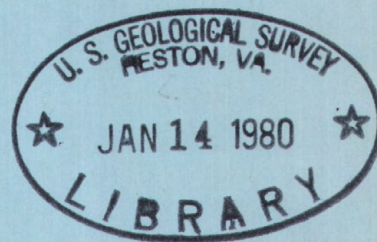




Water Resources Data for Texas

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-78-1

WATER YEAR 1978

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

CALENDAR FOR WATER YEAR 1978

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Water Resources Data for Texas

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

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-78-1

WATER YEAR 1978

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

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. W. Menard, Director

**For additional information write to
District Chief, Water Resources Division
300 East 8th Street
Austin, Texas 78701**

1979

Preface

This report was prepared by the U.S. Geological Survey in cooperation with the State of Texas and with other agencies by personnel of the Texas district of the Water Resources Division under the supervision of I. D. Yost, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region.

This report is one of a series issued by State under the general direction of J. S. Cragwall, Jr., Chief Hydrologist, and Phil Cohen, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for Texas are in three volumes as follows:

- Volume 1. Arkansas River basin, Red River basin, Sabine River basin, Neches River basin, Trinity River basin, and intervening Coastal basins
- Volume 2. San Jacinto River basin, Brazos River basin, San Bernard River basin, and intervening Coastal basins
- Volume 3. Colorado River basin, Lavaca River basin, Guadalupe River basin, Nueces River basin, Rio Grande basin, and intervening Coastal basins

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WATER RESOURCES DATA FOR TEXAS, 1978

VOLUME 1

ARKANSAS RIVER BASIN, RED RIVER BASIN, SABINE RIVER BASIN, NECHES RIVER BASIN, TRINITY RIVER BASIN, AND INTERVENING COASTAL BASINS

INTRODUCTION

Surface-water data for Texas for the 1978 water year are presented in three volumes, appropriately identified 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. Records for a few pertinent stations in bordering states are also included. These data represent that part of the National Water Data System operated by the U.S. Geological Survey in cooperation with State and Federal agencies in Texas.

Records of discharge (or stage) of streams and contents (or stage) of lakes and reservoirs were first published in a series of Geological Survey Water-Supply Papers entitled, 'Surface Water Supply of the United States.' Through water year 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperature, and suspended sediment were published from 1941 to 1971 in an annual series of water-supply papers entitled, 'Quality of Surface Waters of the United States.' Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow and water quality are published as an official Survey report on a State-boundary basis. These official Survey reports carry 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 report is identified as 'U.S. Geological Survey Water-Data Report TX-78-1.' Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

COOPERATION

Organizations that assisted in the collection of data in this report through cooperative agreements with the Geological Survey in 1978 are:

Texas Department of Water Resources, J. M. Rose, Executive Director; A. L. Black, Chairman; R. B. Gilmore, Vice-Chairman; M. T. Potts, G. E. Roney, J. H. Garrett, and G. W. McCleskey, Members.

Pecos River Commission, Horace Babcock, Federal Representative and Chairman; R. B. McGowen, Jr., Commissioner for Texas, and J. L. Cathey, Commissioner for New Mexico.

Sabine River Compact Administration, W. H. Robinson, Federal Representative and Chairman; R. J. Palmer and D. V. Cresap for Louisiana; and J. M. Syler and G. M. Smith for Texas.

City of Austin, C. B. Graves, Jr., Director, Engineering Department.

City of Dallas, Monroe McCorkle, Director, Public Works Department.

City of Fort Worth, J. L. Robinson, Director of Public Works.

City of Garland, F. G. Greene, Director of Public Works.

City of Houston, J. A. Schindewolf, Director, Department of Public Works.

City of Mesquite, G. E. Dowling, City Engineer.

Assistance in the form of funds or services was given by the following Federal agencies:

Corps of Engineers, U.S. Army.

International Boundary and Water Commission, Department of State.

Soil Conservation Service, Department of Agriculture.

Assistance in the form of funds or services was rendered by the following organizations through the Texas Department of Water Resources:

The cities of Abilene, Alice, Arlington, Austin, Brady, Cleburne, Clyde, Corpus Christi, Dallas, El Paso, Gainesville, Galveston, Graham, Houston, Nacogdoches, San Angelo, and Wichita Falls; Athens Municipal Water Authority; Bexar, Medina, and Atascosa Counties Water Control and Improvement District No. 1; Bistone Municipal Water Supply District; Brazos River Authority; Chocolate Bayou Land and Water Company; Colorado River Municipal Water District; Dallas County; Dallas Power and Light Company; Dow Chemical Company; Edwards Underground Water District; Franklin County Water District; Freese and Nichols, Inc.; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris County Flood Control District; Houston Lighting and Power Company; Lone Star Steel Company; Lower Colorado River Authority; Lower Neches Valley Authority; MacKenzie Municipal Water Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; Palo Pinto County Municipal Water District; Red Bluff Water Power Control District; Reeves County Water Improvement District No. 1; Richmond Rice Association; Sabine River Authority of Texas; 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 Electric Service Company; Texas Utilities Services, Inc.; Titus County Fresh Water Supply District No. 1; Tom Green County Water Control and Improvement District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; Upper Trinity Basin Water Quality Compact; West Central Texas Municipal Water District; Wichita County Water Improvement District No. 2; and Wood County.

HYDROLOGIC CONDITIONS

Large variations in rainfall and runoff characterize the usual hydrologic conditions in Texas. In the east, streams are usually deep with wide alluvial flood plains, and streamflow is generally perennial. Normal annual rainfall exceeds 50 inches in the extreme east and annual runoff may average as much as 15 inches. In the west, streams are generally of the arroyo type and streamflow is highly ephemeral. Normal annual rainfall is less than 8 inches in the extreme west and annual runoff averages less than 0.1 inch in many areas.

During the 1978 water year, two of the four index stations, Neches River near Rockland in east Texas and North Bosque River near Clifton in central Texas, had deficient runoff for the year. The index station in the west, North Concho River near Carlsbad, was in the median range, and the index station Guadalupe River near Spring Branch, in south-central Texas, was in the excessive range. Figure 1 on page 28 shows a comparison of monthly and annual mean discharges for the index stations. Conservation storage in a selected group of 63 reservoirs, with a combined conservation capacity of 30,252,000 acre-feet, continued to decrease from 81 percent of capacity in September 1977, to 78 percent of capacity at the end of September 1978.

The 1978 water year began with deficient streamflow across the Panhandle and North Texas and near normal runoff in the remainder of the State. By the end of July, drought conditions had spread across the eastern two-thirds of the State with deficient streamflow noted in all areas except in the Rio Grande, Pecos, and Devils River Basins in far west Texas.

On July 31, 1978, tropical storm Amelia struck the Texas coast in the vicinity of Corpus Christi. The storm moved inland and produced torrential rains of 20 to 30 inches on August 1 and 2. The heaviest rainfall occurred north of the Edwards Escarpment in the Medina, Sabinal, and Guadalupe River Basins. Remnants of the storm continued to move northward into the Brazos River Basin where the storm collided with a stationary cold front. On August 3 and 4, rainfall amounts from 20 to 30 inches were recorded north of Abilene in Shackelford and Throckmorton Counties.

Along the path of the storm, flooding to some degree occurred in an area of approximately 25,000 square miles. Major flooding, some of it record breaking, occurred at the gaging stations and miscellaneous sites listed on the following page.

The large volume of runoff associated with the August floods in the upper Brazos River Basin had considerable effect on the water quality in the streams and reservoirs. The following table lists four sampling sites in the Brazos River basin in downstream order. The table shows the variations, before and after the flood, in the average specific conductance, along the centerline section of the three reservoirs and the range of specific conductance on the Brazos River below Whitney Lake.

	<u>Before flood</u>		<u>After flood</u>	
	Date (1978)	Specific conductance ^{1/}	Date (1978)	Specific conductance ^{1/}
Hubbard Creek Reservoir	June 9	1450	Aug. 29	700
Possum Kingdom Reservoir	June 13	4000	Aug. 30	1600
Whitney Lake	June 23	1600	Sept. 5	3000
Brazos River below Whitney Lake	July 1 - Aug. 1	1300 - 1600	Aug. 2-31	1600 - 3700

^{1/} In micromhos per centimeter at 25 C.

No.	Date	Site	Drainage area (mi ²)	Discharge		Recurrence Interval
				(cfs)	(cfsm)	
08085500	Aug.4	Clear Fork Brazos River at Fort Griffin	3,988	149,000	37.4	> 100
08086150	Aug.4	North Fork Hubbard Creek near Albany	39.3	103,000	2,620	> 100
08086212	Aug.4	Hubbard Creek below Albany	613	330,000	538	> 100
08166000	.....	Johnson Creek near Ingram	114	73,900	648	60
08167000	.....	Guadalupe River at Comfort	838	240,000	286	> 100
08167500	.....	Guadalupe River near Spring Branch	1,315	158,000	120	> 100
08179000	.....	Medina River near Pipe Creek	474	281,000	593	> 100
Miscellaneous sites						
<u>a</u> /08152800	.....	Spring Creek near Fredericksburg	14.1	42,500	3,010	> 100
.....	.....	Turtle Creek at SH 16 near Kerrville	26.5	32,700	1,230	...
.....	.....	North Prong Medina River near Medina	67.5	123,000	1,820	...

a/ Formerly gaged site.

Seventeen counties in central Texas sustained widespread damages from tropical storm Amelia. Thirty-three persons were drowned and 154 were injured. More than 1,400 homes were destroyed or damaged. Total damages from this storm were estimated to be more than 110 million dollars.

At the end of the 1978 water year, streamflow was excessive in the Guadalupe, San Antonio, and Pecos River Basins, and deficient in the remainder of the State.

DEFINITION OF TERMS

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

During water year 1978, revisions were made in the terminology used to define 143 of the water-quality parameter codes that have been used by the Geological Survey in its publication of water-quality data in its WATSTORE data system. These revisions were made to achieve consistency in terminology. They do not represent a change in the way the codes have been used in the past or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in this publication. Definitions on which the terminology is based are included in the 'Definitions' section of this report.

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, about 326,000 gallons, or 1,233 cubic meters.

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

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, 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 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which

produce colonies with a golden-green metallic sheen within 24 hours when incubated at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ 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 intestines 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 which produce blue colonies within 24 hours when incubated at $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found in intestines 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 $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material 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 g/m^3 (grams per cubic meter), and periphyton and benthic organisms in g/m^2 (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for 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.

Biomass pigment ratio is the ratio of organic mass in mg/m^2 (milligrams per square meter) to the mass of chlorophyll a, in mg/m^2 .

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 mL (milliliters) or L (liters).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-ft, about 646,000 gallons or 2,447 cubic meters.

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 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, and unless otherwise indicated is computed on the basis of a level pool. The computation does not include bank storage.

Control designates a feature downstream from a 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.

Cubic foot per second per square mile (CFSM) 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.

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

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 μ m membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of 'dissolved' constituents are made on a subsamples of the filtrate.

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

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

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

Drainage area of a stream at a 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 location. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

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.T.) 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 attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO_3).

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.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram ($\mu\text{g/g}$) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/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 represent 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 sediment per liter of water-sediment mixture.

ND is used in some of the tables of pesticide data as an abbreviation for 'Not Detected.' Analyses in which this term is reported were made by the U.S. Environmental Protection Agency laboratory in Bay Saint Louis, Mississippi.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

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 meters (m^2), acres, or hectares. 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 milliliters (mL) or liters (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.

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 suspended sediment or bed material determined either by 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 recommendations made by the American Geophysical Unit 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.....	.004 - .062	Do.
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

The particle-size distribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material 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 growing upon solid surfaces. While primarily consisting of algae, the assemblage may include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

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/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats of floating 'moss' in lakes. Their concentrations are expressed as number of 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 crustaceous 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.

Recoverable from bottom material refers to 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 only 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.

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.

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).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge (ft^3/s) times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

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 weight or volume, that passes a section during a given time.

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

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigation.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks 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 micromhos 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 in the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). 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 lived.

Natural substrates refers to any naturally occurring emerged or submersed solid surface, such as rock or tree, upon which an organism lived.

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 multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Suspended, recoverable refers to 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 would be 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 refers to 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.

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 numbers 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 in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Total refers to 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 water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material refers to the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as 'total in bottom material.'

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the mean discharge (ft^3/s), times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to 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 would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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 for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WDR is used as an abbreviation for 'Water-Data Report' in the REVISED RECORDS paragraph to refer to State annual basic-data reports.

WRD is used as an abbreviation for 'Water Resources Dataa' in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

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

DOWNSTREAM ORDER AND STATION NUMBER

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 main-stream station are listed before that station. A station on a tributary that enters between two main-stream 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 on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. 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 station numbering system is not used at miscellaneous sites where only random water-quality samples or discharge measurements are taken. The complete number for each station consists of eight digits, such as 08123800. The first two digits, 08 or 07, identify the river basin as previously published in the series of water-supply papers on the Surface Water Supply of the United States. The digits 07 indicate the Lower Mississippi River basin, and the digits 08 indicate the Western Gulf of Mexico Basins. The remaining six digits of the station number are sequential in downstream order.

All records for a drainage basin that extends across State boundaries can be arranged in downstream order by assembling the pages from the appropriate State reports by station number.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled gaging stations where additional samples are collected monthly or twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The basic data collected at gaging stations consist of (1) records of stage; (2) measurements of discharge of streams and canals; and (3) stage, surface area, and contents of lakes and reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement basic data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, 30-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6. Surface areas of lakes or reservoirs are determined from instrument surveys using standard methods. The configuration of the reservoir bottom is often determined by sounding at many points.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables; monthly and yearly mean discharges are computed from the daily values. 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 computed by the shifting-control method, in which correction factors (based on individual discharge measurements and notes by the hydrologists or observers) are used in applying the gage heights to the rating tables.

At some stream-gaging stations, the stage-discharge relation is affected by 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.

For a lake- or reservoir-gaging station, a capacity table giving the contents for any stage is prepared from a stage-area relation curve defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes in contents are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

At 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 on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly values. For gaging stations on streams or canals, a table showing the daily, monthly, and yearly discharge is given. For a gaging station on a reservoir, a table showing the daily contents is given. Tables of daily or maximum and minimum daily gage heights are included for some gaging stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current water year is shown on the inside of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations, except those partial-record stations published in tabular form in the back of the report, gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, general remarks, and notations of revisions of previously published records. The location of the gaging stations and the drainage areas are obtained from the most accurate maps

available. River mileage, given under 'LOCATION' for some stations, is that determined and used by the Corps of Engineers or other agencies (U.S. Water Resources Council, 1968). Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under 'PERIOD OF RECORD.'

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed 'REVISED RECORDS' has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: '(M)' means that only the instantaneous maximum discharge was revised; '(m)' that only the instantaneous minimum was revised; '(P)' that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use, the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history Datum of 1929 (NGVD) 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.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under 'REMARKS.' For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under 'REMARKS.'

The average discharge for the number of years indicated is given under 'AVERAGE DISCHARGE'; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under 'EXTREMES' are given first, the extremes for the

period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with **EXTREMES FOR THE CURRENT YEAR**; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed 'TOTAL' gives the sum of the daily figures. The line headed 'MEAN' gives the average flow in cubic feet per second during the month. The lines headed 'MAX' and 'MIN' give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed 'CFSM'), or in inches (line headed 'IN'), or in acre-feet (line headed 'AC-FT'). Figures for cubic feet per second per square mile and runoff in inches are generally omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word 'NOTE.' Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual sources, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month of more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

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 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. Occasionally, a series of discharge measurements are made and samples collected within a short time period to investigate the seepage and (or) pollutant gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements and analyses are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of discharge data 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 observations of stage, measurements of discharge, and interpretation of records.

The station description under 'REMARKS' states the degree of accuracy of the records. 'Excellent' means that about 95 percent of the daily discharges are within 5 percent; 'good', within 10 percent; and 'fair' within 15 percent. 'Poor' means that daily discharges have less than 'fair' accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

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 station, 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 data available

Information of a more detailed nature than that published for most of the gaging stations, such as observations of water temperatures, discharge measurements, gage-height records, and rating tables, is on file in the Texas District Office in Austin. Most gaging-station records are available in computer-usable form, and many statistical analyses have been made.

Records of discharge collected by agencies other than the Geological Survey

The International Boundary and Water Commission, United States and Mexico, operates all streamflow stations on the Rio Grande and near the mouth of its principal tributaries at and below El Paso, Texas. Records collected at these stations are published in annual bulletins by the Commission and may be obtained from the International Boundary and Water Commission, United States Section, P. O. Box 20003, El Paso, Texas 79998.

EXPLANATION OF SURFACE-WATER QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

Water analysis

Most methods for collecting and analyzing water samples are described in U.S. Geological Survey Techniques of Water Resources Investigations listed on a following page.

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 loads.

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 the reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is probably 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 carbonate and bicarbonate in the laboratory.

At stream-gaging stations where daily samples are obtained, tables are included to show monthly and annual means of specified conductance; concentrations of dissolved solids, chloride, sulfate, hardness; and loads of dissolved solids, chloride, and sulfate. The means have been computed by using the daily records of specific conductance and developing regression relationships between each water-quality parameter and specific conductance.

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 district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. Water temperatures are also taken at time of discharge measurements at gaging stations. At sites at which daily samples are taken, the water temperature is taken about the same time each day. Large streams have a small diurnal temperature change; but small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams and reservoirs may be affected by waste-heat discharges.

At stations where continuously recording thermographs are present, the records published consist of maximum and minimum temperatures for each day and the monthly averages.

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 section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected twice daily or, in some instances, hourly. The published values of sediment discharges for days of rapidly changing flow or concentrations were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days in which the published value of sediment discharge 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 loads of suspended sediment were estimated on the basis of water-sediment discharge relations, sediment concentrations observed immediately before and after 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 estimating long-term sediment-discharge characteristics of the stream.

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Most methods used by the U.S. Geological Survey have been published in the series on techniques describing procedures for planning and executing 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) is on 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, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering 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. 1976. 65 p. \$1.60.
- 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. \$1.00.
- 3-A2. *Measurement of peak discharge by the slope-area methods*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 p. \$0.35.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 p. \$0.40.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 4 p. \$1.00.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 p. \$0.35.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 p. \$1.00.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 p. \$1.40.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 p. \$1.25.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 p. \$1.20.
- 3-A12. *Fluorometric procedures are dye tracing*, by J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 p. \$0.35. Not currently available.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 p. \$0.65.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 p. \$2.50.

- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 p. \$2.10.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 p. \$1.60.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 p. \$0.35.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 p. \$0.65.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 p. \$0.75.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1975. 15 p. \$0.65.
- 5-A1. *Methods for collection and analysis of water samples for dissolved minerals and gases*, by Eugene Brown, M. W. Skougstad, and M. J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 p. \$2.40.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 p. \$0.80.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 p. \$0.90.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and Slack: USGS--TWRI Book 5, Chapter A4. 1977. Revised edition. 332 p. \$20.00.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 p. \$16.00.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 p. \$2.10.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 p. \$1.10.

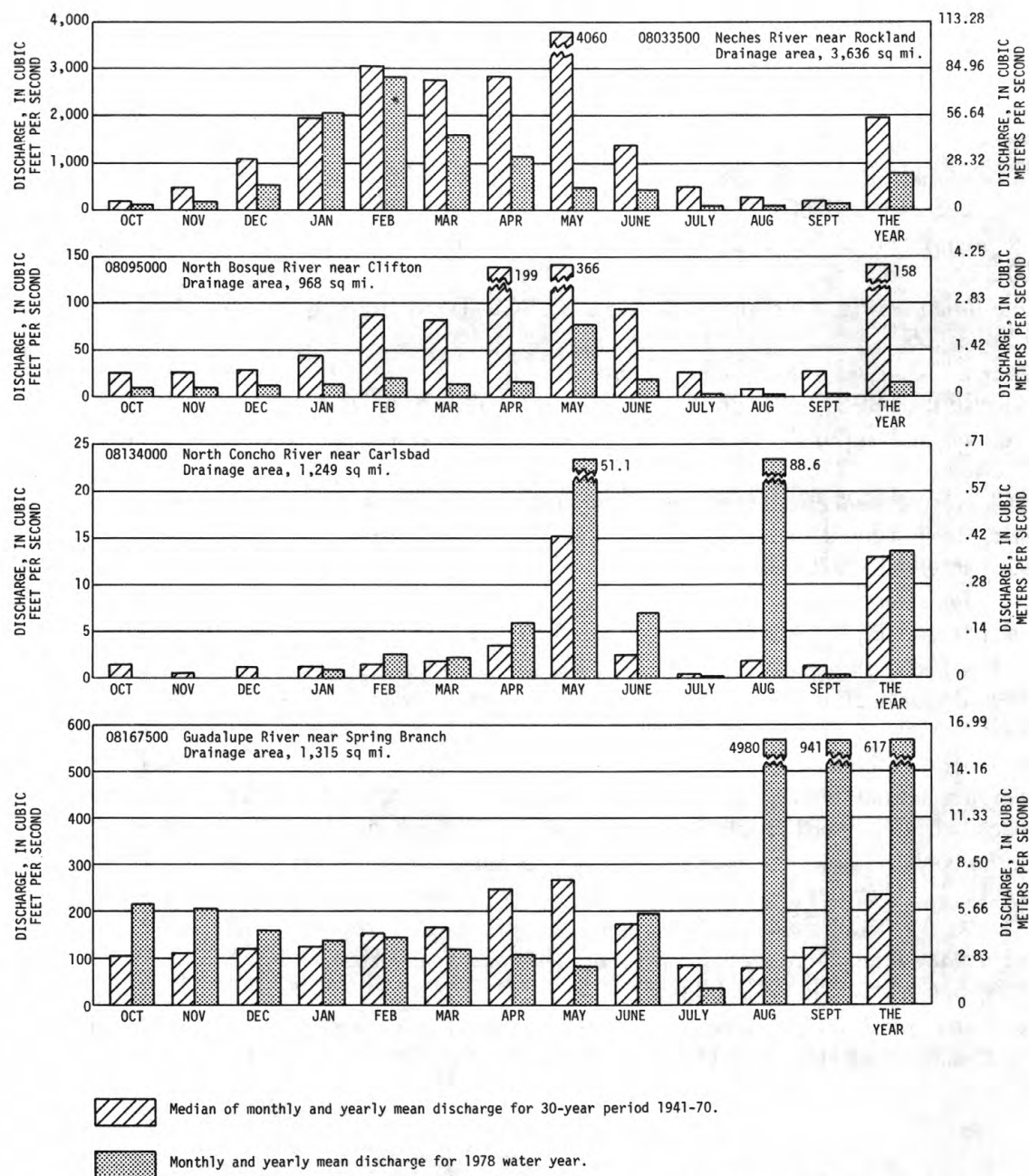


FIGURE 1.--COMPARISON OF DISCHARGE AT FOUR LONG-TERM REPRESENTATIVE GAGING STATIONS DURING THE 1978 WATER YEAR WITH MEDIAN DISCHARGE FOR THE PERIOD 1941-70

ARKANSAS RIVER BASIN

07227000 CANADIAN RIVER AT LOGAN, NM

LOCATION.--Lat 35°21'25", long 103°25'03", in NE1/4NE1/4 sec.15, T.13 N., R.33 E., Quay County, Hydrologic Unit 1108006, on left bank 1,100 ft (340 m) upstream from bridge on U.S. Highway 54, 0.7 mi (1.1 km) south of Logan, 1.4 mi (2.3 km) upstream from Chicago, Rock Island, & Pacific Railroad Co. bridge, 2.0 mi (3.2 km) downstream from Ute Dam, 4.3 mi (6.9 km) upstream from Revuelto Creek, and at mile 672.0 (1,081.2 km).

DRAINAGE AREA.--11,141 mi² (28,855 km²), of which 1,110 mi² (2,870 km²) probably is noncontributing.

PERIOD OF RECORD.--June 1904 to November 1905 (gage heights and discharge measurements only), December 1908 to September 1909, February, April to July 1910, August 1910 to September 1911 (gage heights and discharge measurements only), October 1911 to May 1914, January to May 1924, September 1924 to July 1925, January 1927 to April 1934, August 1934 to current year. Monthly discharge only for some periods, published in WSP 1311. Records for December 1909, January 1910, and May to July 1934, published in WSP 267, 287, and 762 are unreliable and should not be used. Published as South Canadian River, June to September 1904.

REVISED RECORDS.--WSP 1087: 1935-36. WSP 1117: Drainage area. WSP 1281: 1912, 1932(M), 1934, 1945-47, 1949-50. WSP 1311: 1931(M). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 3,668.1 ft (1,118.04 m) National Geodetic Vertical Datum of 1929. See WSP 1311 or 1731 for history of changes prior to Oct. 1, 1934.

REMARKS.--Records fair. Flow regulated by Conchas Lake, 45 mi (72 km) upstream, and Ute Reservoir, 2 mi (3 km) upstream. Diversions for irrigation of about 90,000 acres (360 km²) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1909, 1912-13, 1927-38) prior to completion of Conchas Dam, 392 ft³/s (11.10 m³/s), 284,000 acre-ft/yr (350 hm³/yr); 24 years (water years 1939-62) prior to completion of Ute Dam, 257 ft³/s (7.278 m³/s), 186,200 acre-ft/yr (230 hm³/yr); 16 years (water years 1963-78) regulated, 30.6 ft³/s (0.867 m³/s), 22,170 acre-ft/yr (27.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD (SINCE 1925).--Maximum discharge, 219,000 ft³/s (6,200 m³/s) Sept. 22, 1941, gage height, 29.3 ft (8.93 m), from floodmarks, from rating curve extended above 75,000 ft³/s (2,120 m³/s); no flow at times prior to completion of Ute Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 278,000 ft³/s (7,870 m³/s) Sept. 30, 1904, gage height, about 36.5 ft (11.13 m), site and datum used in 1909, from rating curve extended above 14,000 ft³/s (396 m³/s), from Ninth Biennial Report of State Engineer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 163 ft³/s (4.62 m³/s) Oct. 12, gage height, 3.20 ft (0.975 m); minimum, 0.70 ft³/s (0.020 m³/s) Dec. 10, 22, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.6	2.2	2.0	2.2	2.6	2.2	2.2	2.4	1.8	1.6	1.8
2	2.0	1.8	2.2	2.2	2.2	2.6	2.0	6.4	3.2	2.0	1.8	1.8
3	2.0	1.8	2.2	2.2	2.4	2.6	2.0	4.6	2.6	1.8	1.8	1.8
4	2.0	1.8	2.2	2.2	2.4	2.6	2.0	3.5	7.6	1.8	2.0	2.0
5	2.2	1.6	2.0	2.2	2.4	2.4	2.2	3.5	4.2	1.8	2.0	2.0
6	2.4	1.8	2.0	2.2	2.4	2.4	2.2	3.2	2.9	1.8	2.0	1.8
7	2.4	2.2	2.0	2.2	2.4	2.4	2.4	2.6	2.4	1.8	3.7	1.8
8	2.2	2.2	1.8	2.2	2.6	9.2	2.4	2.9	2.4	1.8	2.0	1.8
9	2.2	2.0	1.8	2.2	2.6	13	2.6	2.4	2.0	1.8	1.8	1.8
10	2.2	2.0	1.8	3.5	2.6	13	2.9	2.4	1.6	2.0	2.2	2.0
11	2.2	2.0	1.8	2.4	2.6	13	2.6	2.4	1.6	2.0	1.6	2.0
12	19	2.0	1.8	2.4	2.6	13	2.4	2.2	1.6	2.2	1.4	2.0
13	6.8	2.0	1.8	2.4	2.4	3.9	2.4	2.2	1.6	4.4	1.4	2.0
14	3.5	2.0	1.8	2.2	2.4	2.9	2.4	2.2	1.6	2.6	1.3	2.0
15	2.9	2.0	1.8	2.4	2.4	2.4	2.4	2.2	1.6	2.0	1.3	2.0
16	2.6	2.0	1.8	2.2	2.4	2.4	2.6	2.0	1.6	1.8	1.4	2.0
17	2.6	2.0	1.8	2.4	2.4	2.4	2.2	2.2	1.6	1.8	1.3	1.8
18	2.4	2.0	1.8	2.0	2.4	2.4	2.2	2.0	1.6	1.8	1.4	1.8
19	2.4	1.8	1.8	2.4	2.4	2.2	2.2	2.0	1.6	1.8	1.4	1.8
20	2.4	1.6	1.8	2.4	2.4	2.4	2.2	2.2	1.6	1.8	1.6	2.0
21	2.2	1.6	1.8	2.4	2.4	2.4	2.4	2.4	1.8	1.8	1.6	2.0
22	2.2	1.8	1.8	2.2	2.4	2.2	2.2	2.2	1.8	2.0	1.6	2.0
23	2.2	1.8	2.0	2.2	2.4	2.2	2.2	2.0	1.6	2.0	1.6	2.0
24	2.0	1.8	2.0	2.2	2.4	2.6	2.2	2.2	1.6	2.0	1.6	2.0
25	1.8	2.0	2.0	2.2	2.4	2.9	2.4	2.4	1.6	2.0	1.6	2.4
26	1.8	2.0	2.2	2.2	2.4	2.9	2.4	4.7	1.6	1.8	2.0	2.2
27	1.8	2.0	2.2	2.0	2.4	2.4	2.6	4.2	3.1	1.8	1.8	1.8
28	1.8	2.2	2.2	2.0	2.4	2.6	2.4	2.2	2.8	1.8	1.8	1.6
29	1.8	2.2	2.2	2.2	---	2.9	2.0	2.0	2.0	1.8	1.8	1.4
30	1.6	2.2	2.2	2.2	---	2.4	2.2	2.0	1.8	1.8	2.2	1.4
31	1.6	---	2.0	2.2	---	2.2	---	2.0	---	1.8	1.8	---
TOTAL	89.2	57.8	60.8	70.3	67.8	127.5	69.5	83.6	67.0	61.2	54.4	56.8
MEAN	2.88	1.93	1.96	2.27	2.42	4.11	2.32	2.70	2.23	1.97	1.75	1.89
MAX	19	2.2	2.2	3.5	2.6	13	2.9	6.4	7.6	4.4	3.7	2.4
MIN	1.6	1.6	1.8	2.0	2.2	2.2	2.0	2.0	1.6	1.8	1.3	1.4
AC-FT	177	115	121	139	134	253	138	166	133	121	108	113
CAL YR 1977	TOTAL	12060.1	MEAN	33.0	MAX	315	MIN	1.6	AC-FT	23920		
WTR YR 1978	TOTAL	865.9	MEAN	2.37	MAX	19	MIN	1.3	AC-FT	1720		

ARKANSAS RIVER BASIN

07227100 REVUELTO CREEK NEAR LOGAN, NM

LOCATION.--Lat 35°20'28", long 103°23'40", in SW1/4NW1/4 sec.24, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080008, on right bank 0.3 mi (0.5 km) upstream from bridge on State Highway 39, 1.9 mi (3.1 km) southeast of Logan, and at mile 2.3 (3.7 km).

DRAINAGE AREA.--786 mi² (2,036 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1959 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,665 ft (1,117 m), from topographic map.

REMARKS.--Water-discharge records poor. Low flows supplemented by surface- and ground-water return from irrigation in vicinity of Tucumcari.

AVERAGE DISCHARGE.--19 years, 46.9 ft³/s (1.328 m³/s), 33,980 acre-ft/yr (41.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s (756 m³/s) July 9, 1960, gage height, 14.3 ft (4.36 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD (1941-47).--Maximum discharge determined, about 13,400 ft³/s (379 m³/s) Sept. 18, 1946, gage height, 9.04 ft (2.755 m), at site 500 ft (150 m) downstream at different datum, from unpublished records collected by Bureau of Reclamation. A peak discharge of 26,100 ft³/s (739 m³/s), date unknown, gage height, 12.9 ft (3.93 m), was measured by slope-area method in May 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,500 ft³/s (99.1 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 4	2330	*3,760 106	5.89 1.795	July 13	2215	3,590 102	5.78 1.762

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.06	.10	.04	.00	.00	3.3	35	.00	.00
2	.00	.00	.09	.04	.10	.15	.00	136	75	18	.00	.00
3	.00	.00	.20	.02	.10	.10	.00	154	45	8.4	.00	.00
4	.00	.00	.15	.08	.13	.10	.00	47	554	5.6	.00	.00
5	.00	.00	.08	.00	.07	.22	.00	20	1970	3.3	.00	.00
6	.08	.00	.07	.00	.00	.00	.00	14	704	404	.00	.00
7	.19	.40	.02	.00	.00	.05	.00	5.0	164	400	.39	.00
8	.00	.21	.00	.00	.18	.05	.00	1.3	190	63	.00	.00
9	.00	.00	.00	.10	.15	.08	.00	.42	72	14	23	.00
10	.00	.05	.17	.10	.19	.06	8.2	.05	33	2.0	5.3	.00
11	.00	.08	.06	.12	.06	.00	17	.04	18	.78	.22	.00
12	.00	.08	.04	.14	.24	.02	.60	.00	10	.60	.00	.00
13	.00	.08	.00	.17	.10	.00	.00	.00	12	312	.00	.00
14	.00	.08	.00	.19	.10	.00	.00	.00	22	957	.00	.00
15	.00	.08	.00	.16	.10	.01	.00	.00	4.1	218	.00	.00
16	.00	.08	.00	.15	.20	.00	.00	.00	.54	20	.00	.00
17	.00	.08	.00	.15	.15	.02	.00	.00	.07	.48	.00	.00
18	.00	.05	.00	.15	.10	.01	.00	.00	.00	.00	.00	.00
19	.00	.03	.00	.15	.20	.00	.00	.00	.00	.00	.00	.00
20	.00	.01	.01	.10	.30	.00	.00	.00	.00	234	.00	.00
21	.00	.00	.05	.10	.56	.02	.00	.01	.00	1.3	.00	.00
22	.33	.00	.02	.09	5.1	.00	.00	.00	.00	9.8	.00	.00
23	.22	.00	.00	.08	6.2	.00	.00	.00	.00	4.4	.00	.00
24	.08	.00	.00	.14	.93	.20	.00	.00	.00	.11	.00	.00
25	.08	.00	.09	.05	.34	.33	.00	168	.00	.35	.00	1.9
26	.04	.05	.00	.05	.34	.00	.00	464	.00	.00	.00	41
27	.00	.08	.00	.05	.05	.00	.00	359	.00	.00	.00	6.9
28	.06	.12	.06	.05	.00	.16	.00	53	177	.00	.00	1.4
29	.05	.08	.08	.05	---	.36	.00	20	126	.00	.00	.43
30	.00	.04	.02	.05	---	.00	.00	11	47	.00	.00	.00
31	.00	---	.00	.05	---	.00	---	4.8	---	.00	.00	---
TOTAL	1.13	1.68	1.21	2.64	16.09	1.98	25.80	1457.62	4255.01	2712.12	28.91	51.63
MEAN	.036	.056	.039	.085	.57	.064	.86	47.0	142	87.5	.93	1.72
MAX	.33	.40	.20	.19	6.2	.36	.17	464	1970	957	23	41
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2.2	3.3	2.4	5.2	32	3.9	51	2890	8440	5380	57	102
CAL YR 1977	TOTAL	10473.83	MEAN 28.7	MAX 2950	MIN .00	AC-FT 20770						
WTR YR 1978	TOTAL	8555.82	MEAN 23.4	MAX 1970	MIN .00	AC-FT 16970						

ARKANSAS RIVER BASIN

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07227100 REVUELTO CREEK NEAR LOGAN, NM--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1959 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	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)	
NOV 22...	1330	.50	6500	8.5	11.0	420	32	70	59	1300	28	5.8	
DEC 07...	1315	.10	--	--	10.0	--	--	--	--	--	--	--	
14...	1330	.10	6000	8.4	11.0	360	4	62	51	1200	27	5.9	
FEB 01...	1430	.10	6000	8.6	8.5	320	0	56	44	1000	24	5.1	
22...	1300	.46	5250	8.6	14.0	350	5	61	48	900	23	4.9	
MAR 29...	1300	.33	5720	8.4	27.0	320	0	52	46	1100	27	5.9	
JUL 18...	1530	.01	810	8.6	37.0	50	--	14	3.7	170	10	2.4	
DATE		BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	SEDI- MENT, DIS- SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 22...	470	0	320	1800	1.1	10	--	3800	.01	9	.01	--	
DEC 07...	--	--	--	--	--	--	--	--	--	57	.02	--	
14...	440	0	310	1600	1.1	9.3	3450	3460	.02	67	.02	--	
FEB 01...	420	1	260	1400	.9	8.6	--	2980	.12	30	.01	--	
22...	420	0	270	1400	1.0	8.8	--	2990	.08	83	.10	84	
MAR 29...	450	5	290	1500	1.0	8.8	3270	3230	.06	23	.02	--	
JUL 18...	--	--	130	72	.7	14	488	--	.85	802	.02	65	

ARKANSAS RIVER BASIN

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM
(National stream-quality accounting network station)

LOCATION.--Lat 35°23'35", long 103°02'30", in SW1/4 sec. 32, T.14 N., R.37 E., Quay County, Hydrologic Unit 11080006, 0.1 mi (0.2 km) upstream from New Mexico-Texas State line, 5.5 mi (8.8 km) downstream from Rana Canyon and 14.7 mi (23.7 km) north of Glenrio.

DRAINAGE AREA.--12,616 mi² (32,675 km²).

PERIOD OF RECORD.--1969-73, 1975 to current year.

REMARKS.--Discharge measurements were made at the time water-quality samples were collected.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 26...	1015	5.9	8000	8.1	13.0	3	10.6	41	59	580	360
NOV 23...	1000	5.8	8000	8.2	6.5	2	14.8	4	6	650	390
DEC 14...	1000	7.6	8000	8.3	4.0	2	12.8	0	5	640	430
FEB 01...	1100	12	9200	8.9	3.0	6	12.5	0	320	740	470
22...	1000	12	9680	8.7	3.5	4	11.8	0	18	770	500
MAR 29...	1000	10	8560	8.0	16.0	2	11.9	14	18	670	440
APR 27...	0945	2.2	7100	8.3	21.0	3	8.4	34	22	600	350
MAY 24...	1000	1.6	6490	8.1	24.0	--	8.3	340	56	590	--
JUN 21...	1000	3.8	6900	8.5	25.0	--	8.3	460	24	540	--
JUL 17...	1000	16	2100	8.6	25.0	--	7.7	64	220	200	--
SEP 26...	0945	38	1200	8.4	18.0	--	14.5	4700	--	83	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 26...	110	74	1400	25	8.6	270	0	400	2000	.6	11	
NOV 23...	130	78	1500	26	9.0	310	0	400	2300	.6	13	
DEC 14...	140	80	1600	27	10	300	0	460	2500	.6	12	
FEB 01...	150	88	1900	30	11	320	1	440	2900	.6	11	
22...	160	89	1900	30	11	330	0	470	2900	.6	10	
MAR 29...	130	84	1600	27	8.8	280	0	45	2700	.6	7.3	
APR 27...	110	79	1400	25	10	300	0	390	2000	.7	8.8	
MAY 24...	110	77	1200	21	10	--	--	350	1800	.6	8.8	
JUN 21...	110	75	1300	23	10	--	--	360	2100	.6	11	
JUL 19...	54	16	430	13	4.7	--	--	85	550	.6	11	
SEP 26...	22	6.7	200	4.6	4.1	--	--	58	290	.5	7.5	

07272140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 26...	4170	4140	.17	.03	.20	.00	--	9	.14	47
NOV 23...	4520	4590	.43	.04	.24	.03	1.6	5	.08	57
DEC 14...	4940	4950	.46	.11	.41	.00	--	40	.82	38
FEB 01...	5410	5660	.38	.00	.19	.01	1.7	40	1.3	61
22...	5750	5710	.30	.03	.31	.01	2.4	22	.71	60
MAR 29...	4840	4710	.04	.01	2.3	.00	--	46	1.2	28
APR 27...	4200	4150	.01	.01	.32	.01	--	26	.15	74
MAY 24...	3590	--	.05	.01	--	.03	2.2	93	.40	98
JUN 21...	4030	--	.04	.01	.29	.03	--	46	.47	96
JUL 19...	1310	--	.57	.00	.70	.20	5.2	330	14	96
SEP 26...	720	--	.73	.05	13	17	2.7	24500	2510	100

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 26...	1015	--	--	--	--	--	--	--	--	--
NOV 23...	1000	--	--	--	--	--	--	--	--	--
DEC 14...	1000	1	0	1	200	0	200	1	0	1
FEB 01...	1100	--	--	--	--	--	--	--	--	--
22...	1000	--	--	--	--	--	--	--	--	--
MAR 29...	1000	1	0	1	200	0	200	1	0	1
APR 27...	0945	--	--	--	--	--	--	--	--	--
MAY 24...	1000	--	--	--	--	--	--	--	--	--
JUN 21...	1000	2	0	2	400	100	300	0	0	0
JUL 19...	1000	--	--	--	--	--	--	--	--	--
SEP 26...	0945	41	--	7	5000	4800	200	1	0	1

DATE	CHROMIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHROMIUM, SUS- PENDED RECOV. (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 26...	--	--	--	--	--	--	--	--	--	--
NOV 23...	--	--	--	--	--	--	--	--	--	--
DEC 14...	10	0	20	0	0	0	4	4	0	310
FEB 01...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
MAR 29...	10	0	10	0	0	0	2	1	1	180
APR 27...	--	--	--	--	--	--	--	--	--	--
MAY 24...	--	--	--	--	--	--	--	--	--	--
JUN 21...	0	0	10	0	0	0	14	12	2	450
JUL 19...	--	--	--	--	--	--	--	--	--	--
SEP 26...	230	230	0	140	140	3	400	400	4	150000

ARKANSAS RIVER BASIN

07227140 CANADIAN RIVER ABOVE NEW MEXICO-TEXAS STATE LINE, NM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, SUS- PENDE REC OV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL REC OV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE REC OV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL REC OV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE REC OV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL REC OV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE REC OV- ERABLE (UG/L AS HG)
OCT 26...	--	30	--	--	--	--	--	--	--	--
NOV 23...	--	10	--	--	--	--	--	--	--	--
DEC 14...	--	30	5	3	2	170	50	120	.0	.0
FEB 01...	--	60	--	--	--	--	--	--	--	--
22...	--	20	--	--	--	--	--	--	--	--
MAR 29...	--	10	10	6	4	120	0	120	.0	.0
APR 27...	--	30	--	--	--	--	--	--	--	--
MAY 24...	--	50	--	--	--	--	--	--	--	--
JUN 21...	430	20	17	14	3	90	40	50	.0	.0
JUL 19...	--	90	--	--	--	--	--	--	--	--
SEP 26...	150000	40	--	--	1	6000	6000	0	.6	.6

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL REC OV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE REC OV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL REC OV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE REC OV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 26...	--	--	--	--	--	--	--	--	--	--
NOV 23...	--	--	--	--	--	--	--	--	--	--
DEC 14...	.0	1	0	1	0	0	0	40	20	20
FEB 01...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
MAR 29...	.0	0	0	0	0	0	0	10	0	10
APR 27...	--	--	--	--	--	--	--	--	--	--
MAY 24...	--	--	--	--	--	--	--	--	--	--
JUN 21...	.0	1	1	0	0	0	0	40	20	20
JUL 19...	--	--	--	--	--	--	--	--	--	--
SEP 26...	.0	2	1	1	1	1	0	700	690	10

ARKANSAS RIVER BASIN

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07227500 CANADIAN RIVER NEAR AMARILLO, TX

LOCATION.--Lat 35°28'13", Long 101°52'45", Potter County, Hydrologic Unit 11090105, on left bank at downstream side of southbound lane of bridge on U.S. Highways 87 and 287, 1,500 ft (460 m) downstream from Pitcher Creek, 1.4 mi (2.3 km) downstream from East Amarillo Creek, 1.7 mi (2.7 km) downstream from Panhandle and Santa Fe Railway Co. bridge, 19 mi (31 km) north of Amarillo, and 537.7 mi (865.2 km) upstream from mouth.

DRAINAGE AREA.--19,445 mi² (50,362 km²), of which 4,069 mi² (10,539 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1924 to December 1925, January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,989.16 ft (911.096 m) National Geodetic Vertical Datum of 1929. Jan. 16, 1924, to Dec. 31, 1925, and Apr. 3 to June 1, 1938, nonrecording gage at site of old bridge 20 ft (6 m) upstream at same datum. June 2 to Dec. 5, 1938, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records poor. The city of Amarillo reported that during the year 0.7 acre-ft (863 m³) of sewage effluent was discharged into East Amarillo Creek. At times, extreme low flow is maintained by sewage effluent. Some regulation by Conchos and Ute Reservoirs in New Mexico, total capacity 439,700 acre-ft (542 hm³). Conchos Canal and Bell Ranch Canal divert from Conchos Reservoir for irrigation.

AVERAGE DISCHARGE.--41 years (water years 1925, 1939-78), 348 ft³/s (9.855 m³/s), 252,100 acre-ft/yr (311 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 135,000 ft³/s (3,820 m³/s) July 25, 1941, gage height, 15.7 ft (4.79 m), from rating curve extended above 100,000 ft³/s (2,830 m³/s); no flow at times January 1924 to December 1925 and Aug. 7, 8, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of 24 ft (7.3 m); a higher stage probably occurred during flood in October 1904, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 14,000 ft³/s (396 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 26	2200	24,400 691	8.54 2.603	June 8	0500	14,500 411	6.94 2.115
June 2	0900	28,600 810	9.05 2.758	Sept. 19	2330	*28,900 818	8.25 2.515

Minimum discharge, 0.08 ft³/s (0.002 m³/s) Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	.92	2.9	1.5	5.0	12	1.1	.09	222	3.2	3.7	17
2	1.7	1.1	5.5	2.9	7.0	10	.69	12	7200	3.2	7.8	5.0
3	1.4	1.1	3.2	7.7	10	7.0	.48	34	369	4.8	308	14
4	1.0	1.0	2.2	9.5	12	8.0	.63	40	195	3.8	278	7.1
5	.89	1.2	2.1	5.2	15	21	.61	23	1070	17	93	11
6	1.5	.79	1.3	8.6	12	24	.57	18	3740	4.6	28	3.3
7	1.6	1.3	1.6	7.1	8.0	21	.77	11	1840	7.4	10	1.7
8	.46	2.1	1.9	6.2	4.0	19	.70	20	4290	4.8	4.6	1.7
9	.43	4.5	.99	3.6	3.0	15	5.0	16	509	5.9	23	2.1
10	.33	3.1	1.5	2.0	4.0	15	10	10	466	17	151	2.5
11	.24	2.8	1.5	2.0	3.0	12	6.8	7.6	343	23	80	1.2
12	.21	2.6	2.3	3.9	3.0	13	4.1	3.8	195	19	50	.54
13	.27	1.9	1.7	4.6	3.0	10	2.8	1.6	206	13	24	.32
14	.33	1.8	1.7	4.6	2.0	7.2	3.1	.94	180	10	13	.32
15	.31	1.8	1.7	5.0	2.0	7.7	1.1	.67	99	8.8	7.9	.21
16	.50	2.1	1.7	4.0	4.0	7.0	.64	.60	62	200	6.6	.21
17	.61	2.3	1.5	3.0	4.0	6.0	.60	.68	49	128	5.6	.26
18	.42	1.9	1.6	2.0	4.0	5.0	.60	.55	36	95	3.6	.08
19	.50	1.6	1.1	2.0	3.0	4.2	.43	3.6	40	71	2.2	3180
20	.59	.95	.72	3.0	4.0	4.0	.54	3.6	74	53	2.4	4950
21	.50	.67	.66	4.0	5.0	3.0	.63	36	57	26	3.1	295
22	2.7	.73	.63	5.0	6.0	2.0	.38	288	45	28	2.7	69
23	9.4	.77	.90	6.0	7.0	1.3	.42	70	31	4.6	2.5	34
24	4.1	.68	.69	7.0	8.0	1.4	.36	15	19	4.6	2.3	26
25	2.7	.94	.53	6.0	9.0	3.0	.22	65	8.7	4.7	2.1	25
26	1.9	1.2	.68	5.0	10	3.2	.44	1680	5.9	4.9	1.7	24
27	1.2	1.1	.83	6.0	11	3.4	.57	4410	4.9	2.7	1.5	26
28	1.3	.93	.91	7.0	12	3.5	.66	2280	3.4	1.7	1.5	25
29	1.6	.81	1.9	5.0	---	3.0	.22	565	2.1	1.4	1.7	21
30	1.2	1.0	2.4	4.0	---	2.0	.29	393	1.4	1.4	2.3	18
31	.88	---	4.5	4.0	---	1.5	---	292	---	1.9	12	---
TOTAL	42.97	45.69	53.34	147.4	180.0	255.4	45.45	10301.73	21363.4	774.4	1135.8	8761.54
MEAN	1.39	1.52	1.72	4.75	6.43	8.24	1.52	332	712	25.0	36.6	292
MAX	9.4	4.5	5.5	9.5	15	24	10	4410	7200	200	308	4950
MIN	.21	.67	.53	1.5	2.0	1.3	.22	.09	1.4	1.4	1.5	.08
AC-FT	85	91	106	292	357	507	90	20430	42370	1540	2250	17380
CAL YR 1977	TOTAL	57392.21	MEAN 157	MAX 4380	MIN .12	AC-FT 113800						
WTR YR 1978	TOTAL	43107.12	MEAN 118	MAX 7200	MIN .08	AC-FT 85500						

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1948 to October 1949, February 1950 to current year. Chemical and biochemical analyses: January 1969 to current year. Pesticide analyses: October 1968 to current year.

PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: October 1950 to current year.

WATER TEMPERATURES: August 1949 to current year.

SUSPENDED SEDIMENT DISCHARGE: August 1949 to September 1952.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,530 micromhos Dec. 9, 1977; minimum daily, 346 micromhos Oct. 29, 1964.

WATER TEMPERATURES (1949-76): Maximum daily, 39.0°C July 7, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,530 micromhos Dec. 9; minimum daily, 446 micromhos May 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 05...	1300	1.1	4400	8.2	16.0	5	15	9.7	102	1.6	900	750
DEC 07...	1230	1.4	3180	8.0	9.5	0	2	13.0	119	.2	710	520
JAN 05...	1230	4.7	6250	7.4	8.0	--	--	--	--	--	1300	1100
FEB 09...	1300	3.0	3780	8.2	.5	0	15	12.2	88	1.1	580	380
APR 19...	1150	.38	2900	8.3	21.0	5	4	10.9	127	1.7	530	370
MAY 31...	0815	295	1470	8.1	17.0	--	--	--	--	--	190	19
JUN 24...	1000	20	2850	8.2	24.0	20	55	8.0	110	1.6	470	340
AUG 24...	1030	2.3	1400	8.1	24.0	5	25	8.2	111	1.9	340	190
SEP 20...	1330	6000	373	--	13.0	--	--	--	--	--	81	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)	SOLIOS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
OCT 05...	230	80	660	9.6	7.6	190	0	770	1000	.7	18	2860
DEC 07...	190	56	480	7.9	5.0	220	0	530	700	.5	19	2090
JAN 05...	360	97	990	12	6.1	200	0	1100	1500	.5	16	4170
FEB 09...	140	57	620	11	6.0	250	0	420	920	.8	13	2300
APR 19...	140	44	420	7.9	4.6	200	0	390	610	.6	19	1730
MAY 31...	47	18	220	6.9	5.5	210	0	170	250	.9	13	828
JUN 24...	120	42	420	8.4	7.8	160	0	400	600	.6	13	1680
AUG 24...	100	22	120	2.8	6.1	180	0	220	170	.7	11	739
SEP 20...	22	6.4	47	2.3	2.5	140	0	36	32	.3	9.5	225

[illegible]

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)			
DATE	TIME									
OCT 05...	1300	4	800	2	10	0	10			
FEB 09...	1300	2	200	5	0	2	10			
JUN 24...	1000	4	300	0	0	2	0			
AUG 24...	1030	5	300	0	0	1	170			
		LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)			
OCT 05...		0	200	.0	0	0	10			
FEB 09...		2	140	.0	0	0	10			
JUN 24...		0	10	.0	0	0	10			
AUG 24...		0	50	.0	0	0	10			
		PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
OCT 05...	1300	.0	0	.00	.00	.0	0	.00	.0	
FEB 09...	1300	.0	0	.00	.00	.0	0	.00	.0	
JUN 24...	1000	.0	0	.00	.00	.0	0	.00	.0	
AUG 24...	1030	.0	0	.00	.00	.0	0	.00	.0	
		DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
OCT 05...	.00	.0	.00	.0	.00	.00	.0	.00	.0	
FEB 09...	.00	.0	.00	.0	.00	.00	.0	.00	.0	
JUN 24...	.00	.0	.00	.0	.10	.00	.0	.00	.0	
AUG 24...	.00	.0	.00	.0	.07	.00	.0	.00	.0	
		ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	
OCT 05...	.00	.00	.0	.00	.0	.00	.0	.00	.00	
FEB 09...	.00	.00	.0	.00	.0	.00	.0	.00	.00	
JUN 24...	.00	.00	.0	.00	.0	.00	.0	.00	.00	
AUG 24...	.00	.00	.0	.00	.0	.00	.0	.00	.00	
		METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 05...	.00	--	.00	0	0	0	.00	.00	.00	.00
FEB 09...	.00	.00	.00	0	0	0	.00	.00	.00	.00
JUN 24...	.00	.00	.00	0	0	0	.00	.04	.02	.09
AUG 24...	.00	.00	.00	0	0	0	.00	.04	.02	.12

ARKANSAS RIVER BASIN
07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	42.97	4370	2730	317	1010	117	650	75	810
NOV. 1977.....	45.69	3970	2480	305	900	112	580	72	740
DEC. 1977.....	53.34	5380	3380	486	1260	182	800	115	1000
JAN. 1978.....	147.4	4090	2560	1020	940	373	610	241	760
FEB. 1978.....	180	3400	2120	1030	760	370	500	241	640
MAR. 1978.....	255.4	4260	2670	1840	980	677	630	434	800
APR. 1978.....	45.45	3350	2090	256	750	92	490	60	630
MAY 1978.....	10301.73	785	470	13000	100	2910	93	2590	160
JUNE 1978.....	21363.39	948	560	32500	140	7850	120	7070	190
JULY 1978.....	774.4	1830	1120	2350	360	756	260	538	350
AUG. 1978.....	1135.8	1090	650	1990	170	524	140	430	220
SEPT 1978.....	8761.54	607	360	8480	61	1450	64	1520	130
TOTAL	43107.09	**	**	63600	**	15400	**	13400	**
WTD.AVG.	118.1	915	550	**	130	**	110	**	180

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4020	2550	4250	5640	4010	4060	2380	1830	1590	4000	970	983
2	4200	3150	5120	5700	3500	4170	1950	1320	850	2970	1810	1630
3	4380	3340	5250	5740	2860	4190	1490	2440	1160	1940	1010	1410
4	4580	3250	5120	5870	3110	4140	1410	2000	1840	2550	890	1650
5	4660	3200	4930	4770	3310	4480	1450	1830	1310	1010	806	1550
6	4580	3330	5180	4170	3230	4660	1510	2910	996	2000	1100	1430
7	3400	3310	5710	2800	3150	4590	1470	3470	868	1580	1740	1380
8	3720	3290	6120	2950	3080	4480	2000	3650	605	920	2340	1360
9	4050	4580	6530	3280	2960	4020	4340	4210	922	1460	1750	1190
10	4330	4220	6230	3640	3470	3890	5250	4040	1160	3440	1300	1070
11	4400	4400	5180	4070	3370	4190	4930	3850	1220	3850	1340	1300
12	4070	4330	5350	3920	3070	4460	2450	4080	1420	2760	1280	1350
13	3830	4210	5600	3730	3260	4380	2010	4110	1370	1970	1410	1490
14	3780	4110	5810	3440	2830	4350	1680	3280	1540	2550	1530	1630
15	3620	4030	5590	3190	3000	4310	1760	2500	1680	2310	1100	1760
16	3450	3940	5640	3880	3240	4300	2050	2320	2090	1970	781	1170
17	3350	3870	5340	4070	3390	4290	1500	2160	2520	1540	820	1040
18	3840	3800	5530	4340	3610	4230	1420	2000	2600	1370	851	1760
19	3680	3120	4960	4620	3790	4180	1290	1420	2840	1400	1210	750
20	3350	3630	4340	4850	3670	4140	1170	1650	3170	1440	1110	459
21	3200	4340	4480	4000	3790	4560	1050	1890	3120	1460	923	456
22	4050	4250	4610	4390	3720	3920	2400	1150	2980	1970	835	820
23	4800	4160	4770	3690	3430	3490	2320	1200	2770	2180	1100	1180
24	5520	3920	5550	4000	3380	3450	2000	2500	2690	2320	1160	1600
25	4960	3820	5330	3860	3440	3610	1750	3560	3090	2640	1150	1910
26	4550	4850	5120	3790	3560	3840	1700	950	3270	2900	1140	2270
27	4040	4870	5480	3700	3680	4060	1630	446	3320	2460	1180	2170
28	3780	4390	6210	3530	3790	4270	1550	735	3900	2000	1230	2100
29	3620	4130	6000	3690	---	3080	1810	1060	4290	1570	1240	2020
30	3500	3920	5820	3930	---	3110	3250	1280	4400	1340	1170	2570
31	3340	---	5500	4170	---	2940	---	1480	---	1110	974	---
MEAN	4020	3880	5380	4110	3380	4060	2100	2300	2190	2100	1200	1450

ARKANSAS RIVER BASIN

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07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	9.0	---	---	1.0	4.0	8.0	12.0	16.0	---	34.0	29.0
2	---	4.0	---	---	1.0	3.0	---	8.0	---	---	34.0	30.0
3	11.0	4.0	---	6.0	1.0	1.0	9.0	6.0	---	---	---	23.0
4	16.0	4.0	---	10.0	1.0	2.0	10.0	5.0	---	35.0	---	32.0
5	16.0	---	4.0	12.0	1.0	1.0	14.0	15.0	---	32.0	29.0	---
6	14.0	---	6.0	11.0	---	---	8.0	17.0	22.0	33.0	30.0	---
7	16.0	---	12.0	9.0	---	---	11.0	23.0	25.0	36.0	31.0	29.0
8	---	7.0	---	7.0	---	15.0	---	25.0	24.0	34.0	---	25.0
9	---	.0	1.0	---	2.0	19.0	---	27.0	27.0	35.0	---	29.0
10	20.0	10.0	1.0	---	4.0	16.0	---	---	26.0	25.0	30.0	24.0
11	21.0	3.0	1.0	4.0	7.0	18.0	25.0	29.0	28.0	---	30.0	30.0
12	21.0	4.0	---	5.0	4.0	15.0	23.0	25.0	26.0	---	32.0	30.0
13	22.0	5.0	---	8.0	4.0	---	24.0	28.0	---	30.0	31.0	---
14	24.0	---	15.0	---	2.0	---	25.0	31.0	---	35.0	29.0	---
15	---	---	14.0	7.0	---	---	28.0	35.0	31.0	37.0	---	16.0
16	---	18.0	8.0	4.0	---	---	27.0	---	34.0	31.0	31.0	18.0
17	23.0	---	13.0	3.0	---	4.0	25.0	---	33.0	27.0	---	20.0
18	24.0	15.0	13.0	---	---	6.0	---	33.0	26.0	27.0	18.0	14.0
19	24.0	15.0	11.0	---	1.0	7.0	---	30.0	29.0	---	17.0	18.0
20	24.0	10.0	9.0	.0	.0	7.0	24.0	23.0	26.0	---	18.0	13.0
21	24.0	10.0	---	.0	.0	8.0	25.0	30.0	21.0	22.0	20.0	11.0
22	---	---	---	.0	.0	8.0	10.0	26.0	---	22.0	20.0	---
23	---	---	4.0	.0	2.0	8.0	26.0	26.0	21.0	21.0	19.0	---
24	24.0	2.0	5.0	.0	---	---	24.0	---	20.0	20.0	19.0	---
25	23.0	2.0	---	---	---	---	22.0	25.0	21.0	21.0	---	---
26	---	4.0	1.0	.0	---	---	---	---	20.0	21.0	---	23.0
27	16.0	5.0	2.0	---	---	---	---	16.0	22.0	20.0	---	26.0
28	25.0	4.0	1.0	---	6.0	8.0	15.0	16.0	20.0	---	---	---
29	---	2.0	2.0	---	---	9.0	14.0	18.0	21.0	---	26.0	28.0
30	---	4.0	---	---	---	11.0	16.0	18.0	---	---	29.0	25.0
31	10.0	---	---	2.0	---	27.0	---	17.0	---	---	28.0	---
MEAN	20.0	6.5	6.5	4.5	2.0	9.5	19.0	21.5	24.5	28.0	26.5	23.5

07227900 LAKE MEREDITH NEAR SANFORD, TX

LOCATION.--Lat 35°42'38", long 101°33'03", Hutchinson County, Hydrologic Unit 11090106, in outlet tower near right end of dam on Canadian River, 1.2 mi (1.9 km) northwest of Sanford, and 508.5 mi (818.2 km) upstream from mouth.

DRAINAGE AREA.--20,220 mi² (52,370 km²), of which 4,172 mi² (10,805 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Aug. 16, 1965, nonrecording gage read daily at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 6,410 ft (1,954 m) long. The dam was completed and storage began in October 1964. The service spillway is an uncontrolled concrete drop inlet located near the left end of dam. The spillway discharges into a 22-foot-diameter (7 m) conduit that is designed to discharge 19,300 ft³/s (547 m³/s) at an elevation of 3,004.9 ft (915.89 m). The flood-control outlet works consists of three 12 by 15 ft (4 by 5 m) gates that open into three 15.5 ft (4.7 m) concrete conduits. The flood-control works are located just to the left of the service spillway near the left end of dam. The dam was built by the U.S. Bureau of Reclamation for the Canadian River Municipal Water Authority for flood control, municipal, and industrial supply for the cities of Amarillo, Borger, Brownfield, Lamesa, Levelland, Lubbock, O'Donnel, Pampa, Plainview, Slaton, and Tahoka. The area-capacity curves are based on Geological Survey topographic maps dated 1953. 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.....	3,011.0	-
Design flood.....	3,004.9	2,434,200
Crest of drop inlet.....	2,965.0	1,407,600
Top of conservation pool.....	2,936.5	864,400
Crest of flood-control outlet works (invert).....	2,894.0	313,700
Lowest gated outlet (invert).....	2,850.0	43,050

COOPERATION.--Record of elevations and diversions furnished by the Canadian River Municipal Water Authority. The area-capacity curves were furnished by the U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 546,100 acre-ft (673 hm³) Apr. 28, 1973, elevation, 2,914.91 ft (888.465 m); minimum since first appreciable storage, 219,900 acre-ft (271 hm³) Apr. 10, 11, 1967, elevation, 2,883.10 ft (878.769 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 369,900 acre-ft (456 hm³) Oct. 1, elevation, 2,899.69 ft (883.826 m); minimum, 313,100 acre-ft (386 hm³) May 21, elevation, 2,893.94 ft (882.073 m).

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

2,893.0	304,300	2,899.0	362,800
2,895.0	323,200	2,901.0	383,509
2,897.0	342,700		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369900	358600	349900	342200	336200	334400	327800	316600	326800	356300	341500	330500
2	369300	358000	349600	342200	336100	333900	327100	317700	332000	355800	340800	329600
3	369000	357600	349300	341100	335900	333800	326800	317800	337900	355400	342100	329100
4	368400	357400	349000	341000	335400	333700	326400	317400	338600	355300	342700	329100
5	367800	356900	348600	340900	337400	333200	326500	317500	341400	354000	342600	329000
6	367500	356600	348400	340800	337500	333100	325700	317800	346100	354200	342200	328400
7	367200	356500	348400	340600	337400	333100	325700	317500	351100	353700	341600	328100
8	366700	356200	347900	340100	337400	333200	325500	317100	359900	353200	341500	327700
9	366100	356000	347800	340000	336000	332900	325000	316900	362300	352100	341600	327200
10	365500	355700	347200	339800	335600	332800	325100	316700	362900	351800	341500	326700
11	365200	355400	346800	339500	337400	332400	324900	316600	362400	351300	341200	326200
12	364800	354900	346600	339400	337100	332300	324600	315900	362400	350700	340700	325700
13	364200	354500	346600	339200	337100	332000	324500	315800	363400	350400	340200	325400
14	364000	354500	346400	339100	337100	331900	323700	315200	363000	349800	339800	325000
15	363400	354300	346500	338700	335300	332200	323100	314900	363200	349100	339000	324700
16	362900	353900	346100	338300	334300	331700	322800	314500	363000	348800	338600	324100
17	362500	353800	345600	338300	335300	331600	322800	314200	362100	348800	337800	323600
18	362200	353500	345300	338300	335000	331300	322100	313900	361700	348500	336700	322600
19	362000	353400	345300	338300	336800	331000	321700	313800	361900	348000	336500	323800
20	361800	352500	345300	337900	334300	330700	321600	313400	360800	347500	336200	323500
21	361300	352200	344300	337600	334800	330700	321100	313100	360800	347000	335800	336100
22	361300	351900	343800	337500	334800	329900	320500	313800	360700	346800	335400	336400
23	361000	351600	343500	337300	336800	329400	320100	313700	360000	346200	334800	336200
24	361000	351600	343400	337300	334700	329400	319500	313500	359800	346000	334300	335900
25	360500	351300	343400	337100	334600	329400	319500	313400	359000	345500	333700	335900
26	360400	350900	343100	336900	334600	329000	318900	313900	358200	344900	333200	336000
27	360100	350700	342800	336900	334500	328800	318700	318600	358000	344500	332600	335800
28	359700	350500	342500	336500	334300	328600	318100	324800	357500	344000	331900	335700
29	359600	350400	342400	336400	---	328600	317500	326700	357300	343200	331600	335200
30	359000	350100	342200	336100	---	328400	317200	327300	357000	342600	331400	334900
31	358800	---	342200	336100	---	327800	---	327500	---	342300	330900	---
MAX	369900	358600	349900	342200	337500	334400	327800	327500	363400	356300	342700	336400
MIN	358800	350100	342200	336100	334300	327800	317200	313100	326800	342300	330900	322600
(†)	2898.60	2897.74	2896.95	2896.33	2896.14	2895.47	2894.37	2895.44	2898.43	2896.96	2895.79	2896.20
(‡)	-12000	-8700	-7900	-6100	-1800	-6500	-10600	+10300	+29500	-14700	-11400	+4000
(††)	6171	4439	5132	4913	4046	5648	7077	6232	6446	8274	7010	5579
CAL YR 1977	MAX	375700	MIN	328400	+	-22200	††	68623				
WTR YR 1978	MAX	369900	MIN	313100	+	-35900	††	70967				

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses by Canadian River Municipal Water Authority.

ARKANSAS RIVER BASIN

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07227900 LAKE MEREDITH NEAR SANFORD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
JAN 05...	1030	1900	6.0	260	88	53	31	300	8.1
DATE		POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HC03)	CARBONATE (MG/L AS C03)	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)
JAN 05...		8.8	210	0	270	330	.9	4.3	1100

ARKANSAS RIVER BASIN

07227920 DIXON CREEK NEAR BORGER, TX

LOCATION.--Lat 35°39'53", long 101°21'02", Hutchinson County, Hydrologic Unit 11090106, on right bank at downstream side of bridge on State Highway 152, 2.4 mi (3.9 km) east of Borger, and 7.6 mi (12.2 km) upstream from mouth.

DRAINAGE AREA.--134 mi² (347 km²).

PERIOD OF RECORD.--March 1974 to current year.

REMARKS.--Records poor. No known diversion above station. Several observations of water temperature were made during the year.

GAGE.--Water-stage recorder. Datum of gage is 2,834.84 ft (864.059 m) National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,640 ft³/s (103 m³/s) May 26, 1977, gage height, 8.99 ft (2.740 m), from rating curve extended above 25 ft³/s (0.71 m³/s) on basis of slope-conveyance studies; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 2	0415	760 21.5	6.27 1.911	Sept. 20	1945	*1,440 40.8	7.10 2.164

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.02	.02	.00	.04	.06	.01	.55	.05	.00	.00
2	.00	.00	.02	.01	.00	.03	.04	.07	152	.05	.00	.00
3	.00	.00	.03	.01	.01	.00	.04	.06	9.6	.06	.00	.00
4	.00	.00	.03	.02	.02	.00	.05	.05	1.9	.05	.00	.00
5	.00	.00	.03	.04	.03	.03	.05	.05	1.6	.03	.00	.00
6	.00	.00	.03	.05	.02	.04	.03	.06	11	.01	.00	.00
7	.00	.00	.04	.05	.00	.03	.06	.06	1.8	.00	.68	.00
8	.00	.00	.01	.03	.00	.03	.06	.07	12	.00	.15	.00
9	.00	.00	.01	.00	.00	.04	.05	.08	1.9	.00	.09	.00
10	.00	.00	.01	.00	.00	.05	.03	.10	.91	.00	.00	.00
11	.00	.00	.02	.00	.00	.04	.03	.12	.90	.00	.00	.00
12	.00	.00	.04	.01	.00	.04	.01	.08	.68	.00	.00	.00
13	.00	.00	.01	.03	.00	.03	.03	.08	4.8	.00	.00	.00
14	.00	.00	.02	.02	.00	.03	.05	.15	4.9	.00	.00	.00
15	.00	.00	.04	.04	.00	.03	.05	.20	.47	.00	.00	.00
16	.00	.00	.03	.03	.00	.02	.06	.20	.08	.00	.00	.00
17	.00	.00	.04	.00	.00	.03	.03	.19	.09	.00	.00	.00
18	.00	.00	.04	.00	.00	.04	.01	.21	.05	.00	.00	.00
19	.00	.00	.04	.00	.00	.05	.01	.22	.05	.00	.00	.21
20	.00	.00	.04	.00	.00	.05	.02	.22	.05	.00	.00	501
21	.00	.00	.05	.01	.02	.06	.02	.27	.05	.00	.00	104
22	.00	.01	.07	.01	.05	.07	.02	.33	.05	.00	.00	1.2
23	.00	.01	.04	.03	.06	.06	.03	.31	.05	.00	.00	.36
24	.00	.01	.03	.03	.06	.05	.02	.34	.05	.00	.00	.18
25	.00	.02	.04	.01	.06	.05	.02	.71	.05	.00	.00	.10
26	.00	.02	.06	.00	.05	.06	.02	3.7	.07	.00	.00	.08
27	.00	.01	.07	.00	.06	.06	.02	11	.08	.00	.00	.04
28	.00	.01	.06	.01	.05	.06	.03	3.3	.06	.00	.00	.01
29	.00	.02	.05	.00	---	.05	.03	.71	.06	.00	.00	.00
30	.00	.03	.04	.00	---	.06	.04	.65	.04	.00	.00	.00
31	.00	---	.04	.00	---	.06	---	.58	---	.00	.00	---
TOTAL	.00	.14	1.10	.46	.49	1.29	1.02	24.18	205.89	.25	.92	607.18
MEAN	.000	.005	.035	.015	.018	.042	.034	.78	6.86	.008	.030	20.2
MAX	.00	.03	.07	.05	.06	.07	.06	11	152	.06	.68	501
MIN	.00	.00	.01	.00	.00	.00	.01	.01	.04	.00	.00	.00
AC-FT	.00	.3	2.2	.9	1.0	2.6	2.0	48	408	.5	1.8	1200
CAL YR 1977	TOTAL	2616.82	MEAN 7.17	MAX 1010	MIN .00	AC-FT 5190						
WTR YR 1978	TOTAL	842.92	MEAN 2.31	MAX 501	MIN .00	AC-FT 1670						

ARKANSAS RIVER BASIN

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07228000 CANADIAN RIVER NEAR CANADIAN, TX
(National stream-quality accounting network)

LOCATION.--Lat 35°56'06", long 100°22'13", Hemphill County, Hydrologic Unit 11090106, near left bank on downstream side of pier of bridge on U.S. Highways 60 and 83, 600 ft (180 m) downstream from Panhandle and Santa Fe Railway Co. bridge, 1.2 mi (1.9 km) downstream from Red Deer Creek, 1.6 mi (2.6 km) northeast of Canadian, and 433.9 mi (698.1 km) upstream from mouth.

DRAINAGE AREA.--22,866 mi² (59,222 km²), of which 4,688 mi² (12,142 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to August 1925 (gage heights only), January 1938 to current year. Prior to April 1938, monthly discharge only, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft (701.497 m) National Geodetic Vertical Datum of 1929. July 1, 1924, to Aug. 31, 1925, and Apr. 21 to Dec. 15, 1938, nonrecording gage; Dec. 16, 1938, to Sept. 30, 1953, water-stage recorder and nonrecording gages; all at site 300 ft (91 m) upstream at same datum.

REMARKS.--Water-discharge records good. Extreme low flow is maintained by springs which enter the river about 600 ft (180 m) above gage. Some regulation and diversions from Lake Meredith (station 07227900) 75 mi (121 km) upstream.

AVERAGE DISCHARGE.--26 years (water years 1939-64) prior to completion of Lake Meredith, 549 ft³/s (15.55 m³/s), 397,800 acre-ft/yr (490 hm³/yr); 14 years (water years 1965-78) regulated, 94.2 ft³/s (2.668 m³/s), 68,250 acre-ft/yr (84.2 hm³/yr),

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 122,000 ft³/s (3,460 m³/s) Sept. 23, 1941, gage height, 9.8 ft (2.99 m), from graph based on gage readings, from rating curves for two channels extended above 8,000 and 54,000 ft³/s (227 and 1,530 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 20.0 ft (6.10 m) Oct. 2, 1904. Floods of May 2, 1914, and Oct. 5, 1923, reached stages of 12 ft (3.7 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,500 ft³/s (297 m³/s) May 19, gage height, 7.14 ft (2.176 m); minimum, 0.16 ft³/s (0.004 m³/s) Sept. 7, 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	28	35	20	59	68	53	32	74	32	.33	.23
2	7.2	31	36	21	63	77	59	46	1560	35	.32	.22
3	7.2	28	40	22	88	70	58	208	1630	24	.91	.28
4	7.1	27	42	32	82	70	60	378	1340	17	.69	.30
5	8.1	26	44	39	39	81	55	491	2410	13	.71	.23
6	9.9	25	44	28	47	88	50	670	2290	9.6	.61	.22
7	11	26	44	30	59	93	45	644	1080	7.5	.54	.22
8	10	29	43	25	38	92	43	464	1960	10	430	.21
9	9.4	66	30	17	40	86	45	339	1930	7.2	227	.30
10	8.9	44	14	17	61	82	60	225	995	5.0	106	.29
11	8.0	38	34	17	91	69	66	153	356	4.2	49	.24
12	7.4	34	50	27	110	62	62	76	145	2.8	22	.26
13	8.3	34	41	33	100	62	56	57	261	2.1	12	.24
14	8.4	35	37	36	120	59	55	48	373	1.9	7.4	.22
15	8.3	33	37	47	110	83	50	37	161	1.5	4.7	.24
16	8.2	34	35	30	100	90	49	34	109	1.2	3.8	.20
17	9.4	35	34	20	90	74	46	35	51	.90	2.1	.23
18	9.9	34	33	17	100	70	42	38	1900	.78	1.0	.27
19	11	35	32	15	130	67	39	2270	445	.83	.63	.33
20	11	33	30	15	160	63	38	2160	272	.68	.70	93
21	11	29	28	20	188	55	39	328	259	.50	.67	868
22	17	34	38	30	288	47	39	363	190	.87	.32	202
23	21	35	31	50	334	46	34	201	129	.70	.26	381
24	22	34	29	61	255	59	37	128	93	.62	.23	195
25	23	35	29	55	149	66	34	74	58	.46	.22	130
26	22	33	26	50	98	65	34	301	44	.42	.28	90
27	21	33	26	45	91	61	32	2540	37	.32	.26	66
28	24	32	30	40	85	56	30	2480	33	.33	.22	52
29	26	34	34	45	---	53	30	978	32	.29	.24	41
30	27	33	35	54	---	49	30	388	31	.35	.21	32
31	25	---	25	58	---	50	---	178	---	.35	.22	---
TOTAL	415.9	1007	1066	1016	3175	2113	1370	16364	20248	182.40	873.57	2154.73
MEAN	13.4	33.6	34.4	32.8	113	68.2	45.7	528	675	5.88	28.2	71.8
MAX	27	66	50	61	334	93	66	2540	2410	35	430	868
MIN	7.1	25	14	15	38	46	30	32	31	.29	.21	.20
AC-FT	825	2000	2110	2020	6300	4190	2720	32460	40160	362	1730	4270
CAL YR 1977	TOTAL	55412.62	MEAN	152	MAX	6970	MIN	.14	AC-FT	109900		
WTR YR 1978	TOTAL	49985.60	MEAN	137	MAX	2540	MIN	.20	AC-FT	99150		

ARKANSAS RIVER BASIN

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1968 to current year. Pesticide analyses: October 1971 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,200 micromhos Oct. 2, 1976; minimum daily, 595 micromhos Aug. 28, 1976.
WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 12, 1976, July 25, 29, Aug. 2, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,810 micromhos June 25; minimum daily, 775 micromhos Aug. 2.
WATER TEMPERATURES: Maximum daily, 35.0°C July 3, 4, 10, 13; minimum daily, 0.0°C on several days during January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
OCT 06...	0900	9.5	2680	8.1	14.5	3	9.0	92	1.3	7400	780	
NOV 02...	0930	32	2560	8.2	7.0	6	10.5	91	1.7	6200	1400	
DEC 08...	0900	47	2830	8.0	2.5	10	12.4	95	1.5	680	290	
JAN 11...	0910	20	3340	8.0	.5	8	12.4	90	1.7	1900	640	
FEB 11...	1020	88	2810	8.2	.5	15	12.2	88	3.2	540	300	
MAR 08...	0920	88	2780	8.1	3.0	25	12.5	97	2.5	60	20	
APR 20...	1215	30	3200	8.6	19.5	15	9.3	106	6.0	100	24	
MAY 24...	1000	152	2500	8.3	22.5	65	7.7	101	5.9	1200	380	
JUN 22...	1100	190	3100	8.3	24.5	45	7.9	106	4.4	340	250	
JUL 26...	0830	.57	960	8.1	23.5	15	7.3	96	3.1	1600	620	
AUG 22...	1200	.41	2150	7.6	28.5	35	4.7	69	4.4	--	160	
SEP 26...	1430	90	2650	8.2	24.5	60	10.5	144	4.2	--	2700	
DATE		STREP- TOCOCCI FECAL KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 06...	500	460	240	100	50	390	8.0	16	260	0	190	
NOV 02...	2500	480	270	110	50	340	6.8	15	260	0	240	
DEC 08...	1300	560	340	130	58	420	7.7	18	270	0	310	
JAN 11...	7500	660	380	150	70	480	8.1	16	350	0	350	
FEB 11...	6100	540	310	130	53	400	7.5	15	290	0	250	
MAR 08...	780	540	310	130	53	400	7.5	19	280	0	300	
APR 20...	16	580	340	130	61	470	8.5	20	260	13	250	
MAY 24...	200	430	220	100	44	360	7.5	14	250	3	170	
JUN 22...	K70	530	350	120	57	440	8.3	17	230	0	250	
JUL 26...	1700	240	0	65	20	95	2.6	3.8	300	0	22	
AUG 22...	120	310	89	73	31	260	6.4	8.2	270	0	85	
SEP 26...	200	490	300	120	45	380	7.5	17	220	0	330	

ARKANSAS RIVER BASIN

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07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, 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)
DATE											
OCT 06...	620	1.6	25	1490	1520	.00	.01	.01	.02	.12	.14
NOV 02...	530	1.7	20	1500	1430	.00	.01	.01	.01	.29	.30
DEC 08...	690	1.8	23	1800	1780	.56	.14	.70	.14	.96	1.1
JAN 11...	760	1.9	28	2000	2030	.84	.07	.91	.57	.53	1.1
FEB 11...	700	1.6	24	1700	1720	.52	.03	.55	.92	.78	1.7
MAR 08...	670	1.9	20	1670	1730	.00	.01	.00	.01	1.6	1.6
APR 20...	790	2.4	21	1980	1890	.00	.01	.01	.00	1.3	1.3
MAY 24...	560	2.0	16	1440	1390	.01	.00	.01	.01	1.3	1.3
JUN 22...	780	1.9	24	1880	1800	.00	.01	.01	.01	.89	.90
JUL 26...	130	1.0	29	500	514	.00	.01	.01	.00	.70	.70
AUG 22...	420	1.3	30	1040	1040	.00	.00	.00	.01	1.1	1.1
SEP 26...	580	2.0	18	1630	1600	.27	.13	.40	.07	1.4	1.5
	NITRO- GEN,AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
DATE											
OCT 06...	.16	.04	.01	2.6	--	--	--	14	.36	63	
NOV 02...	.13	.05	.03	4.7	--	--	--	29	2.5	42	
DEC 08...	.91	.10	.02	4.9	--	--	--	47	6.0	55	
JAN 11...	1.1	.17	.20	4.4	--	--	--	21	1.1	73	
FEB 11...	1.6	.18	.06	--	5.8	--	--	93	22	20	
MAR 08...	1.3	.25	.15	6.3	--	--	--	196	47	21	
APR 20...	.37	.23	.01	9.2	--	--	.20	81	6.6	66	
MAY 24...	.42	.17	.01	16	--	--	--	429	176	29	
JUN 22...	.41	.19	.04	--	12	3.5	--	98	50	70	
JUL 26...	.39	.09	.02	4.0	--	--	--	20	.03	50	
AUG 22...	.46	.20	.04	--	5.6	2.3	--	52	.06	92	
SEP 26...	.71	.13	.03	12	--	--	--	93	23	97	

ARKANSAS RIVER BASIN

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ARSENIC SUS- PENDE TOTAL (UG/L AS AS)		ARSENIC DIS- SOLVED (UG/L AS AS)		BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)		BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)		BARIUM, DIS- SOLVED (UG/L AS BA)		CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)		CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)		CADMIUM DIS- SOLVED (UG/L AS CD)	
DATE	TIME																
OCT 06...	0900		4	0	4	400	0	500	<10	<10	0						
FEB 11...	1020		3	0	3	200	0	200	0	0	9						
JUN 22...	1100		4	0	4	300	0	300	0	0	0						
AUG 22...	1200		7	1	6	400	0	400	0	0	0						
DATE	TIME	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)						
OCT 06...	0	0	0	0	<50	<50	0	10	10	0	220						
FEB 11...	10	10	0	0	1	0	1	2	1	1	400						
JUN 22...	0	0	10	0	0	0	0	7	5	2	1300						
AUG 22...	0	0	0	0	0	0	0	7	6	1	1100						
DATE	TIME	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)						
OCT 06...	--	10	<100	<100	0	60	0	60	.0	.0	.0						
FEB 11...	--	10	5	2	3	40	0	40	.0	.0	.0						
JUN 22...	--	20	3	3	0	100	80	20	.0	.0	.0						
AUG 22...	900	200	4	4	0	270	90	180	.0	.0	.0						
DATE	TIME	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)						
OCT 06...	.0	2	2	0	<10	<10	0	0	0	0	10						
FEB 11...	.0	2	0	2	0	0	0	0	20	10	10						
JUN 22...	.0	2	0	2	0	0	0	0	20	0	20						
AUG 22...	.0	1	1	0	0	0	0	0	10	0	10						

ARKANSAS RIVER BASIN

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07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ATRA- ZINE, TOTAL (UG/L)	ATRA- ZINE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
NOV 02...	0930	ND	ND	ND	ND	ND	ND	ND	ND	ND	
FEB 11...	1020	ND	ND	--	ND	--	ND	--	ND	--	
SEP 26...	1430	ND	ND	--	--	--	ND	--	ND	--	
DATE		DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 11...	ND	--	ND	--	ND	--	ND	--	ND	--	--
SEP 26...	ND	--	ND	--	ND	--	ND	--	ND	--	--
DATE		ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 11...	ND	--	ND	--	ND	--	ND	--	ND	--	--
SEP 26...	ND	--	ND	--	ND	--	ND	--	ND	--	--
DATE		METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL TRI- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL (UG/L)	SIMA- ZINE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 11...	ND	--	ND	--	ND	--	ND	--	ND	--	--
SEP 26...	ND	--	ND	--	ND	--	ND	--	ND	--	--
DATE		TOXA- PHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TRI- THION, TOTAL (UG/L)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4,5-T TOTAL (UG/L)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SILVEX, TOTAL (UG/L)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 11...	ND	--	ND	--	ND	--	ND	--	ND	--	--
SEP 26...	ND	--	ND	--	ND	--	ND	--	ND	--	--

ARKANSAS RIVER BASIN

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO JULY 1978

DATE TIME	NOV 2,77 0930	MAR 8,78 0920	MAY 24,78 1000	JUN 22,78 1100	JUL 26,78 0830
TOTAL CELLS/ML	6800	8200	100000	140000	17000
DIVERSITY: DIVISION	1.0	1.1	1.0	0.5	0.5
..CLASS	1.0	1.1	1.0	0.5	0.6
..ORDER	1.3	1.9	1.2	0.6	0.9
...FAMILY	2.1	2.6	1.8	1.2	2.5
....GENUS	2.1	2.7	2.0	1.3	3.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	89	1	--	--	--	--	--	--	--	--
...HYDRODICTYACEAE										
...PEDIASTRUM	710	10	--	--	--	--	18000	13	1400	8
...MICRACTINACEAE										
...GOLFNKINIA	45	1	120	1	720	1	--	--	2300	13
...MICRACTINIUM	--	--	--	--	--	--	*	0	4000#	23
...OOCYSTACEAE										
...ANKISTRODESMUS	--	--	60	1	720	1	--	--	710	4
...CHODATELLA	*	0	--	--	21000#	20	--	--	1300	8
...DICTYOSPHAERIUM	--	--	--	--	--	--	--	--	1400	8
...KIRCHNERIELLA	530	8	--	--	--	--	--	--	350	2
...OOCYSTIS	--	--	--	--	2900	3	--	--	--	--
...SCENEDESMACEAE										
...CRUCIGENIA	--	--	--	--	--	--	1500	1	--	--
...SCENEDESMUS	1700#	25	2000#	24	32000#	31	100000#	76	3300#	19
...TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	--	--	--	--	1400	1	--	--	--	--
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CARTERIA	--	--	--	--	--	--	--	--	350	2
...CHLAMYDOMONAS	--	--	180	2	--	--	--	--	180	1
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCACEAE										
...CYCLOTELLA	3300#	49	2200#	26	42000#	42	730	1	1200	7
..PENNALES										
...ACHNANTHACEAE										
...COCCONEIS	--	--	--	--	--	--	--	--	88	1
...CYMBELLACEAE										
...AMPHORA	--	--	60	1	--	--	--	--	--	--
...FRAGILARIACEAE										
...SYNEDRA	--	--	--	--	--	--	4800	3	270	2
...GOMPHONEMATACEAE										
...GOMPHONEMA	--	--	300	4	--	--	--	--	88	1
...NAVICULACEAE										
...CALONEIS	45	1	60	1	--	--	--	--	--	--
...DIPLONEIS	--	--	60	1	--	--	--	--	--	--
...NAVICULA	130	2	1400#	18	720	1	*	0	--	--
...NITZSCHIA	180	3	1500#	18	720	1	2900	2	350	2
...CHRYSTOPHYCEAE										
...CHRYSONADACEAE										
...OCHROMONADACEAE										
...OCHROMONAS	--	--	--	--	--	--	--	--	88	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
...ANACYSTIS	--	--	240	3	--	--	4000	3	--	--
...HORMOGONALES										
...OSCILLATORIACEAE										
...LYNGBYA	*	0	--	--	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
...EUGLENA	45	1	--	--	--	--	--	--	--	--
...TRACHELOMONAS	--	--	60	1	--	--	--	--	--	--

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ARKANSAS RIVER BASIN

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07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	415.9	2690	1600	1800	610	690	250	275	500
NOV. 1977.....	1007	2860	1720	4670	660	1800	270	728	530
DEC. 1977.....	1066	2970	1780	5130	690	1990	280	811	550
JAN. 1978.....	1016	2780	1660	4570	640	1750	260	708	520
FEB. 1978.....	3175	2680	1600	13700	610	5250	240	2090	500
MAR. 1978.....	2113	2900	1740	9910	670	3820	270	1550	540
APR. 1978.....	1370	3280	1980	7320	770	2860	320	1190	610
MAY 1978.....	16364	1700	980	43400	340	15200	120	5330	340
JUNE 1978.....	20248	1770	1030	56000	370	20300	130	7040	350
JULY 1978.....	182.4	2910	1750	860	670	331	270	135	540
AUG. 1978.....	873.57	1730	1000	2350	360	847	120	291	340
SEPT 1978.....	2154.73	1790	1040	6030	370	2180	130	761	350
TOTAL	49985.58	**	**	156000	**	57000	**	20900	**
WTD.AVG.	136.95	1970	1200	**	420	**	150	**	380

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2910	2540	2930	2950	2800	2800	3120	3120	2580	2700	778	790
2	2740	2560	2920	3020	2750	2760	3220	3100	1210	3100	775	780
3	2760	2670	2880	2870	2590	2910	3200	2630	1100	3170	1040	779
4	2770	2690	2900	2800	2830	2790	3190	2960	1560	3150	1000	785
5	2680	2660	2920	2760	2870	2670	3310	2710	1760	3220	945	796
6	2620	2740	2970	2920	2820	2790	3350	2910	2000	3250	830	820
7	2690	2760	3010	2900	2760	2910	3190	3020	2240	3090	815	834
8	2750	2750	2830	2960	2790	2710	3220	3000	1650	3260	1240	819
9	2740	2540	3200	3010	2770	2760	3270	3040	1640	2950	1930	856
10	2730	2690	3390	3160	2810	2800	3100	3170	2250	2780	2170	831
11	2710	2740	2900	3340	2760	2900	3140	3380	2140	2730	2710	853
12	2650	2790	2830	2940	2480	2890	3330	3550	2890	2590	2890	822
13	2740	2810	3030	2720	2610	2940	3350	3580	2060	2330	3250	819
14	2700	2850	3110	2550	2820	2930	3370	3620	1750	2030	3450	825
15	2670	2830	2910	2450	2840	2860	3350	3700	2030	1890	3490	819
16	2630	2820	2840	2970	2850	2830	3360	3650	2120	1740	3400	825
17	2640	2870	2910	3110	2800	2930	3380	3530	2250	1600	3430	828
18	2660	2900	3050	3340	2780	2900	3370	3370	1230	1460	3020	828
19	2700	2930	3070	3320	2750	2880	3310	874	2020	1450	2370	850
20	2680	3060	3050	3130	2730	2930	3270	822	2630	1320	2410	1300
21	2670	3120	3040	2890	2800	2950	3300	1600	3000	1190	1270	1470
22	2540	3080	3030	2810	2540	2980	3430	1500	3300	1230	1350	1750
23	2560	3140	2960	2630	2330	3100	3330	2000	3370	1220	1150	1600
24	2630	3120	3030	2450	2520	3000	3380	2500	3600	1090	892	1870
25	2670	3110	3070	2510	2730	3020	3330	2960	3810	929	855	2280
26	2730	3090	3110	2820	2840	3000	3350	2590	3770	864	820	2670
27	2740	3080	3100	2710	2870	2990	3420	1280	3710	838	797	2900
28	2710	2980	2930	2800	2750	3010	3360	1100	3620	812	794	3100
29	2670	3040	2870	2720	---	3110	3280	1900	3510	818	797	3220
30	2690	3070	2950	2650	---	3190	3120	2500	3520	779	806	3290
31	2710	---	2870	2750	---	3170	---	2690	---	784	797	---
MEAN	2690	2870	2990	2870	2740	2920	3290	2660	2480	1950	1690	1370

ARKANSAS RIVER BASIN

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	9.0	7.0	---	2.0	4.0	21.0	20.0	25.0	32.0	30.0	26.0
2	19.0	---	8.0	1.0	2.0	3.0	20.5	---	21.0	34.0	28.0	22.0
3	22.0	15.0	12.0	2.0	4.0	.0	20.0	11.0	23.0	35.0	26.0	24.0
4	25.0	17.0	11.0	7.0	10.0	4.0	23.0	18.0	26.0	35.0	21.0	26.0
5	17.0	16.0	5.0	8.0	4.0	13.0	17.0	14.0	24.0	32.0	27.0	27.0
6	20.0	18.0	5.0	9.0	---	13.0	20.0	13.0	25.0	30.0	28.0	27.0
7	26.0	17.0	6.0	8.0	1.0	7.0	21.5	23.0	29.0	34.0	27.0	27.0
8	21.0	15.0	2.0	2.0	---	12.0	22.0	24.0	27.0	30.0	26.0	22.0
9	---	8.0	1.0	.0	1.0	15.0	25.0	27.0	25.0	34.0	28.0	23.0
10	18.0	12.0	2.0	.0	1.0	16.0	16.0	21.0	26.0	35.0	31.0	26.0
11	19.0	15.0	3.0	1.0	1.0	15.0	20.0	26.0	26.0	34.0	31.0	24.0
12	20.0	13.0	11.0	2.0	1.0	14.0	20.0	22.0	25.0	34.0	33.0	28.0
13	19.0	16.0	11.0	2.0	1.0	13.0	19.0	27.0	29.0	35.0	28.0	29.0
14	23.0	15.0	10.0	1.0	1.0	17.0	21.0	28.0	29.0	32.0	29.0	30.0
15	15.0	13.0	11.0	---	---	12.0	25.0	28.0	30.0	32.0	30.0	30.0
16	18.0	12.0	8.0	.0	1.0	14.0	---	26.0	32.0	30.0	32.0	27.0
17	20.0	13.0	8.0	.0	1.0	19.0	19.0	20.0	30.0	28.0	30.0	26.0
18	23.0	---	10.0	.0	---	18.0	17.0	31.0	22.0	28.0	28.0	27.0
19	23.0	15.0	8.0	.0	---	19.0	18.0	9.0	30.0	31.0	23.0	26.0
20	22.0	8.0	---	.0	2.0	20.0	20.0	18.0	28.0	30.0	32.0	15.0
21	20.0	7.0	2.0	1.0	3.0	19.0	19.0	24.0	28.0	30.0	31.0	18.0
22	15.0	11.0	5.0	2.0	5.0	10.0	18.0	---	28.0	30.0	30.0	21.0
23	21.0	12.0	10.0	2.0	10.0	8.0	24.0	---	33.0	28.0	28.0	20.0
24	23.0	---	10.0	---	14.0	15.0	23.0	---	28.0	31.0	30.0	23.0
25	23.0	---	---	1.0	12.0	15.0	22.0	28.0	30.0	28.0	28.0	---
26	22.0	---	5.0	2.0	9.0	18.0	19.0	25.0	31.0	32.0	---	26.0
27	18.0	11.0	---	3.0	13.0	23.0	22.0	18.0	33.0	28.0	29.0	27.0
28	24.0	9.0	6.0	---	8.0	21.0	29.0	---	29.0	29.0	28.0	---
29	19.0	11.0	10.0	---	---	21.0	27.0	27.0	28.0	26.0	26.0	29.0
30	---	8.0	6.0	---	---	20.5	24.0	28.0	27.0	28.0	27.0	27.0
31	19.0	---	5.0	---	---	23.0	---	30.0	---	30.0	22.0	---
MEAN	20.5	12.5	7.0	2.5	4.5	14.0	21.0	22.5	27.5	31.0	28.0	25.0

ARKANSAS RIVER BASIN

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07233500 PALO DURO CREEK NEAR SPEARMAN, TX

LOCATION.--Lat 36°12'08", Long 101°18'20", Hansford County, Hydrologic Unit 11100104, on right bank at downstream side of bridge on State Highway 15, 6 mi (10 km) west of Spearman, and 18 mi (29 km) upstream from Horse Creek.

DRAINAGE AREA.--960 mi² (2,490 km²), of which 520 mi² (1,350 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1945 to current year.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,961.63 ft (902.705 m) National Geodetic Vertical Datum of 1929. May 8, 1968, to Dec. 4, 1969, at site 5 mi (8 km) downstream at different datum.

REMARKS.--Water-discharge records fair. Small diversion above station for irrigation.

AVERAGE DISCHARGE.--33 years, 19.1 ft³/s (0.541 m³/s), 0.27 in/yr (7 mm/yr), 13,840 acre-ft/yr (17.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s (600 m³/s) Oct. 7, 1946, gage height, 19.87 ft (6.056 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1936, 22.5 ft (6.86 m) Sept. 4, 1938, from floodmark, discharge about 34,000 ft³/s (963 m³/s). Flood of June 4, 1936, reached a stage of 21 ft (6.4 m), from floodmark, discharge 26,100 ft³/s (739 m³/s), from rating curve extended above 20,000 ft³/s (566 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 28	0430	1,050 29.7	11.45 3.490	Aug. 4	0200	*1,390 39.4	12.63 3.850
June 5	1400	747 21.2	9.70 2.957	Aug. 9	0300	685 19.4	9.25 2.819
June 9	1000	813 23.0	10.15 3.094				

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	.00	.00		
2	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	14	.00		
3	.00	.00	.00	.00	.00	.00	.00	.00	87	.00	673	.00		
4	.00	.00	.00	.00	.00	.00	.00	.00	78	.00	478	.00		
5	.00	.00	.00	.00	.00	.00	.00	.00	451	.00	71	.00		
6	.00	.00	.00	.00	.00	.00	.00	.00	199	.00	41	.00		
7	.00	.00	.00	.00	.00	.00	.00	.00	162	.00	26	.00		
8	.00	.00	.00	.00	.00	.00	.00	.00	145	.00	244	.00		
9	.00	.00	.00	.00	.00	.00	.00	.00	660	.00	345	.00		
10	.00	.00	.00	.00	.00	.00	.00	.00	272	.00	83	.00		
11	.00	.00	.00	.00	.00	.00	.00	.00	138	.00	13	.00		
12	.00	.00	.00	.00	.00	.00	.00	.00	62	.00	1.7	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	30	.00	.45	.00		
14	.00	.00	.00	.00	.00	.00	.00	.00	17	.00	.31	.00		
15	.00	.00	.00	.00	.00	.00	.00	.00	7.5	.00	.00	.00		
16	.00	.00	.00	.00	.00	.00	.00	.00	2.1	.00	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	.00		
18	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27		
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.1		
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	131		
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	81		
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	49		
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31		
25	.00	.00	.00	.00	.00	.00	.00	124	.00	.00	.00	15		
26	.00	.00	.00	.00	.00	.00	.00	237	.00	.00	.00	3.2		
27	.00	.00	.00	.00	.00	.00	.00	312	.00	.00	.00	1.2		
28	.00	.00	.00	.00	.00	.00	.00	716	.00	.00	.00	.23		
29	.00	.00	.00	.00	---	.00	.00	202	.00	.00	.00	.00		
30	.00	.00	.00	.00	---	.00	.00	41	.00	.00	.00	.00		
31	.00	---	.00	.00	---	.00	---	18	---	.00	.00	---		
TOTAL	.00	.00	.00	.00	.00	.00	.00	1650.00	2334.16	.00	1990.46	317.00		
MEAN	.000	.000	.000	.000	.000	.000	.000	53.2	77.8	.000	64.2	10.6		
MAX	.00	.00	.00	.00	.00	.00	.00	716	660	.00	673	131		
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
CFSM	.000	.000	.000	.000	.000	.000	.000	.06	.08	.000	.07	.01		
IN.	.00	.00	.00	.00	.00	.00	.00	.06	.09	.00	.08	.01		
AC-FT	.00	.00	.00	.00	.00	.00	.00	3270	4630	.00	3950	629		
CAL YR 1977	TOTAL	2910.86	MEAN	7.97	MAX	949	MIN	.00	CFSM	.008	IN	.11	AC-FT	5770
WTR YR 1978	TOTAL	6291.62	MEAN	17.2	MAX	716	MIN	.00	CFSM	.02	IN	.24	AC-FT	12480

ARKANSAS RIVER BASIN

07233500 PALO DURO CREEK NEAR SPEARMAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: January 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JUN 16...	0845	2.3	307	21.0	110	0	33	6.9	6.7
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
JUN 16...	.3	14	150	0	13	7.6	.7	19	175

LOCATION.--Lat 36°14'19", long 100°16'31", Lipscomb County, Hydrologic Unit 11100203, near center of stream on downstream side of bridge on State Highway 305, 0.3 mi (0.5 km) north of Lipscomb, 0.6 mi (1.0 km) downstream from Sand Creek, 2 mi (3 km) upstream from Plum Creek, and 61.2 mi (98.5 km) upstream from mouth.

PERIOD OF RECORD.--October 1937 to September 1942, October 1961 to current year. Prior to 1941, monthly discharges only, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 2,371.29 ft (722.769 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 25, 1938, nonrecording gage, Feb. 25, 1938, to Sept. 30, 1942, water-stage recorder at present site at datum 5.77 ft (1.759 m) higher.

AVERAGE DISCHARGE.--22 years (water years 1938-42, 1962-78), 18.0 ft³/s (0.510 m³/s), 0.35 in/yr (9 mm/yr), 13,040 acre-ft/yr (16.1 hm³/yr).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 15.5 ft (4.72 m) June 23, 1957, present site and datum, from flood-marks. Flood in May 1955 reached a stage of 12.1 ft (3.69 m), present site and datum, from information by Texas Department of Highways and Public Transportation.

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)		Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
May 20	0900	1,090	30.9	7.40	2.256	May 28	1400	*3,360	95.2	8.90	2.713

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.59	.56	1.2	2.1	1.6	1.5	1.7	35	3.6	.65	.48
2	.29	.62	.65	1.2	2.1	1.5	1.4	1.9	31	3.8	.65	.48
3	.30	.59	.65	1.2	2.1	1.4	1.4	2.4	27	3.1	.88	.48
4	.30	.61	.65	1.2	2.3	1.3	1.5	2.6	28	2.7	.68	.48
5	.32	.65	.65	1.2	2.3	1.4	1.5	2.4	32	2.4	.71	.48
6	.39	.66	.65	1.3	2.3	1.4	1.4	2.4	79	2.0	.65	.48
7	.37	.66	.65	1.3	2.1	1.4	1.4	2.4	53	1.8	.65	.48
8	.32	.74	.65	1.3	1.8	1.4	1.5	2.3	32	1.7	.65	.48
9	.33	.74	.65	1.3	1.4	1.5	1.5	2.1	25	1.6	.73	.41
10	.32	.65	.74	1.3	1.3	1.5	1.6	2.0	20	1.5	3.1	.39
11	.31	.65	.74	1.3	1.4	1.5	1.6	1.7	18	1.4	3.4	.36
12	.33	.65	.74	1.3	1.5	1.5	1.7	1.5	16	1.2	1.7	.37
13	.36	.65	.74	1.3	1.4	1.5	1.7	1.2	14	1.1	.98	.36
14	.36	.65	.74	1.3	1.4	1.5	1.8	1.2	13	1.0	.74	.36
15	.36	.65	.83	1.4	1.7	2.0	1.9	1.1	12	.95	.68	.38
16	.39	.65	.83	1.4	1.7	2.0	1.8	.98	11	.89	.65	.35
17	.41	.56	.83	1.5	1.8	1.5	1.9	.92	10	.83	.65	.36
18	.45	.56	.83	1.5	2.1	1.4	1.9	1.2	9.4	.71	.65	.37
19	.48	.65	.83	1.5	2.0	1.4	1.9	1.3	9.0	.65	.64	.40
20	.48	.65	.83	1.5	1.6	1.4	2.0	378	8.4	.65	.63	1.1
21	.48	.65	.83	1.4	1.7	1.4	2.0	63	8.1	.65	.61	.77
22	.48	.65	.83	1.4	1.8	1.4	2.1	36	7.7	.93	.64	.63
23	.50	.65	.93	1.5	2.0	1.4	2.1	20	6.8	1.1	.64	.54
24	.46	.65	.93	1.7	1.9	1.3	2.0	12	6.3	1.0	.61	.48
25	.48	.65	.93	2.0	1.7	1.3	1.9	8.1	5.6	.93	.59	.48
26	.49	.65	.93	1.8	1.6	1.3	1.7	7.8	5.3	.75	.56	.48
27	.48	.65	.93	1.7	1.6	1.3	1.7	11	5.0	.65	.56	.50
28	.48	.56	1.0	1.8	1.5	1.3	1.7	1410	4.7	.65	.56	.48
29	.54	.56	1.0	1.8	---	1.3	1.6	195	4.3	.65	.53	.47
30	.54	.56	1.0	2.0	---	1.3	1.5	72	3.9	.65	.48	.47
31	.51	---	1.3	2.1	---	1.4	---	44	---	.65	.48	---
TOTAL	12.60	19.06	25.05	45.7	50.2	44.8	51.2	2290.20	540.5	42.19	26.33	14.35
MEAN	.41	.64	.81	1.47	1.79	1.45	1.71	73.9	18.0	1.36	.85	.48
MAX	.54	.74	1.3	2.1	2.3	2.0	2.1	1410	79	3.8	3.4	1.1
MIN	.29	.56	.56	1.2	1.3	1.3	1.4	.92	3.9	.65	.48	.35
CFSM	.001	.001	.001	.002	.003	.002	.002	.11	.03	.002	.001	.001
IN.	.00	.00	.00	.00	.00	.00	.00	.12	.03	.00	.00	.00
AC-FT	25	38	50	91	100	89	102	4540	1070	84	52	28
WTR YR 1977	TOTAL	1678.96	MEAN	4.60	MAX	305	MIN	.29	CFSM	.007	IN	.09
YR 1978	TOTAL	3162.18	MEAN	8.66	MAX	1410	MIN	.29	CFSM	.01	AC-FT	3330
											6270	

RED RIVER BASIN

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX
(National stream-quality accounting network)

LOCATION.--Lat 34°50'15", long 101°24'49", Armstrong County, Hydrologic Unit 11120103, on left bank at downstream side of bridge on Farm Road 284, 13 mi (21 km) northeast of Wayside, 26 mi (42 km) south of Claude, and at mile 1,145 (1,842 km).

DRAINAGE AREA.--4,211 mi² (10,906 km²), of which 3,281 mi² (8,498 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 2,463.74 ft (750.948 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Several small diversions above station.

AVERAGE DISCHARGE.--11 years, 33.9 ft³/s (0.960 m³/s), 24,560 acre-ft/yr (30.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft³/s (1,640 m³/s) Aug. 28, 1968, gage height, 13.0 ft (3.96 m), from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 27	1145	*46,400 1,310	12.49 3.807	Sept. 20	1345	6,060 172	9.35 2.850
Aug. 8	2030	10,200 289	10.30 3.139				

Minimum discharge, no flow May 9, Sept. 13-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.60	.80	.72	1.0	1.9	.37	.06	101	4.2	3.9	.03
2	.07	.56	.94	.60	1.0	2.0	.33	40	726	16	2.0	15
3	.10	.58	.90	.60	1.3	1.5	.37	14	240	7.6	2.3	1.5
4	.11	.66	.78	1.3	1.5	1.0	.31	.83	279	4.3	3.0	.47
5	.15	.66	.69	.93	1.7	.60	.29	.43	227	4.4	2.3	.23
6	.22	.66	.40	.88	1.6	1.0	.19	.33	284	3.3	1.7	.13
7	.17	.62	.40	.57	1.0	1.2	.21	.07	67	2.0	1.4	.11
8	.14	.62	.64	.63	.50	1.3	.32	.02	100	1.7	328	.20
9	.14	.60	.54	.50	.50	1.2	.45	.00	26	1.4	121	.15
10	.13	.46	.50	.40	.60	1.1	.66	.01	9.7	1.6	29	.10
11	.11	.45	.50	.40	.80	.76	.34	.01	5.6	1.3	1.6	.06
12	.12	.47	.60	.50	1.0	.85	.21	.01	3.9	1.2	.64	.02
13	.12	.49	.66	.80	1.0	1.2	.13	.01	11	1.4	.35	.00
14	.12	.46	.75	1.0	.80	.95	.17	.01	52	1.4	.24	.00
15	.15	.48	.90	1.2	.60	1.1	.11	.01	9.5	1.4	.18	.00
16	.15	.55	.68	1.7	.60	1.0	.12	.01	7.3	1.3	.17	.00
17	.15	.52	.61	1.0	.50	.88	.07	.01	6.1	1.3	.10	.00
18	.16	.52	.67	.80	.50	.67	.07	.01	5.7	1.2	.11	.00
19	.17	.65	.54	.40	.50	.48	.05	14	4.7	155	.16	61
20	.22	.57	.72	.40	1.0	.64	.03	3.7	3.4	10	.17	1210
21	.30	.52	.78	.40	1.5	.51	.04	6.7	2.8	4.7	.13	82
22	.35	.57	1.1	1.0	2.0	.55	.02	.01	2.2	3.5	.07	21
23	.73	.56	1.1	1.9	2.0	.47	.03	.01	2.3	3.0	.03	13
24	.52	.67	.78	1.8	2.0	.50	.05	.01	2.4	2.6	.03	11
25	.43	.73	.68	1.0	1.7	.54	.03	6.7	1.6	2.4	.02	15
26	.47	.72	.89	1.0	1.7	.40	.03	553	1.4	4.0	.07	21
27	.43	.60	.92	1.0	1.9	.43	.03	11100	1.3	5.5	.04	8.0
28	.60	.58	1.0	1.2	2.0	.40	.05	1950	2.6	2.1	.03	5.1
29	.65	.64	1.3	1.4	---	.38	.04	551	7.5	1.7	.04	3.6
30	.59	.73	1.3	1.2	---	.40	.06	237	7.5	2.0	.04	2.6
31	.63	---	1.2	1.0	---	.38	---	153	---	11	.03	---
TOTAL	8.48	17.50	24.27	28.23	32.80	26.29	5.18	14630.96	2200.5	264.5	498.85	1471.30
MEAN	.27	.58	.78	.91	1.17	.85	.17	472	73.4	8.53	16.1	49.0
MAX	.73	.73	1.3	1.9	2.0	2.0	.66	11100	726	155	328	1210
MIN	.07	.45	.40	.40	.50	.38	.02	.00	1.3	1.2	.02	.00
AC-FT	17	35	48	56	65	52	10	29020	4360	525	989	2920

CAL YR 1977	TOTAL	13959.24	MEAN	38.2	MAX	1960	MIN	.02	AC-FT	27690
WTR YR 1978	TOTAL	19208.86	MEAN	52.6	MAX	11100	MIN	.00	AC-FT	38100

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to current year.

WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 51,100 micromhos July 30, 1978; minimum daily, 417 micromhos July 10, 1975.

WATER TEMPERATURES: Maximum daily, 38.0°C Oct. 14, 1968, June 13, 1975; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 51,100 micromhos July 30; minimum daily, 709 micromhos May 28.

WATER TEMPERATURES: Maximum daily, 37.0°C Aug. 2; minimum daily, 0.0°C on several days during January and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 05...	1030	.14	40500	8.0	19.5	1	7.8	104	.9	340	25
NOV 01...	1500	.01	35000	8.2	10.5	2	9.0	97	.5	140	140
DEC 07...	1015	.01	28400	7.8	2.5	0	10.8	92	.1	120	100
JAN 10...	1230	.01	37900	7.6	.0	1	10.7	90	.3	3	3
FEB 11...	1445	.02	16200	8.1	2.5	2	12.4	100	1.0	19	3
MAR 07...	1450	.90	21100	8.4	10.0	1	10.6	106	.0	4	<1
APR 19...	1530	.03	45500	8.0	20.0	1	--	--	1.3	12	8
MAY 25...	1120	.01	31500	8.2	26.0	40	6.8	105	.8	>480	480
JUN 23...	1530	5.5	10000	8.2	34.0	1	6.2	98	1.8	>48	K48
JUL 26...	1515	2.2	44600	8.0	33.0	1	6.4	96	.0	220	35
AUG 23...	1200	.52	37100	8.0	28.0	9	6.2	101	1.3	--	K10
SEP 27...	1430	.70	12000	8.0	31.0	80	7.0	108	1.1	--	580

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 05...	840	3900	3800	1100	280	9300	65	170	160	0	3100
NOV 01...	100	3500	3300	1000	240	6800	50	120	170	0	2800
DEC 07...	140	3100	2900	870	220	6000	47	100	170	0	2600
JAN 10...	16	3700	3600	1000	300	8400	60	130	180	0	3100
FEB 11...	83	2300	2200	650	160	3200	29	45	160	0	2300
MAR 07...	14	2700	2600	760	190	4100	34	72	140	0	2400
APR 19...	<1	4500	4400	1300	300	10000	65	220	110	0	3200
MAY 25...	52	3300	3200	930	240	6900	52	120	160	0	2700
JUN 23...	K10	1800	1700	500	130	1600	16	32	130	0	1700
JUL 26...	89	3500	3400	950	280	9800	72	180	130	0	3200
AUG 23...	K16	2800	2700	760	230	8000	65	170	140	0	2900
SEP 27...	330	2000	1900	590	130	2300	22	38	160	0	1800

RED RIVER BASIN

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF 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)
OCT 05...	15000	.7	25	28100	29100	.00	.01	.01	.02	.00
NOV 01...	11000	.9	--	23500	--	.00	.01	.01	.21	.08
DEC 07...	10000	.7	24	19600	19900	.02	.00	.02	.12	.58
JAN 10...	13000	.7	28	24900	26000	.06	.01	.07	.21	.19
FEB 11...	4900	1.0	25	11000	11400	.09	.01	.10	.01	.39
MAR 07...	6700	1.0	21	14600	14300	.01	.00	.01	.00	.40
APR 19...	16000	.7	24	32300	31100	.01	.01	.02	.01	.99
MAY 25...	11000	.9	26	21400	22000	.01	.01	.02	.04	.49
JUN 23...	2500	1.2	28	--	6560	.01	.01	.02	.11	.09
JUL 26...	17000	.8	25	--	31500	.00	.01	.01	.00	.00
AUG 23...	12000	.9	18	26600	24100	.01	.01	.02	.01	.19
SEP 27...	3600	1.0	24	8950	8560	.08	.01	.09	.06	.35
DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 05...	.00	.22	.01	.00	1.3	--	--	3	.00	91
NOV 01...	.29	.30	.00	.01	1.0	--	--	3	.00	22
DEC 07...	.70	.37	.00	.01	1.4	--	--	11	.00	87
JAN 10...	.40	.25	.02	.02	.9	--	--	25	.00	97
FEB 11...	.40	.20	.01	.01	--	--	--	14	.00	57
MAR 07...	.40	.21	.05	.06	1.3	--	--	2	.00	90
APR 19...	1.0	.78	.00	.00	1.6	--	--	6	.00	56
MAY 25...	.53	.52	.03	.01	1.2	--	--	149	.00	97
JUN 23...	.20	.18	.00	.00	--	1.6	.3	20	.30	94
JUL 26...	.00	.00	.02	.03	1.2	--	--	12	.07	75
AUG 23...	.20	.39	.04	.02	--	--	.4	45	.06	97
SEP 27...	.41	.39	.07	.04	3.4	--	--	160	.30	100

RED RIVER BASIN

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07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ARSENIC		ARSENIC		BARIUM,		BARIUM,		CADMIUM		CADMIUM	
		TOTAL		SUS- PENDE		TOTAL		SUS- PENDE		TOTAL		SUS- PENDE	
		(UG/L AS AS)		(UG/L AS AS)		(UG/L AS AS)		(UG/L AS BA)		(UG/L AS BA)		(UG/L AS CD)	
DATE	TIME												
OCT 05...	1030	1		0		2		600		200		400	
FEB 11...	1445	2		0		2		100		0		200	
JUN 23...	1530	4		0		4		300		100		200	
AUG 23...	1200	7		2		5		0		0		0	
		CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)		CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)		CHRO- MIUM, DIS- SOLVED (UG/L AS CR)		COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)		COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)		COBALT, DIS- SOLVED (UG/L AS CO)	
		COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)		COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)		COPPER, DIS- SOLVED (UG/L AS CU)		IRON, TOTAL RECOV- ERABLE (UG/L AS FE)					
OCT 05...	40	20		20		200		200		1		50	
FEB 11...	10	0		20		1		0		1		4	
JUN 23...	10	8		2		3		3		0		4	
AUG 23...	30	0		30		1		0		1		5	
		IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)		IRON, DIS- SOLVED (UG/L AS FE)		LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)		LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)		LEAD, DIS- SOLVED (UG/L AS PB)		MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	
		MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)		MANGA- NESE, DIS- SOLVED (UG/L AS MN)		MANGA- NESE, DIS- SOLVED (UG/L AS MN)		MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)		MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)			
OCT 05...	--	20		200		200		0		640		190	
FEB 11...	--	10		3		1		2		270		40	
JUN 23...	40	30		6		5		1		80		10	
AUG 23...	270	140		31		28		3		200		60	
		SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)		SELE- NIUM, DIS- SOLVED (UG/L AS SE)		SELE- NIUM, DIS- SOLVED (UG/L AS SE)		SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)		SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)		SILVER, DIS- SOLVED (UG/L AS AG)	
		ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)		ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)		ZINC, DIS- SOLVED (UG/L AS ZN)							
OCT 05...	.0	1		1		0		30		30		0	
FEB 11...	.0	1		0		1		0		0		0	
JUN 23...	.0	1		1		0		0		0		0	
AUG 23...	.0	2		1		1		0		0		0	

RED RIVER BASIN

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PERIPHYTON

DATE	LENGTH OF EXPOSURE (DAYS)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- FLUOROM (MG/M2)	SAMPLING METHOD
OCT 05...	35	103	110	.053	.002	POLYETHYLENE STRIP
DEC 07...	36	120	139	1.63	.000	POLYETHYLENE STRIP
APR 19...	43	12.4	15.8	2.13	.000	POLYETHYLENE STRIP

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO JULY 1978

DATE TIME	NOV 1,77 1500	MAR 7,78 1450	MAY 25,78 1120	JUN 23,78 1530	JUL 26,78 1515
TOTAL CELLS/ML	2000	2900	410	4000	1700
DIVERSITY: DIVISION	1.1	0.2	0.0	0.1	0.0
..CLASS	1.1	0.3	0.0	0.1	0.1
..ORDER	1.1	0.3	0.2	0.6	0.1
...FAMILY	2.2	1.5	1.2	0.9	1.1
...GENUS	2.2	1.6	1.3	0.9	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	190	9	--	--	--	--	--	--	--	--
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	--	84	3	--	--	58	1	--	--
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
..PENNALES										
...NAVICULACEAE										
...ENTOMONEIS	--	--	84	3	--	--	58	1	330#	19
..CENTRALES										
...COSCINODISCAEAE										
...CYCLOTELLA	--	--	--	--	14	3	430	11	--	--
..PENNALES										
...ACHNANTHACEAE										
...COCCONEIS	--	--	--	--	14	3	--	--	--	--
...CYMBELLACEAE										
...AMPHORA	--	--	1900#	65	43	10	--	--	--	--
...CYMBELLA	--	--	--	--	--	--	29	1	--	--
...EPITHEMIA	--	--	--	--	14	3	--	--	--	--
...FRAGILARIACEAE										
...SYNEDRA	810#	40	--	--	--	--	--	--	16	1
...GOMPHONEMACEAE										
...GOMPHONEMA	--	--	--	--	--	--	29	1	--	--
...NAVICULACEAE										
...NAVICULA	160	8	370	13	310#	76	29	1	280#	17
...NITZSCHACEAE										
...NITZSCHIA	570#	28	420	15	14	3	3400#	84	1100#	62
...SURIPELLACEAE										
...SURIPELLA	18	1	--	--	--	--	--	--	--	--
..CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
...OCHROMONAS	--	--	56	2	--	--	--	--	16	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
...AGMENELLUM	280	14	--	--	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
...EUGLENA	18	1	--	--	--	--	--	--	--	--

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

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07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	8.48	33400	22800	522	11300	259	2830	65	****
NOV. 1977.....	17.5	31500	21500	1020	10600	501	2730	129	****
DEC. 1977.....	24.27	28900	19800	1300	9660	633	2600	171	****
JAN. 1978.....	28.23	22900	15700	1200	7460	568	2290	175	****
FEB. 1978.....	32.8	16400	11400	1010	5090	451	1950	173	****
MAR. 1978.....	26.29	19100	13200	935	6080	432	2090	148	****
APR. 1978.....	5.18	38600	26300	368	13200	185	3100	43	****
MAY 1978.....	14630.95	1230	810	32100	130	4950	340	13500	360
JUNE 1978.....	2200.5	1890	1270	7540	260	1560	490	2930	550
JULY 1978.....	264.5	7290	5020	3590	1990	1420	1120	800	1670
AUG. 1978.....	498.85	2870	1910	2580	560	761	610	818	830
SEPT 1978.....	1471.3	2230	1520	6030	450	1790	410	1620	650
TOTAL	19208.83	**	**	58200	**	13500	**	20600	**
WTD.AVG.	52.63	1680	1100	**	260	**	400	**	490

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42100	34400	26200	15400	14600	14600	33900	46600	2950	8630	19000	40200
2	42200	34200	25100	19700	15400	14300	35400	15500	1090	4500	24700	12700
3	42500	35200	26300	19400	13900	14800	36800	3660	2550	6370	27200	6520
4	41700	37500	26500	18400	17200	15200	36700	5550	1530	8980	26100	14000
5	41300	34000	27000	19000	17000	16100	37000	7400	1790	6410	25000	17300
6	38300	33700	33300	21700	16600	15700	37100	8970	1230	12600	34500	19800
7	35100	33300	32500	20500	15000	16300	36500	11000	2570	17000	41900	26500
8	37700	28100	27500	22200	24000	16800	38700	12600	1280	20700	2050	34700
9	41000	26100	33800	27000	25200	18000	40000	---	2510	17400	1460	35400
10	39000	33600	36200	29600	25900	19100	42300	19100	3120	19500	2560	36200
11	41800	30800	32900	24800	11500	20200	41900	24600	4030	21400	3300	38000
12	42700	30600	25900	20500	14100	21200	39400	25700	4680	23300	8100	39800
13	42500	30500	28800	21500	16900	16100	36800	26900	4590	26600	12100	---
14	42300	31000	28100	25100	16600	17400	34300	36100	3330	34400	19200	---
15	42500	30800	26700	23000	15500	17000	31500	37600	5720	35900	25600	---
16	42400	31500	28400	17800	14100	17100	34200	38900	6440	34700	23900	---
17	42100	31100	29900	27800	15700	18700	37600	41100	7550	35900	24800	---
18	41800	30900	28500	27400	16800	20200	40000	42000	8340	46100	38300	---
19	42000	28300	32200	25700	17800	21800	42300	21300	6580	2240	37700	15000
20	42300	33100	32100	25900	19000	23300	43100	15700	7050	5270	37800	971
21	35700	36500	37500	26100	19400	24800	44600	3290	7490	6560	39000	1960
22	28900	32500	30400	22800	13900	25700	45500	7500	7550	13300	38600	5450
23	23600	33400	28000	21200	13500	26700	46100	10700	8010	18700	38400	6310
24	26900	31700	28900	21100	13200	27600	45800	18800	8480	23900	38500	10600
25	28600	27300	29700	27800	15700	28500	45600	15600	11000	27300	39600	9500
26	31400	28200	31400	22700	18600	28200	45800	3070	13000	25600	40400	4400
27	34700	29000	32400	22200	18100	27500	45900	1120	16600	15200	40200	8180
28	28200	32300	30600	24500	17500	28600	46000	709	14100	24600	40000	14400
29	29400	30600	25100	27500	---	29400	46300	1020	13900	35900	39800	15300
30	28900	26600	25700	26500	---	31000	46400	1530	11400	51100	39300	21700
31	35000	---	23900	24700	---	32500	---	2560	---	12500	39800	---
MEAN	37200	31600	29400	23200	16900	21400	40500	16900	6350	20700	28000	18100

RED RIVER BASIN

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	11.0	10.0	1.0	6.0	5.0	24.0	20.0	23.0	31.0	33.0	28.0
2	24.0	13.0	15.0	4.0	5.0	4.0	16.0	10.0	20.0	26.0	37.0	30.0
3	22.0	17.0	15.0	5.0	12.0	4.0	20.0	10.0	21.0	32.0	25.0	26.0
4	20.0	10.0	16.0	10.0	11.0	5.0	24.0	17.0	25.0	32.0	21.0	29.0
5	20.0	21.0	12.0	10.0	12.0	8.0	18.0	15.0	19.0	30.0	32.0	31.0
6	17.0	19.0	7.0	8.0	.0	16.0	21.0	19.0	18.0	30.0	28.0	30.0
7	23.0	15.0	6.0	10.0	.0	10.0	27.0	14.0	27.0	33.0	30.0	29.0
8	19.0	17.0	10.0	8.0	.0	12.0	24.0	22.0	23.0	32.0	31.0	22.0
9	15.0	6.0	4.0	3.0	4.0	13.0	17.0	---	26.0	28.0	27.0	27.0
10	22.0	15.0	1.0	.0	5.0	11.0	12.0	21.0	26.0	35.0	27.0	24.0
11	18.0	10.0	10.0	.0	3.0	13.0	23.0	25.0	27.0	32.0	29.0	29.0
12	20.0	15.0	15.0	4.0	3.0	8.0	22.0	20.0	27.0	33.0	30.0	30.0
13	19.0	14.0	13.0	7.0	2.0	17.0	21.0	23.0	28.0	32.0	29.0	---
14	21.0	15.0	10.0	5.0	7.0	10.0	28.0	18.0	29.0	34.0	30.0	---
15	16.0	10.0	12.0	5.0	5.0	12.0	23.0	26.0	29.0	34.0	28.0	---
16	16.0	9.0	10.0	2.0	3.0	15.0	19.0	25.0	30.0	28.0	27.0	---
17	22.0	15.0	11.0	1.0	1.0	16.0	24.0	21.0	31.0	31.0	30.0	---
18	22.0	15.0	13.0	.0	4.0	18.0	23.0	27.0	24.0	31.0	29.0	---
19	25.0	17.0	8.0	.0	5.0	11.0	22.0	23.0	30.0	32.0	22.0	25.0
20	23.0	16.0	5.0	---	6.0	16.0	20.0	21.0	29.0	31.0	23.0	26.0
21	18.0	10.0	4.0	5.0	8.0	18.0	21.0	22.0	32.0	30.0	32.0	16.0
22	15.0	14.0	7.0	5.0	13.0	19.0	24.0	28.0	32.0	30.0	31.0	17.0
23	18.0	15.0	15.0	10.0	14.0	11.0	18.0	26.0	32.0	27.0	30.0	19.0
24	22.0	8.0	14.0	3.0	13.0	10.0	17.0	27.0	30.0	31.0	29.0	23.0
25	21.0	12.0	2.0	4.0	12.0	17.0	16.0	28.0	25.0	30.0	---	22.0
26	22.0	14.0	9.0	4.0	10.0	10.0	23.0	27.0	32.0	32.0	25.0	21.0
27	18.0	13.0	5.0	8.0	16.0	17.0	26.0	17.0	35.0	32.0	---	23.0
28	21.0	12.0	8.0	8.0	10.0	20.0	27.0	15.0	33.0	31.0	27.0	27.0
29	20.0	12.0	13.0	1.0	---	17.0	28.0	20.0	31.0	32.0	26.0	21.0
30	20.0	11.0	6.0	1.0	---	20.0	23.0	23.0	30.0	29.0	22.0	26.0
31	21.0	---	11.0	3.0	---	22.0	---	28.0	---	31.0	27.0	---
MEAN	20.0	13.5	9.5	4.5	7.0	13.0	21.5	21.5	27.5	31.0	28.0	25.0

07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX

LOCATION.--Lat 34°32'43", long 101°26'16", Briscoe County, Hydrologic Unit 11120104, at upstream side of dam on Tule Creek, 0.9 mi (1.4 km) upstream from Rock Creek, 9.5 mi (15.3 km) northwest of Silverton, and 22.7 mi (36.5 km) upstream from mouth.

DRAINAGE AREA.--1,053 mi² (2,727 km²), of which 904 mi² (2,341 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REVISED RECORDS.--WDR TX-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Freese, Nichols, and Endress, Consulting Engineers bench mark).

REMARKS.--The reservoir is formed by a rolled earthfill dam 2,100 ft (640 m) long. The dam was completed in August 1974 and storage began in June 1974. The uncontrolled emergency spillway is an open cut channel just beyond the right end of dam. The service spillway is an uncontrolled ogee-type weir across a concrete chute at the right end of dam. A 30 in (762 mm) gated outlet concrete pipe discharges into a valve vault at the downstream toe of the dam and then into the creek bed downstream. When facilities are completed, water will be used for municipal, industrial, and recreational purposes by the cities of Floydada, Silverton, and Tulia. 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.....	3,127.0	-
Crest of spillway.....	3,111.0	57,770
Crest of spillway with ogee weir.....	3,100.0	46,080
Lowest gated outlet (invert).....	2,961.0	17

COOPERATION.--The area and capacity tables 1-A and 1-C furnished by MacKenzie Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 15,670 acre-ft (19.3 hm³) June 14, 1978, elevation, 3,047.51 ft (928.881 m); minimum 598 acre-ft (0.737 hm³) Oct. 1, 2, 1974, elevation, 2,980.61 ft (908.490 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,670 acre-ft (19.3 hm³) June 14, elevation, 3,047.51 ft (928.881 m); minimum, 8,490 acre-ft (10.5 hm³) May 1, elevation, 3,027.52 ft (922.788 m).

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

3,025.0	7,760	3,040.0	12,670
3,030.0	9,240	3,045.0	14,620
3,035.0	10,880	3,048.0	15,880

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8950	8850	8760	8680	8610	8650	8590	8490	11590	15500	15250	15070
2	8950	8850	8760	8680	8610	8640	8590	8540	11790	15490	15240	15060
3	8950	8850	8760	8670	8610	8650	8580	8540	12080	15480	15240	15060
4	8950	8840	8750	8670	8620	8650	8580	8540	12160	15470	15230	15050
5	8940	8840	8750	8670	8620	8650	8590	8540	12300	15460	15220	15050
6	8940	8840	8750	8660	8620	8650	8580	8540	14000	15450	15220	15050
7	8940	8840	8750	8660	8620	8640	8580	8530	14420	15440	15210	15040
8	8940	8840	8740	8660	8630	8640	8590	8530	14420	15430	15200	15040
9	8930	8830	8740	8660	8640	8640	8590	8530	14410	15420	15200	15030
10	8920	8830	8740	8650	8630	8640	8600	8530	14410	15410	15190	15030
11	8910	8820	8740	8650	8630	8640	8580	8520	14400	15400	15180	15030
12	8910	8820	8730	8650	8640	8640	8580	8520	14400	15390	15180	15020
13	8900	8820	8730	8650	8640	8650	8580	8510	15450	15380	15180	15020
14	8900	8810	8730	8650	8640	8640	8570	8510	15670	15370	15170	15010
15	8890	8810	8720	8640	8640	8640	8570	8500	15660	15360	15160	15010
16	8890	8810	8720	8640	8640	8640	8570	8500	15650	15360	15160	15010
17	8880	8800	8720	8640	8640	8640	8560	8500	15630	15350	15150	15000
18	8890	8800	8720	8640	8640	8620	8550	8500	15620	15340	15140	15000
19	8890	8800	8720	8630	8640	8630	8540	8510	15620	15330	15140	14990
20	8890	8800	8710	8630	8640	8630	8540	8510	15600	15320	15130	14990
21	8880	8790	8710	8630	8650	8620	8530	8520	15590	15320	15130	14990
22	8880	8790	8700	8620	8650	8620	8530	8520	15580	15310	15120	14980
23	8880	8790	8700	8620	8650	8620	8520	8500	15570	15310	15110	14980
24	8880	8780	8700	8620	8650	8610	8520	8500	15560	15300	15110	14980
25	8870	8780	8700	8610	8650	8610	8520	8500	15550	15290	15100	14970
26	8870	8780	8690	8610	8650	8610	8510	8500	15540	15290	15100	15120
27	8870	8780	8690	8610	8650	8610	8510	8740	15530	15280	15090	15120
28	8860	8770	8690	8600	8650	8610	8500	9640	15520	15270	15080	15110
29	8860	8770	8680	8600	---	8600	8500	9930	15510	15270	15080	15100
30	8860	8770	8680	8600	---	8600	8500	9970	15500	15260	15080	15100
31	8860	---	8680	8610	---	8600	---	10960	---	15250	15070	---
MAX	8950	8850	8760	8680	8650	8650	8600	10960	15670	15500	15250	15120
MIN	8860	8770	8680	8600	8610	8600	8500	8490	11590	15250	15070	14970
(†)	3028.75	3028.45	3028.16	3027.93	3028.06	3027.89	3027.55	3035.24	3047.12	3046.52	3046.09	3046.15
(‡)	-90	-90	-90	-70	+40	-50	-100	+2460	+4540	-250	-180	+30
CAL YR 1977	MAX	9200	MIN	952	†	+7680						
WTR YR 1978	MAX	15670	MIN	8490	†	+6150						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

RED RIVER BASIN

07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
JUN 05...	1640	417	21.0	120	0	31	9.8	31	1.2
JUL 20...	1230	366	27.5	110	0	30	8.9	29	1.2

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
JUN 05...	10	150	0	70	7.5	1.1	6.0	240
JUL 20...	11	140	0	53	7.5	1.1	6.6	216

07298200 TULE CREEK NEAR SILVERTON, TX

LOCATION.--Lat 34°32'36", long 101°25'46", Briscoe County, Hydrologic Unit 11120104, on downstream side of bridge on State Highway 207, 0.1 mi (0.2 km) downstream from Rock Creek, 1.0 mi (1.6 km) downstream from MacKenzie Dam, 8.8 mi (14.2 km) northwest of Silverton, 17.7 mi (28.5 km) downstream from South Tule Draw, and 21.7 mi (34.9 km) upstream from Prairie Dog Town Fork Red River.

DRAINAGE AREA.--1,150 mi² (2,980 km²), of which 960 mi² (2,490 km²) probably is noncontributing.

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

Water-quality records: Chemical analyses: October 1967 to September 1975. Water temperatures: October 1967 to September 1969.

GAGE.--Water-stage recorder. Datum of gage is 2,852.44 ft (869.424 m) Texas Department of Highways and Public Transportation datum.

REMARKS.--Records poor. Since June 1974, flow is regulated by MacKenzie Reservoir 1.0 mi (1.6 km) upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years (water years 1965-73) prior to completion of MacKenzie Dam, 9.24 ft³/s (0.262 m³/s), 6,690 acre-ft/yr (8.25 hm³/s); 5 years (water years 1974-78) regulated, 2.56 ft³/s (0.072 m³/s), 1,850 acre-ft/yr (2.28 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s (362 m³/s) May 20, 1977, gage height, 14.5 ft (4.42 m), from flood-marks; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, occurred in 1892 (stage and discharge unknown); second highest stage occurred September 1926 (stage and discharge unknown); third highest stage occurred May 10, 1934, gage height, 20.3 ft (6.19 m), discharge unknown, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,580 ft³/s (73.1 m³/s) May 27, gage height, 7.12 ft (2.170 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.08	.30	.20	.17	.00	.00	63	.00	.00	.00
2	.00	.08	.08	.10	.22	.20	.00	4.0	25	.00	.00	.00
3	.00	.09	.10	.10	.23	.15	.00	1.2	6.9	.00	1.4	.00
4	.00	.08	.15	.20	.28	.04	.00	.58	4.1	.00	.06	.00
5	.00	.10	.15	.29	.19	.02	.00	.75	22	.00	.00	.00
6	.00	.11	.06	.16	.18	.10	.00	.46	64	.00	.00	.00
7	.00	.12	.06	.18	.12	.10	.00	.36	10	.00	.00	.00
8	.00	.15	.08	.14	.08	.09	.51	.06	.39	.00	.00	.00
9	.00	.08	.05	.10	.06	.16	3.5	.00	.02	.00	4.1	.00
10	.00	.07	.04	.06	.06	.15	.74	.30	.00	.00	.00	.00
11	.00	.08	.05	.04	.06	.06	.02	.58	.00	.00	.00	.00
12	.00	.11	.10	.08	.08	.09	.00	.02	.00	.00	.00	.00
13	.00	.11	.20	.12	.08	.35	.00	.00	13	.00	.00	.00
14	.00	.11	.15	.16	.08	.14	.00	.00	58	.00	.00	.00
15	.00	.15	.08	.20	.06	.07	.00	.00	5.5	.00	.00	.00
16	.00	.08	.08	.25	.06	.10	.00	.00	.50	.00	.00	.00
17	.00	.06	.20	.20	.04	.08	.00	.00	.10	.00	.00	.00
18	.00	.08	.27	.16	.02	.06	.00	.00	.01	.00	.00	.00
19	.00	.11	.11	.10	.02	.02	.00	.32	.00	.00	.00	.00
20	.00	.11	.11	.08	.05	.04	.00	.96	.00	.00	.00	38
21	.00	.09	.06	.08	.10	.04	.00	.58	.00	.00	.00	1.0
22	.03	.08	.06	.12	.15	.02	.00	.27	.00	.00	.00	.03
23	.26	.11	.20	.30	.25	.01	.00	.00	.00	.00	.00	.04
24	.09	.08	.32	.41	.27	.01	.00	.00	.00	.00	.00	.05
25	.03	.11	.20	.30	.20	.04	.00	.03	.00	.00	.00	.02
26	.00	.11	.15	.35	.15	.04	.00	.39	.00	.00	.00	.22
27	.00	.08	.20	.35	.14	.01	.00	260	.00	.00	.00	.20
28	.11	.15	.25	.30	.12	.01	.00	21	.00	.00	.00	.20
29	.15	.15	.25	.30	---	.00	.00	3.4	.00	.00	.00	.20
30	.11	.11	.35	.25	---	.00	.00	1.5	.00	.00	.00	.18
31	.22	---	.48	.20	---	.00	---	112	---	.00	.00	---
TOTAL	1.00	2.99	4.72	5.98	3.55	2.37	4.77	408.76	272.52	.00	5.56	40.14
MEAN	.032	.10	.15	.19	.13	.076	.16	13.2	9.08	.000	.18	1.34
MAX	.26	.15	.48	.41	.28	.35	3.5	260	64	.00	4.1	38
MIN	.00	.04	.04	.04	.02	.00	.00	.00	.00	.00	.00	.00
AC-FT	2.0	5.9	9.4	12	7.0	4.7	9.5	811	541	.00	11	80
CAL YR 1977	TOTAL	2948.49	MEAN 8.08	MAX 1550	MIN .00	AC-FT 5850						
WTR YR 1978	TOTAL	752.36	MEAN 2.06	MAX 260	MIN .00	AC-FT 1490						

RED RIVER BASIN

07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX

LOCATION.--Lat 34°34'23", long 100°44'43", Hall County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on Farm Road 657, 7.6 mi (12.2 km) southwest of Lakeview, 8.6 mi (13.8 km) upstream from Little Red River, 13.3 mi (21.4 km) downstream from former gage near Brice, and at mile 1,092.5 (1,757.8 km).

DRAINAGE AREA.--6,792 mi² (17,591 km²), of which 4,769 mi² (12,352 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,926.41 ft (587.170 m) National Geodetic Vertical Datum of 1929. Aug. 29 to Dec. 12, 1968, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records poor. Several small diversions above station.

AVERAGE DISCHARGE.--15 years (water years 1964-78), 79.5 ft³/s (2.251 m³/s), 57,600 acre-ft/yr (71.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,000 ft³/s (2,690 m³/s) May 20, 1977, gage height, 11.1 ft (3.38 m), from floodmark, from rating curve extended above 51,000 ft³/s (1,440 m³/s) on basis of slope-area measurement at gage height 9.10 ft (2.774 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1906, 14.8 ft (4.51 m) occurred in summer of 1933 at former site 15 mi (24 km) upstream. Flood of June 7, 1960, reached a stage of 12.0 ft (3.66 m), present site and datum, from information by local residents and Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)				
May 20	0200	6,520	185	4.95	1.509	June 6	0800	10,200	289	5.62	1.713
May 27	2100	*56,800	1,610	49.40	2.865	June 14	0600	12,600	357	5.97	1.820
June 2	0900	9,210	261	5.20	1.585	Sept. 20	2000	10,800	306	5.70	1.737
June 5	0900	6,190	175	4.80	1.463						

a From floodmark.

Minimum daily discharge, 0.01 ft³/s (0.0003 m³/s) for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.27	.35	.07	.46	3.2	.72	.24	.20	1260	9.9	.01	.21
2	.36	.28	.13	.35	1.5	.88	.21	85	2680	5.9	.01	.27
3	.36	.26	.12	.40	1.3	.90	.21	343	457	20	1.5	32
4	.70	.29	.13	.44	.70	.50	.25	179	208	5.8	30	117
5	.63	.34	.14	.27	.57	.60	.36	146	2230	7.1	41	4.8
6	.53	.43	.18	.21	.70	.70	.29	103	3140	1.3	11	.36
7	4.6	.51	.27	.18	.60	.76	.40	59	298	.57	1.3	.36
8	.86	.65	.22	.19	.60	1.3	.44	15	250	.60	.47	1.3
9	.49	.66	.20	.15	.55	.87	.53	6.0	236	.42	114	2.8
10	.42	.11	.20	.10	.50	.57	.81	6.6	181	.47	187	1.8
11	.30	.05	.30	.10	.40	.46	.66	3.8	146	.43	175	1.1
12	.30	.02	.51	.40	.50	.70	.44	1.9	106	.29	64	.57
13	.36	.02	.42	.82	.60	1.5	.28	2.0	52	.32	19	.11
14	.40	.02	.36	.79	.60	.87	.30	1.7	1950	.33	4.7	.20
15	.42	.02	.50	.85	.50	.67	.38	1.0	138	.23	1.1	.87
16	.40	.15	.49	.74	.55	.72	.41	.90	57	.15	.77	2.1
17	.46	.15	1.1	.70	.50	.84	.24	1.3	22	.14	.20	3.2
18	.53	.11	1.2	.60	.10	.65	.27	1.3	19	.09	.50	3.7
19	.62	.03	1.3	.50	.20	.51	.22	22	16	.98	4.2	52
20	.54	.02	1.3	.50	.25	.48	.29	1930	14	50	4.6	3000
21	.61	.03	1.5	.40	.20	.43	.36	912	12	27	2.5	1220
22	31	.03	1.2	1.0	.30	.38	.24	514	19	4.3	.13	187
23	186	.02	.91	2.1	.50	.38	.22	331	17	.88	.02	72
24	39	.01	.95	1.6	.70	.46	.30	197	13	.57	.02	53
25	5.6	.03	.80	3.6	1.3	.47	.19	93	10	.43	.01	57
26	.80	.02	.50	1.8	1.3	.42	.19	462	7.6	2.9	.01	52
27	.42	.01	.50	1.4	1.3	.36	.21	12300	6.2	14	.03	43
28	.54	.01	.70	1.4	.97	.35	.16	6280	4.5	.11	.03	33
29	.57	.02	.80	1.3	---	.35	.15	1850	5.1	.05	.06	19
30	.57	.08	1.0	1.8	---	.34	.18	514	3.8	.01	.07	12
31	.33	---	.99	3.2	---	.29	---	380	---	.03	4.0	---
TOTAL	278.99	4.73	18.99	28.35	20.99	19.43	9.43	26741.70	13558.2	155.30	667.24	4972.75
MEAN	9.00	.16	.61	.91	.75	.63	.31	863	452	5.01	21.5	166
MAX	186	.66	1.5	3.6	3.2	1.5	.81	12300	3140	50	187	3000
MIN	.27	.01	.07	.10	.10	.29	.15	.20	3.8	.01	.01	.11
AC-FT	553	9.4	38	56	42	39	19	53040	26890	308	1320	9860
CAL YR 1977	TOTAL	50200.16	MEAN	138	MAX	8810	MIN	.01	AC-FT	99570		
WTR YR 1978	TOTAL	46476.10	MEAN	127	MAX	12300	MIN	.01	AC-FT	92190		

WATER-QUALITY RECORDS

WATER TEMPERATURES: July 1968 to current year.

WATER TEMPERATURES (1968-77): Minimum daily, 0.0°C on many days during winter months.

SPECIFIC CONDUCTANCE: Maximum daily, 34,200 micromhos May 8; minimum daily, 2,280 micromhos Sept. 20.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT 05...	0920	.50	16200	--	17.0	2500	--	640	230	--	--
NOV 29...	1035	1.0	17700	--	8.5	2400	--	630	210	--	--
DEC 21...	1455	1.5	22300	--	8.0	2900	--	740	260	--	--
JAN 10...	1210	.20	5320	7.7	1.0	1900	1700	480	160	590	6.0
FEB 22...	1150	.70	28000	--	9.5	3400	--	870	290	--	--
MAR 14...	1020	.95	19800	--	12.0	2700	--	670	240	--	--
APR 25...	1020	.27	5170	7.6	19.0	1700	1500	400	160	530	5.7
MAY 17...	1450	2.1	17700	--	23.0	--	--	--	--	--	--
JUN 01...	1135	.970	4130	--	22.0	980	890	320	43	550	7.7
06...	1600	4050	3250	--	25.0	880	760	290	37	370	5.4
JUL 19...	0920	.93	9950	--	26.0	2200	2000	590	180	1600	15
AUG 07...	1500	1.5	16500	--	--	--	--	--	--	--	--

[illegible]

RED RIVER BASIN

07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	278.99	8080	5270	3970	1490	1130	1880	1420	1950
NOV. 1977.....	4.73	18300	11700	150	5320	68	2200	28	****
DEC. 1977.....	18.99	16300	10500	538	4580	235	2140	110	****
JAN. 1978.....	28.35	16600	10600	815	4680	358	2150	164	****
FEB. 1978.....	20.99	20000	12900	728	5980	339	2260	128	****
MAR. 1978.....	19.43	19100	12200	642	5610	294	2230	117	****
APR. 1978.....	9.43	12700	8210	209	3270	83	1990	51	****
MAY 1978.....	26741.69	4710	3130	226000	990	71300	980	70800	1530
JUNE 1978.....	13558.19	4020	2690	98400	770	28200	910	33400	1310
JULY 1978.....	155.3	18200	11700	4880	5280	2210	2200	921	****
AUG. 1978.....	667.24	8840	5760	10400	1770	3200	1910	3450	2000
SEPT 1978.....	4972.75	4580	3030	40700	880	11800	1010	13600	1490
TOTAL	46476.07	**	**	387000	**	119000	**	124000	**
WTD.AVG.	127.33	4650	3100	**	950	**	990	**	1500

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10500	18200	18000	18500	19100	19800	17700	5090	4480	23300	26800	8230
2	7800	16900	17500	18700	18400	20500	17500	14000	4350	24100	27600	8290
3	5070	17800	17800	18300	14800	21200	17400	13800	4870	19200	17700	5320
4	19100	18500	18000	16800	17300	21000	17600	21400	5380	23600	12000	4100
5	16600	18700	18300	16700	18600	20200	17700	20500	2290	25800	7820	6040
6	16800	18600	18500	16400	16700	19500	15700	27800	2840	24900	9500	7210
7	12500	18800	17900	16200	16000	18900	15300	31400	5180	24200	16400	8330
8	13900	18700	17200	12400	15400	19400	16400	34200	6150	23700	23600	8470
9	11800	18600	18700	8500	15000	19800	17100	22800	7140	25000	12000	8640
10	9970	18500	21900	5090	19400	18600	17700	21500	7960	26100	7290	8520
11	8000	18300	19700	9250	19800	17300	15900	21300	10100	25700	6560	8440
12	10500	17900	16400	15700	19600	19200	14000	21000	12500	26000	10200	8360
13	13100	18100	17000	13600	19700	21000	14400	19700	14800	26300	13900	8430
14	13600	18200	17500	14000	16200	19600	14100	16300	3260	26500	17600	8410
15	11100	18000	17100	16300	18800	19300	14900	13200	5540	25000	23000	8400
16	12800	17300	17300	18500	18600	19100	12200	16500	6250	25600	15200	8330
17	14600	17500	16500	20600	19800	18900	9430	19300	6910	26300	9070	8380
18	14700	17600	16300	20000	22400	14100	6530	18500	6930	26600	8830	8430
19	14900	17900	16100	19400	24700	16400	5670	13200	6890	27200	8700	4590
20	14400	17300	16200	19300	25900	18000	6810	2360	6830	18400	8580	2280
21	14500	16600	14500	10500	28000	18400	5470	3580	12500	12100	8460	5850
22	8980	16900	14100	15600	29600	18000	8980	5270	22700	14600	8400	8130
23	6040	17100	17000	19300	32700	17400	7320	10400	22800	19500	8370	11200
24	12800	17400	13000	17300	29000	18100	6040	16100	22500	24600	8330	15500
25	18600	17500	13400	16500	25300	18400	5170	19700	23300	25100	8290	19800
26	19400	17600	14500	17900	22800	18200	6190	10100	23700	25700	8400	20400
27	20000	17800	15600	10100	20200	18300	5640	3690	24000	11000	8380	23600
28	19900	18000	16900	12600	19800	18400	5170	4000	24200	22800	8400	21100
29	19800	17700	17800	15300	---	18000	5210	4170	24700	24800	8350	21800
30	19700	17600	18100	17700	---	18200	5150	5180	24100	25400	8290	22400
31	19600	---	18400	18300	---	17900	---	6650	---	26000	8190	---
MEAN	13900	17900	17000	15700	20800	18700	11500	14900	11800	23400	12100	10600

RED RIVER BASIN

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07299200 PRAIRIE DOG TOWN FORK RED RIVER NEAR LAKEVIEW, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	6.0	5.0	---	24.0	28.0	29.0	32.0	---
2	---	10.0	---	---	3.0	---	---	---	20.0	---	31.0	22.0
3	22.0	---	5.0	4.0	11.0	4.0	23.0	10.0	18.0	33.0	29.0	---
4	20.0	20.0	---	8.0	5.0	2.0	---	17.0	---	---	---	---
5	21.0	8.0	---	---	---	---	---	16.0	19.0	32.0	19.0	30.0
6	---	---	11.0	---	---	---	25.0	24.0	17.0	33.0	---	---
7	22.0	---	---	6.0	---	8.0	28.0	---	28.0	---	---	31.0
8	23.0	15.0	12.0	---	---	15.0	27.0	25.0	---	34.0	27.0	20.0
9	---	---	7.0	---	7.0	19.0	---	26.0	30.0	---	---	20.0
10	---	14.0	5.0	2.0	2.0	---	14.0	24.0	27.0	34.0	26.0	---
11	18.0	4.0	---	---	2.0	8.0	---	---	---	35.0	29.0	---
12	---	9.0	---	3.0	---	---	21.0	25.0	---	35.0	---	31.0
13	20.0	---	---	---	8.0	21.0	23.0	12.0	28.0	---	---	30.0
14	21.0	---	13.0	3.0	5.0	20.0	28.0	---	29.0	36.0	31.0	---
15	11.0	16.0	16.0	---	7.0	---	14.0	25.0	---	29.0	27.0	29.0
16	---	17.0	---	---	---	17.0	---	---	---	---	---	25.0
17	21.0	---	---	4.0	---	21.0	---	26.0	29.0	---	30.0	---
18	---	---	---	---	---	23.0	20.0	27.0	---	---	32.0	22.0
19	22.0	8.0	14.0	3.0	---	---	24.0	28.0	---	32.0	---	26.0
20	23.0	---	---	.0	7.0	27.0	23.0	26.0	28.0	31.0	---	---
21	18.0	9.0	5.0	1.0	4.0	24.0	18.0	---	---	30.0	26.0	15.0
22	---	---	8.0	---	---	---	14.0	---	35.0	23.0	25.0	17.0
23	---	16.0	15.0	8.0	16.0	14.0	---	---	28.0	---	---	16.0
24	14.0	---	14.0	3.0	---	---	---	---	25.0	30.0	30.0	---
25	26.0	14.0	---	---	5.0	19.0	19.0	29.0	---	---	24.0	20.0
26	---	4.0	---	9.0	---	---	23.0	---	33.0	31.0	23.0	18.0
27	17.0	---	---	4.0	8.0	---	---	19.0	29.0	30.0	---	19.0
28	20.0	---	---	---	11.0	24.0	22.0	---	---	26.0	28.0	21.0
29	14.0	---	14.0	---	---	27.0	13.0	22.0	30.0	22.0	---	---
30	---	11.0	---	3.0	---	25.0	---	27.0	---	---	27.0	17.0
31	19.0	---	5.0	---	---	26.0	---	27.0	---	32.0	29.0	---
MEAN	19.5	11.5	10.5	4.0	6.5	17.5	21.0	23.0	26.5	31.0	27.5	22.5

RED RIVER BASIN

07299300 LITTLE RED RIVER NEAR TURKEY, TX

LOCATION.--Lat 34°32'27", long 100°46'13", Hall County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on Farm Road 657, 10 mi (16 km) upstream from mouth, and 14.5 mi (23.3 km) northeast of Turkey.

DRAINAGE AREA.--139 mi² (360 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,925.39 ft (586.859 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No diversion above station.

AVERAGE DISCHARGE.--10 years (water years 1969-78), 11.3 ft³/s (0.320 m³/s), 1.10 in/yr (28 mm/yr), 8,190 acre-ft/yr (10.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,570 ft³/s (101 m³/s) Aug. 29, 1968, gage height, 13.48 ft (4.109 m), from floodmarks, from rating curve extended above 620 ft³/s (17.6 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 28	0230	*3,010 85.2	12.40 3.780	Aug. 28	0200	1,580 44.7	8.70 2.652
June 2	0445	1,910 54.1	10.13 3.088	Sept. 20	0400	2,350 66.6	10.08 3.072
June 6	0315	2,520 71.4	11.40 3.475				

Minimum discharge, no flow Sept. 13-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.05	.05	.04	.06	.14	.09	.11	.06	53	.21	.40	.03		
2	.05	.05	.06	.07	.09	.09	.08	123	331	.23	.14	.02		
3	.05	.06	.06	.08	.10	.09	.08	58	28	.22	46	.05		
4	.08	.06	.06	.09	.11	.09	.08	.91	146	.22	2.1	.02		
5	.08	.06	.06	.10	.09	.13	.07	2.2	310	2.7	.28	.02		
6	.09	.06	.05	.13	.10	.15	.09	.28	854	.22	.19	.01		
7	.22	.06	.06	.15	.10	.10	.10	.12	120	.18	.16	.01		
8	.07	.06	.06	.11	.07	.11	.10	.04	19	.28	.19	.02		
9	.06	.06	.05	.10	.08	.14	.09	.03	5.0	.34	.19	.02		
10	.06	.06	.05	.09	.07	.14	.08	.04	2.1	.15	.19	.01		
11	.04	.08	.05	.11	.08	.15	.07	.04	1.1	.21	.16	.01		
12	.06	.10	.06	.10	5.3	.18	.09	.03	.49	.25	.16	.01		
13	.06	.12	.06	.12	.72	.22	.10	.03	.17	.29	.14	.00		
14	.06	.10	.05	.10	.09	.18	.11	.03	265	.58	.12	.00		
15	.06	.10	.07	.10	.08	.17	.09	.04	49	.22	.12	.00		
16	.06	.09	.06	.10	.08	.14	.08	.04	4.4	.15	.10	.00		
17	.06	.09	.05	.10	.29	.14	.07	.04	1.8	.13	.09	.00		
18	.06	.09	.06	.12	.28	.16	.07	.04	1.4	.13	.09	.00		
19	.06	.09	.06	.13	.26	.15	.07	46	1.6	.14	.14	4.5		
20	.06	.08	.05	.10	.36	.18	.07	58	1.8	.09	.12	1240		
21	.06	.05	.06	.12	.28	.17	.08	157	1.8	.09	.10	296		
22	14	.06	.07	.13	.23	.16	.07	3.8	1.2	.09	.09	6.3		
23	2.0	.08	.07	.15	.11	.13	.07	.11	.80	.09	.08	4.3		
24	.10	.06	.08	.14	.11	.12	.07	.04	.60	.16	.07	2.3		
25	.08	.06	.06	.15	.09	.10	.07	.03	.47	.16	.06	12		
26	.08	.06	.06	.14	.08	.09	.08	.04	.43	.25	.07	14		
27	.07	.06	.08	.12	.10	.11	.09	545	.35	.96	.07	.86		
28	.07	.05	.09	.14	.10	.12	.09	916	.32	.96	164	.60		
29	.06	.04	.09	.13	---	.11	.07	27	.25	.16	.19	.40		
30	.06	.05	.09	.12	---	.11	.07	.76	.18	.12	.09	.31		
31	.06	---	.09	.13	---	.11	---	.23	---	1.7	.04	---		
TOTAL	18.03	2.09	1.96	3.53	9.59	4.13	2.46	1938.98	2201.26	11.68	215.94	1581.80		
MEAN	.58	.070	.063	.11	.34	.13	.082	62.5	73.4	.38	6.97	52.7		
MAX	14	.12	.09	.15	5.3	.22	.11	916	854	2.7	164	1240		
MIN	.04	.04	.04	.06	.07	.09	.07	.03	.17	.09	.04	.00		
CFSM	.004	.001	.000	.001	.002	.001	.001	.45	.53	.003	.05	.38		
IN.	.00	.00	.00	.00	.00	.00	.00	.52	.59	.00	.06	.42		
AC-FT	36	4.1	3.9	7.0	19	8.2	4.9	3850	4370	23	428	3140		
CAL YR 1977	TOTAL	2335.03	MEAN	6.40	MAX	548	MIN	.02	CFSM	.05	IN	.62	AC-FT	4630
WTR YR 1978	TOTAL	5991.45	MEAN	16.4	MAX	1240	MIN	.00	CFSM	.12	IN	1.60	AC-FT	11880

07299300 LITTLE RED RIVER NEAR TURKEY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to current year.

WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 126,000 micromhos Feb. 21, 1978; minimum daily, 7,460 micromhos June 6, 1978.

WATER TEMPERATURES (1968-76): Maximum daily, 36.0°C July 23, 1969; minimum daily, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 126,000 micromhos Feb. 21; minimum daily, 7,460 micromhos June 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS AS (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 09...	1230	.04	47900	12.0	3900	1000	340	3500	21000	--	--	--
DEC 21...	1145	.06	48700	5.0	4700	1300	350	3100	17000	--	--	--
JAN 31...	1100	.15	45500	2.0	4300	1200	320	3400	16000	--	--	--
FEB 22...	1320	.07	118000	13.0	7000	1700	680	4700	54000	--	--	--
APR 25...	0800	.80	52200	12.0	4800	1300	380	3800	20000	--	--	--
MAY 17...	1615	.10	53000	27.0	5200	1500	350	3700	21000	133	.04	81
JUN 08...	1200	17	31500	23.0	3700	1200	180	2800	12000	163	7.7	99
28...	1330	.25	49000	29.0	--	--	--	--	--	30	.02	99
JUL 19...	0730	.10	52800	25.0	--	--	--	--	--	36	.01	89
AUG 09...	1335	.16	48800	26.5	--	--	--	--	--	60	.03	82
31...	1015	.04	33000	23.0	3600	1100	200	2900	12000	70	.01	72
SEP 20...	0945	2150	10100	17.0	1800	630	55	1700	3000	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	18.03	42000	13200	644	4720	230	3560	174	****
NOV. 1977.....	2.09	48600	15400	87	6020	34	3600	21	****
DEC. 1977.....	1.96	48200	15300	81	5950	31	3600	20	****
JAN. 1978.....	3.53	46600	14700	141	5630	53	3590	35	****
FEB. 1978.....	9.59	93900	30200	782	15000	389	3880	101	****
MAR. 1978.....	4.13	50400	16000	178	6390	71	3610	41	****
APR. 1978.....	2.46	51800	16500	109	6680	44	3620	25	****
MAY 1978.....	1938.98	16600	7020	36700	2950	15500	1430	7510	****
JUNE 1978.....	2201.26	12100	4800	28600	1760	10400	1250	7430	****
JULY 1978.....	11.68	46700	14800	467	6070	191	3190	101	****
AUG. 1978.....	215.94	15000	7690	4490	3300	1930	1510	878	****
SEPT 1978.....	1581.8	11500	3270	14000	930	3990	1110	4750	****
TOTAL	5991.44	**	**	86300	**	32900	**	21100	**
WTD.AVG.	16.41	13900	5300	**	2000	**	1300	**	*****

RED RIVER BASIN

07299300 LITTLE RED RIVER NEAR TURKEY, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50300	49000	48100	46800	43900	53700	50600	53400	26100	49300	49900	37100
2	50100	49100	47800	46500	46800	53200	50900	25000	12100	49500	52600	38300
3	49900	49000	47700	46400	46400	52600	51100	30900	21300	49800	30700	40200
4	47100	49200	47800	45300	46200	51500	51200	62700	16100	49900	32900	42000
5	50200	48700	47900	46100	46500	51000	51300	80200	11500	34700	36000	43500
6	49300	48500	47900	47200	46000	50500	51500	104000	7460	41900	39300	45100
7	42600	48600	48300	47700	45100	50800	52100	89500	18000	45600	44800	46600
8	47500	48400	48500	47300	44400	49800	51500	74800	29300	47800	47600	47000
9	48100	47900	48300	47500	43900	49600	51300	64300	39500	49200	48300	46900
10	49000	48300	47900	47600	44500	50000	51100	59400	41400	51300	48800	48400
11	49500	48100	48000	47300	44900	50400	51000	58500	42900	51800	51000	49700
12	49200	48000	47800	47100	101000	50100	50800	57700	44200	52500	52100	51000
13	49300	48200	48200	46400	94200	49800	51500	55200	45600	52600	53500	---
14	49600	48500	48300	45600	75500	50000	51500	54900	13000	53000	53900	---
15	49300	48700	48400	45900	62500	49400	51100	54700	22400	52700	54600	---
16	49400	48600	48600	46100	62100	49500	51900	53900	34500	53100	56000	---
17	49300	48500	48300	46200	105000	49300	52500	53200	39000	53400	57200	---
18	49100	48600	48600	46700	108000	50000	53200	53200	42600	53800	57900	---
19	49200	48400	48700	47000	102000	50600	53400	33300	45100	54000	55100	45600
20	49900	48800	48600	47200	117000	51100	52900	29100	48300	54100	55900	10900
21	49600	49300	48500	47600	126000	50400	52200	22600	45900	54600	56400	10400
22	40400	49200	48900	47000	118000	50300	52300	50500	42800	54100	56600	26900
23	46800	49100	48900	46100	98600	50200	52500	56900	44100	53900	57200	45600
24	51000	48700	48600	45900	81400	50100	52400	54500	47200	53600	57500	48700
25	50900	48400	48900	46200	65300	49900	52300	52100	48700	54000	58200	33800
26	50100	48300	48800	46600	62000	51100	52600	51900	50200	54200	58700	26000
27	49500	48600	48200	46700	59400	50300	52200	19500	50500	45700	59100	70000
28	48800	48300	47900	46200	56000	50000	51500	9760	49400	47200	9620	68800
29	48600	48400	47700	46400	---	50100	53000	19600	50200	49000	18500	63200
30	48700	48000	47300	46600	---	49900	53200	34300	49800	51200	27800	57700
31	48800	---	47000	45500	---	50400	---	42100	---	52200	34500	---
MEAN	48700	48600	48200	46600	71200	50500	51900	50400	36000	50600	47500	43500

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	6.0	6.0	---	26.0	29.0	23.0	33.0	---
2	---	12.0	---	---	4.0	---	---	---	23.0	---	32.0	23.0
3	20.0	---	6.0	3.0	10.0	6.0	23.0	10.0	20.0	30.0	28.0	---
4	21.0	20.0	---	7.0	5.0	.0	---	17.0	---	---	---	---
5	20.0	9.0	---	---	---	---	---	18.0	22.0	31.0	20.0	28.0
6	---	---	12.0	---	---	---	26.0	25.0	18.0	32.0	---	---
7	22.0	---	---	7.0	---	8.0	30.0	---	28.0	---	---	22.0
8	21.0	15.0	14.0	---	---	16.0	28.0	23.0	---	28.0	28.0	21.0
9	---	---	9.0	---	7.0	18.0	---	24.0	27.0	---	---	20.0
10	---	15.0	8.0	1.0	3.0	---	14.0	22.0	25.0	34.0	26.0	---
11	17.0	5.0	---	---	3.0	9.0	---	---	---	33.0	29.0	---
12	---	8.0	---	4.0	---	---	20.0	24.0	---	34.0	---	28.0
13	19.0	---	---	---	9.0	20.0	26.0	14.0	27.0	---	---	---
14	18.0	---	14.0	2.0	6.0	18.0	27.0	---	30.0	35.0	29.0	---
15	12.0	17.0	16.0	---	7.0	17.0	15.0	26.0	---	28.0	27.0	---
16	---	18.0	---	---	---	---	---	---	---	---	---	---
17	20.0	---	---	2.0	---	20.0	---	27.0	31.0	---	32.0	---
18	---	---	---	---	2.0	23.0	22.0	30.0	---	---	31.0	---
19	21.0	9.0	13.0	5.0	---	---	25.0	27.0	---	30.0	---	26.0
20	22.0	---	---	1.0	8.0	25.0	26.0	20.0	30.0	32.0	---	---
21	18.0	10.0	4.0	.0	5.0	23.0	20.0	---	---	31.0	26.0	15.0
22	---	---	8.0	---	---	---	16.0	29.0	33.0	25.0	27.0	17.0
23	---	15.0	13.0	10.0	15.0	16.0	---	28.0	27.0	---	---	16.0
24	15.0	---	14.0	4.0	---	---	---	---	24.0	30.0	29.0	---
25	24.0	15.0	---	---	6.0	18.0	16.0	30.0	---	---	25.0	20.0
26	---	5.0	---	11.0	---	---	26.0	---	32.0	28.0	24.0	17.0
27	17.0	---	---	3.0	9.0	---	---	20.0	31.0	30.0	---	18.0
28	20.0	---	---	---	11.0	24.0	23.0	---	---	25.0	27.0	20.0
29	14.0	---	13.0	---	---	20.0	14.0	24.0	31.0	23.0	---	---
30	---	12.0	---	4.0	---	24.0	---	27.0	---	---	26.0	18.0
31	20.0	---	6.0	---	---	25.0	---	28.0	---	31.0	28.0	---
MEAN	19.0	12.5	10.5	4.5	7.0	17.0	22.0	23.5	27.0	29.5	27.5	20.5

RED RIVER BASIN

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07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX

LOCATION.--Lat 34°34'20", long 100°20'00", Childress County, Hydrologic Unit 11120105, on left bank 4 mi (6 km) upstream from mouth and 6.5 mi (10.5 km) northeast of Estelline.

DRAINAGE AREA.--65.5 mi² (169.6 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,701.03 ft (518.47 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Water-discharge records fair. Low flow is regulated by an unknown amount of water diverted 0.25 mi (0.40 km) upstream. Water is diverted from a collection system and pumped into a disposal well that penetrates the Ellenberger Formation at a depth of 7,480 ft (2,280 m).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,680 ft³/s (47.6 m³/s) May 28, 1978, gage height, 5.35 ft (1.631 m), from rating curve extended above 3.5 ft³/s (0.099 m³/s) on basis of Francis weir formula; no flow for part of many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 28	0245	1,680 47.6	5.35 1.631	June 6	0800	696 19.7	3.90 1.189

Minimum discharge, no flow Oct. 1-3, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.14	.71	.63	.34	.46	.41	.13	.80	.79	.59	.22
2	.00	.10	.69	.71	.22	.49	.29	11	7.6	.78	.52	.32
3	.00	.11	.72	.64	.09	.23	.30	.82	3.0	.80	.52	1.3
4	.26	.14	.72	.64	.07	.24	.51	.26	.90	.78	.72	.70
5	.02	.14	.71	.64	.08	.22	.39	.60	2.1	.77	.65	.50
6	.02	.13	.45	.67	.32	.27	.23	.48	135	.73	.52	.30
7	.17	.16	.34	.60	.51	.22	.22	2.8	.84	.73	.28	.25
8	.01	.31	.33	.57	.22	.18	.34	.23	.34	.74	.22	.20
9	.00	.10	.22	.60	.65	.21	2.6	.04	.28	.83	.16	.16
10	.05	.10	.24	.45	.40	.31	.86	.22	.22	.72	.22	.14
11	.01	.12	.26	.22	.56	.22	.33	.31	.22	.72	.16	.12
12	.01	.05	.31	.22	2.4	.18	.28	.13	.22	.72	.22	.10
13	.01	.10	.37	.16	.42	.99	.27	.14	.22	.65	.16	.12
14	.01	.16	.24	.11	.29	.18	.34	.19	.89	.59	.22	.10
15	.02	.28	.25	.17	.35	.24	.41	.18	.55	.59	.16	.12
16	.01	.34	.30	.40	.57	.17	.39	.21	.21	.52	.22	.10
17	.02	.34	.12	.34	.82	.13	.39	.32	.21	.46	.16	.12
18	.01	.40	.20	.41	.76	.15	.32	.43	.20	.40	.22	.10
19	.01	.46	.17	.34	.92	.17	.34	2.8	.19	.46	.16	.12
20	.02	.46	.17	.35	.74	.17	.34	1.5	.20	.52	.22	.10
21	.04	.34	.12	.36	.58	.12	.28	.70	.43	.64	.16	5.2
22	.62	.40	.15	.47	.70	.17	.40	.45	.13	.53	.22	.96
23	.16	.46	.14	.33	.69	.31	.34	.30	.17	.52	.16	.61
24	.05	.52	.15	.42	.75	.21	.33	.31	.17	.47	.22	.48
25	.04	.52	.12	.52	.57	.18	.28	.46	.18	.41	.16	1.8
26	.05	.52	.15	.34	.35	.11	.16	4.6	.16	.44	.22	20
27	.09	.52	.14	.34	.25	.11	.18	114	.15	.66	.16	2.5
28	.11	.52	.28	.29	.38	.13	.39	619	.16	.52	.22	.70
29	.10	.59	.47	.29	---	.17	.20	5.1	.15	.52	.16	.52
30	.23	.65	.46	.28	---	.15	.24	1.9	.50	4.9	.22	.52
31	.13	---	.58	.46	---	.15	---	1.0	---	.96	.16	---
TOTAL	2.28	9.18	10.28	12.97	15.00	7.24	12.36	770.61	156.39	23.87	8.36	38.48
MEAN	.074	.31	.33	.42	.54	.23	.41	24.9	5.21	.77	.27	1.28
MAX	.62	.65	.72	.71	2.4	.99	2.6	619	135	4.9	.72	.20
MIN	.00	.05	.12	.11	.07	.11	.16	.04	.13	.40	.16	.10
AC-FT	4.5	18	20	26	30	14	25	1530	310	47	17	76
CAL YR 1977	TOTAL	296.38	MEAN	.81	MAX	44	MIN	.00	AC-FT	588		
WTR YR 1978	TOTAL	1067.02	MEAN	2.92	MAX	619	MIN	.00	AC-FT	2120		

RED RIVER BASIN

07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1974 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 156,000 micromhos May 14, 1975; minimum daily, 4,920 micromhos May 28, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 114,000 micromhos Oct. 11, 12; minimum daily, 4,920 micromhos May 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT												
05...	1320	.18	96300	22.0	5700	1600	410	4800	40000	--	--	--
DEC												
22...	1455	.24	102000	9.0	6000	1700	430	5100	43000	--	--	--
FEB												
01...	1310	.39	91300	3.0	5900	1700	400	4800	34000	--	--	--
MAR												
15...	1135	.38	93000	9.0	5900	1700	400	5000	38000	--	--	--
APR												
06...	1150	.34	100000	25.0	5700	1600	420	5300	42000	--	--	--
MAY												
17...	1120	.05	103000	19.0	--	--	--	--	--	80	.01	91
JUN												
14...	0945	1.8	58600	25.0	3700	1100	230	3100	23000	--	--	--
19...	0945	1.8	58000	25.0	--	--	--	--	--	34	.17	98
29...	1030	.03	103000	28.0	--	--	--	--	--	103	.01	73
JUL												
18...	1735	.35	110000	--	6300	1800	430	5700	45000	--	--	--
18...	2000	.35	108000	28.0	--	--	--	--	--	213	.20	93
AUG												
08...	1510	.32	107000	32.0	6300	1800	430	5400	45000	96	.08	10
SEP												
01...	1325	.25	105000	32.0	--	--	--	--	--	196	.13	19
22...	1310	1.2	32200	--	--	--	--	--	--	72	.25	63
22...	1400	.98	31200	23.0	1800	510	120	1500	10000	--	--	--

RED RIVER BASIN

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07299512 JONAH CREEK AT WEIR NEAR ESTELLINE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	2.28	104000	77900	479	42800	263	5460	34	****
NOV. 1977.....	9.18	102000	76600	1900	42000	1040	5380	133	****
DEC. 1977.....	10.28	106000	79000	2190	43400	1200	5530	153	****
JAN. 1978.....	12.97	98700	73500	2570	40300	1410	5160	181	****
FEB. 1978.....	14	84200	61900	2510	34000	1380	4310	175	****
MAR. 1978.....	7.24	93900	69700	1360	38200	748	4890	95	****
APR. 1978.....	12.36	95600	71100	2370	39000	1300	4990	166	****
MAY 1978.....	770.61	9990	6460	13400	3550	7370	400	825	830
JUNE 1978.....	156.39	11100	7090	2990	3890	1640	430	182	****
JULY 1978.....	23.87	640000	206000	13300	113000	7280	14400	927	****
AUG. 1978.....	8.36	106000	79800	1800	43800	989	5610	126	****
SEPT 1978.....	38.48	35800	23900	2480	13100	1360	1570	163	****
TOTAL	1067.02	**	**	47300	**	26000	**	3160	**
WTD.AVG.	2.92	31500	16000	**	9000	**	1100	**	*****

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	100000	106000	101000	91300	92400	96500	103000	65000	100000	100000	104000
2	---	104000	106000	100000	93500	92900	98800	75000	20000	99300	102000	100000
3	---	102000	106000	102000	93800	93900	97500	80000	9030	99600	103000	70000
4	95200	102000	106000	103000	93200	94000	91600	89000	20000	99600	101000	76000
5	96300	100000	108000	102000	94600	91900	95400	82000	8480	99800	104000	85000
6	97200	98800	108000	101000	92400	92900	100000	90000	7500	102000	105000	95000
7	98500	98300	104000	100000	91000	93300	104000	75000	18300	104000	107000	99000
8	101000	97800	106000	101000	97000	91200	105000	85000	21500	105000	106000	10500
9	---	100000	109000	99000	89000	90600	90400	97000	25500	102000	111000	103000
10	108000	95800	108000	102000	92000	91100	62800	92000	30800	101000	112000	103000
11	114000	99500	105000	99700	90000	93200	83300	90000	40100	101000	111000	103000
12	114000	100000	102000	98500	75000	92500	90500	100000	45600	105000	111000	104000
13	112000	101000	105000	101000	65000	92700	95400	100000	50900	107000	111000	103000
14	111000	101000	106000	105000	68000	91700	97800	98000	58600	109000	111000	106000
15	112000	102000	104000	104000	67000	93000	98400	107000	70000	109000	111000	111000
16	112000	102000	108000	100000	66000	90600	98400	105000	85000	108000	111000	111000
17	110000	102000	108000	101000	65000	91600	107000	103000	87000	109000	111000	111000
18	111000	103000	106000	99000	72000	95200	106000	100000	92000	110000	112000	111000
19	111000	103000	106000	100000	80000	98700	105000	80000	96000	110000	112000	110000
20	110000	104000	106000	100000	90000	95200	102000	75000	95000	110000	113000	106000
21	112000	105000	108000	99000	99000	96400	106000	80000	80000	110000	113000	40000
22	113000	106000	102000	95000	95000	98700	108000	85000	87000	110000	111000	31200
23	109000	104000	104000	97000	95200	97700	102000	90800	86000	110000	109000	37500
24	98400	105000	104000	93000	97300	95600	103000	90500	88000	110000	108000	50000
25	99300	105000	108000	92000	97300	95200	103000	89000	85000	110000	110000	42000
26	96800	104000	106000	93000	96800	96100	103000	80000	90700	110000	109000	20000
27	103000	102000	107000	95000	91700	96500	109000	17300	95500	109000	107000	30000
28	98900	102000	104000	94000	92400	98300	107000	4920	100000	109000	105000	40000
29	98600	102000	102000	93000	---	98600	102000	35000	105000	110000	106000	45000
30	98200	100000	103000	94000	---	95700	102000	43900	104000	89000	105000	48000
31	98800	---	101000	90000	---	99900	---	56100	---	94000	104000	---
MEAN	105000	102000	106000	98500	86900	94400	99000	80600	62300	105000	108000	76800

RED RIVER BASIN

07299530 SALT CREEK NEAR ESTELLINE, TX

LOCATION.--Lat 34°35'26", long 100°15'08", Childress County, Hydrologic Unit 11120105, on left bank 3 mi (5 km) upstream from mouth and 11.5 mi (18.5 km) northeast of Estelline.

DRAINAGE AREA.--142 mi² (368 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,654.45 ft (504.276 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records poor. No diversion above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,950 ft³/s (55.2 m³/s) May 25, 1974, gage height, 7.62 ft (2.323 m), from rating curve extended above 200 ft³/s (5.66 m³/s); maximum gage height, 7.88 ft (2.402 m) May 28, 1978; minimum daily discharge, 0.10 ft³/s (0.003 m³/s) Dec. 11, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,840 ft³/s (52.1 m³/s) May 28, gage height, 7.88 ft (2.402 m), from rating curve extended above 200 ft³/s (5.66 m³/s), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily discharge, 0.20 ft³/s (0.006 m³/s) on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.63	.63	.43	.40	.63	.63	.63	.26	4.3	.51	.50	.37
2	.63	.63	.47	.34	.70	.63	.63	1.9	38	.55	.62	.37
3	.63	.63	.57	.30	.70	.56	.56	2.6	13	.63	.66	.42
4	.70	.70	.54	.40	.80	.50	.56	1.0	6.4	.57	.55	.41
5	.70	.65	.49	.56	.91	.60	.49	.80	10	.66	.49	.35
6	.69	.70	.59	.59	.80	.91	.49	.70	112	.66	.51	.40
7	.63	.80	.49	.49	.70	1.0	.49	.63	15	.53	.60	.43
8	.56	.80	.42	.43	.60	1.0	.49	.63	9.0	.49	.60	.51
9	.56	.70	.49	.37	.50	1.2	.49	.56	3.5	.48	.56	.45
10	.56	.70	.49	.30	.30	1.3	.49	.49	2.5	.49	.51	.45
11	.63	.63	.49	.20	.20	1.2	.91	.43	1.3	.45	.51	.54
12	.63	.80	.49	.20	.20	1.1	.80	.43	.91	.55	.55	.65
13	.91	.70	.43	.20	.30	1.0	.56	.43	1.0	.49	.59	.53
14	.63	.63	.41	.30	.30	.62	.56	.43	1.3	.40	.79	.51
15	.63	.64	.43	.30	.20	.56	.56	.49	1.5	.36	.59	.52
16	.63	.56	.43	.37	.20	.56	.70	.49	1.3	.40	.62	.56
17	.69	.50	.43	.32	.20	.63	.56	.49	1.0	.40	.60	.70
18	.70	.49	.43	.32	.20	.63	.56	.49	.80	.46	.52	.88
19	.75	.56	.37	.20	.20	.63	.56	.49	1.2	.41	.44	.96
20	.70	.62	.32	.20	.22	1.4	.56	.49	.80	.43	.43	1.3
21	.70	.63	.26	.20	.40	.63	.49	.49	.91	.47	.44	8.0
22	.63	.64	.22	.30	.37	.56	.49	.56	1.3	.45	.51	1.8
23	.71	.65	.26	.30	.63	1.3	.49	.56	1.2	.43	.50	.88
24	.77	.52	.33	.37	.63	.49	.49	.56	1.0	.44	.42	.76
25	.71	.57	.30	.32	1.0	.43	.49	.56	1.3	.40	.43	.80
26	.70	.56	.30	.32	.56	.43	.49	.58	1.4	.37	.40	1.5
27	.76	.56	.20	.43	.63	.49	.43	189	1.4	.42	.40	1.5
28	.74	.49	.20	.49	.63	.56	.37	626	1.0	.43	.50	.77
29	.73	.47	.30	.40	---	.63	.37	19	.70	.42	.37	.66
30	.70	.49	.43	.50	---	.63	.32	9.9	.65	.43	.40	.66
31	.66	---	.49	.63	---	.63	---	7.3	---	.43	.37	---
TOTAL	21.00	18.65	12.50	11.05	13.71	23.58	16.08	868.74	235.67	14.61	15.98	28.64
MEAN	.68	.62	.40	.36	.49	.76	.54	28.0	7.86	.47	.52	.95
MAX	.91	.80	.59	.63	1.0	1.4	.91	626	112	.66	.79	8.0
MIN	.56	.47	.20	.20	.20	.43	.32	.26	.65	.36	.37	.35
CFSM	.005	.004	.003	.003	.003	.005	.004	.20	.06	.003	.004	.007
IN.	.01	.00	.00	.00	.00	.01	.00	.23	.06	.00	.00	.01
AC-FT	42	37	25	22	27	47	32	1720	467	29	32	57
CAL YR 1977	TOTAL	838.16	MEAN 2.30	MAX 195	MIN .13	CFSM .02	IN .22	AC-FT 1660				
WTR YR 1978	TOTAL	1280.21	MEAN 3.51	MAX 626	MIN .20	CFSM .03	IN .34	AC-FT 2540				

RED RIVER BASIN

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07299530 SALT CREEK NEAR ESTELLINE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1974 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 76,400 micromhos Aug. 26, 1974; minimum daily, 3,330 micromhos May 28, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 71,900 micromhos Apr. 3; minimum daily, 3,330 micromhos May 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 05...	1720	1.0	66200	21.0	4900	1400	330	3600	27000	--	--	--
NOV 30...	0800	.55	60900	5.0	4800	1400	320	3700	23000	--	--	--
FEB 23...	1010	.66	62500	9.0	4400	1400	220	4000	24000	--	--	--
MAR 15...	0910	.57	60800	12.0	5100	1500	330	3900	23000	--	--	--
APR 26...	0820	5.0	64700	14.0	5900	1800	330	4200	26000	--	--	--
MAY 17...	0920	.49	57000	19.0	--	--	--	--	--	20	.03	91
JUN 07...	1545	13	10200	27.0	1100	360	50	990	3200	59	2.1	100
JUN 29...	0855	.65	53700	29.5	--	--	--	--	--	24	.04	97
JUL 18...	1805	.45	5830	32.0	5000	1500	310	4500	25000	11	.01	74
AUG 08...	1225	.57	65700	26.0	5100	1500	340	4200	25000	46	.07	89
SEP 01...	1015	.39	62500	--	--	--	--	--	--	32	.03	72
SEP 22...	1145	1.7	16400	18.0	1800	560	95	1600	5600	13	.06	72

RED RIVER BASIN

07299530 SALT CREEK NEAR ESTELLINE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	20	65800	47700	2700	25300	1430	4410	250	****
NOV. 1977.....	18.65	63500	45800	2310	24300	1220	4230	213	****
DEC. 1977.....	12.5	63500	45800	1550	24300	819	4240	143	****
JAN. 1978.....	11.05	66200	48100	1430	25500	760	4440	133	****
FEB. 1978.....	13.71	64100	46300	1710	24500	908	4290	159	****
MAR. 1978.....	23.58	62200	44700	2850	23700	1510	4140	263	****
APR. 1978.....	16.08	66500	48400	2100	25600	1110	4470	194	****
MAY 1978.....	868.74	5860	3880	9100	2050	4820	400	927	460
JUNE 1978.....	235.67	14700	9690	6160	5140	3270	950	605	****
JULY 1978.....	14.61	65100	47100	1860	25000	985	4340	171	****
AUG. 1978.....	15.98	67800	49500	2130	26200	1130	4570	197	****
SEPT 1978.....	28.64	46700	33400	2580	17700	1370	3110	240	****
TOTAL	1280.21	**	**	36500	**	19300	**	3490	**
WTD.AVG.	3.51	15200	11000	**	5600	**	1000	**	*****

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C.) WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66200	64600	61800	67400	64000	60600	69400	69800	35600	63500	66700	68000
2	66100	64400	62100	67100	65400	60000	71100	63800	18600	64300	66500	68800
3	66200	64000	61800	66600	65600	60200	71900	37600	13800	64100	66600	69700
4	66100	63700	62200	66000	65400	59400	71700	37600	14100	63700	66800	69800
5	66200	63700	62800	66400	66400	59700	70500	45100	21700	63200	66500	70100
6	66300	63700	63300	66800	66500	58400	66200	51700	6210	63000	66400	71100
7	66700	63900	63000	66900	66300	58800	66600	54000	10200	62900	65700	71300
8	66900	64100	62600	67300	66200	57500	67500	52600	14600	62800	65700	71300
9	67100	64700	63600	67600	66000	57900	67200	55000	18200	63200	66300	71000
10	67100	64900	63300	68400	65700	60600	68600	60000	21700	63600	66900	70800
11	67700	63700	62500	67900	65000	60200	66000	61900	26800	64000	66900	70400
12	67900	64200	61900	67300	65100	60700	65000	62200	31100	64200	67500	70000
13	67500	64600	62200	66800	65300	60900	64500	61500	35700	64600	68100	70200
14	67200	64500	61700	67400	65600	60400	63800	60700	38700	64800	68900	70300
15	67100	64600	61200	67300	64000	60800	64500	60800	39400	64900	69100	70200
16	66800	64400	62400	66000	63200	62200	63600	62400	41300	65600	69000	69800
17	66100	64300	65200	66600	63200	62300	64000	65400	43000	66200	68800	69300
18	66000	63900	64100	66300	62800	61700	64000	65400	44000	67000	69200	69100
19	65500	63700	63900	66100	62400	60900	63800	66900	45700	66600	69900	68800
20	65300	63300	63000	66000	62400	60500	64200	64100	46500	66500	68700	66000
21	65300	63300	63200	65400	62000	68500	63700	61500	48000	66500	68100	12300
22	65000	63000	62100	65100	61600	67300	63400	64000	51300	66600	67900	16400
23	65000	62900	63300	65300	62500	66300	64100	65100	51200	66600	68500	40200
24	65000	62700	65000	65200	61700	66700	64500	64900	51400	66600	68700	52200
25	64900	62000	68100	65800	62100	67100	64400	64900	52300	66900	68800	57300
26	65100	61600	68600	65200	62100	67100	64700	64400	53200	66700	68600	59400
27	62800	61000	67000	65300	61100	67400	70600	7190	56600	66800	68300	58800
28	62600	61500	66700	64900	61000	67900	70700	3330	56900	66500	68900	58600
29	63600	60800	65900	65200	---	68500	70300	12100	57600	66500	69100	59000
30	64200	60900	66100	64900	---	68200	70600	15500	63000	66600	68900	62000
31	64600	---	66300	64700	---	69100	---	38300	---	66800	68500	---
MEAN	65800	63400	63800	66300	64000	62800	66700	52200	36900	65200	67900	62400

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°34'09", long 100°11'37", Childress County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on U.S. Highways 62 and 83, 3.1 mi (5.0 km) downstream from Salt Creek, 10.0 mi (16.1 km) north of Childress, and at mile 1,061 (1,707 km).

DRAINAGE AREA.--7,725 mi² (20,008 km²), of which 4,769 mi² (12,352 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1964 to March 1965 (gage heights only), April 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.4 ft (496.34 m) Texas Department of Highways and Public Transportation datum.

REMARKS.--Water-discharge records poor. Many small diversions above station.

AVERAGE DISCHARGE.--13 years (water years 1966-78), 116 ft³/s (3.285 m³/s), 84,040 acre-ft/yr (104 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,400 ft³/s (2,450 m³/s) May 28, 1978, gage height, 13.47 ft (4.106 m), from floodmark, from rating curve extended above 33,000 ft³/s (935 m³/s); maximum gage height, 13.94 ft (4.249 m) May 21, 1977; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 16.9 ft (5.15 m) in May or June 1957, from information by local residents and Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,000 ft³/s (198 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 20	0900	12,700 360	10.00 3.048	June 6	0600	7,900 224	8.20 2.499
May 28	0200	*86,400 2,450	a13.47 4.106	Sept. 21	0345	7,300 207	8.30 2.530
June 2	1800	10,700 303	8.85 2.697				

a From floodmark.

Minimum daily discharge, 0.02 ft³/s (0.001 m³/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.3	.87	3.5	13	9.0	2.1	1.4	2030	2.0	.35	.58
2	3.0	1.1	1.0	5.3	13	13	3.0	148	2390	2.0	.02	1.2
3	3.9	1.1	1.5	9.2	7.8	7.6	1.7	192	1700	1.7	.19	46
4	4.4	1.4	1.8	7.4	6.2	5.6	2.4	201	584	2.7	.72	27
5	11	1.8	1.6	6.5	5.7	8.7	5.6	141	3430	18	.36	30
6	3.0	1.7	.91	6.2	5.6	7.9	1.5	89	3890	14	.17	17
7	5.7	1.9	1.4	5.5	5.0	6.4	.89	185	2300	4.1	.08	7.6
8	4.5	2.2	2.4	3.4	4.5	3.5	.76	82	1840	1.6	.16	11
9	2.5	4.7	.71	1.9	4.0	3.4	1.4	29	1630	.96	.04	13
10	1.6	1.6	1.1	2.0	4.0	4.3	31	16	1390	.54	111	12
11	1.6	1.5	2.0	3.3	6.0	4.6	5.3	15	1100	.41	491	4.4
12	.90	1.6	4.3	4.2	8.0	2.2	1.9	3.3	1030	.24	346	4.2
13	.72	1.9	4.8	5.5	7.0	26	1.1	3.5	870	.34	117	4.5
14	.72	1.7	2.8	4.1	6.0	11	1.2	3.9	1470	.34	25	2.8
15	1.1	2.0	3.5	3.7	5.0	5.3	1.4	4.4	252	.24	5.8	5.2
16	1.1	1.7	5.0	6.7	4.0	5.2	1.9	4.4	76	.16	.73	4.5
17	.90	1.4	1.0	3.7	4.0	3.8	2.1	2.2	61	.16	1.1	3.2
18	1.3	1.4	2.3	3.2	5.0	2.5	.99	2.6	45	.10	1.1	2.2
19	.90	2.1	2.6	2.6	6.0	1.9	.93	1.6	32	.59	1.3	1.8
20	.90	2.0	2.7	2.8	7.0	2.5	1.0	2830	30	.31	1.7	1530
21	.57	.96	1.6	3.9	6.0	2.0	1.1	766	28	.13	.34	3440
22	1.6	1.5	1.8	4.2	8.0	2.1	2.2	1500	20	.35	.34	780
23	24	2.1	2.1	5.0	10	2.6	1.6	522	13	.42	.58	332
24	30	1.8	2.7	5.7	12	2.2	2.1	371	8.7	.44	.45	240
25	36	2.0	1.8	11	10	1.5	2.0	311	7.1	.33	.90	259
26	15	2.0	2.3	13	11	1.7	2.2	389	4.6	.24	.34	590
27	6.6	2.6	2.0	5.0	11	1.4	2.2	9110	3.2	.10	1.1	231
28	5.8	1.2	2.2	4.4	13	1.3	2.4	34200	3.2	.08	.24	140
29	4.5	1.4	2.9	3.5	---	1.7	2.3	4140	2.7	.04	.49	100
30	6.3	.76	3.3	4.0	---	2.6	2.2	1110	2.4	.04	.34	67
31	5.0	---	5.6	5.8	---	2.3	---	513	---	8.2	.45	---
TOTAL	187.61	55.42	72.59	156.2	207.8	155.8	88.47	56887.3	26242.9	60.86	1109.39	7907.18
MEAN	6.05	1.85	2.34	5.04	7.42	5.03	2.95	1835	875	1.96	35.8	264
MAX	36	4.7	5.6	13	13	26	31	34200	3890	18	491	3440
MIN	.57	.76	.71	1.9	4.0	1.3	.76	1.4	2.4	.04	.02	.58
AC-FT	372	110	144	310	412	309	175	112800	52050	121	2200	15680
CAL YR 1977	TOTAL	55937.02	MEAN 153	MAX 20800	MIN .57	AC-FT 111000						
WTR YR 1978	TOTAL	93131.52	MEAN 255	MAX 34200	MIN .02	AC-FT 184700						

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to current year.

WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at his station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 98,100 micromhos June 18, July 8, and Aug. 9, 1970; minimum daily, 3,000 micromhos Aug. 13, 1971.

WATER TEMPERATURES: Maximum daily 38.0°C Aug. 20, 1969, June 19, 21, 22, 1974; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 97,100 micromhos Aug. 18; minimum daily, 4,870 micromhos May 28.

WATER TEMPERATURES: Maximum daily, 35.0°C July 14; minimum daily, 0.0°C on several days during December, January, and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
OCT 26...	0945	40	39800	--	15.0	--	--	--	--	--	--	
NOV 29...	1430	10	77600	--	14.0	--	--	--	--	--	--	
DEC 22...	0900	2.0	74300	--	.5	--	--	--	--	--	--	
JAN 11...	1215	4.8	79000	7.8	.0	3	9.7	97	1.0	10	2	
FEB 10...	1240	22	64200	7.9	1.5	15	10.4	105	1.5	4	1	
MAR 08...	1320	5.0	67900	8.1	13.5	2	7.8	105	.2	<1	<1	
APR 20...	0730	1.6	78500	7.9	11.0	2	6.5	89	.7	21	<1	
MAY 17...	0715	7.0	76000	--	--	--	--	--	--	--	--	
24...	1600	200	24500	8.2	30.0	700	6.3	100	1.6	4000	780	
31...	1540	529	9620	--	29.0	--	--	--	--	--	--	
JUN 23...	1000	10	41000	7.8	24.0	65	6.2	97	3.6	K120	<1	
JUL 25...	1745	.50	82800	7.9	30.0	3	5.0	75	2.3	20	<1	
SEP 27...	0900	240	21500	7.8	18.0	950	7.8	96	2.0	--	7200	
DATE		STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 26...	--	3800	--	1100	250	--	--	--	--	--	--	2900
NOV 29...	--	5400	--	1500	390	--	--	--	--	--	--	4400
DEC 22...	--	5500	--	1600	360	--	--	--	--	--	--	4100
JAN 11...	720	5400	5200	1500	390	20000	119	56	150	0	0	4600
FEB 10...	26	4700	4600	1400	290	15000	95	46	130	0	0	3600
MAR 08...	8	5000	4900	1400	360	17000	105	57	140	0	0	3900
APR 20...	2	5900	5800	1700	410	21000	119	70	140	0	0	4600
MAY 17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	1100	2700	2700	820	170	5000	42	34	110	0	0	2000
31...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	K20	3900	3800	1100	280	9300	65	48	100	0	0	3300
JUL 25...	36	6300	6300	1800	450	21000	115	65	96	0	0	2500
SEP 27...	7900	1600	1500	460	120	4500	48	19	190	0	0	1500

RED RIVER BASIN

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07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF 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)
OCT 26...	14000	--	--	--	--	--	--	--	--	--
NOV 29...	35000	--	--	--	--	--	--	--	--	--
DEC 22...	30000	--	--	--	--	--	--	--	--	--
JAN 11...	31000	1.1	13	57200	57600	.25	.01	.26	.92	.00
FEB 10...	24000	.5	11	43600	44400	.26	.01	.27	.38	.12
MAR 08...	27000	.8	9.8	46800	49800	.18	.01	.19	.04	.26
APR 20...	31000	.6	8.4	58200	58900	.21	.01	.22	.03	.47
MAY 17...	--	--	--	--	--	--	--	--	--	--
24...	7700	.6	13	16200	15800	7.6	.00	7.6	.18	1.6
31...	--	--	--	--	--	--	--	--	--	--
JUN 23...	14000	--	--	28900	--	.00	.01	.01	.05	.75
JUL 25...	35000	.4	18	62500	60900	.01	.01	.02	.00	.60
SEP 27...	7000	.5	10	13900	13700	.23	.01	.24	.14	1.4
DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 26...	--	--	--	--	--	--	--	--	--	--
NOV 29...	--	--	--	--	--	--	--	--	--	--
DEC 22...	--	--	--	--	--	--	--	--	--	--
JAN 11...	.90	.89	.03	.03	1.5	--	--	44	.57	56
FEB 10...	.50	.42	.02	.02	--	2.4	--	69	4.1	85
MAR 08...	.30	.17	.09	.09	1.8	--	--	12	.16	86
APR 20...	.50	.48	.00	.00	2.1	--	--	41	.18	96
MAY 17...	--	--	--	--	--	--	--	40	.76	--
24...	1.8	.67	.55	.03	13	--	--	1220	659	91
31...	--	--	--	--	--	--	--	3100	4430	98
JUN 23...	.80	.07	.06	.01	--	4.5	2.2	164	4.4	99
JUL 25...	.60	.65	.15	.12	3.0	--	--	29	.04	40
SEP 27...	1.5	.41	.76	.05	15	--	--	1990	1290	73

RED RIVER BASIN

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO JULY 1978

DATE TIME	MAR 8,78 1320	MAY 24,78 1600	JUN 23,78 1000	JUL 25,78 1745
TOTAL CELLS/ML	1700	86	16000	5400
DIVERSITY: DIVISION	0.1	0.0	0.4	0.8
..CLASS	0.1	0.0	0.4	0.8
...ORDER	0.1	0.0	1.1	1.3
....FAMILY	0.5	1.6	1.9	1.4
.....GENUS	0.5	1.6	1.9	1.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...VOLVOCALES								
....CHLAMYDOMONADACEAE								
.....CARTERIA	18	1	--	--	--	--	--	--
.....CHLAMYDOMONAS	18	1	--	--	310	2	54	1
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
....NAVICULACEAE								
.....ENTOMONEIS	--	--	--	--	160	1	54	1
...CENTRALES								
....CHAETOCERACEAE								
.....CHAETOCEROS	--	--	--	--	2300	15	3600#	67
....COSCINODISCACEAE								
.....CYCLOTELLA	--	--	--	--	9200#	58	--	--
...PENNALES								
....ACHNANTHACEAE								
.....COCCONEIS	--	--	29#	33	--	--	--	--
....FRAGILARIACEAE								
.....FRAGILARIA	--	--	--	--	1100	7	--	--
....SYNEDRA	120	7	--	--	--	--	--	--
....NAVICULACEAE								
.....NAVICULA	--	--	29#	33	--	--	54	1
....NITZSCHIA								
.....NITZSCHIA	1600#	91	29#	33	2300	15	650	12
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
....CRYPTOCHRYSIDACEAE								
.....CHROOMONAS	--	--	--	--	--	--	920#	17
....CRYPTOMONODACEAE								
.....CRYPTOMONAS	--	--	--	--	160	1	54	1
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
....GLENODINIACEAE								
.....GLENODINIUM	--	--	--	--	310	2	--	--

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	187.61	55600	39800	20200	21100	10700	3570	1810	****
NOV. 1977.....	55.42	74200	54600	8160	29200	4370	4480	670	****
DEC. 1977.....	72.59	76200	56200	11000	30100	5910	4580	897	****
JAN. 1978.....	156.2	72400	53100	22400	28400	12000	4400	1860	****
FEB. 1978.....	207.8	60200	43300	24300	23000	12900	3790	2120	****
MAR. 1978.....	155.8	65900	47800	20100	25500	10700	4070	1710	****
APR. 1978.....	88.47	69800	51000	12200	27300	6500	4270	1020	****
MAY 1978.....	56887.29	7500	4720	724000	2130	327000	770	118000	990
JUNE 1978.....	26242.89	8640	5400	383000	2370	168000	970	68500	1140
JULY 1978.....	60.86	61900	44700	7330	23700	3900	3860	633	****
AUG. 1978.....	1109.39	14800	9530	28500	4190	12500	1700	5090	****
SEPT 1978.....	7907.18	11500	7400	158000	3430	73200	1140	24400	****
TOTAL	93131.37	**	**	1420000	**	648000	**	227000	**
WTD.AVG.	255.15	8860	5600	**	2600	**	900	**	1200

RED RIVER BASIN

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07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87500	74600	75500	69600	69500	65500	78100	80600	6990	66100	81000	81500
2	80200	73800	75300	70800	70900	64000	83500	17000	7100	65700	83500	75500
3	71000	72700	75500	71800	71700	65300	78100	17900	6280	69100	86500	44500
4	70200	75900	75200	72300	71500	66300	78700	18200	10200	67000	76100	55100
5	66800	74800	75300	73300	71600	64200	73800	35300	5620	53500	74500	46500
6	72500	74000	75000	74000	71700	71000	82200	37600	5190	52600	77000	44000
7	71200	74800	76500	74800	71300	69300	80000	27600	5750	63400	76400	62700
8	78700	73000	78100	79600	71000	67400	78400	27900	8730	61800	81600	72100
9	73000	63600	76400	79300	70700	71800	82200	40900	9160	59500	79100	71400
10	75200	72700	76300	74800	70400	72800	56400	51700	11900	79500	13100	70900
11	76300	73500	74700	77400	60500	78500	61100	64900	13900	74400	12000	75500
12	75500	74600	73200	74000	50400	74700	70000	77200	15800	80000	13300	75300
13	76300	74500	76200	71800	43100	47700	72500	70000	19800	83800	17800	79600
14	76600	74400	74600	72300	44700	63200	75000	78100	14000	83100	33400	78100
15	81500	74300	77700	72500	52200	68500	78700	77700	13500	83400	64600	86500
16	76000	74800	81800	81200	55500	69300	79900	77200	11000	84800	66400	82800
17	74100	72900	77600	80800	60000	75300	78100	79000	10000	85500	66900	80900
18	75700	75300	77300	72500	64600	73400	79300	80800	9900	86300	97100	87700
19	75200	75400	77600	72800	63600	75300	80600	84200	10000	87400	87600	90000
20	74600	77600	77000	81200	55000	76400	78400	20100	9950	85600	76200	7200
21	77500	79300	76400	76400	54400	75300	76600	13200	15000	87500	77900	6970
22	76300	77000	75000	73000	56800	75800	76000	13500	37200	90500	86400	10000
23	50500	76700	76400	69600	37600	76000	84600	20000	41400	83100	92700	14700
24	45000	76100	76700	71000	45000	76400	82900	23800	45300	77800	92500	16500
25	35600	76400	75900	63900	55300	72800	83800	26300	47200	78400	92300	21400
26	49000	75300	76300	68100	61800	75300	80600	26100	52300	79400	94400	11600
27	58300	77200	76400	70800	63600	74700	67700	7150	56000	81300	90300	20300
28	67700	77000	76900	71000	65600	76000	84900	4870	62800	85900	92300	29400
29	67900	77200	75000	71300	---	77300	82900	6570	65600	86600	85000	35800
30	67700	75800	73900	72100	---	76400	80000	7540	67300	87500	80100	44500
31	69500	---	73600	71100	---	78500	---	8240	---	76700	80700	---
MEAN	70100	74800	76100	73400	60700	71400	77500	39400	23200	77000	71900	52400

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	6.0	5.0	.5	---	6.0	16.0	19.0	20.0	25.0	30.0	28.0
2	25.0	9.0	4.0	.0	7.0	5.0	25.0	---	28.0	22.0	29.0	23.0
3	25.0	10.0	13.0	3.0	8.0	8.0	11.0	13.0	19.0	28.0	25.0	23.0
4	21.0	20.0	15.0	4.0	11.0	7.0	15.0	---	20.0	25.0	27.0	22.0
5	15.0	11.0	6.0	3.0	.0	6.0	17.0	18.0	20.0	24.0	20.0	21.0
6	18.0	12.0	.0	14.0	1.0	12.0	28.0	24.0	20.0	30.0	25.0	20.0
7	21.0	12.0	10.0	6.0	---	3.0	18.0	27.0	20.0	33.0	24.0	25.0
8	23.0	10.0	8.0	.0	---	3.0	19.0	18.0	29.0	24.0	25.0	22.0
9	14.0	10.0	1.0	.5	---	18.0	26.0	15.0	20.0	32.0	25.0	22.0
10	12.0	7.0	.0	.5	---	11.0	10.0	16.0	20.0	26.0	28.0	23.0
11	20.0	15.0	9.0	.0	---	13.0	9.0	25.0	30.0	25.0	25.0	21.0
12	20.0	8.0	10.0	.0	.0	13.0	18.0	16.0	20.0	31.0	23.0	23.0
13	13.0	8.0	6.0	3.0	.0	10.0	19.0	15.0	30.0	26.0	26.0	22.0
14	15.0	7.0	5.0	1.0	4.0	15.0	26.0	27.0	30.0	35.0	28.0	24.0
15	17.0	10.0	15.0	8.0	6.0	8.0	26.0	20.0	25.0	25.0	24.0	22.0
16	10.0	8.0	12.0	3.0	---	4.0	26.0	21.0	30.0	23.0	25.0	23.0
17	11.0	12.0	10.0	.0	---	10.0	17.0	30.0	27.0	21.0	23.0	23.0
18	15.0	13.0	15.0	.0	.5	9.0	22.0	27.0	23.0	27.0	33.0	23.0
19	11.0	14.0	9.0	.0	1.0	10.0	15.0	28.0	28.0	28.0	20.0	24.0
20	11.0	14.0	8.0	.0	4.0	11.0	10.0	20.0	28.0	27.0	20.0	15.0
21	22.0	4.0	4.0	.0	1.0	10.0	14.0	20.0	27.0	27.0	20.0	12.0
22	18.0	6.0	5.0	8.0	4.0	12.0	12.0	30.0	32.0	29.0	23.0	17.0
23	20.0	10.0	14.0	.0	4.0	11.0	25.0	30.0	25.0	22.0	29.0	26.0
24	15.0	15.0	9.0	4.0	5.0	19.0	18.0	29.0	23.0	27.0	23.0	20.0
25	15.0	15.0	11.0	7.0	5.0	5.0	15.0	27.0	22.0	29.0	25.0	28.0
26	20.0	13.0	9.0	.0	10.0	12.0	20.0	27.0	24.0	28.0	24.0	20.0
27	13.0	8.0	8.0	10.0	7.0	10.0	12.0	24.0	25.0	26.0	24.0	17.0
28	21.0	5.0	2.0	6.0	10.0	17.0	25.0	27.0	24.0	29.0	22.0	25.0
29	22.0	5.0	9.0	.0	---	13.0	20.0	20.0	30.0	25.0	22.0	---
30	15.0	4.0	5.0	1.0	---	12.0	30.0	20.0	32.0	25.0	25.0	---
31	12.0	---	8.0	---	---	16.0	---	29.0	---	28.0	25.0	---
MEAN	17.0	10.0	8.0	3.0	4.5	10.5	19.0	23.0	25.0	27.0	24.5	22.0

RED RIVER BASIN

07299570 RED RIVER NEAR QUANAH, TX

LOCATION.--Lat 34°24'47", long 99°44'03", Hardeman County, Hydrologic Unit 11130101, on right bank at downstream side of bridge on State Highway 6, 8 mi (13 km) north of Quanah, 30 mi (48 km) upstream from Salt Fork Red River, and at mile 1,030 (1,657 km).

DRAINAGE AREA.--8,321 mi² (21,551 km²), of which 4,769 mi² (12,352 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,412.97 ft (430.673 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station for irrigation.

AVERAGE DISCHARGE.--18 years (water years 1961-78), 146 ft³/s (4.135 m³/s), 105,800 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,500 ft³/s (2,080 m³/s) May 28, 1978, gage height, 15.78 ft (4.810 m); maximum gage height, 16.00 ft (4.877 m) June 7, 1960; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1891 occurred in 1896, about 23 ft (7.0 m); second highest stage occurred June 1, 1957, 21.2 ft (6.46 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (142 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 21	0130	8,420 238	8.99 2.740	June 6	2200	19,600 555	10.52 3.206
May 28	1300	*73,500 2,080	15.78 4.810	June 15	0045	6,860 194	8.78 2.676
June 3	0015	14,200 402	9.82 2.993	Sept. 21	1230	12,600 357	9.60 2.926

Minimum discharge, 0.52 ft³/s (0.015 m³/s) Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	9.0	8.0	10	18	31	7.0	3.3	289	9.6	1.2	3.3
2	1.5	8.7	8.3	9.0	21	31	7.7	53	1580	10	.60	3.0
3	1.6	8.0	9.6	10	21	28	13	370	5740	9.0	1.2	2.9
4	2.0	6.6	10	11	21	20	14	185	865	9.3	3.1	3.5
5	4.0	6.9	10	12	20	20	11	143	7350	26	1.5	4.8
6	4.0	6.5	10	14	19	22	8.8	102	9650	15	1.1	3.6
7	3.5	6.6	10	13	15	21	7.4	68	6270	8.2	.87	3.0
8	2.7	13	11	12	12	19	6.4	99	646	7.3	.77	3.7
9	2.7	13	9.0	10	10	16	11	56	311	6.4	.87	4.1
10	2.6	11	7.6	9.0	9.0	15	25	29	205	5.5	1.5	3.1
11	2.4	9.6	8.1	8.0	8.0	12	25	20	120	5.2	2.0	2.7
12	2.3	9.4	11	8.0	10	11	25	12	68	4.6	19	2.5
13	2.7	8.9	11	9.0	12	15	15	7.7	125	4.2	33	2.6
14	2.5	8.5	11	14	12	14	9.1	6.0	41	4.1	16	2.6
15	2.0	8.5	10	13	10	16	6.7	4.8	1870	3.8	8.5	2.3
16	2.0	8.0	10	12	9.0	20	6.0	4.1	169	3.4	4.6	2.5
17	2.2	8.0	9.0	11	8.0	16	5.2	3.6	70	3.3	2.2	2.4
18	2.1	8.0	8.1	9.0	7.0	13	4.6	3.7	36	2.8	1.5	2.2
19	2.9	8.0	7.6	8.0	10	9.5	4.3	8.7	21	2.4	4.6	2.0
20	2.4	8.1	7.6	7.0	20	8.7	4.1	791	18	2.4	4.3	15
21	2.4	7.9	6.2	6.0	30	8.2	3.8	2410	18	2.2	2.7	5500
22	10	7.4	6.4	7.0	55	7.6	3.8	545	17	2.1	2.2	987
23	9.6	7.1	6.4	8.0	44	9.1	3.7	142	16	2.6	2.0	273
24	6.9	7.6	7.0	9.0	39	10	4.1	59	16	1.7	1.7	162
25	11	8.5	7.1	15	35	9.1	4.0	33	16	1.5	1.7	162
26	12	8.9	7.1	19	32	9.2	3.8	42	17	1.5	1.7	203
27	13	8.5	7.1	17	32	8.9	3.3	3770	16	1.2	1.8	322
28	9.5	8.5	7.3	18	34	8.2	3.4	38100	16	.97	21	147
29	8.2	8.5	8.0	18	---	7.5	3.7	5990	15	.97	7.0	87
30	8.4	8.0	9.2	16	---	7.6	3.8	924	11	.97	4.9	56
31	8.7	---	11	17	---	7.3	---	386	---	2.2	4.4	---
TOTAL	149.4	255.2	269.7	359.0	573.0	450.9	253.7	54370.9	35602	160.41	159.51	7970.8
MEAN	4.82	8.51	8.70	11.6	20.5	14.5	8.46	1754	1187	5.17	5.15	266
MAX	13	13	11	19	55	31	25	38100	9650	.97	.33	5500
MIN	1.5	6.5	6.2	6.0	7.0	7.3	3.3	3.3	11	.97	.60	2.0
AC-FT	296	506	535	712	1140	894	503	107800	70620	318	316	15810
CAL YR 1977 TOTAL	69496.86			MEAN 190	MAX 21500	MIN .94	AC-FT 137800					
WTR YR 1978 TOTAL	100574.52			MEAN 276	MAX 38100	MIN .60	AC-FT 199500					

RED RIVER BASIN
07299570 RED RIVER NEAR QUANAH, TX
WATER-QUALITY RECORDS

83

PERIOD OF RECORD.--Chemical analyses: October 1969 to September 1973. Pesticide analyses: March 1968 to September 1973.
Sediment records: May to August 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
MAY								
28...	1330	68000	18.5	38600	7090000	23	28	34
28...	2055	32600	18.0	37900	3340000	16	22	27
JUN								
06...	1040	2940	21.0	12200	96800	27	36	44
29...	0920	15	23.0	59	2.5	--	--	--
JUL								
19...	1525	2.5	35.0	69	.48	--	--	--
AUG								
29...	1040	8.8	25.5	1850	44	--	--	--
DATE		SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAY								
28...		38	42	44	72	91	98	100
28...		32	39	45	66	88	98	100
JUN								
06...		50	57	65	86	95	99	100
29...		--	--	96	--	--	--	--
JUL								
19...		--	--	95	--	--	--	--
AUG								
29...		--	--	100	--	--	--	--

RED RIVER BASIN

07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX

LOCATION.--Lat 34°21'16", long 99°44'24", Hardeman County, Hydrologic Unit 11130101, near left bank on downstream side of bridge on State Highway 6, 2 mi (3 km) downstream from confluence of North and South Groesbeck Creeks, 4 mi (6 km) north of Quanah, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--303 mi² (785 km²).

PERIOD OF RECORD.--November 1961 to current year. Prior to October 1974, published as "at State Highway 283".

GAGE.--Water-stage recorder. Datum of gage is 1,425.69 ft (434.550 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several diversions upstream from station for farm and ranch use and for a gypsum wallboard plant. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years (water years 1963-78), 13.9 ft³/s (0.394 m³/s), 0.62 in/yr (16 mm/yr), 10,070 acre-ft/yr (12.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,900 ft³/s (394 m³/s) Sept. 19, 1974, gage height, 23.56 ft (7.181 m), from rating curve extended above 6,100 ft³/s (173 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Highest stage occurred in June 1891; highest stage since 1891 occurred in September 1929; other large floods are reported to have occurred in 1912, 1936, 1946, 1951, 1955, and 1957, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,840 ft³/s (194 m³/s) May 21, gage height, 20.66 ft (6.297 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum, 1.4 ft³/s (0.040 m³/s) Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	5.7	7.7	7.1	6.7	7.1	9.1	7.2	26	14	4.7	3.2
2	5.2	5.5	7.5	7.2	6.5	6.8	8.8	12	26	13	5.7	3.1
3	5.4	5.4	7.4	7.3	6.5	6.6	8.2	24	40	16	6.3	3.0
4	5.6	5.4	7.0	7.3	6.5	6.6	12	14	27	16	7.5	3.7
5	5.9	5.7	6.5	7.3	6.7	6.6	10	11	296	14	6.4	3.0
6	5.9	5.8	6.3	7.2	6.7	6.8	8.6	10	362	13	5.5	3.4
7	5.9	5.7	6.4	7.1	6.7	7.0	7.5	8.8	139	24	4.9	3.6
8	5.5	6.6	6.3	7.1	6.5	7.3	7.1	7.5	44	16	4.6	3.4
9	5.7	7.0	6.3	6.9	6.0	7.1	7.2	6.8	25	12	4.5	3.8
10	5.8	6.4	6.3	6.5	6.0	7.8	8.0	6.6	22	10	4.9	3.3
11	5.5	6.1	6.3	6.0	6.5	7.7	8.1	7.0	21	10	4.5	2.2
12	5.6	6.3	6.3	6.0	7.1	7.5	7.0	6.4	20	9.6	3.9	1.9
13	5.5	6.3	6.3	7.2	7.4	8.4	6.3	6.5	18	9.7	3.5	1.8
14	5.7	6.5	6.3	7.1	6.7	8.4	6.3	6.5	17	9.6	3.7	1.6
15	5.6	6.7	6.4	7.1	6.6	8.0	6.3	8.3	17	9.5	3.6	1.7
16	5.7	6.9	6.6	7.1	6.3	7.5	6.3	9.6	17	8.5	3.5	1.5
17	5.9	6.7	6.6	7.1	6.2	7.0	6.8	9.4	17	8.6	3.4	1.4
18	5.9	6.8	6.4	7.0	6.0	6.8	6.3	10	16	8.3	3.3	1.5
19	6.0	7.0	6.6	6.7	6.0	6.4	6.1	160	17	8.0	60	1.5
20	6.1	6.8	6.6	6.0	6.2	6.7	6.1	733	18	7.1	56	9.2
21	6.2	6.7	6.3	6.0	6.3	7.1	6.5	2460	19	6.8	27	811
22	6.0	6.7	6.4	6.5	6.3	7.1	6.3	114	18	6.3	9.2	200
23	7.0	7.0	6.7	6.7	6.2	7.4	6.4	40	19	6.5	5.0	73
24	7.1	7.0	6.7	7.1	6.9	7.6	6.2	32	18	6.3	3.4	22
25	6.8	7.4	6.7	7.1	7.5	7.7	6.4	31	18	6.2	2.5	17
26	6.3	8.2	6.7	7.0	7.1	7.8	6.7	51	18	5.9	2.4	68
27	6.0	8.0	7.1	6.8	7.2	7.6	6.3	47	17	5.5	2.3	64
28	6.0	8.0	7.1	6.6	7.1	8.0	6.3	138	17	5.5	7.1	38
29	6.0	8.0	7.1	6.3	---	8.0	6.3	61	17	5.5	17	15
30	6.2	7.5	7.1	6.6	---	7.9	6.5	44	15	5.2	7.4	7.4
31	6.2	---	7.5	6.7	---	9.0	---	29	---	4.8	4.1	---
TOTAL	183.4	199.8	207.5	211.7	184.4	229.3	216.0	4111.6	1361	301.4	287.8	1373.2
MEAN	5.92	6.66	6.69	6.83	6.59	7.40	7.20	133	45.4	9.72	9.28	45.8
MAX	7.1	8.2	7.7	7.3	7.5	9.0	12	2460	362	24	60	811
MIN	5.2	5.4	6.3	6.0	6.0	6.4	6.1	6.4	15	4.8	2.3	1.4
CFSM	.02	.02	.02	.02	.02	.02	.02	.44	.15	.03	.03	.15
IN.	.02	.02	.03	.02	.02	.03	.03	.50	.17	.04	.04	.17
AC-FT	364	396	412	420	366	455	428	8160	2700	598	571	2720
CAL YR 1977	TOTAL	4167.0	MEAN 11.4	MAX 231	MIN 1.7	CFSM .04	IN .51	AC-FT 8270				
WTR YR 1978	TOTAL	8867.1	MEAN 24.3	MAX 2460	MIN 1.4	CFSM .08	IN 1.09	AC-FT 17590				

07299840 GREENBELT LAKE NEAR CLARENDON, TX

LOCATION.--Lat 35°00'02", Long 100°53'40", Donley County, Hydrologic Unit 11120201, on upstream side near right end of dam on Salt Fork Red River and 4.3 mi (6.9 km) north of Clarendon.

DRAINAGE AREA.--457 mi² (1,184 km²), of which 191 mi² (495 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to current year. Prior to October 1973, published as Greenbelt Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Freese, Nichols, and Endress, Consulting Engineers bench mark).

REMARKS.--The lake is formed by a rolled earthfill dam 5,800 ft (1,770 m) long. Deliberate impoundment began Dec. 5, 1966, and the dam was completed in August 1967. The dam is the property of Greenbelt Municipal and Industrial Water Authority and was built to impound water for municipal and industrial uses by the cities of Childress, Clarendon, Crowell, Hedley, and Quanah. The spillway is an uncontrolled open cut through natural ground, 1,450 ft (442 m) wide and located at the left end of dam, designed to discharge 184,000 ft³/s (5,210 m³/s) at an elevation of 2,684.0 ft (818.08 m). A morning-glory type drop inlet with a 26 ft 8.5-inch-diameter (8.14 m) opening at crest discharges into a 7 by 7 ft (2 by 2 m) concrete conduit. The outlet works consists of a 36 in (914 mm) pipe that is controlled by two 20 in (508 mm) valves that control the discharge into a stilling basin and to a water treatment plant. The capacity table, dated April 1964, is based on Geological Survey topographic maps dated 1962. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	2,686.0	-
Design flood.....	2,683.0	105,600
Crest of spillway.....	2,674.0	81,760
Crest of morning-glory type drop inlet.....	2,663.65	59,110
Lowest gated outlet (invert).....	2,597.0	900

COOPERATION.--Records of diversion and capacity table furnished by Greenbelt Municipal and Industrial Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,650 acre-ft (55.1 hm³) June 26-28, 1975, elevation, 2,655.71 ft (809.460 m); minimum, 2,950 acre-ft (3.64 hm³) Aug. 29, 30, 1967, elevation, 2,607.37 ft (794.726 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 42,550 acre-ft (52.5 hm³) June 8, 9, elevation, 2,654.43 ft (809.070 m); minimum observed, 37,520 acre-ft (46.3 hm³) May 1, elevation, 2,651.19 ft (808.083 m).

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

2,650.0	35,770	2,654.0	41,850
2,652.0	38,730	2,655.0	43,470

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39530	38910	38480	38190	38210	38600	38270	37520	41530	41740	39990	38390
2	39470	38880	38490	38190	38220	38550	38240	37770	41690	41710	39920	38310
3	39420	38840	38480	38210	38240	38570	38220	37800	41720	41660	39930	38360
4	39390	38820	38480	38190	38240	38580	38250	37800	41870	41610	39850	38280
5	39380	38820	38450	38220	38240	38580	38210	37830	42160	41550	39810	38280
6	39330	38810	38420	38210	38280	38550	38180	37880	42450	41440	39760	38210
7	39350	38810	38420	38220	38280	38580	38180	37860	42510	41380	39730	38160
8	39300	38780	38400	38190	38330	38580	38160	37830	42510	41300	39680	38160
9	39250	38750	38370	38180	38310	38550	38150	37800	42510	41230	39730	38130
10	39160	38750	38360	38150	38330	38550	38130	37820	42500	41150	39680	38090
11	39150	38730	38360	38130	38340	38570	38120	37800	42500	41090	39640	38040
12	39100	38720	38340	38150	38430	38550	38120	37770	42430	41010	39620	38010
13	39070	38690	38340	38160	38400	38600	38070	37740	42420	40930	39560	37980
14	39040	38690	38360	38160	38420	38570	38060	37730	42420	40870	39500	37940
15	39010	38690	38360	38180	38460	38580	38040	37730	42380	40790	39420	37830
16	38980	38690	38340	38190	38480	38580	38030	37670	42350	40730	39360	37760
17	38950	38660	38340	38190	38460	38600	37980	37670	42340	40650	39320	37640
18	38930	38670	38330	38190	38460	38510	37920	37650	42270	40590	39250	37580
19	38900	38640	38300	38190	38490	38540	37880	37790	42190	40510	39180	37700
20	38880	38610	38270	38190	38550	38520	37850	37880	42220	40440	39150	38160
21	38910	38570	38240	38190	38570	38510	37820	37950	42160	40400	39100	38150
22	39040	38570	38220	38190	38580	38480	37800	38060	42140	40350	38990	38220
23	39020	38570	38190	38190	38610	38390	37770	38060	42130	40270	38930	38220
24	39040	38550	38240	38190	38580	38460	37740	38060	42030	40250	38880	38220
25	39020	38520	38210	38180	38600	38430	37710	38160	41950	40210	38820	38360
26	39010	38540	38210	38180	38580	38370	37680	38420	41880	40190	38760	38370
27	38990	38540	38190	38180	38580	38370	37670	41280	41820	40180	38760	38370
28	39010	38490	38210	38180	38610	38360	37640	41520	41790	40150	38690	38360
29	39010	38480	38190	38180	---	38310	37610	41550	41760	40100	38640	38330
30	38990	38480	38190	38150	---	38300	37530	41550	41740	40070	38580	38280
31	38980	---	38190	38190	---	38270	---	41530	---	40050	38540	---
MAX	39530	38910	38490	38220	38610	38600	38270	41550	42510	41740	39990	38390
MIN	38880	38480	38190	38130	38210	38270	37530	37520	41530	40050	38540	37580
(+)	2652.16	2651.83	2651.64	2651.64	2651.92	2651.69	2651.20	2653.80	2653.93	2652.86	2651.87	2651.70
(-)	-630	-500	-290	0	+420	-340	-740	+4000	+210	-1690	-1510	-260
(+/-)	335	271	283	286	252	301	371	318	425	629	507	395

CAL YR 1977 MAX 43150 MIN 35540 + +2000 ++ 4065
WTR YR 1978 MAX 42510 MIN 37520 + -1330 ++ 4373

† Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

++ Divisions, in acre-feet, for municipal and industrial uses.

RED RIVER BASIN

07299840 GREENBELT LAKE NEAR CLARENDON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
JAN 03...	1225	524	7.6	4.0	190	46	51	16	34

DATE	SODIUM AD-SORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
JAN 03...	1.1	5.5	180	0	58	45	.6	11	310

RED RIVER BASIN

87

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX
(National stream-quality accounting network)

LOCATION.--Lat 34°57'27", long 100°13'14", Collingsworth County, Hydrologic Unit 11120202, near center of stream on downstream side of bridge on U.S. Highway 83, 4 mi (6 km) downstream from Fort Worth and Denver (Burlington) Railway Co. bridge, 4.5 mi (7.2 km) south of Lutie, and 7.2 mi (11.6 km) north of Wellington.

DRAINAGE AREA.--1,222 mi² (3,165 km²), of which 209 mi² (541 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,941.41 ft (591.742 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Several small diversions upstream from gage for irrigation. Some regulation for municipal use by Greenbelt Lake (station 07299800), capacity 59,100 acre-ft (72.9 hm³), 42 mi (68 km) upstream.

AVERAGE DISCHARGE.--14 years (water years 1953-66) prior to completion of Greenbelt Lake, 72.6 ft³/s (2.056 m³/s), 52,600 acre-ft/yr (64.9 hm³/yr); 12 years (water years 1967-78) regulated, 45.9 ft³/s (1.300 m³/s), 33,250 acre-ft/yr (41.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 146,000 ft³/s (4,130 m³/s) May 16, 1957, gage height, 19.00 ft (5.791 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of slope-area measurement of 63,400 ft³/s (1,800 m³/s); minimum, 0.1 ft³/s (0.003 m³/s) June 19, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,920 ft³/s (281 m³/s) May 27, gage height, 7.93 ft (2.417 m); minimum daily, 3.3 ft³/s (0.093 m³/s) Aug. 3, Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	32	20	16	18	38	15	14	54	8.6	10	3.3
2	10	31	20	18	16	35	16	56	200	8.3	7.6	3.8
3	11	32	23	18	15	22	19	143	190	8.2	7.6	4.9
4	10	29	19	17	20	29	22	81	297	8.4	20	10
5	11	28	19	17	24	33	19	69	1240	8.3	22	6.2
6	13	26	19	15	21	41	15	55	840	7.0	15	3.8
7	14	24	20	14	19	31	14	57	355	6.7	10	4.3
8	12	22	20	13	16	30	15	44	249	6.7	11	5.5
9	11	25	16	12	14	22	16	24	225	6.6	11	6.2
10	11	22	15	11	12	19	18	18	87	7.0	15	5.5
11	11	19	15	12	10	18	15	18	63	6.7	13	5.5
12	10	18	16	14	15	18	14	17	48	6.0	5.5	4.9
13	11	17	17	17	20	22	14	15	33	6.7	5.5	5.5
14	11	15	17	17	30	23	15	14	276	6.8	6.9	4.9
15	11	15	17	18	25	28	14	12	221	6.4	6.9	5.5
16	11	16	15	17	25	26	15	11	41	7.0	6.2	5.5
17	11	15	14	18	22	26	15	12	24	5.6	5.5	5.5
18	8.1	17	13	10	20	22	14	14	26	5.5	5.5	5.5
19	8.2	16	13	12	25	18	14	14	25	6.1	7.6	5.5
20	8.3	14	14	11	30	18	14	109	19	6.3	4.9	896
21	10	15	13	13	35	18	14	231	12	6.1	4.3	208
22	37	16	13	16	40	16	13	293	11	6.7	4.9	380
23	41	15	14	16	45	16	13	112	10	6.1	4.9	47
24	33	14	15	15	50	16	13	38	9.8	6.3	4.9	27
25	32	14	15	17	75	15	13	25	8.7	4.9	4.9	21
26	31	14	15	15	58	16	13	70	8.9	4.9	4.9	179
27	33	14	14	15	38	14	13	3130	8.7	5.5	4.9	124
28	34	15	14	17	45	15	12	2240	9.0	5.5	4.9	50
29	35	16	14	21	---	14	13	237	9.3	5.5	3.8	26
30	37	21	14	16	---	14	14	125	9.6	6.2	3.8	19
31	33	---	18	17	---	14	---	78	---	12	3.3	---
TOTAL	571.6	587	501	475	783	687	444	7376	4610.0	208.6	246.2	2078.8
MEAN	18.4	19.6	16.2	15.3	28.0	22.2	14.8	238	154	6.73	7.94	69.3
MAX	41	32	23	21	75	41	22	3130	1240	12	22	896
MIN	8.1	14	13	10	10	14	12	11	8.7	4.9	3.3	3.3
AC-FT	1130	1160	994	942	1550	1360	881	14630	9140	414	488	4120
CAL YR 1977	TOTAL	35882.6	MEAN	98.3	MAX	12200	MIN	2.6	AC-FT	71170		
WTR YR 1978	TOTAL	18568.2	MEAN	50.9	MAX	3130	MIN	3.3	AC-FT	36830		

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year. Chemical and biochemical analyses: October 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.
WATER TEMPERATURES: October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,190 micromhos May 11, 1970; minimum daily, 743 micromhos June 2, 1978.
WATER TEMPERATURES: Maximum daily, 39.0°C June 28, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,910 micromhos Dec. 3; minimum daily, 743 micromhos June 2.
WATER TEMPERATURES: Maximum daily, 38.0°C July 10; minimum daily, 0.0°C on several days during winter months.

WATER QUALITY DATA: WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	
OCT 06...	1100	13	3270	8.1	17.0	20	9.4	101	.9	4000	
NOV 02...	1200	31	3360	8.0	9.0	5	10.3	93	.3	2000	
DEC 08...	1130	20	3220	7.8	6.5	7	11.4	97	.1	84	
APR 30...	1000	14	3200	--	20.0	--	--	--	--	--	
MAY 31...	0830	114	2420	--	23.0	--	--	--	--	--	
JUN 14...	1535	830	2200	--	30.0	--	--	--	--	--	
AUG 31...	1000	3.3	2870	--	--	--	--	--	--	--	
SEP 06...	1450	3.8	2950	--	33.0	--	--	--	--	--	
DATE		COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT 06...	380	340	1800	1600	560	90	190	2.0	4.6	190	
NOV 02...	140	340	1900	1700	590	98	150	1.5	4.4	210	
DEC 08...	84	190	1800	1600	550	96	200	2.1	4.4	210	
APR 30...	--	--	1700	1500	500	98	180	1.9	4.9	160	
MAY 31...	--	--	960	790	270	69	190	2.7	6.9	200	
JUN 14...	--	--	820	680	230	60	200	3.0	6.5	170	
AUG 31...	--	--	1700	1600	540	84	120	1.3	4.4	140	
SEP 06...	--	--	1700	1600	520	86	130	1.4	5.2	120	

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	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)
OCT 06...	0	1600	270	.6	20	2960	2830	.43	.01	.44
NOV 02...	0	1600	270	.6	20	3040	2840	1.3	.04	1.3
DEC 08...	0	1600	280	.6	19	2930	2850	1.9	.01	1.9
APR 30...	0	1600	250	.7	16	--	2730	--	--	--
MAY 31...	0	840	250	.7	21	--	1750	--	--	--
JUN 14...	0	720	250	.7	19	--	1570	--	--	--
AUG 31...	0	1500	170	.5	21	--	2510	--	--	--
SEP 06...	0	1500	180	.5	21	--	2500	--	--	--

DATE	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)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (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- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 06...	.03	.43	.46	.40	.02	.00	2.1	37	1.3	91
NOV 02...	.10	.40	.50	.31	.02	.01	1.5	46	3.9	80
DEC 08...	.13	.47	.60	.61	.00	.01	1.9	62	3.3	74
APR 30...	--	--	--	--	--	--	--	--	--	--
MAY 31...	--	--	--	--	--	--	--	--	--	--
JUN 14...	--	--	--	--	--	--	--	--	--	--
AUG 31...	--	--	--	--	--	--	--	--	--	--
SEP 06...	--	--	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 06...	1100	3	3	0	500	100	400	50	49	560

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDED RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 06...	40	30	10	350	350	0	80	80	0	790

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDED RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDED RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDED RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT 06...	0	400	400	0	640	570	70	.0	.0	.0

DATE	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, SUS- PENDED TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDED RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 06...	3	0	13	60	60	0	40	30	10

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO NOVEMBER 1977

DATE	NOV 2, 77
TIME	1200
TOTAL CELLS/ML	2800
DIVERSITY: DIVISION	1.1
..CLASS	1.1
..ORDER	1.8
...FAMILY	2.1
....GENUS	2.2

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...CHARACIACEAE		
...SCHROEDERIA	48	2
...OOCYSTACEAE		
...ANKISTRODESMUS	48	2
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
...MELOSIRA	32	1
..PENNALES		
...DIATOMACEAE		
...DIATOMA	24	1
...FRAGILARIACEAE		
...SYNEDRA	290	10
...NAVICULACEAE		
...NAVICULA	48	2
...PINNULARIA	48	2
...NITZSCHACEAE		
...NITZSCHIA	130	5
CRYPTOPHYTA (CRYPTOMONADS)		
..CRYPTOPHYCEAE		
...CRYPTOMONIDALES		
...CRYPTOMONODACEAE		
...CRYPTOMONAS	16	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCACEAE		
...AGMENELLUM	1500#	53
...HORMOGONALES		
...OSCILLATORIACEAE		
...OSCILLATORIA	600#	22
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
...EUGLENA	24	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

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07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	571.6	3310	2730	4210	310	474	1580	2440	1720
NOV. 1977.....	587	3340	2760	4380	310	491	1600	2540	1740
DEC. 1977.....	501	3440	2850	3860	320	432	1660	2240	1800
JAN. 1978.....	475	3250	2680	3430	300	386	1540	1980	1680
FEB. 1978.....	783	2810	2270	4800	260	548	1280	2710	1400
MAR. 1978.....	687	3090	2530	4690	290	530	1450	2690	1580
APR. 1978.....	444	3210	2640	3160	300	357	1520	1820	1650
MAY 1978.....	7376	1330	1000	19900	120	2460	520	10400	550
JUNE 1978.....	4609.99	1660	1240	15400	150	1920	640	7970	690
JULY 1978.....	208.6	3040	2480	1400	280	159	1420	800	1550
AUG. 1978.....	246.2	2960	2410	1600	270	182	1370	913	1500
SEPT 1978.....	2078.8	2010	1570	8810	190	1060	850	4770	900
TOTAL	18568.17	**	**	75600	**	9000	**	41300	**
WTD.AVG.	50.87	1930	1500	**	180	**	820	**	840

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3290	3340	3400	3300	3200	2920	3100	3310	2540	3120	3060	2880
2	3210	3320	3890	3200	2890	3070	3250	3250	743	2780	2960	2900
3	3220	3360	3910	3250	2710	3000	3330	3090	1430	3050	2780	3100
4	3120	3350	3900	3280	2820	2740	3050	3010	1300	3110	2640	3210
5	3260	3330	3890	3320	2920	3100	3100	3120	1090	3120	2800	3090
6	3240	3380	3340	3350	3180	3140	3230	3050	1460	3100	3200	3020
7	3190	3340	3240	3370	3160	2920	3110	3010	1800	3060	3130	3000
8	3310	3310	3340	3390	3170	3000	3220	2800	2140	3050	3030	2950
9	3250	3460	3320	3450	3150	3070	3190	3150	2300	3030	3050	3070
10	3330	3330	3270	3520	3140	3120	3040	3270	2510	3070	3190	3060
11	3300	3370	3330	3550	3130	3150	3100	3290	2690	3030	3070	3050
12	3290	3370	3220	3140	3080	3190	3190	3310	2940	3040	3100	3040
13	3260	3370	3340	3230	2900	3090	3220	3300	2990	3050	3050	3020
14	3300	3340	3290	3220	2780	3120	3200	3290	2670	3010	2970	2970
15	3310	3340	3330	3190	2840	3170	3190	3350	1730	3140	2940	2960
16	3250	3320	3520	3330	2610	3100	3200	3270	2530	3020	2970	2970
17	3260	3300	3360	3370	2700	3120	3480	3360	2820	3030	3010	2950
18	3260	3320	3330	3410	2800	3140	3250	3400	2880	3050	3000	3000
19	3260	3370	3330	3390	2960	3220	3230	3370	2990	3030	2900	3040
20	3250	3340	3410	3450	2800	3170	3170	2590	3140	3100	3010	1150
21	3150	3350	3400	3280	2710	3160	3200	2350	3040	3140	3050	1910
22	3300	3290	3340	3010	2440	3150	3230	1810	3060	3060	2950	2700
23	3320	3330	3320	3580	2250	3170	3200	2570	3040	3030	2930	3200
24	3380	3340	3360	3150	2510	3200	3350	3070	3050	2980	2920	3310
25	3410	3350	3340	3090	2720	3140	3300	3210	3060	3000	2930	3380
26	3350	3340	3310	3220	2540	3130	3250	3080	3060	2980	2890	3010
27	3340	3390	3290	3150	3050	3150	3230	850	3050	2960	2860	2310
28	3350	3320	3300	3000	2900	3190	3270	922	3060	3000	2880	2870
29	3310	3290	3330	2850	---	3180	3230	1690	3090	3050	2860	3200
30	3330	3320	3320	3110	---	3170	3200	2250	3120	3080	2850	3310
31	3350	---	3360	3150	---	3190	---	2470	---	3020	2860	---
MEAN	3280	3340	3420	3270	2870	3110	3210	2830	2510	3040	2960	2920

RED RIVER BASIN

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	12.0	6.0	---	5.0	5.0	15.0	17.0	20.0	22.0	25.0	20.0
2	24.0	10.0	12.0	4.0	4.0	6.0	23.0	10.0	---	24.0	27.0	23.0
3	24.0	20.0	16.0	8.0	12.0	.0	20.0	9.0	---	25.0	24.0	---
4	17.0	---	---	---	15.0	5.0	17.0	10.0	24.0	28.0	22.0	22.0
5	18.0	14.0	8.0	---	2.0	17.0	18.0	12.0	20.0	28.0	21.0	22.0
6	25.0	20.0	.0	15.0	4.0	10.0	12.0	17.0	20.0	27.0	27.0	23.0
7	20.0	15.0	10.0	---	---	10.0	18.0	17.0	22.0	25.0	25.0	24.0
8	20.0	18.0	10.0	6.0	---	5.0	20.0	15.0	18.0	27.0	25.0	20.0
9	22.0	10.0	.0	---	---	6.0	20.0	16.0	22.0	26.0	23.0	22.0
10	21.0	15.0	5.0	11.0	---	15.0	7.0	18.0	21.0	38.0	25.0	26.0
11	20.0	13.0	10.0	10.0	.0	17.0	12.0	20.0	22.0	28.0	26.0	23.0
12	22.0	14.0	10.0	5.0	---	16.0	15.0	16.0	30.0	26.0	32.0	23.0
13	18.0	20.0	15.0	5.0	---	8.0	14.0	17.0	31.0	26.0	---	20.0
14	25.0	15.0	14.0	8.0	2.0	10.0	15.0	22.0	23.0	27.0	27.0	28.0
15	20.0	12.0	15.0	6.0	7.0	8.0	18.0	30.0	23.0	35.0	26.0	23.0
16	16.0	---	10.0	2.0	2.0	17.0	16.0	23.0	34.0	28.0	---	25.0
17	13.0	12.0	11.0	.0	---	10.0	23.0	20.0	33.0	25.0	25.0	31.0
18	15.0	12.0	14.0	---	4.0	14.0	12.0	25.0	25.0	27.0	27.0	25.0
19	20.0	20.0	10.0	---	5.0	20.0	10.0	22.0	22.0	26.0	19.0	25.0
20	15.0	16.0	6.0	.0	3.0	14.0	9.0	18.0	37.0	33.0	32.0	20.0
21	22.0	12.0	8.0	.0	10.0	23.0	14.0	25.0	30.0	33.0	34.0	15.0
22	---	6.0	6.0	4.0	8.0	15.0	17.0	20.0	22.0	24.0	27.0	15.0
23	21.0	10.0	15.0	6.0	14.0	10.0	14.0	22.0	22.0	26.0	27.0	20.0
24	15.0	---	13.0	4.0	18.0	18.0	---	32.0	22.0	25.0	26.0	23.0
25	22.0	16.0	---	10.0	13.0	20.0	---	23.0	25.0	26.0	26.0	20.0
26	24.0	18.0	---	8.0	8.0	---	---	20.0	24.0	28.0	25.0	20.0
27	20.0	13.0	6.0	11.0	---	14.0	16.0	18.0	24.0	25.0	30.0	18.0
28	27.0	9.0	12.0	12.0	9.0	25.0	18.0	17.0	25.0	24.0	23.0	19.0
29	20.0	15.0	12.0	3.0	---	15.0	20.0	20.0	25.0	25.0	25.0	20.0
30	22.0	12.0	8.0	2.0	---	15.0	20.0	22.0	26.0	28.0	---	25.0
31	15.0	---	15.0	2.0	---	17.0	---	23.0	---	26.0	18.0	---
MEAN	20.5	14.0	10.0	6.0	7.5	13.0	16.0	19.0	24.5	27.0	25.5	22.0

RED RIVER BASIN

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07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'32", long 99°30'28", in SW1/4SE1/4 sec.34, T.5 N., R.22 W., Greer County, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mi (0.8 km) south of Mangum, 13.0 mi (20.9 km) downstream from Fish Creek, and 35.5 mi (57.1 km) upstream from mouth.

DRAINAGE AREA.--1,566 mi² (4,056 km²), of which 209 mi² (541 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1905 to June 1906, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft (454.417 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Apr. 11, 1905, to June 30, 1906, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum. Oct. 1, 1937, to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records poor.

AVERAGE DISCHARGE.--41 years (water years 1937-78), 89.1 ft³/s (2,523 m³/s), 64,550 acre-ft/yr (79.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,000 ft³/s (2,040 m³/s) May 16, 1957, gage height, 14.55 ft (4.435 m); maximum gage height, 14.7 ft (4.48 m) June 16, 1938; no flow at times each year except 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,000 ft³/s (1,020 m³/s) May 28, gage height, 13.45 ft (4.100 m), no other peak above base of 6,000 ft³/s (170 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	14	15	16	28	40	18	6.4	189	7.0	.00	.00
2	1.1	16	16	15	27	38	20	16	158	7.0	.00	.00
3	.54	14	16	14	25	33	17	47	298	14	.00	.00
4	2.0	12	17	17	27	24	17	121	167	7.3	.00	.00
5	1.6	11	18	20	29	34	17	85	2790	12	.10	.00
6	1.0	12	17	25	29	35	22	72	2330	5.5	.00	.00
7	1.5	13	15	21	27	32	23	63	678	5.2	.00	.00
8	1.9	18	15	19	20	28	19	58	273	3.7	.00	.00
9	1.8	17	13	15	20	30	20	49	186	2.7	.00	.00
10	1.4	16	13	12	22	29	41	42	230	1.5	.00	.00
11	.70	15	15	13	28	26	51	31	139	1.1	.00	.00
12	.40	15	17	13	43	24	36	22	98	1.0	.00	.00
13	.34	14	22	15	66	24	27	18	87	.70	.00	.00
14	.23	15	21	15	50	25	21	15	123	.40	.00	.00
15	.18	14	19	22	44	27	17	13	71	.25	.00	.00
16	.15	14	18	31	66	24	17	10	181	.15	.00	.00
17	.17	14	17	19	54	23	14	8.6	78	.10	.00	.00
18	.20	14	17	22	60	24	11	8.0	57	.08	.00	.00
19	.22	14	16	23	52	21	8.9	8.2	48	.00	.00	.00
20	.18	14	15	21	62	20	8.2	37	39	.00	.00	231
21	1.7	13	15	20	54	19	7.6	58	31	.00	7.0	634
22	21	13	15	22	51	18	6.7	69	22	.00	.50	131
23	25	13	15	22	54	17	6.4	131	15	9.6	.00	83
24	33	13	16	27	69	17	6.4	86	21	1.3	.00	54
25	23	14	16	26	69	18	6.4	58	13	.00	.00	42
26	18	14	16	30	54	17	6.4	50	12	.00	.00	75
27	15	14	16	26	46	17	6.1	9090	8.8	.00	.00	42
28	14	14	16	25	43	17	5.8	22600	8.0	.00	7.0	84
29	13	15	17	23	---	16	6.3	849	7.0	.00	.50	42
30	15	15	18	21	---	16	6.4	371	7.3	.00	.00	24
31	15	---	19	23	---	16	---	286	---	.00	.00	---
TOTAL	210.61	424	511	633	1219	749	489.6	34378.2	8365.1	80.58	15.10	1442.00
MEAN	6.79	14.1	16.5	20.4	43.5	24.2	16.3	1109	279	2.60	.49	48.1
MAX	33	18	22	31	69	40	51	22600	2790	14	7.0	634
MIN	.15	11	13	12	20	16	5.8	6.4	7.0	.00	.00	.00
AC-FT	418	841	1010	1260	2420	1490	971	68190	16590	160	30	2860
CAL YR 1977	TOTAL	49077.78	MEAN 134	MAX 13200	MIN .00	AC-FT 97350						
WTR YR 1978	TOTAL	48517.19	MEAN 133	MAX 22600	MIN .00	AC-FT 96230						

RED RIVER BASIN

07300500 SALT FORK RED RIVER AT MANGUM, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (LOW LEVEL) (MG/L)				
DATE	TIME											
OCT 20...	1715	3750	8.0	24.0	1	7.8	98	10				
NOV 29...	1100	3800	8.2	7.0	6	11.3	96	6				
DEC 16...	1000	3600	7.8	7.0	9	10.7	95	5				
JAN 23...	1615	3400	8.1	.5	5	13.8	101	10				
FEB 16...	0900	3050	8.5	.0	1	14.6	105	28				
APR 13...	1000	3000	8.4	17.0	13	9.8	106	--				
MAY 11...	0800	3400	8.2	16.5	4	9.2	100	11				
JUN 26...	1415	3390	8.0	34.5	15	7.2	106	18				
JUL 18...	0900	4900	7.7	24.6	7	6.7	85	23				
SEP 24...	1045	2400	8.2	21.5	255	8.9	111	32				
		HARD- NESS (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RINE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SOLIDS, RESIDUE AT 105 DEG. C, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)			
OCT 20...	1160	1702	305	--	3528	--	.03	3.0				
NOV 29...	--	1555	241	.5	--	15	.02	3.0				
DEC 16...	892	1515	243	--	--	24	.01	3.0				
JAN 23...	--	1518	262	--	--	9	1.0	12				
FEB 16...	1491	1546	272	--	--	59	.29	19				
APR 13...	1545	1405	197	--	--	51	5.3	2.0				
MAY 11...	--	1043	313	--	--	83	7.5	18				
JUN 26...	1972	1349	267	--	--	39	1.5	<5.0				
JUL 18...	--	1199	704	--	--	13	4.5	5.0				
SEP 24...	--	876	196	--	--	540	.31	10				
DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHROM- IUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SF)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 20...	1715	--	--	--	--	220	--	150	--	--	--	--
DEC 16...	1000	--	--	--	--	330	--	40	--	--	--	--
FEB 16...	0900	3	1	48	16	12500	58	310	<.5	4	5	52
APR 13...	1000	--	--	--	--	850	--	130	--	--	--	--
JUN 26...	1415	--	--	--	--	520	--	70	--	--	--	--

RED RIVER BASIN

95

07301200 MCCLELLAN CREEK NEAR MCLEAN, TX

LOCATION.--Lat 35°19'45", long 100°36'32", Gray County, Hydrologic Unit 11120301, on left bank at downstream side of bridge on State Highway 273, 5 mi (8 km) upstream from mouth, and 6.9 mi (11.1 km) north of McLean.

DRAINAGE AREA.--759 mi² (1,966 km²), of which 299 mi² (774 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, 1965-57, October 1967 to current year.

REVISED RECORDS.--WDR TX-75-1: 1968-70, 1972, 1973(M), 1974.

GAGE.--Water-stage recorder. Datum of gage is 2,545.99 ft (776.018 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Flow is largely regulated by Lake McClellan, capacity 5,000 acre-ft (6.16 hm³), 18 mi (29 km) upstream. One small diversion from Lake McClellan.

AVERAGE DISCHARGE.--11 years, 21.5 ft³/s (0.609 m³/s), 15,580 acre-ft/yr (19.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s (753 m³/s) May 29, 1975, gage height, 14.55 ft (4.435 m), from rating curve extended above 1,100 ft³/s (31.2 m³/s) on basis of contracted-opening measurement of peak stage; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 21 ft (6.4 m) May 1957, from information by local residents. Other major floods occurred in 1920, 1941, and 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,010 ft³/s (114 m³/s) May 27, gage height, 8.72 ft (2.658 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	4.9	6.1	12	8.0	15	8.5	8.1	1.3	1.8	.00	.00
2	.34	4.7	6.4	8.0	9.0	16	11	27	22	2.5	.00	.00
3	.35	5.7	6.1	8.0	10	15	10	22	11	.34	.16	.00
4	.29	5.3	6.5	10	13	12	9.0	10	6.0	.05	.00	.00
5	.34	6.4	5.9	12	15	10	8.8	12	22	.03	.00	.00
6	.39	5.6	5.2	14	14	11	9.5	14	29	.01	.00	.00
7	.43	4.4	8.0	15	12	14	9.6	12	16	.00	.00	.00
8	.31	6.4	6.8	12	10	17	10	10	34	.00	.00	.00
9	.36	8.3	3.7	11	9.0	17	11	10	28	.00	.17	.00
10	.31	6.1	6.1	8.0	8.0	18	13	10	18	.00	.00	.00
11	.34	5.2	8.1	5.0	10	22	11	9.5	13	.00	.00	.00
12	.37	5.2	8.1	5.0	12	23	6.6	9.1	5.9	.00	.00	.00
13	.49	5.0	8.1	8.0	14	22	6.4	7.9	4.1	.00	.00	.00
14	.79	5.6	9.2	10	16	19	7.2	5.5	7.5	.00	.00	.00
15	.90	4.4	9.3	8.0	14	17	8.5	5.0	6.2	.00	.00	.00
16	.86	3.7	9.3	10	16	15	8.0	6.0	3.1	.00	.00	.00
17	.93	3.9	11	8.0	14	13	7.8	4.6	2.3	.00	.00	.00
18	.79	5.1	12	6.0	12	15	7.1	5.2	2.3	.00	.00	.00
19	1.0	4.4	18	4.0	10	11	6.6	11	2.6	.00	.00	.00
20	1.1	3.9	18	3.0	11	14	6.8	20	1.5	.00	.00	86
21	1.4	6.0	17	3.0	12	13	6.2	21	2.2	.00	.00	100
22	2.9	5.6	16	5.0	13	11	5.8	33	1.6	.00	.00	8.4
23	5.5	5.6	14	7.0	14	15	4.7	9.0	.60	.00	.00	3.0
24	4.0	6.1	12	10	17	15	5.5	6.4	.36	.00	.00	1.4
25	3.5	7.0	11	9.0	20	15	5.4	5.6	.23	.00	.00	1.2
26	2.7	7.1	13	8.0	18	15	6.6	24	.08	.00	.00	4.6
27	4.3	5.7	11	7.0	15	14	6.3	418	.06	.00	.00	1.4
28	4.9	5.1	11	9.0	17	9.8	7.2	9.8	.81	.00	.00	.67
29	4.7	5.3	15	10	---	8.4	8.1	3.5	1.8	.00	.00	1.3
30	5.9	5.1	14	8.0	---	7.7	8.4	2.1	1.4	.00	.00	1.2
31	5.2	---	14	6.0	---	7.4	---	1.6	---	.00	.00	---
TOTAL	55.85	162.8	319.9	259.0	363.0	447.3	240.6	752.9	244.94	4.73	.33	209.17
MEAN	1.80	5.43	10.3	8.35	13.0	14.4	8.02	24.3	8.16	.15	.011	6.97
MAX	5.9	8.3	18	15	20	23	13	418	34	2.5	.17	100
MIN	.16	3.7	3.7	3.0	8.0	7.4	4.7	1.6	.06	.00	.00	.00
AC-FT	111	323	635	514	720	887	477	1490	486	9.4	.7	415
CAL YR 1977	TOTAL	11611.82	MEAN	31.8	MAX	1440	MIN	.06	AC-FT	23030		
WTR YR 1978	TOTAL	3060.52	MEAN	8.38	MAX	418	MIN	.00	AC-FT	6070		

RED RIVER BASIN

07301200 MCCLELLAN CREEK NEAR MCLEAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 17...	1100	.90	1240	8.0	20.0	--	280	83	79	20	140
NOV 21...	1005	3.8	1210	7.8	2.0	--	290	96	81	22	140
JAN 03...	1020	16	1290	7.8	.0	--	340	120	97	24	150
FEB 14...	1215	20	1170	7.8	.0	--	320	96	91	22	130
MAR 09...	1450	16	1180	7.9	18.0	--	290	98	85	20	130
29...	1015	8.4	1160	--	13.0	--	280	97	75	22	140
MAY 08...	1330	12	1200	--	25.0	--	280	100	72	25	140
JUN 17...	0900	3.0	1080	--	21.0	--	240	71	66	19	130

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 17...	3.6	3.8	240	0	140	180	.7	25	--	707
NOV 21...	3.6	3.2	240	0	140	190	.7	23	--	718
JAN 03...	3.5	3.4	270	0	140	210	.7	20	--	778
FEB 14...	3.2	3.4	270	0	120	190	.6	19	--	709
MAR 09...	3.3	3.1	240	0	130	180	.7	21	--	688
29...	3.7	3.3	220	0	130	180	.7	18	--	677
MAY 08...	3.6	4.1	220	0	120	210	.7	16	--	696
JUN 17...	3.6	3.2	210	0	120	170	.7	22	--	634

RED RIVER BASIN

97

07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX

LOCATION.--Lat 35°15'51", long 100°14'29", Wheeler County, Hydrologic Unit 11120302, on left bank at downstream side of bridge on U.S. Highway 83, 2.5 mi (4.0 km) north of Shamrock, 16 mi (26 km) upstream from Texas-Oklahoma State line, and 23 mi (37 km) downstream from McClellan Creek.

DRAINAGE AREA.--1,082 mi² (2,802 km²), of which 379 mi² (982 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1951-63 (occasional low-flow measurements), February 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,165.55 ft (660.060 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records poor. Some regulation by Lake McClellan, capacity 5,000 acre-ft (6.16 hm³), 41 mi (66 km) upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years, 34.3 ft³/s (0.971 m³/s), 24,850 acre-ft/yr (30.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft³/s (578 m³/s) May 29, 1975, gage height, 7.47 ft (2.277 m), from rating curve extended above 3,800 ft³/s (108 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1915, 16.1 ft (4.91 m) in May 1957, from information by Texas Department of Highways and Public Transportation and local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 27	1700	*7,330 208	4.90 1.494	June 8	1315	4,170 118	4.20 1.280

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.12	3.6	5.7	4.0	60	5.9	.45	32	.01	.00	.00
2	.00	.06	6.7	2.5	4.0	45	4.0	267	284	.01	.00	.00
3	.00	.12	20	3.0	4.5	30	13	40	205	.15	.00	.00
4	.00	.16	25	3.6	5.0	23	11	100	254	.04	.00	.00
5	.00	.26	22	6.1	6.0	30	8.7	126	493	.02	.00	.00
6	.00	.26	4.9	4.6	5.0	20	1.6	175	599	.00	.00	.00
7	.00	.26	5.7	4.0	4.0	11	.55	101	381	.00	.00	.00
8	.00	17	7.7	3.5	3.0	12	.16	34	971	.00	.00	.00
9	.00	13	31	3.0	2.5	17	.17	17	425	.00	.00	.00
10	.00	2.1	25	2.5	2.5	30	.72	19	173	.00	.00	.00
11	.00	1.5	43	2.0	2.5	22	.54	6.9	89	.12	.00	.00
12	.00	1.0	66	1.5	4.0	12	.79	.17	22	.28	.00	.00
13	.00	.53	116	2.0	5.0	18	.57	.27	9.8	.45	.00	.00
14	.00	.67	73	3.0	7.0	22	.10	.30	4.2	.08	.00	.00
15	.00	.53	66	3.7	10	18	.12	.25	4.9	.12	.00	.00
16	.00	.67	66	6.0	12	16	.07	.12	1.0	.02	.00	.00
17	.00	.42	66	4.0	10	23	.08	.14	.26	.68	.00	.00
18	.00	.53	73	5.0	5.0	25	.01	.28	.09	.18	.00	.00
19	.00	1.0	48	4.0	6.0	18	.01	6.9	.12	.02	.00	.34
20	.00	.42	35	3.0	8.0	7.2	.02	281	.02	.03	.00	208
21	.01	.16	12	2.0	10	6.7	.02	357	.06	.01	.00	753
22	.82	.53	17	3.0	11	7.9	.02	612	.02	.00	.00	54
23	4.7	.67	20	4.0	15	6.2	.04	268	.02	.00	.00	17
24	.36	.67	60	5.0	20	3.0	.04	142	.01	.00	.00	4.2
25	.19	1.0	25	3.5	30	2.4	.03	61	.01	.00	.00	248
26	.26	1.0	17	6.0	46	4.1	.03	345	.00	.00	.00	331
27	.20	.82	10	5.0	52	6.2	.03	2840	.00	.00	.00	142
28	.26	1.0	13	4.0	72	6.7	.10	1350	.00	.00	.00	43
29	.20	1.2	20	5.0	---	7.0	.13	154	.06	.00	.00	13
30	.42	2.1	15	4.0	---	6.4	.11	169	.02	.00	.00	4.9
31	.26	---	10	5.0	---	5.3	---	134	---	.00	.00	---
TOTAL	7.68	49.76	1022.6	119.2	366.0	521.1	48.66	7607.78	3948.59	2.22	.00	1818.44
MEAN	.25	1.66	33.0	3.85	13.1	16.8	1.62	245	132	.072	.000	60.6
MAX	4.7	17	116	6.1	72	60	13	2840	971	.68	.00	753
MIN	.00	.06	3.6	1.5	2.5	2.4	.01	.12	.00	.00	.00	.00
AC-FT	15	99	2030	236	726	1030	97	15090	7830	4.4	.00	3610
CAL YR 1977	TOTAL	34387.31	MEAN 94.2	MAX 4600	MIN .00	AC-FT 68210						
WTR YR 1978	TOTAL	15512.03	MEAN 42.5	MAX 2840	MIN .00	AC-FT 30770						

RED RIVER BASIN

07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 22...	0800	.12	2680	7.6	.5	1500	1300	500	56	120
JAN 04...	0930	3.3	3200	7.6	.5	1400	1200	450	65	230
FEB 15...	0850	41	2940	7.8	.0	880	700	270	51	330
MAR 09...	1300	18	2630	7.8	13.0	860	720	260	52	260
MAR 30...	0710	3.7	2760	--	7.0	1100	980	340	60	230
MAY 16...	1520	.07	2580	--	33.0	1700	1600	650	30	27
JUN 14...	1745	4.1	2690	--	30.5	1100	940	330	55	220

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
NOV 22...	1.4	4.5	220	0	1200	200	.5	19	2210
JAN 04...	2.7	5.3	190	0	1000	480	.5	17	2340
FEB 15...	4.8	4.0	220	0	440	710	.6	17	1930
MAR 09...	3.9	4.9	180	0	500	570	.6	17	1750
MAR 30...	3.0	5.2	140	0	820	410	.7	16	1950
MAY 16...	.3	3.2	170	0	1500	27	.5	15	2340
JUN 14...	3.0	6.7	130	0	830	390	.6	20	1920

07301410 SWEETWATER CREEK NEAR KELTON, TX

LOCATION.--Lat 35°28'23", Long 100°07'14", Wheeler County, Hydrologic Unit 11120302, near center of stream on downstream side of bridge on Farm Road 592, 5 mi (8 km) north of Kelton, 8 mi (13 km) upstream from Texas-Oklahoma State line, and 8.5 mi (13.7 km) northeast of Wheeler.

DRAINAGE AREA.--287 mi² (743 km²), of which 20 mi² (50 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,230 ft (680 m), from topographic map.

REMARKS.--Water-discharge records fair except those for periods of no gage-height record, which are poor. Diversion above station for ranch use.

AVERAGE DISCHARGE.--16 years (water years 1963-78), 14.4 ft³/s (0.408 m³/s), 0.68 in/yr (17 mm/yr), 10,430 acre-ft/yr (12.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,890 ft³/s (81.8 m³/s) May 20, 1977, gage height, 15.73 ft (4.795 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 20 ft (6.1 m) May 16, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 750 ft³/s (21.2 m³/s) May 28, gage height, 12.38 ft (3.773 m), no other peak above base of 500 ft³/s (14.2 m³/s); minimum daily, 0.01 ft³/s (0.0003 m³/s) Sept. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	6.9	11	15	17	20	15	11	27	6.0	.62	.19
2	1.8	7.5	12	13	17	20	16	19	53	5.5	.60	.19
3	1.7	7.6	13	15	17	18	15	54	55	5.2	.58	.19
4	1.8	7.5	13	16	18	16	15	33	94	4.7	.55	.19
5	2.2	7.4	12	16	19	20	15	24	74	4.5	.52	.19
6	3.0	7.7	11	16	19	20	15	23	59	4.4	.50	.25
7	3.4	7.8	12	16	18	19	14	23	43	4.2	.45	.20
8	2.6	8.0	13	15	17	18	14	20	48	4.0	.42	.18
9	2.3	12	12	14	16	18	15	17	73	4.0	.40	.18
10	2.2	11	11	12	16	18	17	16	42	3.7	.40	.18
11	2.0	10	12	13	16	17	16	15	30	3.5	.38	.15
12	2.1	9.8	13	16	18	17	15	13	23	3.4	.36	.10
13	2.3	9.7	14	16	19	18	15	11	21	3.0	.34	.08
14	2.7	9.7	13	16	20	18	14	11	19	2.6	.32	.07
15	2.8	9.7	14	15	20	17	14	10	19	2.2	.30	.03
16	3.8	9.2	14	14	19	17	14	9.2	18	2.1	.28	.02
17	4.5	8.9	13	13	17	17	14	8.8	16	2.1	.26	.01
18	4.5	9.0	13	12	15	17	13	9.6	24	1.8	.24	.01
19	4.6	9.4	13	11	17	17	13	13	17	1.6	.22	.01
20	4.5	9.1	14	10	19	17	12	97	15	1.3	.22	1.5
21	4.4	8.4	13	10	20	16	13	57	14	1.2	.20	36
22	4.9	9.7	14	12	25	16	13	108	14	1.2	.20	28
23	6.9	11	15	15	31	16	12	50	11	1.2	.20	2.0
24	6.3	10	14	18	28	16	11	29	10	1.1	.20	.70
25	5.9	11	14	18	24	16	11	22	9.2	1.0	.20	.42
26	5.9	11	14	17	21	16	11	38	8.1	.95	.20	61
27	5.8	11	14	15	21	16	11	178	7.4	.85	.20	3.7
28	6.2	10	15	14	20	15	11	295	6.8	.80	.20	1.1
29	6.4	10	15	16	---	15	10	69	6.5	.78	.19	1.1
30	6.8	11	16	15	---	15	11	45	6.4	.75	.19	1.1
31	7.0	---	16	18	---	15	---	32	---	.70	.19	---
TOTAL	123.3	281.0	413	452	544	531	405	1360.6	863.4	80.33	10.13	139.04
MEAN	3.98	9.37	13.3	14.6	19.4	17.1	13.5	43.9	28.8	2.59	.33	4.63
MAX	7.0	12	16	18	31	20	17	295	94	6.0	.62	61
MIN	1.7	6.9	11	10	15	15	10	8.8	6.4	.70	.19	.01
CFSM	.01	.03	.05	.05	.07	.06	.05	.15	.10	.009	.001	.02
IN.	.02	.04	.05	.06	.07	.07	.05	.18	.11	.01	.00	.02
AC-FT	245	557	819	897	1080	1050	803	2700	1710	159	20	276

CAL YR 1977 TOTAL 10236.60 MEAN 28.0 MAX 1820 MIN 1.7 CFSM .10 IN 1.33 AC-FT 20300
WTR YR 1978 TOTAL 5202.80 MEAN 14.3 MAX 295 MIN .01 CFSM .05 IN .67 AC-FT 10320

NOTE.--No gage-height record July 25 to Sept. 7.

RED RIVER BASIN

07301410 SWEETWATER CREEK NEAR KELTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA: WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 18...	0945	4.5	1080	8.0	10.0	420	170	120	28	70
NOV 22...	0955	9.2	911	7.8	4.0	370	130	110	24	61
JAN 04...	1135	19	865	7.9	2.0	340	70	100	22	57
FEB 15...	1150	25	819	7.8	1.0	330	58	97	21	57
MAR 30...	0930	16	855	--	11.0	340	88	99	23	55
MAY 16...	1245	9.6	960	--	24.0	420	170	120	28	64
JUN 15...	1130	19	1030	--	23.5	430	170	130	25	65
SEP 07...	0715	.19	1480	--	18.5	610	400	170	45	94

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 18...	1.5	2.8	300	0	250	39	.7	24	682
NOV 22...	1.4	2.7	300	0	180	40	.8	23	589
JAN 04...	1.3	2.8	330	0	130	54	.7	22	551
FEB 15...	1.4	3.4	330	0	110	37	.7	21	510
MAR 30...	1.3	2.6	310	0	140	36	.7	20	529
MAY 16...	1.4	2.7	300	0	240	37	.7	19	659
JUN 15...	1.4	3.0	320	0	220	43	.7	28	672
SEP 07...	1.7	2.5	260	0	500	63	.5	27	1030

RED RIVER BASIN

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07307600 NORTH PEASE RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°16'30", Long 100°17'05", Cottle County, Hydrologic Unit 11130103, on left bank at downstream side of bridge on U.S. Highways 62 and 83, 12.2 mi (19.6 km) south of Childress, and 87.6 mi (140.9 km) upstream from mouth.

DRAINAGE AREA.--1,434 mi² (3,714 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 1,610 ft (491 m), from topographic map. Prior to June 8, 1973, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair.

AVERAGE DISCHARGE.--5 years (water years 1974-78), 18.3 ft³/s (0.518 m³/s), 13,260 acre-ft/yr (16.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,320 ft³/s (236 m³/s) June 14, 1977, gage height, 10.54 ft (3.213 m), from rating curve extended above 4,000 ft³/s (113 m³/s); no flow most of time.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 2	0930	1,880 53.2	8.23 2.509	June 4	1715	*4,250 120	9.34 2.847

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	3.1	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	32	568	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	30	288	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	5.1	805	27	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	5.7	1070	177	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	1.2	262	29	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	122	352	.54	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	86	167	.03	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	20	79	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	9.3	49	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	6.2	33	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	1.5	24	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.24	19	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.03	85	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	131	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	21	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	2.5	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.48	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	22	.15	.00	64	.00
20	.00	.00	.00	.00	.00	.00	.00	30	.02	.00	5.1	1.2
21	.00	.00	.00	.00	.00	.00	.00	50	.00	.00	.00	119
22	.02	.00	.00	.00	.00	.00	.00	8.1	.00	.00	.00	53
23	.31	.00	.00	.00	.00	.00	.00	3.1	.00	.00	.00	3.4
24	2.2	.00	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.28
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5
26	.00	.00	.00	.00	.00	.00	.00	41	.00	.00	.00	48
27	.00	.00	.00	.00	.00	.00	.00	8.9	.00	.00	.00	32
28	.00	.00	.00	.00	.00	.00	.00	4.6	.00	.00	.00	7.2
29	.00	.00	.00	.00	.00	.00	.00	63	.00	.00	.00	2.1
30	.00	.00	.00	.00	.00	.00	.00	19	.00	.00	.00	.25
31	.00	.00	.00	.00	.00	.00	.00	5.2	.00	.08	.00	.00
TOTAL	2.53	.00	.00	.00	.00	.00	.00	575.17	3959.25	233.65	69.10	269.93
MEAN	.082	.000	.000	.000	.000	.000	.000	18.6	132	7.54	2.23	9.00
MAX	2.2	.00	.00	.00	.00	.00	.00	122	1070	177	64	119
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5.0	.00	.00	.00	.00	.00	.00	1140	7850	463	137	535
CAL YR 1977	TOTAL	5527.87	MEAN	15.1	MAX	1730	MIN	.00	AC-FT	10960		
WTR YR 1978	TOTAL	5109.63	MEAN	14.0	MAX	1070	MIN	.00	AC-FT	10130		

07307600 NORTH PEASE RIVER NEAR CHILDRESS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: March 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1973 to current year.

WATER TEMPERATURES: May 1973 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 60,300 micromhos Oct. 28, 1976; minimum daily, 1,450 micromhos June 23, 1975.

WATER TEMPERATURES (1974-76): Maximum daily, 35.0°C Aug. 17, 1975; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 19,900 micromhos Sept. 30; minimum daily, 2,000 micromhos June 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
NOV 30...	0755	.35	44100	2.5	4500	--	1300	300	--	--	--
APR 03...	1200	26	7070	10.0	1300	1200	390	70	1100	13	12
MAY 04...	1200	26	6920	10.0	--	--	--	--	--	--	--
JUN 06...	1900	164	3810	28.0	880	780	280	43	510	7.5	8.4
14...	0800	1.8	19000	22.0	2000	--	580	130	--	--	--
14...	1845	18	23900	29.5	2100	--	590	150	--	--	--
JUL 31...	1475	.45	14300	40.0	2200	--	700	120	--	--	--
SEP 21...	0750	950	3430	15.0	590	490	180	33	460	8.3	9.0

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 30...	--	--	3300	15000	--	--	--	--	--	--
APR 03...	110	0	1100	1700	--	5.2	4430	--	--	--
MAY 04...	--	--	--	--	--	--	--	2610	185	99
JUN 06...	120	0	710	790	.6	12	2410	2650	1170	74
14...	--	--	1800	6200	--	--	--	--	--	--
14...	--	--	2100	8300	--	--	--	--	--	--
JUL 31...	--	--	2000	4400	--	--	--	--	--	--
SEP 21...	120	0	440	770	.6	12	1960	--	--	--

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
MAY 04...	1200	26	10.0	2610	183	64	73	94
JUN 06...	1900	164	28.0	2650	1170	42	49	57

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
MAY 04...	96	97	99	100	--	--	--
JUN 06...	62	69	74	84	95	99	100

RED RIVER BASIN

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07307600 NORTH PEASE RIVER NEAR CHILDRESS, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	2.53	15500	10600	72	4990	34	1690	12	****
NOV. 1977.....	0	*****	*****	0	*****	0	*****	0	****
DEC. 1977.....	0	*****	*****	0	*****	0	*****	0	****
JAN. 1978.....	0	*****	*****	0	*****	0	*****	0	****
FEB. 1978.....	0	*****	*****	0	*****	0	*****	0	****
MAR. 1978.....	0	*****	*****	0	*****	0	*****	0	****
APR. 1978.....	0	*****	*****	0	*****	0	*****	0	****
MAY 1978.....	575.17	5270	3300	5120	1270	1960	800	1250	920
JUNF 1978.....	3959.25	3400	2130	22800	750	7980	580	6150	670
JULY 1978.....	233.65	7740	4940	3110	2070	1300	1050	664	1240
AUG. 1978.....	69.1	5820	3640	679	1440	269	860	161	990
SEPT 1978.....	269.93	4110	2590	1890	960	703	640	469	770
TOTAL	5109.62	**	**	33700	**	12200	**	8710	**
WTD.AVG.	13	3890	2400	**	890	**	630	**	740

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---							---	11600	---	---	---
2	---							6500	3500	---	---	---
3	---							6700	4070	---	---	---
4	---							7070	2750	15000	---	---
5	---							7000	2000	6500	---	---
6	---							9500	3760	8500	---	---
7	---							3000	2800	10000	---	---
8	---							4000	3800	12500	---	---
9	---							6200	5730	---	---	---
10	---							8000	8870	---	---	---
11	---							8500	13000	---	---	---
12	---							10000	16700	---	---	---
13	---							11500	18600	---	---	---
14	---							15000	7500	---	---	---
15	---							---	3580	---	---	---
16	---							---	4130	---	---	---
17	---							---	8760	---	---	---
18	---							---	14900	---	---	---
19	---							7500	18300	---	5500	---
20	---							5500	17800	---	9800	11500
21	---							4500	---	---	---	2500
22	19500							6000	---	---	---	3490
23	18800							8000	---	---	---	8550
24	15000							10500	---	---	---	17800
25	---							---	---	---	---	15000
26	---							6500	---	---	---	4500
27	---							9800	---	---	---	5950
28	---							11500	---	---	---	11200
29	---							5000	---	---	---	16800
30	---							7500	---	---	---	19900
31	---							10000	---	14300	---	---
MEAN	17800							7810	8610	11100	7650	10700

LOCATION.--Lat 34°16'06", long 100°10'19", Cottle County, Hydrologic Unit 11130103, at ranchroad crossing, 0.6 mi (1.0 km) south of Buckle L Ranch House, and 11.5 mi (18.5 km) southwest of Kirkland.

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data: March 1973 to current year.

DISCHARGE AND WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

RED RIVER BASIN

105

07307750 MIDDLE PEASE RIVER NEAR PADUCAH, TX

LOCATION.--Lat 34°12'31", long 100°18'03", Cottle County, Hydrologic Unit 11130104, on left bank at downstream side of bridge on U.S. Highways 62 and 83, 11.8 mi (19.0 km) north of Paducah, and 13.4 mi (21.6 km) upstream from mouth.

DRAINAGE AREA.--1,086 mi² (2,813 km²), of which 65 mi² (168 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Altitude of gage is 1,630 ft (497 m), from topographic map. Prior to June 6, 1973, nonrecording gage to same site and datum.

REMARKS.--Water-discharge records fair.

AVERAGE DISCHARGE.--5 years (water years 1974-78), 6.34 ft³/s (0.180 m³/s), 4,590 acre-ft/yr (5.66 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,390 ft³/s (153 m³/s) June 4, 1974, gage height, 11.20 ft (3.414 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 424 ft³/s (12.0 m³/s) July 4, gage height, 6.21 ft (1.893 m), no other peak above base of 400 ft³/s (11.3 m³/s); no flow most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	19	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	1.0	20	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4
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	.04
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.6
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	28.00	39.00	1.92	5.54
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.93	1.26	.062	.18
MAX	.00	.00	.00	.00	.00	.00	.00	.00	25	20	1.8	2.6
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	56	77	3.8	11
CAL YR 1977	TOTAL	1089.97	MEAN	2.99	MAX	432	MIN	.00	AC-FT	2160		
WTR YR 1978	TOTAL	74.46	MEAN	.20	MAX	25	MIN	.00	AC-FT	148		

07307750 MIDDLE PEASE RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1973 to current year.

WATER TEMPERATURES: May 1973 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

REMARKS.--No water quality samples collected at this site.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,910 micromhos Feb. 12, 1975; minimum daily, 837 micromhos May 21, 1977.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: maximum daily, 3,500 micromhos Aug. 3; minimum daily, 850 micromhos July 5.

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	0	*****	*****	0	*****	0	*****	0	****
NOV. 1977.....	0	*****	*****	0	*****	0	*****	0	****
DEC. 1977.....	0	*****	*****	0	*****	0	*****	0	****
JAN. 1978.....	0	*****	*****	0	*****	0	*****	0	****
FEB. 1978.....	0	*****	*****	0	*****	0	*****	0	****
MAR. 1978.....	0	*****	*****	0	*****	0	*****	0	****
APR. 1978.....	0	*****	*****	0	*****	0	*****	0	****
MAY 1978.....	0	*****	*****	0	*****	0	*****	0	****
JUNE 1978.....	28	1280	790	60	180	14	260	20	360
JULY 1978.....	39	1060	650	68	150	16	190	20	300
AUG. 1978.....	1.92	2800	1960	10	450	2.3	800	4.1	800
SEPT 1978.....	5.54	2410	1630	24	380	5.7	650	9.7	690
TOTAL	74.46	**	**	162	**	38	**	53.8	**
WTD.AVG.	0.2	1290	810	**	190	**	270	**	370

RED RIVER BASIN

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07307750 MIDDLE PEASE RIVER NEAR PADUCAH, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1									---	---	---	---
2									2100	---	---	---
3									---	---	3500	---
4									1200	1360	2750	---
5									1600	850	---	---
6									---	---	---	---
7									---	---	---	---
8									---	---	---	---
9									---	---	---	---
10									---	---	---	---
11									---	---	---	---
12									---	---	---	---
13									---	---	---	---
14									---	---	---	---
15									---	---	---	---
16									---	---	---	---
17									---	---	---	---
18									---	---	---	---
19									---	---	---	---
20									---	---	---	2900
21									---	---	---	2800
22									---	---	---	---
23									---	---	---	---
24									---	---	---	---
25									---	---	---	3400
26									---	---	---	1900
27									---	---	---	---
28									---	---	---	---
29									---	---	---	---
30									---	---	---	---
31									---	---	---	---
MEAN									1630	1110	3130	2750

RED RIVER BASIN

07307780 MIDDLE PEASE RIVER NEAR KIRKLAND, TX
(Low-flow partial-record station)

LOCATION.--Lat 34°14'17", long 100°07'46", Cottle County, Hydrologic Unit 11130104, 0.3 mi (0.5 km) upstream from mouth and 10.5 mi (16.9 km) southwest of Kirkland.

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data: March 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT										
05...	--	3.6	--	--	--	--	--	--	--	--
19...	1015	2.1	45700	--	10.5	4500	1300	310	3300	16000
NOV										
08...	--	4.6	--	--	--	--	--	--	--	--
30...	1100	3.5	45500	--	3.5	4300	1300	260	3500	16000
DEC										
19...	1510	3.4	44900	--	13.0	3800	1100	260	3700	16000
JAN										
11...	0945	3.7	45900	7.6	1.0	4300	1300	260	3400	16000
FEB										
22...	0825	6.2	45100	--	1.0	4000	1200	250	3500	15000
MAR										
13...	1350	7.4	45300	--	22.0	4200	1300	240	3400	16000
APR										
04...	0855	3.4	46200	--	15.0	4300	1300	260	3500	16000
25...	0915	2.2	46700	--	15.0	4500	1400	240	3700	16000
MAY										
16...	0945	2.2	44800	--	22.0	4400	1300	270	3400	17000
JUN										
29...	0700	.66	43900	--	20.0	4300	1300	250	3500	15000
JUL										
19...	1320	.25	44200	--	32.0	4300	1300	250	3800	16000
AUG										
29...	0730	.64	43900	--	19.0	4300	1300	250	3600	16000
SEP										
18...	1220	1.1	46400	--	30.0	4600	1400	270	3900	16000

07307800 PEASE RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°13'39", long 100°04'24", Cottle County, Hydrologic Unit 11130105, near right bank on downstream side of bridge on Farm Road 104, 0.8 mi (1.3 km) upstream from Catfish Creek, 4.4 mi (7.1 km) downstream from confluence of North and Middle Forks, 17 mi (27 km) southeast of Childress, and 71.0 mi (114.2 km) upstream from mouth.

DRAINAGE AREA.--2,754 mi² (7,133 km²), of which 559 mi² (1,448 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1959 to September 1962, October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,492.98 ft (455.060 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1959, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair. Three small diversions for irrigation above station.

AVERAGE DISCHARGE.--13 years (water years 1961-62, 1967-78), 57.4 ft³/s (1.626 m³/s), 0.28 in/yr (7 mm/yr), 41,590 acre-ft/yr (51.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s (538 m³/s) June 9, 1960, gage height, 13.59 ft (4.142 m), from rating curve extended above 4,000 ft³/s (113 m³/s) on basis of runoff comparisons with nearby stations; no flow Aug. 10-22, 1969, May 25, 26, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1909, 22 ft (6.7 m) June 1, 1957; flood in May 1935 reached a stage of 18 ft (5.5 m) and was the second highest, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 18	2230	*3,540 100	10.21 3.112	June 5	0700	3,320 94.0	10.40 3.170

Minimum discharge, 0.13 ft³/s (0.004 m³/s) July 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.26	2.0	4.0	4.9	8.2	4.8	4.5	6.2	2.7	.66	.40	.46		
2	.28	2.0	3.9	5.9	6.1	5.2	4.5	39	167	.42	.28	.45		
3	.36	2.1	4.1	5.8	4.7	4.6	3.7	132	146	.36	1.2	.99		
4	.97	2.1	4.0	5.7	4.0	4.4	4.1	47	75	.37	8.1	1.8		
5	2.9	2.2	3.8	5.4	3.9	4.5	3.7	40	1640	145	4.5	1.1		
6	1.7	2.2	3.7	5.3	3.8	3.6	3.3	28	537	57	1.7	.63		
7	1.3	2.6	4.0	5.0	3.5	3.2	3.3	22	256	14	.84	.46		
8	.97	5.1	3.9	4.4	3.5	3.7	3.3	158	155	3.4	.63	2.0		
9	.78	4.8	3.3	4.1	3.0	4.2	3.3	47	87	1.4	.66	4.5		
10	.88	3.2	3.3	2.8	3.0	4.1	4.1	25	51	.92	1.1	2.6		
11	.70	2.9	3.5	4.0	3.5	3.2	3.7	19	32	.66	1.2	1.6		
12	.84	3.0	5.0	5.4	5.0	3.5	3.3	12	22	.49	.61	1.2		
13	1.1	3.0	4.9	5.1	4.5	6.4	3.0	8.6	19	.45	.51	.92		
14	1.2	3.2	4.7	4.8	4.0	5.7	3.0	8.6	18	.43	.51	.75		
15	1.1	3.6	4.8	5.3	4.0	5.3	2.7	8.0	96	.37	.55	.65		
16	1.2	3.6	4.2	6.3	3.5	6.0	2.7	7.5	63	.37	.50	.58		
17	1.4	3.1	3.4	4.6	3.0	4.5	2.7	7.5	24	.31	.38	.50		
18	1.5	3.0	4.2	4.0	2.5	4.0	2.1	273	13	.26	.35	.48		
19	1.7	3.6	3.7	3.0	3.0	3.6	2.1	86	8.0	.30	181	.46		
20	1.8	3.2	3.8	2.5	4.0	4.1	2.1	120	5.4	.27	25	268		
21	1.8	2.6	3.8	3.0	4.0	4.0	2.7	74	3.7	.27	4.9	500		
22	4.0	2.4	4.2	4.0	4.3	4.1	2.7	18	3.0	.33	1.9	130		
23	8.2	2.4	4.5	5.1	4.3	4.9	2.4	5.8	2.1	.42	1.3	44		
24	3.5	3.0	4.6	5.4	3.8	4.9	2.7	2.7	1.6	.41	.94	22		
25	2.0	3.5	4.2	7.9	3.3	4.9	2.7	1.4	1.4	.31	.74	54		
26	1.6	3.5	4.5	7.3	3.4	4.5	3.0	37	1.2	.28	.64	236		
27	1.6	3.2	4.7	5.0	4.9	4.5	3.7	22	1.1	.21	.66	101		
28	2.0	3.0	4.7	4.6	5.5	4.1	4.6	34	.91	.28	.65	33		
29	2.1	3.3	5.5	4.4	---	4.1	4.8	10	.94	.25	.54	19		
30	3.2	3.8	5.9	4.5	---	4.5	5.3	27	.90	.64	.48	13		
31	2.6	---	6.2	5.6	---	4.1	---	6.9	---	2.5	.47	---		
TOTAL	55.54	91.2	133.0	151.1	114.2	137.2	99.8	1333.2	3433.95	233.34	243.24	1442.13		
MEAN	1.79	3.04	4.29	4.87	4.08	4.43	3.33	43.0	114	7.53	7.85	48.1		
MAX	8.2	5.1	6.2	7.9	8.2	6.4	5.3	273	1640	145	181	500		
MIN	.26	2.0	3.3	2.5	2.5	3.2	2.1	1.4	.90	.21	.28	.45		
CFSM	.001	.001	.002	.002	.001	.002	.001	.02	.04	.003	.003	.02		
IN.	.00	.00	.00	.00	.00	.00	.00	.02	.05	.00	.00	.02		
AC-FT	110	181	264	300	227	272	198	2640	6810	463	482	2860		
CAL YR 1977	TOTAL	11815.25	MEAN	32.4	MAX	1550	MIN	.04	CFSM	.01	IN	.16	AC-FT	23440
WTR YR 1978	TOTAL	7467.90	MEAN	20.5	MAX	1640	MIN	.21	CFSM	.007	IN	.10	AC-FT	14810

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to current year.

WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 43,800 micromhos Apr. 11, 1974; minimum daily, 1,820 micromhos June 4, 1974.

WATER TEMPERATURES: Maximum daily, 37.0°C on several days during summer months of 1969, 1976, and 1978; minimum daily, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 42,100 micromhos Apr. 5; minimum daily, 2,780 micromhos Sept. 21.

WATER TEMPERATURES: Maximum daily, 37.0°C July 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	
OCT 19...	0845	2.0	34500	11.5	4000	--	1200	250	--	--	
NOV 30...	0915	3.9	38800	3.0	4000	--	1200	240	--	--	
DEC 19...	1310	3.6	39700	13.0	3800	--	1100	250	--	--	
JAN 31...	1115	5.4	37900	1.0	3700	--	1100	240	--	--	
MAR 13...	1230	5.9	39500	19.0	4300	--	1300	250	--	--	
APR 25...	1000	2.5	36900	16.0	--	--	--	--	--	--	
MAY 03...	1300	118	14500	12.5	2000	--	660	90	--	--	
04...	1300	118	14100	12.5	--	--	--	--	--	--	
16...	1030	7.5	38100	22.0	--	--	--	--	--	--	
JUN 06...	1315	392	6390	22.0	1100	1000	390	42	970	12	
06...	1320	392	6470	22.0	--	--	--	--	--	--	
29...	0755	.92	29400	22.0	--	--	--	--	--	--	
JUL 19...	1345	.31	30200	35.0	3900	--	1200	220	--	--	
AUG 08...	0645	.69	28800	21.0	--	--	--	--	--	--	
29...	0815	.70	29700	21.0	3900	--	1200	210	--	--	
SEP 18...	1715	.50	31000	--	--	--	--	--	--	--	
DATE		POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 19...	--	--	--	--	3200	11000	--	--	--	--	--
NOV 30...	--	--	--	--	3400	13000	--	--	--	--	--
DEC 19...	--	--	--	--	3200	14000	--	--	--	--	--
JAN 31...	--	--	--	--	3000	13000	--	--	--	--	--
MAR 13...	--	--	--	--	3400	14000	--	--	--	--	--
APR 25...	--	--	--	--	--	--	--	--	26	.18	90
MAY 03...	--	--	--	--	1600	4300	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	3300	1050	90
16...	--	--	--	--	--	--	--	--	15	.30	100
JUN 06...	8.6	120	0	910	1600	4.8	3990	--	--	--	--
06...	--	--	--	--	--	--	--	3610	3820	.02	78
29...	--	--	--	--	--	--	--	9	--	--	77
JUL 19...	--	--	--	--	2600	8100	--	--	22	.02	89
AUG 08...	--	--	--	--	--	--	--	--	39	.07	90
29...	--	--	--	--	3300	10000	--	--	113	.21	73
SEP 18...	--	--	--	--	--	--	--	--	20	.03	71

RED RIVER BASIN

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07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
APR 25...	1000	2.5	16.0	26	.18	--	--	--
MAY 04...	1300	118	12.5	3300	1050	46	52	82
16...	1030	7.5	22.0	15	.30	--	--	--
JUN 06...	1320	392	22.0	3610	3820	45	46	58
29...	0755	.92	22.0	9	.02	--	--	--
JUL 19...	1345	.31	35.0	22	.02	--	--	--
AUG 08...	0645	.69	21.0	39	.07	--	--	--
29...	0815	.70	21.0	113	.21	--	--	--
SEP 18...	1715	.50	--	20	.03	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
APR 25...	--	--	90	--	--	--	--
MAY 04...	87	88	90	95	99	100	--
16...	--	--	100	--	--	--	--
JUN 06...	65	--	78	88	96	99	100
29...	--	--	77	--	--	--	--
JUL 19...	--	--	89	--	--	--	--
AUG 08...	--	--	90	--	--	--	--
29...	--	--	73	--	--	--	--
SEP 18...	--	--	71	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	55.54	36000	24600	3690	12200	1830	3280	491	****
NOV. 1977.....	91.2	38200	26300	6470	13100	3220	3460	851	****
DEC. 1977.....	132	39100	26800	9640	13400	4800	3530	1270	****
JAN. 1978.....	151.1	38900	26700	10900	13300	5410	3520	1440	****
FEB. 1978.....	114.2	38600	26500	8170	13200	4060	3500	1080	****
MAR. 1978.....	137.2	39400	27100	10000	13500	4990	3550	1320	****
APR. 1978.....	99.8	39300	27000	7270	13400	3620	3550	957	****
MAY 1978.....	1333.2	15200	10100	36300	4680	16900	1650	5950	****
JUNE 1978.....	3433.95	6110	3950	36700	1630	15100	850	7880	1020
JULY 1978.....	233.34	9730	6310	3970	2670	1680	1310	823	1420
AUG. 1978.....	243.24	14100	9190	6030	4170	2740	1610	1060	****
SEPT 1978.....	1442.13	8310	5420	21100	2390	9290	1010	3940	1260
TOTAL	7467.89	**	**	160000	**	73600	**	27100	**
WTD.AVG.	20.46	11900	7900	**	3700	**	1300	**	*****

RED RIVER BASIN

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33200	37700	38700	38500	39100	39700	39100	40900	29100	33200	20000	31700
2	32700	37400	38700	39200	35300	39000	34100	23800	5500	33000	17500	32400
3	31500	37200	38600	39500	40000	39200	32500	16800	6520	33700	21500	33500
4	30000	37100	38700	39800	39600	39700	36900	26100	6990	30900	26200	35800
5	38700	37300	38700	39700	39000	40600	42100	33100	2900	8430	33600	34900
6	35700	34700	38800	39600	38500	40000	41000	38700	6520	6460	24500	33700
7	35200	37400	38600	40300	37300	40000	40200	38800	7000	13700	28200	32600
8	34500	37700	39000	37200	37500	40200	41400	10900	8160	21500	29400	30600
9	33500	38500	39100	40200	33800	40400	41000	11200	12000	27400	28100	32500
10	31600	38200	37800	38500	33600	41200	35500	21100	17100	28000	27600	36900
11	34000	38000	38400	39400	39200	40400	41100	29800	19700	28200	19500	34600
12	34500	37900	39700	39200	34700	38500	41400	34800	23500	33300	29100	34000
13	34600	38100	39400	39000	35900	31900	41000	38100	27100	32000	33500	33200
14	34300	38400	39300	39600	37500	35400	39500	39800	29100	31300	34000	33100
15	34400	38600	39400	39000	38900	37300	41100	39400	10600	32300	32100	33000
16	35000	38300	39700	38000	38900	40900	37500	35400	7730	34100	31100	33100
17	34600	38100	39700	37300	39000	40700	35000	38300	14200	32500	33000	32600
18	34200	38300	39000	38000	39500	40800	37000	4300	23100	32300	34500	33700
19	34500	38900	39700	39000	39600	40600	41100	14000	28100	32100	11200	33100
20	35000	38000	39500	40300	40600	36500	40400	8200	32300	30000	15200	4790
21	35200	38900	39800	39000	41400	38000	36500	14400	32000	29900	23100	2780
22	36500	39100	39500	38500	40400	41100	40900	19800	31500	29500	27000	8340
23	38300	38800	39600	39800	40900	38800	40300	30000	33100	29900	28200	17000
24	38800	38600	39700	39200	40800	40800	40100	36400	31100	32700	29400	25900
25	30800	38900	37900	38000	40600	41000	40000	37900	32500	33000	28700	16000
26	33700	39200	39500	40600	39500	41100	40700	12300	33500	33300	29000	9280
27	35700	39000	39000	34400	39000	41000	40900	16800	32600	31300	29300	13200
28	37700	38900	38900	39600	39800	40900	40800	12600	31800	31700	29500	22000
29	36800	38700	38500	38000	---	40800	40500	25900	33700	31900	29700	29200
30	37100	38800	38900	39400	---	41200	40400	12000	33500	34700	29800	37700
31	37500	---	39100	37000	---	39500	---	22300	---	23600	28900	---
MEAN	34800	38200	39100	38900	38600	39600	39300	25300	21400	28900	27200	27400

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	10.0	12.0	3.0	4.0	6.0	21.0	26.0	25.0	30.0	30.0	29.0
2	18.0	10.0	13.0	6.0	8.0	5.0	25.0	11.0	22.0	30.0	30.0	29.0
3	22.0	20.0	12.0	8.0	12.0	3.0	24.0	11.0	26.0	29.0	26.0	25.0
4	20.0	13.0	12.0	10.0	10.0	10.0	22.0	21.0	25.0	25.0	21.0	29.0
5	18.0	22.0	11.0	16.0	7.0	14.0	16.0	20.0	26.0	25.0	26.0	28.0
6	25.0	22.0	6.0	5.0	5.0	14.0	16.0	23.0	26.0	28.0	34.0	26.0
7	20.0	17.0	10.0	11.0	.0	5.0	16.0	---	---	29.0	32.0	25.0
8	23.0	18.0	8.0	---	.0	14.0	22.0	22.0	28.0	---	25.0	23.0
9	17.0	13.0	2.0	---	.0	18.0	21.0	26.0	32.0	32.0	29.0	27.0
10	15.0	14.0	2.0	---	1.0	18.0	15.0	21.0	25.0	30.0	35.0	27.0
11	12.0	16.0	7.0	---	4.0	16.0	18.0	28.0	32.0	27.0	31.0	30.0
12	20.0	18.0	---	---	5.0	15.0	21.0	20.0	27.0	30.0	27.0	28.0
13	21.0	20.0	---	---	10.0	17.0	20.0	23.0	26.0	32.0	32.0	29.0
14	23.0	16.0	---	8.0	---	22.0	22.0	24.0	27.0	34.0	31.0	26.0
15	17.0	21.0	---	8.0	6.0	10.0	25.0	27.0	24.0	30.0	27.0	27.0
16	18.0	12.0	---	6.0	7.0	14.0	24.0	27.0	30.0	26.0	30.0	30.0
17	17.0	10.0	---	7.0	---	18.0	22.0	23.0	26.0	25.0	29.0	30.0
18	18.0	24.0	---	3.0	---	18.0	25.0	32.0	26.0	---	29.0	30.0
19	23.0	25.0	---	3.0	1.0	17.0	26.0	20.0	27.0	---	22.0	30.0
20	23.0	10.0	---	2.0	5.0	19.0	27.0	23.0	29.0	---	30.0	16.0
21	22.0	8.0	3.0	4.0	13.0	20.0	---	26.0	30.0	---	29.0	18.0
22	22.0	13.0	11.0	5.0	15.0	22.0	19.0	26.0	28.0	---	30.0	18.0
23	21.0	15.0	15.0	6.0	11.0	11.0	23.0	---	28.0	30.0	29.0	26.0
24	27.0	12.0	14.0	7.0	19.0	21.0	21.0	29.0	32.0	30.0	28.0	23.0
25	21.0	17.0	9.0	7.0	14.0	13.0	24.0	29.0	29.0	32.0	34.0	23.0
26	19.0	15.0	9.0	7.0	---	25.0	24.0	27.0	26.0	32.0	29.0	22.0
27	19.0	12.0	5.0	4.0	16.0	27.0	27.0	27.0	26.0	26.0	23.0	24.0
28	20.0	12.0	5.0	8.0	12.0	18.0	25.0	24.0	25.0	32.0	27.0	28.0
29	18.0	13.0	---	3.0	---	17.0	25.0	28.0	27.0	26.0	26.0	22.0
30	20.0	12.0	9.0	3.0	---	22.0	---	26.0	27.0	28.0	24.0	25.0
31	20.0	---	10.0	3.0	---	21.0	---	23.0	---	37.0	27.0	---
MEAN	20.0	15.5	9.0	6.0	7.5	16.0	22.0	24.0	27.0	29.5	28.5	26.0

LOCATION.--Lat 34°05'45", long 99°46'40", Hardeman County, Hydroglogic Unit 11130101, above mouth of Canal Creek and about 9 mi (14 km) northwest of Crowell.

PERIOD OF RECORD.--Chemical analyses: January to September 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible][illegible]

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RED RIVER BASIN

07307950 CANAL CREEK NEAR CROWELL, TX
(Low-flow partial-record station)

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data April 1968 to June 1970, December 1977 to September 1978.

REMARKS.--No flow at time of observation.

RED RIVER BASIN

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07308200 PEASE RIVER NEAR VERNON, TX

LOCATION.--Lat 34°10'44", long 99°16'40", Wilbarger County, Hydrologic Unit 11130105, near left bank on downstream side of bridge on U.S. Highway 283, 1.9 mi (3.1 km) north of Vernon, and 10 mi (16 km) upstream from mouth.

DRAINAGE AREA.--3,488 mi² (9,034 km²), of which 559 mi² (1,448 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,166.03 ft (355.406 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Four small diversions for irrigation above station.

AVERAGE DISCHARGE.--18 years (water years 1961-78), 104 ft³/s (2.945 m³/s), 75,350 acre-ft/yr (92.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,000 ft³/s (878 m³/s) Sept. 19, 1965, gage height, 18.50 ft (5.639 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 24 ft (7.3 m) in 1891. The flood in September 1936 reached a stage of 23.5 ft (7.16 m), and the flood of June 2, 1957, reached a stage of 2.0 ft (6.71 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 5	2015	5,110 145	11.66 3.554	Sept. 21	1330	*6,470 183	12.39 3.776

Minimum discharge, no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.13	.04	3.5	8.3	2.9	.02	46	13	.00	.01
2	.00	.00	.28	.10	3.4	8.7	3.0	44	135	12	.00	.00
3	.00	.00	.50	.20	3.7	7.4	3.3	325	419	10	.00	.00
4	.00	.00	.38	.22	3.7	7.3	6.5	125	530	16	5.7	.00
5	.00	.00	.25	.09	4.1	7.3	3.3	117	2190	12	5.7	.00
6	.00	.00	.11	.10	4.2	7.5	1.8	99	1990	8.9	1.3	.00
7	.00	.00	.28	.07	4.2	9.3	1.1	80	1140	4.5	.11	.00
8	.00	2.6	.24	.02	4.1	8.5	.73	62	741	20	.00	.00
9	.00	.87	.06	.02	5.5	7.8	1.2	51	447	30	.00	.00
10	.00	3.0	.23	.05	8.2	6.4	4.2	68	268	18	.00	.00
11	.00	2.3	.69	.05	8.5	5.0	3.7	83	186	9.8	.00	.00
12	.00	2.0	.99	.05	20	4.4	1.9	59	136	3.1	.00	.00
13	.00	.50	.51	.20	23	3.7	.88	45	117	1.2	.00	.00
14	.00	.36	.30	.25	19	2.7	.41	35	136	.59	.00	.00
15	.00	.25	.43	.49	17	2.2	.20	26	89	.28	.00	.00
16	.00	.10	.57	1.1	18	2.4	.30	19	61	.00	.00	.00
17	.00	.03	.27	.40	15	2.9	.41	18	58	.00	.00	5.0
18	.00	.01	.32	.20	9.9	2.8	.06	14	93	.00	.00	452
19	.00	.01	.19	.10	13	2.3	.02	18	61	.00	125	114
20	.00	.00	.05	.10	18	2.2	.06	156	47	.00	152	24
21	.00	.00	.05	.10	19	1.8	.07	842	36	.00	37	3200
22	.00	.01	.07	.10	17	1.8	.05	348	31	.23	21	1080
23	.00	.02	.08	.25	15	2.3	.07	158	26	52	5.5	319
24	19	.02	.13	.36	13	2.1	.11	97	23	26	.62	112
25	19	.08	.07	.36	11	2.5	.06	68	20	13	.06	129
26	15	.08	.10	.87	9.3	2.2	.05	79	17	3.3	.00	992
27	8.9	.10	.08	.87	8.5	2.0	.03	90	16	.23	.00	426
28	4.6	.06	.09	1.4	8.3	2.3	.04	266	15	.00	73	202
29	3.3	.06	.19	1.4	---	2.5	.05	120	14	.00	51	112
30	.03	.11	.26	2.0	---	2.9	.04	72	12	.00	3.8	68
31	.00	---	.25	3.7	---	3.0	---	63	---	.00	.37	---
TOTAL	69.83	12.57	8.15	15.26	307.1	134.5	36.54	3647.02	9100	254.13	482.16	7235.01
MEAN	2.25	.42	.26	.49	11.0	4.34	1.22	118	303	8.20	15.6	241
MAX	19	3.0	.99	3.7	23	9.3	6.5	842	2190	52	152	3200
MIN	.00	.00	.05	.02	3.4	1.8	.02	.02	12	.00	.00	.00
AC-FT	139	25	16	30	609	267	72	7230	18050	504	956	14350
CAL YR 1977	TOTAL	35041.41	MEAN	96.0	MAX	2660	MIN	.00	AC-FT	69500		
WTR YR 1978	TOTAL	21302.27	MEAN	58.4	MAX	3200	MIN	.00	AC-FT	42250		

RED RIVER BASIN

07308200 PEASE RIVER NEAR VERNON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 08...	1630	2.6	7850	7.6	17.0	1500	1400	410	120	1200
JAN 31...	1755	3.7	11500	7.6	20.0	2000	1900	570	150	1900
MAR 13...	0840	4.3	14500	7.7	7.5	2400	2300	710	160	2600
APR 26...	1105	.12	9710	--	18.5	1900	1600	480	160	1800
MAY 03...	1610	311	1970	--	10.5	540	440	170	29	210
AUG 30...	0835	3.7	1030	--	20.0	250	180	77	14	110
SEP 27...	1600	220	1980	--	25.0	460	390	150	20	240

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
NOV 08...	13	9.0	180	0	1300	1900	--	11	5040
JAN 31...	18	9.4	180	0	1500	3200	--	6.9	7430
MAR 13...	23	11	160	0	1800	4400	--	4.3	9760
APR 26...	18	12	280	0	1800	2500	--	12	6900
MAY 03...	3.9	7.1	130	0	470	300	.4	7.2	1260
AUG 30...	3.0	6.6	90	0	200	160	.4	9.2	622
SEP 27...	4.9	7.2	84	0	360	400	.2	9.2	1230

RED RIVER BASIN

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07308500 RED RIVER NEAR BURKBURNETT, TX
(National stream-quality accounting network)

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., Hydrologic Unit 11130102, on left bank at downstream side of bridge on U.S. Highways 277 and 281, 2.5 mi (4.0 km) northeast of Burkburnett, and at mile 933 (1,501 km).

DRAINAGE AREA.--20,570 mi² (53,280 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to August 1925 (monthly discharge only), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft (290.343 m) National Geodetic Vertical Datum of 1929. July 11, 1924, to Aug. 31, 1925, nonrecording gage at site 1,000 ft (305 m) downstream at same datum. Dec. 16, 1959, to Jan. 11, 1960, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--18 years (water years 1961-78), 884 ft³/s (25.03 m³/s), 640,500 acre-ft/yr (790 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,800 ft³/s (1,780 m³/s) Oct. 19, 1965, gage height, 11.46 ft (3.493 m); maximum gage height, 12.64 ft (3.853 m) July 27, 1975; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1957, reached a stage of 13.54 ft (4.127 m), from levels to floodmarks. According to local residents, higher stages occurred in 1891 and June 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 22	1200	9,920	281	May 31	0030	*44,700	1,270
May 30	2000	39,800	1,130	June 8	1530	26,500	750
			8.49				11.10
			2.588				3.383
			*11.14				10.65
			3.395				3.246

Minimum discharge, 39 ft³/s (1.10 m³/s) Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	149	146	125	232	307	175	87	29700	360	161	413
2	106	141	162	126	224	289	179	108	17700	352	155	272
3	106	149	162	129	215	258	169	274	7090	363	164	245
4	111	160	158	136	205	251	169	2000	9400	357	209	221
5	109	168	154	158	204	244	169	1370	6540	367	269	195
6	103	185	143	181	189	236	175	1120	17000	345	308	179
7	98	186	136	167	186	380	172	930	23300	312	288	165
8	87	244	139	122	179	450	169	760	24600	287	257	147
9	85	213	122	100	171	298	148	775	16000	274	218	139
10	85	195	136	90	205	246	130	582	5320	268	190	132
11	69	204	129	90	192	232	133	461	5110	264	203	129
12	64	195	132	100	239	216	296	403	4360	253	201	125
13	65	190	139	150	281	208	330	335	3920	243	277	123
14	59	182	174	200	295	187	279	281	3670	234	282	119
15	52	178	169	222	315	190	265	231	4490	232	200	108
16	54	162	178	119	331	190	233	187	4040	224	1130	103
17	44	158	199	110	347	190	223	166	3200	219	465	95
18	42	154	178	100	337	182	202	158	2790	218	229	86
19	49	154	174	100	338	179	155	151	1970	203	227	98
20	58	146	169	130	431	193	128	246	1740	208	370	398
21	59	146	150	170	403	199	118	487	1580	201	717	245
22	69	178	143	213	401	199	114	7380	1230	193	933	3010
23	135	174	138	199	376	201	111	4540	1030	224	496	2510
24	183	158	136	195	380	195	106	2990	844	242	302	1780
25	317	154	127	195	329	201	98	2050	808	261	229	1580
26	421	154	128	195	315	200	95	1640	641	251	192	1200
27	450	146	132	199	308	199	91	1620	562	219	168	2260
28	304	139	130	199	345	201	97	2200	485	205	150	1810
29	240	139	135	208	---	196	111	17700	451	203	150	1810
30	199	146	139	213	---	198	93	34400	394	197	248	1430
31	172	---	142	222	---	195	---	37000	---	185	803	---
TOTAL	4099	5047	4599	4863	7973	7110	4933	122632	199965	7964	10191	21127
MEAN	132	168	148	157	285	229	164	3956	6666	257	329	704
MAX	450	244	199	222	431	450	330	37000	29700	367	1130	3010
MIN	42	139	122	90	171	179	91	87	394	185	150	86
AC-FT	8130	10010	9120	9650	15810	14100	9780	243200	396600	15800	20210	41910
CAL YR 1977	TOTAL	614993	MEAN	1685	MAX	34400	MIN	42	AC-FT	1220000		
WTR YR 1978	TOTAL	400503	MEAN	1097	MAX	37000	MIN	42	AC-FT	794400		

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to September 1974. Chemical, biochemical, and pesticide analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to current year.

WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 17,400 micromhos July 30, 1972; minimum daily, 889 micromhos Sept. 24, 1970.

WATER TEMPERATURES (1968-77): Maximum daily, 35.0°C July 10, 1969; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,800 micromhos Feb. 27; minimum daily, 1,400 micromhos Sept. 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
OCT 19...	1455	57	8290	8.2	22.5	25	9.2	112	5.1	30	9	
NOV 03...	0900	139	7190	8.0	10.5	55	10.2	96	5.4	3700	240	
DEC 14...	1200	174	8200	8.2	8.5	10	12.3	112	1.2	45	45	
JAN 12...	0920	100	9590	7.9	.5	6	13.9	103	1.2	92	76	
FEB 28...	1040	363	11000	8.2	10.0	10	11.4	109	.9	24	16	
MAR 09...	1010	296	7990	8.1	4.5	85	12.4	102	4.2	460	90	
APR 11...	1420	136	9250	8.2	21.0	15	10.6	126	8.7	980	2	
MAY 09...	1145	797	8880	8.3	20.5	340	8.5	100	5.2	100000	130	
JUN 06...	1235	19200	3450	7.6	23.0	3200	7.3	88	5.5	750000	44000	
JUL 11...	1045	268	8020	7.8	28.5	35	7.4	99	2.7	K770000	1200	
AUG 15...	1310	195	4800	8.1	29.5	15	7.8	105	6.2	960000	7	
SEP 12...	1100	126	6610	8.0	26.0	25	7.8	100	3.5	--	140	
DATE		STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 19...	5100	1400	1300	350	130	1300	15	9.9	150	0	1100	
NOV 03...	560	1400	1300	370	110	870	10	10	150	0	780	
DEC 14...	32	1500	1300	390	130	1300	15	10	240	0	1300	
JAN 12...	320	1800	1600	440	160	1400	15	10	250	0	1300	
FEB 28...	20	1700	1500	450	130	1900	20	12	200	0	1400	
MAR 09...	1600	1400	1300	370	120	1300	15	9.9	200	0	1000	
APR 11...	300	1600	1500	400	150	1500	16	12	160	0	1300	
MAY 09...	900	1300	1200	370	98	1600	19	14	130	0	1100	
JUN 06...	28000	690	600	210	41	470	7.8	9.0	110	0	550	
JUL 11...	460	1400	1300	370	120	1400	16	13	150	0	1200	
AUG 15...	10	980	910	240	92	720	10	12	88	0	870	
SEP 12...	K48	1200	1100	320	100	1000	13	11	130	0	1000	

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	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)	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)
OCT 19...	2000	.4	6.8	5410	4970	.00	.01	.01	.08	.32
NOV 03...	1600	.4	7.0	4620	3820	.00	.01	.00	.04	.56
DEC 14...	2000	.4	5.8	5290	5250	.91	.03	.94	.23	.37
JAN 12...	2400	.4	4.1	6410	5840	.63	.05	.68	.09	.61
FEB 28...	2900	.5	5.8	7190	6900	.19	.02	.21	.02	.68
MAR 09...	2100	.5	5.6	5130	5000	.30	.03	.33	.03	.77
APR 11...	2400	.4	21	5940	5860	.02	.01	.03	.01	1.2
MAY 09...	2400	.5	7.0	5540	5650	.34	.06	.40	.18	1.5
JUN 06...	690	.5	7.5	2090	2030	.50	.01	.51	.03	2.3
JUL 11...	2100	.5	13	5140	5290	.00	.01	.01	.00	.73
AUG 15...	1100	.4	6.6	--	3080	.01	.01	.02	.31	.79
SEP 12...	1600	.5	9.9	4350	4110	.02	.00	.02	.00	1.3

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (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)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 19...	.40	.37	.07	.01	8.4	--	--	19	2.9	99
NOV 03...	.60	.18	.11	.01	6.4	--	--	141	53	64
DEC 14...	.60	.55	.09	.05	5.5	--	--	102	48	65
JAN 12...	.70	.56	.06	.03	4.3	--	--	22	5.9	76
FEB 28...	.70	.49	.13	.08	--	5.1	.8	--	--	--
MAR 09...	.80	.53	.17	.13	7.5	--	--	319	255	63
APR 11...	1.2	.75	.14	.01	11	--	--	103	38	21
MAY 09...	1.7	.22	.40	.03	18	--	--	1050	2260	68
JUN 06...	2.3	.62	.98	.02	58	--	--	7530	390000	75
JUL 11...	.73	.50	.04	.01	--	5.1	.8	128	93	61
AUG 15...	1.1	.89	.08	.01	9.0	--	--	46	24	87
SEP 12...	1.3	.52	.08	.01	--	4.5	4.5	59	20	81

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 19...	1455	3	1	2	400	200	200	10	10	0
FEB 28...	1040	3	0	3	300	0	300	0	0	1
JUL 11...	1045	3	0	3	200	200	0	2	1	1
SEP 12...	1100	4	1	3	100	0	100	0	0	0

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE D RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE D RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE D RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	
OCT 19...	15	0	20	50	50	0	<10	<7	3	880	
FEB 28...	20	10	10	1	1	0	2	1	1	530	
JUL 11...	10	0	10	1	0	1	17	15	2	480	
SFP 12...	10	10	0	0	0	0	5	0	5	600	
	IRON, SUS- PENDE D RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE D RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE D RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE D RECOV- ERABLE (UG/L AS HG)	
OCT 19...	--	10	<100	<100	0	60	40	20	.0	.0	
FEB 28...	--	20	6	4	2	40	10	30	.0	.0	
JUL 11...	470	10	13	10	3	60	50	10	.1	.1	
SFP 12...	590	10	6	6	0	70	50	20	.2	.0	
	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE D TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE D RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE D RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	
OCT 19...	.0	3	1	2	10	10	0	8	0	10	
FEB 28...	.0	4	0	5	0	0	0	20	0	30	
JUL 11...	.0	2	0	2	1	1	0	70	40	30	
SFP 12...	.2	2	0	2	0	0	0	10	0	20	
	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ATRA- ZINE, TOTAL (UG/L)	ATRA- ZINE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	
NOV 03...	0900	ND	ND	--	ND	ND	--	ND	ND	ND	
FEB 28...	1040	ND	--	--	ND	--	ND	--	ND	ND	
APR 11...	1420	.0	--	.00	.00	--	--	--	.0	.00	
MAY 09...	1145	ND	ND	--	ND	ND	--	--	ND	ND	
JUL 11...	1045	.0	--	.00	.00	--	--	--	.0	.00	
AUG 15...	1310	ND	--	--	ND	--	ND	--	ND	ND	
	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)
NOV 03...	ND	ND	.3	ND	ND	ND	ND	ND	ND	--	ND
FEB 28...	--	ND	--	ND	--	ND	--	ND	--	--	ND
APR 11...	--	.00	--	.00	--	.00	--	.00	--	.00	.00
MAY 09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND
JUL 11...	--	.00	--	.00	--	.00	--	.00	--	.00	.00
AUG 15...	--	ND	--	ND	--	ND	--	ND	--	--	ND

RED RIVER BASIN

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 28...	--	ND	--	ND	--	ND	--	ND	--	ND	--
APR 11...	--	.00	--	.00	--	.00	--	.00	--	.00	--
MAY 09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUL 11...	--	.00	--	.00	--	.00	--	.00	--	.00	--
AUG 15...	--	ND	--	ND	--	ND	--	ND	--	ND	--
	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI- THION, TOTAL (UG/L)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)	SIMA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)
NOV 03...	ND	ND	ND	ND	ND	ND	--	ND	ND	--	ND
FEB 28...	ND	--	ND	--	ND	--	--	ND	--	ND	--
APR 11...	--	--	.01	--	.00	--	--	.02	--	--	--
MAY 09...	ND	ND	ND	ND	ND	ND	--	ND	ND	--	--
JUL 11...	--	--	.00	--	.00	--	.00	.00	--	--	--
AUG 15...	ND	--	ND	--	ND	--	--	ND	--	ND	--
	TOX- APHENE, TOTAL (UG/L)	TOX- APHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TRI- THION, TOTAL (UG/L)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4,5-T TOTAL (UG/L)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SILVEX, TOTAL (UG/L)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	
NOV 03...	ND	ND	ND	ND	--	ND	--	ND	--	ND	
FEB 28...	ND	--	ND	--	ND	--	ND	--	ND	--	
APR 11...	0	--	.00	--	.07	--	.00	--	.00	--	
MAY 09...	ND	ND	ND	ND	--	--	--	--	--	--	
JUL 11...	0	--	.00	--	.00	--	.00	--	.00	--	
AUG 15...	ND	--	ND	--	--	--	--	--	--	--	

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 3.77 0900	MAR 9.78 1010	MAY 9.78 1145	JUN 6.78 1235
TOTAL CELLS/ML	20000	3300	19000	120
DIVERSITY: DIVISION	1.0	1.1	0.7	0.5
..CLASS	1.0	1.1	0.7	0.5
..ORDER	1.8	1.7	1.3	1.1
...FAMILY	2.3	2.0	1.7	1.1
....GENUS	2.7	2.0	2.0	1.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....MICRACTINIACEAE								
.....GOLENKINIA	--	-	--	-	--	-	--	-
.....MICRACTINIUM	--	-	110	3	--	-	--	-
....OOCYSTACEAE								
.....ANKISTRODESMUS	1500	8	29	1	--	-	15	13
....CHODATELLA	930	5	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	110	3	--	-	--	-
....FRANCEIA	310	2	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	* 0		830	5	--	-
....SELENASTRUM	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	230	1	--	-
....CRUCIGENIA	1200	6	--	-	--	-	--	-
....SCENEDESMUS	2500	12	--	-	13000#	68	--	-
....TETRASTRUM	--	-	--	-	610	3	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	530	3	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	1200	6	1500#	46	830	5	--	-
...POLYBLEPHARIDACEAE								
....SPERMATOZOOPSIS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
....CHAETOCERACEAE								
.....CHAETOCEROS	--	-	--	-	--	-	--	-
...COSCINODISCACEAE								
....CYCLOTELLA	8300#	42	200	6	830	5	--	-
....MELOSIRA	--	-	--	-	--	-	90#	75
..PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	* 0		--	-

RED RIVER BASIN

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 3,77 0900	MAR 9,78 1010	MAY 9,78 1145	JUN 6,78 1235
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
...FRAGILARIACEAE				
....SYNEDRA	--	-	--	-
...NAVICULACEAE				15 13
....GYROSIGMA	310	2	--	-
....NAVICULA	930	5	1100#	33
...NITZSCHIA	2800	14	170	5
...NITZSCHIA			680	4
...SURIPELLACEAE				
...SURIPELLA	--	-	--	-
...XANTHOPHYCEAE				
...HETEROCOCCALES				
...CENTRITRACTACEAE				
...CENTRITRACTUS	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)				
..CRYPTOPHYCEAE				
...CRYPTOMONIDAE				
...CRYPTOMONODACEAE				
....CRYPTOMONAS	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...CHROCOCCALES				
...CHROCOCCACEAE				
....AGMENELLUM	--	-	--	-
....ANACYSTIS	--	-	230	1
...HORMOGONALES				
...NOSTOCACEAE				
....ANABAENA	--	-	--	-
...OSCILLATORIA				
....LYNGBYA	--	-	--	-
...OSCILLATORIA	--	-	* 0	--
EUGLENOPHYTA (EUGLENOIDS)				
..EUGLENOPHYCEAE				
...EUGLENALES				
...EUGLENACEAE				
....EUGLENA	--	-	86	3
....TRACHELOMONAS	--	-	* 0	--
PYRRHOPHYTA (FIRE ALGAE)				
..DINOPHYCEAE				
...PERIDINIALES				
...GLENODINIACEAE				
....GLENODINIUM	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	JUL 11,78 1045	AUG 15,78 1310	SEP 12,78 1100			
TOTAL CELLS/ML	200000	270000	210000			
DIVERSITY: DIVISION	0.7	1.0	0.5			
..CLASS	0.7	1.0	0.5			
..ORDER	1.4	1.8	1.0			
...FAMILY	1.5	2.3	1.2			
....GENUS	1.6	2.8	1.5			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....MICRACTINIACEAE						
.....GOLENKINIA	--	-	* 0	--	--	-
....MICRACTINIUM	--	-	* 0	--	--	-
...OOCYSTACEAE						
.....ANKISTRODESMUS	4400	2	1400	1	2100	1
.....CHODATELLA	* 0		* 0		* 0	
.....DICTYOSPHAERIUM	8200	4	7500	3	3400	2
.....FRANCEIA	--	-	--	-	* 0	
.....KIRCHNERIELLA	--	-	1900	1	--	-
.....OOCYSTIS	1600	1	6100	2	* 0	
.....SELENASTRUM	--	-	* 0	--	--	-
.....TREUBARIA	--	-	--	-	* 0	
...SCENEDESMACEAE						
.....ACTINASTRUM	2300	1	--	-	3300	2
.....CRUCIGENIA	--	-	13000	5	--	-
.....SCENEDESMUS	2100	1	18000	7	* 0	
.....TETRASTRUM	--	-	--	-	1500	1
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	2100	1	1900	1	--	-
...POLYBLEPHARIDACEAE						
....SPERMATOZOOPSIS	--	-	* 0	--	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
....CHAETOCERACEAE						
.....CHAETOCEROS	--	-	--	-	* 0	
...COSCINODISCACEAE						
....CYCLOTELLA	1900	1	12000	5	2900	1
....MELOSIRA	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	* 0		--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-

RED RIVER BASIN

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	JUL 11,78 1045	AUG 15,78 1310	SEP 12,78 1100			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
...FRAGILARIACEAE						
...SYNEDRA	--	-	--	-	--	-
...NAVICULACEAE						
...GYROSIGMA	--	-	--	-	--	-
...NAVICULA	--	-	--	-	--	-
...NITZSCHIA	2100	1	3300	1	--	-
...NITZSCHIA						
...SURIPELLACEAE						
...SURIPELLA	--	-	--	-	--	-
...XANTHOPHYCEAE						
...HETEROCOCCALES						
...CENTRITRACTACEAE						
...CENTRITRACTUS	--	-	--	-	*	0
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
..CRYPTOMONIDALES						
..CRYPTOMONODACEAE						
....CRYPTOMONAS	*	0	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
..CHROCOCCALES						
..CHROCOCCACEAE						
....AGMENELLUM	--	-	3700	1	--	-
....ANACYSTIS	38000#	19	64000#	24	31000	15
..HORMOGONALES						
..NOSTOCACEAE						
....ANABAENA	--	-	14000	5	3800	2
..OSCILLATORIACEAE						
....LYNGBYA	--	-	13000	5	4600	2
....OSCILLATORIA	130000#	68	100000#	39	160000#	74
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
..EUGLENALES						
..EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
..PERIDINIALES						
..GLENODINIACEAE						
....GLENODINIUM	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	4099	6520	3980	44100	1560	17200	940	10400	1180
NOV. 1977.....	5047	8030	4930	67200	1990	27100	1100	15000	1430
DEC. 1977.....	4599	8190	5030	62500	2040	25300	1110	13800	1460
JAN. 1978.....	4863	7870	4830	63400	1950	25500	1080	14200	1410
FEB. 1978.....	7973	9080	5590	120000	2300	49500	1210	26000	1540
MAR. 1978.....	7110	8790	5410	104000	2210	42500	1180	22600	1520
APR. 1978.....	4933	8400	5160	68700	2100	28000	1140	15100	1500
MAY 1978.....	122632	3370	2000	661000	640	211000	580	192000	650
JUNE 1978.....	199965	2910	1720	930000	580	311000	460	249000	580
JULY 1978.....	7964	7020	4290	92300	1700	36500	990	21300	1260
AUG. 1978.....	10191	4410	2450	73000	950	26300	690	19000	830
SEPT 1978.....	21127	3290	1940	112000	680	38600	520	29600	640
TOTAL	400503	**	**	2400000	**	838000	**	628000	**
WTD.AVG.	1097.27	3710	2200	**	780	**	580	**	710

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C.), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7330	5750	8210	7980	8250	9670	8220	9080	2250	7820	5780	3110
2	7690	6870	8240	7240	8280	9440	8190	8840	3010	7700	5800	3970
3	7920	7380	8260	6560	8300	9570	8370	7840	3890	7730	6050	4840
4	8270	7740	8220	6890	8330	9290	8730	3250	3000	7640	5950	5290
5	8210	7950	8200	7050	8370	9360	9110	3100	3500	7490	5800	6400
6	8140	7920	8270	4030	8400	9230	9080	3500	2500	7220	5650	6230
7	8030	8090	8210	3550	8440	8190	9200	4250	1750	7580	5800	6100
8	7960	7850	8140	8960	8480	7510	9110	5030	1600	7640	5850	5950
9	7890	7600	8640	9070	8370	8280	9190	5000	2000	7880	5900	5860
10	7860	7690	8700	9300	5560	8500	9200	6710	2520	7700	6200	6080
11	8050	7860	8600	9540	7500	8420	9190	7670	3320	7880	6340	6350
12	8170	8000	8530	9220	4500	8500	8500	8710	3950	7640	6360	6600
13	8270	8120	8420	8730	6890	8820	6790	8880	4630	7430	5900	7110
14	8290	8250	6560	8000	7500	8900	5660	9060	5200	7040	5500	7120
15	8310	8380	7510	7630	8040	8980	7340	9230	3660	7000	5750	6860
16	8250	8500	8790	7920	8590	9020	8440	9520	4160	6850	2130	7000
17	8240	8640	8470	8240	9160	9020	8360	9630	5000	6680	3360	7120
18	8370	8770	8160	8650	9500	8980	8860	9670	5510	6720	5480	7320
19	8340	8770	7800	9100	9950	9020	8620	9580	6100	6800	6450	7480
20	8320	8440	8320	9540	10500	8980	8200	8630	6350	6720	6080	2600
21	8310	8520	8640	9200	10300	9180	9150	6660	6400	6790	3500	2710
22	8340	8300	8510	7540	10100	9130	9620	3020	6580	6830	2500	1400
23	7470	8120	8060	7650	10400	9040	9670	2900	6880	6500	2950	1750
24	6760	8180	8640	7920	10600	8670	9320	2530	7260	6330	3700	2200
25	5910	8200	8120	8070	10500	8440	9010	3710	7450	6200	4830	3350
26	5770	8200	8090	8200	10700	8500	8870	4460	7500	6070	5380	4250
27	5240	8220	7950	8310	10800	8630	8730	5000	7600	5680	5660	3000
28	4750	8250	7910	8240	10400	8700	8590	4700	7720	5590	5950	3220
29	4200	8200	7960	8280	---	8780	8220	3500	7750	5690	6320	3700
30	4500	8180	8140	8340	---	8740	8760	3000	7840	5600	5930	5760
31	5500	---	8020	8370	---	8450	---	2990	---	5400	2800	---
MEAN	7380	8030	8200	7980	8810	8840	8610	6120	4900	6900	5210	5020

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	---	---	.0	---	---	---	---	24.0	29.0	---	---
2	17.0	9.0	---	---	---	8.0	---	---	---	---	---	---
3	15.0	15.0	11.0	3.0	---	.0	---	---	---	33.0	24.0	---
4	17.0	20.0	---	8.0	---	---	---	---	25.0	31.0	21.0	---
5	---	21.0	---	11.0	---	---	---	---	23.0	31.0	---	---
6	---	15.0	---	---	---	---	---	---	22.0	31.0	---	---
7	---	14.0	---	11.0	---	---	---	---	24.0	29.0	---	28.5
8	---	---	---	3.0	.0	---	18.0	---	23.0	31.0	---	24.0
9	18.0	10.0	---	---	.0	12.0	22.0	---	24.0	31.0	---	24.5
10	17.0	13.0	---	---	.0	---	15.0	---	23.0	28.0	29.0	27.5
11	17.0	15.0	---	---	---	---	20.0	---	24.0	30.0	28.0	28.0
12	14.0	---	---	---	3.0	---	12.0	---	26.0	31.0	29.0	27.0
13	10.0	---	---	3.0	4.0	---	---	---	26.0	30.0	29.0	30.0
14	---	---	4.0	---	---	---	---	---	27.0	32.0	30.0	28.5
15	11.0	---	---	3.0	---	12.0	---	---	27.0	---	31.0	31.5
16	17.0	---	12.0	4.0	---	15.0	---	---	27.0	---	30.0	28.0
17	26.0	---	---	.0	.0	18.0	---	24.0	27.0	30.0	27.0	29.5
18	---	15.0	---	---	---	---	---	25.5	26.0	27.0	30.0	27.5
19	---	---	---	---	---	---	---	25.5	---	30.0	30.0	29.0
20	---	18.0	---	.0	4.0	---	---	22.0	27.0	30.0	30.0	27.0
21	18.0	---	---	---	---	20.0	21.0	22.0	28.0	30.0	---	18.5
22	18.0	---	---	---	1.0	---	22.0	24.0	27.0	30.0	26.0	24.0
23	18.0	---	4.0	---	4.0	---	23.0	23.0	28.0	29.0	26.0	26.0
24	16.0	---	12.0	1.0	---	---	---	24.0	28.0	30.0	---	24.0
25	17.0	---	---	---	10.0	---	---	24.0	28.0	30.0	---	22.5
26	18.0	---	---	---	---	---	---	22.0	29.0	31.0	---	24.5
27	---	---	---	4.0	---	15.0	---	24.0	29.0	29.0	---	25.0
28	---	8.0	---	5.0	---	21.0	---	21.0	30.0	29.0	---	25.0
29	21.0	---	---	---	---	21.0	---	21.0	29.0	28.0	---	25.0
30	22.0	8.0	---	---	---	21.0	---	22.0	29.0	27.0	---	23.0
31	---	---	3.0	2.0	---	---	---	25.0	---	27.0	---	---
MEAN	17.5	14.0	7.5	4.0	2.5	15.0	19.0	23.5	26.5	30.0	28.0	26.0

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

LOCATION.--Lat 33°57'02", long 100°03'52", Cottle County, Hydrologic Unit 11130204, near center of stream on downstream side of county bridge, 4 mi (6 km) downstream from Cottonwood Creek, 7 mi (11 km) downstream from Salt Creek, 10 mi (16 km) upstream from Middle Fork, 14 mi (23 km) southeast of Paducah, and 211.3 mi (340.0 km) upstream from mouth.

DRAINAGE AREA.--540 mi² (1,399 km²).

PERIOD OF RECORD.--1951-54 (occasional low-flow measurements), July 1961 to current year.

Water-quality records: Chemical analyses: October 1967 to September 1976. Water temperatures: October 1967 to September 1976.

GAGE.--Water-stage recorder. Altitude of gage is 1,530 ft (466 m), from topographic map.

REMARKS.--Records good. One small diversion for irrigation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1962-78), 19.9 ft³/s (0.564 m³/s), 0.50 in/yr (13 mm/yr), 14,420 acre-ft/yr (17.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,920 ft³/s (281 m³/s) Aug. 25, 1966, gage height, 15.3 ft (4.66 m), from flood-mark; minimum, 0.3 ft³/s (0.008 m³/s) Sept. 1-4, 1964, gage height, 4.35 ft (1.326 m); minimum gage height, 2.50 ft (0.762 m) Aug. 28, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, 29.5 ft (8.99 m) in October 1955; flood in May or June 1956 reached a stage of 27 ft (8.2 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s (11.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 7	1900	417 11.8	5.26 1.603	Sept. 21	1200	*2,120 60.0	8.51 2.594

Minimum discharge, 6.2 ft³/s (0.18 m³/s) Aug. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	13	13	14	13	13	11	13	9.5	7.5	9.0
2	11	12	13	12	13	13	13	23	120	9.5	7.2	8.9
3	11	12	13	12	13	13	13	58	157	12	9.2	9.1
4	12	12	13	13	13	14	13	20	32	9.9	11	10
5	12	12	13	14	13	14	12	17	121	9.9	8.5	11
6	11	12	13	13	13	14	12	15	15	9.2	8.1	9.2
7	11	14	13	13	12	13	13	14	255	8.8	8.1	9.0
8	11	15	13	13	11	14	13	13	93	8.5	7.8	12
9	11	13	13	12	10	14	13	13	31	8.1	7.5	11
10	12	14	13	11	10	14	13	13	20	8.1	11	10
11	11	14	14	11	11	13	13	13	17	8.1	14	9.9
12	12	14	14	11	12	14	13	12	14	8.1	18	9.8
13	13	14	12	12	13	13	13	12	13	8.1	8.5	9.4
14	12	15	12	13	14	13	13	12	13	8.1	7.8	9.4
15	12	14	13	13	14	13	13	11	35	7.8	7.5	9.4
16	12	13	12	13	13	13	12	11	17	7.5	7.8	9.4
17	13	13	12	13	12	13	11	12	12	7.8	7.5	17
18	13	13	13	11	12	13	11	14	11	7.8	7.2	24
19	12	14	12	10	13	12	11	22	11	7.5	8.5	11
20	12	13	12	10	14	11	11	145	11	7.5	8.5	67
21	12	13	13	10	13	11	12	108	11	7.5	8.1	1080
22	13	14	13	11	13	12	12	37	10	7.2	8.1	96
23	13	14	13	13	13	11	12	20	10	7.5	7.8	27
24	12	14	13	13	13	11	12	16	9.9	7.5	7.5	20
25	12	14	13	13	13	12	12	15	9.9	7.5	7.5	30
26	12	14	13	13	13	12	12	15	9.5	7.5	7.8	94
27	12	13	13	13	13	12	12	20	9.5	9.5	7.8	29
28	13	13	13	13	13	12	12	15	9.2	7.5	17	17
29	13	13	14	13	---	12	11	14	9.2	7.5	12	15
30	13	13	14	13	---	13	11	14	9.2	7.2	9.0	13
31	13	---	14	14	---	13	---	13	---	7.8	8.8	---
TOTAL	373	400	402	382	354	395	367	748	1108.4	256.0	282.6	1696.5
MEAN	12.0	13.3	13.0	12.3	12.6	12.7	12.2	24.1	36.9	8.26	9.12	56.6
MAX	13	15	14	14	14	14	13	145	255	12	18	1080
MIN	11	12	12	10	10	11	11	11	9.2	7.2	7.2	8.9
CFSM	.02	.03	.02	.02	.02	.02	.02	.05	.07	.02	.02	.11
IN.	.03	.03	.03	.03	.02	.03	.03	.05	.08	.02	.02	.12
AC-FT	740	793	797	758	702	783	728	1480	2200	508	561	3370
CAL YR 1977	TOTAL	7305.7	MEAN 20.0	MAX 793	MIN 8.4	CFSM .04	IN .50	AC-FT 14490				
WTR YR 1978	TOTAL	6764.5	MEAN 18.5	MAX 1080	MIN 7.2	CFSM .03	IN .47	AC-FT 13420				

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1976. Water temperatures: October 1967 to September 1976.
Sediment analyses: October 1977 to September 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM
APR 24...	1630	11	11.7	77	2.4	--	--	--	--	--	90	--
JUN 06...	1505	159	22.5	1600	687	55	63	67	69	70	99	100
JUL 18...	1335	7.8	32.0	14	.29	--	--	--	--	--	76	--
AUG 28...	1515	17	28.0	27	1.3	--	--	--	--	--	86	--

RED RIVER BASIN

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07311668 NORTH WICHITA RIVER ABOVE BLUFF CREEK NEAR TRUSCOTT, TX
(Low-flow partial-record station)

LOCATION.--Lat 33°49'16", long 99°49'18", Knox County, Hydrologic Unit 11130204, above mouth of Bluff Creek and about 4.5 mi (7.2 km) north of Truscott.

PERIOD OF RECORD.--Chemical analyses: January to September 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
JAN 10...	1115	2.4	22000	7.6	.0	3200	3100	930	220
30...	1430	17	18200	7.7	3.0	2400	2300	660	190
FEB 27...	1240	18	18900	--	10.0	2800	2700	800	200
MAR 14...	1045	18	19700	--	12.5	2900	--	840	200
APR 03...	1015	17	20500	--	18.5	3000	--	870	200
24...	1255	15	22100	--	23.5	3200	--	920	220
MAY 15...	1410	12	21700	--	32.0	3100	--	870	230
JUN 28...	1215	8.0	21400	--	31.5	2700	--	710	220
JUL 18...	--	5.4	--	--	--	--	--	--	--
AUG 09...	1620	10	21300	--	31.0	3100	--	910	200
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
JAN 10...	4200	32	22	190	0	2700	6500	7.5	14700
30...	3900	34	19	180	0	2400	6000	7.5	13300
FEB 27...	3800	31	18	160	0	2400	5800	6.0	13100
MAR 14...	--	--	--	--	--	2500	6000	--	--
APR 03...	--	--	--	--	--	2600	6200	--	--
24...	--	--	--	--	--	2700	6800	--	--
MAY 15...	--	--	--	--	--	2700	7000	--	--
JUN 28...	--	--	--	--	--	2900	6700	--	--
JUL 18...	--	--	--	--	--	--	--	--	--
AUG 09...	--	--	--	--	--	2900	7200	--	--

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RED RIVER BASIN

07311670 BLUFF CREEK NEAR TRUSCOTT, TX
(Low-flow partial-record station)

LOCATION.--Lat 33°48'38", long 99°49'38", Knox County, at ranch road about 0.1 mi (0.2 km) upstream from mouth and about 4.5 mi (7.2 km) north of Truscott.

PERIOD OF RECORD.--Occasional discharge measurement and water-quality data from April 1968 to June 1970, December 1977 to September 1978.

REMARKS.--No flow at time of observation.

RED RIVER BASIN

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07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX

LOCATION.--Lat 33°49'14", long 99°47'10", Foard-Knox County line, Hydrologic Unit 11130204, near right bank on downstream side of bridge on State Highway 6, 4.5 mi (7.2 km) north of Truscott, about 47.6 mi (76.6 km) upstream from confluence with South Wichita River, and 188.4 mi (303.1 km) upstream from mouth.

DRAINAGE AREA.--937 mi² (2,427 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,351.78 ft (412.023 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 2, 1960, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. One small diversion for irrigation above station.

AVERAGE DISCHARGE.--18 years (water years 1961-78), 58.8 ft³/s (1.665 m³/s), 0.85 in/yr (22 mm/yr), 42,600 acre-ft/yr (52.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,900 ft³/s (818 m³/s) Sept. 19, 1965, gage height, 21.96 ft (6.693 m); minimum, 0.01 ft³/s (0.0003 m³/s) July 25, 1964, Aug. 22, 23, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred in September 1919; the next highest flood occurred in May 1954, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 2	1530	1,530 43.3	11.08 3.377	Sept. 21	1200	*3,520 99.7	14.25 4.343

Minimum discharge, 3.3 ft³/s (0.093 m³/s) Aug. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	19	19	21	24	19	16	13	9.1	8.0	4.0	9.7
2	13	19	20	20	23	18	17	89	692	7.9	3.7	8.9
3	12	19	20	21	21	19	17	150	395	16	8.1	8.9
4	13	18	20	21	18	20	16	79	154	13	40	8.3
5	16	18	20	20	18	20	15	40	492	11	40	9.3
6	17	17	20	19	16	18	15	26	346	7.9	15	9.8
7	18	18	20	19	18	19	14	20	211	6.6	11	9.3
8	17	22	19	18	19	20	14	16	259	6.5	8.9	65
9	17	22	20	19	15	19	15	14	85	6.3	8.6	57
10	16	21	21	9.1	14	18	18	12	39	5.9	30	24
11	16	19	21	14	17	16	18	12	28	5.6	55	15
12	17	18	20	15	20	17	16	11	21	5.5	23	12
13	17	18	19	20	20	16	16	9.9	19	5.4	19	12
14	17	18	19	20	17	17	15	9.4	19	5.3	11	11
15	17	18	18	23	14	17	14	9.2	18	5.0	7.4	11
16	18	18	18	22	14	18	14	8.9	32	4.7	7.2	9.7
17	18	18	18	19	12	17	14	8.4	21	4.3	6.6	103
18	18	19	18	15	10	16	13	8.7	16	4.4	6.2	196
19	19	17	18	9.3	12	15	13	54	14	4.1	6.0	46
20	19	17	18	11	14	14	14	331	12	4.0	6.8	157
21	18	17	19	11	16	14	14	256	11	4.0	7.6	2600
22	71	18	19	15	18	14	14	125	10	5.4	6.0	1290
23	35	17	18	20	20	16	14	51	9.1	4.4	6.0	157
24	24	18	19	24	18	16	14	27	8.8	4.9	6.0	83
25	20	19	19	23	17	17	14	18	8.3	4.9	6.0	77
26	18	19	20	22	17	17	14	54	7.6	4.9	5.3	83
27	17	18	20	21	17	17	14	21	7.4	28	4.8	147
28	19	18	20	20	18	16	13	15	7.2	13	5.2	69
29	20	19	20	20	---	17	13	14	7.2	8.2	9.1	46
30	19	20	21	20	---	17	13	11	7.3	5.7	18	37
31	19	---	21	22	---	17	---	10	---	4.7	11	---
TOTAL	607	556	602	573.4	477	531	441	1523.5	2966.0	225.5	402.5	5371.9
MEAN	19.6	18.5	19.4	18.5	17.0	17.1	14.7	49.1	98.9	7.27	13.0	179
MAX	71	22	21	24	24	20	18	331	692	28	55	2600
MIN	12	17	18	9.1	10	14	13	8.4	7.2	4.0	3.7	8.3
CFSM	.02	.02	.02	.02	.02	.02	.02	.05	.11	.008	.01	.19
IN.	.02	.02	.02	.02	.02	.02	.02	.06	.12	.01	.02	.21
AC-FT	1200	1100	1190	1140	946	1050	875	3020	5880	447	798	10660
CAL YR 1977	TOTAL	14939.0	MEAN	40.9	MAX	1300	MIN	8.4	CFSM	.04	IN	.59
WTR YR 1978	TOTAL	14276.8	MEAN	39.1	MAX	2600	MIN	3.7	CFSM	.04	IN	.57
									AC-FT	29630	AC-FT	28320

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to current year.

WATER TEMPERATURES: July 1968 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 33,800 micromhos Aug. 19, 1970; minimum daily, 840 micromhos Sept. 23, 1969.

WATER TEMPERATURES (1968-77): Maximum daily, 39.0°C Aug. 21, 23, 1969, Aug. 22, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 27,300 micromhos July 21; minimum daily, 1,000 micromhos Sept. 21.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	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)
OCT											
18...	1000	16	21300	15.0	3100	--	900	210	--	--	--
DEC											
20...	1615	19	20200	8.0	3000	--	870	200	--	--	--
JAN											
30...	1000	20	18900	2.5	2800	--	810	190	--	--	--
MAR											
14...	0900	19	19800	10.0	3000	--	870	200	--	--	--
APR											
24...	1340	14	21800	22.5	3200	--	930	220	--	--	--
24...	1400	14	21800	22.5	--	--	--	--	--	--	--
MAY											
15...	1510	12	21600	30.5	3100	--	880	230	--	--	--
JUN											
07...	1130	2.1	3500	23.0	790	690	250	40	430	6.7	10
07...	1400	213	3860	23.0	--	--	--	--	--	--	--
08...	1230	360	2010	24.0	--	--	--	--	--	--	--
28...	1250	8.1	21500	--	--	--	--	--	--	--	--
JUL											
18...	1100	5.0	26400	31.0	--	--	--	--	--	--	--
18...	1110	5.0	26000	31.0	3800	--	1100	260	--	--	--
AUG											
05...	1405	26	11200	24.0	2000	--	490	200	--	--	--
08...	1000	9.0	21800	26.0	--	--	--	--	--	--	--
28...	1340	5.7	23300	28.5	--	--	--	--	--	--	--
SEP											
18...	1130	126	5890	24.5	--	--	--	--	--	--	--
27...	1405	132	5340	21.0	--	--	--	--	--	--	--

DATE	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	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)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER .062 MM
OCT										
18...	--	--	2700	6700	--	--	--	--	--	--
DEC										
20...	--	--	2600	6000	--	--	--	--	--	--
JAN										
30...	--	--	2300	5000	--	--	--	--	--	--
MAR										
14...	--	--	2500	5900	--	--	--	--	--	--
APR										
24...	--	--	2900	6900	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	32	1.2	84
MAY										
15...	--	--	2600	6000	--	--	--	27	.87	84
JUN										
07...	120	0	630	670	.3	11	2100	--	--	--
07...	--	--	--	--	--	--	--	1860	1070	90
08...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	23	.50	91
JUL										
18...	--	--	--	--	--	--	--	50	.67	47
18...	--	--	3300	9500	--	--	--	--	--	--
AUG										
05...	--	--	1400	3100	--	--	--	986	69	99
08...	--	--	--	--	--	--	--	31	.75	95
28...	--	--	--	--	--	--	--	13	.20	72
SEP										
18...	--	--	--	--	--	--	--	4690	1600	76
27...	--	--	--	--	--	--	--	680	242	86

RED RIVER BASIN

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07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	
APR 24...	1400	14	22.5	32	1.2	--	--	
MAY 15...	1510	12	30.5	27	.87	--	--	
JUN 07...	1400	213	23.0	1860	1070	--	--	
08...	1230	360	24.0	4350	4230	58	72	
28...	1250	8.1	--	23	.50	--	--	
JUL 18...	1100	5.0	31.0	50	.67	--	--	
AUG 05...	1405	26	24.0	986	69	--	--	
08...	1000	9.0	26.0	31	.75	--	--	
28...	1340	5.7	28.5	13	.20	--	--	
SEP 18...	1130	126	24.5	4690	1600	--	--	
27...	1405	132	21.0	680	242	--	--	
		SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
APR 24...	--	--	--	84	--	--	--	--
MAY 15...	--	--	--	84	--	--	--	--
JUN 07...	--	--	--	90	95	99	100	100
08...	80	83	86	92	96	99	100	100
28...	--	--	--	91	--	--	--	--
JUL 18...	--	--	--	47	--	--	--	--
AUG 05...	--	--	--	99	--	--	--	--
08...	--	--	--	95	--	--	--	--
28...	--	--	--	72	--	--	--	--
SEP 18...	--	--	--	76	--	--	--	--
27...	--	--	--	86	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	607	19800	13200	21600	5920	9690	2550	4180	****
NOV. 1977.....	556	19600	13100	19600	5870	8820	2530	3800	****
DEC. 1977.....	602	19600	13100	21200	5860	9530	2530	4110	****
JAN. 1978.....	573.4	18900	12600	19500	5640	8730	2440	3780	****
FEB. 1978.....	477	17800	11800	15200	5260	6780	2300	2970	****
MAR. 1978.....	531	19600	13100	18800	5870	8420	2530	3630	****
APR. 1978.....	441	21600	14500	17300	6530	7770	2780	3310	****
MAY 1978.....	1523.5	7250	4600	18900	1910	7870	990	4080	1200
JUNE 1978.....	2965	3190	2020	16200	720	5730	540	4290	650
JULY 1978.....	225.5	20200	13500	8210	6060	3690	2600	1580	****
AUG. 1978.....	402.5	17600	11700	12700	5210	5660	2290	2480	****
SEPT 1978.....	5371.9	2790	1770	25600	600	8630	490	7180	590
TOTAL	14276.78	**	**	215000	**	91300	**	45400	**
WTD.AVG.	39.11	8480	5600	**	2400	**	1200	**	1400

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22000	19600	19600	19400	17900	18700	20600	23000	18500	21900	24900	24200
2	22300	19400	19400	19100	18000	19100	20600	7780	1500	22000	26400	23100
3	22000	19600	19400	19100	18200	18900	20400	5000	2000	14500	24500	23600
4	21800	20000	19500	19200	18200	18800	20500	8000	2500	13900	13000	24000
5	21500	19800	19400	19100	18100	18700	20900	11500	1000	17700	12300	24300
6	21400	20000	19600	19300	18200	19000	21000	10000	2060	19800	16000	24100
7	21300	19800	19400	19400	18000	19100	21300	11600	3000	21000	19700	24500
8	21400	19200	19400	19500	17600	19000	21600	14200	2500	23200	21400	9500
9	21400	19400	19600	19400	18100	18900	21200	16800	3280	23700	21600	8120
10	21500	19300	19800	20300	18400	19400	20800	17700	5320	24200	14000	13000
11	21700	19400	19700	20800	17700	19700	20600	18400	7190	24600	11400	19500
12	21500	19600	19400	20400	16400	19700	20900	19600	9190	24900	15600	20500
13	21600	19600	19500	18900	16300	20100	21100	20800	10700	25200	20000	21000
14	21600	19600	19400	18300	17000	19800	21500	21200	11600	25700	21200	20700
15	21500	19600	19700	18100	17300	19900	21600	21600	12700	26000	22500	22200
16	21400	19800	19600	18500	17600	19700	21800	21900	15800	26000	23300	22700
17	21200	19600	19800	18800	17400	19700	22000	22000	16700	26200	22900	7000
18	21300	19500	19900	19100	17300	19900	22200	22100	17400	26500	23500	5510
19	21000	19600	19800	19800	17200	20100	22400	10500	14100	26700	24500	15600
20	21200	19600	20200	20200	17000	20300	22400	3500	13100	27100	22200	4500
21	21100	19800	19900	19100	17600	20400	22500	4340	13600	27300	18900	1000
22	13800	19700	19800	19300	17400	20500	22600	5150	14700	22500	19900	1200
23	16100	19800	19900	18300	18000	20400	22500	6010	17400	25200	20600	3910
24	18900	19700	19800	18100	18500	19900	22200	7930	18600	26000	24300	4850
25	19300	19600	19700	17900	18700	20000	22300	9490	19400	26500	23500	5800
26	19600	19700	19800	18300	18800	20100	22300	5000	20500	26500	23300	5700
27	19800	19600	19600	18600	18700	20200	22300	10300	21200	13500	22900	3500
28	19600	19700	19400	18700	18600	20300	22600	13400	22900	13000	23600	4500
29	19500	19600	19300	18600	---	20100	22800	15100	21600	15000	25300	5150
30	19700	19400	19200	18800	---	19900	22600	16600	21800	18300	20700	6000
31	19800	---	19300	18400	---	20300	---	18100	---	22700	25100	---
MEAN	20600	19600	19600	19100	17800	19700	21700	13500	12100	22500	20900	13300

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	---	5.0	.0	3.0	5.0	15.0	---	25.0	---	26.0	25.0
2	21.0	11.0	10.0	2.0	1.0	6.0	25.0	10.0	---	33.0	27.0	25.0
3	21.0	14.0	13.0	5.0	5.0	---	23.0	12.0	25.0	---	---	25.0
4	---	17.0	---	---	9.0	---	22.0	11.0	27.0	30.0	20.0	---
5	20.0	20.0	8.0	7.0	---	14.0	22.0	---	25.0	33.0	25.0	29.0
6	19.0	18.0	8.0	12.0	3.0	14.0	21.0	23.0	25.0	32.0	25.0	---
7	24.0	18.0	8.0	11.0	---	9.0	---	26.0	28.0	---	28.0	---
8	21.0	15.0	8.0	---	---	---	23.0	26.0	23.0	29.0	28.0	25.0
9	19.0	15.0	---	1.0	---	7.0	27.0	25.0	30.0	31.0	28.0	28.0
10	21.0	7.0	3.0	1.0	---	---	---	23.0	27.0	30.0	29.0	---
11	16.0	---	---	.0	1.0	15.0	20.0	26.0	30.0	30.0	---	29.0
12	18.0	14.0	14.0	.0	2.0	15.0	18.0	---	30.0	---	---	31.0
13	18.0	16.0	12.0	3.0	4.0	17.0	20.0	25.0	27.0	33.0	33.0	30.0
14	20.0	16.0	12.0	4.0	4.0	16.0	25.0	27.0	---	---	---	27.0
15	17.0	18.0	10.0	7.0	2.0	13.0	25.0	28.0	27.0	30.0	31.0	30.0
16	18.0	16.0	---	---	3.0	9.0	25.0	25.0	28.0	30.0	30.0	30.0
17	22.0	12.0	10.0	.0	---	18.0	22.0	---	---	31.0	31.0	28.0
18	---	16.0	12.0	.0	3.0	21.0	22.0	25.0	28.0	30.0	32.0	29.0
19	22.0	16.0	10.0	---	---	20.0	20.0	27.0	29.0	33.0	22.0	28.0
20	18.0	15.0	10.0	.0	4.0	19.0	17.0	22.0	28.0	34.0	28.0	22.0
21	22.0	8.0	10.0	.0	5.0	17.0	---	24.0	33.0	---	29.0	15.0
22	---	13.0	5.0	3.0	10.0	---	24.0	---	28.0	25.0	---	18.0
23	---	11.0	---	4.0	10.0	15.0	25.0	29.0	28.0	27.0	33.0	---
24	22.0	8.0	---	3.0	10.0	15.0	21.0	25.0	28.0	---	28.0	---
25	22.0	11.0	---	5.0	12.0	10.0	20.0	28.0	---	30.0	30.0	22.0
26	23.0	---	7.0	1.0	---	20.0	18.0	---	28.0	35.0	---	21.0
27	20.0	13.0	5.0	4.0	13.0	---	17.0	---	28.0	26.0	30.0	---
28	---	9.0	7.0	5.0	---	21.0	---	28.0	33.0	30.0	28.0	23.0
29	20.0	10.0	9.0	.0	---	---	17.0	---	28.0	24.0	28.0	---
30	21.0	10.0	---	5.0	---	15.0	25.0	30.0	---	32.0	---	---
31	20.0	---	---	---	---	25.0	---	28.0	---	29.0	23.0	---
MEAN	20.5	13.5	9.0	3.0	5.5	15.0	21.5	24.0	28.0	30.5	28.0	25.5

RED RIVER BASIN

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07311790 SOUTH WICHITA RIVER AT ROSS RANCH NEAR BENJAMIN, TX

LOCATION.--Lat 33°39'18", long 100°00'49", King County, Hydrologic Unit 11130205, on left bank 170 ft (52 m) upstream from ranch road, 1.6 mi (2.6 km) downstream from Ox Yoke Creek, 13.7 mi (22.0 km) northwest of Benjamin, and 64.5 mi (103.8 km) upstream from mouth.

DRAINAGE AREA.--499 mi² (1,292 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1970 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,450 ft (442 m), from topographic map.

REMARKS.--Water-discharge records good.

AVERAGE DISCHARGE.--8 years (water years 1971-78), 13.0 ft³/s (0.368 m³/s), 0.35 in/yr (9 mm/yr), 9,420 acre-ft/yr (11.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft³/s (78.7 m³/s) May 28, 1975, gage height, 12.23 ft (3.728 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 144 ft³/s (4.08 m³/s) Sept. 26, gage height, 6.28 ft (1.914 m), no peak above base of 500 ft³/s (14.2 m³/s); no flow July 13-25, Aug. 1, 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	4.8	8.3	6.9	7.6	6.9	5.6	2.4	3.1	.21	.00	.92
2	1.7	4.6	8.3	6.9	7.8	6.5	6.0	21	5.6	.34	.00	1.0
3	1.8	4.7	8.0	7.2	8.5	6.0	5.6	31	8.3	.52	1.9	.64
4	1.9	5.0	7.9	7.4	7.9	6.1	5.6	20	5.6	.66	40	1.3
5	2.1	5.2	8.1	7.5	7.5	5.7	4.9	12	28	.74	32	2.1
6	2.4	5.2	7.4	7.3	7.1	5.6	4.2	8.8	30	.67	11	2.9
7	3.1	5.6	7.6	6.9	7.2	6.0	3.6	6.4	28	.54	6.0	2.7
8	3.1	6.5	7.2	6.5	7.3	6.0	2.8	5.2	13	.28	4.2	7.1
9	2.8	6.2	6.5	6.3	8.1	5.7	3.1	4.6	8.9	.23	3.4	7.7
10	2.7	5.8	6.6	6.1	8.0	6.1	4.2	3.9	6.4	.14	3.8	7.0
11	2.5	5.9	7.5	6.3	8.0	6.0	4.2	3.6	5.2	.07	22	5.6
12	2.4	5.8	8.4	6.7	10	5.5	4.2	2.8	4.6	.02	8.6	4.2
13	2.5	6.1	7.8	6.8	11	6.0	3.6	2.8	3.8	.00	4.9	3.3
14	2.9	6.2	7.3	6.5	9.2	5.9	3.1	2.8	5.2	.00	3.8	2.8
15	2.9	6.4	7.6	6.7	7.3	5.9	3.4	2.6	4.7	.00	3.1	2.1
16	3.1	6.2	7.6	6.9	7.8	6.0	3.6	2.2	4.8	.00	2.4	1.9
17	3.2	6.5	7.2	6.8	6.5	5.6	3.1	2.0	4.0	.00	1.8	1.6
18	3.4	6.5	6.6	6.4	5.0	5.6	2.8	2.2	2.2	.00	1.2	1.9
19	3.5	6.8	6.6	5.7	6.0	5.6	2.6	5.2	1.4	.00	1.6	1.1
20	3.5	6.8	7.3	5.4	7.0	5.6	2.8	33	1.1	.00	2.7	4.4
21	3.8	6.4	6.8	5.0	6.9	5.6	3.4	21	1.0	.00	3.2	74
22	6.2	6.1	6.5	5.2	7.2	5.6	3.4	14	.82	.00	3.6	44
23	8.0	7.1	6.4	6.0	6.5	5.6	3.4	8.3	.71	.00	2.9	18
24	5.9	7.0	6.6	6.3	6.5	5.6	3.1	5.6	.70	.00	2.1	13
25	5.2	7.0	6.5	7.2	6.4	5.6	1.5	5.2	.56	.00	1.3	10
26	4.5	7.4	6.5	7.2	6.2	5.6	2.4	10	.42	.02	.69	69
27	4.4	7.5	6.2	6.7	6.1	5.6	2.8	8.3	.33	2.0	.62	37
28	4.9	7.5	6.4	6.6	6.4	5.6	2.8	9.4	.28	1.5	1.1	20
29	5.0	7.8	6.7	6.4	---	5.5	2.6	6.0	.24	.30	1.3	14
30	5.2	8.3	7.0	6.4	---	5.5	2.6	4.6	.20	.12	1.1	11
31	5.0	---	7.5	6.9	---	5.7	---	3.6	---	.03	.71	---
TOTAL	111.5	188.9	222.9	203.1	207.0	179.8	107.0	270.5	179.16	8.39	173.02	372.26
MEAN	3.60	6.30	7.19	6.55	7.39	5.80	3.57	8.73	5.97	.27	5.58	12.4
MAX	8.0	8.3	8.4	7.5	11	6.9	6.0	33	30	2.0	40	74
MIN	1.7	4.6	6.2	5.0	5.0	5.5	1.5	2.0	.20	.00	.00	.64
CFSM	.007	.01	.01	.01	.02	.01	.007	.02	.01	.001	.01	.03
IN.	.01	.01	.02	.02	.02	.01	.01	.02	.01	.00	.01	.03
AC-FT	221	375	442	403	411	357	212	537	355	17	343	738
CAL YR 1977	TOTAL	3810.40	MEAN	10.4	MAX	380	MIN	1.7	CFSM	.02	IN	.28
WTR YR 1978	TOTAL	2223.53	MEAN	6.09	MAX	74	MIN	.00	CFSM	.01	IN	.17
									AC-FT	7560		
									AC-FT	4410		

RED RIVER BASIN

07311790 SOUTH WICHITA RIVER AT ROSS RANCH NEAR BENJAMIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: August 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1970 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 51,000 micromhos July 28, 1978; minimum daily, 1,500 micromhos May 28, 1975.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 51,000 micromhos July 28; minimum daily, 15,900 micromhos Sept. 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	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
OCT 03...	0830	1.7	39600	18.0	5400	1500	400	--	--
DEC 20...	0950	7.1	34800	6.5	4400	1200	330	--	--
JAN 30...	1045	6.5	33300	2.0	4300	1200	310	--	--
FEB 27...	0915	2.5	32700	9.0	4300	1200	310	--	--
APR 24...	0910	3.7	37200	19.0	5300	1500	370	--	--
MAY 15...	1100	2.8	34900	24.0	5100	1500	340	7900	48
JUN 12...	1225	4.4	31500	27.0	--	--	--	--	--
JUN 28...	1020	.31	43600	27.5	5900	1700	410	--	--
AUG 09...	1330	3.5	33700	30.0	4300	1200	320	--	--
AUG 28...	0930	1.5	41400	25.5	--	--	--	--	--
SEP 18...	0955	2.0	39500	25.0	4800	1300	380	--	--

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 03...	--	3600	14000	--	--	--	--	--
DEC 20...	--	3000	12000	--	--	--	--	--
JAN 30...	--	2900	11000	--	--	--	--	--
FEB 27...	--	3100	11000	--	--	--	--	--
APR 24...	--	3900	14000	--	--	52	.52	98
MAY 15...	40	3700	12000	.4	6.6	57	.43	98
JUN 12...	--	--	--	--	--	12	.14	73
JUN 28...	--	4100	16000	--	--	87	.07	26
AUG 09...	--	3300	12000	--	--	2	.02	40
AUG 28...	--	--	--	--	--	90	.36	26
SEP 18...	--	3900	15000	--	--	10	.05	82

RED RIVER BASIN

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07311790 SOUTH WICHITA RIVER AT ROSS RANCH NEAR BENJAMIN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	111.5	37000	25600	7700	12700	3830	3440	1040	****
NOV. 1977.....	188.9	35000	24200	12300	12000	6100	3320	1690	****
DEC. 1977.....	222.9	34000	23500	14100	11600	6980	3250	1960	****
JAN. 1978.....	203.1	34100	23500	12900	11600	6380	3250	1780	****
FEB. 1978.....	206	32400	22400	12500	11000	6140	3140	1750	****
MAR. 1978.....	179.8	33600	23200	11300	11500	5560	3220	1560	****
APR. 1978.....	106	38500	26700	7710	13300	3840	3570	1030	****
MAY 1978.....	270.5	32500	22500	16400	11000	8070	3160	2310	****
JUNE 1978.....	179.16	29700	20500	9890	9980	4830	2990	1450	****
JULY 1978.....	8.39	45800	31900	722	16100	364	4060	92	****
AUG. 1978.....	173.02	27000	18500	8650	8940	4180	2820	1320	****
SEPT 1978.....	372.26	27500	18900	19000	9140	9190	2830	2850	****
TOTAL	2223.53	**	**	133000	**	65500	**	18800	**
WTD.AVG.	6.09	32200	22000	**	11000	**	3100	**	*****

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39600	35400	35000	34800	33200	32200	35600	40300	36800	44500	---	45300
2	39600	35400	34900	34600	33100	32700	36100	34400	36600	44400	---	45800
3	39600	35300	34800	34600	32800	33500	36400	31000	34600	43700	34200	46200
4	39000	35200	35000	34400	33200	33400	36800	30700	34300	43200	26400	46300
5	38400	35200	35000	34800	33900	34000	37100	30900	31300	42400	16300	46100
6	38400	35200	34900	34900	34300	34200	36900	31800	26300	42500	22100	46500
7	38500	35200	34700	34800	34200	33700	36800	31600	23700	43400	29600	46600
8	38400	34400	34900	34700	34000	33900	37900	31200	24500	44500	33600	43400
9	38600	34700	35600	34500	33300	34200	38200	31600	28800	45700	35800	40700
10	38300	34700	29200	34900	33500	33800	38000	32000	31200	46400	36800	41400
11	38500	34800	30400	34700	33600	34100	38700	31700	33000	46800	22000	41600
12	38600	34700	31300	34200	31400	34900	39400	31400	32500	47700	22700	42000
13	38400	34800	31900	33700	31000	34800	39500	32900	32700	---	25000	42500
14	38400	34800	31600	34300	31700	35100	39900	34500	32300	---	29500	42900
15	38500	34800	32600	34300	31900	34400	39900	37200	32100	---	33700	44200
16	38900	34900	33800	34000	31500	34000	39700	38300	33000	---	36200	45000
17	38500	34900	34200	33500	32100	33900	39700	39100	33500	---	38600	45100
18	38300	34800	34500	34000	32600	34000	40000	39700	33800	---	40400	42500
19	38400	34700	35200	33900	31700	34300	40000	38500	34100	---	41300	42500
20	38400	34900	34800	34000	31000	33700	39800	28400	34300	---	41100	40400
21	38400	35200	31100	32800	31200	33300	39500	32000	34400	---	41800	32300
22	36800	35000	34700	33000	30900	33100	39700	33300	38100	---	42400	27200
23	34700	35100	34800	34100	31600	32600	39400	34400	39700	---	42600	25600
24	35300	35100	35100	34500	31200	32100	39600	35200	40300	---	43300	26600
25	34700	35000	35300	33000	32000	32000	39800	35700	42500	---	44200	27200
26	34800	35000	35300	33500	32400	32800	39900	34300	42400	48500	44800	20800
27	35200	35100	35400	34100	32700	32700	40500	32900	43200	49700	45100	15900
28	35100	35300	34500	33000	32500	32600	40900	34600	43900	51000	44600	17200
29	35100	35000	34500	33800	---	33100	40600	34900	44400	33600	44800	20200
30	35200	35000	35200	33300	---	34000	40400	35200	44500	30100	44700	23100
31	35300	---	35400	33200	---	34800	---	36000	---	29900	45100	---
MEAN	37500	35000	34100	34100	32400	33600	38900	34100	35100	43200	36200	37100

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX

LOCATION.--Lat 33°38'39", long 99°48'02", Knox County, Hydrologic Unit 11130205, on right bank at upstream side of bridge on State Highway 6, 2 mi (3 km) downstream from Panhandle and Santa Fe Railway Co. bridge, 4 mi (6 km) north of Benjamin, and 41 mi (66 km) upstream from confluence with North Wichita River.

DRAINAGE AREA.--584 mi² (1,513 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,334.23 ft (406.673 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 2, 1960, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. No known regulation or diversion above station.

AVERAGE DISCHARGE.--18 years (water years 1961-78), 39.5 ft³/s (1.119 m³/s), 092 in/yr (23 mm/yr), 28,620 acre-ft/yr (35.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s (368 m³/s) Oct. 18, 1960, gage height, 15.40 ft (4.694 m); maximum gage height, 16.48 ft (5.023 m) Oct. 18, 1965; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903 occurred in September 1919 (stage and discharge unknown), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Aug. 4	1300	*2,440	69.1	Sept. 25	1430	923	26.1
Sept. 21	0600	1,160	32.9			9.01	2.746
			9.82				

Minimum discharge, no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.01	5.3	5.0	5.6	8.5	7.2	5.0	1.5	.54	.98	.00	.48		
2	.00	4.9	5.0	5.5	8.1	7.4	5.2	52	7.6	.07	.00	.47		
3	.00	4.6	5.0	5.5	8.1	6.8	4.7	33	17	2.1	60	.54		
4	.00	4.9	5.1	6.3	7.8	6.7	4.9	11	2.1	2.6	1280	.62		
5	.20	4.8	4.9	6.3	7.2	7.3	4.5	7.4	59	.05	364	.76		
6	.40	4.8	4.9	6.2	7.2	6.8	4.1	4.8	29	.00	57	.68		
7	.92	4.9	5.3	7.0	9.6	6.8	3.9	3.7	71	.00	29	.48		
8	1.2	6.3	5.4	6.1	10	6.5	3.2	2.7	15	.00	19	117		
9	1.2	5.9	4.9	5.0	8.0	6.3	3.1	2.1	4.8	.00	7.1	3.0		
10	1.5	5.8	4.6	4.5	7.0	6.4	3.3	1.7	2.9	.00	33	28		
11	1.5	5.8	5.1	4.1	9.0	5.9	3.4	1.6	2.0	.00	120	16		
12	1.3	6.3	5.4	4.0	10	5.3	3.5	1.3	1.5	.00	23	11		
13	1.5	6.3	5.3	4.0	10	5.4	3.4	.86	1.1	.00	16	6.1		
14	1.3	6.9	5.2	5.0	11	4.7	3.3	.81	.97	.00	9.7	3.0		
15	1.7	6.2	5.4	6.0	12	4.8	3.4	.90	.79	.00	6.4	1.7		
16	1.5	6.6	5.5	6.0	9.7	4.8	3.2	.67	.61	.00	4.9	.96		
17	1.9	6.9	4.9	5.0	8.0	4.8	3.2	.47	.41	.00	4.0	.52		
18	1.9	6.4	4.9	4.0	5.0	4.8	2.7	2.7	.28	.00	3.7	.60		
19	1.9	6.8	4.9	3.5	5.0	4.7	2.5	2.7	.20	.00	3.4	.06		
20	2.3	6.9	4.9	3.0	7.0	4.4	2.5	215	.13	.00	4.6	14		
21	2.3	7.8	4.4	3.0	9.4	3.9	2.5	11	.06	.00	4.0	594		
22	89	7.8	5.5	3.5	9.4	4.2	2.5	6.3	.00	.00	3.0	51		
23	76	7.8	5.6	4.0	8.2	4.3	2.5	4.0	.00	.00	2.3	24		
24	9.7	8.2	5.3	5.0	7.8	4.4	2.5	2.5	.00	.00	1.7	22		
25	7.4	7.7	5.3	5.0	7.2	4.5	2.1	1.7	.00	.00	1.4	242		
26	5.2	8.0	5.3	5.5	6.6	4.8	2.0	3.6	.00	7.1	1.1	159		
27	4.6	8.0	5.3	5.5	6.9	4.5	1.6	1.4	.00	6.4	1.1	64		
28	4.7	8.0	4.9	6.0	7.2	4.6	1.5	1.4	.00	.11	1.2	41		
29	5.0	6.4	6.7	6.0	---	4.6	1.7	1.6	.00	.00	.63	27		
30	5.0	6.3	6.4	6.8	---	4.5	1.6	1.4	.00	.00	.43	21		
31	5.5	---	6.8	7.2	---	4.7	---	.90	---	.00	.43	---		
TOTAL	236.63	193.3	163.1	160.1	230.9	166.8	93.5	382.71	216.99	19.41	2062.09	1501.97		
MEAN	7.63	6.44	5.26	5.16	8.25	5.38	3.12	12.3	7.23	.63	66.5	50.1		
MAX	89	8.2	6.8	7.2	12	7.4	5.2	215	71	7.1	1280	594		
MIN	.00	4.6	4.4	3.0	5.0	3.9	1.5	.47	.00	.00	.00	.06		
CFSM	.01	.01	.009	.009	.01	.009	.005	.02	.01	.001	.11	.09		
IN.	.02	.01	.01	.01	.01	.01	.01	.02	.01	.00	.13	.10		
AC-FT	469	383	324	318	458	331	185	759	430	38	4090	2980		
CAL YR 1977	TOTAL	7667.40	MEAN	21.0	MAX	716	MIN	.00	CFSM	.04	IN	.49	AC-FT	15210
WTR YR 1978	TOTAL	5427.50	MEAN	14.9	MAX	1280	MIN	.00	CFSM	.03	IN	.35	AC-FT	10770

RED RIVER BASIN

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07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 48,900 micromhos May 13, 1971; minimum daily, 901 micromhos Sept. 6, 1973.

WATER TEMPERATURES: Maximum daily, 38.0°C Sept. 7, 1969; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 41,400 micromhos Apr. 26, May 1; minimum daily, 1,510 micromhos Aug. 4.

WATER TEMPERATURES: Maximum daily, 29.5°C Aug. 29; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	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)
OCT 18...	1100	5.0	39600	15.0	5900	--	1500	520	--	--	--
NOV 07...	1220	5.0	34700	17.0	4600	--	1200	390	--	--	--
JAN 30...	1230	6.9	32400	3.0	4400	--	1200	340	--	--	--
FEB 21...	1125	100	27600	2.0	3700	--	1000	290	--	--	--
APR 24...	1110	2.7	40900	25.5	5200	--	1300	480	--	--	--
MAY 15...	1300	1.4	37400	29.0	4900	--	1300	400	--	--	--
JUN 07...	1455	360	3570	22.0	810	710	260	38	490	7.5	8.5
07...	1620	248	5590	22.0	850	730	260	48	970	15	11
08...	1350	29	12800	25.0	2000	--	570	130	--	--	--
AUG 05...	1600	208	--	--	--	--	--	--	--	--	--
SEP 27...	1205	61	16100	21.0	2600	--	760	170	--	--	--

DATE	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	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 CONSTI- TUENTS, DIS- SOLVED (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 18...	--	--	3900	13000	--	--	--	--	--	--
NOV 07...	--	--	3300	14000	--	--	--	--	--	--
JAN 30...	--	--	3000	11000	--	--	--	--	--	--
FEB 21...	--	--	2300	8100	--	--	--	--	--	--
APR 24...	--	--	4000	13000	--	--	--	--	--	--
MAY 15...	--	--	3600	12000	--	--	--	--	--	--
JUN 07...	120	0	590	840	.2	12	2300	--	--	--
07...	140	0	660	1500	.2	12	3530	--	--	--
08...	--	--	1400	4100	--	--	--	--	--	--
AUG 05...	--	--	--	--	--	--	--	5980	3360	43
SEP 27...	--	--	2400	5000	--	--	--	--	--	--

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
AUG 05...	1600	208	5980	3360	27	33	35
DATE		SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
AUG 05...		38	41	43	56	82	100

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	236.63	14900	9810	6260	4650	2970	1590	1020	****
NOV. 1977.....	193.3	34600	22900	11900	11300	5890	3250	1690	****
DEC. 1977.....	163.1	34700	22900	10100	11300	4990	3250	1430	****
JAN. 1978.....	160.1	31500	20800	9000	10300	4440	2970	1280	****
FEB. 1978.....	230.9	27800	18300	11400	9000	5610	2670	1660	****
MAR. 1978.....	166.8	33800	22300	10000	11000	4960	3170	1430	****
APR. 1978.....	93.5	38700	25600	6460	12700	3210	3570	901	****
MAY 1978.....	382.71	9570	6320	6540	2860	2960	1120	1160	1500
JUNE 1978.....	216.99	8260	5460	3200	2420	1420	1040	606	1330
JULY 1978.....	19.41	10600	7030	369	3230	169	1250	65	****
AUG. 1978.....	2062.09	2920	1930	10800	800	4460	400	2230	720
SEPT 1978.....	1501.97	4010	2650	10700	1100	4460	560	2270	870
TOTAL	5427.49	**	**	96700	**	45500	**	15700	**
WTD.AVG.	14.87	10000	6600	**	3100	**	1100	**	*****

RED RIVER BASIN

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07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36400	34000	34500	30600	28400	30000	36700	41400	35400	29800	---	23400
2	---	34500	34700	30900	28200	30800	36900	8500	17600	31100	---	23500
3	---	34400	34800	30300	28900	31600	37200	9270	12000	19200	8700	23200
4	---	34700	34600	30600	29300	32000	36800	17400	18100	7550	1510	23100
5	37400	34500	34700	28800	28800	32100	37900	26200	3500	13500	1690	23200
6	34200	34200	34500	29600	29100	32300	37700	27700	8790	---	8000	23200
7	35400	34700	34400	29400	28100	31900	38200	28500	5930	---	14900	23300
8	36700	33200	34500	32900	27800	31800	38300	28900	10700	---	15200	2000
9	37400	33800	34900	31600	28200	32700	38200	29800	19700	---	20000	3500
10	39400	33900	35500	34900	28900	32800	37900	32600	21100	---	4580	8960
11	40200	34800	35400	33800	27700	33100	37600	33000	22200	---	2000	9040
12	40900	34700	34000	31200	27000	33500	37900	34400	23200	---	2300	12100
13	40700	34600	34200	33200	23800	33700	38300	35800	24300	---	3170	13900
14	40200	34400	34500	28800	26500	34000	38600	35700	22900	---	16800	14600
15	40000	34300	34300	29000	27200	34100	38800	36700	26300	---	21100	20300
16	40300	34400	34400	31800	26500	34400	38900	37300	27600	---	21300	22600
17	39900	34500	34600	31400	26800	34500	39200	37800	28400	---	22200	22500
18	39700	34800	34800	28800	27300	34600	40200	26300	29100	---	21900	24400
19	39800	34600	34700	34300	26800	34700	40400	12500	34200	---	20900	24800
20	39400	34400	34900	34500	26700	35400	40600	5000	34800	---	21200	15800
21	39700	35100	35100	34500	27700	35900	40800	10200	35200	---	21100	1900
22	7960	35200	35200	33900	27600	35700	40900	13100	---	---	22200	5420
23	4500	35300	35500	32500	28000	35900	41000	16700	---	---	23000	16700
24	14200	35000	35100	32400	27900	36200	40900	19900	---	---	23500	20800
25	16000	34900	35200	32200	28100	36300	41200	26400	---	---	24200	2070
26	27300	34800	35000	32100	28700	36400	41400	16800	---	8980	24600	4210
27	29400	34900	35000	32100	30800	35900	41300	27700	---	7760	24000	5500
28	32100	35000	34700	32200	29300	36100	40600	27800	---	10400	23400	7500
29	32300	34900	34500	32300	---	36600	40900	29400	---	---	23700	8340
30	32600	34700	34000	32500	---	36200	40800	34200	---	---	23500	10500
31	33700	---	33800	30600	---	36500	---	35000	---	---	23300	---
MEAN	33300	34600	34700	31700	27900	34100	39200	25900	22000	16000	16700	14700

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	14.0	13.0	.0	2.0	6.0	18.0	16.0	21.5	---	---	21.0
2	---	10.0	4.0	2.0	.0	5.0	18.0	14.0	21.0	---	---	22.0
3	---	8.5	6.5	.0	3.0	.0	18.0	10.0	21.0	---	---	22.0
4	---	10.5	7.0	4.0	5.5	.0	14.0	8.0	21.0	25.5	20.0	23.0
5	22.0	10.0	10.0	5.0	4.0	5.0	19.0	15.5	20.0	23.0	19.5	20.0
6	22.0	14.0	1.0	4.0	1.5	9.0	14.0	19.0	21.0	---	23.0	21.0
7	21.0	13.0	1.0	5.5	3.0	6.0	19.0	18.0	20.5	---	23.0	21.0
8	16.0	13.0	7.0	2.0	---	3.0	18.0	18.0	20.0	---	24.0	21.0
9	21.0	5.0	.0	.0	---	.0	19.0	16.0	20.0	---	25.0	22.0
10	13.0	2.5	.0	.0	.0	5.0	14.0	19.0	20.5	---	24.5	25.0
11	10.0	5.0	8.0	.0	1.0	9.0	9.0	20.0	21.0	---	21.5	24.0
12	7.0	6.0	10.0	.0	2.0	6.0	7.5	19.0	24.0	---	24.0	24.0
13	8.0	10.0	9.0	4.0	.0	7.5	14.5	17.0	23.0	---	25.0	25.0
14	9.0	9.0	9.0	.0	.0	9.0	15.0	17.0	23.0	---	25.5	24.0
15	11.0	12.0	7.0	5.0	.0	10.0	17.0	20.0	23.0	---	24.5	25.0
16	---	10.0	8.5	7.0	5.0	5.0	17.0	21.0	22.5	---	25.0	25.0
17	13.0	9.0	6.0	.0	.0	6.0	19.5	22.5	23.0	---	20.5	25.0
18	12.5	6.0	8.0	.0	.0	9.0	12.0	23.0	23.5	---	24.0	23.0
19	13.0	13.0	7.0	.0	2.0	12.0	13.0	21.0	24.0	---	23.0	23.0
20	14.0	14.0	6.0	.0	1.0	13.0	13.0	19.5	23.0	---	25.0	21.5
21	16.0	5.5	.5	.0	.0	12.0	14.0	---	24.0	---	24.0	16.0
22	18.0	6.0	8.0	2.0	2.0	14.0	17.0	21.5	---	---	24.0	16.0
23	20.5	8.0	5.5	.0	4.0	15.0	17.0	23.0	---	---	24.0	19.0
24	15.0	---	9.0	2.0	6.0	8.0	18.0	23.0	---	---	23.5	19.0
25	15.0	5.0	---	6.0	6.0	10.0	14.0	23.0	---	---	24.0	22.0
26	15.0	4.5	5.0	.0	6.0	10.0	14.5	21.0	---	---	27.5	21.0
27	16.0	4.5	.5	.0	9.0	10.5	16.0	24.5	---	23.0	---	20.0
28	16.0	7.0	3.0	.0	9.0	13.0	17.0	24.0	---	21.5	23.0	18.0
29	16.5	5.0	7.5	.0	---	15.0	18.0	21.0	---	---	29.5	19.0
30	18.0	2.5	9.0	1.0	---	11.0	18.0	22.0	---	---	20.5	19.0
31	15.0	---	8.0	---	---	14.5	---	22.0	---	---	18.0	---
MEAN	15.5	8.5	6.0	1.5	3.0	8.5	15.5	19.5	22.0	23.5	23.5	21.5

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX

LOCATION.--Lat 33°42'01", long 99°23'18", Baylor County, Hydrologic Unit 11130206, near left bank on downstream side of pier of bridge on Ranch Road 1919, 6 mi (10 km) upstream from head of Lake Kemp, 10 mi (16 km) downstream from confluence of North and South Wichita Rivers, and 10.5 mi (16.9 km) northwest of Seymour.

DRAINAGE AREA.--1,874 mi² (4,854 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements made 4 mi or 6 km downstream), November 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,152.7 ft (351.34 m) National Geodetic Vertical Datum of 1929 (Texas Department of Highways and Public Transportation bridge plans).

REMARKS.--Water-discharge records good.

AVERAGE DISCHARGE.--18 years (water years 1961-78), 163 ft³/s (4.616 m³/s), 1.18 in/yr (30 mm/yr), 118,100 acre-ft/yr (146 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s (654 m³/s) Sept. 20, 1965, gage height, 17.75 ft (5.410 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 2	2100	3,530 100	11.15 3.399	Aug. 5	0600	*9,440 267	14.95 4.557
June 5	1700	3,060 86.7	10.70 3.261	Sept. 22	0830	2,980 84.4	10.62 3.237

Minimum discharge, no flow July 18-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	5.9	17	16	19	30	29	18	7.0	14	4.2	2.1	14		
2	4.9	15	16	20	29	29	18	93	1060	4.2	.99	24		
3	4.6	16	16	21	28	28	16	495	1520	4.2	13	14		
4	4.7	15	16	20	28	28	16	158	338	4.6	3870	12		
5	5.3	15	16	20	27	27	15	87	1840	9.4	5890	11		
6	5.8	15	16	20	27	26	13	58	1060	8.2	1600	11		
7	5.9	16	16	20	35	39	13	46	638	4.6	208	10		
8	6.2	23	16	20	30	30	13	36	398	3.5	109	14		
9	5.6	18	15	18	25	26	14	27	303	3.1	59	301		
10	5.8	16	17	17	20	24	19	23	161	2.8	48	227		
11	5.6	17	17	16	30	23	14	21	104	2.2	83	67		
12	5.2	17	17	19	161	22	15	18	79	1.8	318	38		
13	5.3	16	17	20	88	21	13	14	62	1.5	80	26		
14	5.4	16	16	25	51	21	13	13	52	1.3	46	21		
15	5.6	16	17	24	48	20	12	13	44	.77	32	18		
16	5.5	16	16	28	44	20	13	12	39	.05	24	16		
17	5.7	16	15	19	32	20	13	11	31	.01	18	15		
18	6.0	15	15	15	20	20	9.5	10	36	.00	14	13		
19	6.2	16	15	13	25	20	9.0	108	27	.00	20	173		
20	6.2	15	15	10	30	20	8.5	114	25	.00	32	71		
21	5.7	15	15	10	35	20	9.0	526	21	.00	16	1120		
22	35	15	15	15	43	20	9.7	212	17	.00	13	2650		
23	378	15	14	20	37	20	9.1	116	14	.47	9.5	890		
24	119	15	15	25	33	20	10	70	12	7.9	9.1	268		
25	43	15	16	30	31	19	9.4	43	11	6.4	6.4	487		
26	30	16	16	28	29	19	8.8	140	7.6	2.7	6.3	1870		
27	24	16	16	27	29	19	8.8	89	6.7	42	5.1	493		
28	22	16	17	26	29	19	8.8	50	5.7	25	5.6	247		
29	19	16	17	26	---	18	8.8	33	5.7	7.6	34	151		
30	19	15	18	25	---	18	7.6	21	4.6	5.8	17	111		
31	18	---	20	27	---	18	---	18	---	3.4	13	---		
TOTAL	824.1	480	499	643	1074	703	365.0	2682.0	7936.3	157.70	12602.09	9383		
MEAN	26.6	16.0	16.1	20.7	38.4	22.7	12.2	86.5	265	5.09	407	313		
MAX	378	23	20	30	161	39	19	526	1840	42	5890	2650		
MIN	4.6	15	14	10	20	18	7.6	7.0	4.6	.00	.99	10		
CFSM	.01	.009	.009	.01	.02	.01	.007	.05	.14	.003	.22	.17		
IN.	.02	.01	.01	.01	.02	.01	.01	.05	.16	.00	.25	.19		
AC-FT	1630	952	990	1280	2130	1390	724	5320	15740	313	25000	18610		
CAL YR 1977	TOTAL	36132.10	MEAN	99.0	MAX	2820	MIN	4.6	CFSM	.05	IN	.72	AC-FT	71670
WTR YR 1978	TOTAL	37349.19	MEAN	102	MAX	5890	MIN	.00	CFSM	.05	IN	.74	AC-FT	74080

RED RIVER BASIN

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07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 30,800 micromhos Feb. 12, 1969; minimum daily, 639 micromhos Aug. 5, 1978.

WATER TEMPERATURES (1967-72, 1974-77): Maximum daily, 38.0°C June 30, 1976; minimum daily, 0.0°C Dec. 29, 1969, Jan. 5, 1971.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 23,300 micromhos Apr. 18, 19; minimum daily, 840 micromhos Aug. 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT 03...	1240	4.5	19400	22.0	3100	--	850	240	--	--	--
NOV 07...	0820	15	18200	14.0	2800	--	800	200	--	--	--
DEC 21...	1050	15	20800	2.5	3300	--	930	240	--	--	--
FEB 21...	0915	61	15500	.0	2300	--	650	160	--	--	--
MAR 14...	1515	20	20900	14.0	3200	--	890	230	--	--	--
APR 25...	1600	9.2	22800	26.0	--	--	--	--	--	--	--
MAY 15...	0820	13	17300	19.0	2800	--	780	200	--	--	--
JUN 07...	1740	976	2960	26.0	--	--	--	--	--	--	--
08...	1100	432	2260	22.0	440	350	140	23	280	5.8	7.0
28...	0830	6.5	15500	23.5	--	--	--	--	--	--	--
AUG 05...	1945	3240	779	22.0	230	160	73	11	63	1.8	4.2
09...	0900	68	3570	25.5	--	--	--	--	--	--	--
29...	0830	47	16700	27.5	--	--	--	--	--	--	--
SEP 18...	0810	6.6	12600	24.0	--	--	--	--	--	--	--
27...	0815	508	2040	20.0	400	330	130	19	270	5.9	7.0

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)	SEDI- MENT, SUS- PENDED (MG/L)	SERI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 03...	--	--	2700	5700	--	--	--	--	--	--
NOV 07...	--	--	2300	5800	--	--	--	--	--	--
DEC 21...	--	--	2700	6400	--	--	--	--	--	--
FEB 21...	--	--	1900	4300	--	--	--	--	--	--
MAR 14...	--	--	2600	6500	--	--	--	--	--	--
APR 25...	--	--	--	--	--	--	--	44	1.1	82
MAY 15...	--	--	2100	5300	--	--	--	55	1.9	95
JUN 07...	--	--	--	--	--	--	--	9280	24500	88
08...	110	0	410	410	.2	9.7	1330	5120	5970	95
28...	--	--	--	--	--	--	--	39	.68	92
AUG 05...	86	0	220	73	.2	7.1	494	5670	49600	91
09...	--	--	--	--	--	--	--	149	22	99
29...	--	--	--	--	--	--	--	151	14	99
SEP 18...	--	--	--	--	--	--	--	69	1.2	97
27...	89	0	370	390	.2	9.0	1240	5250	7200	94

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
00...	--	13	19.0	55	1.9	--	--	--
APR 25...	1600	9.2	26.0	44	1.1	--	--	--
JUN 07...	1740	976	26.0	9280	24500	37	48	58
08...	1130	432	22.0	5120	5970	52	66	74
28...	0830	6.5	23.5	39	.68	--	--	--
AUG 05...	1945	3240	22.0	5670	49600	--	--	--
09...	0900	68	25.5	149	28	--	--	--
29...	0830	47	27.5	151	19	--	--	--
SEP 18...	0810	6.6	24.0	69	1.2	--	--	--
27...	0910	508	20.0	5250	7200	63	75	85

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM
00...	--	--	95	--	--	--	--
APR 25...	--	--	82	--	--	--	--
JUN 07...	69	80	88	92	95	99	100
08...	82	90	95	98	99	100	--
28...	--	--	92	--	--	--	--
AUG 05...	--	--	91	98	99	100	--
09...	--	--	99	--	--	--	--
29...	--	--	99	--	--	--	--
SEP 18...	--	--	97	--	--	--	--
27...	90	92	94	99	100	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	824.1	9580	6080	13500	2590	5770	1230	2730	1580
NOV. 1977.....	480	18700	12500	16300	5630	7310	2390	3100	****
DEC. 1977.....	499	20300	13700	18500	6190	8340	2590	3500	****
JAN. 1978.....	643	19800	13300	23200	6010	10400	2530	4390	****
FEB. 1978.....	1074	15100	9950	28800	4420	12800	1920	5580	****
MAR. 1978.....	703	20200	13600	25800	6140	11700	2570	4880	****
APR. 1978.....	364	22500	15300	15100	6930	6830	2860	2820	****
MAY 1978.....	2682	7500	4680	33900	1940	14000	1000	7240	1270
JUNE 1978.....	7936.29	3130	1890	40600	670	14300	500	10800	620
JULY 1978.....	157.7	12200	7930	3380	3470	1480	1560	666	****
AUG. 1978.....	12602.07	1690	1020	34800	280	9550	340	11500	450
SEPT 1978.....	9383	3380	2050	52100	740	18800	520	13300	660
TOTAL	37349.16	**	**	306000	**	121000	**	70500	**
WTD.AVG.	102.33	4770	3000	**	1200	**	700	**	860

RED RIVER BASIN

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07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19500	17000	20000	20700	18300	19300	21900	22900	12300	15700	18600	12200
2	19600	17400	20100	20600	18600	19500	22100	14000	2130	15900	18000	10000
3	19400	17600	20000	20500	19000	19900	22200	4500	3220	15700	15000	10600
4	19300	17900	20100	20100	19300	20500	22300	6500	7500	16700	1570	11300
5	18900	18100	20200	20300	19400	20300	22500	9000	2080	16800	840	12700
6	18700	18200	20000	20300	19300	19900	22600	10200	1570	17000	1800	13200
7	18900	18200	20100	20500	18600	16400	22500	11700	2350	18500	2500	14400
8	19600	14000	20200	20600	18200	17100	22200	12200	3070	19100	3000	14000
9	20400	17600	20000	20700	17900	19200	21900	13000	3780	19200	3780	6880
10	20300	18100	19900	20900	18000	20000	21400	13800	3900	19100	5010	7460
11	20800	18600	19600	21000	18100	20500	22500	14500	4050	19000	6790	9500
12	20600	19100	19900	21100	7200	20600	22000	15400	4290	19100	4640	10000
13	20400	19200	20100	19500	8980	20900	22400	15900	5620	18400	6510	10500
14	20500	19100	20100	17300	11400	20900	22800	16600	6850	18600	8000	10700
15	20400	19000	20500	18200	14500	20700	23000	17300	7740	18700	9260	11700
16	20300	19100	20600	19700	17300	20700	23100	18100	8760	18500	9150	12300
17	20600	19200	20700	20000	16600	20800	23200	19000	9670	19000	9090	12400
18	20400	19300	20600	20600	15800	20900	23300	21100	10300	---	9550	12500
19	20200	19400	20700	21100	15500	21100	23300	15000	11700	---	9000	10300
20	20300	19300	20700	20900	15200	21400	22800	14000	12600	---	10900	11500
21	20400	19500	20800	19900	16100	21600	22900	4780	13100	---	7910	3500
22	15200	19700	20900	19200	16600	21700	23000	4950	13600	---	8950	2490
23	6230	19900	20800	18200	17600	20000	22200	5130	14200	22200	9930	1230
24	6510	19800	20700	18500	18400	19500	22900	7520	14500	17500	10900	1990
25	6970	19600	20800	19500	18900	20700	23100	8340	14900	19000	11300	2750
26	8060	19800	20600	19800	19000	21100	22800	5000	15400	20200	12300	1810
27	8320	19900	20700	19900	19100	21000	22700	6000	15600	7500	13100	2010
28	12200	20000	20700	19700	19000	21500	22900	7080	15700	5000	14500	5490
29	15500	20100	20300	19600	---	21600	23000	7340	15900	7610	14800	9270
30	15600	20000	20200	19400	---	21500	22800	8760	15800	10300	12500	9950
31	16400	---	20000	19000	---	21800	---	12000	---	18700	10800	---
MEAN	17100	18800	20300	19900	16900	20400	22600	11700	9070	16700	9030	8820

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	17.0	13.0	6.0	4.0	---	---	---	---	34.0	34.0	24.5
2	22.0	---	13.0	---	7.0	10.0	---	10.0	23.0	---	31.0	28.5
3	24.0	18.0	15.0	6.0	6.0	---	21.0	11.0	25.0	33.0	25.0	26.0
4	19.0	---	7.0	9.0	10.0	11.0	---	17.0	---	34.0	20.0	26.5
5	19.0	20.0	11.0	12.0	---	---	24.0	19.0	23.0	36.0	20.0	33.0
6	24.0	21.0	8.0	13.0	5.0	12.0	30.0	23.0	21.0	36.0	---	24.0
7	24.0	21.0	12.0	12.0	---	---	31.0	27.0	27.0	37.0	---	23.0
8	22.0	16.0	12.0	---	---	11.0	---	---	---	34.0	---	23.0
9	19.0	13.0	---	5.0	2.0	17.0	---	---	29.0	---	29.0	24.0
10	24.0	15.0	---	---	---	---	16.0	---	21.0	36.0	---	25.5
11	19.0	17.0	7.0	---	5.0	18.0	24.0	---	---	36.0	---	26.0
12	20.0	16.0	16.0	2.0	5.0	---	26.0	---	33.0	36.0	---	31.0
13	21.0	---	14.0	11.0	6.0	19.0	26.0	---	30.0	34.0	---	31.5
14	23.0	19.0	14.0	5.0	5.0	---	---	---	31.0	---	---	33.5
15	21.0	21.0	15.0	---	---	13.0	26.0	---	---	34.0	---	24.5
16	19.0	19.0	---	4.0	3.0	18.0	20.0	---	33.0	27.0	---	32.0
17	24.0	16.0	14.0	---	---	20.0	24.0	---	31.0	---	---	29.0
18	23.0	17.0	13.0	---	3.0	---	25.0	---	---	---	---	24.0
19	23.0	16.0	12.0	1.0	5.0	---	25.0	29.0	34.0	---	---	29.0
20	15.0	17.0	11.0	.0	6.0	---	27.0	25.0	34.0	---	---	22.5
21	16.0	11.0	8.0	1.0	9.0	25.0	26.0	---	34.0	---	---	17.5
22	19.0	17.0	---	5.0	13.0	23.0	---	30.0	---	---	---	16.5
23	19.0	17.0	10.0	5.0	18.0	16.0	---	31.0	34.0	26.0	---	18.5
24	21.0	12.0	14.0	4.0	19.0	14.0	25.0	---	---	---	---	21.5
25	23.0	14.0	8.0	11.0	15.0	---	25.0	---	---	35.0	24.5	22.0
26	25.0	15.0	---	6.0	16.0	22.0	27.0	20.0	---	39.0	25.0	21.0
27	20.0	14.0	7.0	7.0	13.0	25.0	25.0	29.0	36.0	29.0	26.0	20.0
28	---	9.0	10.0	8.0	10.0	26.0	---	27.0	---	34.0	23.5	23.5
29	19.0	11.0	14.0	---	---	19.0	---	30.0	---	35.0	27.5	26.5
30	21.0	13.0	9.0	3.0	---	27.0	---	33.0	34.0	36.0	22.0	22.0
31	24.0	---	14.0	---	---	27.0	---	31.0	---	35.0	25.0	---
MEAN	21.5	16.0	11.5	6.0	8.5	18.5	25.0	24.5	29.5	34.0	25.5	25.0

07312000 LAKE KEMP NEAR MABELLE, TX

LOCATION.--Lat 33°45'30", long 99°09'03", Baylor County, Hydrologic Unit 11130206, in outlet gate tower near center of dam on Wichita River, 6.2 mi (10.0 km) north of Mabelle, 13 mi (21 km) northeast of Seymour, and 126.7 mi (203.9 km) upstream from mouth.

DRAINAGE AREA.--2,086 mi² (5,403 km²).

PERIOD OF RECORD.--October 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1972, nonrecording gage at different site and at datum 2.40 ft (0.732 m) higher.

REMARKS.--The lake is formed by a rolled-fill earthen dam 8,890 ft (2,710 m) long. The original dam was completed Aug. 25, 1923, but deliberate impoundment had begun Oct. 1, 1922. Enlargement of the dam was completed in November 1973. The uncontrolled emergency spillway, 3,000 ft (910 m) wide, is located approximately 600 ft (180 m) to right and slightly upstream from right end of dam. The controlled outlet works near center of dam consist of two hydraulically operated slide gates 5 ft 8 in by 13 ft (1.7 by 4 m) with a 13-foot-diameter (4.0 m) conduit and spillway basin. The dam and lake are owned by the city of Wichita Falls and the Wichita County Water Improvement District No. 2. Water is used for irrigation in the Wichita River Valley, oilfield operation, municipal, and industrial uses. The capacity table is based on a resurvey made in 1973. 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.....	1,183.0	-
Crest of spillway.....	1,160.0	603,000
Top of flood-control pool.....	1,156.0	502,900
Top of conservation pool.....	1,144.0	268,000
Lowest gated outlet (invert).....	1,090.0	1,400

COOPERATION.--Capacity table No. 4-C was furnished by the Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,900 acre-ft (519 hm³) June 30, 1941, elevation, 1,152.0 ft (351.13 m), present datum; minimum since first appreciable storage, 26,160 acre-ft (32.3 hm³) June 30, 1953, elevation, 1,108.0 ft (337.72 m), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 192,900 acre-ft (238 hm³) Oct. 1, elevation, 1,138.54 ft (347.027 m); minimum, 117,900 acre-ft (145 hm³) Aug. 4, elevation, 1,129.61 ft (344.305 m).

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

1,129.0	114,100	1,135.0	157,200
1,131.0	127,000	1,137.0	176,000
1,133.0	141,100	1,139.0	198,300

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192400	181100	176600	163700	163800	168100	164400	154100	148700	146300	118900	148600
2	191700	180400	176400	163700	163900	168000	164400	155200	149400	145500	118300	148400
3	191300	180100	176500	163700	164000	167900	164300	156100	150900	144400	118100	148400
4	190900	179600	176600	164000	164000	167800	164200	155900	151600	143400	126100	148500
5	190700	179000	176300	164100	164000	167900	164100	156500	154600	142500	134800	148100
6	190600	178300	176000	164200	164100	168400	164300	156800	158100	141500	141200	148300
7	190600	178900	176200	164300	164300	168300	164200	156900	159400	140300	143000	148000
8	190200	178700	175900	163700	164500	168300	164100	156900	160200	139400	143800	148100
9	190100	178700	175600	163600	164600	168400	163900	156800	160700	138500	144200	147800
10	189100	178500	175500	163400	164600	168600	163800	156900	160800	137500	144400	147800
11	187000	178500	175500	163500	164700	168600	163800	156700	161100	136600	144600	147200
12	185900	178200	175400	163600	165100	168700	163600	155600	161300	135700	145200	146700
13	185700	178300	174200	163700	165700	168800	163400	154900	160900	134800	145400	146300
14	185400	178500	173200	163400	166300	168700	163400	154000	161000	134100	145300	145900
15	185200	178300	172400	163700	166600	168500	163400	153200	160600	133200	145300	145600
16	184900	178300	171100	163600	166800	168200	163300	152200	160000	132300	145200	145200
17	184800	178100	169900	163500	167000	168000	162500	151200	159100	131500	145100	144900
18	184800	178000	168800	163600	167100	168000	161500	150700	158500	130400	144900	144200
19	184300	178100	167900	163300	167300	167500	160600	150500	157700	129400	149500	143900
20	181900	177800	167400	163200	167400	167400	159500	149800	156800	128200	149600	143700
21	179700	177700	166500	163300	167500	167100	158600	150000	155800	127200	149700	144500
22	180200	177700	166200	163300	167700	167000	157700	150400	154800	126100	149600	148000
23	180500	177300	165700	163600	168000	166900	156900	150600	153600	125200	149500	149900
24	181000	177400	165500	163500	168200	165900	156200	150600	152600	124200	149500	150300
25	181100	177200	165000	163700	168000	165200	155600	150500	151500	123200	149400	152400
26	181100	177400	164800	163600	168100	164400	154900	151300	150500	122500	149200	155700
27	181200	177000	164300	163700	168200	164200	154500	150900	149800	122000	149100	157000
28	181100	176900	163900	163500	168200	164200	154400	150700	149100	121600	149100	157300
29	181100	176700	163900	163600	---	164300	154500	150300	148200	120900	148800	157300
30	181100	176600	163800	163600	---	164200	154400	149700	147300	120300	148700	157200
31	180900	---	164000	163700	---	164400	---	149100	---	119700	148600	---
MAX	192400	181100	176600	164300	168200	168800	164400	156900	161300	146300	149700	157300
MIN	179700	176600	163800	163200	163800	164200	154400	149100	147300	119700	118100	143700
(†)	1137.46	1137.05	1135.76	1135.73	1136.21	1135.80	1134.67	1134.03	1133.80	1129.90	1133.97	1135.00
(‡)	-12300	-4300	-12600	-300	+4500	-3800	-10000	-5300	-1800	-27600	+28900	+8600
CAL YR 1977	MAX	265100	MIN	163800	‡	-43600						
WTR YR 1978	MAX	192400	MIN	118100	‡	-36000						

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

07312100 WICHITA RIVER NEAR MABELLE, TX

LOCATION.--Lat 33°45'36", long 99°08'33", Baylor County, Hydrologic Unit 11130206, near left bank on downstream side of bridge on U.S. Highways 183 and 283, 0.3 mi (0.5 km) downstream from Lake Kemp Dam, 6.2 mi (10.0 km) north of Mabelle, and 13 mi (21 km) northeast of Seymour.

DRAINAGE AREA.--2,086 mi² (5,403 km²), all of which is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-58 (occasional discharge measurements), October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,062.72 ft (323.917 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is regulated by Lake Kemp (see station 07312000). Water is released from Lake Kemp to supply Lake Diversion. Water from Lake Diversion is released for mining and industrial uses, recreation, and irrigation in vicinity of Wichita Falls.

AVERAGE DISCHARGE.--19 years, 150 ft³/s (4.035 m³/s), 108,700 acre-ft/yr (134 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,290 ft³/s (121 m³/s) Mar. 24, 1976, gage height, 10.47 ft (3.191 m); minimum daily, 0.15 ft³/s (0.004 m³/s) June 22, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,470 ft³/s (70.0 m³/s) May 18, gage height, 8.00 ft (2.438 m); minimum, 0.64 ft³/s (0.018 m³/s) Jan. 25, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	1.3	1.5	.77	.81	.83	1.5	.99	114	386	251	1.6
2	.91	1.3	1.5	.77	.81	.82	1.5	4.2	6.4	385	251	1.6
3	.92	101	1.5	.76	.81	.80	1.4	1.1	3.5	440	253	1.6
4	.94	208	1.5	.77	.77	.78	1.6	.91	3.1	521	132	1.6
5	1.1	208	1.5	.72	.77	.80	2.2	.91	4.9	520	13	2.1
6	1.1	209	1.5	.72	.77	.84	2.2	.91	8.3	519	2.6	2.2
7	.99	79	1.5	.70	.78	.99	2.2	.84	3.1	518	2.4	2.1
8	.99	2.5	1.5	.70	.78	.91	2.1	.91	3.0	431	2.2	2.1
9	.99	1.8	1.3	.70	.77	.91	2.0	.91	2.9	371	2.1	196
10	367	1.8	1.2	.70	.77	.91	1.9	.72	2.8	371	2.1	360
11	807	1.7	1.3	.70	.77	.84	1.9	147	2.8	370	2.0	291
12	386	1.6	305	.74	2.0	.77	1.9	305	2.7	369	1.8	243
13	3.0	1.6	543	.70	.76	.84	1.6	357	2.6	367	1.8	242
14	3.0	1.6	543	.84	.76	.84	1.7	357	2.6	367	1.8	175
15	2.5	1.6	543	.84	.77	28	1.7	357	71	369	1.7	117
16	2.4	1.6	543	.83	.76	103	1.7	360	287	369	1.8	117
17	2.2	1.5	543	.80	.78	103	148	360	286	368	1.6	117
18	1.6	1.3	543	.82	.71	107	368	499	285	449	1.6	117
19	292	1.3	396	.77	.77	107	373	349	319	503	12	149
20	1080	1.3	240	.77	.87	107	373	290	400	502	2.0	174
21	1090	1.3	240	.78	.73	107	377	155	401	496	1.8	179
22	530	1.7	155	.77	.73	107	373	7.6	401	496	1.7	180
23	2.5	1.7	105	.77	.73	107	373	6.0	400	498	1.8	180
24	2.0	1.7	105	.74	.74	187	296	5.8	396	497	1.7	180
25	1.7	1.7	105	.71	.73	338	240	5.8	396	437	1.7	182
26	1.6	1.6	105	.70	.74	338	180	6.0	393	363	1.6	147
27	1.5	1.5	105	.70	.75	122	101	181	234	293	1.6	120
28	1.4	1.5	105	.70	.75	1.5	39	282	282	254	1.9	121
29	1.4	1.5	78	.70	---	1.5	1.1	282	391	252	1.6	120
30	1.5	1.6	.96	.70	---	1.5	.99	280	389	254	1.6	121
31	1.4	---	.88	.72	---	1.5	---	281	---	252	1.6	---
TOTAL	4590.49	844.6	5319.64	23.11	22.69	1878.88	3272.19	4885.60	5493.7	12587	958.1	3842.9
MEAN	148	28.2	172	.75	.81	60.6	109	158	183	406	30.9	128
MAX	1090	209	543	.84	2.0	338	377	499	401	521	253	360
MIN	.85	1.3	.88	.70	.71	.77	.99	.72	2.6	252	1.6	1.6
AC-FT	9110	1680	10550	46	45	3730	6490	9690	10900	24970	1900	7620
CAL YR 1977	TOTAL	42610.34	MEAN 117	MAX 1090	MIN .51	AC-FT 84520						
WTR YR 1978	TOTAL	43718.90	MEAN 120	MAX 1090	MIN .70	AC-FT 86720						

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to current year.

WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,860 micromhos May 30, 31, 1978; minimum daily, 561 micromhos May 28, 1975.

WATER TEMPERATURES: Maximum daily, 32.0°C Sept. 4, 1972, June 26, July 5, 1975; minimum daily, 0.0°C Dec. 20, 1973.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,860 micromhos May 30, 31; minimum daily, 1,620 micromhos Aug. 5.

WATER TEMPERATURES: Maximum daily, 28.0°C on several days during July; minimum daily, 3.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT										
07...	0940	.99	5290	7.8	18.5	1000	840	270	80	800
NOV										
01...	1155	1.3	5630	7.9	17.0	1000	890	280	79	850
DEC										
13...	1250	546	6120	7.5	9.5	1100	1000	310	82	970
FEB										
15...	0810	.90	4980	--	7.0	970	810	260	77	740
MAR										
07...	1335	.90	4730	--	8.0	920	750	240	79	700
APR										
18...	0835	367	6770	7.9	27.5	1300	1200	390	88	1100
JUN										
07...	0735	3.0	4660	--	21.0	810	690	220	63	660
AUG										
21...	1020	1.8	3550	--	26.0	670	540	180	54	570
SEP										
12...	0735	200	5940	--	25.0	1000	940	290	71	990

DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT										
07...	11		7.4	200	0	720	1300	--	9.6	3290
NOV										
01...	12		8.6	160	0	740	1400	--	9.1	3450
DEC										
13...	13		9.4	110	0	910	1600	--	6.4	3940
FEB										
15...	10		7.4	190	0	630	1300	.7	9.8	3120
MAR										
07...	10		9.9	210	0	640	1200	.4	9.2	2980
APR										
18...	13		10	110	0	990	1800	--	3.9	4440
JUN										
07...	10		12	150	0	640	1100	.4	6.6	2780
AUG										
21...	9.6		9.1	160	0	490	870	.3	8.3	2260
SEP										
12...	14		14	94	0	910	1600	.3	6.5	3930

RED RIVER BASIN

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07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFAT (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA+MG) (MG/L)
OCT. 1977.....	4590.48	5890	3770	46700	1530	18900	830	10200	1080
NOV. 1977.....	844.6	5950	3800	8660	1540	3510	830	1900	1090
DEC. 1977.....	5319.63	6110	3930	56500	1600	22900	860	12300	1110
JAN. 1978.....	23.11	5300	3310	206	1330	83	740	46	990
FEB. 1978.....	22.69	4820	2980	183	1180	72	670	41	900
MAR. 1978.....	1878.88	6440	4190	21200	1710	8650	910	4610	1160
APR. 1978.....	3272.19	6630	4330	38300	1770	15600	940	8280	1190
MAY 1978.....	4885.6	6720	4400	58000	1800	23800	950	12500	1200
JUNE 1978.....	5493.7	6580	4300	63700	1760	26100	930	13800	1180
JULY 1978.....	12587	6750	4420	150000	1810	61500	950	32400	1210
AUG. 1978.....	958.1	5900	3840	9930	1560	4020	830	2140	1080
SEPT 1978.....	3842.9	5840	3720	38600	1510	15600	820	8490	1070
TOTAL	43718.85	**	**	492000	**	201000	**	107000	**
WTD.AVG.	119.78	6420	4200	**	1700	**	900	**	1200

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5430	5760	5620	5330	5250	5180	5960	5740	6770	6660	6790	5490
2	5340	5660	5690	5280	5280	5180	5960	5790	4480	6680	6790	5430
3	5400	5560	5650	5330	5220	5210	5980	3580	5310	6680	6790	5490
4	5350	6030	5560	5560	5250	5210	6030	5050	5310	6680	1630	5430
5	5480	6010	5650	5330	5260	5180	6310	5050	3230	6710	1620	5560
6	5470	6010	5680	5410	5230	5210	6240	5140	1990	6710	3280	5730
7	5330	6010	5680	5340	5130	4640	6240	5250	4500	6710	4550	5800
8	5370	4390	5790	3730	5170	5180	6240	5290	4700	6710	4820	5860
9	5330	5770	5790	5450	4680	5180	6240	5400	4850	6750	4930	5730
10	5410	5940	5870	5530	5170	5210	6020	5400	5310	6720	4980	5860
11	5940	5930	5740	5480	5220	5210	6040	5610	5670	6730	5170	5860
12	5940	5850	5600	5380	2240	5220	6130	6770	5910	6730	5270	5860
13	5770	5750	6120	5300	4800	5250	6130	6770	5760	6720	5300	5860
14	5690	5950	6120	5440	4980	5250	6190	6770	5830	6720	5340	5850
15	5570	5860	6120	5570	4980	5230	6240	6770	5950	6740	5340	5850
16	5740	5860	6120	5330	5020	6460	6320	6770	6620	6770	5340	5860
17	5600	5820	6120	5250	4860	6460	6240	6770	6600	6770	5450	5860
18	5580	5780	6140	5300	5090	6460	6650	6770	6600	6780	5510	5880
19	5480	5730	6160	5280	4860	6460	6650	6770	6600	6750	5330	5880
20	5990	5750	6160	5300	4660	6460	6620	6770	6600	6790	1920	5900
21	5990	5870	6180	5430	4680	6460	6620	6770	6590	6750	3360	5880
22	5990	5830	6180	5360	4910	6460	6650	6460	6590	6780	4460	5910
23	5560	5810	6180	5560	5150	6460	6670	6340	6600	6770	4850	5910
24	5390	5780	6180	5380	5140	6460	6670	6230	6600	6790	4980	5900
25	5620	5730	6180	5170	5220	6460	6670	6340	6600	6810	5130	5900
26	5630	5750	6180	5210	5220	6510	6730	6040	6630	6810	5210	5860
27	5660	5830	6180	5210	5220	6510	6730	6100	6620	6810	5260	5830
28	5660	5830	6180	5210	5150	5770	6730	6770	6620	6810	5170	5670
29	5600	5710	6190	5220	---	5820	6130	6810	6620	6820	5210	5620
30	5650	5570	5990	5240	---	5820	5850	6860	6620	6830	5370	5560
31	5710	---	5430	5250	---	5920	---	6860	---	6830	5440	---
MEAN	5600	5770	5950	5300	4970	5760	6330	6120	5820	6750	4860	5770

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	11.0	9.0	6.0	5.0	8.0	15.0	18.0	23.0	26.0	26.0	23.0
2	19.0	11.0	8.0	5.0	5.0	9.0	18.0	18.0	21.0	27.0	26.0	23.0
3	17.0	12.0	10.0	5.0	8.0	3.0	18.0	11.0	21.0	26.0	26.0	24.0
4	17.0	16.0	10.0	7.0	6.0	3.0	17.0	10.0	22.0	26.0	25.0	23.0
5	17.0	16.0	9.0	9.0	6.0	6.0	18.0	15.0	22.0	27.0	22.0	24.0
6	18.0	17.0	7.0	10.0	5.0	10.0	16.0	18.0	20.0	27.0	22.0	23.0
7	19.0	17.0	6.0	9.0	6.0	9.0	19.0	19.0	21.0	27.0	23.0	24.0
8	19.0	15.0	10.0	7.0	5.0	7.0	20.0	19.0	21.0	27.0	23.0	23.0
9	16.0	9.0	4.0	4.0	4.0	8.0	20.0	18.0	22.0	28.0	24.0	26.0
10	16.0	8.0	4.0	3.0	5.0	9.0	16.0	18.0	21.0	27.0	24.0	25.0
11	20.0	9.0	6.0	4.0	7.0	12.0	12.0	19.0	22.0	27.0	24.0	25.0
12	19.0	12.0	10.0	6.0	7.0	11.0	14.0	20.0	22.0	27.0	25.0	25.0
13	14.0	13.0	9.0	6.0	3.0	11.0	15.0	20.0	21.0	27.0	25.0	25.0
14	17.0	14.0	9.0	6.0	5.0	12.0	16.0	20.0	24.0	28.0	25.0	25.0
15	15.0	16.0	9.0	6.0	7.0	11.0	19.0	21.0	24.0	28.0	25.0	26.0
16	14.0	14.0	10.0	10.0	7.0	6.0	19.0	20.0	25.0	28.0	25.0	27.0
17	14.0	13.0	9.0	3.0	3.0	9.0	19.0	19.0	25.0	28.0	25.0	27.0
18	16.0	11.0	9.0	5.0	4.0	9.0	18.0	22.0	25.0	28.0	24.0	26.0
19	16.0	15.0	9.0	3.0	5.0	10.0	18.0	22.0	25.0	27.0	24.0	26.0
20	18.0	17.0	8.0	3.0	4.0	10.0	17.0	22.0	25.0	27.0	21.0	25.0
21	18.0	11.0	7.0	4.0	4.0	10.0	17.0	23.0	25.0	27.0	25.0	24.0
22	19.0	10.0	9.0	5.0	7.0	11.0	18.0	22.0	26.0	27.0	25.0	24.0
23	16.0	12.0	9.0	5.0	8.0	11.0	16.0	23.0	25.0	26.0	25.0	24.0
24	17.0	12.0	10.0	8.0	9.0	9.0	17.0	23.0	24.0	27.0	24.0	24.0
25	16.0	11.0	7.0	5.0	9.0	12.0	17.0	22.0	25.0	27.0	24.0	24.0
26	17.0	10.0	7.0	5.0	8.0	15.0	17.0	22.0	26.0	27.0	24.0	23.0
27	17.0	11.0	7.0	4.0	11.0	11.0	17.0	22.0	25.0	27.0	25.0	23.0
28	18.0	11.0	7.0	6.0	12.0	13.0	17.0	23.0	25.0	27.0	24.0	23.0
29	18.0	9.0	9.0	6.0	---	15.0	19.0	23.0	26.0	27.0	24.0	23.0
30	19.0	9.0	9.0	6.0	---	14.0	19.0	24.0	26.0	27.0	24.0	23.0
31	18.0	---	11.0	5.0	---	15.0	---	24.0	---	27.0	24.0	---
MEAN	17.5	12.5	8.5	5.5	6.5	10.0	17.5	20.0	23.5	27.0	24.5	24.0

RED RIVER BASIN

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07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX

LOCATION.--Lat 33°48'50", long 98°55'57", Archer County, Hydrologic Unit 11130206, on left bank 125 ft (38 m) downstream from Lake Diversion headgates and 5.3 mi (8.5 km) northwest of Dundee.

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

GAGE.--Water-stage recorder. Datum of gage is 1,039.70 ft (316.901 m) National Geodetic Vertical Datum of 1929 (Wichita County Water Improvement District bench mark).

REMARKS.--Records good. Water diverted from Lake Diversion is used for mining, industrial use, recreation, and irrigation. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--7 years, 86.6 ft³/s (2.453 m³/s), 62,740 acre-ft/yr (77.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 374 ft³/s (10.6 m³/s) July 22, 1974; maximum gage height, 8.66 ft (2.640 m) July 23, 1978; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	71	1.7	32	.77	.42	5.4	145	186	309	252	148
2	201	71	1.7	44	.77	.43	3.7	149	206	309	252	165
3	197	73	1.7	53	.77	.40	3.9	74	206	309	253	162
4	194	65	1.7	69	.64	.35	3.5	37	203	310	185	161
5	188	54	1.7	72	.64	.33	3.6	45	185	310	38	160
6	186	55	1.7	62	.64	.33	3.8	45	96	313	32	158
7	181	69	1.7	61	.64	.43	3.6	43	34	305	32	155
8	178	82	1.7	61	.64	.47	3.5	40	34	296	31	153
9	174	78	1.7	61	.61	.60	35	28	34	289	31	151
10	169	80	1.9	61	.58	.54	70	53	12	288	30	151
11	169	81	69	61	.54	.49	71	97	4.1	286	29	152
12	176	81	109	60	.57	.64	70	117	4.1	285	30	167
13	180	82	120	59	.51	.84	71	108	16	300	30	178
14	178	81	123	59	.54	.84	87	99	69	304	65	178
15	173	75	123	60	.62	.85	103	103	113	303	143	178
16	163	73	133	57	.63	.62	127	126	157	304	146	177
17	138	34	143	58	.61	.69	149	193	174	317	68	177
18	137	2.2	143	41	.53	6.2	147	226	177	322	66	175
19	135	2.3	142	22	.60	39	139	248	186	322	66	174
20	136	1.9	148	22	.58	45	135	249	205	325	66	171
21	146	2.0	153	22	.51	15	137	252	212	335	66	171
22	125	2.0	146	19	.49	9.8	131	250	233	343	84	170
23	8.8	2.0	135	19	.49	4.7	135	243	262	346	101	159
24	81	2.2	125	4.0	.45	2.4	135	235	263	320	101	147
25	111	2.1	111	1.9	.42	2.5	141	220	264	295	100	148
26	79	2.0	89	1.1	.42	2.5	147	219	277	295	99	127
27	78	1.9	89	1.1	.44	2.5	154	215	299	280	99	103
28	77	1.9	89	.82	.44	2.5	153	195	299	270	99	103
29	75	1.7	80	.78	---	2.3	146	160	302	265	117	103
30	75	1.7	44	.77	---	2.2	145	160	309	252	132	103
31	73	---	33	.77	---	2.2	---	160	---	252	131	---
TOTAL	4385.8	1230.9	2364.2	1151.24	16.09	148.07	2659.0	4534	5021.2	9359	2974	4625
MEAN	141	41.0	76.3	37.1	.57	4.78	88.6	146	167	302	95.9	154
MAX	204	82	153	72	.77	45	154	252	309	346	253	178
MIN	8.8	1.7	1.7	.77	.42	.33	3.5	28	4.1	252	29	103
AC-FT	8700	2440	4690	2280	32	294	5270	8990	9960	18560	5900	9170
CAL YR 1977	TOTAL	36304.40	MEAN	99.5	MAX	285	MIN	1.7	AC-FT	72010		
WTR YR 1978	TOTAL	38468.50	MEAN	105	MAX	346	MIN	.33	AC-FT	76300		

07312200 BEAVER CREEK NEAR ELECTRA, TX

LOCATION.--Lat 33°54'21", long 98°54'17", Wichita County, Hydrologic Unit 11130207, near right bank on downstream side of bridge on Farm Road 2326, 6.5 mi (10.5 km) northwest of Kama, 8 mi (13 km) upstream from Wichita River, and 9 mi (14 km) south of Electra.

DRAINAGE AREA.--652 mi² (1,689 km²).

PERIOD OF RECORD.--February 1960 to current year.

Water-quality records: Chemical analyses: October 1968 to June 1970. Water temperatures: October 1968 to June 1970. Sediment records: April 1966 to September 1975.

GAGE.--Water-stage recorder. Datum of gage is 991.3 ft (302.15 m) National Geodetic Vertical Datum of 1929 (Texas Department of Highways and Public Transportation reference point).

REMARKS.--Records fair. Some regulation by Santa Rosa Lake, capacity 11,570 acre-ft (14.3 hm³), about 30 mi (48 km) upstream. Several small diversions above station.

AVERAGE DISCHARGE.--18 years, 58.6 ft³/s (1.660 m³/s), 1.22 in/yr (31 mm/yr), 42,460 acre-ft/yr (52.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Mar. 17, 1961, gage height, 33.57 ft (10.232 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1925, 36.0 ft (10.97 m) probably occurred Oct. 2, 1941 (partly caused by deliberate demolition of Santa Rosa Dam to avoid its failure), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 6	1400	*1,670 47.3	19.60 5.974	Aug. 19	2300	1,190 33.7	17.75 5.410

Minimum daily discharge, 0.27 ft³/s (0.008 m³/s) Sept. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	.85	1.0	2.2	1.3	.35	1.7	.93	9.1	3.5	3.7	4.5
2	2.7	1.5	.92	2.1	1.2	3.1	1.7	25	46	3.8	4.3	4.1
3	2.5	1.1	.93	2.0	1.2	2.6	1.7	123	97	4.3	4.0	3.8
4	2.8	1.0	.92	2.0	1.2	1.5	1.6	35	25	5.1	86	3.7
5	3.1	.86	.91	2.1	1.2	1.4	1.6	13	167	4.7	616	3.6
6	3.3	.62	.91	2.2	.85	1.6	1.7	11	893	4.3	37	3.5
7	3.4	.52	.93	1.5	.60	19	1.5	7.2	226	4.0	26	2.9
8	3.4	13	.92	.75	.60	5.6	1.4	5.8	183	3.6	22	3.2
9	3.4	19	.84	.60	.60	2.8	1.4	5.2	101	4.1	19	3.7
10	3.1	5.2	.80	.60	1.0	2.3	1.6	4.7	51	4.4	14	2.9
11	3.4	3.5	.85	.70	1.4	2.1	1.5	4.9	26	4.6	7.3	2.3
12	3.2	2.6	.92	.80	37	1.9	1.4	5.5	9.5	3.4	4.3	2.0
13	3.1	2.7	.91	1.0	58	1.8	1.3	5.1	6.3	2.7	4.0	1.9
14	2.8	2.7	1.1	1.3	11	1.7	1.2	5.0	26	2.4	4.0	1.6
15	2.2	2.5	1.2	1.4	3.8	1.7	1.1	3.8	28	2.0	3.8	1.4
16	1.9	2.5	1.1	1.4	2.1	1.8	1.1	3.2	22	1.9	299	1.1
17	1.7	2.3	.89	.90	.50	1.7	1.1	3.5	18	2.2	75	.91
18	1.5	1.7	.94	.60	.50	1.8	1.1	3.4	10	3.0	18	.61
19	1.6	1.3	1.2	.30	.75	1.7	1.5	4.1	5.6	3.5	497	.27
20	1.9	1.1	1.0	.30	1.6	1.7	1.2	49	3.8	3.8	549	.67
21	1.8	.96	.83	.40	2.5	1.8	.93	82	3.6	4.7	59	2.6
22	15	.94	.76	.60	5.2	1.7	.60	14	3.3	5.4	17	13
23	44	.91	.71	.85	2.3	1.8	.62	6.3	3.7	5.8	9.8	6.4
24	13	.79	.72	.95	1.2	1.9	1.1	4.8	3.7	5.6	7.2	2.5
25	2.9	1.0	.73	1.1	.80	1.9	1.3	5.1	3.4	5.2	5.8	7.4
26	1.6	1.3	1.7	1.1	.60	1.6	1.3	58	3.6	5.2	4.6	327
27	1.4	1.5	2.2	1.1	.51	1.7	1.2	28	3.4	4.7	4.2	53
28	1.2	1.5	2.1	1.1	.43	1.7	1.2	11	3.5	4.3	4.0	11
29	1.1	1.5	2.2	1.1	---	1.5	.96	9.8	3.5	3.8	3.7	5.6
30	.90	1.4	2.3	1.1	---	1.6	.68	11	3.3	3.2	3.5	2.5
31	.80	---	2.3	1.1	---	1.8	---	10	---	2.9	4.6	---
TOTAL	137.50	78.35	35.74	35.25	139.94	77.15	38.29	558.33	1988.3	122.1	2416.8	479.66
MEAN	4.44	2.61	1.15	1.14	5.00	2.49	1.28	18.0	66.3	3.94	78.0	16.0
MAX	44	19	2.3	2.2	58	19	1.7	123	893	5.8	616	327
MIN	.80	.52	.71	.30	.43	.35	.60	.93	3.3	1.9	3.5	.27
CFSM	.007	.004	.002	.002	.008	.004	.002	.03	.10	.006	.12	.03
IN.	.01	.00	.00	.00	.01	.00	.00	.03	.11	.01	.14	.03
AC-FT	273	155	71	70	278	153	76	1110	3940	242	4790	951
CAL YR 1977	TOTAL	14316.85	MEAN	39.2	MAX	2060	MIN	.52	CFSM	.06	IN	.82
WTR YR 1978	TOTAL	6107.41	MEAN	16.7	MAX	893	MIN	.27	CFSM	.03	IN	.35
									AC-FT	28400	AC-FT	12110

07312500 WICHITA RIVER AT WICHITA FALLS, TX

LOCATION.--Lat 33°54'34", long 98°32'00", Wichita County, Hydrologic Unit 11130206, near center of stream on downstream side of bridge on Beverly Drive in Wichita Falls, 4 mi (6 km) upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi (13.5 km) upstream from Holliday Creek, and 55.3 mi (89.0 km) upstream from mouth.

DRAINAGE AREA.--3,140 mi² (8,130 km²), of which 2,086 mi² (5,403 km²) is above Lake Kemp Dam.

PERIOD OF RECORD.--February 1900 to January 1902 (monthly discharge only, published in WSP 1311), October 1910 to December 1911 (gage heights only), March 1938 to current year.
Water-quality records: Sediment records: January 1966 to September 1975.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 924.26 ft (281.714 m) National Geodetic Vertical Datum of 1929. February 1900 to February 1902 and Oct. 1, 1910, to Dec. 31, 1911, nonrecording gages at site 4 mi (6 km) downstream at different datum. Mar. 30, 1938, to Dec. 1, 1959, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow from 2,086 mi² (5,403 km²) is regulated by Lake Kemp, capacity 603,000 acre-ft (743 hm³), 71 mi (114 km) upstream. Since completion of dam in 1923, no flow has been permitted to pass over spillway. Water is diverted from Lake Diversion, capacity 40,000 acre-ft (49.3 hm³), 41 mi (82 km) upstream, for the irrigation of 42,000 acres (170 km²) under permit in the vicinity of Wichita Falls. During the water year, Wichita County Water Improvement District No. 2 diverted 76,300 acre-ft (94.1 hm³) from Lake Diversion for mining, industrial use, recreation, and irrigation of 31,630 acres (128 km²). For diversions from Lake Diversion during the current year, see station (07312110). Several observations of water temperatures were made during the year.

AVERAGE DISCHARGE.--41 years (water years 1901, 1939-78), 277 ft³/s (7.845 m³/s), 200,700 acre-ft/yr (247 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s (504 m³/s) Oct. 3, 1941, gage height, 24.0 ft (7.32 m); no flow Oct. 11, 1960 (construction of cofferdam upstream).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) June 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,620 ft³/s (45.9 m³/s) June 7, gage height, 8.62 ft (2.627 m); minimum, 6.0 ft³/s (0.17 m³/s) Apr. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	51	36	60	25	13	11	73	60	94	91	82
2	65	66	35	65	23	13	12	102	58	104	93	87
3	69	63	34	70	22	12	12	188	112	98	109	84
4	70	62	34	72	20	17	12	264	170	89	185	86
5	76	59	33	75	20	18	13	150	170	109	891	92
6	100	62	33	77	18	15	13	105	583	102	1150	89
7	105	78	32	81	16	391	10	79	1470	96	361	90
8	100	101	32	82	15	502	8.0	67	628	98	264	81
9	95	98	31	70	15	161	7.7	57	185	82	230	79
10	97	95	31	60	15	93	41	49	124	82	173	83
11	86	88	31	50	20	61	74	43	95	89	163	76
12	76	84	30	50	71	46	17	39	77	81	179	80
13	71	75	30	65	96	38	14	48	60	70	93	84
14	68	72	30	72	138	34	17	77	49	72	64	89
15	64	68	41	67	94	29	20	60	40	85	54	80
16	62	66	47	61	51	25	31	28	58	81	205	69
17	61	63	51	45	30	22	34	26	62	83	414	68
18	60	62	51	35	27	20	43	27	62	87	196	71
19	75	60	57	30	30	15	70	37	66	87	150	70
20	72	57	68	25	32	15	88	49	61	96	782	75
21	75	54	82	25	31	14	37	150	60	93	840	83
22	77	51	85	30	34	28	62	204	61	86	200	99
23	115	49	87	40	31	58	58	116	80	112	103	105
24	126	47	85	47	31	63	62	79	72	143	86	92
25	33	45	78	39	22	41	67	61	71	160	81	89
26	63	44	73	37	16	29	51	49	77	116	64	123
27	58	42	72	30	13	21	47	88	75	130	56	324
28	53	40	70	25	14	18	57	171	94	111	69	173
29	52	38	67	24	---	16	76	110	98	98	67	112
30	52	37	67	23	---	14	59	85	84	98	66	84
31	50	---	68	24	---	12	---	68	---	97	91	---
TOTAL	2358	1877	1601	1556	970	1854	1123.7	2749	4962	3029	7570	2899
MEAN	76.1	62.6	51.6	50.2	34.6	59.8	37.5	88.7	165	97.7	244	96.6
MAX	126	101	87	82	138	502	88	264	1470	160	1150	324
MIN	50	37	30	23	13	12	7.7	26	40	70	54	68
AC-FT	4630	3720	3180	3090	1920	3680	2230	5450	9840	6010	15020	5750
CAL YR 1977	TOTAL	42979.0	MEAN	118	MAX	1860	MIN	19	AC-FT	85250		
WTR YR 1978	TOTAL	32548.7	MEAN	89.2	MAX	1470	MIN	7.7	AC-FT	64560		

RED RIVER BASIN

07312700 WICHITA RIVER NEAR CHARLIE, TX

LOCATION.--Lat 34°03'11", long 98°17'47", Clay County, Hydrologic Unit 11130206, on right bank at upstream side of bridge on Farm Road 810, 3.0 mi (4.8 km) southeast of Charlie, and 5.7 mi (9.2 km) northwest of Petrolia.

DRAINAGE AREA.--3,439 mi² (8,907 km²), of which 2,086 mi² (5,403 km²) is above Lake Kemp Dam and 143 mi² (370 km²) is above Lake Wichita Dam.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 872.71 ft (266.002 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. For statement regarding regulations and diversions, see station 07312500. Records furnished by the city of Wichita Falls show that 15,270 acre-ft (18.8 hm³) was returned to river above station as sewage effluent or filter plant washwater.

AVERAGE DISCHARGE.--11 years, 280 ft³/s (7.930 m³/s), 202,900 acre-ft/yr (250 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,090 ft³/s (172 m³/s) Nov. 4, 1972, gage height, 21.21 ft (6.465 m); minimum, 24 ft³/s (0.68 m³/s) Feb. 18, 1978, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,690 ft³/s (47.9 m³/s) June 8, gage height, 9.49 ft (2.893 m); minimum, 24 ft³/s (0.68 m³/s) Feb. 18, result of freezeup.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	95	59	98	59	54	51	113	205	118	136	133
2	103	93	59	82	60	53	50	108	355	134	133	150
3	99	85	59	66	56	51	59	232	137	148	141	126
4	104	87	57	71	55	52	54	275	155	154	244	126
5	109	88	57	80	54	51	53	360	328	149	634	127
6	114	97	55	76	54	53	56	252	1010	156	1130	134
7	137	93	57	82	57	300	63	160	1500	146	984	132
8	134	98	57	84	63	1330	53	130	1580	148	466	130
9	129	176	56	74	63	543	51	116	636	150	351	123
10	131	108	55	71	58	224	56	102	251	128	303	123
11	132	106	53	76	62	129	85	83	167	124	244	125
12	132	103	54	79	79	96	138	84	129	124	238	119
13	124	98	55	82	213	83	117	78	112	117	250	116
14	114	95	54	84	90	77	85	96	94	111	152	118
15	119	100	122	85	108	71	53	108	81	100	119	130
16	129	111	119	87	93	63	52	85	75	105	277	131
17	135	106	78	93	72	61	60	59	95	108	433	126
18	141	100	85	90	50	58	74	53	114	108	515	125
19	115	119	91	88	58	55	86	49	124	106	285	124
20	98	111	91	86	67	52	110	60	126	104	314	105
21	90	86	98	81	64	52	137	77	110	112	929	99
22	92	74	98	81	60	55	93	184	108	116	781	107
23	150	70	111	76	57	62	90	270	108	115	331	136
24	183	63	122	72	58	233	99	160	135	149	219	147
25	181	61	109	74	54	135	100	122	130	191	191	134
26	136	61	112	72	54	74	101	117	108	217	184	185
27	107	57	103	69	52	62	84	96	117	173	160	207
28	120	55	103	64	52	57	89	578	116	193	150	400
29	100	55	91	58	---	55	102	473	118	172	149	227
30	90	59	88	54	---	52	129	190	133	153	155	154
31	93	---	103	56	---	52	---	130	---	140	149	---
TOTAL	3737	2710	2511	2391	1922	4345	2430	5000	8457	4269	10747	4319
MEAN	121	90.3	81.0	77.1	68.6	140	81.0	161	282	138	347	144
MAX	183	176	122	98	213	1330	138	578	1580	217	1130	400
MIN	90	55	53	54	50	51	50	49	75	100	119	99
AC-FT	7410	5380	4980	4740	3810	8620	4820	9920	16770	8470	21320	8570
CAL YR 1977	TOTAL	72302	MEAN 198	MAX 1810	MIN 53	AC-FT 143400						
WTR YR 1978	TOTAL	52838	MEAN 145	MAX 1580	MIN 49	AC-FT 104800						

RED RIVER BASIN

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07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,000 micromhos Apr. 25, 1972; minimum daily, 384 micromhos Aug. 16, 1971.

WATER TEMPERATURES: Maximum daily, 33.5°C July 6, 12, 14, 1978; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,900 micromhos July 26; minimum daily, 1,000 micromhos Mar. 8.

WATER TEMPERATURES: Maximum daily, 33.5°C July 6, 12, 14; minimum daily, 0.0°C on several days during January and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 19...	1600	108	5590	8.4	22.0	6.6	79	2.2	1000	920
DEC 14...	0950	52	4810	7.8	7.5	11.0	96	2.6	1000	810
FFB 28...	1200	59	5080	--	9.5	--	--	--	1000	860
MAR 01...	1110	55	4800	8.2	7.5	12.2	106	3.0	960	770
APR 11...	1100	90	5000	8.2	16.0	9.2	98	7.1	980	800
11...	1420	88	5240	--	18.5	--	--	--	1000	850
MAY 23...	1325	271	4670	--	27.5	--	--	--	780	670
JUN 07...	0955	1480	1800	7.1	23.0	3.7	45	7.0	320	250
JUL 06...	1420	163	6400	--	30.5	--	--	--	1100	1000
AUG 15...	1035	106	5800	8.3	29.0	7.5	100	5.0	1000	930

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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 19...	260	97	810	11	9.4	150	4	700	1400	.5
DEC 14...	230	110	690	9.4	11	260	0	530	1200	.6
FFB 28...	230	110	710	9.6	12	210	0	470	1400	--
MAR 01...	220	100	680	9.5	12	230	0	450	1300	.7
APR 11...	210	110	730	10	11	220	0	440	1400	.9
11...	230	110	740	10	12	220	0	510	1400	--
MAY 23...	200	69	680	11	7.5	140	0	340	1300	.5
JUN 07...	85	27	250	6.1	6.8	84	0	200	410	.3
JUL 06...	300	93	1000	13	12	140	0	830	1600	.6
AUG 15...	270	86	900	12	12	120	0	750	1600	.5

RED RIVER BASIN

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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, 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...	5.6	3360	.95	.02	.97	.04	.68	.72	.92
DEC 14...	6.8	2910	3.5	.21	3.7	1.1	1.1	2.2	2.7
FEB 28...	5.3	3040	--	--	--	--	--	--	--
MAR 01...	4.6	2880	.24	.07	.31	1.2	3.5	4.7	2.5
APR 11...	18	3030	.17	.19	.36	.41	2.4	2.8	2.4
APR 11...	3.8	3110	--	--	--	--	--	--	--
MAY 23...	8.0	2670	--	--	--	--	--	--	--
JUN 07...	4.6	1030	.60	.01	.61	.47	1.3	1.8	.51
JUL 06...	8.9	3910	--	--	--	--	--	--	--
AUG 15...	8.6	3690	.24	.02	.26	.03	1.2	1.2	.69

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFAT (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1977.....	3737	5450	3260	32900	1440	14500	620	6300	1000
NOV. 1977.....	2710	5290	3160	23100	1400	10200	600	4380	970
DEC. 1977.....	2511	5580	3340	22700	1480	10000	650	4390	1020
JAN. 1978.....	2391	4180	2480	16000	1090	7050	440	2860	760
FEB. 1978.....	1922	3460	2040	10600	900	4650	340	1770	630
MAR. 1978.....	4345	2330	1350	15800	590	6870	210	2490	430
APR. 1978.....	2430	5530	3310	21700	1460	9590	640	4230	1010
MAY 1978.....	5000	4140	2460	33200	1080	14600	430	5820	760
JUNE 1978.....	8457	2640	1540	35100	670	15300	260	5970	480
JULY 1978.....	4269	6450	3870	44600	1710	19700	840	9690	1180
AUG. 1978.....	10747	3210	1890	54700	830	24000	330	9450	590
SEPT 1978.....	4319	5060	3020	35200	1330	15500	580	6740	920
TOTAL	52838	**	**	346000	**	152000	**	64100	**
WTD.AVG.	144.76	4080	2400	**	1100	**	450	**	750

RED RIVER BASIN

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07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5900	5460	5700	4000	4000	4300	5100	6170	3000	6220	6450	5100
2	5740	5440	5630	3680	2370	4660	5180	5180	1380	6040	6470	5070
3	5920	5260	5600	3560	4360	4760	5300	5220	3920	6300	6270	5090
4	5750	5360	5430	3320	3030	4660	5440	2940	3700	6480	6110	5300
5	5670	5480	5460	1700	2490	4840	5000	3800	3500	6400	3570	5620
6	5640	5490	5560	2930	2470	4760	4870	4820	1840	6360	2340	5650
7	5550	5480	5710	2960	4400	2740	5300	4770	1490	6500	1980	5700
8	5590	5370	5330	5430	4170	1000	5470	4270	1390	6490	2170	5510
9	5490	4000	5460	2630	4170	1200	5000	4770	1420	6480	4580	5800
10	5640	2990	5420	2700	4170	1490	4770	4980	2140	6520	4400	5620
11	5640	4930	5410	2800	4620	1770	5260	5100	2480	6450	4070	5430
12	5530	5470	5290	2860	4260	2100	3800	5180	2870	6400	4190	5620
13	5550	5860	5270	2690	2140	2390	5830	5040	3160	6590	5940	5400
14	5570	5480	5260	2910	1280	2730	5780	5250	3500	6450	6080	5620
15	5760	5680	5020	3290	2190	3110	5700	5570	3790	6340	5500	5860
16	5800	5700	5980	3730	2930	3500	5670	5910	3880	6390	4090	5900
17	5620	5670	5690	4300	3100	3860	5600	5780	3940	6540	3810	5830
18	5600	5620	5460	4800	3240	4120	5570	5450	4810	6590	3280	5880
19	5590	5630	5020	5280	3730	4190	5670	5050	5440	6400	3010	6070
20	5640	5970	5710	5500	4360	4330	5760	4980	5160	6460	2860	5950
21	5750	5560	5480	5280	3570	4460	5820	5220	5420	6630	1130	5830
22	5560	5330	5740	5460	3550	4400	6250	5370	5310	6700	1440	6040
23	5000	5200	6180	5550	4440	4590	5860	4350	5470	6690	1950	5830
24	4170	5130	6050	5630	4040	3990	5730	3750	5350	6680	2630	5750
25	4800	5170	5900	5500	4680	1310	5990	4250	6070	6690	3420	6000
26	5670	5210	5790	5280	4920	2400	5800	4710	6100	6900	3800	5560
27	5190	5580	5580	5400	5160	3960	5790	5050	6120	6010	4230	3780
28	5050	5550	5590	5320	5120	4270	5730	2280	6100	6260	4400	2500
29	5190	5570	5670	5360	---	4850	5860	2500	6160	6070	4600	2940
30	5430	5620	5400	5500	---	4870	5980	3280	6240	6420	4770	3960
31	5370	---	5360	5410	---	5000	---	4580	---	6430	5370	---
MEAN	5500	5340	5550	4220	3680	3570	5500	4700	4040	6450	4030	5340

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	17.0	9.0	---	---	7.0	23.0	24.5	26.5	31.5	28.5	26.5
2	26.5	14.5	8.5	4.0	3.0	7.0	23.0	26.5	23.5	31.5	28.5	27.0
3	26.5	14.5	9.0	6.5	3.5	1.5	21.0	13.0	24.0	29.5	26.5	28.5
4	19.0	15.0	10.0	6.5	4.0	3.5	24.0	13.0	26.5	29.5	24.0	---
5	15.5	16.5	8.0	4.0	4.5	9.0	21.0	16.5	26.5	30.0	24.0	29.5
6	21.0	18.5	5.0	10.0	4.5	11.0	23.0	18.5	22.0	33.5	24.5	---
7	21.0	18.5	8.0	8.5	.0	5.5	25.0	22.0	25.5	33.0	25.5	26.5
8	20.0	15.0	5.0	8.5	1.0	6.0	24.0	24.5	21.0	31.5	26.5	26.0
9	18.5	11.0	3.5	2.0	.0	13.0	23.5	24.5	22.0	30.5	29.5	25.0
10	20.0	12.0	1.0	---	.0	12.0	15.5	24.0	26.5	33.0	---	26.5
11	18.0	13.5	3.5	---	.0	13.0	18.5	25.0	29.0	---	30.5	28.5
12	18.0	13.0	9.0	.5	4.0	10.0	20.5	24.0	29.0	33.5	31.0	29.5
13	---	14.5	9.5	4.0	4.0	14.5	21.0	24.0	26.5	29.5	31.0	30.0
14	18.5	16.0	9.5	3.5	4.0	15.5	22.0	25.5	---	33.5	31.5	31.0
15	18.0	19.0	10.0	.0	4.0	12.0	---	27.0	29.5	33.0	29.5	28.5
16	15.5	17.0	10.5	3.0	4.0	---	22.0	25.5	30.5	32.0	29.0	28.0
17	16.5	15.0	10.0	.0	---	10.0	---	23.0	29.5	30.5	29.0	31.0
18	19.0	14.0	10.0	---	1.0	15.5	21.5	25.5	30.0	31.5	29.5	28.0
19	18.5	18.0	9.0	.0	1.5	18.5	20.5	27.0	31.0	31.0	26.0	26.0
20	21.0	18.0	7.0	.0	3.5	18.5	20.5	26.0	32.0	32.0	27.0	---
21	21.0	11.0	5.5	.5	4.0	18.5	20.0	26.0	29.5	31.5	25.0	22.0
22	20.0	13.5	6.0	.5	7.0	19.0	21.0	26.5	30.5	30.5	26.0	20.5
23	19.0	11.5	7.0	---	12.0	14.5	21.5	28.0	31.0	30.0	28.5	26.0
24	21.0	11.0	8.5	1.0	8.5	12.0	21.0	28.0	31.5	31.0	29.5	24.5
25	21.0	---	---	4.5	10.0	11.0	21.0	28.5	30.5	29.5	29.5	25.0
26	20.5	11.0	6.5	4.5	10.0	14.5	20.5	28.0	31.0	30.5	---	23.0
27	20.0	11.0	4.0	3.5	9.5	16.5	21.0	---	30.5	31.0	30.0	23.5
28	21.0	9.0	7.0	4.0	8.5	18.5	23.0	24.0	31.0	31.0	---	23.0
29	21.0	9.0	7.0	1.5	---	18.0	25.5	23.0	31.0	31.5	---	24.0
30	20.5	9.0	6.5	2.0	---	18.5	26.0	28.0	32.0	30.5	28.0	25.0
31	20.5	---	10.0	2.0	---	---	---	28.0	---	31.0	27.0	---
MEAN	20.0	14.0	7.5	3.5	4.5	12.5	22.0	24.5	28.5	31.5	28.0	26.5

07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'47", long 98°46'43", Archer County, Hydrologic Unit 11130209, on intake tower near left end of dam on North Fork Little Wichita River, 8.2 mi (13.2 km) south of Mankins, and 9.2 mi (14.8 km) northwest of Archer City.

DRAINAGE AREA.--275 mi² (712 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1946 to current year. Prior to October 1965, monthend contents only.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Nonrecording gage read twice daily prior to Feb. 17, 1974, once daily thereafter. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Wichita Falls). Prior to Oct. 8, 1946, water-stage recorder at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 8,200 ft (2,500 m) long, including a 483-foot-wide (147 m) reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Dec. 15, 1945, and storage began Feb. 1, 1946. The service outlet consists of two gate-controlled 4 by 5 ft (1.2 by 1.5 m) conduits. The dam and lake are owned by the city of Wichita Falls, which uses the water for their municipal supply. The capacity table is based on Geological Survey topographic maps, dated 1929. The capacity curve, dated November 1946, was entitled "Lake Kickapoo Area & Capacity Curve". 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.....	1,062.0	-
Design flood (2 ft freeboard).....	1,060.0	221,000
Crest of spillway.....	1,045.0	106,000
Lowest gated outlet (invert).....	1,000.92	0

COOPERATION.--Capacity curve, record of lake elevations, and diversions for municipal use are furnished by the city of Wichita Falls.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents, 134,300 acre-ft (166 hm³) Aug. 2, 1950, elevation, 1,049.2 ft (319.80 m); minimum observed since first filling in July 1950, 35,660 acre-ft (44.0 hm³) June 30, 1953, elevation, 1,029.8 ft (313.88 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents, 96,040 acre-ft (118 hm³) Oct. 1, 2, elevation, 1,043.4 ft (318.03 m); minimum observed, 70,340 acre-ft (86.7 hm³) July 24 to Aug. 6, elevation, 1,038.8 ft (316.63 m).

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

1,038.0	66,500	1,042.0	87,700
1,040.0	76,500	1,044.0	99,700

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96040	90650	88880	85420	83710	82000	82000	79800	78150	74940	70340	80900
2	96040	90650	88880	85420	83710	82000	82000	79800	78150	74940	70340	80900
3	95430	90650	88880	85420	83710	82000	82000	79800	78150	74940	70340	80900
4	95430	90650	88880	85420	83710	82000	82000	79800	78150	74940	70340	80900
5	95430	90650	88880	85420	83140	82000	82000	79800	78150	74940	70340	80350
6	95430	90060	88880	85420	83140	81450	82000	79800	78150	74940	70340	80350
7	95430	90060	88880	85420	83140	81450	82000	79800	78150	74940	81450	80350
8	95430	90060	88880	85420	83140	81450	82000	79800	78150	74940	81450	80350
9	95430	90060	88290	84850	83140	81450	82000	79800	78150	74940	81450	80350
10	95430	90060	88290	84850	83140	81450	82000	79800	78150	73900	81450	80350
11	95430	90060	88290	84850	83140	81450	82000	79800	78150	73900	81450	79800
12	95430	90060	88290	84850	83140	81450	82000	79800	78150	73900	81450	79800
13	93600	89470	88290	84850	82570	81450	82000	79800	78150	73900	81450	79800
14	93600	89470	88290	84850	82570	81450	82000	79800	78150	73900	81450	79800
15	92420	89470	88290	84850	82570	81450	82000	79800	78150	73900	81450	79800
16	92420	89470	88290	84280	82570	81450	82000	79800	78150	73900	81450	79800
17	91240	89470	88290	84280	82570	82000	82000	79800	78150	72340	81450	79800
18	91240	89470	88290	84280	82570	82000	82000	79800	78150	72340	81450	79800
19	91240	89470	88290	84280	82000	82000	82000	78150	78150	72340	81450	79800
20	91240	88880	88290	84280	82000	82000	82000	78150	78150	72340	81450	79800
21	91240	88880	88290	84280	82000	82000	82000	78150	78150	71820	80900	79800
22	91240	88880	88290	84280	82000	82000	82000	78150	78150	71820	80900	79800
23	91240	88880	88290	83710	82000	82000	82000	78150	78150	71820	80900	79800
24	90650	88880	88290	83710	82000	82000	82000	78150	78150	70340	80900	79800
25	90650	88880	88290	83710	82000	82000	82000	78150	78150	70340	80900	79250
26	90650	88880	87130	83710	82000	82000	82000	78150	75980	70340	80900	78700
27	90650	88880	87130	83710	82000	82000	79800	78150	75980	70340	80900	78700
28	90650	88880	85990	83710	82000	82000	79800	78150	75980	70340	80900	78700
29	90650	88880	85990	83710	---	82000	79800	78150	75460	70340	80900	78150
30	90650	88880	85990	83710	---	82000	79800	78150	74940	70340	80900	78150
31	90650	---	85420	83710	---	82000	---	78150	---	70340	80900	---
MAX	96040	90650	88880	85420	83710	82000	82000	79800	78150	74940	81450	80900
MIN	90650	88880	85420	83710	82000	81450	79800	78150	74940	70340	70340	78150
(†)	1042.5	1042.2	1041.6	1041.3	1041.0	1041.0	1040.6	1040.3	1039.7	1038.8	1040.8	1040.3
(#)	-5390	-1770	-3460	-1710	-1710	0	-2200	-1650	-3210	-4600	+10560	-2750
(††)	135	70.2	105	46.4	106	25.0	155	42.0	80.7	136	94.3	105

CAL YR 1977 MAX 106000 MIN 85420 † -11840 †† 1070
WTR YR 1978 MAX 96040 MIN 70340 † -17890 †† 1101

† Elevation, in feet, at end of month.

Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by city of Wichita Falls.

RED RIVER BASIN

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07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
MAR 08...	1425	508	8.2	7.5	140	0	36	12	52
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
MAR 08...	1.9	5.2	190	0	16	66	.4	7.2	288

RED RIVER BASIN

07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'45", Long 98°36'46", Archer County, Hydrologic Unit 11130209, on left bank at downstream side of bridge on State Highway 79, 1.5 mi (2.4 km) downstream from confluence of North and Middle Forks, and 4.8 mi (7.7 km) north of Archer City.

DRAINAGE AREA.--481 mi² (1,246 km²), of which 275 mi² (712 km²) is above Lake Kickapoo.

PERIOD OF RECORD.--May 1932 to January 1956, August 1966 to current year.

Water-quality records: Chemical analyses: January 1953 to January 1956. Water temperatures: January 1953 to January 1956. Sediment records: May 1968 to September 1975.

REVISED RECORDS.--WSP 827: 1932-35. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 934.72 ft (284.903 m) National Geodetic Vertical Datum of 1929. Aug. 17, 1954, to Jan. 6, 1956, nonrecording gage at present site and datum.

REMARKS.--Records good. Some regulation by Lake Kickapoo (station 07314000) on North Fork Little Wichita River. Records furnished by the city of Wichita Falls show that 1,101 acre-ft (1.36 hm³) was diverted from Lake Kickapoo for municipal use during the current water year. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1933-45) prior to completion of Lake Kickapoo, 110 ft³/s (3.115 m³/s), 79,700 acre-ft/yr (98.3 hm³/yr); 22 years (water years 1946-55, 1967-78) regulated, 37.7 ft³/s (1.068 m³/s), 27,310 acre-ft/yr (33.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,900 ft³/s (507 m³/s) Oct. 31, 1941, gage height, 26.18 ft (7.980 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1930 reached a stage of about 28 ft (8.5 m), from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 933 ft³/s (26.4 m³/s) Aug. 6, gage height, 15.45 ft (4.709 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.17	9.6	.39	.21	.15	.03	.00	.60	.20	.00	.00
2	.00	.10	3.6	.30	.21	.10	.02	.00	.15	.39	.00	.85
3	.00	.09	1.8	.25	.21	.10	.01	4.2	.07	.51	.12	26
4	.00	.06	1.1	.20	.21	.10	.01	6.6	.05	.51	30	5.5
5	.00	.06	.83	.20	.21	.10	.00	1.3	5.6	.51	682	2.0
6	.00	.06	.66	.20	.21	.06	.00	.35	143	.51	641	1.0
7	.00	.09	.66	.25	.15	39	.00	.29	231	.51	45	.39
8	.00	.77	.66	.20	.12	126	.00	.33	47	.51	11	.15
9	.00	1.8	.51	.15	.10	20	.15	.10	9.4	.51	3.6	.10
10	.00	3.6	.51	.10	.10	6.6	11	.05	1.7	.29	1.2	.10
11	.00	1.2	.51	.10	.10	2.8	11	.03	.32	.04	.44	1.5
12	.00	.49	.51	.10	1.7	1.2	4.8	.03	.05	.01	1.1	4.2
13	.00	.23	.39	.10	12	.45	2.7	.01	.02	.00	4.8	1.7
14	.00	.13	.39	.15	3.8	.29	1.2	.01	.01	.00	1.7	.51
15	.00	.07	.51	.20	1.7	.20	.37	.00	.00	.00	.54	.39
16	.00	.05	.51	.20	.83	.17	.12	.00	.00	.00	4.6	.39
17	.00	.06	.29	.15	.51	.07	.10	.00	.00	.00	11	.29
18	.00	.12	.21	.10	.39	.03	.08	.00	.00	.00	1.9	.29
19	.00	.15	.21	.10	.39	.02	.05	.00	.00	.00	1.4	.10
20	.00	.17	.21	.10	.51	.01	.03	.00	.00	.00	26	.06
21	.00	.29	.29	.10	.66	.01	.02	.00	.00	.00	7.5	.06
22	.00	.29	.29	.20	3.2	.01	.02	.00	.00	.00	2.7	.03
23	.00	.29	.39	.39	2.0	13	.02	.00	.00	.00	.86	.03
24	15	.36	.39	6.5	.66	384	.02	.00	.00	.00	.29	.02
25	16	.51	.39	7.9	.29	120	.02	.00	.00	.00	.13	.01
26	16	.57	.39	3.8	.21	8.7	.02	.00	.00	.00	.08	.01
27	10	.67	.29	1.5	.15	2.6	.01	.01	.00	4.0	.06	.01
28	3.9	.95	.29	.66	.15	.81	.00	2.0	.00	6.5	.06	.00
29	1.3	6.2	.39	.39	---	.27	.00	8.0	.00	.46	.04	.00
30	.64	14	.39	.29	---	.14	.00	2.1	.00	.04	.03	.00
31	.44	---	.39	.21	---	.07	---	2.7	---	.01	.01	---
TOTAL	63.28	33.60	27.56	25.48	30.98	727.06	31.80	28.11	438.97	15.51	1479.16	45.69
MEAN	2.04	1.12	.89	.82	1.11	23.5	1.06	.91	14.6	.50	47.7	1.52
MAX	16	14	9.6	7.9	12	384	11	8.0	231	6.5	682	26
MIN	.00	.05	.21	.10	.10	.01	.00	.00	.00	.00	.00	.00
AC-FT	126	67	55	51	61	1440	63	56	871	31	2930	91
CAL YR 1977	TOTAL	5554.84	MEAN	15.2	MAX	730	MIN	.00	AC-FT	11020		
WTR YR 1978	TOTAL	2947.20	MEAN	8.07	MAX	682	MIN	.00	AC-FT	5850		

07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX

LOCATION.--Lat 33°45'51", Long 98°22'17", Clay County, Hydrologic Unit 11130209, at intake tower near center of dam on Little Wichita River, 2.3 mi (3.7 km) upstream from Lake Creek, 11 mi (18 km) southwest of Henrietta, and 12.3 mi (19.8 km) southeast of Wichita Falls.

DRAINAGE AREA.--822 mi² (2,129 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 0.40 ft (0.122 m) below National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 15,900 ft (4,846 m) long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft (482 m) wide located near the left end of dam. The dam was completed in December 1966 and storage began in June 1967. The service outlet works, located in a cylindrical service tower at upstream side of dam, consist of two gated 5-foot-diameter (2 m) inlets that can be used for controlled releases. The dam was built by the city of Wichita Falls to impound water for municipal, industrial, and recreational uses. The area-capacity curves are based on Geological Survey topographic maps. 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.....	944.4	-
Design flood.....	939.95	551,400
Crest of spillway (top of conservation pool).....	926.4	262,100
Lowest gated outlet (invert).....	874.1	-

COOPERATION.--Capacity table furnished by Homer Hunter and Associates and Biggs and Mathews Consulting Engineers for the city of Wichita Falls. Area-capacity curves furnished by Homer Hunter and Associates. Record of diversions furnished by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 246,300 acre-ft (304 hm³) July 28, 30, 1975, gage height, 925.40 ft (282.062 m); minimum since first appreciable storage, 4,640 acre-ft (5.72 hm³) Aug. 31 to Sept. 4, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 190,800 acre-ft (235 hm³) Oct. 1, gage height, 921.53 ft (280.882 m); minimum, 142,600 acre-ft (176 hm³) Sept. 30, gage height, 917.51 ft (279.657 m).

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

917.0	137,200	920.0	171,300
918.0	148,000	921.0	183,900
919.0	159,400	922.0	197,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189400	182200	178200	173300	171300	172600	174900	168300	166100	160800	149100	148600
2	188700	182200	178200	173600	171600	171300	175200	168800	165900	160600	148700	148600
3	187800	182200	177900	173700	170800	171300	175400	168900	165800	160200	149200	148300
4	187700	181700	177900	173900	171300	172300	174700	169300	165700	160000	150000	148300
5	187200	181700	176800	173400	171200	172600	174700	169100	166600	159700	151100	148000
6	187700	181700	177300	173700	171300	172300	174800	169500	167700	159400	152500	148000
7	187200	181400	177900	173100	171100	173700	174600	169400	168500	158900	152800	147700
8	186400	182600	175800	172200	171400	174200	174700	168900	168700	158400	152600	147700
9	187000	181200	175900	172300	171400	174400	174800	168800	168800	158100	152500	147600
10	185900	181400	176300	172400	171700	174800	174200	169700	168700	157600	152600	147600
11	185100	181300	176600	172700	171700	174100	174700	168700	168200	157200	152900	147600
12	185200	181300	176700	172700	172300	174300	174300	167900	167500	156600	152700	147300
13	184900	181200	176900	172100	172100	173900	174300	167900	167500	156000	152500	147100
14	184700	181300	176900	172400	172100	173900	174100	167900	167500	155600	152200	146800
15	183900	180900	177300	172900	172600	173600	174700	167200	167300	155100	152200	146700
16	184300	180600	176400	171700	171800	173700	174300	166900	167100	154800	152000	146700
17	183900	180200	176100	172200	172400	173700	173100	167200	166600	154500	151900	146600
18	183500	180900	176300	171600	172800	174300	172800	166900	166000	154100	151500	145800
19	183500	180700	175300	171400	172900	173800	172200	167300	166000	153500	150900	145400
20	183500	178800	175200	171800	172300	173400	172100	166500	165400	153000	151000	144000
21	183400	179300	175100	171900	172800	173300	172300	167200	165100	152500	150900	143600
22	183400	179700	175700	172100	172900	174400	171300	167600	164800	151900	150800	143300
23	183100	178700	175100	171800	173300	174300	171200	167300	164200	151900	150500	143500
24	183300	179200	174200	171900	172300	174300	170800	167000	163900	151800	149900	143400
25	183000	178800	174400	171600	172700	175100	170500	166700	163500	151500	149700	143300
26	183400	180100	174300	171200	172900	175300	170500	166400	162900	150900	149400	143200
27	182900	178300	174400	171200	172900	175600	170300	165500	162300	150600	149200	143200
28	182900	177800	174300	171200	172300	175300	170500	167200	162000	150600	148700	143100
29	183000	178100	174100	170900	---	175100	170000	167200	161600	150000	148300	143100
30	183500	177900	174100	170700	---	175100	169900	167100	161300	149600	148000	142600
31	182600	---	173100	170800	---	175700	---	166600	---	149600	148000	---
MAX	189400	182600	178200	173900	173300	175700	175400	169700	168800	160800	152900	148600
MIN	182600	177800	173100	170700	170800	171300	169900	165500	161300	149600	148000	142600
(†)	920.90	920.53	920.14	919.96	920.08	920.35	919.88	919.61	919.16	918.14	918.00	917.51
(+)	-8200	-4700	-4800	-2300	+1500	+3400	-5800	-3300	-5300	-11700	-1600	-5400
(††)	1586	1294	1292	1276	1135	1345	1425	1757	2174	3454	2080	1896

CAL YR 1977 MAX 223700 MIN 173100 † -34200 †† 18971
WTR YR 1978 MAX 189400 MIN 142600 † -48200 †† 20714

† Gage height, in feet, at end of month.

† Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by city of Wichita Falls.

RED RIVER BASIN

07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO_3)	HARDNESS, NONCARBONATE (MG/L AS CaCO_3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO
APR 19...	0900	991	18.5	200	48	47	19	110	3.4

DATE	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO_3)	CARBONATE (MG/L AS CO_3)	SULFATE DIS-SOLVED (MG/L AS SO_4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO_2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
APR 19...	11	180	0	9.7	210	.4	.5	496

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX

LOCATION.--Lat 33°49'36", long 98°14'23", Clay County, Hydrologic Unit 11130209, on right bank at downstream side of bridge on U.S. Highways 822 and 287, 1.0 mi (1.6 km) downstream from Duck Creek, 2.8 mi (4.5 km) west of Henrietta, 6.6 mi (10.6 km) upstream from Turkey Creek, and 7.6 mi (12.2 km) upstream from Dry Fork Little Wichita River.

DRAINAGE AREA.--1,037 mi² (2,686 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1953 to current year. Prior to October 1974, published as "near Henrietta".

GAGE.--Water-stage recorder and concrete control. Datum of gage is 831.57 ft (253.463 m) National Geodetic Vertical Datum of 1929. Prior to June 26, 1953, nonrecording gage. Prior to July 11, 1975, at site 2.6 mi (4.2 km) downstream at same datum.

REMARKS.--Water-discharge records poor. Flow largely regulated by Lake Arrowhead 39 mi (63 km) upstream, capacity 262,100 acre-ft (323 hm³). The city of Wichita Falls diverted 1,101 acre-ft (1.36 hm³) from Lake Kickapoo and 20,714 acre-ft (25.5 hm³) from Lake Arrowhead for municipal uses, and returned 15,270 acre-ft (18.8 hm³) as sewage effluent and filter plant washwater to the Wichita River below station 07312500 at Wichita Falls and above station 07312700 near Charlie. The city of Henrietta diverted 517 acre-ft (0.637 hm³) from pool at gage for municipal use. Diversion records were furnished by the cities of Wichita Falls and Henrietta, respectively.

AVERAGE DISCHARGE.--13 years (water years 1954-66) prior to completion of Lake Arrowhead, 124 ft³/s (3.512 m³/s), 89,840 acre-ft/yr (111 hm³/yr); 12 years (water years 1967-78) regulated, 21.4 ft³/s (0.606 m³/s), 15,500 acre-ft/yr (19.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,630 ft³/s (216 m³/s) May 1, 1966, gage height, 18.28 ft (5.572 m), at former site; maximum gage height, 18.36 ft (5.596 m) May 2, 1957, at former site; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 21 ft (6.4 m) at former site, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 572 ft³/s (16.2 m³/s) June 8, gage height, 12.57 ft (3.831 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	2.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	12	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	96	.00	.00	.00
7	.00	.00	.00	.00	.00	14	.00	.00	54	.00	.00	3.7
8	.00	.00	.00	.00	.00	22	.00	.00	264	.00	.00	38
9	.00	.00	.00	.00	.00	2.7	.00	.00	24	.00	.00	19
10	.00	.00	.00	.00	.00	.00	.00	.00	7.1	.00	.00	.22
11	9.3	.00	.00	.00	.00	.00	.00	.00	3.2	.00	.00	.00
12	41	.00	.00	.00	.00	.00	.00	.00	1.6	.00	.00	.00
13	25	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00	.00
14	1.1	.00	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.3	.00	.00
23	.00	.00	.00	.00	.00	.15	.00	.00	.00	16	.00	.00
24	.00	.00	.00	.00	.00	13	.00	.00	.00	24	.00	.00
25	.00	.00	.00	.00	.00	6.8	.00	.00	.00	5.7	.00	.00
26	.00	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	4.1	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	46	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	52	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	24	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	90.40	.00	126.10	1.30	.00	59.75	.00	.00	452.25	48.00	.00	60.92
MEAN	2.92	.0000	4.07	.042	.0000	1.93	.0000	.0000	15.1	1.55	.0000	2.03
MAX	41	.00	52	1.3	.00	22	.00	.00	264	24	.00	38
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	179	.00	250	2.6	.00	119	.00	.00	897	95	.00	121
CAL YR 1977	TOTAL	2052.71	MEAN 5.62	MAX 209	MIN .00	AC-FT 4070						
WTR YR 1978	TOTAL	838.72	MEAN 2.30	MAX 264	MIN .00	AC-FT 1660						

RED RIVER BASIN

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1952 to January 1956, March 1959 to September 1966, January 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 13...	1250	24	947	7.6	16.0	180	44	47	16	100
JUN 08...	1350	162	130	--	22.0	37	0	9.9	2.9	10
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
OCT 13...		3.2	10	170	0	12	170	.4	4.2	443
JUN 08...		.7	4.8	52	0	6.0	9.2	.1	8.0	77

07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX

LOCATION.--Lat 33°48'46", long 98°05'05", Clay County, Hydrologic Unit 11130209, on downstream side of bridge on U.S. Highway 82, 5.8 mi (9.3 km) upstream from Little Wichita River, 6.4 mi (10.3 km) east of Henrietta, and 8.9 mi (14.3 km) west of Ringgold.

DRAINAGE AREA.--178 mi² (461 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR TX-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 825.32 ft (251.558 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known diversions above station.

AVERAGE DISCHARGE.--14 years (water years 1965-78), 21.7 ft³/s (0.615 m³/s), 1.66 in/yr (42 mm/yr), 15,720 acre-ft/yr (19.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,500 ft³/s (439 m³/s) May 12, 1972, gage height, 28.85 ft (8.793 m), from rating curve extended above 4,000 ft³/s (113 m³/s) on basis of contracted-opening measurement of 15,500 ft³/s (439 m³/s); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1920, that of May 12, 1972. Flood in October 1941 reached a stage of 28.8 ft (8.78 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Apr. 10	2300	*578 16.4	16.65 5.075	June 15	0600	486 13.8	15.59 4.752
June 7	2030	431 12.2	14.90 4.542				

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	MEAN VALUES		APR	MAY	JUN	JUL	AUG	SEP		
					FEB	MAR								
1	.01	.00	.00	.00	.00	.01	.16	.03	31	.01	.00	.02		
2	.01	.00	.00	.00	.00	.01	.10	.13	154	.00	.00	.04		
3	.01	.00	.00	.00	.00	.01	.05	2.6	43	.00	.00	.04		
4	.01	.00	.00	.00	.00	.01	.03	1.5	8.8	.00	.00	.09		
5	.00	.00	.00	.00	.00	.01	.03	1.8	5.2	.00	.00	.25		
6	.00	.00	.00	.00	.01	.01	.03	1.4	166	.00	69	.13		
7	.00	.00	.00	.00	.01	56	.02	.91	418	.00	20	.07		
8	.00	.00	.00	.00	.01	54	.02	.65	179	.00	4.8	.03		
9	.00	.00	.00	.00	.01	15	.01	.46	15	.00	2.2	.03		
10	.00	.00	.00	.00	.00	4.9	341	.35	5.5	.00	1.4	.02		
11	.00	.00	.00	.00	.00	1.7	346	.29	2.4	.00	.82	.02		
12	.00	.00	.00	.00	.04	1.2	24	.23	1.1	.00	.40	.02		
13	.00	.00	.00	.00	.01	.85	6.7	.18	4.6	.00	.20	.02		
14	.00	.00	.00	.00	.00	.49	2.6	.15	265	.00	.09	.02		
15	.00	.00	.00	.00	.01	.27	1.5	.12	345	.00	.04	.02		
16	.00	.00	.00	.00	.00	.15	.96	.10	35	.00	1.0	.02		
17	.00	.00	.00	.00	.01	.07	.59	.08	9.7	.00	1.2	.01		
18	.00	.00	.00	.00	.01	.04	.36	.06	3.6	.00	1.3	.00		
19	.00	.00	.00	.00	.01	.02	.24	.04	1.7	.00	.66	.00		
20	.00	.00	.00	.00	.01	.02	.16	.04	1.1	.00	.34	.00		
21	.00	.00	.00	.00	.01	.01	.11	.12	.62	.00	.18	.00		
22	.00	.00	.00	.00	.01	.00	.07	3.1	.35	.00	.08	.00		
23	.00	.00	.00	.00	.01	.36	.06	7.6	.23	.00	.03	.00		
24	.00	.00	.00	.00	.01	70	.05	3.0	.14	.00	.02	.00		
25	.00	.00	.00	.01	.00	23	.04	1.4	.08	.00	.02	.00		
26	.00	.00	.00	.00	.00	5.7	.04	1.0	.04	.00	.02	.00		
27	.00	.00	.00	.00	.01	1.9	.03	.97	.03	.00	.02	.00		
28	.00	.00	.00	.00	.01	1.3	.03	17	.02	.00	.02	.00		
29	.00	.00	.00	.00	---	.91	.03	21	.01	.00	.01	.00		
30	.00	.00	.00	.00	---	.54	.03	8.8	.01	.00	.01	.00		
31	.00	---	.00	.01	---	.23	---	3.0	---	.00	.01	---		
TOTAL	.04	.00	.00	.02	.20	238.72	725.05	78.11	1696.23	.01	103.87	.85		
MEAN	.001	.000	.000	.001	.007	7.70	24.2	2.52	56.5	.000	3.35	.028		
MAX	.01	.00	.00	.01	.04	70	346	21	418	.01	69	.25		
MIN	.00	.00	.00	.00	.00	.00	.01	.03	.01	.00	.00	.00		
CFSM	.000	.000	.000	.000	.000	.04	.14	.01	.32	.000	.02	.000		
IN.	.00	.00	.00	.00	.00	.05	.15	.02	.35	.00	.02	.00		
AC-FT	.08	.00	.00	.04	.4	474	1440	155	3360	.02	206	1.7		
CAL YR 1977	TOTAL	8312.53	MEAN	22.8	MAX	2360	MIN	.00	CFSM	.13	IN	1.74	AC-FT	16490
WTR YR 1978	TOTAL	2843.10	MEAN	7.79	MAX	418	MIN	.00	CFSM	.04	IN	.59	AC-FT	5640

RED RIVER BASIN

07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968, October 1969 to current year. Sediment records: October 1965 to September 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAR 01...	0835	.01	1310	7.6	6.5	350	0	89	30	180
APR 12...	1425	18	213	--	17.0	51	5	13	4.4	18
MAY 24...	0810	3.6	604	--	23.0	110	49	30	9.7	68
JUL 06...	0850	.01	887	--	27.5	210	0	55	18	85
AUG 15...	1015	.05	240	--	26.5	68	7	19	5.1	21

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
MAR 01...	4.2	2.3	570	0	51	130	.7	17	781
APR 12...	1.1	5.8	56	0	11	28	.1	9.3	117
MAY 24...	2.8	7.6	80	0	11	130	.1	8.3	304
JUL 06...	2.5	5.5	390	0	13	55	.6	20	444
AUG 15...	1.1	6.5	75	0	7.0	36	.2	11	143

07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, near left bank on downstream side of pier of bridge on U.S. Highway 81, 0.5 mi (0.8 km) downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 1.2 mi (1.9 km) south of Terral, 3.6 mi (5.8 km) downstream from Little Wichita River, and at mile 872 (1,403 km).

DRAINAGE AREA.--28,723 mi² (74,393 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft (234.790 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Many small diversions for irrigation, oilfield, and municipal uses upstream from station.

AVERAGE DISCHARGE.--40 years (water years 1939-78), 2,180 ft³/s (61.74 m³/s), 1,579,000 acre-ft/yr (1.95 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft³/s (5,580 m³/s) June 8, 1941, gage height, 28.12 ft (8.571 m); minimum, 43 ft³/s (1.22 m³/s) Mar. 15, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1891, that of June 8, 1941. Flood of May 19, 1935, reached a stage of 27.2 ft (8.29 m); floods in 1891 and May 1, 1908, are reported to have reached about the same stage.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 21,000 ft³/s (595 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 31	2300	32,500 920	18.16 5.535	June 8	1000	*35,500 1,010	18.62 5.675

Minimum discharge, 169 ft³/s (4.79 m³/s) Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	413	225	239	282	451	302	302	31100	716	342	289
2	285	373	227	243	294	452	294	343	16500	685	322	549
3	273	361	225	239	298	420	289	583	5770	660	314	474
4	271	355	224	239	293	394	282	578	8700	643	324	367
5	268	343	222	235	285	389	297	1620	9520	636	376	329
6	275	339	223	230	279	389	284	2160	14900	608	489	323
7	271	336	218	228	283	761	288	1520	29300	584	962	299
8	277	365	224	222	279	1350	288	1080	34500	578	1150	284
9	273	364	218	190	284	3230	298	912	31300	572	711	311
10	273	370	210	185	281	2500	699	790	13800	566	527	268
11	258	383	215	180	321	1490	866	768	4960	549	470	261
12	250	347	221	180	361	941	559	661	4560	511	440	270
13	244	393	226	180	448	727	369	570	4270	502	421	234
14	247	374	221	195	559	610	405	536	4470	490	402	222
15	243	354	217	210	1040	539	448	500	8040	471	375	213
16	241	331	211	241	1140	488	400	473	7360	438	416	219
17	248	320	243	230	934	458	377	443	5130	422	806	215
18	258	309	244	180	791	422	352	419	3770	415	1530	208
19	264	304	227	180	720	403	338	385	2500	393	949	198
20	275	300	219	180	729	386	342	373	2030	388	658	191
21	268	286	219	200	626	370	333	479	1720	379	714	178
22	272	273	220	230	593	353	331	765	1470	355	1380	253
23	288	260	223	270	616	379	333	4730	1290	356	1770	2580
24	306	257	226	317	618	501	315	3320	1160	364	1030	3040
25	365	262	230	254	572	503	308	2220	1070	378	613	1900
26	567	252	233	315	522	565	303	1710	982	416	465	2000
27	617	245	232	377	432	426	302	1840	914	437	400	1390
28	616	238	234	332	455	373	303	9810	852	432	347	1310
29	596	231	237	302	---	337	291	22100	795	401	312	2570
30	529	229	241	290	---	322	296	30600	752	396	285	1630
31	457	---	238	283	---	310	---	30900	---	367	273	---
TOTAL	10177	9567	6993	7376	14445	21239	10892	123490	253485	15108	19573	22575
MEAN	328	319	226	238	516	685	363	3984	8450	487	631	753
MAX	617	413	244	377	1140	3230	866	30900	34500	716	1770	3040
MIN	241	229	210	180	279	310	282	302	752	355	273	178
AC-FT	20190	18980	13870	14630	28650	42130	21600	244900	502800	29970	38820	44780

CAL YR 1977	TOTAL	837851	MEAN	2295	MAX	33700	MIN	210	AC-FT	1662000
WTR YR 1978	TOTAL	514920	MEAN	1411	MAX	34500	MIN	178	AC-FT	1021000

RED RIVER BASIN

07315500 RED RIVER NEAR TERRAL, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,700 micromhos Apr. 23, 1970; minimum daily, 450 micromhos May 25, 1975.

WATER TEMPERATURES: Maximum daily, 32.0°C July 19, 1974, July 10, 1976; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 8,870 micromhos May 16; minimum daily, 922 micromhos May 29.

WATER TEMPERATURES: Maximum daily, 30.0°C July 7; minimum daily, 0.0°C on several days during December, January, and March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 28...	0910	620	4620	7.4	20.0	820	700	200	78	730
NOV 30...	1015	234	6210	8.1	8.0	1100	960	290	100	990
DEC 07...	0950	216	6440	7.6	3.0	1200	1000	310	110	1000
JAN 18...	0925	189	7080	7.5	.0	1400	1200	360	110	1100
MAR 01...	0925	449	7940	--	6.5	1300	1100	330	110	1300
APR 12...	0920	603	3730	--	15.5	750	630	170	80	540
MAY 31...	0940	30900	3090	--	24.5	540	440	170	27	430
JUN 08...	1135	36000	1660	--	23.5	350	230	110	18	200
AUG 15...	0905	359	5220	--	26.0	950	830	250	78	820

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 28...	11	8.7	150	0	620	1100	.4	6.9	2820
NOV 30...	13	10	220	0	820	1600	--	5.8	3920
DEC 07...	12	9.3	230	0	830	1700	--	4.8	4080
JAN 18...	13	9.6	240	0	980	1800	--	5.3	4480
MAR 01...	16	11	190	0	960	2000	--	5.9	4810
APR 12...	8.6	9.0	150	0	530	850	.5	3.5	2260
MAY 31...	8.1	9.4	120	0	410	640	.5	12	1760
JUN 08...	4.7	7.0	140	0	230	320	.3	11	965
AUG 15...	12	10	140	0	840	1300	.4	8.9	3380

RED RIVER BASIN

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07315500 RED RIVER NEAR TERRAL, OK--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	10177	5640	3430	94200	1400	38500	770	21300	1050
NOV. 1977.....	9567	5850	3560	91800	1450	37500	800	20800	1090
DEC. 1977.....	6993	6540	3980	75200	1630	30900	900	17100	1210
JAN. 1978.....	7376	6410	3900	77700	1600	31800	880	17600	1190
FEB. 1978.....	14445	5860	3560	139000	1460	56800	800	31400	1090
MAR. 1978.....	21239	4410	2670	153000	1080	62100	600	34300	830
APR. 1978.....	10892	5690	3460	102000	1410	41500	780	23000	1060
MAY 1978.....	123490	2890	1700	566000	690	229000	380	125000	560
JUNE 1978.....	253485	2400	1430	978000	560	385000	310	211000	470
JULY 1978.....	15104	6420	3910	159000	1600	65400	890	36200	1190
AUG. 1978.....	19573	3430	2070	109000	830	43900	460	24100	660
SEPT 1978.....	22575	5410	3290	200000	1340	81800	740	45100	1010
TOTAL	514920	**	**	2740000	**	1100000	**	607000	**
WTD.AVG.	1410.74	3300	2000	**	790	**	440	**	630

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5720	4470	6120	6450	6660	7500	5960	6570	2350	6330	5950	5050
2	5620	4360	6200	6410	6720	7940	6370	6770	2220	6510	5950	4000
3	5650	4600	6320	6400	7030	8280	6250	4000	2600	6370	5850	3660
4	5560	4840	6360	6360	6530	7830	6310	3680	2860	6350	5880	3440
5	5680	5300	6510	6310	6630	7370	6350	3250	3980	6360	5590	3870
6	5810	5570	6450	6500	6610	7240	6160	3020	2600	6320	5440	4410
7	5980	5740	6550	6460	6600	5180	6100	2560	2130	6770	5150	4670
8	6190	5690	6430	6400	6550	4660	6160	4000	1640	6400	3930	4980
9	6310	5850	6490	6670	6500	2800	6250	4250	1760	6220	2750	5540
10	6500	6010	6570	6520	6480	1970	4350	6200	1890	6210	3240	5390
11	6180	6120	6490	6500	6400	2150	1980	7510	1960	6510	3520	5590
12	6310	5990	6430	6450	5930	3100	2370	7000	2380	6440	4530	5390
13	6340	6080	6570	6440	5500	3730	4960	7090	2760	6630	4650	5180
14	6300	5800	6580	6000	5370	4250	5990	7500	3050	6770	4760	5260
15	6220	5370	6590	5550	4800	4580	6930	7820	2080	6820	5200	5540
16	6200	5760	6450	6130	3580	4960	6430	8870	2250	6570	5000	5690
17	6150	5990	6490	7030	3750	5150	5260	8760	2350	6630	3500	5790
18	6090	6060	6570	7080	4500	5320	5620	7740	2970	6380	1250	5860
19	6170	6190	6420	6950	5500	5530	6770	7620	3500	6360	1880	5980
20	6220	6170	6790	6800	6320	5710	6690	7360	4440	6500	2810	6000
21	6170	6550	7060	6600	6880	5670	7030	5670	4670	6570	3380	6030
22	6090	6540	6810	6460	6590	5890	7250	4480	5100	6500	2640	5980
23	5850	6500	6720	6500	6720	6160	6700	4000	5430	6360	2340	7020
24	5950	6440	6550	6000	6850	5420	6430	3750	5340	6420	2570	6470
25	6050	6690	6810	6050	6860	5080	6520	3040	5460	6350	2770	5980
26	5000	6730	6530	5870	7100	5940	6820	2710	5610	6280	2550	5540
27	4130	6750	6590	6050	7360	5530	6910	2510	5940	6200	2700	5500
28	4620	6800	6640	6440	7190	5610	6730	2160	6160	6500	3320	4650
29	4750	6730	6530	6540	---	5340	6650	922	6280	6200	3960	4500
30	5430	6200	6740	6560	---	5400	6820	2860	6380	6190	4350	3760
31	5280	---	6490	6890	---	5740	---	3140	---	5920	4690	---
MEAN	5820	5930	6540	6430	6200	5390	6040	5060	3600	6420	3940	5220

RED RIVER BASIN

07315500 RED RIVER NEAR TERRAL, OK--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	20.0	7.0	---	2.0	6.0	19.0	22.0	25.0	28.0	27.0	25.0
2	21.0	14.0	8.0	1.0	2.0	8.0	19.0	17.0	24.0	28.0	24.0	25.0
3	18.0	15.0	8.0	5.0	8.0	8.0	18.0	13.0	24.0	28.0	24.0	26.0
4	18.0	13.0	10.0	4.0	3.0	.0	18.0	12.0	24.0	---	24.0	26.0
5	17.0	15.0	9.0	6.0	4.0	8.0	19.0	16.0	24.0	28.0	22.0	26.0
6	17.0	16.0	6.0	6.0	3.0	7.0	19.0	17.0	24.0	28.0	25.0	26.0
7	19.0	16.0	8.0	7.0	---	7.0	21.0	19.0	23.0	30.0	26.0	25.0
8	20.0	17.0	8.0	4.0	---	5.0	20.0	20.0	24.0	28.0	25.0	25.0
9	16.0	10.0	4.0	1.0	---	6.0	20.0	20.0	22.0	28.0	25.0	24.0
10	17.0	8.0	.0	.0	---	8.0	19.0	23.0	22.0	28.0	26.0	26.0
11	14.0	9.0	6.0	---	2.0	10.0	14.0	20.0	24.0	29.0	26.0	25.0
12	12.0	12.0	6.0	---	4.0	11.0	16.0	22.0	25.0	28.0	26.0	25.0
13	13.0	11.0	9.0	4.0	2.0	10.0	18.0	20.0	25.0	28.0	27.0	26.0
14	15.0	17.0	7.0	.0	2.0	11.0	17.0	20.0	25.0	29.0	28.0	25.0
15	15.0	15.0	7.0	3.0	4.0	13.0	19.0	23.0	25.0	29.0	26.0	26.0
16	13.0	13.0	10.0	5.0	3.0	11.0	20.0	24.0	25.0	29.0	25.0	26.0
17	13.0	15.0	8.0	.0	---	11.0	21.0	20.0	26.0	28.0	26.0	26.0
18	15.0	12.0	7.0	---	---	13.0	17.0	22.0	26.0	28.0	---	24.0
19	16.0	17.0	8.0	---	---	13.0	16.0	25.0	27.0	26.0	26.0	27.0
20	17.0	18.0	7.0	---	3.0	17.0	19.0	26.0	26.0	29.0	24.0	24.0
21	18.0	12.0	3.0	---	1.0	16.0	15.0	24.0	26.0	28.0	27.0	---
22	20.0	12.0	2.0	.0	4.0	16.0	17.0	24.0	26.0	26.0	29.0	19.0
23	18.0	10.0	5.0	.0	6.0	18.0	17.0	25.0	25.0	26.0	27.0	20.0
24	16.0	11.0	8.0	2.0	8.0	11.0	15.0	25.0	26.0	27.0	27.0	22.0
25	20.0	11.0	5.0	4.0	8.0	8.0	16.0	26.0	26.0	27.0	27.0	23.0
26	19.0	9.0	5.0	3.0	7.0	10.0	16.0	25.0	26.0	27.0	28.0	23.0
27	20.0	12.0	5.0	1.0	8.0	13.0	18.0	25.0	26.0	27.0	27.0	23.0
28	20.0	9.0	5.0	1.0	9.0	15.0	18.0	23.0	27.0	27.0	26.0	21.0
29	20.0	8.0	7.0	3.0	---	16.0	22.0	21.0	28.0	27.0	26.0	22.0
30	21.0	8.0	7.0	3.0	---	16.0	22.0	23.0	28.0	27.0	24.0	22.0
31	20.0	---	7.0	3.0	---	16.0	---	25.0	---	27.0	24.0	---
MEAN	17.5	13.0	6.5	3.0	4.5	11.0	18.0	21.5	25.0	28.0	26.0	24.0

07315950 MOSS LAKE NEAR GAINESVILLE, TX

LOCATION.--Lat 33°46'26", long 97°12'52", Cooke County, Hydrologic Unit 11130201, at upstream side of outlet tower near right end of Fish Creek dam on Fish Creek, 1.6 mi (2.6 km) upstream from Bearhead Creek, 3.7 mi (6.0 km) upstream from mouth, and 11 mi (18 km) northwest of Gainesville.

DRAINAGE AREA.--65 mi² (168 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 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 1,460 ft (445 m) long. The dam was completed and storage began Dec. 2, 1966. An uncontrolled morning-glory-type spillway with a 7 by 7 ft (2 by 2 m) opening is designed to discharge 2,500 ft³/s (70.8 m³/s) at a 10 ft (3 m) head. The emergency spillway is a 400-foot-wide (120 m) cut through natural ground located about 100 ft (30 m) to the left of the left end of dam. The dam was built by the city of Gainesville to impound water for municipal use. Area and capacity tables are based on a 1961 survey. There was no diversion from the lake during the current water year. 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.....	740.0	-
Top of design flood pool.....	736.0	55,230
Crest of spillway.....	725.0	36,440
Crest of spillway (top of conservation pool).....	715.0	23,210
Lowest gated outlet (invert).....	666.0	78

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,960 acre-ft (40.6 hm³) Oct. 31, 1974, elevation, 722.63 ft (220.258 m); minimum since lake first filled in May 1968, 19,520 acre-ft (24.1 hm³) Jan. 10, 1978, elevation, 711.51 ft (216.868 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,400 acre-ft (27.6 hm³) June 13, elevation, 714.26 ft (217.706 m); minimum, 19,520 acre-ft (24.1 hm³) Jan. 10, elevation, 711.51 ft (216.868 m).

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

711.0	19,010	714.0	22,110
712.0	20,010	715.0	23,210

 CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
 INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20780	20120	19870	19580	19610	19940	20450	21770	22000	22020	21240	20710
2	20750	20090	19860	19570	19610	19940	20450	21860	22000	22000	21220	20750
3	20730	20060	19860	19570	19610	19930	20450	21850	21980	21990	21250	20740
4	20710	20060	19850	19570	19610	19920	20450	21850	21980	21970	21240	20730
5	20660	20050	19840	19570	19610	19920	20470	21900	22050	21950	21310	20750
6	20590	20050	19810	19570	19600	19920	20470	21930	22330	21910	21300	20710
7	20560	20040	19810	19570	19630	20060	20460	21940	22350	21870	21280	20700
8	20470	20110	19780	19540	19640	20070	20460	21940	22330	21850	21250	20690
9	20450	20050	19760	19530	19660	20080	20760	21940	22310	21820	21240	20680
10	20370	20040	19750	19520	19660	20080	21750	21940	22300	21800	21220	20670
11	20370	20030	19740	19590	19660	20080	21820	21950	22290	21770	21210	20650
12	20370	20010	19750	19590	19830	20080	21830	21930	22280	21740	21180	20640
13	20340	20010	19730	19590	19840	20090	21850	21920	22390	21700	21160	20620
14	20320	20000	19730	19580	19840	20100	21860	21910	22390	21680	21130	20590
15	20280	19990	19730	19580	19870	20090	21860	21910	22370	21650	21080	20580
16	20270	19990	19710	19600	19870	20080	21860	21870	22360	21620	21060	20560
17	20270	19970	19700	19590	19920	20080	21870	21860	22330	21580	21030	20530
18	20250	19960	19680	19620	19930	20070	21860	21860	22330	21530	20990	20470
19	20220	19960	19670	19610	19940	20080	21840	21860	22310	21510	20970	20450
20	20230	19950	19660	19610	19930	20220	21830	21900	22290	21480	20960	20420
21	20220	19930	19640	19610	19920	20230	21820	21910	22280	21450	20940	20390
22	20350	19910	19630	19610	19930	20250	21820	21900	22240	21410	20930	20380
23	20350	19910	19620	19610	19930	20400	21810	21900	22220	21400	20910	20360
24	20340	19890	19610	19610	19930	20430	21810	21890	22190	21470	20880	20360
25	20340	19890	19600	19610	19920	20440	21810	21860	22170	21450	20850	20340
26	20320	19870	19580	19610	19920	20440	21800	21850	22120	21440	20830	20330
27	20290	19860	19580	19610	19930	20440	21790	21930	22110	21410	20810	20320
28	20260	19850	19570	19610	19940	20450	21780	22040	22100	21400	20790	20300
29	20220	19870	19600	19600	---	20450	21780	22040	22080	21370	20760	20280
30	20200	19870	19600	19600	---	20450	21790	22040	22060	21340	20750	20260
31	20170	---	19610	19610	---	20450	---	22010	---	21290	20730	---
MAX	20780	20120	19870	19620	19940	20450	21870	22040	22390	22020	21310	20750
MIN	20170	19850	19570	19520	19600	19920	20450	21770	21980	21290	20730	20260
(†)	712.16	711.86	711.60	711.60	711.93	712.43	713.70	713.91	713.95	713.23	712.70	712.24
(‡)	-610	-300	-260	0	+330	+510	+1340	+220	+50	-770	-560	-470
CAL YR 1977	MAX	26310	MIN	19570	†	-2330						
WTR YR 1978	MAX	22390	MIN	19520	†	-520						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

RED RIVER BASIN

07315950 MOSS LAKE NEAR GAINESVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO_3)	HARDNESS, NONCARBONATE (MG/L AS CaCO_3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO
APR 03...	1540	325	18.0	140	6	48	4.2	11	.4

DATE	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO_3)	CARBONATE (MG/L AS CO_3)	SULFATE DIS-SOLVED (MG/L AS SO_4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO_2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
APR 03...	3.3	160	0	17	12	.2	7.9	182

07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW1/4 sec.36, T.9 S., R.1 E., Love County, Okla., Hydrologic Unit 11130201, near center of span on downstream side of bridge on U.S. Highway 77, 0.2 mi (0.3 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi (8.0 km) downstream from Fish Creek, 7.0 mi (11.0 km) north of Gainesville, and at mile 791.5 (1,273.5 km).

DRAINAGE AREA.--30,782 mi² (79,725 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft (191.387 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1939, and Feb. 13, 1965, to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Flow slightly regulated by Lake Kemp (station 07331500), since 1943 by Lake Altus in Oklahoma, since 1946 by Lake Kickapoo (station 07314000), and since 1967 by Lake Arrowhead and Moss Lake (stations 07314800 and 07315950).

COOPERATION.--Gage-height record and 27 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--42 years, 2,728 ft³/s (77.26 m³/s), 1,976,000 acre-ft/yr (2.44 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 168,000 ft³/s (4,760 m³/s) June 9, 1941, gage height, 24.15 ft (7.361 m); maximum gage height, 26.53 ft (8.086 m) May 21, 1951; minimum discharge, 48 ft³/s (1.36 m³/s) Jan. 27, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 24,000 ft³/s (680 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
May 31	0145	44,200 1,250	18.64 5.681	June 9	0530	*48,600 1,380	19.66 5.992

Minimum daily discharge, 205 ft³/s (5.81 m³/s) Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	441	235	223	320	465	390	247	39400	933	408	367
2	289	402	234	233	314	450	370	220	36800	872	408	348
3	277	374	231	241	310	427	353	223	17200	818	390	340
4	274	346	229	245	300	417	354	249	10600	794	422	403
5	274	323	227	245	300	400	351	412	12500	747	430	533
6	271	308	223	249	300	393	344	509	19700	730	435	487
7	263	296	221	249	290	447	339	999	33000	715	430	434
8	259	293	217	252	290	545	330	1550	45200	693	426	385
9	256	296	217	252	280	934	327	1160	47700	666	602	373
10	244	296	217	252	280	1310	1000	840	37400	646	991	357
11	238	296	217	256	300	2380	1530	766	15200	643	878	344
12	238	296	217	256	378	1910	2800	690	8440	618	645	339
13	235	296	217	272	517	1180	1750	639	7270	596	555	313
14	229	296	217	296	578	835	942	504	6820	561	509	308
15	226	296	216	295	536	685	585	471	6630	534	461	297
16	225	296	216	296	524	637	482	482	9760	523	440	275
17	222	296	216	289	621	585	450	498	10700	501	430	255
18	215	296	216	279	807	535	420	451	6960	475	451	241
19	211	295	215	227	789	505	400	417	5760	452	515	234
20	211	287	215	232	691	518	382	395	3760	445	1310	226
21	205	276	215	236	636	572	338	407	2950	435	1230	216
22	275	269	215	248	615	491	320	393	2470	421	983	209
23	347	262	215	280	580	528	314	414	2090	418	814	211
24	341	259	215	330	536	1230	308	1100	1790	436	1070	211
25	313	256	214	350	511	2580	297	4740	1570	438	1590	1110
26	293	245	214	350	504	1380	288	3180	1400	420	1110	2030
27	285	238	214	350	501	750	273	2460	1260	397	752	1620
28	280	238	213	350	490	600	257	3350	1150	394	578	1650
29	414	238	213	340	---	500	266	16100	1060	411	482	1290
30	436	236	213	330	---	440	260	38000	995	432	422	1250
31	445	---	219	330	---	410	---	43000	---	425	388	---
TOTAL	8583	8842	6773	8633	13098	25039	16820	124866	397535	17589	20555	16656
MEAN	277	295	218	278	468	808	561	4028	13250	567	663	555
MAX	445	441	235	350	807	2580	2800	43000	47700	933	1590	2030
MIN	205	236	213	223	280	393	257	220	995	394	388	209
AC-FT	17020	17540	13430	17120	25980	49660	33360	247700	788500	34890	40770	33040
CAL YR 1977	TOTAL	944914	MEAN	2589	MAX	38900	MIN	205	AC-FT	1874000		
WTR YR 1978	TOTAL	664989	MEAN	1822	MAX	47700	MIN	205	AC-FT	1319000		

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1944 to April 1946, October 1952 to September 1964, October 1966 to current year.
Pesticide analyses: April 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1944 to April 1946, October 1952 to September 1964, October 1966 to current year.
WATER TEMPERATURES: October 1952 to September 1963, October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,100 micromhos July 16, 1972; minimum daily, 176 micromhos Nov. 4, 1958.
WATER TEMPERATURES (1952-63, 1966-76): Maximum daily, 35.0°C July 13, 1954; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,460 micromhos Mar. 6; minimum daily, 1,060 micromhos Apr. 12.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
03...	1210	276	--	--	24.5	--	--	--	--	--	--
14...	1040	230	--	--	16.0	--	--	--	--	--	--
27...	1030	285	--	--	20.0	--	--	--	--	--	--
31...	1720	445	4500	7.8	--	--	--	--	--	--	--
NOV											
18...	1115	28	--	--	--	--	--	--	--	--	--
30...	--	240	--	--	--	--	--	--	--	--	--
30...	1705	236	6050	8.1	9.5	--	--	--	--	--	--
DEC											
06...	1345	222	--	--	6.0	--	--	--	--	--	--
JAN											
04...	1240	245	--	--	6.0	--	--	--	--	--	--
23...	1620	280	5410	8.3	1.0	4	14.1	104	2.0	28	2
26...	1050	353	--	--	-4.5	--	--	--	--	--	--
FEB											
02...	1220	314	--	--	1.0	--	--	--	--	--	--
13...	1200	517	4660	8.3	3.0	45	12.7	98	4.2	52000	1900
27...	1145	535	--	--	4.0	--	--	--	--	--	--
MAR											
13...	1155	1230	--	--	9.5	--	--	--	--	--	--
14...	0930	835	2010	8.0	11.5	500	8.7	83	5.6	7600	600
APR											
03...	1120	353	--	--	15.0	--	--	--	--	--	--
12...	1220	2800	1060	7.7	18.0	1400	5.7	62	4.9	94000	11000
20...	1200	381	--	--	17.0	--	--	--	--	--	--
26...	1110	295	--	--	19.0	--	--	--	--	--	--
MAY											
10...	1145	1200	2650	7.7	23.0	630	7.3	88	6.5	48000	K100
17...	1210	496	--	--	22.0	--	--	--	--	--	--
25...	1150	5120	--	--	23.0	--	--	--	--	--	--
31...	1220	42400	--	--	22.0	--	--	--	--	--	--
JUN											
07...	1210	36000	--	--	24.0	--	--	--	--	--	--
07...	1425	33500	2040	7.3	25.5	1800	5.6	70	4.3	480000	3600
09...	1135	48500	--	--	23.5	--	--	--	--	--	--
JUL											
12...	--	606	--	--	--	--	--	--	--	--	--
12...	0830	618	6200	7.8	29.5	20	6.1	82	7.0	770000	7
19...	--	450	--	--	--	--	--	--	--	--	--
AUG											
02...	1130	397	--	--	29.0	--	--	--	--	--	--
16...	1210	440	3840	8.2	28.5	45	8.1	107	8.1	48000	10
22...	1430	940	--	--	28.0	--	--	--	--	--	--
31...	1425	396	--	--	26.5	--	--	--	--	--	--
SEP											
07...	1105	438	--	--	26.5	--	--	--	--	--	--
12...	1610	339	4710	8.3	28.0	60	9.5	125	7.2	--	520
13...	1410	307	--	--	27.5	--	--	--	--	--	--
22...	1010	206	--	--	25.0	--	--	--	--	--	--

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WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

RED RIVER BASIN

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07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT										
03...	--	--	--	--	--	--	--	140	104	--
14...	--	--	--	--	--	--	--	30	19	--
27...	--	--	--	--	--	--	--	50	38	--
31...	--	--	--	--	--	--	--	--	--	--
NOV										
18...	--	--	--	--	--	--	--	80	.06	--
30...	--	--	--	--	--	--	--	50	32	--
30...	--	--	--	--	--	--	--	--	--	--
DEC										
06...	--	--	--	--	--	--	--	110	66	--
JAN										
04...	--	--	--	--	--	--	--	40	26	--
23...	.60	.50	.52	.50	--	5.3	.6	6	4.5	89
26...	--	--	--	--	--	--	--	60	57	--
FEB										
02...	--	--	--	--	--	--	--	40	34	--
13...	.90	.92	.47	.14	6.6	--	--	68	95	89
27...	--	--	--	--	--	--	--	90	130	--
MAR										
13...	--	--	--	--	--	--	--	1780	5910	--
14...	3.0	1.5	.66	.27	--	9.8	8.3	674	1520	96
APR										
03...	--	--	--	--	--	--	--	200	191	--
12...	1.7	.87	.74	.07	32	--	--	2020	15300	94
20...	--	--	--	--	--	--	--	180	185	--
26...	--	--	--	--	--	--	--	130	104	--
MAY										
10...	1.8	.61	.49	.10	21	--	--	959	3110	98
17...	--	--	--	--	--	--	--	250	335	--
25...	--	--	--	--	--	--	--	12500	173000	--
31...	--	--	--	--	--	--	--	6310	722000	--
JUN										
07...	--	--	--	--	--	--	--	5190	504000	--
07...	1.8	.78	.55	.02	34	--	--	4750	430000	68
09...	--	--	--	--	--	--	--	2900	380000	--
JUL										
12...	--	--	--	--	--	--	--	160	262	--
12...	1.7	.88	.08	.01	--	5.6	3.6	30	50	85
19...	--	--	--	--	--	--	--	490	595	--
AUG										
02...	--	--	--	--	--	--	--	720	772	--
16...	1.9	1.5	.18	.02	9.0	--	--	63	75	97
22...	--	--	--	--	--	--	--	300	761	--
31...	--	--	--	--	--	--	--	100	107	--
SEPT										
07...	--	--	--	--	--	--	--	160	189	--
12...	2.6	.84	.19	.02	--	5.4	6.5	103	94	99
13...	--	--	--	--	--	--	--	110	91	--
22...	--	--	--	--	--	--	--	210	117	--

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		ARSENIC		ARSENIC		BARIUM,		BARIUM,		CADMIUM	
		TOTAL	SUS- PENDE	DIS- SOLVED	TOTAL	SUS- PENDE	DIS- SOLVED	TOTAL	SUS- PENDE	DIS- SOLVED	TOTAL
		(UG/L AS AS)	(UG/L AS AS)	(UG/L AS AS)	(UG/L AS BA)	(UG/L AS BA)	(UG/L AS BA)	(UG/L AS CD)	(UG/L AS CD)	(UG/L AS CD)	(UG/L AS CD)
DATE	TIME										
JAN 23...	1620	4	1	3	200	0	300	1	0	1	
MAR 14...	0930	20	17	3	400	0	500	0	0	2	
JUL 12...	0830	2	0	2	200	0	300	1	0	1	
SEP 12...	1610	5	1	4	100	0	200	0	0	0	
		CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
JAN 23...	10	10	0	1	1	0	13	12	1	210	
MAR 14...	20	20	0	5	5	0	80	76	4	12000	
JUL 12...	20	10	10	1	0	2	6	4	2	350	
SEP 12...	10	0	10	0	0	0	5	2	3	960	
		IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)
JAN 23...	--	0	13	13	0	70	10	60	.1	.1	
MAR 14...	--	20	6	4	2	480	470	10	.0	.0	
JUL 12...	190	160	9	5	4	130	110	20	.0	.0	
SEP 12...	950	10	3	3	0	200	190	10	.2	.1	
		MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 23...	.0	2	0	2	1	1	0	40	30	10	
MAR 14...	.0	5	1	4	0	0	1	50	40	10	
JUL 12...	.0	1	0	1	0	0	0	30	10	20	
SEP 12...	.1	1	0	1	0	0	0	10	0	10	

RED RIVER BASIN

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07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	
JAN 23...	1620	.1	.00	.00	.0	.00	.00	.00	.05	
AUG 16...	1210	.0	.00	.00	.0	.00	.00	.00	.01	
DATE		DI- ELDRIN 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)	METHYL PARA- THION, TOTAL (UG/L)
JAN 23...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
AUG 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
DATE		METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	
JAN 23...	.00	--	.01	0	.00	.00	.00	.00	.00	
AUG 16...	.00	.00	.00	0	.00	.00	.00	.00	.00	

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PERIPHYTON

DATE	LENGTH OF EXPOSURE (DAYS)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	SAMPLING METHOD
MAY 10...	28	4.09	5.20	.080	.000	POLYETHYLENE STRIP

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	MAR 14,78 0930	MAY 10,78 1145	JUN 7,78 1425	JUL 12,78 0830	AUG 16,78 1210	SEP 12,78 1610				
TOTAL CELLS/ML	4600	8900	230	320000	370000	81000				
DIVERSITY: DIVISION	1.2	1.2	1.0	0.3	0.9	0.3				
..CLASS	1.2	1.2	1.0	0.3	0.9	0.3				
..ORDER	1.5	1.5	1.0	0.5	1.6	0.8				
...FAMILY	2.1	2.2	1.5	1.4	2.5	1.7				
....GENUS	2.2	2.3	1.8	1.8	3.4	2.5				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	--	-	--	-	--	-	--	-	*	0
...COELASTRACEAE										
...COELASTRUM	--	-	--	-	--	-	*	0	--	-
...HYDRODICTYACEAE									720	1
...PEDIASTRUM	--	-	--	-	--	-	27000	7	--	-
...MICRACTINIACEAE										
...GOLENKINIA	--	-	--	-	--	-	*	0	--	-
...OOCYSTACEAE										
...ANKISTRODESMUS	34	1	290	3	--	-	3900	1	--	-
...DICTYOSPHAERIUM	--	-	--	-	--	-	6100	2	1100	1
...FRANCEIA	--	-	--	-	--	-	*	0	*	0
...KIRCHNERIELLA	--	-	--	-	--	-	*	0	540	1
...OOCYSTIS	--	-	--	-	--	-	*	0	*	0
...RADIOCOCCUS	--	-	--	-	--	-	5000	1	--	-
...TREUBARIA	--	-	--	-	--	-	2200	1	--	-
...SCENEDESMACEAE							*	0	--	-
...ACTINASTRUM	--	-	--	-	--	-	2200	1	--	-
...SCENEDESMUS	270	6	4600#	52	--	-	7200	2	540	1
...TETRASTRUM	--	-	--	-	--	-	2200	1	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CARTERIA	--	-	--	-	--	-	*	0	--	-
...CHLAMYDOMONAS	370	8	--	-	--	-	--	-	2200	1
...VOLVOCAEAE										
...PANDORINA	--	-	--	-	--	-	2000	1	--	-
...ZYGNEMATALES										
...DESMIDIACEAE										
...COSMARIUM	--	-	--	-	--	-	--	-	*	0
...CHLOROCOCCALES										
...OOCYSTACEAE										
...GLOEOACTINIUM	--	-	--	-	--	-	--	-	3900	1
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...PENNIALES										
...NAVICULACEAE										
...ENTOMONEIS	34	1	--	-	--	-	--	-	--	-
...CENTRALES										
...CHAETOCERACEAE										
...CHAETOCEROS	--	-	--	-	--	-	*	0	--	-
...COSCINODISCAEAE										
...CYCLOTELLA	100	2	860	10	--	-	2300	1	7800	2
...PENNIALES										
...ACHNANTHACEAE			290	3	--	-	--	-	--	-
...ACHNANTHES	--	-	290	3	--	-	--	-	--	-
...CYMBELLACEAE			290	3	--	-	--	-	--	-
...AMPHORA	--	-	290	3	--	-	--	-	--	-
...NAVICULACEAF			290	3	--	-	--	-	--	-
...GYROSIGMA	--	-	290	3	--	-	--	-	--	-
...MASTOGLIOIA	--	-	--	-	29	13	--	-	--	-
...NAVICULA	2700#	59	1400#	16	29	13	--	-	*	0
...NITZSCHIAEAE										
...NITZSCHIA	510	11	570	6	57#	25	3800	1	3300	1
...SURIPELLACEAE										
...SURIPELLA	100	2	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCCOCCALES										
...CHROCCOCCAEAE										
...AGMENELLUM	--	-	--	-	--	-	6100	2	28000	7
...ANACYSTIS	--	-	--	-	--	-	2000	1	41000	11
...HORMOGONALES										
...NOSTOCACEAE										
...ANABAENA	--	-	--	-	--	-	170000#	55	96000#	26
...ANABAENOPSIS	--	-	--	-	--	-	--	-	11000	3
...APHANIZOMENON	--	-	--	-	--	-	21000	7	--	-
...CYLINDROSPERMUM	--	-	--	-	--	-	--	-	8900	2
...OSCILLATORIACEAE										
...LYNGBYA	--	-	--	-	--	-	--	-	39000	10
...OSCILLATORIA	240	5	--	-	--	-	99000#	31	71000#	19
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENAEAE										
...EUGLENA	200	4	290	3	--	-	--	-	--	-
...TRACHELOMONAS	34	1	--	-	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN
07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMB R 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVE SULFAT (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA+MG) (MG/L)
OCT. 1977.....	8583	5510	3340	77500	1390	32200	740	17100	1000
NOV. 1977.....	8842	5470	3310	79100	1380	32900	730	17400	990
DEC. 1977.....	6773	6060	3680	67300	1530	28000	810	14900	1100
JAN. 1978.....	8633	5810	3530	82200	1470	34200	780	18100	1050
FEB. 1978.....	13098	5310	3220	114000	1340	47200	710	25000	960
MAR. 1978.....	25039	3120	1860	125000	750	50900	390	26500	580
APR. 1978.....	16820	3150	1880	85200	760	34600	400	18100	580
MAY 1978.....	124866	2660	1570	530000	630	213000	330	110000	500
JUNE 1978.....	397535	2320	1360	1460000	540	582000	280	299000	440
JULY 1978.....	17589	5810	3530	168000	1470	69800	780	37000	1050
AUG. 1978.....	20555	3320	1940	110000	810	44900	420	23500	620
SEPT 1978.....	16656	5080	3070	138000	1270	57200	670	30300	920
TOTAL	664989	**	**	3040000	**	1230000	**	637000	**
WTD.AVG.	1821.89	2850	1700	**	680	**	360	**	530

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTERRER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5500	5460	6040	6110	5710	6260	4550	5870	2810	5550	6340	3330
2	5510	5400	6010	6180	5980	5740	4580	5550	2900	5700	6250	3610
3	5560	5370	5960	6220	6070	5350	4590	5410	3120	5780	6210	3950
4	5780	5320	5910	6170	6150	5180	4550	5190	3200	5850	6130	4270
5	5990	5250	5880	6120	6200	6350	4580	4540	3140	5100	6050	4550
6	5380	5000	5850	6080	6260	7460	4620	4000	2870	4690	5090	4800
7	5100	4550	5800	6200	6280	6420	4660	3710	2100	4940	5170	4710
8	4600	3980	5850	6320	6290	6100	4630	3250	1620	5180	5250	4550
9	4290	4370	5940	6050	6310	4550	4700	2900	1500	5450	4980	4430
10	5300	4690	6020	6120	6330	3230	1770	2790	1550	5700	3000	4310
11	6100	5000	6030	6100	6000	1700	1250	3720	1700	5950	2710	4230
12	5450	5360	6050	6140	5750	1870	1060	4640	1800	6200	2830	4560
13	5650	5440	6070	5930	5040	1960	1300	5570	1980	6220	2950	4540
14	5890	5700	6090	5780	4920	2010	1970	6500	2320	6240	3220	4900
15	5650	5880	6080	5750	4810	2470	2650	6480	2550	6230	3500	5290
16	5420	6010	6070	5720	4780	3050	3320	6440	2210	6220	3840	5300
17	5700	5890	6090	5890	4620	3760	4000	6670	1750	5500	4360	5330
18	5940	5380	6130	5920	4300	3940	4670	6720	2090	6370	4280	5340
19	5950	5500	6160	6030	4010	4210	5050	6800	2440	6280	4000	5500
20	5940	5710	6220	5960	3960	4190	5470	6850	3500	6220	3000	5470
21	6060	5770	6240	5890	4050	4030	5330	7230	4510	6190	2500	5220
22	5500	5820	6230	5640	4750	4110	5200	7290	4310	6170	2010	5000
23	5230	5890	6200	5410	5350	3500	5100	7000	4440	6110	2070	4870
24	5260	5930	6180	5200	5790	1910	5760	6180	4580	6000	2100	4720
25	5180	5950	6150	5220	6100	1570	5940	2500	4700	5990	2180	5820
26	5300	5960	6160	5310	6270	1970	5900	2650	4810	5970	2230	5670
27	5460	6050	6120	5440	6500	2350	5920	3220	4910	5940	2280	5460
28	5610	6190	6090	5570	6600	2720	5970	2550	4980	5990	3360	5660
29	5700	6120	6070	5660	---	3420	5910	1790	5080	6030	3000	5910
30	5730	6060	6060	5550	---	4150	6090	2060	5640	6290	2750	4170
31	5550	---	6050	5640	---	4530	---	2750	---	6430	3010	---
MEAN	5530	5500	6060	5850	5540	3870	4370	4800	3170	5890	3760	4850

RED RIVER BASIN
07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	3.0	---	---	---	---	---	---	---
2	28.0	---	---	---	3.0	---	---	---	---	---	---	---
3	22.0	---	---	7.0	3.0	---	---	---	---	---	---	---
4	---	---	---	7.0	---	10.0	---	17.0	---	32.5	---	---
5	22.0	---	---	---	---	---	---	---	---	---	30.0	---
6	22.5	---	---	6.0	5.0	13.5	---	---	24.0	31.5	30.0	---
7	21.0	---	7.0	---	---	---	---	24.0	---	---	---	---
8	---	16.0	9.0	5.0	---	7.0	---	24.0	25.0	---	30.0	---
9	21.0	---	---	3.5	---	---	---	---	23.0	---	---	---
10	---	---	10.0	---	---	---	24.0	24.0	---	---	---	---
11	21.0	---	---	---	---	---	---	---	---	---	---	30.0
12	---	16.0	---	---	---	13.0	---	---	28.0	---	---	27.0
13	---	17.0	---	---	6.0	---	---	---	26.0	31.0	30.0	29.0
14	---	17.0	12.0	2.0	---	---	---	27.0	26.0	---	---	---
15	---	16.5	---	2.0	---	12.0	---	---	---	---	---	28.0
16	---	18.0	---	2.0	5.5	---	---	---	---	31.0	---	---
17	---	15.5	12.0	3.0	---	13.0	---	27.0	---	31.0	---	---
18	---	15.0	---	---	---	---	---	---	---	31.0	---	28.0
19	---	---	9.5	---	---	---	---	---	26.0	---	---	---
20	---	13.0	7.0	---	---	---	---	28.0	---	---	30.0	---
21	---	---	---	---	3.5	---	---	28.0	29.0	---	30.0	---
22	---	---	7.0	---	---	22.0	---	30.0	29.0	---	30.5	---
23	---	---	---	---	---	---	21.0	---	---	---	30.0	---
24	---	---	---	---	---	11.0	21.0	28.0	---	---	---	---
25	---	16.0	---	---	---	14.0	22.0	---	---	---	---	---
26	---	11.0	---	---	12.0	16.0	---	---	---	---	---	25.0
27	---	---	---	---	10.0	---	---	27.0	31.0	30.0	30.0	25.0
28	---	10.5	---	---	7.5	20.0	---	---	31.0	---	30.0	---
29	---	---	---	3.0	---	17.5	21.0	25.0	31.0	32.0	---	25.0
30	---	9.5	---	3.0	---	21.0	22.0	25.0	31.0	31.0	30.0	25.0
31	---	---	10.0	4.0	---	20.0	---	26.0	---	31.0	30.0	---
MEAN	22.5	14.5	9.5	4.0	6.0	15.0	22.0	25.5	27.5	31.0	30.0	27.0

07331500 LAKE TEXOMA NEAR DENISON, TX

LOCATION.--Lat 33°49'05", long 96°34'20", in NE1/4 sec.33, T.8 S., R.7 E., Bryan County, Okla., Hydrologic Unit 11130210, in control tower of Denison Dam on Red River, 1.2 mi (1.9 km) upstream from Shawnee Creek, 1.8 mi (2.9 km) upstream from Sand Creek, 4.0 mi (6.4 km) northwest of Denison, and at mile 725.9 (1,168.0 km).

DRAINAGE AREA.--39,719 mi² (102,872 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

PERIOD OF RECORD.--July 1942 to current year. Monthend contents only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1944, nonrecording gage at same site and datum. Prior to Oct. 1, 1948, auxiliary nonrecording gage in Cumberland pool at the same datum.

REMARKS.--The lake is formed by a rolled earthfill dam. The controlled outlet consists of eight 20-foot-diameter (508 mm) conduits, and the uncontrolled outlet is a concrete ogee-type weir spillway. Flow was diverted through conduits July 27, 1942; regulated storage began Oct. 31, 1943; power pool was first filled Mar. 15, 1945. Dead storage, 11,000 acre-ft (13.6 km³) at elevation 610.0 ft (185.93 m) in Cumberland pool. When contents are below 2,167,900 acre-ft (2.67 km³), the lake is divided into two pools by protective levees around the Cumberland oilfield on the Washita River arm, with bottom of outlet channel for the upper pool (known as Cumberland pool) at elevation 610.0 ft (185.93 m). At higher elevations the two pools are considered as being at a common level, contents being computed from gage in Denison pool. The lake is used principally for flood control and power development. Revised capacity table, based on survey in 1962, used since Oct. 1, 1963. Figures given herein represent total contents of both pools. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	670.0	—
Top of flood control pool.....	640.0	5,392,900
Top of maximum power pool.....	617.0	2,733,300
Bottom of minimum power pool (in Denison pool).....	590.0	1,049,200

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,991,300 acre-ft (7.39 km³) June 5, 1957, elevation, 643.18 ft (196.041 m); minimum since power pool was first filled, 1,565,100 acre-ft (1.93 km³) Sept. 16, 1964; minimum elevation, 599.96 ft (182.868 m) Mar. 1, 2, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,914,000 acre-ft (3.59 km³) June 10, elevation, 619.94 ft (188.958 m); minimum, 2,063,000 acre-ft (2.54 km³) Mar. 5, elevation, 609.39 ft (185.742 m).

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

609.0	2,095,000	614.0	2,479,000
610.0	2,168,000	617.0	2,733,000
612.0	2,319,000	620.0	3,010,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2495000	2381000	2334000	2241000	2107000	2074000	2163000	2227000	2587000	2638000	2542000	2390000
2	2492000	2373000	2330000	2236000	2105000	2080000	2164000	2233000	2670000	2635000	2540000	2387000
3	2486000	2375000	2330000	2229000	2102000	2073000	2167000	2242000	2715000	2636000	2539000	2386000
4	2478000	2372000	2331000	2223000	2102000	2067000	2163000	2237000	2733000	2639000	2543000	2386000
5	2473000	2372000	2329000	2223000	2100000	2067000	2165000	2235000	2744000	2641000	2547000	2378000
6	2470000	2371000	2314000	2215000	2095000	2070000	2163000	2242000	2768000	2640000	2545000	2371000
7	2469000	2366000	2310000	2218000	2093000	2078000	2164000	2244000	2788000	2640000	2545000	2368000
8	2466000	2366000	2310000	2208000	2087000	2080000	2164000	2245000	2817000	2638000	2539000	2363000
9	2465000	2366000	2305000	2198000	2087000	2083000	2171000	2248000	2867000	2633000	2532000	2367000
10	2464000	2364000	2301000	2187000	2085000	2083000	2194000	2249000	2908000	2626000	2527000	2364000
11	2463000	2361000	2299000	2186000	2084000	2091000	2220000	2254000	2907000	2619000	2523000	2357000
12	2459000	2358000	2296000	2182000	2080000	2094000	2210000	2253000	2873000	2614000	2518000	2352000
13	2457000	2357000	2299000	2179000	2100000	2103000	2213000	2255000	2842000	2610000	2513000	2345000
14	2456000	2353000	2296000	2176000	2094000	2104000	2220000	2254000	2825000	2606000	2505000	2338000
15	2456000	2353000	2290000	2174000	2096000	2106000	2224000	2249000	2816000	2601000	2502000	2310000
16	2454000	2352000	2291000	2181000	2098000	2107000	2228000	2245000	2802000	2600000	2492000	2323000
17	2453000	2350000	2290000	2165000	2102000	2103000	2233000	2241000	2794000	2593000	2482000	2319000
18	2451000	2346000	2288000	2160000	2101000	2103000	2235000	2244000	2781000	2589000	2474000	2314000
19	2448000	2345000	2289000	2151000	2102000	2104000	2234000	2246000	2761000	2587000	2469000	2307000
20	2440000	2351000	2285000	2140000	2106000	2107000	2233000	2242000	2740000	2584000	2463000	2303000
21	2433000	2346000	2278000	2133000	2096000	2112000	2231000	2241000	2724000	2579000	2459000	2299000
22	2434000	2341000	2275000	2128000	2096000	2110000	2237000	2237000	2710000	2577000	2455000	2299000
23	2432000	2343000	2273000	2123000	2091000	2125000	2239000	2240000	2691000	2577000	2449000	2299000
24	2427000	2344000	2271000	2125000	2085000	2145000	2241000	2243000	2674000	2576000	2445000	2297000
25	2421000	2341000	2267000	2126000	2084000	2154000	2240000	2251000	2656000	2573000	2438000	2293000
26	2410000	2340000	2265000	2119000	2083000	2162000	2240000	2259000	2640000	2571000	2433000	2293000
27	2403000	2339000	2259000	2116000	2080000	2166000	2235000	2270000	2641000	2569000	2430000	2293000
28	2391000	2336000	2256000	2115000	2074000	2167000	2235000	2295000	2642000	2560000	2422000	2290000
29	2390000	2334000	2253000	2112000	---	2169000	2235000	2326000	2642000	2554000	2414000	2290000
30	2388000	2337000	2248000	2111000	---	2166000	2236000	2396000	2640000	2551000	2403000	2289000
31	2386000	---	2248000	2104000	---	2163000	---	2489000	---	2545000	2391000	---
MAX	2495000	2381000	2334000	2241000	2107000	2169000	2241000	2489000	2908000	2641000	2547000	2390000
MIN	2386000	2334000	2248000	2104000	2074000	2067000	2163000	2227000	2587000	2545000	2391000	2289000
(†)	613.83	613.19	612.00	609.98	609.55	610.82	611.83	615.15	616.96	615.85	613.90	612.55
(#)	-197000	-49000	-89000	-144000	-30000	+89000	+73000	+253000	+151000	-95000	-154000	-102000

CAL YR 1977 MAX 2997000 MIN 2144000 † +7000
WTR YR 1978 MAX 2908000 MIN 2067000 † -294000

† Elevation, in feet, at end of month.

Change in contents, in acre-feet.

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft (549 m) downstream from Denison Dam powerhouse, 0.4 mi (0.6 km) upstream from Shawnee Creek (spillway flow return), 4.5 mi (7.2 km) north of Denison, and at mile 725.5 (1,167.3 km).

DRAINAGE AREA.--39,720 mi² (102,880 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing. At site used prior to October 1961, drainage area 39,777 mi² (103,022 km²), of which 5,936 mi² (15,374 km²) probably was noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, Tex.", and October 1934 to September 1961, published as "near Colbert, Okla.". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 807: 1935(M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934(M), 1935.

GAGE.--Water-stage recorder. Datum of gage is 500.00 ft (152.400 m) National Geodetic Vertical Datum of 1929. Oct. 9, 1923, to Sept. 24, 1934, nonrecording gage, and July 29, 1942, to Sept. 30, 1961, water-stage recorder at county road bridge 2.5 mi (4.0 km) downstream. Prior to Oct. 1, 1931, at datum 6.85 ft (2.088 m) higher; Oct. 1, 1931, to Sept. 24, 1934, at datum 7.07 ft (2.155 m) higher; and July 29, 1942, to Sept. 30, 1961, at datum 2.64 ft (0.805 m) lower. Sept. 25, 1934, to July 28, 1942, water-stage recorder at railway bridge 1.9 mi (3.1 km) downstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Water-discharge records good. Flow regulated since October 1943 by Lake Texoma (station 07331500).

COOPERATION.--Gage-height record and 11 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--20 years (water years 1924-43) prior to completion of Denison Dam, 5,684 ft³/s (161.0 m³/s), 4,118,000 acre-ft/yr (5.08 km³/yr); 34 years (water years 1945-78) regulated, 4,343 ft³/s (123.0 m³/s), 3,147,000 acre-ft/yr (3.88 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 201,000 ft³/s (5,690 m³/s) May 21, 1935, gage height, 31.8 ft (9.69 m), at site and datum then in use; maximum gage height, 32.0 ft (9.75 m) Apr. 25, 1942, at site and datum then in use; minimum daily discharge, 12 ft³/s (0.34 m³/s) Jan. 10, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (13.87 m) at site and datum used July 29, 1942, to Sept. 30, 1961, from records of the National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,400 ft³/s (889 m³/s) June 13, gage height, 15.16 ft (4.621 m); minimum daily, 72 ft³/s (2.04 m³/s) July 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3230	4060	667	3200	1110	790	467	3840	210	2790	1170	2010
2	462	3410	1010	1970	1080	886	704	163	4850	2650	1230	1430
3	2390	284	572	2000	1340	3450	480	142	10700	258	1450	1420
4	2690	1300	438	3160	1070	2110	2480	1880	10700	72	146	432
5	2740	582	1630	1080	1070	467	185	3190	10700	245	136	4590
6	810	600	3910	3230	1900	464	2320	335	14900	258	1610	2840
7	132	2400	1810	1070	3540	442	314	1900	25100	262	180	2820
8	1350	2630	663	3670	3190	443	432	2580	30900	2190	3360	2730
9	160	604	1970	3250	1870	448	649	1380	30900	2890	3780	3090
10	120	469	798	4510	1000	1920	151	1220	30900	3330	2690	1560
11	136	1880	814	3770	1350	435	406	120	30900	2990	2650	4380
12	1200	930	491	2490	1430	341	1530	2370	30900	2990	2340	3510
13	109	478	692	631	1300	381	2450	177	28200	2420	2370	4110
14	101	2590	1610	1630	4240	282	484	1050	21400	2460	4290	4380
15	98	504	1580	1040	999	293	427	3410	15400	2380	2500	3350
16	96	1210	906	1960	837	1330	350	1870	15400	1380	3610	3110
17	96	805	903	4310	2210	2840	443	2120	15400	2210	4320	834
18	1750	1280	920	4200	1180	295	438	1860	15400	1990	3480	2290
19	976	498	914	3850	1090	107	435	570	15400	1420	3830	3670
20	3480	446	1160	4040	2410	375	445	3410	15500	1410	2730	4040
21	3570	451	1050	3620	2520	391	133	2740	12800	1520	3770	1630
22	2380	454	1490	2240	1830	1050	404	2760	10800	1160	2450	1510
23	2900	451	1310	2940	3520	271	124	221	10800	1290	3270	166
24	3510	450	1240	604	3980	623	1430	180	10900	2250	2410	1230
25	3670	455	1250	357	2130	115	461	413	11000	2270	4170	1720
26	4920	449	1660	2360	599	111	1300	203	10900	1340	3310	1700
27	4780	449	2000	1830	3860	572	1950	189	1500	1320	2310	1100
28	5550	454	1930	1070	4070	971	746	212	1710	3010	4230	3100
29	196	1740	2620	1090	---	1240	684	205	2480	2600	4700	1590
30	1590	477	1330	1430	---	3100	854	745	1590	1230	5360	1530
31	3950	---	1930	3270	---	1630	---	231	---	3180	5450	---
TOTAL	59142	32790	41268	75872	56725	28173	23676	41686	448240	57765	89302	71872
MEAN	1908	1093	1331	2447	2026	909	789	1345	14940	1863	2881	2396
MAX	5550	4060	3910	4510	4240	3450	2480	3840	30900	3330	5450	4590
MIN	96	284	438	357	599	107	124	120	210	72	136	166
AC-FT	117300	65040	81860	150500	112500	55880	46960	82680	889100	114600	177100	142600
CAL YR 1977	TOTAL	1401492	MEAN	3840	MAX	41300	MIN	75	AC-FT	2780000		
WTR YR 1978	TOTAL	1026511	MEAN	2812	MAX	30900	MIN	72	AC-FT	2036000		

RED RIVER BASIN

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07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1944 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1944 to current year.

WATER TEMPERATURES: October 1945 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1944-69, 1972-78): Maximum daily, 3,520 micromhos Aug. 14, 1944; minimum daily, 656 micromhos Oct. 16, 1945.

WATER TEMPERATURES (1945-69): Maximum daily, 31.0°C July 17, 1969; minimum daily, 3.0°C Feb. 2-4, 7, 1966.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,160 micromhos May 1, 7-9, June 16; minimum daily, 1,910 micromhos on several days during October.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 17...	1630	96	1910	7.9	19.0	1	10.2	113	2.8	400	55
NOV 07...	0845	2400	2050	7.9	19.0	3	7.6	84	.8	88000	48
DEC 12...	1530	491	1970	7.1	11.0	4	11.5	108	1.8	2300	10
JAN 24...	0845	604	2120	8.2	5.0	2	11.6	94	1.0	570	1
FEB 14...	1030	4500	2050	8.3	3.0	1	12.0	92	1.4	58	2
MAR 15...	0945	293	2070	8.3	6.0	1	13.2	110	1.1	170	2
APR 17...	1340	443	2060	7.9	15.5	3	11.5	120	1.0	12000	22
MAY 22...	1200	2760	2050	7.8	19.0	2	7.9	88	.8	5900	23
JUN 12...	1300	30900	2100	7.3	23.0	3	8.2	99	1.0	4000	20
JUL 17...	1230	2210	2020	7.0	25.0	0	7.2	89	.8	210	140
AUG 21...	1400	5000	2000	7.2	26.5	1	4.6	58	1.4	K25	4
SEP 18...	1330	4520	2000	7.3	25.5	2	3.0	38	1.6	--	15

DATE	STREP- TOCOCCT FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 17...	2	420	300	110	35	240	5.1	6.4	140	0	280
NOV 07...	20	410	310	110	34	260	5.6	6.5	130	0	290
DEC 12...	24	410	310	110	34	250	5.3	7.3	130	0	300
JAN 24...	5	420	320	110	36	260	5.5	6.7	120	0	290
FEB 14...	56	430	330	110	37	260	5.5	6.8	120	0	310
MAR 15...	24	450	350	120	36	260	5.3	7.6	120	0	300
APR 17...	120	440	330	120	35	260	5.4	6.9	140	0	290
MAY 22...	150	430	310	110	37	260	5.5	7.2	140	0	290
JUN 12...	5500	430	310	110	37	250	5.3	6.6	140	0	290
JUL 17...	75	440	330	120	35	260	5.4	6.6	140	0	300
AUG 21...	230	410	290	110	32	260	5.6	6.6	140	0	270
SEP 18...	150	410	300	110	33	260	5.6	6.5	140	0	300

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF 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)
OCT 17...	360	.4	6.3	1160	1110	.01	.01	.02	.02	.38
NOV 07...	400	.3	7.1	1200	1170	.11	.06	.17	.03	.57
DEC 12...	380	.4	7.4	1180	1150	.10	.00	.10	.16	.34
JAN 24...	420	.8	13	1230	1200	.08	.01	.09	.04	.56
FEB 14...	410	.4	7.4	1230	1200	.11	.01	.12	.05	.45
MAR 15...	410	.4	7.0	1220	1200	.07	.01	.08	.04	.46
APR 17...	400	.3	6.4	1220	1190	.04	.01	.05	.05	.65
MAY 22...	390	.4	5.7	1220	1170	.09	.03	.12	.10	.55
JUN 12...	400	.4	7.1	1260	1170	.04	.01	.05	.01	.52
JUL 17...	400	.4	7.4	1250	1200	.10	.01	.11	.01	1.9
AUG 21...	410	.4	9.0	1220	1170	.01	.01	.02	.39	1.1
SEP 18...	410	.4	9.6	1240	1200	.09	.02	.11	.57	.53
DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (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)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 17...	.40	.54	.05	.01	4.5	--	--	10	2.6	78
NOV 07...	.60	.47	.06	.03	5.4	--	--	23	149	64
DEC 12...	.50	.44	.03	.01	4.0	--	--	20	27	88
JAN 24...	.60	.32	.04	.02	--	4.8	.4	0	.00	--
FEB 14...	.50	.36	.04	.04	5.9	--	--	5	61	45
MAR 15...	.50	.82	.03	.02	--	7.1	.6	3	2.4	39
APR 17...	.70	.70	.02	.00	3.2	--	--	10	12	71
MAY 22...	.65	.65	.02	.01	6.2	--	--	27	201	96
JUN 12...	.53	.38	.04	.01	4.2	--	--	24	2000	6
JUL 17...	1.9	.54	.06	.05	--	4.2	.4	6	36	45
AUG 21...	1.5	.67	.19	.19	5.2	--	--	3	40	90
SEP 18...	1.1	.78	.13	.15	--	4.6	.4	4	49	70

RED RIVER BASIN

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07331600 RED RIVER AT DENSON DAM NEAR DENISON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
JAN 24...	0845	2	0	2	200	0	200	1	0	1
MAR 15...	0945	3	1	2	300	0	300	0	0	1
JUL 17...	1230	3	0	3	200	0	200	1	0	1
SEP 18...	1330	3	--	3	100	0	200	0	0	0

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
JAN 24...	0	0	0	0	0	0	9	8	1	20
MAR 15...	0	0	0	0	0	0	7	6	1	110
JUL 17...	--	--	0	1	0	2	8	6	2	60
SEP 18...	0	0	0	0	0	2	2	1	1	80

DATE	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)
JAN 24...	--	20	15	15	0	20	10	10	.0	.0
MAR 15...	--	10	1	1	0	20	0	30	.0	.0
JUL 17...	40	20	14	12	2	340	80	260	.0	.0
SEP 18...	70	10	5	5	0	510	60	450	.0	.0

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 24...	.0	0	0	1	2	2	0	30	20	10
MAR 15...	.0	1	1	0	0	0	1	10	0	10
JUL 17...	.1	0	0	0	0	0	0	30	10	20
SEP 18...	.0	0	0	0	0	0	0	10	0	10

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PERIPHYTON

DATE	LENGTH OF EXPOSURE (DAYS)	PERI- PHYTON BIOMASS WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	SAMPLING METHOD
AUG 21...	31	.079	.472	.000	.000	POLYETHYLENE STRIP

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 7,77 0845	MAR 15,78 0945	MAY 22,78 1200	JUN 12,78 1300	JUL 17,78 1230	SEP 18,78 1330				
TOTAL CELLS/ML	12000	41000	2300	3800	16000	55000				
DIVERSITY: DIVISION	0.3	0.0	1.2	1.2	0.2	0.3				
...CLASS	0.3	0.0	1.3	1.2	0.2	0.3				
...ORDER	1.0	0.0	1.4	1.2	0.7	0.8				
...FAMILY	1.8	0.0	2.7	2.0	1.0	1.1				
...GENUS	2.1	0.0	2.8	2.2	1.6	1.7				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	--	-	--	-	14	1	--	-	--	-
...COELASTRACEAE										
...COELASTRUM	--	-	--	-	540#	23	1600#	42	--	-
...HYDRODICTYACEAE										
...PEDIASTRUM	--	-	--	-	140	6	--	-	--	-
...MICRACTINIACEAE										
...GOLENKINIA	--	-	--	-	--	-	*	0	--	-
...OOCYSTACEAE										
...ANKISTRODESUS	110	1	--	-	--	-	*	0	350	1
...CHODATILLA	--	-	--	-	--	-	--	-	--	-
...KIPCHNEFIELLA	--	-	--	-	14	1	--	-	--	-
...OOCYSTIS	--	-	--	-	360#	15	190	5	--	-
...SELENASTRUM	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE									*	0
...CRUCIGENIA	--	-	--	-	--	-	290	8	--	-
...SCENEDESMUS	220	2	--	-	460#	20	230	6	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	*	0	--	-	43	2	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...CHAETOCERACEAE										
...CHAETOCEROS	--	-	--	-	--	-	--	-	--	-
...COSCINONISACEAE									*	0
...CYCLOTELLA	--	-	--	-	--	-	150	4	*	0
...MELOSIRA	--	-	--	-	29	1	--	-	--	-
...STEPHANODISCUS	*	0	--	-	--	-	*	0	--	-
...PENNALES										
...ACHNANTHACEAE										
...COCCONIS	--	-	--	-	14	1	*	0	--	-
...RHODICOSPHECIA	--	-	--	-	14	1	--	-	--	-
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	14	1	--	-	--	-
...FRAGILARIACEAE										
...SYNEDRA	--	-	*	0	--	-	--	-	*	0
...GOMPHONEMACEAE										
...GOMPHONEMA	--	-	*	0	--	-	--	-	*	0
...NAVICULACEAE										
...NAVICULA	--	-	--	-	--	-	*	0	--	-
...NAVICULA	--	-	*	0	--	-	--	-	*	0
...NITZSCHIA	--	-	--	-	--	-	--	-	*	0
...NITZSCHIA	--	-	--	-	--	-	--	-	*	0
..CHRYSOPHYCEAE										
...CHRYSOMONADES										
...OCHROMONADACEAE										
...OCHROMONAS	--	-	--	-	160	7	--	-	--	-
...XANTHOPHYCEAE										
...HETEROOCOCCALES										
...CHLOROTHECIACEAE										
...OPHIOCYTIUM	--	-	--	-	--	-	--	-	610	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
...AGMONEIUM	--	-	--	-	--	-	720	4	3800	7
...ANACYSTIS	2400#	21	--	-	--	-	*	0	*	0
...HORMOGONALES										
...NOSTOCACEAE										
...ANABAEANA	440	4	--	-	14	1	--	-	--	-
...APHANIZOEMON	4000#	34	--	-	500#	22	--	-	110	1
...CYLINDROSPERMUM	--	-	--	-	--	-	580	4	4000	7
...OSCILLATORIA										
...LYNGBYA	440	4	--	-	--	-	--	-	1400	12
...OSCILLATORIA	4100#	35	41000#	100	--	-	1300#	33	11000#	69
...CHROCOCCALES										
...CHROCOCCACEAE										
...GOETOPHOSPHARIA	--	-	--	-	--	-	--	-	1000	2
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENAEACEAE										
...TRACHELOMONAS	--	-	--	-	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 1%
 * - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

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07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	59142	1970	1140	181000	380	60900	280	45300	420
NOV. 1977.....	32790	2010	1160	103000	390	34700	290	25900	420
DEC. 1977.....	41268	2000	1150	129000	390	43500	290	32300	420
JAN. 1978.....	75872	2040	1180	241000	400	81100	300	60600	430
FEB. 1978.....	56725	2070	1200	183000	400	61500	300	46100	430
MAR. 1978.....	28173	2090	1210	92100	410	31200	300	23200	440
APR. 1978.....	23676	2070	1200	76600	400	25700	300	19200	440
MAY 1978.....	41686	2140	1230	139000	420	46900	310	35100	450
JUNE 1978.....	448240	2050	1180	1430000	400	480000	300	359000	430
JULY 1978.....	57765	2080	1200	187000	400	62900	300	47100	440
AUG. 1978.....	89302	2050	1180	286000	400	96000	300	71800	430
SEPT 1978.....	71872	2030	1170	228000	400	76700	300	57400	430
TOTAL	1026511	**	**	3280000	**	1100000	**	823000	**
WTD.AVG.	2812.36	2050	1200	**	400	**	300	**	430

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1910	2050	1990	2030	2060	2100	2080	2160	2070	2050	2040	2060
2	1910	2020	1990	2030	2060	2100	2070	2150	2050	2060	2040	2060
3	1910	2020	1990	2030	2040	2100	2060	2150	2040	2060	2050	2050
4	1910	2040	1990	2040	2040	2100	2060	2140	2040	2060	2060	2050
5	1910	2040	1990	2040	2040	2110	2070	2140	2040	2070	2060	2040
6	1950	2050	1990	2010	2040	2110	2070	2150	2020	2070	2060	2050
7	1970	2060	2000	2010	2040	2100	2070	2160	2040	2040	2070	2060
8	1980	2030	2000	2010	2040	2100	2070	2160	2030	2060	2070	2040
9	1990	1990	2000	2010	2030	2100	2060	2160	2030	2070	2070	2040
10	1990	2010	2000	2010	2020	2100	2060	2150	2030	2120	2040	2040
11	2000	1990	2000	2060	2030	2100	2060	2150	2030	2100	2050	2030
12	1980	1990	2000	2030	2040	2100	2060	2130	2030	2060	2050	2030
13	1960	1990	2000	2040	2050	2100	2060	2130	2010	2090	2040	2030
14	1930	1990	2000	2050	2080	2100	2060	2140	2040	2070	2040	2030
15	1920	1990	2000	2060	2080	2090	2060	2150	2110	2070	2030	2040
16	1920	1990	2000	2070	2090	2090	2060	2150	2160	2070	2050	2040
17	1910	1980	2000	2050	2100	2090	2060	2130	2100	2070	2030	2040
18	1930	2000	2000	2050	2100	2090	2070	2130	2050	2080	2080	2040
19	1930	2010	2000	2020	2110	2090	2060	2120	2030	2060	2090	2060
20	1930	2010	2000	2040	2110	2090	2060	2120	2040	2080	2100	2050
21	1960	2020	2000	2040	2120	2090	2080	2120	2060	2110	2110	2050
22	1980	2000	2020	2040	2080	2090	2080	2120	2050	2110	2060	2030
23	2000	1980	2020	2040	2080	2090	2090	2120	2050	2100	2100	2010
24	2010	1980	2010	2040	2080	2090	2090	2120	2050	2100	2060	2000
25	2020	1980	2010	2040	2080	2090	2070	2090	2050	2080	2040	1990
26	2000	1980	2010	2040	2080	2090	2090	2090	2050	2080	2040	1980
27	1980	1980	2000	2050	2080	2090	2090	2080	2080	2080	2030	1970
28	1960	1980	2000	2050	2080	2090	2070	2090	2060	2070	2020	1990
29	2000	2000	2000	2060	---	2090	2090	2100	2090	2070	2030	2010
30	2030	1990	2020	2060	---	2090	2100	2110	2050	2070	2030	2000
31	2060	---	2030	2040	---	2090	---	2120	---	2070	2020	---
MEAN	1960	2000	2000	2040	2070	2100	2070	2130	2050	2080	2050	2030

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.5	14.0	---	3.0	1.5	---	16.5	23.0	---	28.0	27.0
2	---	19.5	14.0	---	3.0	2.0	---	16.5	25.0	---	28.0	---
3	24.5	19.5	---	5.5	2.0	2.0	9.0	16.5	---	28.0	28.5	---
4	24.5	---	---	5.5	---	---	10.0	---	---	---	28.0	---
5	24.0	---	14.0	5.5	---	---	10.0	17.0	26.0	---	---	29.0
6	24.0	---	13.0	5.5	2.0	---	11.0	---	26.5	28.0	---	---
7	---	19.0	12.0	---	2.0	---	11.0	---	27.0	28.0	29.0	27.0
8	---	19.0	12.0	---	2.0	---	---	20.0	27.0	---	28.5	27.0
9	---	18.0	12.0	5.0	---	---	---	20.0	26.5	28.5	28.5	---
10	---	17.0	---	5.0	1.5	3.5	11.0	20.0	---	30.0	28.5	---
11	21.5	17.0	---	5.0	---	---	12.0	20.0	---	---	29.0	27.0
12	---	---	10.0	5.0	---	---	13.5	20.0	26.5	29.0	---	27.0
13	21.0	---	10.0	5.0	1.5	---	15.0	---	27.0	28.0	---	27.0
14	21.0	16.5	10.0	---	1.5	3.5	15.0	---	25.5	30.0	---	26.5
15	---	16.5	10.0	---	1.5	4.0	---	20.5	26.0	---	27.0	---
16	---	16.5	10.0	3.5	---	4.0	---	20.5	25.5	---	27.0	---
17	20.0	16.5	---	3.5	1.5	5.0	15.0	20.5	---	29.0	27.0	---
18	20.0	16.5	---	3.0	---	---	15.0	20.5	---	28.0	27.0	26.5
19	20.0	---	10.0	5.5	---	---	15.0	20.5	26.5	28.0	---	26.5
20	20.0	---	10.0	3.0	---	6.0	15.5	---	26.0	---	---	26.5
21	20.0	16.0	9.5	---	1.0	6.5	15.5	---	26.5	29.0	28.0	26.5
22	---	15.5	9.0	---	.5	6.5	---	21.0	26.5	---	28.0	26.5
23	---	15.5	---	3.0	.5	---	---	---	---	---	28.0	---
24	---	---	---	3.0	1.0	7.0	16.0	21.0	---	29.0	28.0	---
25	20.0	---	---	3.0	---	---	16.0	21.0	---	29.0	28.0	26.0
26	20.0	---	---	3.0	---	---	16.5	21.0	26.0	---	---	---
27	19.5	---	8.0	3.0	1.5	7.0	16.5	21.0	26.0	---	---	26.0
28	19.5	14.5	8.0	---	1.5	8.5	16.5	---	26.5	---	28.0	26.0
29	---	14.5	8.0	---	---	9.0	---	---	28.5	---	28.0	26.0
30	---	14.5	8.0	3.0	---	11.0	---	---	28.0	---	---	---
31	19.5	---	---	3.0	---	11.0	---	23.0	---	29.5	28.0	---
MEAN	21.0	17.0	10.5	4.0	1.5	6.0	14.0	20.0	26.5	28.5	28.0	26.5

RED RIVER BASIN

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07332600 BOIS D'ARC CREEK NEAR RANDOLPH, TX

LOCATION.--Lat 33°28'32", long 96°12'52", Fannin County, Hydrologic Unit 11140101, on right bank at downstream side of bridge on State Highway 11, 2.3 mi (3.7 km) upstream from Henson Creek, and 2.4 mi (3.9 km) east of Randolph.

DRAINAGE AREA.--72 mi² (186 km²).

PERIOD OF RECORD.--November 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 564.38 ft (172.023 m) National Geodetic Vertical Datum of 1929 (Texas Department of Highways and Public Transportation bench mark).

REMARKS.--Records good. No know diversion or regulation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1964-78), 57.0 ft³/s (1.614 m³/s), 10.75 in/yr (273 mm/yr), 41,300 acre-ft/yr (50.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s (399 m³/s) July 1, 1976, gage height, 23.15 ft (7.056 m); no flow each year except 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1922, 24.6 (7.50 m) about 1935, from information by Texas Department of Highways and Public Transportation and local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 12	1800	*1,770	50.1	May 3	0330	1,580	7.75
Mar. 23	2300	1,730	49.0				2.362
			8.05				
			2.481				
			2.454				

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.08	.21	.14	1.2	13	13	9.1	6.5	.08	.00	.00
2	.10	.08	.08	.11	1.0	15	12	15	6.1	.04	.00	.00
3	.06	.06	.07	.09	.97	13	11	584	5.0	.02	.00	.00
4	.05	.04	.07	.08	.95	9.9	11	33	4.3	.01	.00	.00
5	.05	.03	.06	.09	.86	9.9	21	158	26	.00	.00	.00
6	.05	.03	.04	.11	.77	13	18	42	145	.00	.00	.00
7	.04	.02	.04	.12	1.1	90	12	26	72	.00	.00	.00
8	.04	.20	.05	.08	1.2	41	9.9	18	141	.00	.00	.00
9	.04	.16	.02	.00	1.5	26	9.6	13	17	.00	.00	.00
10	.04	.05	.02	.00	1.6	20	329	11	10	.00	.00	.00
11	.04	.04	.02	.10	1.9	17	56	10	8.4	.00	.00	.00
12	.03	.02	.03	.21	705	15	27	9.8	6.0	.00	.00	.00
13	.03	.02	.10	.26	242	16	20	8.0	78	.00	.00	.00
14	.02	.01	.13	.23	22	14	17	5.6	17	.00	.00	.00
15	.02	.01	.14	.27	17	12	15	5.2	9.5	.00	.00	.00
16	.02	.01	.12	1.1	18	11	14	4.6	6.3	.00	.00	.00
17	.01	.01	.08	.85	16	10	13	4.4	4.3	.00	.00	.00
18	.01	.00	.06	1.2	14	9.9	12	4.3	3.2	.00	.00	.00
19	.01	.00	.06	1.5	17	9.0	11	3.7	3.0	.00	.00	.00
20	.01	.01	.05	1.5	19	19	11	3.3	2.6	.00	.00	.00
21	.00	.00	.04	1.5	21	47	10	5.7	2.0	.00	.00	.00
22	.00	.00	.04	1.5	39	14	10	37	1.5	.00	.00	.00
23	.00	.00	.04	1.5	58	318	25	8.7	1.3	.00	.00	.00
24	.00	.00	.04	1.3	26	276	11	4.6	1.1	.00	.00	.00
25	.00	.00	.03	1.6	18	35	10	3.3	.80	.00	.00	.00
26	.00	.00	.03	1.8	14	25	10	2.7	.64	.00	.00	.00
27	.00	.00	.08	1.7	13	21	9.9	2.3	.40	.00	.00	.00
28	.00	.00	.09	1.5	15	19	9.5	135	.28	.00	.00	.00
29	.00	.00	.15	1.3	---	17	9.1	51	.19	.00	.00	.00
30	.00	.15	.19	.98	---	15	9.1	15	.12	.00	.00	.00
31	.00	---	.17	1.0	---	14	---	8.8	---	.00	.00	---
TOTAL	.77	1.03	2.35	23.72	1287.05	1184.7	756.1	1242.1	579.53	.15	.00	.00
MEAN	.025	.034	.076	.77	46.0	38.2	25.2	40.1	19.3	.005	.000	.000
MAX	.10	.20	.21	1.8	705	318	329	584	145	.08	.00	.00
MIN	.00	.00	.02	.00	.77	9.0	9.1	2.3	.12	.00	.00	.00
CFSM	.000	.000	.001	.01	.64	.53	.35	.56	.27	.000	.000	.000
IN.	.00	.00	.00	.01	.66	.61	.39	.64	.30	.00	.00	.00
AC-FT	1.5	2.0	4.7	47	2550	2350	1500	2460	1150	.3	.00	.00
CAL YR 1977	TOTAL	16904.43	MEAN	46.3	MAX	6000	MIN	.00	CFSM	.64	IN	8.73
WTR YR 1978	TOTAL	5077.50	MEAN	13.9	MAX	705	MIN	.00	CFSM	.19	IN	2.62
									AC-FT	33530	AC-FT	10070

RED RIVER BASIN

07335390 PAT MAYSE LAKE NEAR CHICOTA, TX

LOCATION.--Lat 33°51'10", Long 95°32'38", Lamar County, Hydrologic Unit 11140101, on upstream side of dam on Sanders Creek, 2,800 ft (850 m) to right of outlet channel, 2.0 mi (3.2 km) southeast of Chicota, and 4.6 mi (7.4 km) upstream from mouth.

DRAINAGE AREA.--175 mi² (453 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year. Prior to October 1970, published as Pat Mayse Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 10, 1968, nonrecording gage at present site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam about 7,080 ft (2,160 m) long, including an emergency spillway 100 ft (30 m) wide located near the right abutment of dam. The dam was completed and deliberate impoundment began Sept. 28, 1967. The flood-control outlet works consist of an uncontrolled morning-glory-type drop-inlet spillway that is connected to a 7.25-foot-diameter (2.21 m) concrete conduit through the dam. A 24-inch- and 12-inch-diameter (610 and 305 mm) low-flow pipe are provided for additional outlets. The lake was built for flood control, municipal and industrial water supply, recreation, fish and wildlife conservation, and for channel improvement on Sanders Creek. Records furnished by the Corps of Engineers indicate that during the current year, 11,700 acre-ft (14.4 hm³) was diverted from the lake for municipal and industrial uses by the city of Paris. Any resultant effluent is discharged into Pine Creek below Lake Crook, which is located in another drainage basin. The capacity table is based on Geological Survey topographic maps dated 1949. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.....	488.5	-
Crest of spillway.....	477.0	352,700
Top of flood-control pool.....	460.5	189,100
Crest of morning-glory drop-inlet spillway (top of conservation pool).....	451.0	124,500
Streambed.....	393.0	0

COOPERATION.--Records furnished by Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 208,000 acre-ft (256 hm³) Dec. 11, 12, 1971, elevation, 462.87 ft (141.083 m); minimum since conservation pool was first reached on Apr. 20, 1968, 105,400 acre-ft (130 hm³) Sept. 30, 1978, elevation, 447.64 ft (136.441 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 119,400 acre-ft (147 hm³) June 15-17, elevation, 450.13 ft (137.200 m); minimum, 105,400 acre-ft (130 hm³) Sept. 30, elevation, 447.64 ft (136.441 m).

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

446.0	96,700	450.0	118,600
448.0	107,300	452.0	130,600

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114100	111600	109800	107600	107600	108600	117800	117200	117700	117300	112200	107900
2	113800	111600	109700	107600	107600	108700	117700	117500	117700	117000	112100	107800
3	113700	111500	109700	107600	107500	108600	117700	117800	117600	117000	112000	107800
4	113600	111400	109600	107400	107500	108500	117700	117800	117500	116800	112100	107700
5	113500	111400	109600	107400	107400	108500	117900	117900	117500	116700	112100	107700
6	113300	111400	109500	107400	107100	108900	117800	118000	117700	116700	112100	107600
7	113200	111300	109200	107400	107100	109500	117800	118200	117700	116600	112000	107500
8	113000	111500	109200	107200	107100	110300	117700	118200	117500	116200	111900	107400
9	112900	111300	109100	107100	107100	110500	117800	118200	117500	116000	111900	107300
10	112800	111100	109000	107000	107100	110600	118200	118100	117400	116000	111700	107200
11	112600	111000	108800	107400	107100	110600	118300	118000	117300	115600	111600	107200
12	112400	111000	108800	107400	107800	110600	118400	118000	117400	115500	111400	107200
13	112300	110900	108900	107400	108200	110600	118400	117900	117800	115200	111200	107100
14	112200	110900	108900	107400	108300	110600	118400	117700	117700	115000	111100	107000
15	112000	110700	108800	107200	108400	110500	118300	117700	119400	114800	110900	106900
16	111900	110700	108700	107700	108400	110500	118300	117500	119400	114600	110700	106900
17	111800	110600	108600	107700	108800	110500	118300	117400	119400	114400	110500	106700
18	111800	110400	108500	107700	108800	110400	118000	117400	119200	114200	110300	106600
19	111600	110400	108500	107700	108800	110400	118000	117400	119100	114000	109900	106400
20	111500	110300	108200	107700	108700	110600	117700	117200	119000	113800	109400	106400
21	111500	110200	108200	107700	108700	111000	117500	117400	118800	113600	109400	106200
22	111300	110100	108000	107700	108600	111700	117600	117700	118800	113300	109200	106100
23	111300	110100	108000	107600	108600	113200	117600	117900	118600	113500	109200	106000
24	111300	110000	107900	107600	108600	115200	118000	118000	118500	113300	109000	106000
25	111300	109900	107900	107700	108600	117500	117800	118000	118400	113300	108900	106000
26	111300	109900	107900	107700	108600	117700	117700	118000	118000	113200	108700	105800
27	111300	109800	107800	107700	108500	117700	117600	117700	117900	113100	108400	105700
28	111100	109500	107700	107700	108500	117800	117700	118000	117700	113000	108400	105700
29	111100	109500	107700	107600	---	117800	117500	118000	117700	112800	108300	105500
30	111000	109800	107700	107600	---	117800	117500	117900	117400	112500	108200	105400
31	111100	---	107700	107600	---	117900	---	117700	---	112400	108100	---
MAX	114100	111600	109800	107700	108800	117900	118400	118200	119400	117300	112200	107900
MIN	111000	109500	107700	107000	107100	108500	117500	117200	117300	112400	108100	105400
(†)	448.69	448.45	448.08	448.05	448.23	449.88	449.81	449.85	449.80	448.92	448.15	447.64
(‡)	-3300	-1300	-2100	-100	+900	+9400	-400	+200	-300	-5000	-4300	-2700
(††)	1000	919	921	1000	942	898	852	981	811	1150	1160	1070

CAL YR 1977 MAX 151800 MIN 107700 † -16700 †† 11000
WTR YR 1978 MAX 119400 MIN 105400 † -9000 †† 11700

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses by city of Paris.

RED RIVER BASIN

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07335390 PAT MAYSE LAKE NEAR CHICOTA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT 18...	1030	187	7.1	15.5	69	3	23	2.7	7.4
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
OCT 18...	.4	2.8	80	0	17	7.4	.2	3.4	103

RED RIVER BASIN

07335400 SANDERS CREEK NEAR CHICOTA, TX
(Outflow from Pat Mayse Lake)

LOCATION.--Lat 33°51'10", long 95°32'28", Lamar County, Hydrologic Unit 11140101, on upstream side of Pat Mayse Dam, 2,800 ft (853 m) to right of morning-glory drop inlet, 2.0 mi (3.2 km) southeast of Chicota, and 4.6 mi (7.4 km) upstream from mouth.

DRAINAGE AREA.--175 mi² (453 km²), at Pat Mayse Dam; 184 mi² (477 km²) at former site 2.6 mi (4.2 km) downstream.

PERIOD OF RECORD.--March 1964 to September 1967 (gage heights and discharge measurements) only), October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 440.00 ft (134.112 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1967, at site 2.6 mi (4.2 km) downstream at datum 52.77 ft (16.084 m) lower. Oct. 1, 1967, to Sept. 30, 1970, at datum 10.00 ft (3.048 m) higher.

REMARKS.--Records good. Flow represents uncontrolled outflow from Pat Mayse Lake (station 07335390). Flow downstream from dam is affected by local runoff and backwater from the Red River.

COOPERATION.--Records furnished by Corps of Engineers and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--11 years, 132 ft³/s (3.738 m³/s), 95,600 acre-ft/yr (118 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum outflow, 1,060 ft³/s (30.0 m³/s) May 19, 1969, gage height, 10.20 ft (3.109 m), datum then in use; maximum gage height, 22.87 ft (6.971 m) Dec. 11, 12, 1971; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--No outflow during the year.

CAL YR 1977	TOTAL 29,720.40	MEAN 81.4	MAX 870	MIN 0	AC-FT 58,950
WTR YR 1978	TOTAL 0	MEAN 0	MAX 0	MIN 0	AC-FT 0

RED RIVER BASIN

195

07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'32", long 95°30'08", in NW1/4 sec.11, T.8 S., R.17 E., Choctaw County, Okla., Hydrologic Unit 11140101, near right bank on downstream side of pier of bridge on U.S. Highway 271 at Arthur City, 10.6 mi (17.1 km) downstream from Muddy Boggy River, 26.0 mi (41.8 km) upstream from Kiamichi River, and at mile 633.1 (1,018.7 km).

DRAINAGE AREA.--44,531 mi² (115,335 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

PERIOD OF RECORD.--January to September 1905 (gage heights and discharge measurements only), October 1905 to December 1911, July 1936 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1891 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1241: Drainage area. WSP 1311: 1906-11.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft (115.845 m) National Geodetic Vertical Datum of 1929. From 1905-11, non-recording gage at St. Louis-San Francisco Railway Co. bridge 200 ft (61 m) upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records good. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi (149.3 km) above station.

COOPERATION.--Gage-height records and 21 discharge measurements furnished by Corps of Engineers; records computed by the Geological Survey.

AVERAGE DISCHARGE.--13 years (water years 1906-11, 1937-43) prior to completion of Denison Dam, 9,266 ft³/s (262.4 m³/s), 6,713,000 acre-ft/yr (8.28 km³/yr); 34 years (water years 1944-78) regulated, 7,855 ft³/s (225.5 m³/s), 5,691,000 acre-ft/yr (7.02 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 400,000 ft³/s (11,300 m³/s) May 28, 1908, gage height, 43.2 ft (13.17 m), from rating curve extended above 41,000 ft³/s (1,160 m³/s) on basis of records for later years; minimum, 130 ft³/s (3.68 m³/s) Dec. 11, 12, 1956, gage height, 4.49 ft (1.369 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,800 ft³/s (1,070 m³/s) June 9, gage height, 16.61 ft (5.063 m); minimum daily, 234 ft³/s (6.63 m³/s) Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3480	1450	916	2520	1850	3590	4420	3220	7840	3130	2170	4890
2	3470	3800	1680	1860	3190	5200	3680	6250	6530	2710	1820	5180
3	3380	6820	1030	2790	2500	3260	2950	9330	5140	2950	2260	3350
4	2510	6090	968	3130	1690	1810	1900	10800	6380	3310	1400	1840
5	1350	3380	1210	2410	1680	3490	2350	11200	12100	2630	1310	1440
6	2490	1640	871	2780	1620	3790	5600	10900	12200	1380	1440	1400
7	2680	1610	753	2440	1510	2400	5700	10300	12600	1050	890	1730
8	2130	1220	1650	2410	1740	2070	3330	6840	24900	933	714	2920
9	1080	1690	4000	2370	3370	5360	3420	4790	36500	975	1160	2450
10	617	2660	2000	2750	4080	8130	2220	6890	37300	1040	1100	2420
11	1080	2410	950	3980	3010	6580	2230	5620	35800	2690	2750	2650
12	616	1440	1900	4630	1990	3980	6550	3780	33700	3410	2910	2240
13	401	1530	1200	4730	4190	3230	9410	2410	33800	3560	2440	2750
14	403	1780	1150	3610	12000	1980	9250	1860	32800	3200	2290	3510
15	844	1300	978	2010	11800	1620	10200	2650	25900	2790	2050	3760
16	472	1310	1130	1970	10700	1420	7570	1430	18600	2610	3010	4010
17	315	2240	1850	1610	5720	1220	3290	2320	17100	2440	2960	3630
18	277	1120	1830	1870	3370	1410	2300	3380	16800	2140	2650	3100
19	254	1390	1200	4210	3570	2390	1870	2430	16800	1680	3750	2360
20	234	1200	1200	4770	3100	2230	1680	3460	16700	2040	3400	1390
21	916	1480	1190	4530	2540	1340	1550	2610	16600	1830	3620	2440
22	1810	960	1180	4830	3390	3740	1420	2390	16200	1450	2790	3500
23	3150	809	1380	4430	3940	7140	1340	3330	12800	1430	3020	2880
24	2840	769	1410	3070	3700	13500	1430	3990	12000	1620	2830	1700
25	2670	750	1730	3330	4820	20800	2650	6180	11900	1390	2550	1450
26	3160	723	1540	2470	5580	19200	3510	5720	11900	1720	2760	863
27	3480	712	1540	1400	4560	15200	2880	3420	11800	2410	3110	1190
28	4460	710	1580	2460	2550	14000	1730	1460	9540	2230	3490	1530
29	5130	686	1980	2720	---	13100	2070	1180	3800	1540	2690	1490
30	5960	707	2290	1970	---	10300	2430	4050	2760	1850	3170	1590
31	3100	---	2580	1690	---	5010	---	7550	---	2620	4150	---
TOTAL	64759	54386	46866	91750	113760	188490	110930	151740	518790	66758	76654	75653
MEAN	2089	1813	1512	2960	4063	6080	3698	4895	17290	2153	2473	2522
MAX	5960	6820	4000	4830	12000	20800	10200	11200	37300	3560	4150	5180
MIN	234	686	753	1400	1510	1220	1340	1180	2760	933	714	863
AC-FT	128400	107900	92960	182000	225600	373900	220000	301000	1029000	132400	152000	150100
CAL YR 1977	TOTAL	2282305	MEAN	6253	MAX	106000	MIN	234	AC-FT	4527000		
WTR YR 1978	TOTAL	1560536	MEAN	4275	MAX	37300	MIN	234	AC-FT	3095000		

RED RIVER BASIN

07336750 LITTLE PINE CREEK NEAR KANAWHA, TX

LOCATION.--Lat 33°50'26", Long 95°15'55", Red River County, Hydrologic Unit 11140106, on right bank at downstream side of bridge on Farm Road 410, 1.6 mi (2.6 km) south of Kanawha, 1.8 mi (2.9 km) upstream from Tanyard Creek, and about 4 mi (6 km) upstream from Big Pine Creek.

DRAINAGE AREA.--75.4 mi² (195.3 km²).

PERIOD OF RECORD.--December 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 389.26 ft (118.646 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known diversion or return water in vicinity of gage.

COOPERATION.--Records furnished by Corps of Engineers and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--9 years (water years 1970-78), 71.5 ft³/s (2.025 m³/s), 12.88 in/yr (327 mm/yr), 51,800 acre-ft/yr (63.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,200 ft³/s (855 m³/s) Dec. 10, 1971, gage height, 21.26 ft (6.480 m), from rating curve extended above 4,400 ft³/s (125 m³/s) on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1948, that of Dec. 10, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,510 ft³/s (156 m³/s) Mar. 25, gage height, 14.65 ft (4.465 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); no flow Oct. 1 to Feb. 12, June 28 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	4.7	8.3	4.5	.68	.00	.00	.00
2	.00	.00	.00	.00	.00	3.2	6.4	3.3	1.0	.00	.00	.00
3	.00	.00	.00	.00	.00	3.8	5.7	33	1.0	.00	.00	.00
4	.00	.00	.00	.00	.00	3.7	5.0	49	.75	.00	.00	.00
5	.00	.00	.00	.00	.00	4.4	5.0	25	.74	.00	.00	.00
6	.00	.00	.00	.00	.00	5.6	6.1	18	1.0	.00	.00	.00
7	.00	.00	.00	.00	.00	72	5.6	39	1.7	.00	.00	.00
8	.00	.00	.00	.00	.00	323	5.6	109	52	.00	.00	.00
9	.00	.00	.00	.00	.00	145	5.6	34	111	.00	.00	.00
10	.00	.00	.00	.00	.00	35	14	13	17	.00	.00	.00
11	.00	.00	.00	.00	.00	19	67	7.5	7.2	.00	.00	.00
12	.00	.00	.00	.00	.00	12	63	4.6	3.3	.00	.00	.00
13	.00	.00	.00	.00	10	9.2	22	3.0	2.2	.00	.00	.00
14	.00	.00	.00	.00	52	7.5	12	1.9	1.4	.00	.00	.00
15	.00	.00	.00	.00	20	5.2	8.0	1.6	.79	.00	.00	.00
16	.00	.00	.00	.00	9.4	3.3	5.3	1.2	.57	.00	.00	.00
17	.00	.00	.00	.00	5.7	2.4	3.7	.93	.36	.00	.00	.00
18	.00	.00	.00	.00	4.2	2.0	3.0	.82	.28	.00	.00	.00
19	.00	.00	.00	.00	2.6	1.8	2.3	.82	.22	.00	.00	.00
20	.00	.00	.00	.00	1.9	1.6	1.8	.84	.20	.00	.00	.00
21	.00	.00	.00	.00	1.7	8.3	1.6	.84	.14	.00	.00	.00
22	.00	.00	.00	.00	1.6	13	3.7	1.0	.10	.00	.00	.00
23	.00	.00	.00	.00	2.4	37	3.7	54	.08	.00	.00	.00
24	.00	.00	.00	.00	10	606	51	43	.05	.00	.00	.00
25	.00	.00	.00	.00	18	993	271	10	.03	.00	.00	.00
26	.00	.00	.00	.00	13	214	112	4.9	.02	.00	.00	.00
27	.00	.00	.00	.00	8.4	43	20	2.7	.01	.00	.00	.00
28	.00	.00	.00	.00	7.7	24	11	2.5	.00	.00	.00	.00
29	.00	.00	.00	.00	---	16	7.1	1.9	.00	.00	.00	.00
30	.00	.00	.00	.00	---	12	6.2	1.0	.00	.00	.00	.00
31	.00	---	.00	.00	---	9.6	---	.76	---	.00	.00	---
TOTAL	.00	.00	.00	.00	168.60	2640.3	742.7	473.61	203.82	.00	.00	.00
MEAN	.000	.000	.000	.000	6.02	85.2	24.8	15.3	6.79	.000	.000	.000
MAX	.00	.00	.00	.00	52	993	271	109	111	.00	.00	.00
MIN	.00	.00	.00	.00	.00	1.6	1.6	.76	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.08	1.13	.33	.20	.09	.000	.000	.000
IN.	.00	.00	.00	.00	.08	1.30	.37	.23	.10	.00	.00	.00
AC-FT	.00	.00	.00	.00	334	5240	1470	939	404	.00	.00	.00
CAL YR 1977	TOTAL	27508.46	MEAN 75.4	MAX 3780	MIN .00	CFSM 1.00	IN 13.57	AC-FT 54560				
WTR YR 1978	TOTAL	4229.03	MEAN 11.6	MAX 993	MIN .00	CFSM .15	IN 2.09	AC-FT 8390				

RED RIVER BASIN

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07336820 RED RIVER NEAR DE KALB, TX

LOCATION.--Lat 33°41'15", long 94°41'39", Bowie County, Tex.--McCurtain County, Okla. State line, Hydrologic Unit 11140106, near left bank at downstream side of bridge on U.S. Highway 259, 4.8 mi (7.7 km) upstream from North Mill Creek, 13 mi (21 km) north of De Kalb, and at mile 556.9 (896.1 km).

DRAINAGE AREA.--47,348 mi² (122,631 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 302.92 ft (92.330 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. At times, flood peaks may be affected by storage in Lake Texoma (station 07331500) located approximately 169 mi (272 km) upstream, and low flows may be affected by releases for generation of electric power. National Weather Service gage-height telemeter at station.

COOPERATION.--Records furnished by Corps of Engineers and reviewed by the Geological Survey.

AVERAGE DISCHARGE.--10 years (water years 1969-78), 11,760 ft³/s (333.0 m³/s), 8,520,000 acre-ft/yr (10.5 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 189,000 ft³/s (5,350 m³/s) Dec. 11, 1971, gage height, 31.55 ft (9.616 m), from graph based on gage readings; minimum, 431 ft³/s (12.2 m³/s) Sept. 4, 5, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1957, 205,000 ft³/s (5,800 m³/s) June 1957, gage height, 32.2 ft (9.81 m), from rating curve extended above 186,500 ft³/s (5,280 m³/s). Greatest flood since 1936 occurred in February 1938, stage unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34,500 ft³/s (977 m³/s) June 11, gage height, 18.82 ft (5.736 m), from graph based on gage readings; minimum, 648 ft³/s (18.4 m³/s) Oct. 22, gage height, 7.38 ft (2.249 m), from graph based on gage readings.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4300	5680	1170	2310	2240	6780	13000	2780	6460	4920	2580	3770
2	4030	3380	1160	2550	1990	5640	9270	3260	9390	4250	3170	4740
3	3790	2310	1240	2500	2150	6920	8900	7970	8440	4210	2710	5470
4	3750	4340	1680	2130	3000	7130	7080	13900	6780	3980	2640	5560
5	3600	6630	1490	2730	2630	5520	4960	21200	5950	3960	2970	4140
6	2700	5750	1270	3020	2040	5140	4320	22600	9600	4170	2580	2700
7	1980	3400	1420	2590	1940	7510	5500	19000	13300	3380	2080	2150
8	2610	2320	1240	2830	1880	8850	7410	18300	13600	2560	2020	1960
9	2870	2140	1160	2480	1820	7310	5510	15400	22000	2180	1630	2240
10	2390	1850	2420	2510	2070	9330	4850	10100	32300	1980	1460	3190
11	1650	2060	2870	2560	3330	12900	4940	8750	34200	1950	1760	2980
12	1210	2680	2040	3100	3860	13500	4110	9100	33800	2110	1890	2970
13	1320	2430	1700	4040	3730	10900	5540	6430	32600	3360	3170	3120
14	1160	1840	1960	4670	3990	8390	10300	4670	32900	4190	3650	2790
15	882	1850	1670	4540	10900	5680	10500	3590	32300	4350	3300	3060
16	932	1960	1470	3700	13600	4300	10000	3280	27700	4000	3120	3860
17	1100	1670	1330	2680	12800	3650	9610	3350	22700	3610	2880	4100
18	972	1690	1360	2390	10100	2860	6440	2670	19400	3360	3520	4380
19	796	2080	1700	2120	7380	2270	4800	3320	18700	3260	3830	4140
20	730	1620	1720	2270	6380	2300	4140	3840	18400	2940	3510	3650
21	684	1580	1510	3980	6290	3420	3490	3470	18100	2550	4330	2880
22	658	1500	1410	4730	5710	3920	2680	4010	17900	2640	4330	2100
23	930	1590	1400	4660	5600	4820	2440	3480	17200	2640	4360	2710
24	1830	1410	1410	4760	6190	14000	2330	3410	15300	2340	3790	3640
25	2990	1270	1490	4350	6410	24700	2400	3970	13200	2230	3740	3330
26	2910	1130	1560	3560	6510	29800	2830	4970	12900	2340	3650	2340
27	2760	1070	1740	3470	7620	28700	4610	6130	12700	2160	3340	1940
28	3190	1040	1740	2680	8020	25400	4810	5690	12500	2390	3480	1490
29	3670	1090	1710	1990	---	24200	3880	4110	12400	2920	3840	1580
30	4660	1150	1780	2500	---	23500	2650	2600	7730	2750	4240	1910
31	5430	---	2040	2690	---	20100	---	2530	---	2440	3580	---
TOTAL	72484	70510	49860	97090	150180	339440	173300	227880	540450	96120	97150	94890
MEAN	2338	2350	1608	3132	5364	10950	5777	7351	18020	3101	3134	3163
MAX	5430	6630	2870	4760	13600	29800	13000	22600	34200	4920	4360	5560
MIN	658	1040	1160	1990	1820	2270	2330	2530	5950	1950	1460	1490
AC-FT	143800	139900	98900	192600	297900	673300	343700	452000	1072000	190700	192700	188200
CAL YR 1977	TOTAL	3092334	MEAN	8472	MAX	106000	MIN	658	AC-FT	6134000		
WTR YR 1978	TOTAL	2009354	MEAN	5505	MAX	34200	MIN	658	AC-FT	3986000		

RED RIVER BASIN

07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1968 to current year.
WATER TEMPERATURES: January 1968 to current year.

REMARKS.--When codes for agencies collecting and analyzing a sample are shown, the sample was collected and field data obtained by the Oklahoma District (1028), U.S. Geological Survey, and the remainder of the analysis performed by the Oklahoma State Health Department (9740).

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,040 micromhos June 20, 1978; minimum daily, 132 micromhos Mar. 25, 1968.
WATER TEMPERATURES: Maximum daily, 34.0°C on several days during July and August 1969-70; minimum daily, 0.0°C Jan. 11, 1977.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,040 micromhos June 20; minimum daily, 166 micromhos Mar. 29.
WATER TEMPERATURES: Maximum daily, 31.0°C July 8-12; minimum daily, 0.5°C Jan. 19-22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV 07...	1430	3400	1410	8.0	18.0	15	35	9.5	103	1.7	310	210
DEC 27...	0805	1740	1840	8.5	5.0	--	--	--	--	--	390	250
JAN 26...	1500	3560	1760	8.1	3.0	5	15	12.0	92	1.9	370	260
MAR 20...	1535	2300	787	8.3	17.0	45	35	10.6	113	3.8	210	77
MAY 16...	1035	3280	952	8.4	22.5	40	45	8.2	96	4.1	230	120
JUN 29...	0740	12400	1980	--	28.0	--	--	--	--	--	410	300
JUL 18...	0915	3480	1760	8.0	29.5	20	15	6.8	91	2.5	380	270
AUG 18...	0845	3520	1760	--	28.0	--	--	--	--	--	360	240
SEP 21...	1135	2880	1910	8.4	28.0	20	20	8.5	110	3.0	380	270

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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 07...	83	26	170	4.2	5.6	130	0	200	280	.3	6.0
DEC 27...	100	34	240	5.3	6.6	150	10	260	370	.3	8.5
JAN 26...	97	31	220	5.0	6.0	140	0	250	360	.3	7.5
MAR 20...	57	16	80	2.4	4.2	160	0	92	110	.2	7.5
MAY 16...	63	18	110	3.1	4.6	130	4	130	150	.3	4.1
JUN 29...	110	33	250	5.4	6.3	140	0	300	400	.4	7.2
JUL 18...	98	33	230	5.1	6.1	140	0	250	340	.4	9.4
AUG 18...	93	30	250	5.8	7.2	140	0	270	350	.3	7.5
SEP 21...	100	31	240	5.4	6.1	130	2	280	380	.4	7.5

RED RIVER BASIN

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WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (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 07...	835	89	14	.15	.02	.17	.01	.59	.60	.11	4.9
DEC 27...	1100	--	--	--	--	--	--	--	--	--	--
JAN 26...	1040	30	6	.03	.01	.04	.08	.62	.70	.09	4.3
MAR 20...	446	96	17	.02	.01	--	.00	--	--	.10	--
MAY 16...	548	88	19	.00	.01	.01	.01	.78	.79	.07	8.1
JUN 29...	1180	--	--	--	--	--	--	--	--	--	--
JUL 18...	1040	44	15	.00	.00	.00	.01	.89	.90	.05	5.3
AUG 18...	1080	--	--	--	--	--	--	--	--	--	--
SEP 21...	1110	50	15	.00	.00	.00	.07	1.6	1.7	.10	9.4

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 26...	1500	1	200	1	0	0	0
MAR 20...	1535	1	200	0	0	1	30
JUL 18...	0915	2	--	1	0	1	30
SEP 21...	1135	3	200	0	0	1	10

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 26...	0	20	.0	0	0	10
MAR 20...	0	20	.0	17	0	10
JUL 18...	2	10	.0	0	0	20
SEP 21...	1	0	.0	1	0	10

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	1500	.0	0	.00	.00	.0	.0	0	.00	.0
JUL 18...	0915	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
JUL 18...	.00	.2	.00	.0	.00	.00	.0	.00	.00	.0

RED RIVER BASIN

07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JAN 26...	.00	.00	.0	.00	.0	.00	.0	.00	.00
JUL 18...	.00	.00	.0	.00	.0	.00	.0	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 26...	.00	--	.00	0	0	.00	.03	.02	.00
JUL 18...	.00	.00	.00	0	0	.00	.01	.01	.00

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	72484	1720	1030	201000	350	67600	250	49400	360
NOV. 1977.....	70510	1560	930	176000	300	58000	230	43000	330
DEC. 1977.....	49860	1690	1010	136000	340	45300	250	33300	360
JAN. 1978.....	97090	1830	1100	289000	380	98300	270	71600	380
FEB. 1978.....	150180	985	570	232000	170	68200	130	52400	240
MAR. 1978.....	339440	431	250	226000	54	49700	47	43100	130
APR. 1978.....	173300	534	300	143000	71	33000	60	27900	150
MAY 1978.....	227880	632	360	224000	95	58500	77	47500	170
JUNE 1978.....	540450	1770	1070	1550000	360	529000	260	385000	370
JULY 1978.....	96121	1700	1020	264000	340	88900	250	64900	360
AUG. 1978.....	97150	1770	1060	277000	360	93700	260	68400	370
SEPT 1978.....	94890	1820	1090	280000	370	95000	270	69400	380
TOTAL	2009355	**	**	4000000	**	1290000	**	956000	**
WTD.AVG.	5505.08	1240	740	**	240	**	180	**	280

RED RIVER BASIN

07336820 RED RIVER NEAR DE KALB, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1840	1890	1400	1850	1670	1010	207	884	550	1690	1530	1770
2	1780	1800	1390	1890	1700	831	350	1270	340	1590	1790	1850
3	1740	1610	1400	1910	1600	850	519	840	245	1700	1830	1920
4	1750	1620	1420	1830	1700	1240	693	333	300	1720	1680	1910
5	1780	1570	1500	1820	1880	982	732	300	351	1730	1820	1810
6	1800	1500	1590	1960	1650	760	818	290	346	1890	1700	1700
7	1830	1420	1480	1900	1680	787	698	262	1660	1780	1610	1600
8	1610	1320	1580	1870	1700	902	584	239	1740	1650	1530	1630
9	1700	1210	1640	1940	1740	716	630	425	1810	1490	1620	1690
10	1790	1300	1540	1930	1670	419	670	496	1820	1410	1490	1850
11	1650	1340	1700	1920	1770	399	882	460	1850	1360	1380	1870
12	1530	1510	1840	1810	1930	332	772	586	1820	1340	1410	1690
13	1450	1560	1730	1880	1730	267	653	807	1900	1360	1370	1830
14	1500	1620	1660	1930	1350	286	400	900	2000	1700	1900	1890
15	1470	1470	1850	1920	900	594	309	1000	1910	1920	1790	1680
16	1440	1440	1710	1830	560	631	262	991	1880	1900	1770	1910
17	1400	1630	1660	1780	376	581	350	949	1850	1890	1750	1890
18	1330	1520	1650	1650	706	587	662	1260	1930	1810	1740	1900
19	1420	1610	1670	1710	650	680	536	1130	2000	1840	1960	1920
20	1350	1750	1750	1650	618	793	543	1600	2040	1810	1990	1910
21	1300	1650	1820	1790	678	888	540	1550	2030	1680	1960	1880
22	1280	1570	1740	1880	812	1340	553	1590	2000	1690	1950	1690
23	1250	1600	1750	1870	743	925	768	1190	1990	1720	1900	1730
24	1220	1650	1780	1920	837	539	865	1160	1960	1690	1860	1980
25	1690	1600	1800	1840	1020	284	893	1550	1940	1690	1790	1930
26	1840	1470	1820	1800	974	270	930	1660	1960	1680	1780	1730
27	1790	1460	1840	1780	1000	261	804	1180	1990	1660	1770	1670
28	1840	1470	1860	1820	1100	209	509	750	1980	1630	1760	1660
29	1880	1470	1820	1620	---	166	373	429	1990	1740	1750	1530
30	1870	1440	1780	1560	---	170	665	480	1860	1710	1770	1590
31	1880	---	1820	1660	---	173	---	557	---	1690	1790	---
MEAN	1610	1540	1680	1820	1240	609	606	875	1600	1680	1730	1790

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	21.0	8.0	7.0	2.0	7.0	16.0	20.0	27.0	29.0	28.0	25.0
2	25.5	17.5	9.0	4.0	3.0	7.0	---	17.0	25.0	30.0	28.0	26.0
3	22.0	16.5	10.0	3.5	3.0	5.5	17.0	15.0	25.0	30.0	28.0	26.0
4	20.0	17.0	14.0	4.0	4.0	4.0	18.0	15.0	---	---	28.0	26.0
5	20.0	17.5	13.0	6.5	4.0	4.5	19.0	15.0	26.0	30.0	27.0	27.0
6	20.0	---	6.0	7.0	4.0	6.0	19.0	16.0	26.0	30.0	---	28.0
7	20.0	17.5	5.0	10.0	3.0	8.5	21.0	20.0	26.0	30.0	26.0	28.0
8	21.0	18.0	8.0	8.0	1.5	8.0	21.0	20.0	25.0	31.0	27.0	27.0
9	---	14.0	6.0	4.0	1.5	6.0	---	20.0	23.0	31.0	27.0	26.0
10	19.0	11.0	5.0	---	2.0	6.0	20.0	20.0	23.0	31.0	27.0	26.0
11	18.5	10.0	---	2.0	3.0	7.5	18.0	21.0	24.0	31.0	28.0	26.0
12	15.5	11.0	6.0	1.5	4.0	8.0	17.5	21.0	25.0	31.0	28.0	26.0
13	14.5	---	9.0	1.5	4.5	9.0	18.0	20.0	25.0	30.0	29.0	26.0
14	14.5	12.0	8.0	1.5	4.0	9.0	19.0	---	25.0	30.0	28.0	26.0
15	16.0	13.0	8.0	1.0	5.0	10.0	19.0	22.0	24.0	29.0	28.0	27.0
16	---	16.0	10.0	3.0	5.0	10.0	20.0	23.0	24.0	---	28.0	28.0
17	15.0	15.0	11.0	1.0	4.5	10.0	---	21.0	25.0	29.0	29.0	28.0
18	16.0	14.0	9.0	1.5	2.0	11.0	19.0	21.0	---	28.0	28.0	27.0
19	17.0	14.0	11.0	.5	---	12.5	17.0	23.0	26.0	29.0	28.0	27.0
20	17.0	16.0	8.0	.5	3.0	15.0	16.0	24.0	26.0	29.0	---	27.0
21	18.0	15.0	5.0	.5	1.0	16.0	16.0	25.0	27.0	30.0	28.0	27.0
22	20.0	13.0	4.0	.5	1.5	16.5	17.0	25.0	27.0	29.0	---	24.0
23	---	13.0	4.5	1.0	4.0	17.0	19.0	25.0	27.0	29.0	---	23.0
24	20.0	13.5	7.0	2.5	5.0	15.0	20.0	26.0	27.0	28.0	29.0	23.0
25	20.0	14.0	---	4.0	7.0	12.0	19.0	26.0	27.0	28.0	28.0	22.0
26	18.0	12.0	---	1.5	7.0	---	18.0	27.0	28.0	28.0	29.0	22.0
27	19.0	12.0	5.0	2.0	7.0	12.0	18.5	27.0	28.0	27.0	29.0	22.0
28	20.0	12.0	5.0	2.0	7.0	12.0	19.0	---	28.0	29.0	28.0	22.0
29	20.0	10.0	6.0	2.0	---	13.0	19.0	26.0	28.0	29.0	27.0	22.0
30	---	9.0	6.5	3.0	---	14.0	20.0	25.0	29.0	---	25.0	22.0
31	21.0	---	7.0	3.0	---	15.0	---	26.0	---	28.0	25.0	---
MEAN	19.0	14.0	7.5	3.0	4.0	10.0	18.5	22.0	26.0	29.5	27.5	25.5

RED RIVER BASIN

07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW1/4SW1/4 sec.7, T.14 S., R.28 W., Miller County, Hydrologic Unit 11140106, near right bank on downstream side of bridge on U.S. Highway 71 at Index, 2.2 mi (3.5 km) south of Ogden, 20.6 mi (33.1 km) upstream from Little River, and at mile 485.3 (780.8 km).

DRAINAGE AREA.--48,030 mi² (124,400 km²), of which 5,936 mi² (15,370 km²), probably is noncontributing.

PERIOD OF RECORD.--July 1936 to current year. Gage-height records collected at same site since 1917 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft (75.246 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 12, 1939, nonrecording gage at present site and datum.

REMARKS.--Records good. Some regulation by Lake Texoma (station 07331500), 241 mi (388 km) upstream since Oct. 31, 1943, capacity, 5,392,900 acre-ft (6.65 km³), by Pat Mayse Lake (station 07335390) since Sept. 28, 1967, capacity, 352,700 acre-ft (435 hm³), and by Hugo Lake in Oklahoma since Jan. 18, 1974, capacity, 966,700 acre-ft (1,190 hm³).

AVERAGE DISCHARGE.--42 years, 11,780 ft³/s (333.6 m³/s), 8,535,000 acre-ft/yr (10.5 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 297,000 ft³/s (8,410 m³/s) Feb. 23, 1938, gage height, 34.25 ft (10.439 m); minimum, 378 ft³/s (10.7 m³/s) Nov. 28, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,700 ft³/s (841 m³/s) June 12, gage height, 12.77 ft (3.892 m); minimum daily, 1,380 ft³/s (39.1 m³/s) Oct. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3540	4590	1580	1850	3050	7500	18200	3400	2370	8460	2740	3580
2	3900	5280	1570	2040	3020	7330	13700	2770	3350	5700	2410	3220
3	4190	4920	1520	2240	2690	6140	9980	3130	6760	4550	2620	3500
4	3990	3430	1470	2410	2530	6240	9010	5350	8050	4290	2990	4170
5	3900	3050	1500	2340	2750	6970	8030	12000	6810	4140	2740	4670
6	3850	4660	1750	2210	3230	6260	6140	19900	5670	3930	2660	4450
7	3580	5740	1650	2610	2880	6360	5080	20400	6220	4140	2670	3400
8	2850	4990	1500	2730	2480	9200	5010	17700	10000	3950	2320	2580
9	2620	3430	1550	2500	2380	10700	6380	16800	11600	3230	2220	2260
10	2970	2660	1460	2590	2320	9280	6400	14500	19300	2750	2150	2110
11	3030	2380	1420	2440	2290	8910	5190	10500	27700	2460	1920	2530
12	2590	2180	2240	2610	2690	11400	5020	8130	29500	2300	1790	2950
13	2150	2410	2580	2620	3720	13300	4640	8180	28800	2240	1890	2960
14	1930	2770	2120	3130	4170	12200	4440	6760	28100	2430	2070	2930
15	1930	2490	1890	3820	4170	9760	7360	4940	28800	3470	2860	2900
16	1820	2130	1990	4550	7500	6760	9870	3820	27600	3950	3220	2650
17	1690	2140	1830	4940	13000	4830	9670	3130	23800	3900	3050	3060
18	1610	2130	1670	4120	13000	3950	9530	3130	20100	3680	2890	3440
19	1690	1920	1550	3220	10800	3260	7580	2820	17600	3400	2790	3640
20	1650	2000	1550	2830	8200	2670	5440	2570	16900	3250	3350	3770
21	1540	2230	1760	2530	6670	2370	4440	3310	16600	3120	3340	3570
22	1460	1910	1780	2950	6300	2630	3920	3250	16400	2810	3310	3200
23	1410	1840	1660	4190	5990	3540	3230	3310	16200	2730	3740	2630
24	1380	1800	1580	4970	5590	3850	2730	3440	16000	2770	3760	2370
25	1530	1800	1550	5870	5800	10800	2510	2970	14500	2650	3720	2850
26	2360	1680	1550	6440	6110	23800	2410	3250	12400	2440	3380	3260
27	3090	1540	1600	5500	6180	28000	2500	3680	11700	2400	3370	2850
28	3060	1470	1650	4490	6740	26100	3250	4850	11600	2480	3220	2320
29	3090	1490	1800	3930	---	23000	4390	5150	11500	2370	3190	2010
30	3370	1510	1830	3160	---	21800	4300	4520	11100	2530	3190	1760
31	3760	---	1810	2730	---	20800	---	3180	---	2860	3490	---
TOTAL	81530	82570	52960	104560	146250	319710	190350	210840	467030	105380	89060	91590
MEAN	2630	2752	1708	3373	5223	10310	6345	6801	15570	3399	2873	3053
MAX	4190	5740	2580	6440	13000	28000	18200	20400	29500	8460	3760	4670
MIN	1380	1470	1420	1850	2290	2370	2410	2570	2370	2240	1790	1760
AC-FT	161700	163800	105000	207400	290100	634100	377600	418200	926400	209000	176700	181700
CAL YR 1977	TOTAL	3355520	MEAN	9190	MAX	101000	MIN	1380	AC-FT	6656000		
WTR YR 1978	TOTAL	1941830	MEAN	5320	MAX	29500	MIN	1380	AC-FT	3852000		

RED RIVER BASIN

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07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°21'20", long 95°35'39", Hopkins-Delta County line, Hydrologic Unit 11140301, on left bank of cut channel at downstream side of bridge on State Highways 19 and 154, 1.0 mi (1.6 km) downstream from Big Creek, 1.0 mi (1.6 km) upstream from Brushy Creek, 4.5 mi (7.2 km) downstream from Doctors Creek, and 5.6 mi (9.0 km) southeast of Cooper.

DRAINAGE AREA.--527 mi² (1,365 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 371.91 ft (113.358 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 3.00 ft (0.914 m) higher. May 9, 1942, to Nov. 8, 1949, nonrecording gage, and Nov. 9, 1949, to May 13, 1955, water-stage recorder at site 700 ft (213 m) to right of present gage.

REMARKS.--Water-discharge records good. Small diversions upstream from station.

AVERAGE DISCHARGE.--36 years (water years 1943-78), 406 ft³/s (11.50 m³/s), 10.46 in/yr (266 mm/yr), 294,100 acre-ft/yr (363 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,500 ft³/s (1,200 m³/s) Dec. 10, 1971, gage height, 26.15 ft (7.971 m), from floodmark in gage well; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,710 ft³/s (133 m³/s) Feb. 14, gage height, 19.69 ft (6.002 m), no peak above base of 8,000 ft³/s (227 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	30	34	.23	19	67	29	17	42	.05	.39	.00
2	.52	581	238	.06	23	56	19	16	17	.04	.15	.00
3	.35	867	78	.02	38	52	15	57	11	.04	.12	.00
4	.30	211	29	.00	30	47	13	159	7.4	.04	.08	.00
5	.40	39	11	.06	22	33	11	198	14	.09	.06	.00
6	.46	16	5.1	.26	17	32	10	342	10	.14	.05	.00
7	.52	11	2.3	.23	14	2240	9.2	351	434	.09	.04	.00
8	.82	9.5	1.2	.20	12	3610	9.0	113	270	.06	.04	.00
9	.66	213	1.3	.05	12	3320	8.7	47	90	.05	.03	.00
10	.59	405	1.2	.00	11	1240	46	27	77	.04	.03	.00
11	.40	112	.52	.08	26	250	434	18	29	.09	.25	.00
12	.35	34	1.1	.23	546	150	236	13	13	.40	.48	.00
13	.40	17	.82	.82	2810	110	82	11	8.6	.40	.52	.00
14	.52	11	1.6	.46	4350	88	38	9.1	792	.26	.37	.00
15	.40	8.7	1.9	.35	3700	75	21	8.6	1160	.17	.24	.00
16	.35	6.8	1.5	2.4	1700	66	14	6.8	340	.09	.15	.00
17	.47	4.7	2.0	149	309	58	11	11	91	.05	.11	.00
18	.36	2.9	2.4	165	233	40	8.7	11	55	.04	.08	.00
19	.28	1.1	2.1	72	211	26	7.4	11	42	.04	.06	.00
20	.26	.91	2.0	24	236	20	6.6	10	34	.02	.05	.00
21	.22	.52	2.1	11	318	39	6.1	12	31	.01	.04	.00
22	.20	.40	2.3	4.9	463	27	5.7	12	20	.01	.04	.00
23	.15	.40	2.4	2.4	1160	62	5.6	16	11	.20	.02	.00
24	.21	.52	2.6	1.5	1290	1130	5.9	205	7.3	.17	.01	.00
25	.10	.66	2.9	315	469	1780	6.7	54	5.3	.05	.00	.00
26	.06	.91	3.2	873	173	1830	7.0	20	3.5	.03	.00	.00
27	3.5	.91	3.9	586	92	285	10	11	2.4	.03	.00	.00
28	3.1	.91	2.6	171	63	129	13	8.4	1.2	.03	.00	.00
29	1.4	1.2	1.6	67	---	88	15	50	.35	5.3	.00	.00
30	1.3	1.5	1.4	36	---	53	16	572	.09	6.3	.00	.00
31	.58	---	.74	23	---	39	---	208	---	1.5	.00	---
TOTAL	19.89	2589.54	442.78	2506.25	18347	17042	1119.6	2604.9	3619.14	15.83	3.41	.00
MEAN	.64	86.3	14.3	80.8	655	550	37.3	84.0	121	.51	.11	.000
MAX	3.5	867	238	873	4350	3610	434	572	1160	6.3	.52	.00
MIN	.06	.40	.52	.00	11	20	5.6	6.8	.09	.01	.00	.00
CFSM	.001	.16	.03	.15	1.24	1.04	.07	.16	.23	.001	.000	.000
IN.	.00	.18	.03	.18	1.30	1.20	.08	.18	.26	.00	.00	.00
AC-FT	39	5140	878	4970	36390	33800	2220	5170	7180	31	6.8	.00
CAL YR 1977	TOTAL	155104.86	MEAN	425	MAX	17800	MIN	.06	CFSM	.81	IN	10.95
WTR YR 1978	TOTAL	48310.34	MEAN	132	MAX	4350	MIN	.00	CFSM	.25	IN	3.41
									AC-FT	307700	AC-FT	95820

RED RIVER BASIN

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1966, October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1958 to September 1966, October 1967 to current year.

WATER TEMPERATURES: October 1958 to September 1966, October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,710 micromhos Aug. 14, 1973; minimum daily, 82 micromhos July 2, 1976.

WATER TEMPERATURES: Maximum daily, 36.0°C Aug. 6, 1960, Aug. 10, 1962; minimum daily, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,000 micromhos Jan. 17; minimum daily, 153 micromhos Feb. 14.

WATER TEMPERATURES: Maximum daily, 29.0°C June 25, July 23; minimum daily, .0°C Jan. 17, 20-22, Feb. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 17...	1345	.54	368	7.5	18.0	140	5	47	4.6	24
NOV 30...	0745	1.6	325	7.9	10.0	120	0	42	3.9	19
FEB 15...	0930	3890	168	--	4.0	65	7	22	2.4	7.4
MAR 29...	1225	89	287	--	16.5	110	4	38	3.7	14
APR 30...	0855	17	577	--	20.0	210	22	72	7.5	40
MAY 11...	1505	17	333	--	21.0	120	9	40	3.8	21
JUL 31...	0730	2.0	415	--	28.0	160	0	56	5.3	22

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
OCT 17...	.9	4.8	160	0	33	19	.3	12	224
NOV 30...	.8	4.7	150	0	21	15	.2	11	191
FEB 15...	.4	3.7	71	0	15	3.9	.2	8.4	98
MAR 29...	.6	3.7	130	0	21	10	.2	10	165
APR 30...	1.2	5.6	230	0	58	31	.3	8.5	336
MAY 11...	.9	4.0	130	0	30	12	.3	9.4	185
JUL 31...	.8	5.8	210	0	16	16	.4	13	238

RED RIVER BASIN

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07342500 SOUTH SULPHUR RIVER (HEAD OF SULPHUR RIVER) NEAR COOPER, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	19.89	379	220	12	19	1	29	1.5	140
NOV. 1977.....	2589.54	208	120	831	9	60	16	111	77
DEC. 1977.....	442.78	408	240	281	23	27	31	37	150
JAN. 1978.....	2506.25	338	190	1310	18	119	25	170	130
FEB. 1978.....	18347	190	110	5380	8	388	14	711	70
MAR. 1978.....	17042	209	120	5430	8	389	16	732	77
APR. 1978.....	1119.6	316	180	543	15	44	24	73	120
MAY 1978.....	2604.9	347	200	1400	16	115	26	186	130
JUNE 1978.....	3619.14	215	120	1190	9	87	17	162	80
JULY 1978.....	15.83	391	220	9.6	21	0.8	30	1.2	140
AUG. 1978.....	3.41	466	270	2.5	28	0.2	35	0.3	170
SEPT 1978.....	0	*****	*****	0	*****	0	*****	0	****
TOTAL	48310.32	**	**	16400	**	1230	**	2180	**
WTD.AVG.	132.36	221	130	**	9.4	**	17	**	82

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275	401	314	340	294	335	336	587	304	291	425	
2	283	250	500	404	350	310	358	601	308	307	430	
3	287	169	283	412	438	352	378	596	316	324	437	
4	291	205	271	---	400	374	392	322	325	328	443	
5	298	215	300	359	363	381	410	279	336	345	478	
6	302	226	297	426	385	384	416	366	352	319	448	
7	307	240	298	432	400	194	424	359	217	337	452	
8	314	256	299	404	420	172	438	345	261	357	460	
9	318	250	300	438	424	183	454	322	271	381	465	
10	324	187	302	---	394	189	440	319	282	406	454	
11	328	200	306	422	415	225	300	329	255	429	452	
12	336	228	311	418	250	242	231	339	283	367	473	
13	343	238	315	355	176	252	251	354	305	373	485	
14	349	251	320	406	153	253	269	364	199	385	490	
15	357	263	326	383	162	253	289	370	191	399	491	
16	363	272	332	444	176	247	307	383	217	415	471	
17	368	279	333	1000	208	245	325	392	226	426	479	
18	378	284	329	525	221	242	347	401	227	451	480	
19	384	291	332	331	241	251	367	408	221	455	482	
20	393	300	335	281	259	272	390	413	210	442	470	
21	400	305	342	299	288	290	415	411	211	430	460	
22	404	309	346	321	303	572	444	408	209	410	454	
23	411	315	351	359	238	333	465	417	215	400	470	
24	414	320	356	367	213	270	491	381	224	400	480	
25	412	326	358	395	233	230	521	389	237	411	---	
26	419	329	361	268	238	228	530	383	246	427	---	
27	425	329	361	229	242	260	540	384	253	444	---	
28	419	330	369	262	256	279	550	391	260	460	---	
29	425	331	389	272	---	286	562	398	268	400	---	
30	434	325	395	292	---	293	577	304	278	381	---	
31	435	---	396	296	---	317	---	315	---	417	---	
MEAN	361	274	336	384	291	281	407	388	257	391	464	

RED RIVER BASIN

07342500 SOUTH SULPHUR RIVER (HEAD OF SULPHUR RIVER) NEAR COOPER, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	20.0	8.0	5.0	2.0	8.0	18.0	20.0	24.0	27.0	27.0	
2	24.0	18.0	9.0	3.0	2.0	8.0	20.0	19.0	24.0	27.0	26.0	
3	20.0	16.0	10.0	2.0	3.0	7.0	20.0	16.0	24.0	27.0	27.0	
4	19.0	15.0	11.0	---	2.0	5.0	20.0	14.0	24.0	26.0	26.0	
5	20.0	16.0	11.0	5.0	3.0	5.0	20.0	14.0	24.0	27.0	25.0	
6	20.0	17.0	8.0	6.0	3.0	8.0	20.0	16.0	25.0	28.0	23.0	
7	20.0	17.0	6.0	10.0	2.0	10.0	21.0	18.0	24.0	28.0	23.0	
8	22.0	17.0	9.0	7.0	2.0	8.0	22.0	19.0	23.0	27.0	23.0	
9	18.0	15.0	7.0	3.0	.0	7.0	21.0	19.0	23.0	28.0	24.0	
10	19.0	13.0	5.0	---	1.0	7.0	21.0	20.0	23.0	28.0	24.0	
11	17.0	12.0	5.0	2.0	3.0	9.0	18.0	21.0	25.0	28.0	25.0	
12	13.0	11.0	6.0	2.0	4.0	10.0	17.0	21.0	25.0	28.0	26.0	
13	13.0	11.0	10.0	2.0	5.0	11.0	17.0	20.0	26.0	28.0	27.0	
14	13.0	12.0	8.0	1.0	5.0	11.0	18.0	20.0	23.0	28.0	27.0	
15	15.0	13.0	8.0	1.0	5.0	12.0	19.0	21.0	25.0	28.0	27.0	
16	12.0	16.0	10.0	2.0	5.0	11.0	20.0	22.0	25.0	28.0	28.0	
17	12.0	15.0	11.0	.0	5.0	11.0	20.0	22.0	26.0	28.0	27.0	
18	15.0	13.0	9.0	2.0	2.0	11.0	20.0	22.0	27.0	27.0	26.0	
19	15.0	15.0	10.0	1.0	1.0	14.0	18.0	23.0	27.0	27.0	27.0	
20	16.0	16.0	8.0	.0	2.0	15.0	17.0	24.0	27.0	27.0	---	
21	17.0	15.0	6.0	.0	1.0	17.0	16.0	25.0	27.0	---	---	
22	18.0	13.0	4.0	.0	1.0	17.0	17.0	24.0	27.0	---	26.0	
23	18.0	14.0	6.0	1.0	3.0	19.0	18.0	24.0	27.0	29.0	---	
24	18.0	15.0	7.0	2.0	5.0	15.0	20.0	25.0	27.0	26.0	---	
25	18.0	15.0	6.0	2.0	9.0	12.0	18.0	24.0	29.0	27.0	---	
26	16.0	11.0	3.0	1.0	9.0	11.0	17.0	25.0	28.0	28.0	---	
27	16.0	14.0	3.0	1.0	10.0	11.0	17.0	25.0	28.0	27.0	---	
28	19.0	11.0	5.0	1.0	9.0	12.0	18.0	25.0	28.0	27.0	---	
29	18.0	10.0	5.0	1.0	---	15.0	20.0	25.0	28.0	27.0	---	
30	20.0	10.0	6.0	2.0	---	16.0	20.0	23.0	28.0	28.0	---	
31	21.0	---	7.0	2.0	---	18.0	---	23.0	---	28.0	---	
MEAN	17.5	14.0	7.5	2.5	3.5	11.5	19.0	21.5	25.5	27.5	25.5	

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°28'29", long 95°35'15", Lamar County, Hydrologic Unit 11140301, on left bank at downstream side of highway embankment near left end of downstream bridge on State Highways 19 and 24, 2.3 mi (3.7 km) upstream from Auds Creek, 5.5 mi (8.8 km) upstream from Hickory Creek, 8.7 mi (14.0 km) northeast of Cooper, and 15.6 mi (25.1 km) upstream from mouth.

DRAINAGE AREA.--276 mi² (715 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 372.42 ft (113.51 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Nov. 8, 1949, nonrecording gage, Nov. 8, 1949, to May 21, 1960, water-stage recorder at site 50 ft (15 m) upstream at datum 9.00 ft (2.743 m) higher, and May 22, 1960, to Sept. 30, 1970, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Water-discharge records fair. In 1928-29, the channel was rectified for a distance of 28 mi (45 km) upstream and 18 mi (29 km) downstream from this station.

AVERAGE DISCHARGE.--29 years, 238 ft³/s (6.740 m³/s), 11.71 in/yr (297 mm/yr), 172,400 acre-ft/yr (213 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,600 ft³/s (2,570 m³/s) Oct. 19, 1971, gage height, 36.16 ft (11.022 m), from floodmarks; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1915, that of Oct. 19, 1971. Flood of May 2, 1944, reached a stage of 35.6 ft (10.85 m), present datum, and flood in 1932 reached about same stage, from information by Corps of Engineers and local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,070 ft³/s (200 m³/s) Feb. 12, gage height, 13.2 ft (4.02 m), from floodmark, no peak above base of 20,000 ft³/s (566 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	258	227	.42	21	40	20	6.4	10	.00	.00	.00
2	.01	112	23	.42	26	36	18	5.7	159	.00	.00	.00
3	.00	20	12	.18	18	34	17	438	32	.03	.00	.00
4	.00	15	7.7	.07	14	25	16	76	14	.09	.00	.00
5	.00	7.2	5.3	.10	12	13	15	126	7.8	.09	.00	.00
6	.00	4.5	3.7	.10	10	34	22	114	13	.01	.00	.00
7	.00	4.5	2.0	.10	9.3	1710	20	47	10	.00	.00	.00
8	.00	109	1.5	.03	9.3	246	14	27	209	.00	.00	.00
9	.00	122	1.3	.00	9.3	84	13	17	45	.00	.00	.00
10	.00	16	1.1	.00	17	47	67	11	16	.00	.00	.00
11	.00	9.3	.95	.00	85	30	90	7.6	7.1	.00	.00	.00
12	.00	5.3	.79	.13	2740	21	37	6.7	2.8	.00	.00	.00
13	.00	3.0	.79	1.3	861	18	21	5.9	1930	.00	.00	.00
14	.00	2.0	.79	2.0	105	15	15	4.2	942	.00	.00	.00
15	.00	1.3	.52	2.3	39	13	12	3.5	21	.00	.00	.00
16	.00	.65	.33	319	33	9.3	10	3.0	10	.00	.00	.00
17	.00	.42	.52	48	32	5.3	11	2.9	7.7	.00	.00	.00
18	.00	.42	.95	20	162	3.0	11	2.7	3.3	.00	.00	.00
19	.00	.33	.33	16	142	2.3	7.6	3.1	1.7	.00	.00	.00
20	.00	.13	.05	14	67	3.7	6.5	2.9	1.1	.00	.00	.00
21	.00	.01	.00	11	92	281	6.2	5.2	.60	.00	.00	.00
22	.00	.00	.00	9.3	105	77	7.3	374	.37	.00	.00	.00
23	.00	.00	.00	14	705	32	153	119	.23	.00	.00	.00
24	.00	.00	.00	42	135	859	48	20	.12	.00	.00	.00
25	.18	.00	.00	181	52	229	19	12	.09	.00	.00	.00
26	.65	.00	.00	87	30	92	12	10	.04	.00	.00	.00
27	.65	.00	.00	43	22	58	8.5	5.8	.01	.00	.00	.00
28	.52	.00	.00	23	56	43	7.0	270	.01	.00	.00	.00
29	.25	.00	.05	16	---	33	6.1	144	.00	.00	.00	.00
30	.52	321	.25	13	---	27	6.2	45	.00	.00	.00	.00
31	.42	---	.42	10	---	23	---	19	---	.00	.00	---
TOTAL	3.23	1012.06	291.34	873.45	5608.9	4143.6	716.4	1934.6	3443.97	.22	.00	.00
MEAN	.10	33.7	9.40	28.2	200	134	23.9	62.4	115	.007	.000	.000
MAX	.65	321	227	319	2740	1710	153	438	1930	.09	.00	.00
MIN	.00	.00	.00	.00	9.3	2.3	6.1	2.7	.00	.00	.00	.00
CFSM	.000	.12	.03	.10	.73	.49	.09	.23	.42	.000	.000	.000
IN.	.00	.14	.04	.12	.76	.56	.10	.26	.46	.00	.00	.00
AC-FT	6.4	2010	578	1730	11130	8220	1420	3840	6830	.4	.00	.00
CAL YR 1977	TOTAL	44389.11	MEAN	122	MAX	14700	MIN	.00	CFSM	.44	IN	5.98
WTR YR 1978	TOTAL	18027.77	MEAN	49.4	MAX	2740	MIN	.00	CFSM	.18	IN	2.43
									AC-FT	88050		
									AC-FT	35760		

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to current year.

WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,290 micromhos Sept. 17, 1969; minimum daily, 191 micromhos Oct. 12, Dec. 10, 1971.

WATER TEMPERATURES: Maximum daily, 39.0°C June 1, 1977; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,210 micromhos Oct. 31; minimum daily, 320 micromhos Mar. 24.

WATER TEMPERATURES: Maximum daily, 33.0°C June 12, 18; minimum daily, 0.0°C Jan. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 31...	0810	.52	2280	8.2	20.0	580	480	180	32	270
NOV 30...	0800	14	1160	8.2	10.0	370	230	120	16	110
JAN 31...	0830	12	832	8.2	4.0	280	150	93	11	65
FEB 13...	1540	805	355	--	1.0	140	38	48	4.1	15
APR 30...	1630	5.8	911	--	24.0	280	140	94	9.8	85
MAY 31...	0730	13	527	--	26.0	180	78	61	5.8	34
JUN 20...	0940	.90	625	--	26.5	190	87	62	7.4	50

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 31...	4.9	4.3	120	0	590	330	.5	3.1	1470
NOV 30...	2.5	3.8	170	0	330	100	.3	3.9	768
JAN 31...	1.7	3.1	160	0	210	45	.3	6.0	512
FEB 13...	.6	2.6	120	0	54	6.9	.4	7.5	198
APR 30...	2.2	3.4	170	0	210	60	.5	3.2	550
MAY 31...	1.1	2.9	120	0	110	21	.6	7.8	302
JUN 20...	1.6	3.5	120	0	140	40	.5	7.5	370

RED RIVER BASIN
07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	3.23	2000	1330	12	270	2.4	560	4.9	570
NOV. 1977.....	1012.06	580	350	951	30	82	120	323	200
DEC. 1977.....	291.34	494	300	233	23	18	93	73	180
JAN. 1978.....	873.45	619	370	875	33	78	130	307	210
FEB. 1978.....	5608.9	504	300	4540	24	358	95	1440	180
MAR. 1978.....	4143.6	396	240	2630	16	179	64	717	150
APR. 1978.....	716.4	716	430	825	42	81	160	305	230
MAY 1978.....	1934.6	556	330	1730	28	146	110	583	190
JUNE 1978.....	3443.97	369	220	2050	14	127	56	525	140
JULY 1978.....	0.22	866	520	0.3	55	0.03	200	0.1	270
AUG. 1978.....	0	*****	*****	0	*****	0	*****	0	****
SEPT 1978.....	0	*****	*****	0	*****	0	*****	0	****
TOTAL	18027.75	**	**	13800	**	1070	**	4280	**
WTD.AVG.	49.39	477	290	**	22	**	88	**	170

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1300	884	450	1380	850	661	764	918	591	---	---	---
2	1320	430	520	1380	866	675	752	933	338	---	---	---
3	---	506	562	1410	863	692	764	468	370	830	---	---
4	---	564	618	1400	870	738	769	574	470	855	---	---
5	---	609	698	1400	912	779	796	550	521	889	---	---
6	---	636	739	1430	923	750	770	552	577	875	---	---
7	---	680	779	1420	950	338	780	607	595	---	---	---
8	---	635	787	1510	970	386	791	616	395	---	---	---
9	---	629	833	---	974	499	826	620	434	---	---	---
10	---	557	864	---	965	572	791	650	472	---	---	---
11	---	584	891	---	934	619	697	685	523	---	---	---
12	---	636	927	1650	524	686	750	729	557	---	---	---
13	---	668	931	1510	383	736	829	743	350	---	---	---
14	---	711	996	1540	430	753	861	784	385	---	---	---
15	---	739	1030	1580	502	764	871	816	439	---	---	---
16	---	779	1060	500	573	774	885	844	481	---	---	---
17	---	830	1070	672	620	788	914	949	508	---	---	---
18	---	848	1090	682	550	808	925	970	531	---	---	---
19	---	891	1100	760	575	814	929	991	570	---	---	---
20	---	930	1110	875	676	826	953	1000	628	---	---	---
21	---	958	---	983	670	340	974	885	647	---	---	---
22	---	---	---	1040	664	437	1000	760	701	---	---	---
23	---	---	---	1080	350	544	455	468	714	---	---	---
24	---	---	---	950	426	320	710	550	738	---	---	---
25	1690	---	---	550	504	400	794	594	740	---	---	---
26	1820	---	---	566	593	527	800	634	771	---	---	---
27	1960	---	---	690	645	582	824	661	758	---	---	---
28	2040	---	---	648	672	660	848	450	779	---	---	---
29	2060	---	1370	766	---	697	868	418	---	---	---	---
30	2200	350	1430	806	---	736	911	493	---	---	---	---
31	2210	---	1400	832	---	753	---	531	---	---	---	---
MEAN	1840	684	924	1070	694	634	820	692	557	862	---	---

RED RIVER BASIN

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	19.0	12.0	5.0	3.0	8.0	17.0	26.0	29.0	---		
2	24.0	14.0	---	6.0	3.0	8.0	19.0	15.0	28.0	---		
3	---	17.0	15.0	6.0	5.0	6.0	20.0	8.0	24.0	29.0		
4	---	19.0	21.0	7.0	3.0	7.0	25.0	15.0	29.0	29.0		
5	---	17.0	15.0	14.0	10.0	10.0	21.0	21.0	28.0	28.0		
6	---	19.0	10.0	13.0	7.0	10.0	27.0	26.0	28.0	29.0		
7	---	21.0	5.0	13.0	2.0	10.0	25.0	28.0	27.0	---		
8	---	17.0	16.0	6.0	7.0	5.0	21.0	28.0	29.0	---		
9	---	10.0	9.0	---	3.0	10.0	22.0	18.0	29.0	---		
10	---	14.0	4.0	---	3.0	13.0	19.0	26.0	24.0	---		
11	---	14.0	6.0	---	3.0	11.0	19.0	22.0	31.0	---		
12	---	16.0	6.0	3.0	6.0	13.0	23.0	23.0	33.0	---		
13	---	16.0	15.0	4.0	6.0	15.0	24.0	25.0	25.0	---		
14	---	17.0	8.0	6.0	3.0	19.0	23.0	28.0	31.0	---		
15	---	18.0	8.0	3.0	5.0	15.0	20.0	21.0	26.0	---		
16	---	19.0	18.0	3.0	5.0	14.0	24.0	20.0	25.0	---		
17	---	19.0	8.0	2.0	---	16.0	21.0	20.0	26.0	---		
18	---	15.0	12.0	.0	3.0	12.0	21.0	25.0	33.0	---		
19	---	14.0	---	---	4.0	19.0	21.0	27.0	26.0	---		
20	---	---	9.0	1.0	5.0	19.0	22.0	28.0	26.0	---		
21	---	16.0	---	3.0	4.0	20.0	20.0	25.0	32.0	---		
22	---	---	---	4.0	8.0	21.0	15.0	25.0	30.0	---		
23	---	---	---	4.0	7.0	19.0	24.0	29.0	32.0	---		
24	---	---	---	7.0	8.0	12.0	23.0	30.0	27.0	---		
25	22.0	---	---	4.0	11.0	9.0	22.0	30.0	26.0	---		
26	24.0	---	---	4.0	12.0	15.0	24.0	29.0	27.0	---		
27	21.0	---	---	4.0	7.0	11.0	21.0	31.0	29.0	---		
28	21.0	---	---	9.0	8.0	20.0	23.0	25.0	27.0	---		
29	24.0	---	6.0	3.0	---	20.0	20.0	25.0	---	---		
30	22.0	10.0	7.0	3.0	---	23.0	24.0	30.0	---	---		
31	20.0	---	6.0	4.0	---	27.0	---	26.0	---	---		
MEAN	22.5	16.0	10.5	5.0	5.5	14.0	21.5	24.5	28.0	29.0		

RED RIVER BASIN

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07343200 SULPHUR RIVER NEAR TALCO, TX

LOCATION.--Lat 33°23'10", Long 95°07'56", Franklin County, Hydrologic Unit 11140302, on downstream side of highway embankment near right end of bridge on U.S. Highway 271, 2.2 mi (3.5 km) northwest of Talco, 3.2 mi (5.1 km) downstream from Mustang Creek, and 162 mi (261 km) upstream from mouth.

DRAINAGE AREA.--1,365 mi² (3,535 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 290.82 ft (88.642 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those below 1.0 ft³/s (0.028 m³/s), which are fair. There were no diversions upstream from station during the 1978 water year.

AVERAGE DISCHARGE.--22 years, 1,428 ft³/s (40.44 m³/s), 14.21 in/yr (361 mm/yr), 1,035,000 acre-ft/yr (1.28 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,000 ft³/s (2,180 m³/s) Dec. 11, 1971, gage height, 29.40 ft (8.961 m), from floodmark; no flow at times in 1957, 1964-65, and 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1908 and 1914 each reached a stage of 27.5 ft (8.38 m), and flood in 1945 reached a stage of 26.5 ft (8.08 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft³/s (300 m³/s) Mar. 25, gage height, 23.11 ft (7.044 m); no peak above base of 15,000 ft³/s (425 m³/s); minimum daily, 0.01 ft³/s (0.0003 m³/s) Sept. 21-23.

REVISIONS.--The peak gage height of Apr. 21, 1976 (0630 hours), has been revised to 23.65 ft (7.209 m), discharge, 17,900 ft³/s (507 m³/s), superseding figures published in WDR TX-76-1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	73	63	4.7	90	258	136	14	341	.58	.04	.04
2	.11	1070	185	5.8	80	253	105	16	136	.54	.04	.05
3	.07	747	251	5.4	96	220	81	44	204	.52	.05	.06
4	.04	887	174	4.9	90	219	64	553	75	.46	.05	.08
5	.03	478	99	4.9	86	158	53	370	37	.44	.04	.09
6	.03	164	54	4.6	65	125	45	496	23	.34	.06	.09
7	.04	78	33	4.1	47	2950	42	580	77	.25	.06	.09
8	.05	43	23	3.6	34	8940	45	621	516	.25	.05	.08
9	.13	170	19	3.4	28	5460	39	351	1140	.22	.04	.09
10	.15	333	13	2.6	24	3920	35	164	395	.18	.04	.09
11	.15	477	10	3.4	28	2480	501	93	160	.15	.04	.08
12	.16	246	8.9	4.6	163	700	770	74	88	.10	.05	.08
13	.15	104	8.0	6.2	3770	363	480	76	60	.08	.06	.09
14	.15	50	7.1	6.9	6820	263	215	41	835	.08	.06	.10
15	.15	27	6.0	7.5	4030	207	121	26	714	.06	.05	.10
16	.12	15	5.1	21	3920	166	74	18	1030	.05	.04	.07
17	.10	9.4	4.9	485	3010	135	52	13	521	.04	.04	.04
18	.12	6.4	4.9	472	962	114	40	11	176	.03	.04	.02
19	.13	5.4	4.2	331	513	93	32	9.1	107	.02	.04	.02
20	.10	6.4	3.4	206	422	67	25	7.6	83	.02	.04	.02
21	.05	8.2	3.1	129	514	980	20	6.0	71	.02	.04	.01
22	.05	6.6	2.9	81	621	3190	16	32	61	.02	.03	.01
23	.05	5.1	3.0	56	1330	1170	28	1640	51	.06	.02	.03
24	.07	4.2	3.2	66	2160	4230	259	1000	35	.40	.02	.03
25	.09	3.8	3.1	553	1770	7890	146	432	15	.25	.02	.02
26	.13	3.1	2.9	1270	880	3860	70	174	15	.16	.02	.02
27	.70	3.2	2.5	1270	370	2190	41	77	6.8	.10	.02	.03
28	3.5	3.2	2.1	815	229	738	29	44	3.0	.08	.02	.03
29	4.0	3.9	4.4	370	---	371	22	690	1.2	.05	.02	.03
30	3.1	9.7	3.6	176	---	262	17	269	.72	.04	.03	.02
31	2.3	---	3.9	122	---	188	---	530	---	.04	.03	---
TOTAL	16.16	5040.6	1011.2	6495.6	32152	52160	3603	8471.7	6977.72	5.63	1.20	1.61
MEAN	.52	168	32.6	210	1148	1683	120	273	233	.18	.039	.054
MAX	4.0	1070	251	1270	6820	8940	770	1640	1140	.58	.06	.10
MIN	.03	3.1	2.1	2.6	24	67	16	6.0	.72	.02	.02	.01
CFSM	.000	.12	.02	.15	.84	1.23	.09	.20	.17	.000	.000	.000
IN.	.00	.14	.03	.18	.88	1.42	.10	.23	.19	.00	.00	.00
AC-FT	32	10000	2010	12880	63770	103500	7150	16800	13840	11	2.4	3.2
CAL YR 1977	TOTAL	429546.43	MEAN	1177	MAX	28900	MIN	.03	CFSM	.86	IN	11.71
WTR YR 1978	TOTAL	115936.42	MEAN	318	MAX	8940	MIN	.01	CFSM	.23	IN	3.16
									AC-FT	852000	AC-FT	230000

07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1966 to current year. Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: January 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to current year.

WATER TEMPERATURES: October 1966 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,800 micromhos Feb. 17, 1976; minimum daily, 100 micromhos Sept. 11, 1974.

WATER TEMPERATURES: Maximum daily, 38.0°C Aug. 15, 1975; minimum daily, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 987 micromhos Sept. 30; minimum daily, 177 micromhos Feb. 15.

WATER TEMPERATURES: Maximum daily, 29.0°C on several days during June and July; minimum daily, 0.0°C on several days during January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV												
07...	1250	74	267	7.3	17.5	80	160	7.5	81	3.1	99	8
DEC												
01...	1010	13	421	7.7	9.0	--	--	--	--	--	160	11
JAN												
26...	1750	1580	281	8.0	2.5	80	210	11.8	89	4.6	90	25
FEB												
16...	1110	3850	181	--	4.5	--	--	--	--	--	70	11
MAR												
20...	1320	62	404	7.6	17.5	65	60	9.0	97	2.7	150	29
30...	1610	254	372	--	21.0	--	--	--	--	--	150	25
MAY												
15...	1645	24	443	7.4	24.5	50	70	6.6	80	2.8	150	15
JUL												
17...	1805	.04	715	7.5	33.0	20	6	6.7	93	1.9	270	37
SEP												
21...	1400	.02	940	7.6	30.0	20	15	8.6	115	3.4	250	30

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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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											
07...	34	3.3	15	.7	5.4	110	0	18	18	.2	7.0
DEC											
01...	56	4.5	23	.8	4.5	180	0	43	12	.3	7.8
JAN											
26...	31	3.1	18	.8	3.1	80	0	43	18	.3	8.7
FEB											
16...	24	2.4	7.4	.4	3.6	72	0	19	4.3	.2	8.3
MAR											
20...	53	4.8	23	.8	3.9	150	0	51	16	.2	9.2
30...	52	4.5	19	.7	3.7	150	0	46	10	.3	9.4
MAY											
15...	54	4.8	28	1.0	4.3	170	0	52	20	.3	7.0
JUL											
17...	94	7.8	45	1.2	5.2	280	0	77	38	.4	15
SEP											
21...	84	10	100	2.7	4.1	270	0	160	72	.4	8.3

RED RIVER BASIN

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WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, SUS- PENDED (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 07...	155	280	40	.27	.01	.28	.05	1.1	1.1	.46	14
DEC 01...	240	--	--	--	--	--	--	--	--	--	--
JAN 26...	165	562	82	.99	.01	1.0	.08	1.0	1.1	.35	15
FEB 16...	105	--	--	--	--	--	--	--	--	--	--
MAR 20...	235	138	27	.09	.01	.10	.01	.62	.63	.24	9.6
30...	219	--	--	--	--	--	--	--	--	--	--
MAY 15...	254	142	30	1.2	.08	1.3	.08	.74	.82	.13	9.1
JUL 17...	421	33	19	.02	.00	.02	.01	1.1	1.1	.04	6.7
SEP 21...	572	33	13	.00	.00	.00	.01	1.1	1.1	.07	8.4

DATE	TIME	ARSENIC, DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM, DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 26...	1750	4	0	1	0	3	40
MAR 20...	1320	4	200	0	0	2	20
JUL 17...	1805	4	200	2	0	3	20
SEP 21...	1400	3	100	0	0	1	10

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY, DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 26...	1	4	.0	1	0	0
MAR 20...	1	40	.0	4	0	10
JUL 17...	2	150	.0	0	0	20
SEP 21...	1	10	.0	0	0	10

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	1750	.0	0	.00	.00	.0	.0	0	.00	6.7
MAR 20...	1320	.0	0	.00	.00	.0	.0	0	.00	2.5
JUL 17...	1805	.0	0	.00	.00	.0	.0	0	.00	2.9
SEP 21...	1400	.0	0	.00	.00	.0	.0	0	.00	2.6

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	.01	16	.02	1.2	.01	.00	.2	.00	.00	.0
MAR 20...	.00	5.2	.00	1.9	.00	.00	.1	.00	.00	.0
JUL 17...	.00	5.6	.00	.0	.00	.00	.1	.00	.00	.0
SEP 21...	.00	7.2	.00	.8	.00	.00	.2	.00	.00	.0

RED RIVER BASIN

07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JAN 26...	.00	.00	.0	.00	.0	.00	.0	.00	.00
MAR 20...	.00	.00	.0	.00	.0	.00	.0	.00	.00
JUL 17...	.00	.00	.0	.00	.0	.00	.0	.00	.00
SEP 21...	.00	.00	.0	.00	.0	.00	.0	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 26...	.00	--	.00	0	0	.00	.01	.01	.00
MAR 20...	.00	--	.00	0	0	.00	.01	.01	.00
JUL 17...	.00	.00	.00	0	0	.00	.01	.00	.00
SEP 21...	.00	.00	.00	0	0	.00	.00	.00	.00

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	16.16	767	460	19	47	2.1	130	5.5	260
NOV. 1977.....	5040.58	286	170	2250	9	119	32	437	75
DEC. 1977.....	1011.2	420	240	668	18	49	56	153	120
JAN. 1978.....	6495.6	305	170	3070	10	181	36	636	81
FEB. 1978.....	32152	254	150	12700	8	652	28	2430	65
MAR. 1978.....	52160	253	150	20600	7	973	27	3850	64
APR. 1978.....	3603	439	260	2490	19	188	60	579	120
MAY 1978.....	8471.7	353	210	4710	13	299	44	1000	97
JUNE 1978.....	6977.71	304	180	3310	10	190	35	655	81
JULY 1978.....	5.63	560	330	5.2	29	0.4	84	1.2	160
AUG. 1978.....	1.2	787	470	1.5	50	0.1	130	0.4	260
SEPT 1978.....	1.61	898	540	2.2	65	0.3	150	0.6	270
TOTAL	115436.25	**	**	49800	**	2650	**	9750	**
WTD.AVG.	317.63	275	160	**	8.6	**	31	**	71

RED RIVER BASIN

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07343200 SULPHUR RIVER NEAR TALCO, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	468	540	415	590	298	302	416	548	294	431	804	848
2	479	350	441	598	315	320	446	539	325	455	787	853
3	491	287	400	603	311	342	474	427	417	475	794	855
4	507	242	392	619	337	347	496	400	448	491	734	856
5	526	211	430	636	388	404	514	406	405	511	824	852
6	528	259	469	631	384	392	539	594	414	533	619	862
7	552	272	395	603	386	263	563	410	427	543	818	872
8	555	281	380	631	407	220	587	357	350	509	668	875
9	556	287	381	665	477	196	614	341	314	587	774	879
10	578	270	386	685	520	199	637	347	276	590	782	886
11	569	266	409	694	511	214	500	380	288	593	765	883
12	586	275	417	702	467	259	358	398	310	616	669	900
13	596	283	423	729	350	297	388	347	323	640	748	911
14	622	298	435	732	270	311	336	406	376	625	838	918
15	633	302	443	746	177	339	360	434	329	555	696	926
16	609	318	453	700	180	362	393	462	211	603	851	934
17	640	332	468	460	194	381	429	502	225	640	809	930
18	660	352	482	483	240	391	465	516	260	667	851	934
19	675	364	494	335	256	404	496	533	283	697	838	930
20	683	378	499	373	285	412	525	543	285	706	867	934
21	679	393	506	360	305	350	552	565	290	715	860	940
22	690	409	517	351	283	273	582	500	295	656	857	934
23	700	422	531	381	314	245	608	273	297	690	805	945
24	709	437	541	392	295	304	500	246	299	743	828	950
25	696	454	545	318	240	265	521	252	310	656	850	953
26	718	467	553	250	251	263	484	364	331	753	847	960
27	727	483	556	215	279	261	489	444	347	719	762	966
28	786	494	565	257	297	295	516	459	357	802	844	970
29	778	502	570	261	---	336	527	400	383	817	845	974
30	836	504	583	274	---	357	537	372	416	815	848	987
31	815	---	592	288	---	384	---	355	---	838	854	---
MEAN	634	358	473	502	322	313	495	423	330	635	798	914

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.5	19.0	8.0	6.0	2.0	8.0	17.0	21.0	25.0	28.0	27.0	24.0
2	25.0	17.0	8.0	4.0	2.0	8.0	19.0	19.0	24.0	28.0	26.5	25.0
3	21.0	15.0	9.0	3.0	2.0	7.0	19.0	20.0	25.0	28.0	26.5	24.0
4	18.0	16.0	11.0	3.0	2.0	5.0	20.0	14.0	25.5	27.0	27.0	25.0
5	19.0	16.0	11.0	6.0	3.0	5.0	20.0	14.0	25.5	27.5	27.0	25.0
6	19.0	16.0	9.0	6.0	3.0	7.0	20.0	17.0	25.5	27.5	25.0	26.0
7	19.0	16.0	7.0	9.0	3.0	10.0	21.0	18.0	25.5	28.0	25.0	24.5
8	21.0	17.0	8.5	7.0	3.0	8.0	22.0	19.0	26.0	28.0	25.0	25.0
9	17.0	14.0	7.0	5.0	2.0	7.0	22.0	20.0	22.5	28.0	25.0	25.0
10	18.0	12.0	5.0	3.0	1.0	6.0	22.0	20.0	22.5	29.0	25.5	25.0
11	17.0	13.0	5.0	3.0	1.5	8.5	18.0	21.0	25.0	29.0	26.0	25.0
12	14.0	13.0	6.0	2.0	4.0	10.0	18.0	21.0	26.0	29.0	26.5	25.0
13	13.0	11.0	9.0	2.0	4.0	10.0	18.0	20.0	27.0	29.0	28.0	25.0
14	13.0	11.5	8.0	1.0	4.0	10.0	18.0	20.0	25.0	29.0	27.5	25.5
15	13.0	13.0	7.5	1.0	5.0	11.0	19.0	21.0	25.0	28.0	27.5	26.0
16	13.0	15.0	9.0	2.0	5.0	12.0	19.0	22.0	24.0	28.5	28.0	25.0
17	12.0	14.0	9.0	.0	5.0	12.0	21.0	21.0	25.0	28.0	28.0	26.0
18	13.0	13.0	8.0	.0	3.0	12.0	20.0	22.0	26.0	28.0	28.0	26.0
19	14.0	14.0	9.5	.0	4.0	13.0	19.0	22.0	27.0	28.0	28.0	26.0
20	15.0	16.0	8.0	.0	4.0	15.0	18.0	24.0	27.0	28.0	28.0	25.5
21	16.0	15.0	5.0	.0	2.0	16.0	18.0	24.0	27.0	28.0	28.0	26.0
22	17.0	13.0	4.0	1.0	1.0	16.0	18.0	24.0	27.5	28.0	27.0	23.0
23	17.0	13.5	6.0	.0	4.0	18.0	19.0	23.0	28.0	27.0	27.0	22.0
24	18.5	13.5	7.0	2.0	4.0	15.0	21.0	24.0	28.0	27.0	27.0	22.0
25	18.0	14.0	6.0	2.0	7.0	12.0	19.0	25.0	28.5	27.0	27.5	21.5
26	17.0	11.5	4.0	1.0	7.0	11.0	19.0	25.0	29.0	27.0	27.5	22.0
27	17.0	13.0	4.0	.0	7.0	11.0	18.0	26.0	29.0	27.0	26.0	21.5
28	18.0	12.0	4.0	1.0	8.0	12.0	19.0	26.0	28.0	27.0	26.0	21.0
29	17.0	10.0	5.0	2.0	---	14.0	20.5	24.0	28.0	27.0	25.0	20.0
30	18.0	10.0	5.0	2.0	---	16.0	21.0	24.0	28.0	28.0	23.0	20.0
31	19.5	---	6.0	2.0	---	16.0	---	25.0	---	28.0	24.0	---
MEAN	17.0	14.0	7.0	2.5	3.5	11.0	19.5	21.5	26.0	28.0	26.5	24.0

07343500 WHITE OAK CREEK NEAR TALCO, TX

LOCATION.--Lat 33°19'20", long 95°05'33", Titus County, Hydrologic Unit 11140303, near center of main channel on downstream side of bridge on U.S. Highway 271, 0.8 mi (1.3 km) downstream from Lewis Creek, 2.4 mi (3.9 km) upstream from Ripley Creek, 2.7 mi (4.3 km) south of Talco, and 38.4 mi (61.8 km) upstream from mouth.

DRAINAGE AREA.--494 mi² (1,279 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

REVISED RECORDS.--WSP 1711: Elevation of historical maximum.

GAGE.--Water-stage recorder. Datum of gage is 286.45 ft (87.310 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Several small diversions above station for municipal supply. Records furnished by the cities of Sulphur Springs and Mount Vernon show that during the year, 851 acre-ft (1.05 hm³) and 195 acre-ft (0.240 hm³), respectively, were discharged into tributaries above station.

AVERAGE DISCHARGE.--28 years (water years 1951-78), 445 ft³/s (12.60 m³/s), 12.23 in/yr (311 mm/yr), 322,400 acre-ft/yr (398 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s (1,360 m³/s) Dec. 11, 1971, gage height, 21.20 ft (6.462 m), from rating curve extended above 23,000 ft³/s (651 m³/s); no flow at times in 1954, 1956, 1964-65, 1969-73, 1976, and 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, 22.9 ft (6.98 m) Mar. 31, 1945, from floodmarks and from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,380 ft³/s (181 m³/s) Nov. 11, gage height, 17.43 ft (5.313 m), no peak above base of 9,000 ft³/s (255 m³/s); no flow Jan. 12, July 24 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	490	130	7.2	90	91	96	9.9	5.3	2.7	.00	.00
2	.72	3000	335	6.5	94	82	81	8.8	4.8	2.1	.00	.00
3	.60	5470	394	5.7	96	81	71	20	4.3	1.6	.00	.00
4	.48	3830	268	4.9	92	77	64	72	6.9	1.3	.00	.00
5	.43	2820	120	4.8	78	70	59	197	9.8	.91	.00	.00
6	.38	1830	66	4.7	63	65	54	165	9.1	.67	.00	.00
7	.34	757	43	4.7	51	783	49	143	7.2	.54	.00	.00
8	.31	190	30	4.8	42	1810	44	158	5.9	.43	.00	.00
9	.28	392	23	4.6	37	3140	42	113	4.1	.38	.00	.00
10	.25	420	18	4.2	34	3560	42	88	7.7	.34	.00	.00
11	.22	429	15	1.1	40	2470	51	57	15	.28	.00	.00
12	.17	309	14	.00	120	1540	71	30	11	.25	.00	.00
13	.15	130	13	.19	932	655	135	31	7.8	.17	.00	.00
14	.13	67	15	7.3	1450	253	124	21	4.9	.15	.00	.00
15	.11	49	16	8.6	1720	180	71	18	3.2	.11	.00	.00
16	.09	41	15	70	1800	144	47	18	103	.09	.00	.00
17	.07	36	14	578	1900	118	37	19	98	.07	.00	.00
18	.06	32	13	799	1360	96	30	16	36	.05	.00	.00
19	.05	29	12	746	459	80	25	13	23	.04	.00	.00
20	.05	28	12	591	266	68	22	11	17	.02	.00	.00
21	.04	27	11	248	305	259	20	9.2	13	.02	.00	.00
22	.04	25	11	130	399	704	19	8.0	12	.01	.00	.00
23	.04	28	11	100	439	843	24	7.0	10	.01	.00	.00
24	.04	30	10	158	350	911	23	6.3	8.9	.00	.00	.00
25	.04	29	9.1	553	211	1180	22	6.1	7.8	.00	.00	.00
26	.03	23	8.7	847	159	1310	23	12	6.8	.00	.00	.00
27	.03	20	8.3	855	125	1180	18	26	5.8	.00	.00	.00
28	.03	19	7.8	663	106	727	15	19	4.7	.00	.00	.00
29	12	18	7.3	359	---	244	13	13	3.8	.00	.00	.00
30	22	25	7.0	163	---	147	11	8.9	3.2	.00	.00	.00
31	16	---	7.4	103	---	118	---	6.7	---	.00	.00	---
TOTAL	55.98	20593	1664.6	7032.29	12818	22986	1403	1330.9	460.0	12.24	.00	.00
MEAN	1.81	686	53.7	227	458	741	46.8	42.9	15.3	.39	.000	.000
MAX	22	5470	394	855	1900	3560	135	197	103	2.7	.00	.00
MIN	.03	18	7.0	.00	34	65	11	6.1	3.2	.00	.00	.00
CFSM	.004	1.39	.11	.46	.93	1.50	.10	.09	.03	.001	.000	.000
IN.	.00	1.55	.13	.53	.97	1.73	.11	.10	.03	.00	.00	.00
AC-FT	111	40850	3300	13950	25420	45590	2780	2640	912	24	.00	.00
CAL YR 1977	TOTAL	162750.44	MEAN 446	MAX 15000	MIN .03	CFSM .90	IN 12.26	AC-FT 322800				
WTR YR 1978	TOTAL	68356.01	MEAN 187	MAX 5470	MIN .00	CFSM .38	IN 5.15	AC-FT 135600				

RED RIVER BASIN

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07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos June 15, 1972; minimum daily, 33 micromhos May 16, 1969.

WATER TEMPERATURES: Maximum daily, 37.0°C July 18, Aug. 3, 15, 1975; minimum daily, 0.0°C on several days during January 1968, 1970, and 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 696 micromhos May 2; minimum daily, 60 micromhos Nov. 3, 4.

WATER TEMPERATURES: Maximum daily, 29.0°C July 14; minimum daily, 0.0°C on several days during January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 30...	0820	18	175	7.9	10.0	49	5	12	4.7	13
DEC 01...	1330	124	164	7.1	9.0	44	7	11	3.9	13
FEB 16...	1240	1750	88	--	3.0	25	12	5.7	2.6	6.0
MAR 30...	1235	147	196	--	20.0	48	19	11	5.0	15
APR 30...	0930	11	505	--	21.0	120	53	27	12	54
MAY 31...	0825	7.0	393	--	25.0	95	22	23	9.0	34
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 30...		.8	4.7	54	0	16	14	.1	7.3	98
DEC 01...		.9	4.7	44	0	19	10	.2	7.0	91
FEB 16...		.5	3.8	16	0	15	7.2	.1	6.5	55
MAR 30...		.9	4.5	35	0	32	16	.1	8.0	109
APR 30...		2.2	6.4	78	0	64	70	.2	9.4	281
MAY 31...		1.5	7.4	88	0	56	36	.3	9.8	219

RED RIVER BASIN

07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	55.98	346	190	29	34	5.3	32	4.8	88
NOV. 1977.....	20593	72	43	2400	6	315	11	585	20
DEC. 1977.....	1664.6	142	83	371	13	60	10	44	35
JAN. 1978.....	7032.29	131	77	1460	12	231	9	163	33
FEB. 1978.....	12818	120	71	2450	11	389	13	461	30
MAR. 1978.....	22986	116	69	4250	11	666	12	755	29
APR. 1978.....	1403	356	200	747	36	136	34	127	90
MAY 1978.....	1330.9	323	180	644	32	116	30	108	81
JUNE 1978.....	459	253	140	177	25	31	22	28	64
JULY 1978.....	12.24	218	130	4.1	21	0.6	19	0.6	55
AUG. 1978.....	0	*****	*****	0	*****	0	*****	0	****
SEPT 1978.....	0	*****	*****	0	*****	0	*****	0	****
TOTAL	68355.81	**	**	12500	**	1950	**	2280	**
WTD.AVG.	187.28	116	68	**	11	**	12	**	29

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	307	164	164	249	153	196	225	566	405	203		
2	308	65	135	251	162	206	242	696	412	207		
3	310	60	124	250	167	221	256	585	425	211		
4	309	60	131	251	192	240	275	415	431	213		
5	308	65	128	254	213	256	288	220	384	218		
6	310	72	129	259	228	277	300	252	375	224		
7	311	87	128	264	255	172	311	432	352	229		
8	312	110	131	269	250	107	326	338	359	234		
9	315	87	135	272	243	88	336	345	390	241		
10	314	116	146	275	257	81	345	308	428	246		
11	315	110	155	277	262	87	614	285	481	249		
12	315	107	162	---	240	100	396	295	366	253		
13	316	112	167	275	125	120	418	255	390	257		
14	317	119	173	278	119	156	364	242	432	261		
15	319	125	177	293	99	178	419	241	443	262		
16	321	130	180	322	88	203	367	246	250	266		
17	320	133	187	104	87	228	365	257	177	271		
18	321	138	200	169	96	238	367	275	201	273		
19	323	145	199	135	121	246	378	304	206	276		
20	324	149	200	117	161	257	388	338	203	277		
21	324	153	202	127	186	210	399	330	197	282		
22	325	156	204	139	192	164	402	325	191	284		
23	326	159	205	152	156	145	434	327	186	283		
24	327	160	207	169	135	127	418	336	188	---		
25	326	162	217	118	150	117	438	346	186	---		
26	328	155	220	121	162	114	423	354	187	---		
27	332	143	223	119	173	123	428	386	189	---		
28	331	146	235	114	177	138	436	427	192	---		
29	335	151	239	121	---	165	444	437	196	---		
30	381	174	238	133	---	187	505	375	200	---		
31	320	---	242	143	---	208	---	393	---	---		
MEAN	321	124	180	201	173	173	377	353	301	249		

RED RIVER BASIN

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07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	18.0	8.5	6.0	2.0	7.0	17.0	21.0	25.0	28.0		
2	25.0	16.0	8.0	5.0	2.0	8.0	19.0	19.0	24.0	28.0		
3	23.0	15.0	10.0	4.0	2.0	7.0	19.0	19.0	24.5	28.0		
4	21.0	15.0	11.0	4.0	2.0	5.0	20.0	14.0	25.0	27.0		
5	21.0	15.5	11.0	5.0	3.0	5.0	20.0	13.0	24.0	27.5		
6	21.0	16.0	9.0	5.0	3.0	7.0	20.0	15.0	25.0	27.5		
7	21.0	16.0	7.0	8.0	3.0	10.0	21.0	18.0	25.0	28.0		
8	22.0	17.0	8.5	7.0	2.0	8.0	22.0	19.0	24.5	28.0		
9	20.0	15.0	7.0	5.0	1.0	6.0	22.0	19.0	24.0	28.0		
10	19.0	12.5	5.0	4.0	1.0	7.0	22.0	20.0	23.0	28.5		
11	19.0	13.0	5.0	4.0	1.5	9.0	18.0	21.0	24.5	28.5		
12	17.0	12.0	6.0	---	4.0	10.0	18.0	21.0	25.0	28.5		
13	16.0	11.0	8.5	2.0	4.0	10.0	18.0	20.0	25.5	28.5		
14	15.0	11.0	8.0	1.0	4.0	10.0	18.0	20.0	25.0	29.0		
15	15.0	13.0	8.0	1.0	4.0	11.0	19.0	21.0	25.0	28.5		
16	15.0	15.0	9.0	2.0	4.0	12.0	19.0	21.0	25.0	28.5		
17	14.0	14.0	10.0	.0	5.0	12.0	20.0	21.0	24.5	28.0		
18	14.5	13.5	9.0	.0	3.0	12.0	19.0	22.0	25.5	28.0		
19	15.0	14.0	10.0	.0	4.0	13.0	19.0	22.0	25.5	28.0		
20	16.0	16.0	8.0	.0	4.0	15.0	18.0	24.0	26.0	28.0		
21	16.0	15.5	6.0	.0	2.0	16.0	17.0	24.0	26.0	28.0		
22	17.0	14.0	5.0	.0	1.0	16.0	17.0	24.0	26.5	28.0		
23	17.0	13.5	6.0	.0	4.0	18.0	18.0	24.0	26.5	27.0		
24	18.0	14.0	7.0	1.5	4.0	15.0	20.0	24.0	27.0	---		
25	18.0	14.0	6.0	2.0	7.0	12.0	18.0	25.0	28.0	---		
26	17.0	13.0	5.0	1.0	7.0	11.0	18.0	25.0	28.0	---		
27	17.0	13.0	4.0	1.0	7.0	11.0	18.0	26.0	28.0	---		
28	18.0	11.0	4.0	1.0	8.0	13.0	18.0	26.0	27.5	---		
29	17.5	10.0	5.0	2.0	---	14.0	20.0	25.0	28.0	---		
30	18.0	10.0	5.0	2.0	---	16.0	21.0	24.0	28.0	---		
31	19.0	---	6.0	2.0	---	16.0	---	25.0	---	---		
MEAN	18.5	14.0	7.5	2.5	3.5	11.0	19.0	21.5	25.5	28.0		

RED RIVER BASIN

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX

LOCATION.--Lat 33°18'16", Long 94°09'38", Bowie-Cass County line, Hydrologic Unit 11140302, in intake structure of Texarkana Dam on the Sulphur River, 0.5 mi (0.8 km) upstream from U.S. Highway 59, 10 mi (16 km) southwest of Texarkana, and 44.5 mi (71.6 km) upstream from mouth.

DRAINAGE AREA.--3,443 mi² (8,917 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1953 to current year. Published as Texarkana Reservoir prior to October 1970 and as Lake Texarkana from October 1970 to September 1972.

REVISED RECORDS.--WSP 1561: 1957(M). WSP 1711: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). July 19 to Dec. 31, 1953, nonrecording gage at site about 125 ft (38 m) upstream at datum 200 ft (61.0 m) higher.

REMARKS.--The lake is formed by a rolled earthfill dam 18,500 ft (5,640 m) long, including a 200 ft (61 m) uncontrolled spillway and a 1 mi (2 km) long dike. Temporary impoundment of water began July 2, 1953, and deliberate impoundment began June 27, 1956. The dam was completed in December 1957. The flood-control outlet works consist of two 20.0-foot-diameter (6.1 m) conduits controlled by four 10.0 by 20.0 ft (3.0 by 6.1 m) electrically driven broome-type gates. Flow discharging over the spillway passes into an outlet channel and then to the Sulphur River. The lake was built for flood control and conservation. The capacity table is based on a 1948 survey. 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.....	286.0	
Crest of spillway.....	259.5	2,654,300
Top of conservation pool.....	220.0	145,300
Lowest gated outlet (invert).....	200.0	2,600

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,912,100 acre-ft (2.36 km) May 9, 1966, elevation, 252.64 ft (77.005 m); minimum since first appreciable storage and after deliberate impoundment began, 137,500 acre-ft (170 hm³) Sept. 5, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 265,500 acre-ft (327 hm³) Oct. 1, elevation, 224.90 ft (68.550 m); minimum, 154,500 acre-ft (190 hm³) Nov. 28, elevation, 220.44 ft (67.190 m).

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

220.0	145,300	224.0	240,200
222.0	189,300	226.0	298,500

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 0700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	263300	186300	168200	158600	168400	176100	178800	199900	236700	242100	222100	203300
2	260400	186500	167400	157800	168200	173600	183200	197000	238600	242400	221800	203300
3	260100	177800	165100	157800	165800	170900	191400	202400	237800	240800	221300	203100
4	259600	170300	161500	157800	165100	165600	192600	205300	239100	240200	219800	202600
5	259300	164900	160400	157800	164900	161200	195000	204300	239700	239700	218700	202400
6	259300	162800	160000	158000	161600	159300	195400	204600	239400	238800	219000	201600
7	257600	162800	158900	157800	160800	161400	191900	208300	240200	238600	218200	200600
8	258200	163200	160600	159500	161400	165100	192600	213300	242100	237800	217400	200400
9	256800	168700	160200	158200	161600	166700	191000	216400	240200	237500	216400	199900
10	255600	163000	159400	156700	162100	168700	190200	217900	239900	236900	216400	199200
11	254200	163410	160200	155700	160400	170900	191400	220300	240800	236100	215400	198400
12	253400	165400	160200	159300	158800	174200	190500	226800	242700	235100	215100	198400
13	250600	166200	161300	159900	166200	174900	190500	233700	242400	234500	214600	200900
14	246100	165600	161700	160800	162100	183200	190700	234000	242900	233700	213300	199900
15	243000	165800	160400	160100	162100	181300	193400	234500	242900	231800	213100	199600
16	239100	166000	160200	161600	164000	183900	195000	232100	242900	232400	212300	199900
17	233000	163400	159400	166400	165400	187900	196000	232600	242900	231000	211300	199600
18	227700	161900	158100	164200	168900	188600	199400	233200	244000	230000	210600	199200
19	224000	160400	158100	166000	171800	199200	201100	233700	244900	229200	209800	198900
20	219800	160400	158300	164700	174200	199600	197500	234000	246800	227900	209000	199200
21	213000	159600	158900	164000	175400	189100	199600	233700	247100	226800	208600	198900
22	213300	161100	156600	164900	175600	180000	199600	233200	246800	225000	208300	196500
23	209300	161100	157400	165100	177900	173800	201600	233200	246800	225800	207800	196500
24	205400	159600	158700	166900	179700	172000	201400	232100	246200	226300	207300	196700
25	203400	159400	157000	168700	180200	168000	201400	230200	245700	225800	206800	196200
26	200500	158700	157200	170000	175400	169600	201600	231800	245100	226000	206100	195300
27	195800	157900	157200	168000	175600	170400	200100	234200	244900	226000	204800	195000
28	192000	154500	156800	166700	176800	172700	200100	236400	244000	225000	203800	194600
29	187900	158900	157000	167600	---	174200	200900	236700	243500	224700	201400	194100
30	184200	165100	157900	168000	---	175400	200900	236700	242900	224400	205800	194300
31	181200	---	158100	168400	---	177400	---	236400	---	223700	204300	---
MAX	263300	186500	168200	170000	180200	199600	201600	236700	247100	242400	222100	203300
MIN	181200	154500	156600	155700	158800	159300	178800	197000	236700	223700	201400	194100
(†)	221.65	220.94	220.61	221.09	221.46	221.49	222.48	223.86	224.10	223.38	222.62	222.21
(‡)	-82400	-16100	-7000	+10300	+8400	+600	+23500	+35500	+6500	-19200	-19400	-10000
(††)	2990	2760	2050	2880	2510	3170	4090	4340	4740	5060	5460	4690
CAL YR 1977	MAX 263300	MIN 154500	† +3700	†† 32840								
WTR YR 1978	MAX 265500	MIN 154500	† +69300	†† 44740								

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses.

RED RIVER BASIN

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WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1967 to current year.

331838094095901 - WRIGHT PATMAN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
JAN									
10...	1300	1.0	209	7.4	5.5	.40	10.3	84	71
10...	1306	10	209	7.4	6.0	--	10.6	88	--
10...	1312	22	213	7.3	6.0	--	10.3	84	71

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
JAN									
10...	7	24	2.7	13	.7	3.3	78	0	21
10...	--	--	--	--	--	--	--	--	--
10...	7	24	2.7	14	.7	3.2	78	0	21

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN									
10...	11	.2	4.3	118	.01	.08	.09	400	120
10...	--	--	--	--	.02	.04	.09	70	30
10...	13	.2	4.1	121	.01	.04	.09	60	40

331903094100201 - LAKE WRIGHT PATMAN AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
10...	1321	1.0	209	7.4	6.0	11.2	93
10...	1323	10	209	7.4	6.0	11.0	91

332142094115001 - LAKE WRIGHT PATMAN BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
JAN							
10...	1346	1.0	213	7.7	5.5	.80	11.6
10...	1348	8.0	213	7.7	5.5	--	11.6

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN						
10...	95	.03	.08	.06	20	0
10...	95	.01	.04	.06	20	0

RED RIVER BASIN

WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331935094112901 - LAKE WRIGHT PATMAN CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
JAN							
10...	1336	1.0	209	7.5	5.5	.50	11.6
10...	1340	14	209	7.5	6.0	--	11.5

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN						
10...	95	.01	.06	.07	30	0
10...	95	.02	.04	.06	20	0

331628094121901 - LAKE WRIGHT PATMAN DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
10...	1432	1.0	207	7.6	4.5	11.8	94
10...	1434	6.0	207	7.6	4.5	11.8	94

331706094130501 - LAKE WRIGHT PATMAN DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
10...	1417	1.0	207	7.5	5.0	11.5	93
10...	1418	10	207	7.5	5.0	11.5	93
10...	1420	20	207	7.5	4.5	11.9	95
10...	1422	28	207	7.4	4.5	12.0	96

RED RIVER BASIN

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WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331519094141101 - WRIGHT PATMAN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA.MG) (MG/L)
JAN									
10...	1500	1.0	206	7.4	4.0	.40	11.4	90	68
10...	1510	10	206	7.5	4.0	--	11.8	93	--
10...	1520	22	206	7.5	4.0	--	11.8	93	68

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
JAN									
10...	9	23	2.6	12	.6	3.2	72	0	19
10...	--	--	--	--	--	--	--	--	--
10...	9	23	2.6	12	.6	3.1	72	0	21

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN								
10...	12	4.5	112	.01	.06	.11	20	10
10...	--	--	--	.01	.06	.10	20	0
10...	13	4.6	115	.02	.08	.16	40	100

RED RIVER BASIN

WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331838094095901 WRIGHT PATMAN LAKE SITE AC
PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO JANUARY 1978

DATE	JAN 10, 78
TIME	1300
TOTAL CELLS/ML	30000
DIVERSITY: DIVISION	1.2
..CLASS	1.2
...ORDER	1.6
....FAMILY	1.8
.....GENUS	2.7

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....OOCYSTACEAE		
.....ANKISTRODESMUS	2000	6
.....DICTYOSPHAERIUM	240	1
.....KIRCHNERIELLA	490	2
.....OOCYSTIS	370	1
.....SELENASTRUM	980	3
....SCENEDESMACEAE		
.....SCENEDESMUS	1100	4
.....TETRASTRUM	240	1
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
....COSCINODISCACEAE		
.....CYCLOTELLA	1300	4
....MELOSIRA	1200	4
...PENNALES		
....NAVICULACEAE		
.....NAVICULA	*	0
....NITZSCHIACEAE		
.....NITZSCHIA	240	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCCOCCALES		
....CHROCCOCCACEAE		
.....AGMENELLUM	6700#	22
.....ANACYSTIS	13000#	41
...HORMOGONALES		
....OSCILLATORIA		
.....OSCILLATORIA	2400	8
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
....EUGLENACEAE		
.....TRACHELOMONAS	370	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

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WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331838094095901 - WRIGHT PATMAN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	HARD- NESS, DIS- SOLVED (PER- CENT AS CAC03)
JUN									
20...	1135	1.0	263	8.0	30.0	.80	7.6	101	87
20...	1145	10	263	7.9	29.0	--	7.4	97	--
20...	1150	20	263	6.9	28.0	--	3.2	41	--
20...	1207	25	269	6.7	28.0	--	.4	5	91

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
JUN										
20...	11	29		3.6	17	.8	3.8	93	0	22
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	11	30		3.8	16	.7	3.8	97	0	22

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN										
20...	19		.2	4.0	145	.00	.00	.06	10	5
20...	--	--	--	--	--	.07	.00	.06	20	0
20...	--	--	--	--	--	.02	.03	.06	20	80
20...	20		.2	5.7	150	.01	.00	.08	20	690

331903094100201 - LAKE WRIGHT PATMAN AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION
JUN							
20...	1216	1.0	263	8.2	30.0	8.1	108
20...	1220	10	263	7.9	29.5	7.2	95
20...	1225	15	263	7.5	29.0	5.8	76

332142094115001 - LAKE WRIGHT PATMAN BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JUN							
20...	1237	1.0	245	8.6	31.5	.60	8.8
20...	1245	12	245	7.5	29.5	--	5.6

DATE	TIME	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN							
20...	119		.01	.00	.05	20	0
20...	74		.00	.00	.05	40	5

RED RIVER BASIN

WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331935094112901 - LAKE WRIGHT PATMAN CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JUN							
20...	1300	1.0	249	8.2	30.0	.80	8.6
20...	1305	10	249	7.3	29.0	--	5.3
20...	1310	17	249	6.9	28.5	--	2.7

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN						
20...	115	.00	.00	.05	20	40
20...	70	--	--	--	--	--
20...	35	.01	.00	.09	20	310

331628094121901 - LAKE WRIGHT PATMAN DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
20...	1402	1.0	265	8.2	31.5	8.9	120
20...	1409	9.0	265	7.0	28.5	4.1	53

331706094130501 - LAKE WRIGHT PATMAN DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
20...	1337	1.0	291	8.3	31.5	9.0	122
20...	1340	10	275	7.6	28.5	6.4	83
20...	1343	20	275	7.4	28.0	5.9	76
20...	1346	30	287	6.9	28.0	1.4	18

RED RIVER BASIN

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WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331519094141101 - WRIGHT PATMAN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
20...	1425	1.0	326	8.2	31.0	.50	9.1	125	100
20...	1430	10	313	7.8	28.5	--	6.4	84	--
20...	1435	20	309	7.6	28.5	--	5.5	72	--
20...	1445	25	309	7.2	28.5	--	4.1	54	98

DATE	HARD- NESS, NONCAR- BONATE, DIS, (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
20...	13	35	4.2	22	.9	4.1	100	6	32
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	8	33	3.9	20	.9	4.0	110	0	28

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN								
20...	25	2.1	180	.01	.00	.09	40	0
20...	--	--	--	.01	.01	.09	20	10
20...	--	--	--	.02	.01	.09	20	5
20...	23	3.8	170	.01	.13	.12	80	170

331459094164501 - LAKE WRIGHT PATMAN FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN								
20...	1528	1.0	328	8.2	31.5	9.2	126	
20...	1529	5.0	344	7.4	30.0	7.0	95	
20...	1530	10	344	7.3	29.0	4.5	60	
20...	1532	16	344	7.1	28.5	3.4	45	

RED RIVER BASIN
WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331533094210901 - LAKE WRIGHT PATMAN GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
20...	1810	1.0	359	7.7	32.0	.20	8.0	111	130
20...	1815	10	350	7.0	29.0	--	4.8	64	--
20...	1820	15	368	7.1	28.5	--	4.7	6	130

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS, (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
20...	30	45	4.0	22	.8	3.4	120	0	55	--
20...	--	--	--	--	--	--	--	--	--	--
20...	30	45	4.0	23	.9	3.4	120	0	58	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
20...	13	7.9	209	.49	.00	.06	20	5	
20...	--	--	--	.51	.03	.09	20	30	
20...	11	8.1	212	.74	.10	.11	20	20	

331838094095901 - WRIGHT PATMAN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
JUN							
20...	1135	1.0	3	200	1	0	2
20...	1145	10	--	--	--	--	--
20...	1150	20	--	--	--	--	--
20...	1207	25	5	200	1	0	5

DATE	TIME	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JUN								
20...	10	3	5	.0	0	0	0	
20...	20	--	0	--	--	--	--	
20...	20	--	80	--	--	--	--	
20...	20	2	690	.0	0	0	60	

RED RIVER BASIN

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WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331533094210901 LAKE WRIGHT PATMAN GC
PHYTOPLANKTON ANALYSES, MAY 1978 TO JUNE 1978

DATE	JUN 20, 78
TIME	1809
TOTAL CELLS/ML	25000
DIVERSITY: DIVISION	0.9
..CLASS	0.9
..ORDER	1.8
...FAMILY	2.0
....GENUS	2.7

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...CHARACIACEAE		
....SCHROEDERIA	*	0
...OOCYSTACEAE		
....ANKISTRODESMUS	600	2
....DICTYOSPHAERIUM	1100	4
....KIRCHNERIELLA	250	1
....TETRAEDRON	*	0
...SCENEDESMACEAE		
....CRUCIGENIA	710	3
....SCENEDESMUS	420	2
....TETRASTRUM	280	1
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	140	1
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCAEAE		
....CYCLOTELLA	*	0
....MELOSIRA	920	4
..PENNALES		
...NAVICULACEAE		
....NAVICULA	*	0
...NITZSCHACEAE		
....NITZSCHIA	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCACEAE		
....AGMENELLUM	9700#	38
....ANACYSTIS	2600	10
...COCCOCHLOIS	280	1
...HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	600	2
...OSCILLATORIAEAE		
....OSCILLATORIA	7000#	28
....SPIRULINA	*	0
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....EUGLENA	*	0
....PHACUS	*	0
....TRACHELOMONAS	180	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331838094095901 - WRIGHT PATMAN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
SEP									
27...	1135	1.0	292	8.2	25.0	.50	8.8	107	92
27...	1137	5.0	292	7.8	24.5	--	6.7	81	--
27...	1139	10	292	7.7	24.5	--	6.5	78	--
27...	1141	15	292	7.7	24.5	--	6.4	77	--
27...	1145	23	292	7.7	24.5	--	6.4	77	92

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
27...	2	31	3.6	21	1.0	4.0	110	0	17
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	2	31	3.6	21	1.0	4.0	110	0	17

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP									
27...	22	.3	3.6	157	.00	.06	.12	10	0
27...	--	--	--	--	.00	.09	.12	<10	2
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	.00	.10	.13	<10	20
27...	22	--	3.6	157	.01	.09	.15	20	60

331903094100201 - LAKE WRIGHT PATMAN AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
27...	1210	1.0	292	8.4	25.0	9.2	112
27...	1212	5.0	292	7.8	24.5	6.8	82
27...	1214	10	292	7.7	24.5	6.3	76
27...	1216	15	292	7.6	24.5	6.2	75
27...	1220	24	292	7.7	24.5	6.2	75

332142094115001 - LAKE WRIGHT PATMAN BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
27...	1235	1.0	292	8.5	25.5	.50	9.4
27...	1237	5.0	292	7.9	24.5	--	6.2
27...	1240	9.0	292	7.9	24.5	--	6.2

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
27...	116	.00	.03	.09	<10	1
27...	75	--	--	--	--	--
27...	75	.00	.08	.09	<10	2

RED RIVER BASIN

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WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331935094112901 - LAKE WRIGHT PATMAN CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP												
27...	1250	1.0	288	8.0	25.5	7.8	96	.01	.11	.10	<10	6
27...	1252	5.0	288	7.7	25.0	6.6	80	--	--	--	--	--
27...	1254	10	288	7.6	25.0	5.9	72	--	--	--	--	--
27...	1257	16	288	7.5	25.0	5.4	66	.01	.16	.10	<10	20

331628094121901 - LAKE WRIGHT PATMAN DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
27...	1340	1.0	301	8.4	25.0	9.3	113
27...	1345	6.0	301	7.8	24.5	6.9	83

331706094130501 - LAKE WRIGHT PATMAN DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
22...	1324	1.0	301	8.0	24.5	7.9	95
22...	1326	5.0	301	7.6	24.5	6.4	77
22...	1328	10	301	7.6	24.0	5.9	71
22...	1331	20	301	7.5	24.0	5.8	70
22...	1333	27	301	7.5	24.0	5.7	69

331519094141101 - WRIGHT PATMAN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SEP									
27...	1400	1.0	305	8.2	24.0	.40	8.5	102	92
27...	1402	5.0	305	7.8	24.0	--	6.7	81	--
27...	1405	10	305	7.6	23.5	--	6.0	71	--
27...	1410	17	305	7.6	24.0	--	5.8	70	93

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
SEP									
27...	0	31	3.6	23	1.0	4.1	120	0	17
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	0	31	3.7	23	1.0	4.1	120	0	16

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
27...	27	3.8	169	.00	.05	.15	<10	5
27...	--	--	--	.00	.04	.14	<10	10
27...	--	--	--	.00	.11	.16	<10	30
27...	25	3.8	166	.00	.10	.17	<10	50

RED RIVER BASIN

WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331459094164501 - LAKE WRIGHT PATMAN FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
27...	1445	1.0	318	8.3	25.0	9.5	116
27...	1447	5.0	318	7.9	23.5	6.9	82
27...	1449	10	318	7.6	23.0	5.7	67
27...	1451	14	318	7.6	23.0	5.2	61

331533094210901 - LAKE WRIGHT PATMAN GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SEP									
27...	1730	1.0	354	8.3	25.5	.40	9.3	115	110
27...	1735	4.0	356	7.8	25.0	--	7.1	87	110

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
27...	0	38	4.1	27	1.1	4.0	140	0	21
27...	0	37	4.1	28	1.2	4.0	140	0	21

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
27...	28	3.1	194	.00	.06	.13	<10	3
27...	28	3.1	194	.00	.07	.12	<10	3

331838094095901 - WRIGHT PATMAN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
SEP							
27...	1135	1.0	3	0	0	0	4
27...	1137	5.0	--	--	--	--	--
27...	1141	15	--	--	--	--	--
27...	1145	23	3	0	1	0	6

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
SEP							
27...	10	0	0	.0	0	0	10
27...	<10	--	2	--	--	--	--
27...	<10	--	20	--	--	--	--
27...	20	0	60	.0	0	0	10

RED RIVER BASIN

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07344482 BIG CYPRESS CREEK NEAR WINNSBORO, TX

LOCATION.--Lat 33°01'24", long 95°16'12", Franklin County, Hydrologic Unit 11140305, on left bank at downstream side of bridge on State Highway 37, 0.3 mi (0.5 km) downstream from Glade Branch, 1.8 mi (2.9 km) upstream from Little Cypress Creek, 4.7 mi (7.6 km) north of Winnsboro, and 146.5 mi (235.7 km) upstream from mouth.

DRAINAGE AREA.--27.2 mi² (70.4 km²).

PERIOD OF RECORD.--March 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 375.83 ft (114.553 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for June, which are fair. Flow affected slightly by Lake Franklin located upstream on Glade Branch. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,320 ft³/s (122 m³/s) Nov. 24, 1974, gage height, 12.39 ft (3.776 m); no flow Aug. 24, 1974, and June 29 to Sept. 30, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 723 ft³/s (20.5 m³/s) Mar. 7, gage height, 10.36 ft (3.158 m), no peak above base of 900 ft³/s (25.5 m³/s), no flow June 29 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	1.0	4.7	6.6	5.8	7.1	6.8	5.0	1.8	.66	.00	.00	.00		
2	.49	3.8	4.0	5.7	7.6	6.7	4.0	1.2	.68	.00	.00	.00		
3	.26	1.6	3.4	5.8	6.4	6.2	4.1	7.1	.64	.00	.00	.00		
4	.16	1.1	3.2	6.3	5.6	5.6	4.2	4.4	.64	.00	.00	.00		
5	.09	1.2	2.7	7.1	5.2	5.5	3.8	20	.66	.00	.00	.00		
6	.04	1.7	2.3	6.2	5.0	8.8	4.1	8.5	1.1	.00	.00	.00		
7	.11	1.9	2.4	7.3	5.0	359	3.3	4.6	1.1	.00	.00	.00		
8	.88	5.7	3.7	5.8	5.4	27	3.3	2.9	.64	.00	.00	.00		
9	.32	5.7	2.0	5.0	6.5	12	3.2	1.7	.65	.00	.00	.00		
10	.27	2.5	1.9	5.3	6.9	8.8	5.2	1.3	.67	.00	.00	.00		
11	.41	1.9	2.7	7.2	7.4	7.9	5.7	2.4	.67	.00	.00	.00		
12	.23	1.8	3.4	9.4	16	6.4	4.2	19	.67	.00	.00	.00		
13	.20	1.9	4.3	8.5	36	6.5	3.0	4.0	.75	.00	.00	.00		
14	.55	2.1	3.9	8.2	7.8	6.9	3.3	2.0	.78	.00	.00	.00		
15	.58	2.3	4.0	7.8	5.9	6.0	3.1	1.6	.58	.00	.00	.00		
16	.47	2.6	4.9	19	5.5	5.1	2.4	1.2	.52	.00	.00	.00		
17	.64	2.0	3.2	11	6.7	5.2	2.5	1.2	.43	.00	.00	.00		
18	.74	2.2	3.7	6.6	8.8	5.4	2.6	.85	.38	.00	.00	.00		
19	.57	2.6	4.1	7.1	7.3	5.3	1.9	.91	.30	.00	.00	.00		
20	.65	3.2	3.8	5.8	6.6	4.8	1.5	.73	.25	.00	.00	.00		
21	.83	3.4	3.8	5.4	5.3	8.3	1.5	.99	.17	.00	.00	.00		
22	.84	3.2	4.3	5.6	5.1	7.6	1.9	1.6	.16	.00	.00	.00		
23	.99	3.5	5.1	5.8	4.4	6.4	2.3	1.2	.16	.00	.00	.00		
24	2.1	3.3	3.8	7.7	5.1	100	2.4	.84	.15	.00	.00	.00		
25	2.9	3.4	3.3	9.6	4.5	15	1.9	.75	.13	.00	.00	.00		
26	1.6	3.4	4.4	8.1	5.4	9.0	1.5	.83	.10	.00	.00	.00		
27	1.2	3.6	4.9	5.9	6.1	7.4	1.5	.79	.03	.00	.00	.00		
28	1.2	2.8	5.2	5.3	7.4	6.9	1.6	.90	.01	.00	.00	.00		
29	1.4	4.1	6.5	5.2	---	6.1	1.7	1.4	.00	.00	.00	.00		
30	1.4	7.6	6.6	5.8	---	5.3	1.5	1.1	.00	.00	.00	.00		
31	2.0	---	6.2	6.1	---	5.7	---	.63	---	.00	.00	---		
TOTAL	25.12	90.8	124.3	221.4	212.0	683.6	88.2	98.42	13.68	.00	.00	.00		
MEAN	.81	3.03	4.01	7.14	7.57	22.1	2.94	3.17	.46	.000	.000	.000		
MAX	2.9	7.6	6.6	19	36	359	5.7	20	1.1	.00	.00	.00		
MIN	.04	1.1	1.9	5.0	4.4	4.8	1.5	.63	.00	.00	.00	.00		
CFSM	.03	.11	.15	.26	.28	.81	.11	.12	.02	.000	.000	.000		
IN.	.03	.12	.17	.30	.29	.93	.12	.13	.02	.00	.00	.00		
AC-FT	50	180	247	439	421	1360	175	195	27	.00	.00	.00		
CAL YR 1977	TOTAL	6135.00	MEAN	16.8	MAX	933	MIN	.04	CFSM	.62	IN	8.39	AC-FT	12170
WTR YR 1978	TOTAL	1557.52	MEAN	4.27	MAX	359	MIN	.00	CFSM	.16	IN	2.13	AC-FT	3090

07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX

LOCATION.--Lat 33°03'22", Long 95°08'21", Franklin County, Hydrologic Unit 11140305, in brick meter house located on upstream side and near center of dam on Big Cypress Creek, 1.5 mi (2.4 km) upstream from Andy's Creek, 2.6 mi (4.2 km) downstream from Panther Creek, and 10.3 mi (16.6 km) southeast of Mount Vernon.

DRAINAGE AREA.--75.0 mi² (194.2 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 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 5,230 ft (1,590 m) long. Deliberate impoundment began July 7, 1970, and the dam was completed Feb. 15, 1971. The emergency spillway is an excavated channel through natural ground 1,000 ft (300 m) wide located to the left of left end of dam. The service spillway is a rectangular 23 by 23 ft (7 by 7 m) drop inlet located near the right end of dam. The low-flow outlet works consist of an 18-inch-diameter (457 mm) concrete pipe that has duplicate valve controls and discharges into the service spillway conduit. 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.....	397.0	-
Crest of spillway.....	385.0	100,400
Crest of spillway.....	378.0	72,850
Lowest gated outlet (invert).....	317.75	0

COOPERATION.--The capacity table, furnished by the Franklin County Water District, was based on data prepared by Wisenbaker, Fix, and Associates, Consulting Engineers. Records of diversions furnished by Franklin County Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 83,770 acre-ft (103 hm³) Feb. 2, 1975, elevation, 381.00 ft (116.129 m); minimum, 62,180 acre-ft (76.7 hm³) Sept. 30, 1978, elevation, 374.70 ft (114.209 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 71,020 acre-ft (87.6 hm³) May 11, elevation, 377.46 ft (115.050 m); minimum, 62,180 acre-ft (76.7 hm³) Sept. 30, elevation, 374.70 ft (114.209 m).

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

374.0	60,070	377.0	69,490
375.0	63,100	378.0	72,850
376.0	66,240		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65600	63810	63720	63380	65320	66980	70650	69990	70390	68960	66910	64090
2	65480	63750	63690	63440	65320	66850	70650	70090	70350	68930	66950	64000
3	65290	63720	63720	63440	65320	66780	70720	70250	70290	68860	66880	63900
4	65220	63720	63410	63440	65410	66820	70720	70220	70220	68830	66750	63840
5	65130	63720	63590	63440	65410	66820	70690	70590	70220	68830	66850	63750
6	65100	63720	63630	63440	65410	67490	70720	70690	70390	68800	66820	63660
7	64970	63720	63630	63280	65380	68470	70690	70690	70290	68730	66780	63590
8	64810	64150	63530	63530	65380	68630	70650	70690	70320	68600	66720	63500
9	64650	64030	63590	63560	65480	68700	70720	70690	70320	68540	66690	63320
10	64530	64000	63560	63560	65510	68730	70790	70550	70220	68500	66690	63220
11	64370	63940	63560	63840	65570	68770	70790	70920	70120	68310	66590	63250
12	64250	63900	63560	63870	65670	68800	70790	70950	70120	68310	66460	63350
13	64150	63870	63530	63840	66180	68900	70750	70850	70190	68180	66330	63350
14	64030	63840	63560	63900	66300	68900	70750	70850	70120	68140	66240	63250
15	63970	63810	63560	63940	66300	68960	70690	70850	70090	68050	66110	63250
16	63900	63720	63630	64190	66330	68960	70620	70790	69920	67950	65950	63160
17	63870	63660	63630	64430	66530	69030	70690	70720	69920	67880	65790	63100
18	63840	63630	63590	64530	66530	69030	70620	70720	69820	67750	65700	63070
19	63810	63590	63500	64500	66560	69030	70550	70750	69820	67660	65540	63070
20	63720	63590	63280	64620	66530	69130	70520	70750	69750	67620	65440	62980
21	63660	63560	63440	64650	66590	69520	70490	70720	69750	67530	65380	62820
22	63560	63530	63500	64650	66620	69590	70490	70750	69690	67360	65250	62760
23	63470	63470	63440	64750	66590	70120	70390	70750	69590	67560	65130	62640
24	63320	63440	63440	64840	66620	70450	70450	70720	69520	67490	65030	62610
25	63220	63410	63410	64940	66620	70520	70320	70650	69420	67430	64940	62420
26	63220	63380	63410	65060	66620	70550	70320	70520	69360	67400	64750	62390
27	63220	63380	63410	65060	66780	70550	70290	70590	69320	67360	64620	62330
28	63160	63320	63410	65100	66780	70590	70190	70250	69290	67330	64560	62270
29	63250	63320	63500	65130	---	70650	70190	70220	69190	67170	64430	62210
30	63280	63690	63500	65130	---	70690	69130	70220	69130	67110	64340	62180
31	63410	---	63500	65220	---	70650	---	70190	---	67010	64220	---
MAX	65600	64150	63720	65220	66780	70690	70790	70950	70390	68960	66950	64090
MIN	63160	63320	63280	63280	65320	66780	69130	69990	69130	67010	64220	62180
(†)	375.10	375.19	375.13	375.68	376.17	377.35	376.89	377.21	376.89	376.24	375.36	374.70
(+)	-2260	+280	-190	+1720	+1560	+3870	-1520	+1060	-1060	-2120	-2790	-2040
(††)	1640	42	40	40	30	31	39	108	42	113	1190	1260
CAL YR 1977	MAX	79350	MIN	63160	+	-6990	††	6720				
WTR YR 1978	MAX	70950	MIN	62180	+	-3490	††	4580				

† Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal, commercial, industrial, and recreational uses.

RED RIVER BASIN

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07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM DIS-SOLVED (MG/L AS MG)	SODIUM DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO
MAR 29...	1530	166	20.0	46	17	10	5.1	11	.7
AUG 02...	0945	182	29.5	50	17	11	5.4	13	.8

DATE	POTASSIUM DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HC03)	CARBONATE (MG/L AS C03)	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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
MAR 29...	3.7	35	0	17	18	.1	.2	82
AUG 02...	3.9	40	0	19	22	.2	.7	95

RED RIVER BASIN

07344486 BRUSHY CREEK AT SCROGGINS, TX

LOCATION.--Lat 32°58'32", long 95°11'03", Franklin County, Hydrologic Unit 11140305, on downstream side of highway embankment near left end of bridge on Farm Road 115, 0.1 mi (0.2 km) north of Scroggins, 0.3 mi (0.5 km) downstream from Briary Creek, 2.5 mi (4.0 km) upstream from South Brushy Creek, and 9.5 mi (15.3 km) upstream from mouth.

DRAINAGE AREA.--23.4 mi² (60.6 km²).

PERIOD OF RECORD.--December 1977 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is 343.90 ft (104.821 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of no gage-height record, which are poor. Several observations of water temperature were made during the period of record.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 177 ft³/s (5.01 m³/s) May 12, 1978, gage height, 11.68 ft (3.560 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period December to September, 177 ft³/s (5.01 m³/s) May 12, gage height, 11.68 ft (3.560 m), no peak above base of 800 ft³/s (22.7 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, DECEMBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	5.0	9.5	8.4	4.6	2.0	.37	.00	.00	.00
2			---	4.7	10	7.9	4.4	1.7	.47	.00	.00	.00
3			---	4.7	8.2	7.9	4.3	20	.49	.00	.00	.06
4			---	4.9	7.7	7.3	4.7	8.4	2.0	.00	.00	.05
5			---	5.2	7.3	6.8	4.4	26	1.1	.00	.00	.04
6			---	5.0	7.2	9.1	4.4	17	1.1	.00	.26	.03
7			---	5.5	6.8	106	4.0	7.2	2.5	.00	.16	.03
8			---	5.5	7.0	31	3.8	4.5	.82	.00	.00	.00
9			---	4.6	7.7	13	3.9	2.9	.52	.00	.00	.00
10			---	4.6	9.2	11	6.1	2.2	.34	.00	.00	.02
11			---	5.1	11	10	7.2	11	.28	.00	.00	.04
12			---	7.0	16	8.9	5.0	137	.22	.00	.00	.20
13			---	7.7	35	8.9	4.2	24	1.1	.00	.00	.55
14			---	7.8	11	9.2	3.8	6.8	1.6	.00	.00	.29
15			---	7.4	10	8.4	3.4	3.8	.49	.00	.00	.19
16			---	28	9.2	7.5	3.9	2.4	.32	.00	.00	.19
17			---	18	10	7.0	4.0	1.9	.24	.00	.00	.18
18			---	7.2	14	6.6	4.0	1.7	.19	.00	.00	.16
19			---	7.5	11	6.4	3.3	1.5	.15	.00	.00	.12
20			---	6.6	9.7	6.4	2.8	1.3	.13	.00	.00	.22
21			3.7	6.2	8.4	14	2.7	1.1	.13	.00	.00	.22
22			3.6	6.3	7.9	10	2.6	1.2	.10	.01	.00	.31
23			3.6	6.8	7.9	7.9	2.9	1.1	.10	.00	.00	.46
24			3.9	9.5	7.5	42	2.7	.91	.04	.11	.00	.41
25			3.8	12	7.5	13	2.5	.74	.01	.09	.00	.48
26			3.7	11	7.3	9.4	2.1	.62	.01	.00	.00	.45
27			3.7	7.6	7.3	7.9	1.9	.49	.01	.00	.00	.54
28			4.0	7.0	9.2	7.2	1.9	.42	.00	.00	.00	.76
29			4.8	6.6	---	6.4	1.8	.39	.00	.00	.00	.79
30			5.9	6.8	---	6.2	2.0	.55	.00	.00	.00	.78
31			5.2	7.5	---	5.5	---	.42	---	.00	.00	---
TOTAL			---	239.3	280.5	417.2	109.3	291.24	14.83	.21	.42	7.57
MEAN			---	7.72	10.0	13.5	3.64	9.39	.49	.007	.014	.25
MAX			---	28	35	106	7.2	137	2.5	.11	.26	.79
MIN			---	4.6	6.8	5.5	1.8	.39	.00	.00	.00	.00
AC-FT			---	475	556	828	217	578	29	.4	.8	15

CAL YR 1977 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1978 TOTAL - MEAN - MAX - MIN - AC-FT -

NOTE.--No gage-height record June 25 to July 23, July 26 to Aug. 1, Aug. 3 to Sept. 6.

07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 95°00'07", Titus County, Hydrologic Unit 11140305, in control room in left abutment of service spillway at left end of Fort Sherman Dam on Big Cypress Creek, 1.7 mi (2.7 km) upstream from Tankersley Creek, 3.5 mi (5.6 km) upstream from bridge on U.S. Highway 271, 5.7 mi (9.2 km) southwest of the County Courthouse in Mount Pleasant, and 129.2 mi (207.9 km) upstream from mouth.

DRAINAGE AREA.--239 mi² (619 km²).

PERIOD OF RECORD.--August 1977 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. A nonrecording gage was located at same site and datum prior to Apr. 12, 1978.

REMARKS.--The lake is formed by a rolled earthfill dam 10,800 ft (3,290 m) long including spillways. Deliberate impoundment began Aug. 8, 1977, and the dam was completed by April 1978. The emergency spillway is an excavated channel cut through natural ground. The spillway is 4,500 ft (1,400 m) wide, located to the left of the left end of the dam. The service spillway is 289.5 ft (88.2 m) wide with 160 ft (50 m) of net flow width controlled by four 40 by 22.5 ft (12 by 6.9 m) tainter gates. The dam was built and is owned, maintained, and operated by the Titus County Fresh Water Supply District No. 1 to provide water for municipal use. Flow from 75.0 mi² (194.2 km²) above this station is controlled by Lake Cypress Springs on Big Cypress Creek and from 36.0 mi² (93.2 km²) above this station is controlled by Montecello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. 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.....	349.0	-
Crest of uncontrolled spillway.....	341.3	251,000
Crest of gated spillway.....	316.5	64,790
Lowest gated outlet (invert).....	294.5	3,300

COOPERATION.--Area and capacity tables were compiled by Forest and Cotton, Inc., Consulting Engineers. Records of diversions and return flow were furnished by Titus County Fresh Water Supply District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 18,010 acre-ft (22.2 hm³) May 19, 1978, elevation, 304.29 ft (92.748 m); minimum, 520 acre-ft (0.641 hm³) Oct. 4-8, 1977, elevation, 291.01 ft (88.700 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,010 acre-ft (22.2 hm³) May 19, elevation, 304.29 ft (92.748 m); minimum, 520 acre-ft (0.641 hm³) Oct. 4-8, elevation, 291.01 ft (88.700 m).

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

291.0	516	300.0	9,240
294.0	2,110	303.0	15,050
297.0	4,910	305.0	19,730

CONTENTS, IN ACRE-FEET, AUGUST TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	AUG	SEPT	DAY	AUG	SEPT	DAY	AUG	SEPT	DAY	AUG	SEPT	DAY	AUG	SEPT
1	---	930	7	---	880	13	516	870	19	544	875	25	890	880
2	---	925	8	516	875	14	516	870	20	803	875	26	910	880
3	---	920	9	516	870	15	516	870	21	831	875	27	915	880
4	---	910	10	516	870	16	516	875	22	852	875	28	920	880
5	---	895	11	516	870	17	516	875	23	863	880	29	925	880
6	---	885	12	516	870	18	523	875	24	875	880	30	930	880
												31	930	---

MAX		---	930
MIN		---	870
(†)		291.12	291.02
(‡)		---	+50

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--Record based on weekly readings from staff gage.

RED RIVER BASIN

07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX--Continued

 CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
 INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	523	785	1220	1610	3820	6870	13780	14230	17570	13590	9500	5050
2	523	799	1220	1650	3980	6990	13640	14390	17550	13450	9220	5010
3	523	799	1220	1670	4110	7090	13510	14560	17380	13300	9140	4950
4	520	799	1220	1690	4220	7220	13430	14540	17190	13170	9050	4910
5	520	799	1220	1690	4330	7350	13410	14770	17080	13030	8920	4880
6	520	799	1220	1690	4420	7480	13430	14940	16900	12880	8790	4830
7	520	799	1220	1690	4510	7580	13510	15050	16670	12730	8660	4800
8	520	810	1220	1690	4600	8550	13550	15090	16630	12590	8530	4780
9	548	835	1220	1690	4710	10540	14460	15070	16560	12440	8410	4730
10	558	835	1220	1690	4800	10840	14580	15090	16520	12280	8250	4700
11	558	835	1300	1690	4900	10830	14460	15910	16470	12130	8090	4670
12	558	835	1370	1700	5010	10830	14440	16790	16400	12010	7910	4640
13	558	835	1370	1720	5100	10830	14440	17430	16310	11840	7700	4600
14	558	835	1370	1720	5210	10830	14480	17790	16150	11780	7520	4570
15	558	835	1370	1750	5320	10830	14480	17940	16020	11640	7320	4550
16	558	835	1370	1860	5420	10830	14500	17940	15860	11510	7090	4510
17	558	828	1370	2020	5530	10840	14520	17940	15720	11390	6870	4470
18	558	824	1370	2150	5640	10900	14500	17940	15570	11280	6640	4450
19	551	813	1370	2260	5730	10970	14440	17960	15410	11140	6460	4430
20	548	806	1370	2370	5840	11430	14410	17940	15270	11020	6250	4380
21	537	803	1370	2460	5940	12210	14410	17870	15090	10920	6110	4360
22	527	799	1370	2550	6050	12210	14500	17740	14940	10790	5960	4340
23	520	799	1370	2630	6170	12380	14440	17720	14770	10650	5840	4310
24	516	799	1370	2710	6280	13810	14440	17670	14650	10540	5720	4290
25	516	799	1370	2870	6370	13990	14390	17620	14500	10420	5620	4260
26	516	799	1370	3070	6500	13990	14370	17600	14310	10300	5530	4240
27	516	799	1370	3200	6630	13990	14370	17550	14140	10190	5420	4220
28	516	859	1410	3280	6900	13990	14330	17480	14040	10050	5340	4200
29	516	1130	1480	3360	---	13990	14330	17430	13890	9940	5270	4180
30	516	1220	1530	3470	---	13990	14330	17400	13740	9820	5180	4150
31	583	---	1580	3620	---	13950	---	17190	---	9680	5130	---
MAX	583	1220	1580	3620	6900	13990	14580	17960	17570	13590	9500	5050
MIN	516	785	1220	1610	3820	6870	13410	14230	13740	9680	5130	4150
(†)	291.19	292.69	293.29	295.83	298.49	302.48	302.66	303.95	302.38	300.25	297.17	296.32
(+)	+60	+637	+360	+2040	+3280	+7050	+380	+2860	-3450	-4060	-4550	-980
(††)	319	306	342	295	295	305	311	376	439	483	454	393

CAL YR 1977 MAX - MIN - # - †† -
 WTR YR 1978 MAX 17960 MIN 516 # +3630 †† 4318

† Elevation, in feet, at end of month.

‡ Change in contents in acre-feet.

†† Diversions, in acre-feet, for municipal use by city of Mount Pleasant.

NOTE.--Elevation record for Oct. 1, to Apr. 11, and July 12 to Sept. 30 was based on gage readings furnished by Titus County Fresh Water Supply District No. 1.

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX

LOCATION (revised).--Lat 33°01'15", long 94°52'55", Camp-Titus County line, Hydrologic Unit 11140305, near center of stream at downstream side of bridge on State Highway 11, 0.5 mi (0.8 km) upstream from Louisiana & Arkansas Railway Co. bridge, 1.4 mi (2.3 km) upstream from Williamson Creek, 5.2 mi (8.4 km) east of Pittsburg, 19.2 mi (30.9 km) downstream from Lake Bob Sandlin, and 110.0 mi (177.0 km) upstream from mouth.

DRAINAGE AREA.--366 mi² (948 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1943 to January 1963 (published as Cypress Creek near Pittsburg), October 1967 to current year. Gage-height records collected at this site September 1963 to December 1967 are published in reports by Corps of Engineers.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 247.49 ft (75.435 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1954, water-stage recorder at site 1,900 ft (579 m) downstream at present datum.

REMARKS.--Water-discharge records good. Flow partly regulated by Lake Cypress Springs (station 07344484) since July 1970 and by Monticello Reservoir (on Blundell Creek) since August 1972. Flow largely regulated by Lake Bob Sandlin (station 07344489) since August 1977. Records furnished by the city of Mount Pleasant show that 2,860 acre-ft (3.53 hm³) of sewage effluent was returned to a tributary above the station. Records furnished by the city of Pittsburg show that 526 acre-ft (0.649 hm³) of sewage effluent was returned to a tributary below the station.

AVERAGE DISCHARGE.--24 years (water years 1944-62, 1968-72), prior to combined regulation by Lake Cypress Springs and Monticello Reservoir, 327 ft³/s (9.261 m³/s), 12.13 in/yr (308 mm/yr), 236,900 acre-ft/yr (292 hm³/yr); 6 years (water years 1973-78) regulated, 306 ft³/s (8.666 m³/s) 221,700 acre-ft/yr (273 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,500 ft³/s (1,660 m³/s) Mar. 30, 1945, gage height, 28.3 ft (8.63 m), from floodmark and adjusted to present site on basis of record for flood of Apr. 27, 1958, from rating curve extended above 20,000 ft³/s (566 m³/s); no flow Aug. 20 to Oct. 3, 1954, July 19 to Nov. 4, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1895, that of Mar. 30, 1945; flood in January 1938 reached a stage of about 25 ft (7.6 m), present site, adjusted as explained above, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft³/s (31.7 m³/s) Mar. 9, gage height, 12.12 ft (3.694 m); minimum, 1.5 ft³/s (0.042 m³/s) Oct. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	87	134	10	30	35	24	8.3	6.7	14	5.0	5.4
2	3.0	236	162	8.9	45	33	22	7.8	82	6.9	3.6	4.8
3	2.7	264	37	8.3	45	30	21	29	112	6.0	3.4	4.7
4	2.4	37	17	7.5	34	29	18	122	34	5.9	3.8	4.7
5	2.1	12	12	7.3	25	23	17	77	15	5.3	4.6	4.6
6	1.9	9.7	9.9	7.9	21	20	17	97	12	4.5	5.5	3.9
7	2.3	7.8	8.5	8.0	18	408	16	66	11	6.0	6.0	2.9
8	2.4	7.1	8.3	8.3	17	951	15	25	17	13	4.8	3.4
9	2.3	19	7.9	8.2	17	1010	14	20	12	19	3.5	4.1
10	2.1	40	7.7	7.4	18	544	15	16	9.3	18	4.1	4.3
11	2.3	16	7.4	7.1	27	219	20	13	7.4	16	4.4	4.1
12	2.1	9.8	7.3	9.3	38	117	20	514	6.5	11	4.4	4.2
13	1.7	8.0	7.6	12	189	71	15	753	5.6	5.8	4.6	4.9
14	1.9	7.7	8.1	15	433	113	13	260	5.2	5.1	5.0	5.5
15	2.2	6.7	9.4	18	261	99	13	36	5.5	4.9	4.8	6.1
16	2.3	7.2	8.7	57	61	57	12	19	5.1	5.3	4.7	5.6
17	2.3	6.8	8.5	312	40	37	11	16	5.1	5.1	4.1	4.9
18	2.2	6.3	9.6	425	83	29	12	14	5.5	4.2	5.6	4.9
19	2.0	6.0	10	146	128	26	11	13	4.7	7.2	5.0	4.9
20	1.9	6.1	8.5	63	89	22	10	12	4.3	14	4.5	4.6
21	2.1	14	7.4	49	53	93	9.9	11	4.2	15	3.8	4.6
22	2.5	14	6.7	48	34	304	9.7	21	4.6	9.8	4.5	6.9
23	2.5	13	6.6	39	26	196	10	36	6.1	6.7	4.6	5.1
24	2.4	9.4	6.8	52	24	236	18	17	6.6	16	4.1	5.0
25	2.1	8.0	7.4	177	22	452	15	15	6.9	15	3.7	4.5
26	2.4	7.3	7.4	273	20	291	11	13	7.0	7.3	4.1	4.9
27	3.3	6.7	6.9	198	18	81	9.7	8.8	6.8	6.6	4.4	4.1
28	3.2	6.1	6.2	61	24	45	8.9	7.4	11	5.5	3.9	4.0
29	3.0	7.5	6.5	33	---	35	8.7	6.9	22	5.2	4.6	4.6
30	2.4	29	8.6	26	---	30	8.3	6.5	23	6.0	4.6	5.1
31	2.8	---	12	23	---	27	---	6.5	---	5.7	4.9	---
TOTAL	73.8	915.2	571.9	2125.2	1840	5663	425.2	2267.2	464.1	276.0	138.6	141.3
MEAN	2.38	30.5	18.4	68.6	65.7	183	14.2	73.1	15.5	8.90	4.47	4.71
MAX	3.3	264	162	425	433	1010	24	753	112	19	6.0	6.9
MIN	1.7	6.0	6.2	7.1	17	20	8.3	6.5	4.2	4.2	3.4	2.9
AC-FT	146	1820	1130	4220	3650	11230	843	4500	921	547	275	280
CAL YR 1977	TOTAL	73072.8	MEAN	200	MAX	4770	MIN	1.7	AC-FT	144900		
WTR YR 1978	TOTAL	14901.5	MEAN	40.8	MAX	1010	MIN	1.7	AC-FT	29560		

RED RIVER BASIN

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to current year.

WATER TEMPERATURES: October 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1968-69, 1971-78): Maximum daily, 941 micromhos Sept. 1, 1971; minimum daily, 69 micromhos July 30, 1969.

WATER TEMPERATURES: Maximum daily, 32.0°C Aug. 20, 1969; minimum daily, 0.5°C Jan. 21, 22, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 863 micromhos Aug. 24; minimum daily, 140 micromhos May 13.

WATER TEMPERATURES: Maximum daily, 28.0°C on several days during June and July; minimum daily, 0.5°C Jan. 21, 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT										
31...	0710	2.0	637	7.1	28.0	75	49	20	6.2	84
NOV										
15...	1525	6.6	330	7.6	13.0	77	44	20	6.6	31
JAN										
31...	1600	23	386	7.2	2.0	90	71	21	9.1	34
APR										
30...	1215	8.4	480	--	19.0	99	56	24	9.4	50
MAY										
31...	0630	6.3	389	--	23.0	83	36	20	8.0	36
JUN										
30...	0630	23	762	--	27.0	74	59	16	8.3	94
JUL										
18...	1500	4.2	452	--	30.5	84	38	21	7.6	49
SEP										
30...	1130	5.1	725	--	22.0	84	60	22	7.1	91
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT										
31...		4.2	15	32	0	92	94	1.0	12	340
NOV										
15...		1.5	6.6	40	0	50	40	.4	11	185
JAN										
31...		1.6	4.7	23	0	75	50	.3	.3	206
APR										
30...		2.2	7.9	52	0	62	61	.5	15	255
MAY										
31...		1.7	6.3	57	0	45	51	.4	14	209
JUN										
30...		4.8	14	19	0	71	130	.9	13	357
JUL										
18...		2.3	8.7	56	0	46	62	.4	6.8	229
SEP										
30...		4.3	16	30	0	64	130	.5	13	358

RED RIVER BASIN

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07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	73.8	605	330	65	94	18	74	15	93
NOV. 1977.....	915.2	303	160	404	37	92	43	106	77
DEC. 1977.....	571.9	361	190	301	46	71	50	78	80
JAN. 1978.....	2125.2	295	160	922	35	201	42	242	77
FEB. 1978.....	1840	358	190	961	45	226	50	247	80
MAR. 1978.....	5663	255	140	2110	28	430	38	579	66
APR. 1978.....	425.2	491	270	306	72	82	63	72	87
MAY 1978.....	2267.2	221	120	737	25	151	32	198	58
JUNE 1978.....	464.1	424	230	287	59	73	56	71	84
JULY 1978.....	275	483	260	195	70	52	62	46	87
AUG. 1978.....	138.6	679	370	138	110	41	81	30	97
SEPT 1978.....	141.3	692	380	143	110	43	82	31	98
TOTAL	14901.48	**	**	6570	**	1480	**	1710	**
WTD.AVG.	40.83	301	160	**	37	**	43	**	77

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	408	562	370	512	402	437	419	465	406	496	512	704
2	407	240	266	523	433	502	435	470	385	476	511	672
3	444	192	286	520	458	500	400	450	320	472	540	679
4	501	245	305	517	468	518	423	300	302	465	564	692
5	538	291	325	561	464	521	454	320	308	459	571	701
6	562	316	348	550	460	507	448	310	310	465	597	700
7	580	342	362	530	462	262	479	334	326	468	613	701
8	586	372	372	537	465	200	511	352	362	465	623	707
9	574	361	376	520	470	186	518	363	453	465	620	701
10	586	300	399	525	471	248	509	388	500	500	605	687
11	601	408	409	528	475	270	487	390	505	507	606	688
12	617	369	416	532	450	297	533	170	440	474	608	688
13	625	352	427	510	407	323	484	140	407	450	622	675
14	622	336	443	507	261	300	482	215	420	442	640	667
15	632	328	448	489	299	363	507	265	437	431	656	663
16	634	344	466	368	335	391	531	292	440	429	680	673
17	656	380	469	216	362	386	525	309	444	431	702	677
18	654	419	473	199	352	384	545	318	465	448	707	675
19	676	456	500	224	394	404	543	345	493	463	803	671
20	686	477	509	290	370	419	531	369	532	471	811	675
21	685	446	505	345	378	408	543	401	561	676	780	687
22	686	429	487	373	385	300	536	444	580	544	762	697
23	674	409	486	392	394	321	531	350	594	463	853	690
24	643	456	477	380	419	237	543	330	555	446	863	681
25	648	487	462	371	438	200	553	342	597	458	857	715
26	654	454	457	308	451	258	498	507	608	465	730	722
27	674	429	480	302	466	294	497	441	612	452	723	724
28	678	456	493	320	448	340	495	417	603	431	721	722
29	647	464	491	343	---	370	503	409	634	439	723	725
30	635	425	466	371	---	379	480	405	766	505	723	730
31	624	---	477	383	---	395	---	394	---	531	730	---
MEAN	608	385	427	421	416	352	498	355	479	474	679	693

RED RIVER BASIN

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	20.0	8.0	7.0	6.0	10.0	17.0	19.0	24.0	27.0	27.0	25.0
2	26.0	18.0	7.0	5.0	5.0	10.0	19.0	18.0	23.0	27.0	25.0	26.0
3	23.0	15.0	10.0	4.0	4.0	8.0	18.0	15.0	23.0	27.0	26.0	23.0
4	19.0	15.0	12.0	5.0	5.0	6.0	23.0	14.0	23.0	26.0	25.0	25.0
5	19.0	16.0	12.0	9.0	5.0	6.0	20.0	14.0	23.0	27.0	26.0	25.0
6	19.0	17.0	9.0	---	6.5	9.0	19.0	15.0	24.0	27.0	24.0	25.0
7	20.0	17.0	6.0	11.0	4.0	10.0	21.0	18.0	24.0	27.0	24.0	25.0
8	22.0	18.0	8.0	10.0	---	9.0	21.0	19.0	23.0	27.0	24.0	24.0
9	21.0	15.0	8.0	5.0	3.0	7.0	21.0	19.0	23.0	27.0	24.0	27.0
10	20.0	12.0	6.0	---	3.0	10.0	19.0	19.0	22.0	27.0	24.0	25.0
11	18.0	12.0	6.0	2.0	6.0	10.0	17.0	20.0	24.0	28.0	24.0	25.0
12	15.0	13.0	7.0	2.0	7.0	11.0	15.0	20.0	24.0	28.0	25.0	25.0
13	16.0	11.0	10.0	1.0	7.0	11.0	15.0	20.0	25.0	28.0	27.0	25.0
14	17.0	11.0	9.0	2.0	6.0	10.0	16.0	19.0	24.0	28.0	27.0	25.0
15	14.0	12.0	9.0	2.0	6.0	12.0	17.0	19.0	24.0	28.0	27.0	26.0
16	15.0	15.0	10.0	5.0	7.0	12.0	19.0	20.0	24.0	28.0	27.0	26.0
17	16.0	14.0	10.0	2.0	5.0	11.0	19.0	20.0	25.0	27.0	27.0	26.0
18	17.0	13.0	10.0	2.0	5.0	10.0	18.0	21.0	25.0	27.0	27.0	26.0
19	19.0	15.0	12.0	1.0	5.0	13.0	17.0	22.0	25.0	27.0	27.0	26.0
20	19.0	22.0	10.0	1.0	6.0	15.0	15.0	23.0	26.0	26.0	27.0	26.0
21	19.0	17.0	10.0	.5	4.0	16.0	14.0	23.0	26.0	27.0	27.0	26.0
22	17.0	14.0	9.0	.5	4.0	16.0	15.0	23.0	26.0	27.0	26.0	24.0
23	17.0	14.0	7.5	3.0	7.0	17.0	17.0	23.0	26.0	26.0	27.0	23.0
24	20.0	15.0	8.0	4.0	10.0	14.0	15.0	23.0	28.0	25.0	27.0	23.0
25	19.0	16.0	8.0	6.0	9.0	12.0	18.0	23.0	27.0	28.0	27.0	23.0
26	20.0	14.0	4.0	4.0	10.0	12.0	16.0	23.0	27.0	27.0	27.0	22.0
27	19.0	14.0	5.0	3.0	9.0	11.0	15.0	25.0	27.0	27.0	27.0	22.0
28	19.0	12.0	5.0	4.0	10.0	15.0	16.0	24.0	27.0	27.0	26.0	22.0
29	18.0	10.0	5.0	3.0	---	15.0	18.0	24.0	27.0	27.0	26.0	21.0
30	19.0	9.0	6.0	3.0	---	15.0	19.0	23.0	27.0	27.0	26.0	22.0
31	28.0	---	11.0	3.0	---	15.0	---	23.0	---	27.0	26.0	---
MEAN	19.0	14.5	8.5	4.0	6.0	11.5	17.5	20.5	25.0	27.0	26.0	24.5

07345500 ELLISON CREEK RESERVOIR NEAR LONE STAR, TX

LOCATION.--Lat 32°55'16", long 94°43'17", Morris County, Hydrologic Unit 11140305, at pumphouse of Lone Star Steel Co., on left bank 1,700 ft (513 m) upstream from Ellison Creek Dam on Ellison Creek, 0.6 mi (1.0 km) upstream from Big Cypress Creek, and 1.4 mi (2.3 km) southwest of Lone Star.

DRAINAGE AREA.--37.0 mi² (95.8 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1943 to September 1962 (published as "near Daingerfield"), January 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1943, staff gage at site just upstream from dam at datum 200 ft (61.0 m) lower.

REMARKS.--The reservoir is formed by a rolled earthfill dam 4,000 ft (1,200 m) long, with an uncontrolled concrete spillway 300 ft (91 m) long at the left end of dam. Deliberate impoundment began Jan. 14, 1943, and the dam was completed in April 1943. Another spillway is cut through natural ground near the right end of dam. In addition, there is a relief dam, approximately 125 ft (38 m) long, located near the reservoir pumphouse that can be breached if the other spillways are unable to release sufficient floodwater. There is a 36-inch-diameter (914 mm) conduit through the dam that is used for pumping water from Big Cypress Creek into the reservoir and can also be used to discharge water from the reservoir into Big Cypress Creek. The dam is owned by Lone Star Steel Co. Area capacity curves are based on a survey made in 1942. Records furnished by the company show that during the current year, the city of Lone Star diverted 211 acre-ft (0.260 hm³) from the 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.....	280.1	-
Design flood.....	275.1	36,600
Crest of spillway.....	273.1	33,000
Crest of concrete spillway.....	268.1	24,700
Lowest gated outlet (invert).....	235.1	196

COOPERATION.--Capacity table, area-capacity curves, and records of diversions were furnished by Lone Star Steel Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,240 acre-ft (38.5 hm³) Apr. 26, 1958, elevation, 272.11 ft (82.939 m); minimum since lake first filled in May 1944, 15,760 acre-ft (19.4 hm³) Dec. 24, 1975, elevation, 261.28 ft (79.638 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 25,110 acre-ft (31.0 hm³) Dec. 1, elevation, 268.41 ft (81.811 m); minimum, 20,720 acre-ft (25.5 hm³) Oct. 31, elevation, 265.38 ft (80.888 m).

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

265.0	20,230	268.0	24,470
266.0	21,540	269.0	26,020
267.0	22,970		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21930	21900	25040	22810	22780	22640	22970	21780	23740	24070	23500	22230
2	21900	22540	24860	22880	22670	22840	23120	21710	23920	24040	23450	22180
3	21830	22750	24690	22970	22510	22910	23150	21760	23980	24170	23390	22170
4	21810	22900	24520	23050	22370	23090	22970	21710	24040	24190	23320	22160
5	21810	23090	24280	23140	22240	23230	22790	21820	24020	24220	23390	22130
6	21790	23200	24100	23210	22110	23570	22600	21760	24110	24220	23330	22090
7	21780	23290	23870	23330	21960	24170	22320	21810	24160	24230	23320	22000
8	21780	23480	23720	23440	21750	24110	22170	21900	24140	24230	23290	22020
9	21740	23560	23510	23500	21600	24040	21960	22020	24110	24220	23240	21960
10	21640	23620	23300	23540	21550	23870	22030	22130	24140	24170	23200	21930
11	21640	23480	23080	23780	21690	23740	22130	22580	24170	24170	23140	21890
12	21600	23270	22880	23860	22030	23510	22170	23710	24140	24130	23090	21890
13	21480	23030	22760	23870	22320	23620	22280	24100	24200	24130	23050	21880
14	21390	22940	22550	23720	22490	23590	22310	24320	24200	24100	22990	21860
15	21210	22990	22350	23560	22670	23450	22440	24310	24190	24170	22900	21820
16	21130	22970	22230	23890	22820	23270	22520	24070	24230	24160	22880	21810
17	21050	22940	22070	23930	23080	23080	22760	23870	24230	24140	22810	21780
18	21050	22930	21880	23950	23260	22870	22940	23590	24250	24100	22750	21750
19	21020	22900	21690	23920	23390	22600	23020	23470	24200	24050	22700	21690
20	20980	22940	21570	23830	23560	22510	23030	23560	24260	23990	22670	21690
21	21000	23200	21640	23690	23510	22690	22970	23600	24230	23920	22660	21680
22	20980	23200	21690	23570	23320	22600	22970	23650	24280	23860	22630	21640
23	20890	23170	21820	23480	23120	22540	23090	23680	24230	23950	22580	21600
24	20970	23120	21990	23420	22910	22600	23090	23720	24170	23890	22510	21570
25	20980	23120	22090	23600	22720	22490	22840	23690	24040	23860	22460	21510
26	20980	23060	22180	23560	22510	22320	22600	24250	24050	23750	22390	21470
27	20930	23020	22280	23440	22420	22340	22300	24070	24010	23770	22340	21430
28	20950	23080	22370	23320	22450	22490	22090	23870	24040	23710	22310	21400
29	20930	24380	22480	23180	---	22630	21860	23740	24040	23680	22340	21370
30	20720	25060	22600	23030	---	22750	21760	23480	24050	23620	22300	21340
31	20720	---	22730	22910	---	22850	---	23410	---	23540	22250	---
MAX	21930	25060	25040	23950	23560	24170	23150	24320	24280	24230	23500	22230
MIN	20720	21900	21570	22810	21550	22320	21760	21710	23740	23540	22250	21340
(†)	265.38	268.38	266.84	266.96	266.65	266.92	266.16	267.29	267.72	267.38	266.51	265.85
(+)	-1170	+4340	-2330	+180	-460	+400	-1090	+1650	+640	-510	-1290	-910
(††)	9040	9490	10090	9160	9030	9240	9870	10210	10120	9560	9160	8740

CAL YR 1977 MAX 25570 MIN 19970 + -450 †† 121800
WTR YR 1978 MAX 25060 MIN 20720 + -550 †† 113700

† Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for industrial use by Lone Star Steel.

RED RIVER BASIN

07345500 ELLISON CREEK RESERVOIR NEAR LONE STAR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 16...	1130	471	7.5	17.5	130	91	40	6.7	32

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 16...	1.2	12	44	0	92	61	1.7	.2	267

07345900 LAKE O' THE PINES NEAR JEFFERSON, TX

LOCATION.--Lat 32°45'04", long 94°29'59", Marion County, Hydrologic Unit 11140305, in intake structure of Ferrell's Bridge Dam on Big Cypress Creek, on Farm Road 726, 9.0 mi (14.5 km) west of Jefferson, and 80.1 mi (128.9 km) upstream from mouth.

DRAINAGE AREA.--850 mi² (2,202 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Nov. 12, 1957, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 10,600 ft (3,230 m) long, including a 200 ft (61 m) concrete spillway. Impoundment of water began Aug. 21, 1957, and the dam was completed June 25, 1958. Official operation began Dec. 11, 1959. The flood-control outlet works consist of two 10.0-foot-diameter (3.0 m) conduits that are controlled by two 8.0 by 12.5 ft (2.4 by 3.8 m) electrically driven broome-type gates. The low-flow outlet works consist of one controlled 14 in (356 mm) pipe. Flow over the spillway is discharged into a 2,000 ft (610 m) channel and then into Cypress Creek. The capacity table is based on a survey made in 1950. The lake was built for flood control, conservation, and water supply. During the current year, 980 acre-ft (1.21 hm³) was diverted from lake for municipal use and 6,500 acre-ft (8.01 hm³) was diverted by Southwestern Electric Power Co. 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.....	277.0	-
Crest of spillway.....	249.5	842,100
Top of conservation pool.....	228.5	254,900
Crest of intake to wet well (14 in).....	202.5	5,760
Lowest gated outlet (invert).....	200.0	2,860

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 694,360 acre-ft (856 hm³) May 5, 1966, elevation, 245.41 ft (74.801 m); minimum since December 1959, 219,700 acre-ft (271 hm³) Nov. 16, 1963, elevation, 226.54 ft (69.049 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 275,200 acre-ft (339 hm³) June 6, elevation, 229.57 ft (69.973 m); minimum, 222,200 acre-ft (274 hm³) Nov. 14, elevation, 226.69 ft (69.095 m).

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

226.0	210,400	228.0	245,600
227.0	227,600	230.0	283,700

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 0700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	246200	241200	254500	255400	256900	257500	256400	255400	269600	261000	249300	238000
2	246200	242000	255600	254500	257300	256500	254300	255000	271200	260900	249300	238000
3	245800	242300	256800	253700	257100	257700	255400	256900	271000	260500	248900	238000
4	245000	243200	257800	253500	256900	256400	256200	257300	271000	260500	248200	237600
5	244900	244000	258600	253500	257100	254500	256500	257300	271000	260100	249300	237400
6	244900	244100	258800	253900	256400	254800	256900	256400	270400	259500	248900	237100
7	244100	244000	256200	253700	255200	258000	256500	257100	271200	259200	248200	236700
8	244700	243400	255300	258000	256200	261200	258200	258400	271200	258800	247400	236500
9	244300	246500	256400	254500	256700	261000	255200	257800	270400	258000	247200	236400
10	243800	245400	255300	253700	256900	261400	255800	256700	269600	257500	247100	235800
11	244500	244700	254900	253200	256500	261400	257100	256200	269100	257100	247100	235500
12	243200	244600	254500	255800	255400	262400	256400	260100	269100	256400	246300	235500
13	242700	244500	254500	256200	258400	260700	256400	262400	268500	256000	246200	236700
14	242300	244500	258300	256500	258000	263900	255400	263100	268900	255600	245600	236000
15	242300	244000	258100	255600	257700	262000	255400	264500	268700	255200	263500	236400
16	242300	244000	257300	256700	257700	260300	255200	266000	268100	254800	245200	236200
17	241800	244900	258300	259700	256500	259400	255000	267900	267500	254300	262800	235800
18	241600	244000	257700	258200	259400	258000	257800	268300	267100	253400	243400	235300
19	241400	244000	257000	260100	258800	256900	259200	269100	267000	252800	242900	235300
20	241100	244300	257000	259400	257500	256500	256500	269400	266400	252600	242500	236000
21	241200	245200	257700	258400	258400	258200	255800	269600	266200	252000	242000	236000
22	241100	244500	254000	257500	256700	259400	254500	269200	265800	250900	241800	235300
23	241100	245000	254000	256700	256900	258600	255400	269400	265000	251500	241200	235100
24	240500	245200	253400	257100	256200	262200	255400	269200	264500	251900	240900	234600
25	241100	246200	254200	258800	256400	259400	256000	269200	264100	251700	240700	234200
26	241100	245600	253400	259200	256500	261400	256000	268900	263300	251300	240000	233700
27	240900	245600	253600	259000	256500	260900	255600	269100	262800	251100	239400	233500
28	241100	245000	252700	259500	257700	260500	255200	270200	262400	250600	238700	233300
29	240500	248200	253400	259200	---	259200	255200	269600	261800	250400	241000	233000
30	241100	251200	254000	258000	---	257800	255800	269400	261400	250000	239200	232800
31	239800	---	253400	257700	---	257500	---	269200	---	250200	238500	---
MAX	246200	251200	258800	260100	259400	263900	259200	270200	271200	261000	263500	238000
MIN	239800	241200	252700	253200	255200	254500	254300	255000	261400	250000	238500	232800
(†)	227.68	228.30	228.42	228.65	228.65	228.64	228.55	229.26	228.85	228.25	227.61	227.29
(‡)	-6400	+11400	+2200	+4300	0	-200	-1700	+13400	-7800	-11200	-11700	-5700
(††)	769	748	199	82	70	82	621	526	591	778	1930	1080
CAL YR 1977	MAX	291100	MIN	239800	†	-2400	††	9850				
WTR YR 1978	MAX	271200	MIN	232800	†	-13400	††	7480				

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses.

RED RIVER BASIN

LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

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

324509094303901 - LAKE O THE PINES AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
14...	1335	1.0	165	7.2	5.0	12.8	103
14...	1340	10	165	7.2	5.0	12.8	103
14...	1344	20	165	7.2	5.0	12.7	102
14...	1347	28	165	7.2	5.0	12.7	102

324518094300801 - LAKE O THE PINES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA+MG) (MG/L)
FEB									
14...	1302	1.0	165	7.2	5.0	1.50	12.7	102	39
14...	1319	10	165	7.2	5.0	--	12.7	102	--
14...	1321	20	165	7.2	5.0	--	12.8	103	--
14...	1327	34	165	7.2	5.0	--	12.6	102	38

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
FEB									
14...	17	9.5	3.6	13	.9	3.7	26	0	22
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	16	9.1	3.6	13	.9	3.6	26	0	23

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB									
14...	17	.2	10	92	.04	.01	.02	90	40
14...	--	--	--	--	.10	.04	.04	100	50
14...	--	--	--	--	--	--	--	--	--
14...	17	.2	10	93	.11	.04	.04	110	60

324613094323001 - LAKE O THE PINES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
FEB							
14...	1400	1.0	165	7.2	4.5	1.50	12.8
14...	1403	10	165	7.2	4.5	--	12.8
14...	1405	20	165	7.2	4.5	--	12.8
14...	1410	34	165	7.2	4.5	--	12.8

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB						
14...	102	.09	.03	.01	20	20
14...	102	.04	.01	.03	20	30
14...	102	--	--	--	--	--
14...	102	.06	.02	.02	80	70

RED RIVER BASIN

LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324738094325101 - LAKE O THE PINES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
14...	1420	1.0	165	7.2	5.5	12.8	105
14...	1423	10	165	7.2	5.5	12.8	105
14...	1428	23	165	7.2	5.5	12.7	104

324806094350001 - LAKE O THE PINES DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
14...	1225	1.0	126	6.7	5.0	13.1	106
14...	1228	10	155	7.0	4.5	13.1	105
14...	1230	17	161	7.0	4.5	13.1	105

324726094363801 - LAKE O THE PINES EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA+MG) (MG/L)
FEB								
14...	1450	1.0	176	7.3	4.5	12.8	102	40
14...	1456	10	176	7.3	4.5	12.7	102	--
14...	1459	20	176	7.3	4.5	12.7	102	--
14...	1502	36	176	7.3	4.5	12.6	101	44

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
FEB									
14...	19	10	3.7	14	1.0	3.9	26	0	25
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	22	11	3.9	14	.9	4.0	26	0	26

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB								
14...	18	9.4	97	.08	.02	.03	20	10
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	18	9.4	99	.10	.02	.04	80	10

RED RIVER BASIN

LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324518094300801 - LAKE O THE PINES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)
FEB							
14...	1302	1.0	1	0	0	0	5
14...	1319	10	--	--	--	--	--
14...	1327	34	1	100	0	10	22

DATE	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
FEB							
14...	90	0	40	.0	0	0	10
14...	100	--	50	--	--	--	--
14...	110	0	60	.0	0	0	30

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO FEBRUARY 1978

DATE	FEB 14, 78
TIME	1303
TOTAL CELLS/ML	1100
DIVERSITY: DIVISION	1.5
..CLASS	1.5
..ORDER	1.7
...FAMILY	2.2
....GENUS	2.9

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....OOCYSTACEAE		
.....ANKISTRODESMUS	220#	20
.....KIRCHNERIELLA	260#	23
.....OOCYSTIS	23	2
....SCENEDESMACEAE		
.....SCENEDESMUS	46	4
....TETRASTRUM	31	3
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
....COSCINODISCEAE		
.....CYCLOTELLA	180#	16
...PENNALES		
....ACHNANTHACEAE		
.....ACHNANTHES	39	4
....COCCONEIS	23	2
....CYMBELLACEAE		
.....CYMBELLA	8	1
....FRAGILARIACEAE		
.....SYNEDRA	31	3
....NAVICULACEAE		
.....NAVICULA	15	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
....CHROCOCCACEAE		
.....ANACYSTIS	220#	21

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

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LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

325100094420301 LAKE O THE PINES FC
 PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO FEBRUARY 1978

DATE	FEB 14, 78
TIME	1651
TOTAL CELLS/ML	13000
DIVERSITY: DIVISION	1.2
..CLASS	1.2
..ORDER	1.4
...FAMILY	1.6
...GENUS	1.7

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....OOCYSTACEAE		
.....ANKISTRODESMUS	130	1
.....CHODATELLA	*	0
...SCENEDESMACEAE		
....SCENEDESMUS	270	2
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	89	1
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....MELOSIRA	400	3
..PENNALES		
...FRAGILARIACEAE		
....SYNEDRA	3100#	24
...GOMPHONEMATACEAE		
....GOMPHONEMA	*	0
...NAVICULACEAE		
....NAVICULA	270	2
...NITZSCHIACEAE		
....NITZSCHIA	270	2
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	8200#	63
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELONAS	130	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324509094303901 - LAKE O THE PINES AP

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
21...	1033	1.0	186	7.3	30.0	7.4	99
21...	1037	10	186	7.3	29.0	7.4	97
21...	1040	15	186	6.6	28.0	5.8	74
21...	1043	20	186	6.1	26.0	1.2	15
21...	1047	30	205	6.5	23.0	.3	4

324518094300801 - LAKE O THE PINES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED AS CACO3)
JUN									
21...	0940	1.0	186	7.2	30.0	2.70	7.3	97	47
21...	0950	10	186	7.2	29.0	--	7.5	99	--
21...	0955	15	186	6.6	28.0	--	5.8	74	--
21...	1000	20	186	6.1	26.5	--	2.0	25	--
21...	1005	25	190	6.2	23.5	--	.2	2	--
21...	1010	30	205	6.4	22.5	--	.2	2	--
21...	1016	32	205	6.4	22.0	--	.2	2	45

DATE	HARD- NESS, NONCAP- BONATE, DIS- (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
21...	27	12	4.0	15	1.0	4.1	24	0	31
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	10	11	4.1	15	1.0	4.0	42	0	29

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FF)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JUN									
21...	21	.1	8.5	108	.01	.01	.01	30	0
21...	--	--	--	--	.01	.00	.01	40	40
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	.05	.01	.01	60	640
21...	--	--	--	--	--	--	--	--	--
21...	15	.3	8.9	113	.00	.16	.01	160	4200

RED RIVER BASIN

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LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324613094323001 - LAKE O THE PINES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JUN							
21...	1100	1.0	186	7.0	30.5	2.60	7.2
21...	1105	10	186	7.1	29.0	--	7.3
21...	1107	15	186	6.6	28.5	--	6.0
21...	1110	20	186	6.5	25.5	--	.8
21...	1115	30	202	6.5	22.5	--	.5
21...	1118	35	210	6.6	21.5	--	.5
21...	1120	40	213	6.8	21.0	--	.5
21...	1125	45	216	6.8	21.0	--	.3

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN						
21...	96	.01	.00	.00	50	10
21...	96	.01	.00	.00	60	100
21...	78	--	--	--	--	--
21...	10	.06	.01	.01	90	580
21...	6	--	--	--	--	--
21...	6	--	--	--	--	--
21...	6	--	--	--	--	--
21...	3	.00	.65	.09	4600	570

324738094325101 - LAKE O THE PINES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
21...	1150	1.0	186	7.2	31.5	7.4	100
21...	1152	10	186	6.9	30.0	6.7	89
21...	1155	15	186	6.4	28.5	4.8	62
21...	1158	20	186	6.2	26.0	.2	2

324806094350001 - LAKE O THE PINES DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
21...	1223	1.0	186	7.0	32.0	7.2	99
21...	1226	10	175	7.6	30.5	7.6	101
21...	1229	12	175	7.4	30.5	7.4	99
21...	1232	15	170	6.1	28.5	1.4	18
21...	1235	20	170	6.2	27.5	.2	3
21...	1238	25	170	6.3	27.5	.2	3

RED RIVER BASIN
LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324726094363801 - LAKE O THE PINES EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CAC03)
JUN									
21...	1315	1.0	192	7.2	32.0	2.20	7.4	101	44
21...	1320	10	192	6.6	29.5	--	5.8	76	--
21...	1322	15	192	6.4	29.0	--	4.6	61	--
21...	1325	20	192	6.2	27.5	--	1.0	13	--
21...	1330	30	217	6.8	22.5	--	.1	1	--
21...	1332	35	219	6.7	22.0	--	.1	1	--
21...	1335	40	224	6.8	21.5	--	.1	1	56

DATE	HARD- NESS, NONCAR- BONATE, DIS, (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
21...	25	11	4.1	15	1.0	4.1	24	0	31
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	9	15	4.6	15	.9	4.1	58	0	25

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN								
21...	24	11	112	.00	.01	.01	100	10
21...	--	--	--	.01	.00	.02	120	110
21...	--	--	--	--	--	--	--	--
21...	--	--	--	.01	.05	.02	270	960
21...	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
21...	25	14	141	.00	.70	.09	4800	5100

RED RIVER BASIN

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LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

325100094420301 - LAKE O THE PINES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
21...	1517	1.0	202	7.1	31.5	.50	7.5	103	50
21...	1519	5.0	202	6.9	30.5	--	6.6	89	--
21...	1521	10	215	6.3	29.5	--	1.4	19	--
21...	1525	15	228	6.3	29.0	--	.2	3	--
21...	1529	22	228	6.4	28.5	--	.2	3	59

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
21...	24	13	4.2	16	1.0	4.5	32	0	30	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	18	16	4.6	17	1.0	5.1	50	0	27	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
21...	26	11	121	.00	.00	.04	50	20	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	.01	.01	.05	70	210
21...	--	--	--	--	--	--	--	--	--
21...	26	12	134	.01	.01	.08	470	1600	--

324518094300801 - LAKE O THE PINES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
JUN							
21...	0940	1.0	0	200	0	0	2
21...	0945	4.4	--	--	--	--	--
21...	0950	10	--	--	--	--	--
21...	0955	15	--	--	--	--	--
21...	1000	20	--	--	--	--	--
21...	1005	25	--	--	--	--	--
21...	1010	30	--	--	--	--	--
21...	1016	32	0	300	0	0	2

DATE	TIME	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JUN								
21...	30	1	0	.0	0	0	0	0
21...	--	--	--	--	--	--	--	--
21...	40	--	40	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
21...	60	--	640	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
21...	160	1	4200	.1	0	0	70	--

RED RIVER BASIN

LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324518094300801 LAKE O THE PINES AC
PHYTOPLANKTON ANALYSES, APRIL 1978 TO JUNE 1978

DATE JUN 21, 78
TIME 0945

TOTAL CELLS/ML 2800

DIVERSITY: DIVISION 1.2
 ..CLASS 1.2
 ..ORDER 1.7
 ...FAMILY 2.1
 GENUS 2.2

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...COELASTRACEAE		
....COELASTRUM	160	6
...OOCYSTACEAE		
....ANKISTRODESMUS	140	5
....KIRCHNERIELLA	32	1
...SCENEDESMACEAE		
....CRUCIGENIA	260	9
....SCENEDESMUS	16	1
..TETRASPORALES		
...COCCOMYXACEAE		
....ELAKATOTHRIX	64	2
...PALMELLACEAE		
....SPHAEROCYSTIS	620*	23
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	96	3
..PENNALES		
...FRAGILARIACEAE		
....SYNEDRA	16	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCCOCCALES		
...CHROCCOCCAEAE		
....ANACYSTIS	1400*	49

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN

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LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

325100094420301 LAKE O THE PINES FC
 PHYTOPLANKTON ANALYSES, APRIL 1978 TO JUNE 1978

DATE JUN 21, 78
 TIME 1514

TOTAL CELLS/ML 41000

DIVERSITY: DIVISION 1.1
 .CLASS 1.1
 ..ORDER 1.9
 ...FAMILY 2.2
GENUS 2.8

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...OOCYSTACEAE		
....ANKISTRODESMUS	*	0
....DICTYOSPHAERIUM	480	1
....KIRCHNERIELLA	950	2
....OOCYSTIS	600	1
....TETRAEDRON	*	0
....TREUBARIA	*	0
...SCENEDESMACEAE		
....CRUCIGENIA	1700	4
....SCENEDESMUS	1300	3
....TETRASTRUM	240	1
..ULOTRICHALES		
...ULOTRICHACEAE		
....BINUCLEARIA	1400	4
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	420	1
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	*	0
...MELOSIRA	3300	8
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROCOCCALES		
...CHROCOCCACEAE		
....AGMENELLUM	5600	14
....ANACYSTIS	15000#	36
..HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	8700#	21
...OSCILLATORIACEAE		
....OSCILLATORIA	890	2
EUGLENOPHYTA (EUGLENOIDS)		
.CRYPTOPHYCEAE		
..CRYPTOMONIDALES		
...CRYPTOMONODACEAE		
....CRYPTOMONAS	*	0
..EUGLENOPHYCEAE		
...EUGLENALES		
....EUGLENACEAE		
....TRACHELOMONAS	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

RED RIVER BASIN
LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324509094303901 - LAKE O THE PINES AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
28...	0955	1.0	195	6.9	25.5	6.5	81
28...	1003	10	195	6.9	25.5	6.4	80
28...	1005	15	195	6.8	25.5	6.4	80
28...	1007	23	195	6.8	25.5	6.4	80

324518094300801 - LAKE O THE PINES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SFP									
28...	1010	1.0	195	6.9	25.5	1.80	6.4	80	44
28...	1012	10	195	6.9	25.5	--	6.2	78	--
28...	1014	20	195	6.9	25.5	--	6.1	76	--
28...	1016	25	195	6.9	25.5	--	5.9	74	--
28...	1018	30	195	6.9	25.5	--	4.6	58	--
28...	1020	38	257	7.2	23.5	--	.3	4	52

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SFP									
28...	21	11	4.1	16	1.0	4.2	28	0	27
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	0	14	4.2	15	.9	4.3	94	0	16

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SFP									
28...	21	.4	6.4	104	.05	.02	.01	20	30
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	.06	.02	.01	20	590
28...	--	--	--	--	.08	.07	.05	40	2000
28...	19	--	12	147	.00	1.4	.03	20	16000

RED RIVER BASIN

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LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324613094323001 - LAKE O THE PINES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
28...	1045	1.0	195	7.0	25.5	1.70	6.6
28...	1047	10	195	7.0	25.5	--	6.6
28...	1049	20	195	7.0	25.5	--	6.5
28...	1051	30	195	7.1	25.5	--	6.1
28...	1052	35	270	7.2	23.0	--	.3
28...	1055	42	300	7.4	22.5	--	.3

DATE	OXYGEN, DIS- SOLVED (PFR- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
28...	82	.03	.03	.01	50	470
28...	82	--	--	--	--	--
28...	81	--	--	--	--	--
28...	76	.04	.07	.02	80	3200
28...	4	.00	1.8	.07	390	18000
28...	4	.00	2.5	.09	1600	19000

324738094325101 - LAKE O THE PINES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
28...	1115	1.0	195	6.7	25.5	6.0	75
28...	1117	10	195	6.7	25.5	6.0	75
28...	1119	19	195	6.7	25.5	5.9	74

324806094350001 - LAKE O THE PINES DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
28...	1135	1.0	195	6.9	25.5	6.9	86
28...	1137	10	195	6.9	25.5	6.8	85
28...	1140	20	195	6.9	25.5	6.7	84

RED RIVER BASIN
LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324726094363801 - LAKE O THE PINES EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
SFP									
28...	1200	1.0	191	6.8	25.5	1.80	7.1	89	40
28...	1202	10	191	6.8	25.5	--	7.0	88	--
28...	1204	20	191	6.8	25.5	--	7.0	88	--
28...	1205	25	193	6.8	25.5	--	7.0	88	--
28...	1208	30	193	6.8	25.5	--	6.8	85	39

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SFP									
28...	20	9.1	4.1	17	1.2	4.6	24	0	27
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	19	9.0	4.0	18	1.3	4.6	24	0	26

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SFP								
28...	26	5.4	105	.00	.01	.02	<10	9
28...	--	--	--	--	--	--	--	--
28...	--	--	--	.00	.01	.02	20	20
28...	--	--	--	--	--	--	--	--
28...	25	4.6	103	.00	.02	.03	10	60

325100094420301 - LAKE O THE PINES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
SFP									
28...	1345	1.0	221	6.8	25.0	1.10	6.4	79	46
28...	1347	10	223	6.7	24.5	--	5.9	72	--
28...	1350	20	223	6.7	24.5	--	5.6	68	46

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SFP									
28...	18	11	4.4	20	1.3	5.2	34	0	26
28...	--	--	--	--	--	--	--	--	--
28...	18	11	4.4	20	1.3	5.2	34	0	26

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SFP								
28...	29	4.7	117	.01	.05	.04	80	20
28...	--	--	--	.01	.05	.04	20	10
28...	29	4.8	117	.01	.07	.05	50	40

RED RIVER BASIN

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LAKE O' THE PINES NEAR JEFFERSON, TX--Continued

324518094300801 - LAKE O THE PINES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
SEP							
28...	1010	1.0	1	0	1	0	4
28...	1016	25	--	--	--	--	--
28...	1018	30	--	--	--	--	--
28...	1020	38	3	0	0	0	3

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
SEP							
28...	20	0	30	.0	0	0	10
28...	20	--	590	--	--	--	--
28...	40	--	2000	--	--	--	--
28...	20	0	16000	.0	0	0	10

RED RIVER BASIN

07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX

LOCATION.--Lat 32°46'40", long 94°21'26", Marion County, Hydrologic Unit 11140306, near center of channel at downstream side of bridge on U.S. Highway 59, 1.1 mi (1.8 km) north of Jefferson, 2.0 mi (3.2 km) upstream from Texas and Pacific Railway Co. bridge, and 5.2 mi (8.4 km) upstream from mouth.

DRAINAGE AREA.--365 mi² (945 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1968 to current year. May 1938 to September 1955 (daily gage heights) and November 1956 to August 1968 (daily gage heights and discharge measurements) published by Corps of Engineers as "Black Cypress Creek at Jefferson". September 1964 to August 1968 operated as low-flow partial-record station only.

GAGE.--Water-stage recorder. Datum of gage is 171.47 ft (52.264 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Water-discharge records good. No known regulation or diversion in vicinity of gage.

AVERAGE DISCHARGE.--10 years (water years 1969-78), 339 ft³/s (9.600 m³/s), 12.61 in/yr (320 mm/yr), 245,600 acre-ft/yr (303 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,120 ft³/s (202 m³/s) Apr. 25, 1974, gage height, 17.69 ft (5.392 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1938, 22.42 ft (6.834 m) Apr. 29, 1958, from records of Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,330 ft³/s (37.7 m³/s) May 18, gage height, 13.08 ft (3.987 m), no peak above base of 4,000 ft³/s (113 m³/s); no flow Aug. 18-28, Sept. 5-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.2	282	102	746	310	475	119	59	2.4	.40	.02
2	2.5	4.5	301	103	733	295	428	102	67	1.9	.29	.02
3	1.7	27	342	109	695	293	375	107	69	1.7	.21	.01
4	1.4	41	435	114	633	306	330	135	67	1.7	.15	.01
5	1.2	83	546	118	566	321	295	140	83	1.5	.30	.00
6	1.2	132	642	118	511	336	267	180	123	1.4	.38	.00
7	1.1	156	711	115	471	484	243	235	167	1.4	.42	.00
8	.99	163	732	112	439	606	224	306	197	1.3	.32	.00
9	.83	183	685	111	412	586	211	378	196	1.2	.23	.00
10	.76	190	581	108	381	553	202	371	173	1.2	.19	.00
11	.75	177	444	106	349	572	202	363	137	1.0	.15	.00
12	.75	154	315	115	331	632	197	537	103	.95	.10	.24
13	.69	143	238	128	380	710	181	691	77	.88	.07	.80
14	.69	134	209	137	385	836	171	748	59	.69	.05	.79
15	.69	121	185	142	367	937	167	782	50	.57	.03	.45
16	.66	105	164	206	358	954	161	987	42	.38	.02	.28
17	.63	90	164	343	386	930	154	1260	35	.26	.01	.20
18	.63	74	172	408	452	913	206	1310	30	.14	.00	.17
19	.63	61	171	445	490	860	249	1160	26	.06	.00	.12
20	.63	52	167	499	503	776	249	964	23	.06	.00	.08
21	.63	47	162	590	497	700	249	772	19	.07	.00	.06
22	.63	45	152	678	483	632	256	587	16	.06	.00	.05
23	.63	44	140	736	461	564	242	407	14	.07	.00	.03
24	.65	45	131	813	434	528	208	259	11	.38	.00	.02
25	.84	61	123	837	406	510	171	174	8.4	.16	.00	.02
26	1.2	82	115	825	376	505	149	133	6.6	.16	.00	.02
27	1.5	101	107	778	344	502	147	111	5.4	2.6	.00	.02
28	1.6	113	101	729	326	521	150	94	4.4	3.0	.00	.02
29	1.7	140	100	709	---	539	145	81	3.7	1.4	.02	.02
30	1.8	227	105	720	---	535	134	72	2.9	.84	.07	.02
31	1.8	---	105	733	---	512	---	64	---	.56	.03	---
TOTAL	34.41	2997.7	8827	11787	12915	18258	6838	13629	1874.4	29.99	3.44	3.47
MEAN	1.11	99.9	285	380	461	589	228	440	62.5	.97	.11	.12
MAX	3.0	227	732	837	746	954	475	1310	197	3.0	.42	.80
MIN	.63	2.2	100	102	326	293	134	64	2.9	.06	.00	.00
CFSM	.003	.27	.78	1.04	1.26	1.61	.63	1.21	.17	.003	.000	.000
IN.	.00	.31	.90	1.20	1.32	1.86	.70	1.39	.19	.00	.00	.00
AC-FT	68	5950	17510	23380	25620	36210	13560	27030	3720	59	6.8	6.9
CAL YR 1977	TOTAL	106583.43	MEAN 292	MAX 2220	MIN .06	CFSM .80	IN 10.86	AC-FT 211400				
WTR YR 1978	TOTAL	77197.41	MEAN 211	MAX 1310	MIN .00	CFSM .58	IN 7.87	AC-FT 153100				

RED RIVER BASIN

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07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 16...	1550	104	78	5.9	14.0	18	13	4.1	1.9	4.2
DEC 20...	1540	167	65	6.1	7.0	15	8	3.2	1.7	4.0
FEB 02...	1015	740	65	6.4	3.0	15	7	3.8	1.3	4.0
MAR 21...	1245	694	78	--	17.0	15	7	3.6	1.4	4.1
MAY 02...	1655	100	70	--	18.5	19	4	4.3	2.0	4.8
JUN 06...	1138	123	88	--	26.0	20	5	4.6	2.0	4.5
AUG 31...	1000	.03	150	--	31.5	33	9	8.0	3.2	14

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
NOV 16...	.4	3.4	6	0	19	7.3	.1	17	60
DEC 20...	.5	2.3	8	0	12	6.9	.0	17	51
FEB 02...	.5	1.5	9	0	12	6.3	.0	14	47
MAR 21...	.5	1.6	10	0	9.3	5.9	.0	12	43
MAY 02...	.5	2.0	18	0	9.7	7.3	.1	12	51
JUN 06...	.4	2.0	18	0	7.9	6.4	.0	18	54
AUG 31...	1.1	2.7	30	0	7.2	25	.1	11	86

RED RIVER BASIN

07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX

LOCATION.--Lat 32°40'21", long 94°45'03", Upshur County, Hydrologic Unit 11140307, on right bank at downstream side of bridge on U.S. Highway 259, 4 mi (6 km) downstream from Clear Creek, 9 mi (14 km) south of Ore City, and 12 mi (19 km) north of Longview.

DRAINAGE AREA.--383 mi² (992 km²).

PERIOD OF RECORD.--December 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft (70.918 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No known diversion above station. During the water year, the city of Gilmer discharged 657 acre-ft (810,000 m³) of sewage effluent into a tributary above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1964-78), 274 ft³/s (7.760 m³/s), 9.72 in/yr (247 mm/yr), 198,500 acre-ft/yr (245 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft³/s (666 m³/s) Apr. 24, 1966, gage height, 20.20 ft (6.157 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in March 1945; maximum stage since 1945, that of Apr. 24, 1966. The flood in April 1958 reached a stage of 19.4 ft (5.91 m), or 1.3 ft (0.40 m) lower than the flood of March 1945 at a point 6 mi (10 km) upstream, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,100 ft³/s (31.2 m³/s), Mar. 14, gage height, 9.62 ft (2.932 m), no peak above base of 2,000 ft³/s (56.6 m³/s); no flow July 19-23, Sept. 9-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	45	360	86	356	210	324	48	44	2.9	.89	.27
2	12	70	394	86	338	205	271	47	97	2.5	.68	.20
3	11	81	375	84	314	220	219	68	66	2.4	.47	.14
4	7.7	80	352	82	303	225	180	124	82	4.5	.35	.10
5	7.1	75	317	80	298	218	160	155	86	4.9	.61	.06
6	7.5	66	235	79	275	205	147	209	71	2.8	.65	.04
7	8.5	60	148	80	238	412	136	240	57	2.0	.60	.02
8	9.1	62	122	80	205	655	127	269	45	1.5	5.0	.01
9	8.6	76	103	77	185	729	119	307	36	1.2	8.0	.00
10	9.4	84	92	74	180	741	118	294	31	.88	5.8	.00
11	11	88	84	73	185	905	135	212	28	.67	4.0	.00
12	14	88	79	88	203	1030	129	204	25	.44	2.7	.00
13	14	83	84	111	321	968	126	342	25	.28	1.8	.00
14	14	78	114	127	387	1060	120	371	20	.18	1.3	.00
15	14	76	121	138	392	951	108	432	19	.10	.97	.00
16	15	75	117	207	391	657	98	580	19	.07	.69	.00
17	16	74	116	380	406	459	96	655	16	.04	.49	.00
18	18	74	112	414	453	378	123	555	14	.02	.36	.00
19	19	71	105	430	448	322	146	394	13	.00	.23	1.9
20	19	71	97	453	415	257	137	222	12	.00	.16	6.2
21	19	71	91	462	389	292	122	124	11	.00	.11	1.3
22	18	74	86	460	371	416	99	97	8.9	.00	.13	.64
23	19	90	81	434	342	404	87	83	7.8	.00	.11	.41
24	20	117	76	411	298	512	83	72	7.3	.02	.07	.27
25	20	128	73	411	244	742	84	66	6.5	.77	.06	.19
26	25	129	70	425	202	735	84	63	5.6	24	.04	.14
27	29	113	68	417	179	674	73	56	5.0	15	.02	.11
28	30	95	66	409	193	689	63	48	4.6	7.5	.01	.08
29	31	112	69	414	---	616	55	42	3.9	4.1	.02	.07
30	32	246	80	410	---	455	51	39	3.4	2.4	.43	.05
31	37	---	85	381	---	376	---	36	---	1.5	.41	---
TOTAL	528.9	2652	4372	7863	8511	16718	3820	6454	870.0	82.67	37.16	12.20
MEAN	17.1	88.4	141	254	304	539	127	208	29.0	2.67	1.20	.41
MAX	37	246	394	462	453	1060	324	655	97	24	8.0	6.2
MIN	7.1	45	66	73	179	205	51	36	3.4	.00	.01	.00
CFSM	.05	.23	.37	.66	.79	1.41	.33	.54	.08	.007	.003	.001
IN.	.05	.26	.42	.76	.83	1.62	.37	.63	.08	.01	.00	.00
AC-FT	1050	5260	8670	15600	16880	33160	7580	12800	1730	164	74	24
CAL YR 1977	TOTAL	109353.20	MEAN 300	MAX 2980	MIN .10	CFSM .78	IN 10.62	AC-FT 216900				
WTR YR 1978	TOTAL	51920.93	MEAN 142	MAX 1060	MIN .00	CFSM .37	IN 5.04	AC-FT 103000				

RED RIVER BASIN

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07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°42'46", long 94°20'44", Harrison-Marion County line, Hydrologic Unit 11140307, near center of channel at downstream side of bridge on U.S. Highway 59, 0.3 mi (0.5 km) downstream from Texas and Pacific Railway Co. bridge, 3.3 mi (5.3 km) downstream from Grays Creek, 3.5 mi (5.6 km) south of Jefferson, and 6.8 mi (10.9 km) upstream from mouth.

DRAINAGE AREA.--675 mi² (1,748 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 174.60 ft (53.218 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1947, nonrecording gage at upstream side of bridge at same datum.

REMARKS.--Water-discharge records good. For record of sewage effluent discharges into tributaries above this station, see Little Cypress Creek near Ore City (station 07346050). No known diversion above station.

AVERAGE DISCHARGE.--32 years (water years 1947-78), 528 ft³/s (14.95 m³/s), 10.62 in/yr (270 mm/yr), 382,500 acre-ft/yr (472 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,500 ft³/s (1,010 m³/s) Apr. 26, 1966, gage height, 22.28 ft (6.791 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since May 1944, that of Apr. 26, 1966; flood in May 1944 reached a stage of 21.1 ft (6.43 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s (33.1 m³/s) Mar. 18, gage height, 10.10 ft (3.078 m); no flow Aug. 23-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	17	253	87	630	445	854	100	48	5.0	.14	.07
2	34	17	334	93	622	407	828	86	45	4.3	.62	.06
3	28	20	393	96	618	376	789	103	45	3.7	7.9	.05
4	25	29	438	96	613	359	750	144	78	3.7	8.4	.04
5	21	48	468	95	604	350	683	157	149	3.7	8.1	.04
6	17	73	487	94	581	345	601	179	129	3.3	7.6	.03
7	15	81	499	93	542	447	496	228	98	2.5	6.1	.03
8	14	81	504	93	496	554	399	312	99	2.2	4.3	.03
9	12	79	485	93	459	592	330	344	116	1.4	2.4	.02
10	11	81	433	96	430	632	287	357	91	.96	1.1	.02
11	12	91	324	98	403	689	271	376	60	.86	.50	.03
12	12	99	216	102	378	747	256	457	45	.74	.30	.07
13	13	103	170	107	403	791	247	526	37	.60	.20	.17
14	14	99	163	119	434	840	242	539	31	.47	.13	.08
15	14	97	178	139	468	873	231	510	27	.38	.08	.08
16	16	90	209	208	494	942	218	457	24	.34	.07	.07
17	16	78	210	339	526	1070	208	425	22	.27	.05	.05
18	15	67	192	405	569	1150	218	427	20	.22	.04	.06
19	16	61	175	469	591	1150	212	444	17	.16	.03	.05
20	16	54	163	515	604	1070	204	483	16	.11	.02	.05
21	16	49	148	559	610	952	205	533	15	.08	.02	.05
22	17	46	134	592	613	870	211	568	14	.08	.01	.05
23	17	46	119	602	609	808	208	564	13	.09	.00	.06
24	17	47	108	656	593	811	203	459	12	.16	.00	.07
25	18	47	98	706	567	850	180	266	11	.12	.00	.08
26	19	51	90	724	536	880	150	142	9.5	.08	.00	.07
27	19	82	85	723	505	890	133	103	8.7	2.5	.00	.06
28	19	118	80	713	481	883	125	85	7.9	1.8	.00	.05
29	18	148	79	695	---	880	118	72	6.5	.97	.78	.04
30	18	177	79	673	---	883	113	65	5.3	.46	.43	.05
31	17	---	82	646	---	873	---	55	---	.22	.09	---
TOTAL	559	2176	7396	10726	14979	23409	9970	9566	1299.9	41.47	49.41	1.68
MEAN	18.0	72.5	239	346	535	755	332	309	43.3	1.34	1.59	.056
MAX	43	177	504	724	630	1150	854	568	149	5.0	8.4	.17
MIN	11	17	79	87	378	345	113	55	5.3	.08	.00	.02
CFSM	.03	.11	.35	.51	.79	1.12	.49	.46	.06	.002	.002	.000
IN.	.03	.12	.41	.59	.83	1.29	.55	.53	.07	.00	.00	.00
AC-FT	1110	4320	14670	21280	29710	46430	19780	18970	2580	82	98	3.3
CAL YR 1977	TOTAL	189228.38	MEAN	518	MAX	4660	MIN	.34	CFSM	.77	IN	10.43
WTR YR 1978	TOTAL	80173.46	MEAN	220	MAX	1150	MIN	.00	CFSM	.33	IN	4.42
									AC-FT	375300	AC-FT	159000

07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,350 micromhos Nov. 9, 1969; minimum daily, 39 micromhos Apr. 20, 1973.

WATER TEMPERATURES: Maximum daily, 32.0°C on several days during summer months of 1977-78; minimum daily, 1.0°C Jan. 21-23, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 530 micromhos Dec. 28; minimum daily, 124 micromhos May 19.

WATER TEMPERATURES: Maximum daily, 32.0°C July 3, 4, Aug. 17, 20; minimum daily, 1.0°C Jan. 21-23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
NOV 07...	1700	81	314	7.0	17.0	60	7	7.4	79	.7	32	14
DEC 31...	1500	82	293	7.2	7.0	--	--	--	--	--	40	29
JAN 26...	1230	727	159	6.6	3.5	70	20	11.2	87	1.6	27	23
FEB 02...	1050	622	182	6.7	2.0	--	--	--	--	--	32	24
MAR 21...	1000	966	166	6.1	17.5	50	6	6.8	73	1.2	30	24
MAY 16...	1420	448	173	6.7	22.0	160	20	6.5	76	1.1	29	17
JUL 18...	1330	.22	240	6.5	28.0	55	7	2.7	35	2.2	40	0
SEP 21...	1000	.05	260	6.7	27.0	40	5	4.6	58	1.7	39	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)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
NOV 07...	7.6	3.2	45	3.5	4.5	22	0	14	72	.1	19
DEC 31...	10	3.6	35	2.4	4.2	13	0	25	64	.3	3.8
JAN 26...	6.2	2.7	16	1.4	3.3	5	0	24	27	.1	18
FEB 02...	7.5	3.2	18	1.4	2.9	10	0	31	26	.3	8.5
MAR 21...	7.1	3.0	17	1.3	3.2	8	0	26	27	.1	13
MAY 16...	6.9	2.9	19	1.5	3.6	15	0	20	29	.1	16
JUL 18...	9.6	3.9	29	2.0	4.3	49	0	9.0	44	.1	20
SEP 21...	9.0	3.9	33	2.3	3.9	60	0	12	42	.2	11

RED RIVER BASIN

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07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (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 07...	176	11	1	.03	.00	.03	.00	.50	.50	.06	6.7
DEC 31...	152	--	--	--	--	--	--	--	--	--	--
JAN 26...	100	23	7	.07	.01	.08	.02	.28	.30	.08	6.0
FEB 02...	102	--	--	--	--	--	--	--	--	--	--
MAR 21...	101	28	2	--	--	--	--	--	--	--	--
MAY 16...	105	25	9	.15	.01	.16	.03	.74	.77	.08	11
JUL 18...	147	19	9	.00	.00	.00	.01	.89	.90	.08	11
SEP 21...	146	9	5	.00	.01	.01	.04	.86	.90	.05	6.9

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 26...	1230	0	100	1	0	0	230
MAR 21...	1000	0	200	0	0	0	300
JUL 18...	1330	2	300	2	0	1	430
SEP 21...	1000	1	0	0	0	1	100

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 26...	0	160	.0	0	0	30
MAR 21...	1	90	.0	1	0	30
JUL 18...	2	2000	.0	0	0	10
SEP 21...	1	860	.0	0	0	0

DATE	TIME	PCB, TOTAL (UG/L)	PCB, IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	1230	.1	14	.00	.00	.0	.0	5	.00	4.4
JUL 18...	1330	.0	10	.00	.00	.0	.0	10	.00	.5

DATE	DDE, TOTAL (UG/L)	DDE, IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	.00	.0	.00	.0	.00	.00	.4	.00	.00	.0
JUL 18...	.00	1.1	.00	.0	.00	.00	.4	.00	.00	.0

RED RIVER BASIN

07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JAN 26...	.00	.00	.3	.00	.0	.00	.0	.00	.00
JUL 18...	.00	.00	.0	.00	.0	.00	.0	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 26...	.00	--	.00	0	0	.00	.00	.00	.00
JUL 18...	.00	.00	.00	0	0	.00	.00	.00	.00

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	559	191	110	173	34	52	18	27	29
NOV. 1977.....	2176	255	150	860	50	291	23	138	36
DEC. 1977.....	7396	198	120	2360	36	724	19	373	30
JAN. 1978.....	10726	190	110	3280	34	993	18	518	29
FEB. 1978.....	14979	202	120	4870	37	1500	19	765	31
MAR. 1978.....	23409	173	100	6630	30	1910	17	1040	28
APR. 1978.....	9970	220	130	3490	41	1110	21	552	32
MAY 1978.....	9566	163	100	2580	28	715	16	406	27
JUNE 1978.....	1299.9	221	130	449	42	146	21	73	32
JULY 1978.....	41.47	245	140	15	47	5.3	23	2.4	35
AUG. 1978.....	49.41	266	150	20	52	7	24	3.2	37
SEPT 1978.....	1.68	261	150	0.7	51	0.2	24	0.03	36
TOTAL	80173.31	**	**	24700	**	7450	**	3900	**
WTD.AVG.	219.65	191	110	**	34	**	18	**	29

RED RIVER BASIN

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07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151	204	168	166	179	227	165	266	232	248	242	249
2	160	205	145	259	182	228	172	261	229	247	241	254
3	164	204	164	246	183	233	176	255	225	249	248	257
4	172	208	207	267	200	247	187	244	219	245	254	261
5	182	216	200	255	224	235	200	222	232	247	262	265
6	185	275	172	239	247	244	220	229	240	248	273	267
7	190	292	169	257	249	210	230	178	264	249	278	268
8	196	329	164	281	233	196	241	170	245	250	283	263
9	198	474	167	314	225	179	243	165	212	251	288	264
10	197	317	178	325	218	169	247	162	176	253	292	265
11	198	261	192	308	220	172	242	159	161	252	293	266
12	202	200	200	294	218	164	238	157	171	251	295	264
13	204	185	208	287	210	158	234	147	188	250	297	256
14	204	214	218	225	200	150	260	150	196	251	299	257
15	203	216	216	212	194	147	282	157	204	249	300	258
16	205	454	205	207	183	157	265	180	212	251	299	260
17	203	339	197	216	182	154	246	146	218	250	298	261
18	202	248	225	168	181	162	235	131	226	240	294	262
19	203	211	251	171	177	165	229	124	228	254	297	261
20	200	204	220	178	178	167	232	127	230	248	299	262
21	201	205	211	182	179	170	255	133	231	249	299	260
22	200	204	224	171	187	181	336	137	234	248	296	262
23	199	197	222	175	194	185	275	149	238	246	---	263
24	201	208	226	171	195	190	230	173	237	245	---	264
25	199	215	220	158	201	180	225	194	240	242	---	264
26	197	228	224	163	205	167	239	203	241	235	---	265
27	201	235	258	170	215	158	247	214	243	227	---	266
28	203	243	530	185	225	157	267	219	245	221	---	266
29	205	266	380	196	---	152	280	225	246	234	268	267
30	207	193	319	192	---	150	289	226	250	237	252	266
31	206	---	293	185	---	154	---	230	---	241	240	---
MEAN	195	248	225	220	203	181	240	185	224	245	279	262

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	20.0	10.0	6.0	2.0	11.0	20.0	21.0	25.0	31.0	29.0	25.0
2	---	18.0	10.0	6.0	3.0	10.0	21.0	19.0	25.0	31.0	29.0	26.0
3	---	16.5	11.0	6.0	3.0	9.0	21.0	16.0	25.0	32.0	29.0	---
4	22.0	17.0	13.0	6.5	---	7.0	20.0	16.0	25.0	32.0	29.0	27.0
5	20.0	17.0	14.0	---	4.0	8.0	21.0	17.0	25.0	31.0	28.0	26.0
6	21.0	---	12.0	9.0	3.0	9.0	20.5	18.0	---	31.0	28.0	27.0
7	22.0	16.0	---	11.0	2.0	11.0	21.0	21.0	24.0	31.0	---	28.0
8	23.0	16.0	11.0	10.0	2.0	10.0	22.0	21.0	24.0	---	28.0	28.0
9	22.0	15.0	9.0	7.0	---	9.0	22.0	---	25.0	31.0	28.0	28.0
10	19.0	14.0	8.0	5.0	4.0	9.0	22.0	---	25.0	31.0	27.0	---
11	19.0	12.0	7.0	---	5.0	11.0	---	22.0	26.0	31.0	27.0	27.0
12	18.0	---	8.0	---	6.0	12.0	18.0	23.0	26.0	30.0	28.0	25.0
13	17.0	10.5	9.0	---	6.0	---	16.0	22.0	27.0	31.0	28.0	26.0
14	18.0	12.0	9.0	---	---	13.0	---	21.0	---	31.0	28.0	26.0
15	19.0	12.0	10.0	2.0	5.0	14.0	19.0	22.0	27.0	30.0	29.0	27.0
16	16.0	14.0	---	3.0	7.0	13.0	20.0	23.0	27.0	31.0	31.0	---
17	16.0	15.0	11.0	3.5	---	13.0	20.0	22.0	26.0	31.0	32.0	29.0
18	17.0	15.0	---	3.0	5.0	13.0	20.0	23.0	27.0	---	---	---
19	18.0	15.0	12.0	---	5.0	---	19.0	24.0	26.0	30.0	---	28.0
20	18.0	15.0	10.5	---	5.0	---	17.0	---	26.0	30.0	32.0	28.0
21	18.0	15.0	9.0	1.0	5.0	---	16.0	---	27.0	31.0	31.0	28.0
22	18.0	14.0	7.0	1.0	5.0	---	16.0	25.0	27.0	30.0	---	28.0
23	18.0	15.0	8.0	1.0	6.0	---	---	25.0	27.0	---	---	28.0
24	---	15.0	10.0	2.0	7.0	16.5	19.0	25.0	---	29.0	---	27.0
25	19.0	---	8.0	2.0	9.0	15.0	19.0	25.0	---	29.0	---	26.0
26	18.0	14.0	7.0	4.0	10.0	14.0	19.0	26.0	---	---	---	24.0
27	18.0	---	6.5	3.0	10.0	14.0	18.0	26.0	---	27.0	---	24.0
28	19.0	13.0	5.0	2.5	11.0	15.0	17.0	27.0	---	27.0	---	24.0
29	---	12.0	5.0	2.0	---	16.5	19.0	26.0	31.0	27.0	26.0	24.0
30	20.0	10.0	6.0	2.0	---	18.0	20.0	26.0	31.0	28.0	28.0	24.0
31	20.0	---	7.0	2.0	---	19.0	---	25.0	---	29.0	26.0	---
MEAN	19.0	14.5	9.0	4.0	5.5	12.5	19.5	22.5	26.5	30.0	28.5	26.5

RED RIVER BASIN

07346140 FRAZIER CREEK NEAR LINDEN, TX

LOCATION.--Lat 33°03'14", long 94°17'24", Cass County, Hydrologic Unit 11140306, on right bank at downstream side of bridge on U.S. Highway 59, 1.6 mi (2.6 km) upstream from Colley Creek, 3.7 mi (6.0 km) upstream from Johns Creek, and 5.3 mi (8.5 km) northeast of Linden.

DRAINAGE AREA.--48.0 mi² (124.3 km²).

PERIOD OF RECORD.--August 1958 to June 1961 (low-flow partial-record only), November 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 228.7 ft (69.71 m) National Geodetic Vertical Datum of 1929 (Texas Department of Highways and Public Transportation bridge plans).

REMARKS.--Records good. No known diversion. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1966-78), 42.5 ft³/s (1.204 m³/s), 12.02 in/yr (305 mm/yr), 30,790 acre-ft/yr (38.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,010 ft³/s (142 m³/s) Apr. 22, 1974, gage height, 12.51 ft (3.813 m); no flow at times for most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1945, 15.6 ft (4.75 m) Apr. 26, 27, 1958, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 309 ft³/s (8.75 m³/s) Mar. 14, gage height, 8.41 ft (2.563 m), no peak above base of 700 ft³/s (19.8 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	14	149	17	50	53	31	11	8.4	.06	.00	.00
2	.00	76	135	15	55	46	29	10	39	.04	.00	.00
3	.00	50	54	13	49	46	28	27	33	1.5	.00	.00
4	.00	14	34	13	40	36	30	40	18	.07	.00	.00
5	.00	7.4	27	13	35	31	30	29	23	.12	.00	.00
6	.00	5.5	22	13	32	29	28	31	13	.10	.00	.00
7	.00	4.6	18	14	31	86	25	26	11	.10	.00	.00
8	.00	5.2	17	15	29	140	24	36	11	.09	.00	.00
9	.00	17	17	24	28	83	22	30	8.0	.09	.00	.00
10	.00	17	15	19	28	51	23	17	5.5	.08	.00	.00
11	.00	11	13	15	30	45	30	21	4.4	.06	.00	.00
12	.00	7.1	14	19	32	39	25	171	3.6	.06	.00	.02
13	.00	5.8	19	25	64	70	21	231	2.8	.04	.00	.01
14	.00	5.2	26	28	50	228	18	162	2.1	.02	.00	.00
15	.00	5.0	22	26	38	216	17	65	1.5	.01	.00	.00
16	.00	4.8	18	63	33	114	15	37	1.2	.00	.00	.00
17	.00	4.7	20	157	32	65	18	26	1.1	.00	.00	.00
18	.00	4.4	23	170	47	55	51	23	.97	.00	.00	.00
19	.00	3.8	18	83	45	48	37	20	.88	.00	.00	.00
20	.00	4.3	16	59	40	44	23	17	.77	.00	.00	.00
21	.00	5.5	14	47	35	50	18	14	.68	.00	.00	.00
22	.00	17	13	39	30	58	16	12	.56	.00	.00	.00
23	.00	14	12	39	28	46	32	11	.54	.00	.00	.00
24	.00	9.4	13	75	27	76	34	8.8	.46	.00	.00	.00
25	.00	7.9	13	122	26	80	24	7.0	.37	.00	.00	.00
26	.00	7.1	12	143	25	57	18	5.9	.27	.00	.00	.00
27	.00	6.7	11	105	25	46	15	5.1	.20	.00	.00	.00
28	.00	6.4	11	59	57	40	13	4.5	.16	.00	.00	.00
29	.00	31	13	48	---	36	11	4.0	.09	.00	.00	.00
30	.00	108	24	43	---	34	11	4.3	.07	.00	.00	.00
31	.00	---	21	41	---	32	---	4.9	---	.00	.00	---
TOTAL	.00	479.8	834	1562	1041	2080	717	1111.5	192.62	2.44	.00	.03
MEAN	.000	16.0	26.9	50.4	37.2	67.1	23.9	35.9	6.42	.079	.000	.001
MAX	.00	108	149	170	64	228	51	231	39	1.5	.00	.02
MIN	.00	3.8	11	13	25	29	11	4.0	.07	.00	.00	.00
CFSM	.000	.33	.56	1.05	.78	1.40	.50	.75	.13	.002	.000	.000
IN.	.00	.37	.65	1.21	.81	1.61	.56	.86	.15	.00	.00	.00
AC-FT	.00	952	1650	3100	2060	4130	1420	2200	382	4.8	.00	.06
CAL YR 1977	TOTAL	13135.33	MEAN	36.0	MAX	979	MIN	.00	CFSM	.75	IN	10.18
WTR YR 1978	TOTAL	8020.39	MEAN	22.0	MAX	231	MIN	.00	CFSM	.46	IN	6.22
									AC-FT	26050	AC-FT	15910

SABINE RIVER BASIN

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX

LOCATION.--Lat 33°07'58", long 96°04'36", Hunt County, Hydrologic Unit 12010001, on left bank 103 ft (31 m) downstream from center-line of downstream bridge on Interstate Highway 30 (U.S. Highway 67), 0.3 mi (0.5 km) downstream from Horse Creek, 0.9 mi (1.4 km) downstream from Louisiana and Arkansas Railroad Co. bridge, 1.8 mi (2.9 km) east of Greenville, and at mile 558.3 (898.3 km).

DRAINAGE AREA.--77.7 mi² (201.2 km²).

PERIOD OF RECORD.--February 1959 to current year. Prior to October 1963, published as Sabine River at Greenville.

REVISED RECORDS.--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

GAGE.--Water-stage recorder. Datum of gage is 485.07 ft (147.849 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for Mar. 3-27, which are fair. During the current water year, the city of Greenville reported that 4,570 acre-ft (5.63 hm³) of water was diverted from city lakes upstream from station and 3,100 acre-ft (3.82 hm³) was diverted from Lake Tawakoni for municipal uses; 3,010 acre-ft (3.71 hm³) of sewage effluent was returned to a tributary downstream from station. Extreme low flow is largely sustained by returned water from water treatment plant upstream. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1960-78), 61.9 ft³/s (1.753 m³/s), 10.82 in/yr (275 mm/yr), 44,850 acre-ft/yr (55.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s (306 m³/s) May 7, 1969, gage height, 17.95 ft (5.471 m); no flow at 1964, 1969-70, 1972-73, and 1977-78.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1895, 22 ft (6.7 m) in May 1935, from information by local resident and city engineer of Greenville. Flood of July 3, 1913, reached a stage of 20 ft (6.1 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 13	0245	2,600 73.6	*15.70 4.785	June 6	2000	*3,120 88.4	15.65 4.770

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	251	125	.19	17	5.8	2.1	.20	1.2	.85	.01	.16
2	.00	537	27	.12	15	4.9	1.6	2.6	.51	.73	.03	.10
3	.00	21	7.7	.09	6.2	4.1	1.2	85	.64	.74	.04	.04
4	.00	4.4	3.3	.15	4.0	3.4	1.2	28	.58	1.1	.25	.00
5	.00	1.1	1.7	.20	2.7	2.8	1.2	83	.16	.74	3.8	.00
6	.00	.45	.52	.20	1.8	12	1.1	65	1820	.61	.53	.00
7	.01	.22	.30	.22	1.4	89	.93	10	488	.55	.37	.00
8	.06	58	.16	.26	1.5	20	.69	4.5	29	.59	.24	.00
9	.09	235	.24	.27	2.1	5.5	.63	2.2	10	.62	.18	.00
10	.02	22	.17	.26	6.6	2.0	44	1.1	4.8	.66	.18	.00
11	.02	5.3	.11	.30	63	1.5	19	.65	2.6	.55	.28	.00
12	.01	2.0	.06	3.9	857	1.4	5.4	1.4	5.2	.57	.21	2.5
13	.01	.94	.08	2.9	1880	2.6	3.0	.45	407	.55	.11	.46
14	.02	.56	.21	1.1	106	1.6	2.0	.29	161	.59	.04	.35
15	.09	.34	.22	.43	36	1.4	1.5	.23	21	.59	.05	.25
16	.02	.21	.18	39	26	1.2	1.1	.23	8.2	.48	.03	.15
17	.00	.12	.18	52	26	1.1	.95	.20	3.9	.47	.03	.10
18	.00	.08	.19	18	40	1.0	.85	.36	2.1	.49	.04	.05
19	.00	.04	.20	4.5	57	.89	.65	.34	1.2	.51	.01	.04
20	.00	.03	.21	2.2	74	.79	.50	.23	1.6	.52	.03	.04
21	.00	.03	.26	1.6	143	39	.47	5.4	.69	.56	.23	.02
22	.21	.09	.28	1.3	137	9.9	.47	2.0	.49	.39	.25	.05
23	.10	.13	.28	1.8	353	.89	.44	.59	.41	1.0	.14	.14
24	.93	.13	.28	46	60	39	.42	.66	.46	.60	.04	.19
25	.11	.13	.28	317	21	62	.36	1.3	.28	.16	.02	.21
26	.00	.13	.25	212	9.9	15	.28	1.1	.25	.08	.04	.22
27	.00	.13	.25	36	7.6	9.9	.25	.24	.23	.04	.04	.18
28	.00	.32	.25	14	7.7	6.6	.32	6.9	.26	.03	3.7	.13
29	.00	6.0	1.4	5.5	---	4.8	.21	2.6	.19	.02	.83	.05
30	.00	57	.41	3.8	---	3.9	.20	13	.51	.01	.37	.01
31	.01	---	.26	4.1	---	2.9	---	3.3	---	.00	.22	---
TOTAL	1.71	1203.88	171.93	769.39	3962.5	356.87	93.02	323.07	2972.46	15.40	12.34	5.44
MEAN	.055	40.1	5.55	24.8	142	11.5	3.10	10.4	99.1	.50	.40	.18
MAX	.93	537	125	317	1880	89	44	85	1820	1.1	3.8	2.5
MIN	.00	.03	.06	.09	1.4	.79	.20	.20	.16	.00	.01	.00
CFSM	.001	.52	.07	.32	1.83	.15	.04	.13	1.28	.006	.005	.002
IN.	.00	.58	.08	.37	1.90	.17	.04	.15	1.42	.01	.01	.00
AC-FT	3.4	2390	341	1530	7860	708	185	641	5900	31	24	11

CAL YR 1977	TOTAL	27679.26	MEAN 75.8	MAX 4830	MIN .00	CFSM .98	IN 13.25	AC-FT 54900
WTR YR 1978	TOTAL	9888.01	MEAN 27.1	MAX 1880	MIN .00	CFSM .35	IN 4.73	AC-FT 19610

08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX

LOCATION.--Lat 32°53'52", long 96°15'11", Hunt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 1565, 2.4 mi (3.9 km) upstream from Dry Creek, 6.2 mi (10.0 km) upstream from Bearpen Creek, 7 mi (11 km) southwest of Quinlan, and 25 mi (40 km) upstream from mouth.

DRAINAGE AREA.--78.7 mi² (203.8 km²).

PERIOD OF RECORD.--February 1959 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 461.40 ft (140.635 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Records furnished by the city of Royse City show that 138 acre-ft (170,000 m³) of sewage effluent was returned to the stream above this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1960-78), 66.7 ft³/s (1.889 m³/s), 11.51 in/yr (292 mm/yr), 48,320 acre-ft/yr (59.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft³/s (532 m³/s) Mar. 27, 1977, gage height, 17.71 ft (5.398 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 21 ft (6.4 m) July 29, 1902, from information by local resident. Flood of Apr. 27, 1957, reached a stage of 17.76 ft (5.413 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,800 ft³/s (51.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 12	2215	*4,100 116	15.67 4.776	Mar. 7	0945	2,270 64.3	15.33 4.673

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	52	30	.44	14	3.6	.84	.00	2.8	.00	.00	.00
2	.00	15	14	.28	21	2.9	.60	.01	1.6	.00	.00	.00
3	.00	4.7	8.6	.21	16	2.3	.45	51	.93	.00	.00	.00
4	.00	2.5	5.6	.21	10	1.6	.37	16	.64	.00	.00	.00
5	.00	1.4	4.1	.21	7.3	1.1	.30	98	.40	.00	56	.00
6	.00	.87	3.0	.18	5.5	28	.39	44	.28	.00	17	.00
7	.00	.54	2.5	.18	4.7	1330	.29	28	.18	.00	.87	.00
8	.00	31	2.5	.06	4.1	170	.23	10	.12	.00	.08	.00
9	.00	44	2.4	.00	4.2	32	.24	3.5	1.9	.00	.00	.00
10	.00	14	2.0	.00	15	16	84	1.7	2.1	.00	.00	.00
11	.00	7.3	1.5	.00	62	9.0	68	.91	.93	.00	.00	.00
12	.00	4.6	1.2	.09	1020	5.0	13	8.8	.44	.00	.00	.00
13	.00	3.4	1.1	.81	1490	2.9	5.1	4.9	.21	.00	.00	.00
14	.00	2.6	.87	3.9	81	2.3	2.3	1.5	1.9	.00	.00	.00
15	.00	2.1	1.5	3.5	18	1.9	1.3	.53	2.9	.00	.00	.00
16	.00	1.8	2.7	4.0	12	1.4	.87	.20	1.3	.00	.00	.00
17	.00	1.3	2.6	3.2	13	.93	.59	.07	.44	.00	.00	.00
18	.00	.87	2.1	3.5	14	.64	.44	.02	.10	.00	.00	.00
19	.00	.64	1.9	5.6	24	.40	.32	.00	.00	.00	.00	.00
20	.00	.59	1.4	5.5	89	.36	.12	.00	.00	.00	.00	.00
21	.00	.24	.93	5.7	148	.32	.08	1.9	.00	.00	.00	39
22	.00	.08	.75	5.7	64	.24	.08	39	.00	.00	.08	4.6
23	.00	.03	.69	5.7	108	32	.06	23	.00	82	.00	.86
24	.00	.00	.69	14	26	881	.05	4.0	.00	13	.00	.14
25	.00	.00	.49	33	13	60	.05	1.7	.00	.44	.00	.01
26	.00	.00	.44	28	7.9	15	.03	.70	.00	.00	.00	.00
27	.00	.00	.40	14	4.7	6.8	.00	.28	.00	.00	.00	.00
28	.00	.00	.40	9.7	3.8	3.6	.00	7.1	.00	3.8	.00	.00
29	.00	.00	.75	7.0	---	2.3	.00	120	.00	1.2	.00	.00
30	.00	3.4	.69	5.3	---	1.7	.00	24	.00	.08	.00	.00
31	.01	---	.54	4.8	---	1.2	---	4.8	---	.00	.00	---
TOTAL	.01	194.96	98.34	164.77	3300.2	2616.49	180.10	495.62	19.17	100.52	74.03	44.61
MEAN	.000	6.50	3.17	5.32	118	84.4	6.00	16.0	.64	3.24	2.39	1.49
MAX	.01	52	30	33	1490	1330	84	120	2.9	82	56	39
MIN	.00	.00	.40	.00	3.8	.24	.00	.00	.00	.00	.00	.00
CFSM	.000	.08	.04	.07	1.50	1.07	.08	.20	.008	.04	.03	.02
IN.	.00	.09	.05	.08	1.56	1.24	.09	.23	.01	.05	.03	.02
AC-FT	.02	387	195	327	6550	5190	357	983	38	199	147	88
CAL YR 1977	TOTAL	31957.52		MEAN 87.6	MAX 8110	MIN .00	CFSM 1.11	IN 15.11	AC-FT 63390			
WTR YR 1978	TOTAL	7288.82		MEAN 20.0	MAX 1490	MIN .00	CFSM .25	IN 3.45	AC-FT 14460			

08017400 LAKE TAWAKONI NEAR WILLS POINT, TX

LOCATION.--Lat 32°48'40", long 95°54'56", Rains-Van Zandt County line, Hydrologic Unit 12010001, in stairwell at left end of spillway of Iron Bridge Dam on Sabine River, 750 ft (229 m) upstream from bridge on Farm Road 47, 3 mi (5 km) upstream from McBee Creek, 9.0 mi (14.5 km) northeast of Wills Point, and at mile 514.5 (827.8 km).

DRAINAGE AREA.--756 mi² (1,958 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

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

REMARKS.--Lake is formed by a rolled earthfill dam 29,560 ft (9,010 m) long, including a 480 ft (146 m) uncontrolled concrete ogee spillway. Outlet works consist of two 4 by 6 ft (1.2 by 1.8 m) sluice gates and two 20 in (508 mm) steel pipes controlled by service valves. Closure of earthen dam began July 1, 1960, and deliberate impoundment of water began Oct. 7, 1960. Capacity table is based on a 1956 survey. Records furnished by Sabine River Authority show that during year the city of Dallas diverted 23,560 acre-ft (29.0 hm³) of water for municipal use in the Trinity River basin and that various other users in the Sabine River basin diverted 6,000 acre-ft (7.40 hm³). Lake was built for water conservation. 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.....	454.0	-
Design flood.....	446.2	1,290,000
Crest of spillway.....	437.5	936,200
Lowest intake to wet well (invert).....	416.5	342,700
Lowest gated outlet (invert).....	378.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,130,000 acre-ft (1.39 km³) May 1, 1966, elevation, 442.58 ft (134.900 m); minimum since lake first filled in May 1965, 802,700 acre-ft (990 hm³) Oct. 21, 1972, elevation, 433.65 ft (132.177 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 969,500 acre-ft (1.20 km³) Mar. 8, elevation, 438.41 ft (133.627 m); minimum, 864,100 acre-ft (1.07 km³) Sept. 29, 30, elevation, 435.46 ft (132.728 m).

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

435.0	848,200	438.0	954,300
436.0	882,800	439.0	991,200
437.0	918,200		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	931200	927600	922100	911100	915700	950300	952500	937000	940200	925400	899100	881100
2	929400	926500	922100	909000	915300	950300	952500	938100	940200	924700	899100	880400
3	928700	926800	922100	907900	915000	949600	951800	939900	939900	923600	898400	880000
4	925800	926800	922500	907600	916000	946700	951100	938100	939100	922900	897300	879300
5	925000	925800	923600	908300	915700	945300	950700	939900	939100	921800	904700	878600
6	924300	925400	920000	907600	913600	948200	950300	941700	939500	921100	904000	877600
7	923600	924300	918500	911100	916400	963200	949600	942000	939900	920000	903300	877200
8	924300	927200	921800	908600	915700	969100	948900	941700	940200	919300	902600	876900
9	922500	929000	918500	906100	917500	967200	948500	940900	938400	918500	902200	875900
10	923200	927200	916800	905100	917100	963900	951400	939900	937000	917500	901500	874100
11	922100	926800	916000	909000	917800	963600	950700	943800	937000	916400	900500	872700
12	921400	926500	916000	909000	931500	960600	950700	945600	935200	915700	899400	875900
13	918500	925400	917500	910000	948500	960600	949300	944200	937700	915000	896900	875900
14	917800	925000	916400	907600	955400	958800	948900	943500	938100	914300	896900	875500
15	917500	925000	915300	906500	955100	956900	947800	942800	937300	912900	896200	874800
16	916400	925400	916400	913200	954300	955100	947100	941300	936600	911800	895200	873800
17	915300	924700	915300	908600	956500	954000	947100	941300	936200	910700	894500	871700
18	915300	922900	914600	912200	954300	951400	945600	941300	935900	909700	893400	871400
19	914600	922900	915700	911100	952900	951100	943500	941300	934400	909000	892300	870700
20	914300	924700	915700	909700	955100	950700	942400	942400	934100	908300	891300	870700
21	914300	921800	912900	909300	952500	951100	941300	944200	933000	906500	890900	871000
22	914300	921100	911100	909000	954000	950700	941700	944200	932300	905400	889900	869600
23	914600	921800	911100	909300	954000	955100	941700	943800	931500	909000	889200	868900
24	914600	921400	912200	912200	953600	961700	941700	943100	930800	907600	888100	867900
25	914600	921400	911100	914300	953600	963200	939900	942400	929700	907200	887700	866900
26	914300	918200	910700	912900	952200	961300	938400	941700	929400	906500	886700	866200
27	913900	919600	909700	913900	951800	959500	937700	940900	928300	905400	885600	865800
28	913600	919300	909300	913600	951400	958800	937000	940200	927900	904700	885300	864800
29	912900	920700	910400	913200	---	957600	937000	940600	927200	903700	883800	864100
30	912500	922100	909700	913600	---	956200	937000	940200	926100	901900	883100	864100
31	917100	---	910400	913900	---	954300	---	940200	---	900800	881400	---
MAX	931200	929000	923600	914300	956500	969100	952500	945600	940200	925400	904700	881100
MIN	912500	918200	909300	905100	913600	945300	937000	937000	926100	900800	881400	864100
(†)	436.97	437.11	436.78	436.88	437.92	438.00	437.52	437.61	437.22	436.51	435.96	435.46
(‡)	-13400	+5000	-11700	+3500	+37500	+2900	-17300	+3200	-14100	-25300	-19400	-17300
(††)	2220	1780	1350	1720	1020	1260	1060	1360	1020	3950	6020	6800
CAL YR 1977	MAX	1046000	MIN	895200	†	-24000	††	29660				
WTR YR 1978	MAX	969100	MIN	864100	†	-66400	††	29560				

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use.

SABINE RIVER BASIN

08017410 SABINE RIVER NEAR WILLS POINT, TX

LOCATION.--Lat 32°48'34", long 95°54'46", Van Zandt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 47, 750 ft (229 m) downstream from Iron Bridge Dam which forms Lake Tawakoni, 3.0 mi (4.8 km) upstream from McBee Creek, 9.0 mi (14.5 km) northeast of Wills Point, and at mile 514.3 (827.5 km).

DRAINAGE AREA.--756 mi² (1,958 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 370.00 ft (112.776 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good except those for Oct. 18 to Nov. 28, which are poor, and those below 3.0 ft³/s (0.085 m³/s), which are fair. Flow regulated by Lake Tawakoni (see station 08017400).

AVERAGE DISCHARGE.--8 years, 452 ft³/s (12.80 m³/s), 327,500 acre-ft/yr (404 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s (385 m³/s) Dec. 11, 1971, gage height, 18.5 ft (5.64 m), from graph based on gage readings; no flow in October 1971-72, April 1974, September 1975, and July 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since construction of Iron Bridge Dam in 1960, about 21,000 ft³/s (595 m³/s) May 1, 1966, from theoretical rating curve of flow over dam 750 ft (229 m) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s (42.5 m³/s) Mar. 9, gage height, 13.07 ft (3.984 m); no flow July 6-10, 12-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	15	24	40	3.0	505	562	8.2	68	.82	3.9	.83
2	206	4.0	.81	1.2	22	477	519	113	77	.80	.62	.83
3	29	1.0	.73	2.6	1.1	771	488	136	78	.65	.62	.83
4	4.8	3.0	35	1.2	3.8	525	471	173	60	.62	.62	.83
5	1.4	1.5	174	1.2	26	252	432	38	55	3.2	1.2	5.3
6	1.4	1.0	149	1.2	1.9	264	422	49	50	.00	.68	.85
7	1.4	1.0	1.0	5.5	6.1	892	396	96	81	.00	.69	.62
8	77	85	107	97	2.2	1340	365	128	232	.00	4.1	.62
9	5.2	200	191	4.5	6.7	1320	328	110	127	.00	.52	.62
10	1.5	10	6.5	3.0	4.4	1070	514	59	18	.00	.52	.62
11	205	1.0	1.4	1.5	1.1	1010	551	80	9.5	2.8	.52	.60
12	36	1.0	1.4	2.5	49	912	447	250	25	.00	.52	4.7
13	1.4	1.0	13	4.5	634	845	421	300	70	.00	.52	.68
14	1.0	1.0	6.2	67	685	794	362	175	22	.00	.74	.62
15	77	1.0	1.2	.99	698	819	326	140	15	.00	4.6	.62
16	26	7.0	17	172	675	725	293	110	7.9	.00	.72	.69
17	.62	1.0	26	122	736	615	264	45	5.4	.00	.68	.83
18	5.0	1.0	1.0	20	809	551	310	83	8.8	2.7	.81	.92
19	.60	1.0	31	195	631	489	502	81	4.0	.21	.80	4.5
20	.60	25	144	38	738	464	211	81	1.4	.21	.94	.63
21	.55	30	229	1.9	871	480	118	184	.96	.21	.62	1.4
22	.55	5.0	1.5	1.4	610	464	78	188	.96	.21	4.2	.89
23	.50	1.0	.94	1.4	615	447	95	181	3.1	1.6	1.0	.77
24	.50	1.0	6.6	30	601	869	98	166	.55	.45	1.0	.79
25	5.0	1.5	60	138	622	998	296	151	.42	.42	1.0	.74
26	.50	1.0	1.2	52	568	953	95	134	.32	3.6	1.0	.73
27	.50	20	3.6	2.7	500	855	12	116	3.5	.63	1.0	4.4
28	.50	1.0	2.3	4.3	526	776	6.2	181	.81	.52	1.0	.39
29	.50	40	1.1	1.2	---	725	4.3	118	.92	.63	9.5	.59
30	.50	40	1.1	1.8	---	681	5.7	99	1.0	.53	.95	.40
31	55	---	1.0	7.7	---	619	---	76	---	.52	.83	---
TOTAL	770.52	502.0	1239.58	1023.29	10646.3	22507	8992.2	3849.2	1027.54	21.33	46.42	37.84
MEAN	24.9	16.7	40.0	33.0	380	726	300	124	34.3	.69	1.50	1.26
MAX	206	200	229	195	871	1340	562	300	232	3.6	9.5	5.3
MIN	.50	1.0	.73	.99	1.1	252	4.3	8.2	.32	.00	.52	.39
AC-FT	1530	996	2460	2030	21120	44640	17840	7630	2040	42	92	75
CAL YR 1977	TOTAL	163295.85	MEAN	447	MAX	8000	MIN	.44	AC-FT	323900		
WTR YR 1978	TOTAL	50663.22	MEAN	139	MAX	1340	MIN	.00	AC-FT	100500		

SABINE RIVER BASIN

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08017410 SABINE RIVER NEAR WILLS POINT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	
DATE	TIME												
OCT 18...	1905	5.0	197	8.8	25.0	5	1	9.3	115	2.3	68	0	
NOV 08...	1330	84	198	8.1	18.5	70	4	9.3	102	.8	72	0	
DEC 14...	0945	4.2	201	7.0	10.5	20	5	11.6	107	1.7	76	0	
JAN 25...	1630	125	207	7.6	4.5	0	4	12.4	99	1.3	76	0	
FEB 23...	0915	600	203	8.1	3.5	10	2	12.3	95	1.6	76	0	
MAR 22...	1100	469	203	8.1	10.5	20	1	11.0	102	.9	76	0	
APR 18...	1035	325	202	8.1	17.0	0	7	9.5	101	1.1	77	1	
MAY 17...	1400	45	204	8.2	20.0	5	4	9.4	107	.8	75	0	
JUN 13...	1500	70	215	8.3	28.5	5	4	8.8	114	1.8	76	0	
AUG 22...	1015	4.0	220	7.0	26.5	25	45	7.1	90	5.3	82	0	
SEP 20...	0930	.62	240	7.4	25.0	5	6	5.8	72	2.4	94	0	
		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 18...	23	2.6	12	.6	3.4	76	6	15	7.4	.3	.7	.7	108
NOV 08...	25	2.4	9.6	.5	3.3	92	0	10	5.8	.3	.8	.8	103
DEC 14...	26	2.7	9.9	.5	3.3	94	0	12	6.7	.2	.4	.4	108
JAN 25...	26	2.7	9.9	.5	3.3	95	0	11	7.3	.4	.1	.1	108
FEB 23...	26	2.7	9.9	.5	3.2	95	0	14	6.8	.2	.0	.0	110
MAR 22...	26	2.7	9.7	.5	3.2	96	0	13	6.6	.2	.0	.0	109
APR 18...	26	3.0	10	.5	3.2	93	0	13	6.6	.2	.3	.3	108
MAY 17...	26	2.5	9.7	.5	3.4	95	0	14	6.7	.3	.7	.7	110
JUN 13...	26	2.6	10	.5	3.2	94	0	15	6.8	.2	1.0	1.0	111
AUG 22...	28	3.0	11	.5	3.3	100	0	14	7.0	.2	3.2	3.2	119
SEP 20...	32	3.4	11	.5	3.4	120	0	13	7.8	.2	3.3	3.3	133

SABINE RIVER BASIN

08017410 SABINE RIVER NEAR WILLS POINT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 18...	8	3	.02	.01	.03	.00	.38	.38	.04	5.0	0	.00
NOV 08...	32	2	.15	.00	.15	.00	.40	.40	.05	3.9	4	.10
DEC 14...	10	2	.05	.00	.05	.07	.13	.20	.03	4.2	1	.00
JAN 25...	12	4	.06	.01	.07	.03	.32	.35	.03	4.5	4	.00
FEB 23...	5	2	.02	.01	.03	.05	.42	.47	.04	4.0	0	.00
MAR 22...	5	2	.00	.01	.01	.01	.42	.43	.03	4.7	0	.10
APR 18...	16	0	.03	.02	.05	.08	.62	.70	.05	4.0	1	.00
MAY 17...	14	5	.12	.01	.13	.05	.56	.61	.02	3.5	0	.00
JUN 13...	8	1	.06	.02	.08	.03	.62	.65	.03	4.2	1	.10
AUG 22...	107	25	.05	.01	.06	.49	1.0	1.5	.30	9.4	0	.00
SEP 20...	14	4	.15	.04	.19	.06	.61	.67	.10	6.6	1	.10

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 25...	1630	1	100	0	0	0	0
MAR 22...	1100	1	200	0	0	0	10
JUL 13...	0945	4	300	0	0	1	20
SEP 20...	0930	3	0	0	0	1	40

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 25...	0	0	.0	0	0	0
MAR 22...	3	0	.0	2	0	0
JUL 13...	1	20	.0	0	0	0
SEP 20...	0	50	.0	0	0	0

SABINE RIVER BASIN

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08018500 SABINE RIVER NEAR MINEOLA, TX

LOCATION.--Lat 32°46'49", long 95°29'08", Wood County, Hydrologic Unit 12010001, on left bank 5 ft (2 m) downstream from bridge on U.S. Highway 69, 3.5 mi (5.6 km) south of Mineola, 4.5 mi (7.2 km) upstream from Missouri Pacific Railway Lines bridge, 16.2 mi (26.1 km) upstream from Lake Fork Creek, and at mile 461.1 (741.9 km).

DRAINAGE AREA.--1,357 mi² (3,515 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1939 to September 1959, October 1967 to current year. Gage-height records collected at this site since July 1946 are contained in reports published by the National Weather Service.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 304.16 ft (92.708 m) National Geodetic Vertical Datum of 1929. May 12, 1939, to Dec. 11, 1955, at site 55 ft (17 m) upstream from downstream side of bridge; Dec. 12, 1955, to Dec. 12, 1959, at downstream side of bridge; Oct. 1, 1967, to Sept. 12, 1968, nonrecording gage at downstream side of bridge; Sept. 13, 1968, to Oct. 23, 1974, water-stage recorder at downstream side of bridge; Oct. 24, 1974, to Oct. 16, 1975, at site on right bank 75 ft (23 m) downstream from bridge. All gages at present datum.

REMARKS.--Water-discharge records good. Flow partly regulated since October 1960 by Lake Tawakoni (station 08017400) located 53 mi (85 km) upstream and since September 1962 by Lake Holbrook, capacity 7,990 acre-ft (9.85 hm³), located on Keys Creek, tributary to Sabine River 8.0 mi (12.9 km) upstream.

AVERAGE DISCHARGE.--20 years (water years 1940-59) prior to regulation by Lake Tawakoni, 1,054 ft³/s (29.85 m³/s), 763,600 acre-ft/yr (942 hm³/yr); 11 years (water years 1968-77) regulated, 1,005 ft³/s (28.46 m³/s) 728,100 acre-ft/yr (898 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,000 ft³/s (2,150 m³/s) Apr. 1, 1945, gage height, 24.00 ft (7.315 m); maximum gage height, 24.37 ft (7.428 m) June 8, 1943; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, that of June 8, 1943.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,040 ft³/s (114 m³/s) Mar. 11, gage height, 17.07 ft (5.203 m); minimum, 0.46 ft³/s (0.013 m³/s) July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	136	281	16	106	599	928	46	102	3.2	7.2	1.3
2	5.3	270	337	14	148	573	794	36	87	3.1	5.9	2.4
3	4.8	709	312	15	211	581	680	82	77	3.2	4.8	2.8
4	4.4	1020	178	32	239	550	588	223	88	3.2	3.8	2.6
5	55	1030	81	60	181	641	525	258	89	2.8	8.6	2.4
6	50	514	47	34	121	713	485	246	73	2.5	40	2.1
7	28	147	35	22	90	1400	449	182	59	2.3	110	1.7
8	19	78	165	17	87	2330	417	114	56	1.9	226	1.5
9	14	104	117	14	85	3080	390	98	59	1.7	105	1.4
10	14	295	47	50	88	3790	366	119	106	1.5	41	1.3
11	16	527	84	228	123	3930	346	141	165	1.4	21	2.1
12	23	449	122	107	281	3350	411	823	89	1.3	14	4.5
13	36	178	60	73	912	2590	523	1280	42	1.2	10	15
14	88	51	33	63	1290	2010	490	1380	25	1.1	7.9	7.6
15	53	25	21	56	1480	1640	425	1360	20	.95	6.3	16
16	31	17	17	67	1720	1410	368	1040	42	.89	4.8	9.6
17	21	12	17	225	1730	1250	323	522	35	.80	3.8	5.8
18	16	9.7	14	350	1550	1140	297	228	25	.75	3.0	4.0
19	22	8.2	13	313	1370	1010	268	149	20	.69	2.4	3.0
20	26	7.2	12	279	1280	823	282	121	16	.62	2.0	2.4
21	19	24	11	254	1250	735	373	108	13	.50	2.0	2.1
22	15	17	14	207	1140	684	321	99	11	.46	2.3	1.7
23	12	16	118	153	1030	638	184	175	11	31	2.1	1.6
24	10	55	147	119	967	716	120	261	9.2	168	1.8	1.5
25	10	42	58	126	821	813	115	215	7.5	375	1.6	1.3
26	9.6	21	26	176	706	964	119	178	6.3	432	1.6	1.1
27	10	14	16	315	653	1100	241	152	5.2	180	1.4	8.6
28	10	11	14	355	642	1170	228	130	4.4	51	1.2	15
29	9.4	88	29	220	---	1190	112	112	3.9	22	1.1	15
30	8.3	222	25	122	---	1150	62	121	3.4	14	1.0	15
31	14	---	20	89	---	1060	---	141	---	9.8	.91	---
TOTAL	659.9	6097.1	2471	4171	20301	43630	11230	10140	1349.9	1318.86	644.51	152.4
MEAN	21.3	203	79.7	135	725	1407	374	327	45.0	42.5	20.8	5.08
MAX	88	1030	337	355	1730	3930	928	1380	165	432	226	16
MIN	4.4	7.2	11	14	85	550	62	36	3.4	.46	.91	1.1
AC-FT	1310	12090	4900	8270	40270	86540	22270	20110	2680	2620	1280	302
CAL YR 1977	TOTAL	321984.70	MEAN	882	MAX	13200	MIN	4.4	AC-FT	638700		
WTR YR 1978	TOTAL	102165.67	MEAN	280	MAX	3930	MIN	.46	AC-FT	202600		

08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURES: October 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,400 micromhos June 3, 1971; minimum daily, 70 micromhos Dec. 12, 1971.

WATER TEMPERATURES: Maximum daily, 29.0°C on many days during summer months; minimum daily, 1.0°C Jan. 9, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,690 micromhos Sept. 28; minimum daily, 103 micromhos Sept. 13.

WATER TEMPERATURES: Maximum daily, 29.0°C on many days during summer months; minimum daily, 1.0°C Jan. 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	
DATE	TIME												
OCT 18...	1750	22	275	7.2	18.0	10	15	7.9	86	2.4	73	3	
NOV 08...	1150	66	274	7.0	17.0	70	60	7.0	74	2.3	48	17	
DEC 14...	1110	33	300	7.2	9.0	40	25	9.7	87	2.8	69	12	
JAN 25...	1800	134	802	6.9	3.5	40	25	11.4	88	2.0	100	69	
FEB 22...	1410	1120	263	7.6	4.5	35	30	11.3	90	2.3	76	23	
MAR 22...	0900	689	271	7.5	14.5	35	15	8.9	90	2.7	85	20	
APR 18...	1415	294	293	7.5	19.0	25	35	8.1	90	1.8	89	15	
MAY 17...	1130	516	344	6.8	22.0	60	50	5.2	61	3.0	76	30	
JUN 13...	1355	39	330	7.9	27.5	40	45	6.1	78	2.4	85	8	
JUL 13...	1200	1.2	624	6.9	29.5	25	35	1.2	16	3.5	150	54	
AUG 22...	1250	2.3	560	6.5	28.0	55	50	2.1	27	3.5	77	35	
SEP 20...	1100	2.4	2600	7.1	27.5	70	30	6.3	82	4.0	190	130	
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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 18...	23	3.7	25	1.3	3.5	85	0	25	30	.2	3.8	156	
NOV 08...	14	3.1	31	2.0	4.9	37	0	23	46	.1	7.7	148	
DEC 14...	21	4.0	30	1.6	4.1	70	0	22	38	.2	6.5	160	
JAN 25...	27	8.3	110	4.8	4.4	40	0	64	170	.2	12	416	
FEB 22...	22	5.1	20	1.0	3.5	64	0	33	25	.1	4.1	144	
MAR 22...	26	4.8	19	.9	3.5	79	0	32	23	.2	2.9	151	
APR 18...	28	4.7	21	1.0	3.5	90	0	26	25	.2	2.7	155	
MAY 17...	22	5.0	36	1.8	4.8	56	0	41	45	.2	5.8	187	
JUN 13...	27	4.2	28	1.3	3.7	93	0	22	34	.2	3.7	169	
JUL 13...	45	9.7	67	2.4	4.5	120	0	51	100	.3	12	350	
AUG 22...	22	5.4	71	3.5	5.3	51	0	41	110	.2	11	291	
SEP 20...	51	14	460	15	5.4	69	0	110	740	.1	11	1430	

SABINE RIVER BASIN

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08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLLA- TILE, SUS- PENDED (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 18...	42	8	.02	.01	.03	.00	.62	.62	.06	4.9	0	.00
NOV 08...	156	16	.05	.00	.05	.04	.76	.80	.17	10	2	.00
DEC 14...	42	0	.20	.02	.22	.31	.39	.70	.07	10	1	.00
JAN 25...	31	6	1.4	.01	1.4	1.9	2.3	4.2	.10	6.5	2	.10
FEB 22...	43	6	.11	.01	.12	.07	.65	.72	.07	7.0	2	.00
MAR 22...	60	12	.05	.01	.06	.16	.58	.74	.08	5.9	3	.00
APR 18...	82	2	.11	.02	.13	.13	.55	.68	.06	6.9	1	.00
MAY 17...	120	26	.10	.02	.12	.13	2.0	2.1	.11	10	0	.00
JUN 13...	102	12	.06	.02	.08	.00	3.2	3.2	.08	5.9	1	.10
JUL 13...	67	21	.00	.01	.01	.06	.91	.97	.13	8.5	0	.20
AUG 22...	87	16	.02	.01	.03	.06	1.1	1.2	.12	9.5	0	.00
SEP 20...	46	14	.25	.05	.30	.07	1.5	1.6	.12	12	1	.20

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 25...	1800	1	100	1	0	1	70
MAR 22...	0900	1	200	0	0	1	30
JUL 13...	1200	2	300	1	0	0	30
SEP 20...	1100	1	200	1	0	1	160

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 25...	1	280	.0	0	0	20
MAR 22...	0	80	.0	3	0	10
JUL 13...	4	1200	.0	0	0	10
SEP 20...	0	1000	.0	0	0	10

SABINE RIVER BASIN

08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	659.9	421	230	418	71	126	38	67	96
NOV. 1977.....	6097.1	250	140	2270	33	537	23	382	71
DEC. 1977.....	2471	448	250	1680	78	522	41	272	97
JAN. 1978.....	4171	797	450	5010	170	1950	65	727	120
FEB. 1978.....	20301	362	200	11000	56	3050	30	1670	91
MAR. 1978.....	43630	255	140	16800	29	3460	24	2770	73
APR. 1978.....	11230	319	180	5430	41	1230	29	893	88
MAY 1978.....	10140	427	240	6530	72	1970	39	1080	96
JUNE 1978.....	1349.9	388	220	788	60	220	36	130	93
JULY 1978.....	1318.86	710	400	1420	150	533	56	200	120
AUG. 1978.....	644.51	522	290	506	96	167	48	84	100
SEPT 1978.....	152.4	2040	1140	468	580	238	78	32	150
TOTAL	102165.5	**	**	52300	**	14000	**	8310	**
MTD.AVG.	279.91	340	190	**	51	**	30	**	90

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	356	650	428	938	827	367	280	468	275	563	610	528
2	363	507	350	1370	775	396	283	475	274	544	612	524
3	367	312	515	1750	1850	394	291	510	292	552	604	522
4	371	119	396	1110	917	317	283	691	378	580	609	524
5	492	149	362	3500	571	319	282	850	529	593	576	530
6	329	235	390	740	595	308	289	670	558	605	423	568
7	339	275	402	750	600	259	286	510	572	609	531	595
8	315	282	655	760	621	341	295	508	551	615	542	599
9	314	262	302	740	873	281	299	599	486	619	500	582
10	314	250	353	786	880	193	298	703	350	623	473	553
11	257	203	381	458	1790	161	337	552	292	632	504	539
12	322	269	271	549	1900	196	339	261	275	636	506	332
13	472	343	290	587	502	217	395	710	316	640	507	103
14	915	390	298	756	360	226	320	381	364	648	523	444
15	273	392	332	1090	257	234	319	321	411	649	531	895
16	283	391	359	1340	219	253	300	344	426	651	538	1530
17	292	388	354	1230	217	262	301	354	430	655	563	2420
18	279	390	420	1100	284	254	298	355	426	653	547	3080
19	285	388	469	750	381	270	306	363	425	655	559	2950
20	339	385	839	688	273	278	319	365	427	658	564	2670
21	390	184	587	694	251	276	300	367	440	664	552	2530
22	455	383	691	498	264	271	291	374	435	665	540	2500
23	346	713	1000	519	260	289	354	367	447	350	535	2460
24	308	720	450	539	270	293	395	314	460	996	533	2460
25	263	371	348	739	287	337	489	345	477	1270	528	2550
26	317	378	395	848	299	392	498	286	494	268	531	2750
27	315	385	402	1070	290	295	601	284	516	502	548	3930
28	351	363	419	500	303	263	421	291	532	549	556	5690
29	353	338	507	465	---	251	398	294	544	551	560	3880
30	349	238	581	578	---	258	419	291	556	565	568	1390
31	348	---	545	774	---	273	---	276	---	582	540	---
MEAN	357	355	455	910	604	281	343	435	432	624	542	1690

SABINE RIVER BASIN

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08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	20.0	9.0	8.0	4.0	9.0	17.0	20.0	25.0	27.0	---	25.0
2	26.0	19.0	9.0	5.0	5.0	7.0	17.0	21.0	24.0	28.0	27.0	26.0
3	22.0	17.0	12.0	7.0	5.0	7.0	17.0	17.0	24.0	29.0	27.0	25.0
4	20.0	15.0	17.0	5.0	4.0	7.0	17.0	15.0	24.0	28.0	28.0	26.0
5	21.0	15.0	12.0	8.0	5.0	6.0	18.0	16.0	24.0	29.0	26.0	25.0
6	20.0	16.0	10.0	8.0	5.0	7.0	17.0	18.0	25.0	28.0	24.0	25.0
7	21.0	26.0	10.0	11.0	5.0	10.0	18.0	19.0	25.0	27.0	25.0	25.0
8	22.0	18.0	12.0	9.0	5.0	10.0	18.0	20.0	24.0	28.0	24.0	25.0
9	20.0	16.0	10.0	1.0	5.0	5.0	18.0	16.0	24.0	29.0	24.0	25.0
10	20.0	13.0	8.0	8.0	5.0	8.0	18.0	21.0	24.0	29.0	25.0	25.0
11	20.0	13.0	8.0	6.0	4.0	6.0	15.0	22.0	25.0	29.0	26.0	25.0
12	18.0	12.0	10.0	6.0	5.0	10.0	15.0	21.0	25.0	29.0	27.0	25.0
13	16.0	12.0	12.0	5.0	6.0	12.0	15.0	21.0	26.0	29.0	28.0	25.0
14	24.0	16.0	10.0	3.0	5.0	11.0	17.0	20.0	25.0	29.0	28.0	25.0
15	16.0	16.0	11.0	2.0	7.0	12.0	16.0	21.0	25.0	29.0	28.0	26.0
16	14.0	17.0	10.0	9.0	6.0	10.0	15.0	21.0	25.0	29.0	29.0	26.0
17	15.0	19.0	12.0	7.0	6.0	10.0	20.0	22.0	26.0	28.0	29.0	26.0
18	17.0	20.0	13.0	5.0	5.0	12.0	18.0	23.0	26.0	28.0	29.0	27.0
19	17.0	21.0	12.0	4.0	6.0	11.0	18.0	23.0	24.0	28.0	29.0	27.0
20	18.0	17.0	8.0	4.0	5.0	14.0	19.0	21.0	---	28.0	28.0	27.0
21	18.0	26.0	11.0	4.0	3.0	14.0	19.0	24.0	27.0	29.0	27.0	26.0
22	18.0	23.0	9.0	2.0	4.0	14.0	17.0	25.0	26.0	28.0	26.0	---
23	18.0	---	9.0	2.0	5.0	16.0	18.0	25.0	28.0	24.0	27.0	24.0
24	20.0	16.0	9.0	3.0	5.0	14.0	19.0	24.0	27.0	25.0	27.0	24.0
25	18.0	16.0	9.0	7.0	7.0	13.0	18.0	24.0	29.0	26.0	27.0	23.0
26	27.0	14.0	8.0	5.0	6.0	10.0	18.0	24.0	29.0	25.0	28.0	---
27	26.0	15.0	5.0	3.0	8.0	11.0	18.0	22.0	29.0	27.0	27.0	23.0
28	19.0	15.0	7.0	4.0	8.0	11.0	18.0	25.0	28.0	---	27.0	25.0
29	20.0	15.0	7.0	3.0	---	13.0	19.0	25.0	28.0	27.0	26.0	22.0
30	20.0	12.0	7.0	4.0	---	14.0	20.0	24.0	28.0	28.0	25.0	22.0
31	20.0	---	8.0	4.0	---	15.0	---	24.0	---	28.0	25.0	---
MEAN	20.0	17.0	10.0	5.0	5.5	10.5	17.5	21.5	26.0	28.0	27.0	25.0

SABINE RIVER BASIN

08019000 LAKE FORK CREEK NEAR QUITMAN, TX

LOCATION (revised).--Lat 32°45'47", Long 95°27'46", Wood County, Hydrologic Unit 12010003, at downstream side of highway embankment near left end of bridge on State Highway 37, 0.3 mi (0.5 km) downstream from Dry Creek, 2.4 mi (3.9 km) south of Quitman, and 23.4 mi (37.7 km) upstream upstream from mouth.

DRAINAGE AREA.--585 mi² (1,515 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1924 to April 1926, February 1939 to current year. Discharge for some high-water periods in 1925-26 published in WSP 1342. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1961, published as Lake Fork Sabine River near Quitman.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 317.42 ft (96.750 m) National Geodetic Vertical Datum of 1929. June 27, 1924, to Apr. 30, 1926, nonrecording gage at site 1,000 ft (305 m) downstream at same datum. Prior to Sept. 5, 1978, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. No large diversion above station. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with combined detention capacity of 20,270 acre-ft (25.0 hm³). These structures control runoff from 60.0 mi² (155.4 km²) in the Upper Lake Fork Creek drainage basin. Records furnished by the city of Quitman indicate that during the current year 158 acre-ft (195,000 m³) of sewage effluent was returned to a tributary above station. During the 1975 water year, construction began on Lake Fork Creek Reservoir, capacity 675,800 acre-ft (833 hm³) located about 5 mi (8 km) upstream from station.

AVERAGE DISCHARGE.--40 years (water years 1925, 1940-78), 433 ft³/s (12.26 m³/s), 10.05 in/yr (255 mm/yr), 313,700 acre-ft/yr (387 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,600 ft³/s (2,140 m³/s) Mar. 30, 1945, gage height, 29.85 ft (9.098 m), from floodmark, from rating curve extended above 49,000 ft³/s (1,390 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, that of Mar. 30, 1945. Flood in July 1895 reached a stage of about 25.9 ft (7.89 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 2,060 ft³/s (58.3 m³/s) Mar. 12, gage height, 14.38 ft (4.383 m), no peak above base of 6,000 ft³/s (170 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
1	1.1	14	53	5.6	158	165	227	13	20	.73	.06	.00	
2	.90	39	30	5.4	151	153	156	26	17	.65	.05	.00	
3	.77	7.4	17	5.3	137	140	134	59	15	.51	.03	.00	
4	.61	10	15	6.0	107	126	107	71	23	.39	.01	.00	
5	.44	49	13	7.2	100	117	93	76	14	.32	.11	.00	
6	.32	79	14	7.6	92	106	85	121	13	.24	.28	.00	
7	.36	86	17	7.4	87	411	76	134	11	.19	.39	.00	
8	.26	87	17	7.6	81	693	66	168	9.5	.15	.28	.00	
9	.21	95	17	7.4	78	1020	62	256	9.0	.11	.21	.00	
10	.15	67	14	7.2	78	1620	61	293	8.4	.09	.14	.00	
11	.12	58	13	7.4	88	1950	66	259	9.7	.07	.09	.00	
12	.09	67	9.5	14	140	1770	61	335	10	.06	.07	.00	
13	.07	70	8.0	17	187	1110	64	545	10	.05	.05	.05	
14	.05	64	7.2	19	232	697	85	931	8.8	.04	.04	2.3	
15	.04	51	6.4	22	246	445	98	1050	8.0	.03	.01	.69	
16	.02	40	5.4	42	388	303	93	898	4.5	.01	.00	.21	
17	.00	31	4.8	69	583	206	87	502	37	.00	.00	.10	
18	.00	20	5.1	86	749	158	73	232	42	.00	.00	.06	
19	.00	14	4.6	105	561	121	62	146	36	.00	.00	.04	
20	.00	9.9	4.3	120	498	102	50	73	29	.00	.00	.02	
21	.00	12	3.9	134	321	145	44	57	23	.00	.00	.00	
22	.00	13	4.3	140	262	232	37	45	17	.00	.00	.00	
23	.00	5.4	3.7	128	234	272	35	37	9.0	2.2	.00	.00	
24	.00	4.1	3.9	121	233	460	25	32	5.6	12	.00	.00	
25	.02	3.5	3.6	126	229	561	22	29	3.9	2.8	.00	.00	
26	.00	3.4	3.4	126	209	626	19	34	2.9	1.1	.00	.00	
27	.00	2.3	3.7	107	188	845	17	35	1.9	.41	.00	.00	
28	.00	1.7	3.9	111	176	880	15	31	1.4	.26	.00	.00	
29	.00	4.0	5.1	135	---	718	15	26	1.1	.21	.00	.00	
30	.00	15	5.6	148	---	587	13	24	.90	.11	.00	.00	
31	.00	---	5.8	152	---	387	---	22	---	.06	.00	---	
TOTAL	5.53	1022.7	322.2	1996.1	6593	17126	2048	6560	401.60	22.79	1.82	3.47	
MEAN	.18	34.1	10.4	64.4	235	552	68.3	212	13.4	.74	.059	.12	
MAX	1.1	95	53	152	749	1950	227	1050	42	12	.39	2.3	
MIN	.00	1.7	3.4	5.3	78	102	13	13	.90	.00	.00	.00	
CFSM	.000	.06	.02	.11	.40	.94	.12	.36	.02	.001	.000	.000	
IN.	.00	.07	.02	.13	.42	1.09	.13	.42	.03	.00	.00	.00	
AC-FT	11	2030	639	3960	13080	33970	4060	13010	797	45	3.6	6.9	
CAL YR 1977	TOTAL	125383.03	MEAN	344	MAX	7950	MIN	.00	CFSM	.59	IN 7.97	AC-FT	248700
WTR YR 1978	TOTAL	36103.21	MEAN	98.9	MAX	1950	MIN	.00	CFSM	.17	IN 2.30	AC-FT	71610

SABINE RIVER BASIN

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08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1961 to June 1965, November 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1967 to current year.

WATER TEMPERATURES: December 1967 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,800 micromhos Oct. 5, 1972; minimum daily, 37 micromhos Dec. 11, 1971.

WATER TEMPERATURES: Maximum daily, 29.0°C July 3, 4, 6, 1969, July 29, 1972, July 1, 1977; minimum daily, 2.0°C Jan. 10, 1970.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,080 micromhos May 4; minimum daily, 138 micromhos Nov. 8, 14.

WATER TEMPERATURES: Maximum daily, 25.0°C July 23; minimum daily, 7.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 15...	1110	52	141	6.9	13.5	41	6	10	3.8	9.8
DEC 19...	1300	4.7	384	6.8	11.0	80	36	19	7.9	40
FEB 28...	0800	181	344	--	9.0	79	61	18	8.2	31
MAR 14...	1035	692	229	6.5	15.0	48	31	12	4.3	20
APR 30...	0800	13	637	--	12.0	160	100	36	16	63
MAY 31...	0800	23	401	--	21.0	99	49	24	9.4	32
JUL 31...	0800	.08	493	--	22.0	110	28	26	11	49

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 15...	.7	5.0	42	0	18	9.8	.2	6.4	84
DEC 19...	1.9	5.5	54	0	34	67	.2	6.9	207
FEB 28...	1.5	4.8	22	0	59	49	.1	11	192
MAR 14...	1.3	4.9	20	0	33	31	.2	7.6	123
APR 30...	2.2	6.9	64	0	98	96	.2	11	359
MAY 31...	1.4	6.1	60	0	58	51	.2	11	221
JUL 31...	2.0	6.6	100	0	44	70	.1	2.7	259

SABINE RIVER BASIN

08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	5.53	308	170	2.6	45	0.6	39	0.6	74
NOV. 1977.....	1022.7	184	100	279	22	60	23	64	46
DEC. 1977.....	322.2	471	260	225	74	64	59	52	110
JAN. 1978.....	1996.1	552	300	1640	89	482	68	368	130
FEB. 1978.....	6593	357	200	3500	53	948	45	800	86
MAR. 1978.....	17126	295	160	7560	42	1950	37	1710	71
APR. 1978.....	2048	491	270	1500	77	428	62	343	120
MAY 1978.....	6560	393	220	3840	61	1080	48	859	94
JUNE 1978.....	401.6	461	250	275	72	79	58	63	110
JULY 1978.....	22.79	566	310	19	93	5.7	72	4.4	130
AUG. 1978.....	1.82	498	270	1.4	79	0.4	63	0.3	120
SEPT 1978.....	3.47	696	390	3.6	120	1.1	88	0.8	160
TOTAL	36103.19	**	**	18800	**	5100	**	4270	**
WTD.AVG.	98.91	350	190	**	52	**	44	**	84

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	294	402	716	514	431	393	287	633	464	452	496	---
2	299	305	672	493	601	405	320	767	462	455	498	---
3	307	342	620	475	533	428	344	770	468	460	498	---
4	308	330	604	438	531	423	376	1080	580	467	503	---
5	309	232	455	429	477	440	398	747	524	468	435	---
6	311	205	326	471	474	454	432	750	520	474	463	---
7	314	142	299	470	485	780	449	760	512	479	484	---
8	320	138	285	470	490	428	474	546	508	482	513	---
9	319	187	277	444	493	291	494	446	497	489	517	---
10	318	186	290	488	587	232	514	445	470	488	525	---
11	323	166	305	489	774	177	579	636	467	490	532	---
12	333	147	313	702	698	186	646	772	460	492	540	---
13	341	144	337	670	631	191	609	390	455	492	546	549
14	345	138	355	636	627	248	552	348	456	494	549	700
15	348	141	375	645	424	251	628	255	460	510	566	695
16	348	139	392	725	295	275	621	250	467	522	---	697
17	---	143	385	820	301	289	628	247	452	---	---	694
18	---	148	390	909	310	332	614	268	444	---	---	695
19	---	162	385	650	237	385	625	285	427	---	---	700
20	---	169	355	561	239	386	637	303	418	---	---	710
21	---	178	362	500	237	380	630	345	424	---	---	---
22	---	483	360	432	221	670	621	355	420	---	---	---
23	---	345	359	419	241	451	615	369	415	450	---	---
24	---	275	381	498	247	552	605	370	418	656	---	---
25	375	256	409	682	301	475	614	375	436	475	---	---
26	---	240	419	734	305	378	631	369	435	469	---	---
27	---	239	441	636	307	302	652	363	440	471	---	---
28	---	234	473	528	344	254	628	373	442	477	---	---
29	---	240	554	425	---	233	630	379	440	481	---	---
30	---	370	550	400	---	237	637	396	445	493	---	---
31	---	---	524	362	---	253	---	402	---	496	---	---
MEAN	324	228	418	552	423	361	550	477	461	487	511	680

SABINE RIVER BASIN

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08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	17.0	13.0	9.0	8.0	8.0	10.0	15.0	21.0	23.0	22.0	---
2	19.0	17.0	13.0	9.0	7.0	8.0	10.0	12.0	21.0	23.0	22.0	---
3	19.0	16.0	---	---	8.0	8.0	10.0	11.0	21.0	23.0	23.0	---
4	18.0	16.0	13.0	9.0	8.0	7.0	10.0	11.0	21.0	23.0	21.0	---
5	19.0	15.0	13.0	9.0	8.0	8.0	10.0	11.0	22.0	23.0	21.0	---
6	19.0	15.0	12.0	7.0	8.0	8.0	10.0	12.0	22.0	23.0	20.0	---
7	19.0	15.0	12.0	8.0	7.0	8.0	10.0	---	23.0	23.0	21.0	---
8	19.0	15.0	13.0	8.0	7.0	8.0	10.0	12.0	---	23.0	21.0	---
9	19.0	15.0	12.0	8.0	7.0	8.0	10.0	---	22.0	23.0	21.0	---
10	19.0	14.0	---	8.0	7.0	9.0	10.0	15.0	22.0	23.0	21.0	---
11	18.0	14.0	12.0	8.0	7.0	9.0	10.0	15.0	22.0	---	21.0	---
12	18.0	14.0	12.0	8.0	7.0	9.0	10.0	15.0	22.0	24.0	21.0	---
13	18.0	14.0	11.0	---	7.0	9.0	10.0	15.0	21.0	24.0	21.0	21.0
14	18.0	14.0	---	7.0	8.0	9.0	10.0	---	22.0	24.0	21.0	21.0
15	18.0	14.0	11.0	7.0	8.0	9.0	10.0	15.0	22.0	---	21.0	20.0
16	18.0	14.0	11.0	8.0	8.0	9.0	10.0	15.0	22.0	24.0	---	20.0
17	---	14.0	11.0	---	8.0	10.0	10.0	16.0	22.0	---	---	22.0
18	---	14.0	11.0	8.0	7.0	9.0	10.0	16.0	22.0	---	---	22.0
19	---	14.0	11.0	7.0	8.0	10.0	10.0	17.0	22.0	---	---	22.0
20	---	14.0	11.0	7.0	8.0	10.0	10.0	16.0	22.0	---	---	22.0
21	---	14.0	10.0	7.0	7.0	10.0	10.0	17.0	---	---	---	---
22	---	14.0	10.0	7.0	8.0	10.0	10.0	17.0	---	---	---	---
23	---	14.0	10.0	8.0	8.0	10.0	12.0	17.0	---	25.0	---	---
24	---	14.0	10.0	8.0	8.0	10.0	12.0	18.0	23.0	22.0	---	---
25	---	14.0	10.0	7.0	9.0	10.0	12.0	17.0	23.0	22.0	---	---
26	---	14.0	10.0	7.0	9.0	10.0	12.0	18.0	23.0	22.0	---	---
27	---	14.0	10.0	8.0	9.0	10.0	12.0	20.0	23.0	22.0	---	---
28	---	13.0	10.0	8.0	9.0	10.0	12.0	20.0	23.0	22.0	---	---
29	---	13.0	10.0	8.0	---	10.0	12.0	19.0	23.0	22.0	---	---
30	---	13.0	9.0	---	---	10.0	12.0	20.0	23.0	22.0	---	---
31	---	---	9.0	8.0	---	10.0	---	21.0	---	22.0	---	---
MEAN	18.5	14.5	11.0	8.0	8.0	9.0	10.5	16.0	22.0	23.0	21.0	21.5

08019300 LAKE WINNSBORO NEAR WINNSBORO, TX

LOCATION (revised).--Lat 32°53'10", long 95°20'40", Wood County, Hydrologic Unit 12010002, near left end of dam on Big Sandy Creek, 0.8 mi (1.3 km) upstream from bridge on State Highway 37, 2.5 mi (4.0 km) upstream from Indian Creek, and 5.8 mi (9.3 km) southwest of Winnsboro.

DRAINAGE AREA.--27.1 mi² (70.2 km²).

PERIOD OF RECORD.--June 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1963, nonrecording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 2,500 ft (762 m) long. Storage began June 11, 1962, and the dam was completed in August 1962. The dam was built by Wood County for flood control and recreation. The spillway is an uncontrolled 20 ft (6 m) square drop inlet at crest elevation of 419.0 ft (127.71 m). The crest was raised in April 1966 from elevation 417 to 419 ft (127.1 to 127.7 m). The other spillway is a 300-foot-wide (91 m) cut channel through natural ground near right end of dam. The capacity curve is based on 1960 Geological Survey topographic maps. 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.....	437.0	-
Design flood.....	433.0	22,500
Crest of spillway.....	427.0	16,270
Crest of drop inlet (top of conservation pool).....	419.0	8,110
Lowest gated outlet (invert).....	392.2	0

COOPERATION.--Capacity curve was furnished by Wisenbaker, Fix, and Associates, Consulting Engineers for Wood County.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 11,640 acre-ft (14.4 hm³) Feb. 5, 1975, elevation, 422.92 ft (128.906 m); minimum since first appreciable storage, 2,430 acre-ft (3.00 hm³) Jan. 19, 20, 1965, elevation, 409.79 ft (124.904 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,680 acre-ft (9.47 hm³) May 13, 15, elevation, 418.46 ft (127.547 m); minimum, 5,690 acre-ft (7.02 hm³) Sept. 30, elevation, 415.71 ft (126.708 m).

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

415.0	5,230
417.0	6,590
419.0	8,110

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6750	6540	6550	6390	6590	6710	7360	7150	7500	6980	6430	5980
2	6720	6530	6550	6390	6590	6720	7340	7210	7500	6970	6420	5970
3	6700	6520	6570	6380	6580	6710	7350	7210	7480	6940	6400	5960
4	6690	6520	6560	6380	6570	6700	7370	7210	7470	6920	6370	5960
5	6670	6520	6540	6400	6580	6700	7350	7290	7460	6910	6430	5940
6	6670	6520	6520	6390	6570	6890	7360	7310	7460	6890	6420	5930
7	6650	6510	6510	6390	6570	7090	7350	7340	7440	6860	6410	5910
8	6640	6570	6520	6320	6560	7130	7340	7310	7420	6840	6390	5900
9	6620	6550	6490	6320	6570	7150	7340	7310	7400	6810	6390	5880
10	6630	6540	6490	6320	6590	7160	7350	7290	7380	6800	6370	5870
11	6610	6530	6480	6390	6590	7180	7340	7490	7370	6780	6350	5890
12	6580	6530	6490	6400	6670	7170	7340	7660	7370	6750	6340	5920
13	6570	6520	6500	6400	6670	7190	7340	7660	7340	6730	6310	5910
14	6570	6520	6490	6410	6670	7200	7320	7660	7330	6700	6290	5900
15	6540	6510	6480	6400	6670	7190	7320	7670	7300	6690	6280	5890
16	6530	6520	6490	6480	6670	7190	7310	7640	7270	6670	6260	5870
17	6520	6500	6480	6480	6710	7200	7310	7640	7250	6650	6230	5860
18	6530	6490	6470	6510	6700	7180	7300	7650	7240	6620	6210	5850
19	6520	6490	6470	6520	6710	7180	7280	7640	7230	6600	6190	5840
20	6510	6520	6450	6520	6700	7240	7270	7630	7210	6570	6180	5830
21	6510	6520	6430	6520	6700	7250	7250	7620	7180	6560	6160	5810
22	6500	6510	6410	6520	6700	7240	7250	7620	7180	6530	6150	5790
23	6490	6510	6420	6520	6700	7300	7240	7610	7150	6600	6140	5770
24	6530	6510	6420	6550	6700	7360	7240	7600	7130	6580	6110	5760
25	6520	6490	6410	6560	6720	7370	7210	7580	7110	6570	6090	5740
26	6520	6470	6390	6560	6700	7370	7200	7570	7090	6550	6070	5730
27	6520	6470	6390	6550	6700	7370	7190	7540	7060	6540	6060	5720
28	6520	6470	6390	6550	6720	7380	7180	7530	7040	6520	6050	5710
29	6510	6500	6390	6550	---	7390	7150	7540	7030	6490	6020	5700
30	6500	6560	6390	6550	---	7370	7170	7530	7000	6470	6000	5690
31	6490	---	6390	6570	---	7370	---	7520	---	6450	5990	---
MAX	6750	6570	6570	6570	6720	7390	7370	7670	7500	6980	6430	5980
MIN	6490	6470	6390	6320	6560	6700	7150	7150	7000	6450	5990	5690
(†)	416.86	416.96	416.73	416.97	417.18	418.05	417.79	418.25	417.56	416.81	416.15	415.71
(‡)	-280	+70	-170	+180	+150	+650	-200	+350	-520	-550	-460	-300

CAL YR 1977 MAX 9290 MIN 6390 ‡ -990
WTR YR 1978 MAX 7670 MIN 5690 ‡ -1080

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

SABINE RIVER BASIN

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08019500 BIG SANDY CREEK NEAR BIG SANDY, TX

LOCATION.--Lat 32°36'12", long 95°05'32", Upshur County, Hydrologic Unit 12010002, on left bank at downstream side of bridge on State Highway 155, 0.5 mi (0.8 km) upstream from St. Louis Southwestern Railway Lines bridge, 1.6 mi (2.6 km) northeast of Big Sandy, and 6.5 mi (10.5 km) upstream from mouth.

DRAINAGE AREA.--231 mi² (598 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: 1941(M), 1945-46, 1956, drainage area. WSP 1922: 1944(M), 1945-46.

GAGE.--Water-stage recorder. Datum of gage is 278.38 ft (84.850 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1940, nonrecording gage, and Oct. 5, 1940, to Nov. 26, 1951, water-stage recorder at site 1.3 mi (2.1 km) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Water-discharge records good. Since June 1962, flow affected at times by storage or discharge from the flood-detention pool of Lake Winnsboro (station 08019300). Records furnished by the city of Winnsboro show that 237 acre-ft (292,000 m³) of sewage effluent was discharged into a tributary above station.

AVERAGE DISCHARGE.--39 years, 181 ft³/s (5.126 m³/s), 131,100 acre-ft/yr (162 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft³/s (680 m³/s) Mar. 31, 1945, gage height, 24.1 ft (7.35 m), present site and datum, from floodmark, from rating curve extended above 13,000 ft³/s (368 m³/s); minimum, 5.0 ft³/s (0.14 m³/s) Aug. 15, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1875, that of Mar. 31, 1945, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 516 ft³/s (14.6 m³/s) Mar. 12, gage height, 10.11 ft (3.082 m), no peak above base of 1,500 ft³/s (42.5 m³/s); minimum, 11.0 ft³/s (0.31 m³/s) Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	34	162	77	108	136	138	42	38	17	23	21
2	27	58	160	80	101	127	119	40	54	18	22	20
3	26	78	155	79	95	127	107	130	48	17	22	18
4	25	73	133	72	90	125	104	131	42	17	23	16
5	25	58	121	63	87	125	108	137	37	17	30	14
6	25	52	114	61	85	122	108	137	34	22	35	13
7	25	50	98	61	85	289	96	120	35	17	44	12
8	25	54	82	60	90	372	90	130	33	17	42	11
9	24	59	70	56	100	283	85	128	26	17	33	12
10	27	50	64	54	130	292	89	125	24	17	30	12
11	31	47	61	60	162	362	97	102	22	17	29	11
12	29	41	60	96	170	498	91	207	21	15	30	14
13	27	37	75	112	172	471	86	212	20	13	29	112
14	26	36	98	124	203	380	82	187	19	15	28	100
15	25	36	97	137	235	273	81	210	19	16	27	61
16	25	40	79	195	230	199	73	264	18	16	26	45
17	24	38	74	210	218	163	65	350	18	17	25	30
18	25	36	71	220	201	150	77	321	18	16	25	26
19	25	36	70	230	180	137	70	212	17	16	23	25
20	23	35	68	235	170	117	65	123	17	14	18	24
21	22	41	66	208	160	134	60	83	18	13	16	20
22	22	62	64	175	150	141	57	65	18	15	18	22
23	22	83	62	148	133	128	63	63	18	17	18	24
24	22	82	61	147	111	218	59	63	18	32	17	17
25	22	74	60	154	102	229	60	49	18	40	15	14
26	23	70	58	152	128	226	57	42	17	54	14	12
27	24	67	57	142	126	226	58	39	16	45	15	12
28	24	61	56	136	140	234	53	34	16	27	18	12
29	24	84	60	145	---	263	46	32	16	22	20	12
30	24	127	67	127	---	239	43	33	16	23	21	12
31	23	---	68	113	---	178	---	34	---	23	21	---
TOTAL	768	1699	2591	3929	3962	6964	2387	3845	731	642	757	754
MEAN	24.8	56.6	83.6	127	142	225	79.6	124	24.4	20.7	24.4	25.1
MAX	31	127	162	235	235	498	138	350	54	54	44	112
MIN	22	34	56	54	85	117	43	32	16	13	14	11
AC-FT	1520	3370	5140	7790	7860	13810	4730	7630	1450	1270	1500	1500
CAL YR 1977	TOTAL	62980	MEAN	173	MAX	2840	MIN	22	AC-FT	124900		
WTR YR 1978	TOTAL	29029	MEAN	79.5	MAX	498	MIN	11	AC-FT	57580		

SABINE RIVER BASIN

08019500 BIG SANDY CREEK NEAR BIG SANDY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA: WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 04...	1514	25	103	6.7	21.0	17	4	4.2	1.7	11
NOV 08...	1237	49	116	6.8	17.0	19	8	4.8	1.8	12
DEC 13...	1517	80	157	7.1	9.0	28	19	6.8	2.7	15
JAN 24...	0940	153	196	6.7	3.0	35	29	7.8	3.8	20
FEB 27...	1600	129	206	6.5	9.5	39	32	9.2	3.9	20
APR 10...	1450	88	186	--	19.0	36	23	8.0	4.0	18
MAY 23...	1000	62	173	--	22.0	35	19	8.2	3.6	16
JUL 10...	1435	16	117	--	28.0	21	5	5.0	2.0	10
AUG 21...	1530	14	89	--	27.0	18	4	4.4	1.7	8.2

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 04...	1.1	.9	16	0	7.5	15	.0	14	62
NOV 08...	1.2	2.6	14	0	2.1	27	.3	11	68
DEC 13...	1.2	2.9	11	0	14	29	.0	13	89
JAN 24...	1.5	3.5	7	0	23	34	.0	13	109
FEB 27...	1.4	2.1	8	0	28	36	.1	11	114
APR 10...	1.3	3.0	16	0	19	32	.1	12	104
MAY 23...	1.2	3.1	20	0	17	30	.1	15	103
JUL 10...	1.0	2.4	19	0	9.0	18	.1	12	68
AUG 21...	.8	1.8	17	0	6.9	14	.1	12	57

08020000 SABINE RIVER NEAR GLADEWATER, TX

LOCATION.--Lat 32°31'37", long 94°57'36", Gregg County, Hydrologic Unit 12010002, on right bank 46 ft (14 m) downstream from bridge on U.S. Highway 271, 0.4 mi (0.6 km) downstream from Glade Creek, 1.2 mi (1.9 km) southwest of Gladewater, and at mile 397.5 (639.6 km).

DRAINAGE AREA.--2,791 mi² (7,229 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1932 to current year.

REVISED RECORDS.--WSP 1732: Drainage area. WDR TX-73-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 243.85 ft (74.325 m) National Geodetic Vertical Datum of 1929 (Texas Reclamation Department bench mark based on Geological Survey datum). Prior to Oct. 13, 1933, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Flow is partly regulated by Lake Tawakoni (station 08017400) and five tributary reservoirs, with a combined capacity of 975,500 acre-ft (1,200 hm³). Many diversions above station for oilfield operations and municipal supply. Several observations of water temperatures were made during the year. National Weather Service rain gage and gage-height telemeter at station.

AVERAGE DISCHARGE.--28 years (water years 1933-60) prior to regulation by Lake Tawakoni, 2,012 ft³/s (56.98 m³/s), 1,458,000 acre-ft/yr (1.80 km³/yr); 18 years (water years 1961-78) regulated, 1,757 ft³/s (49.76 m³/s), 1,273,000 acre-ft/yr (1.57 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 138,000 ft³/s (3,910 m³/s) Apr. 2, 1945, gage height, 44.16 ft (13.460 m), from floodmark, from rating curve extended above 91,000 ft³/s (2,580 m³/s); minimum, 5.6 ft³/s (0.16 m³/s) Aug. 16, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1892, that of Apr. 2, 1945. Flood in May 1914 reached a stage of about 41.7 ft (12.71 m), discharge, 85,900 ft³/s (2,430 m³/s), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,100 ft³/s (144 m³/s) Mar. 17, gage height, 24.29 ft (7.404 m); minimum, 22 ft³/s (0.62 m³/s) July 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	189	920	375	792	1410	2560	372	296	45	90	36
2	80	383	1030	386	848	1310	2570	317	508	44	72	38
3	74	506	928	379	861	1250	2420	433	486	45	60	37
4	68	562	816	366	824	1210	1930	723	350	47	52	36
5	65	713	731	357	782	1190	1530	636	292	44	58	34
6	64	844	620	349	757	1130	1310	663	258	41	58	34
7	62	918	516	364	707	2180	1150	703	248	40	75	31
8	68	815	449	390	647	3180	1010	724	237	39	93	30
9	114	650	409	368	615	3280	934	730	215	34	125	30
10	126	524	392	343	624	3410	891	607	187	33	220	30
11	135	493	424	328	653	3500	899	550	168	31	224	30
12	129	531	415	382	745	3670	877	954	167	29	159	30
13	116	639	411	488	1180	4430	818	1380	225	28	112	39
14	125	644	505	577	1500	4560	793	1710	228	26	89	286
15	132	526	532	557	1770	4850	846	1880	177	25	74	223
16	154	417	497	686	1940	5040	853	2000	135	28	65	147
17	199	357	453	925	2070	5090	811	2170	112	29	56	114
18	187	317	420	974	2350	4980	821	2340	98	28	49	91
19	162	276	401	1120	2600	4200	799	2310	102	27	45	90
20	146	247	389	1200	2750	3500	700	1820	109	27	43	74
21	126	290	367	1210	2830	3110	615	1170	113	25	39	66
22	110	335	337	1110	2820	3030	574	666	111	24	36	69
23	103	385	324	943	2730	2480	669	440	102	23	35	74
24	100	409	318	896	2550	2580	689	392	91	25	34	63
25	96	372	322	944	2170	2640	557	373	81	136	34	48
26	92	334	389	965	1950	2460	441	413	73	311	32	42
27	89	332	405	890	1690	2300	389	404	65	378	29	40
28	88	326	375	812	1520	2230	371	364	59	420	28	38
29	88	444	345	798	---	2260	387	334	53	327	30	36
30	89	700	350	812	---	2370	419	319	49	197	32	34
31	91	---	357	780	---	2480	---	301	---	121	35	---
TOTAL	3363	14478	15147	21074	43275	91310	29633	28198	5395	2677	2183	1970
MEAN	108	483	489	680	1546	2945	988	910	180	86.4	70.4	65.7
MAX	199	918	1030	1210	2830	5090	2570	2340	508	420	224	286
MIN	62	189	318	328	615	1130	371	301	49	23	28	30
AC-FT	6670	28720	30040	41800	85840	181100	58780	55930	10700	5310	4330	3910
CAL YR 1977	TOTAL	722751	MEAN	1980	MAX	13700	MIN 62	AC-FT	1434000			
WTR YR 1978	TOTAL	258703	MEAN	709	MAX	5090	MIN 23	AC-FT	513100			

SABINE RIVER BASIN

08020000 SABINE RIVER NEAR GLADEWATER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV 08...	1030	814	151	7.1	16.5	7.6	80	2.5	32	10
JAN 26...	0900	973	334	6.7	3.0	11.6	89	1.5	61	45
MAR 21...	1500	3320	228	7.1	15.5	8.3	86	2.2	62	13
MAY 17...	0915	2140	324	6.5	22.0	6.4	75	2.4	61	40
JUL 19...	0945	27	318	6.8	29.5	4.8	63	2.5	71	20
SEP 20...	1245	72	240	6.7	28.0	5.8	74	1.9	44	26
DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV 08...	7.7	3.2	15	1.1	4.8	27	0	9.2	31	.1
JAN 26...	16	5.1	36	2.0	3.5	19	0	33	65	.1
MAR 21...	18	4.1	18	1.0	3.7	60	0	25	23	.1
MAY 17...	16	5.1	34	1.9	5.2	26	0	39	55	.2
JUL 19...	19	5.6	31	1.6	4.0	62	0	25	47	.2
SEP 20...	12	3.5	26	1.7	3.7	22	0	26	43	.1
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, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	
NOV 08...	7.5	92	.07	.01	.08	.09	.65	.74	.24	
JAN 26...	15	183	.05	.01	.06	.14	.65	.79	.08	
MAR 21...	7.9	129	.13	.01	.14	.11	.78	.89	.10	
MAY 17...	7.2	175	.16	.01	.17	.06	1.7	1.8	.12	
JUL 19...	9.8	172	.01	.00	.01	.01	1.2	1.2	.07	
SEP 20...	11	136	.40	.05	.45	.12	.59	.71	.07	

SABINE RIVER BASIN

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08020990 TIAWICHI CREEK NEAR LONGVIEW, TX

LOCATION.--Lat 32°19'14", long 94°43'57", Rusk County, Hydrologic Unit 12010002, on downstream side of highway embankment, 120 ft (37 m) to left of downstream left abutment of main channel bridge on State Highway 322, 0.3 mi (0.5 km) downstream from Barnes Creek, 8.6 mi (13.8 km) south of intersection of Interstate Highway 20 and State Highway 149 in Longview, and 9.3 mi (15.0 km) upstream from right end of spillway of Lake Cherokee.

DRAINAGE AREA.--62.7 mi² (162.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1977 to September 1978.

GAGE.--Water-stage recorders and concrete controls for both main and overflow channels. Datum of gage is 275.00 ft (83.820 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair except those between 8.0 ft³/s (0.23 m³/s) and 60 ft³/s (1.70 m³/s), which are good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 448 ft³/s (12.7 m³/s) May 13, 1978, from rating curve extended above 40 ft³/s (1.13 m³/s); maximum main channel gage height, 8.80 ft (2.682 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period November to September, 448 ft³/s (12.7 m³/s) May 13, from rating curve extended above 40 ft³/s (1.13 m³/s); maximum main channel gage height, 8.80 ft (2.682 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, NOVEMBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	42	9.2	34	25	29	1.5	.97	.00	.67	.00
2		---	33	7.8	49	25	28	1.2	29	.00	.26	.00
3		---	21	7.0	35	25	27	30	47	.00	.00	.00
4		---	15	6.6	25	32	25	87	30	.74	.00	.18
5		---	12	7.0	19	29	24	64	16	.01	.00	.26
6		---	10	7.0	14	26	24	19	13	.00	.27	.18
7		---	9.3	7.5	12	118	22	13	17	.00	.27	.13
8		---	9.2	7.4	13	228	20	13	39	.00	.25	.11
9		---	8.4	6.8	14	138	18	14	23	.00	.19	.11
10		---	8.1	6.1	16	60	21	13	13	.00	.14	.08
11		15	8.1	6.7	19	45	28	6.4	7.1	.00	.11	.08
12		11	8.7	14	25	37	30	242	4.5	.00	.08	.16
13		7.8	17	20	101	40	22	374	2.9	.00	.07	.33
14		6.4	31	19	184	71	17	166	2.0	.00	.03	1.3
15		5.9	37	15	76	75	14	59	1.7	.00	.00	1.5
16		5.7	21	52	45	46	13	35	1.4	.00	.00	1.0
17		5.3	16	190	38	34	14	30	.95	.00	.00	.89
18		4.9	14	213	45	29	29	27	.70	.00	.00	.67
19		4.8	13	61	47	26	32	22	.58	.00	.00	.40
20		4.8	9.0	46	38	25	19	20	.47	.00	.00	.33
21		6.3	6.3	33	31	123	12	17	.22	.00	.00	.26
22		7.0	5.6	25	28	209	10	15	.12	.00	.00	.18
23		7.2	5.5	24	25	108	11	13	.03	.00	.00	.18
24		7.4	5.6	38	24	163	10	11	.00	.00	.00	.21
25		7.3	5.7	61	24	207	8.4	9.7	.00	.00	.00	.26
26		6.9	5.5	60	23	111	5.8	7.5	.00	.00	.00	.18
27		6.9	5.2	40	23	62	3.7	4.3	.00	11	.00	.18
28		6.7	5.2	26	24	48	2.2	2.6	.00	10	.00	.18
29		11	6.6	20	---	41	1.5	1.4	.00	4.9	.00	.26
30		28	8.6	16	---	36	1.4	1.1	.00	2.4	.00	.33
31		---	10	18	---	33	---	.58	---	1.3	.00	---
TOTAL		---	412.6	1070.1	1051	2275	522.0	1320.28	250.64	30.35	2.34	9.93
MEAN		---	13.3	34.5	37.5	73.4	17.4	42.6	8.35	.98	.075	.33
MAX		---	42	213	184	228	32	374	47	11	.67	1.5
MIN		---	5.2	6.1	12	25	1.4	.58	.00	.00	.00	.00
AC-FT		---	818	2120	2080	4510	1040	2620	497	60	4.6	20

CAL YR 1977 TOTAL - MEAN - MAX - MIN - AC-FT -
WTR YR 1978 TOTAL - MEAN - MAX - MIN - AC-FT -

08021500 LAKE CHEROKEE NEAR LONGVIEW, TX

LOCATION.--Lat 32°22'36", long 94°38'30", Gregg-Rusk County line, Hydrologic Unit 12010002, on left wingwall of intake structure of electric generating plant of Southwestern Electric Power Co., 2.3 mi (3.7 km) upstream from dam on Cherokee Bayou, 10 mi (16 km) upstream from Sabine River, and 10.3 mi (16.6 km) southeast of Longview.

DRAINAGE AREA.--158 mi² (409 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1951 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--The lake is formed by a rolled earthfill dam 4,000 ft (1,220 m) long. An uncontrolled concrete spillway 828 ft (252 m) long is located at left end of dam. An emergency spillway, 160 ft (49 m) wide, is cut in natural ground at right end of dam. Storage began in October 1948 and dam was completed Nov. 19, 1948. Lake was built for recreational purposes, to supply cooling water for generating plant of Southwestern Electric Power Co., and for municipal use by city of Longview. 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.....	295.0	-
Top of design flood pool.....	291.0	-
Crest of spillway.....	287.7	-
Crest of spillway (top of conservation pool).....	280.0	46,710
Lowest gated outlet (invert).....	260.0	4,510

COOPERATION.--Elevation record was furnished by Southwestern Electric Power Co. Record of diversions were furnished by city of Longview. Capacity curve data from "Report of Sedimentation of Lake Cherokee, Gregg & Rusk Counties, Apr. 4 to May 13, 1960", by Soil Conservation Service.

EXTREMES (at 0800) FOR PERIOD OF RECORD.--Maximum contents observed, 71,170 acre-ft (87.8 hm³) May 3, 1959, elevation, 285.5 ft (87.02 m); minimum observed, 34,000 acre-ft (41.9 hm³) Sept. 26-30, 1978, elevation, 276.40 f (84.247 m).

EXTREMES (at 0800) FOR CURRENT YEAR.--Maximum contents observed, 47,880 acre-ft (59.0 hm³) Jan. 19, 20, 27, Feb. 12, Mar. 10-15, 23-27, May 14, 15, 17-19, elevation 280.30 ft (85.435 m); minimum observed, 34,000 acre-ft (41.9 hm³) Sept. 26-30, elevation, 276.40 ft (84.247 m).

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

276.0	32,790	279.0	42,900
277.0	35,900	280.0	46,710
278.0	39,300	281.0	50,700

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44770	43270	43270	45150	47490	47100	47490	47100	45930	43640	40000	35900
2	44770	43270	43640	45150	47490	47100	47100	47100	45930	43640	40000	35900
3	44580	43270	43640	45150	47490	47100	47100	47100	45930	43270	39650	35900
4	44580	42900	44010	45150	47490	47100	47100	47100	45930	42900	39650	35900
5	44580	42900	44010	45150	47490	47100	47100	47100	46320	42530	39650	35580
6	44580	42900	44010	45150	47490	47100	47100	47100	45930	42530	39650	35580
7	44580	42900	44010	45150	47490	47100	47100	47100	46320	42530	39300	35580
8	44200	43270	44010	45150	47490	47490	47100	47100	46710	42530	39300	35580
9	44010	43270	44010	45150	47490	47490	47100	47100	46710	41790	39300	35580
10	44010	43270	44010	45150	47490	47880	47100	46710	46710	41790	38950	35260
11	44010	43270	44010	45150	47490	47880	47100	47100	46710	41790	38600	35260
12	44010	43270	44010	45540	47880	47880	47100	47100	46320	41790	38600	35260
13	44010	43270	44390	45540	47490	47880	47100	47490	46320	41790	38600	35260
14	44010	43270	44390	45540	47490	47880	47100	47880	46320	41790	38600	35260
15	43640	43270	44770	45540	47490	47880	47100	47880	45930	41430	38250	35260
16	44010	43270	44770	46320	47490	47490	47490	47490	45930	41430	37910	35260
17	44010	43270	44770	46710	47490	47490	47490	47880	45930	41070	37910	35260
18	44010	43270	44770	46710	47490	47490	47490	47880	45930	41070	37910	34940
19	43640	43270	44960	47880	47490	47490	47490	47880	45930	40350	37910	34940
20	43640	43270	44770	47880	47100	47490	47490	47490	45540	40350	37910	34940
21	43640	43270	44770	47490	47100	47490	47490	47490	45540	40350	37910	34940
22	43640	43270	44770	47490	47100	47490	47490	47100	45150	40350	37570	34940
23	43640	43270	44770	47490	47100	47880	47490	47100	44770	40710	37230	34940
24	43640	43270	44770	47680	47100	47880	47490	47100	44770	40350	37230	34940
25	43640	43270	44770	47680	47490	47880	47490	46710	44770	40710	36890	34620
26	43640	43270	44770	47680	47100	47880	47490	46320	44390	40710	36890	34000
27	43640	43270	44770	47880	47100	47880	47490	46320	44010	41070	36230	34000
28	43640	43270	44770	47490	47100	47490	47490	46320	44010	41070	36230	34000
29	43640	43270	44770	47490	---	47490	47490	46320	44010	41070	36230	34000
30	42900	43270	44770	47490	---	47490	47490	46320	44010	41430	35900	34000
31	42900	---	44770	47490	---	47490	---	46320	---	40710	35900	---
MAX	44770	43270	44960	47880	47880	47880	47490	47880	46710	43640	40000	35900
MIN	42900	42900	43270	45150	47100	47100	47100	46320	44010	40350	35900	34000
(†)	279.00	279.10	279.50	280.20	280.10	280.20	280.20	279.90	279.30	278.40	277.00	276.40
(‡)	-1870	-370	+1500	+2720	-390	+390	0	-1170	-2310	-3300	-4810	-1900
(††)	1380	1220	1220	1370	1260	1260	1410	1580	1920	2170	2180	1610

CAL YR 1977 MAX 50090 MIN 40890 ‡ -2330 †† 16740
WTR YR 1978 MAX 47880 MIN 34000 ‡ -10770 †† 18580

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by the city of Longview.

SABINE RIVER BASIN

08021500 LAKE CHEROKEE NEAR LONGVIEW, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
JAN 24...	1330	173	7.2	8.5	33	20	8.1	3.2	17
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
JAN 24...	1.3	2.2	16	0	13	30	.1	11	92

SABINE RIVER BASIN

08022000 SABINE RIVER NEAR TATUM, TX

LOCATION.--Lat 32°22'11", long 94°27'28", Panola County, Hydrologic Unit 12010002, near right bank on downstream side of pier of bridge on State Highway 43, 5.1 mi (8.2 km) northeast of Tatum, 5.2 mi (8.4 km) upstream from Potters Creek, 5.6 mi (9.0 km) downstream from Cherokee Bayou, and at mile 339.4 (546.1 km).

DRAINAGE AREA.--3,493 mi² (9,047 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1978 (discontinued as a continuous-record station; converted to a crest-stage partial-record station). Monthly discharge only for October 1938 to January 1939, published in WSP 1312.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 204.18 ft (62.234 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1945, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair. Flow is partly regulated by Lake Tawakoni (station 08017400) located 175 mi (282 km) upstream and by six reservoirs on tributary streams, combined capacity, 1,022,000 acre-ft (1.26 km³). Several diversions above station and below Lake Tawakoni for oilfield operation, municipal, and industrial uses. Low flows are sustained by sewage effluents returned to the river above the station. During the current year, the city of Longview reported that 6,840 acre-ft (8.43 km³) of sewage effluent was returned to the river above this station.

AVERAGE DISCHARGE.--22 years (water years 1939-60) prior to regulation by Lake Tawakoni, 2,663 ft³/s (75.42 m³/s), 1,929,000 acre-ft/yr (2.38 km³/yr); 18 years (water years 1961-78) regulated, 2,260 ft³/s (64.00 m³/s), 1,637,000 acre-ft/yr (2.02 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 123,000 ft³/s (3,480 m³/s) Apr. 4, 1945, gage height, 33.80 ft (10.302 m), from graph based on gage readings, from rating curve extended above 66,000 ft³/s (1,870 m³/s) on basis of partly estimated measurement of 88,900 ft³/s (2,520 m³/s); minimum observed, 2.4 ft³/s (0.068 m³/s) Aug. 11, 12, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1884, that of Apr. 4, 1945. Flood in May 1884 reached a stage of about 32 ft (9.8 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,040 ft³/s (143 m³/s) Mar. 22, gage height, 14.27 ft (4.349 m); minimum, 25 ft³/s (0.71 m³/s) Sept. 12, from graph based on gage readings.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	98	1370	469	1110	1770	2600	407	349	91	220	34
2	112	106	1450	488	1310	1630	2680	409	449	94	164	30
3	103	165	1410	508	1320	1520	2750	462	814	92	132	28
4	97	349	1340	511	1260	1450	2630	748	726	91	100	32
5	94	498	1230	508	1160	1350	2380	875	579	92	85	36
6	91	624	1090	490	1050	1310	1910	826	598	113	83	35
7	87	820	973	490	978	1600	1620	808	685	106	78	34
8	87	970	832	488	911	2820	1520	906	522	95	75	35
9	81	1080	696	495	853	3380	1350	1040	363	90	103	34
10	80	978	599	519	827	3530	1060	982	302	83	112	33
11	107	762	530	511	837	3610	1030	832	265	71	122	31
12	142	600	532	516	875	3580	1020	1150	241	63	174	27
13	150	549	596	584	1270	3600	963	1730	220	63	205	47
14	147	622	766	656	1910	3850	881	2120	207	62	143	60
15	135	726	826	808	1970	4170	844	2190	224	59	103	66
16	127	696	826	999	1970	4400	838	2180	220	59	92	202
17	129	562	805	1360	2070	4530	860	2150	194	59	65	214
18	143	438	750	1830	2320	4650	982	2160	164	62	56	143
19	174	365	661	1610	2600	4740	909	2280	150	59	44	127
20	176	318	587	1560	2720	4800	808	2340	142	52	42	126
21	160	285	543	1560	2810	4900	823	2100	135	50	40	119
22	145	295	516	1480	2890	5000	750	1620	130	49	38	112
23	132	322	485	1380	2870	4620	670	1160	129	48	43	98
24	118	347	456	1340	2840	4340	673	835	137	63	37	88
25	110	390	439	1470	2740	4230	732	613	152	70	32	85
26	110	401	426	1570	2530	3910	688	514	143	72	26	83
27	106	373	444	1500	2230	3490	552	464	134	95	26	80
28	104	339	514	1290	1970	3040	429	439	116	359	28	78
29	101	367	530	1120	---	2750	380	416	106	449	36	75
30	98	797	501	1030	---	2590	368	397	92	456	37	70
31	97	---	469	1010	---	2570	---	375	---	338	36	---
TOTAL	3667	15242	23192	30150	50201	103730	35700	35528	8688	3605	2577	2262
MEAN	118	508	748	973	1793	3346	1190	1146	290	116	83.1	75.4
MAX	176	1080	1450	1830	2890	5000	2750	2340	814	456	220	214
MIN	80	98	426	469	827	1310	368	375	92	48	26	27
AC-FT	7270	30230	46000	59800	99570	205700	70810	70470	17230	7150	5110	4490
CAL YR 1977	TOTAL	858742	MEAN	2353	MAX	11300	MIN	80	AC-FT	1703000		
WTR YR 1978	TOTAL	314542	MEAN	862	MAX	5000	MIN	26	AC-FT	623900		

SABINE RIVER BASIN

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08022000 SABINE RIVER NEAR TATUM, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1952 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: March 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1952 to current year.

WATER TEMPERATURES: February 1952 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 3,040 micromhos Jan. 13, 1966; minimum, 82 micromhos Dec. 24, 1971.

WATER TEMPERATURES (water years 1952-62, 1964-78): Maximum, 38.0°C July 8, 1969; minimum, 2.0°C Jan. 12, 13, 1962.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,560 micromhos Aug. 15; minimum daily, 206 micromhos Nov. 10.

WATER TEMPERATURES: Maximum daily, 36.0°C July 17; minimum daily, 4.0°C Jan. 26-29, Feb. 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- CORALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
NOV 08...	0900	966	275	7.1	27.5	70	60	7.0	90	3.6	37	16
DEC 14...	1159	790	385	6.7	9.5	--	--	--	--	--	50	29
JAN 26...	1105	1580	369	7.0	3.5	60	40	11.5	89	2.5	55	35
MAR 21...	1215	4880	235	7.1	15.5	60	50	8.0	82	2.5	54	23
APR 12...	1230	1020	363	7.3	19.0	--	--	--	--	--	69	26
MAY 16...	1625	2280	327	6.8	23.5	80	60	6.1	73	2.6	57	34
JUN 30...	1100	91	668	--	32.0	--	--	--	--	--	94	28
JUL 18...	1515	59	862	--	33.0	40	10	11.0	153	4.4	100	23
SEP 20...	1635	104	490	7.7	30.0	40	15	9.0	120	4.2	57	22

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)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
NOV 08...	10	3.0	30	2.1	5.0	26	0	22	46	.2	12
DEC 14...	13	4.3	52	3.2	4.1	26	0	32	75	.2	13
JAN 26...	14	4.8	43	2.5	3.5	24	0	32	72	.2	15
MAR 21...	15	4.0	22	1.3	3.8	38	0	28	32	.2	6.4
APR 12...	27	.4	39	2.0	2.8	52	0	31	60	.1	10
MAY 16...	15	4.8	37	2.1	4.5	28	0	37	55	.2	10
JUN 30...	26	7.0	88	4.0	5.2	80	0	55	120	.5	7.8
JUL 18...	27	7.9	120	5.2	7.5	94	0	49	180	.6	9.4
SEP 20...	16	4.1	72	4.2	4.5	42	0	45	95	.4	.3

SABINE RIVER BASIN

08022000 SABINE RIVER NEAR TATUM, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, SUS- PENDED (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 08...	141	101	14	.29	.02	.31	.20	.90	1.1	.33	9.5
DEC 14...	206	--	--	--	--	--	--	--	--	--	--
JAN 26...	197	55	11	.21	.01	.22	.35	.55	.90	.20	6.6
MAR 21...	131	183	22	.02	.01	.03	.03	.83	.86	.21	8.1
APR 12...	196	--	--	--	--	--	--	--	--	--	--
MAY 16...	177	132	26	.26	.02	.28	.05	.91	.96	.15	13
JUN 30...	349	--	--	--	--	--	--	--	--	--	--
JUL 18...	449	36	17	.12	.03	.15	.00	1.4	1.4	.10	10
SEP 20...	258	30	11	.14	.01	.15	.02	.88	.90	.13	11

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 26...	1105	1	100	1	10	1	100
MAR 21...	1215	1	200	0	0	2	80
JUL 18...	1515	2	300	1	0	2	20
SEP 20...	1635	1	100	0	0	1	20

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 26...	1	160	.0	0	0	20
MAR 21...	1	80	.1	6	0	40
JUL 18...	1	610	.0	0	0	10
SEP 20...	1	80	.1	1	0	0

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	1105	.1	0	.00	.00	.0	.0	1	.00	.0
MAR 21...	1215	.0	0	.00	.00	.0	.0	0	.00	.0
JUL 18...	1515	.0	2	.00	.00	.0	.0	1	.00	.2
SEP 20...	1635	.0	2	.00	.00	.0	.0	2	.00	.2

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 26...	.00	.0	.00	.0	.02	.00	.0	.00	.00	.0
MAR 21...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
JUL 18...	.00	.0	.00	.0	.05	.00	.0	.00	.00	.0
SEP 20...	.00	.0	.00	.0	.02	.00	.0	.00	.00	.0

SABINE RIVER BASIN

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08022000 SABINE RIVER NEAR TATUM, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JAN 26...	.00	.00	.0	.00	.0	.00	.0	.00	.00
MAR 21...	.00	.00	.0	.00	.0	.00	.0	.00	.00
JUL 18...	.00	.00	.0	.00	.0	.00	.0	.00	.00
SEP 20...	.00	.00	.0	.00	.0	.00	.0	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 26...	.00	--	.00	0	0	.00	.02	.04	.00
MAR 21...	.00	--	.00	0	0	.00	.01	.01	.00
JUL 18...	.00	.00	.00	0	0	.00	.12	.04	.00
SEP 20...	.00	.00	.00	0	0	.00	.01	.00	.00

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	3667	632	330	3300	120	1230	49	484	76
NOV. 1977.....	15242	367	200	8180	66	2710	30	1250	57
DEC. 1977.....	23192	334	180	11500	60	3750	29	1790	55
JAN. 1978.....	30150	389	210	17000	71	5780	32	2600	54
FEB. 1978.....	50201	342	190	25200	61	4240	29	3890	55
MAR. 1978.....	103730	266	150	41200	44	12300	23	6580	50
APR. 1978.....	35700	324	180	17000	57	5490	27	2650	54
MAY 1978.....	35528	352	190	18300	63	6050	29	2820	56
JUNE 1978.....	8688	420	230	5300	78	1820	34	798	61
JULY 1978.....	3605	780	410	3980	160	1510	59	575	86
AUG. 1978.....	2577	719	380	2630	140	995	55	380	82
SEPT 1978.....	2262	624	330	2010	120	752	48	295	75
TOTAL	314542	**	**	156000	**	50600	**	24100	**
WTD.AVG.	861.76	337	190	**	60	**	29	**	55

SABINE RIVER BASIN

08022000 SABINE RIVER NEAR TATUM, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	624	509	327	340	336	302	311	385	399	664	475	745
2	618	750	243	363	392	280	276	394	405	636	358	743
3	591	1270	314	386	509	310	265	385	407	654	422	746
4	585	1000	250	581	456	340	266	401	425	631	474	748
5	600	724	238	432	420	326	280	459	434	660	1460	755
6	606	541	250	333	378	307	297	416	351	679	1000	760
7	620	300	247	328	370	273	310	320	292	670	504	1200
8	632	271	297	362	405	228	314	296	366	661	714	1360
9	637	250	325	373	400	326	320	264	242	690	682	1270
10	626	206	314	340	389	221	326	332	369	717	1420	1200
11	628	229	699	355	590	216	331	593	370	710	1230	615
12	663	323	470	350	502	260	364	379	392	707	736	824
13	689	333	447	340	331	340	381	472	390	742	523	966
14	763	292	465	351	419	293	357	328	404	883	466	1190
15	659	285	376	411	327	260	347	347	448	802	1560	582
16	610	292	308	480	309	207	355	331	432	750	1080	604
17	629	280	375	533	350	217	350	300	441	698	565	545
18	632	632	420	295	394	226	345	271	442	775	491	487
19	647	596	327	325	408	217	351	352	444	851	483	531
20	691	338	341	370	324	237	375	311	449	867	500	487
21	822	303	313	395	269	303	410	350	482	866	522	454
22	652	351	370	430	256	247	388	390	575	875	526	431
23	535	390	451	465	271	244	383	304	569	894	558	443
24	502	375	398	494	313	234	378	323	576	863	590	448
25	614	360	385	389	282	328	391	348	674	958	628	922
26	610	319	372	374	272	273	392	388	683	946	669	536
27	567	312	343	399	280	253	378	387	675	925	706	510
28	657	386	380	369	278	280	402	340	670	904	700	483
29	588	308	374	351	---	289	390	299	665	954	701	554
30	559	315	340	324	---	325	378	386	668	841	708	475
31	519	---	306	337	---	355	---	391	---	489	716	---
MEAN	625	428	357	386	365	275	347	363	471	773	715	720

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.0	22.0	14.0	---	6.0	7.0	16.0	23.0	27.0	33.0	32.0	31.0
2	29.0	---	15.0	8.0	4.0	6.0	17.0	18.0	---	34.0	32.0	30.0
3	28.0	18.0	16.0	7.0	5.0	---	18.0	21.0	26.0	33.0	32.0	---
4	28.0	---	15.0	9.0	5.0	6.0	16.0	23.0	26.0	34.0	33.0	29.0
5	24.0	20.0	14.0	10.0	---	8.0	18.0	24.0	27.0	35.0	31.0	---
6	28.0	20.0	15.0	10.0	5.0	9.0	18.0	24.0	26.0	35.0	---	28.0
7	---	21.0	14.0	10.0	5.0	8.0	17.0	24.0	25.0	---	31.0	29.0
8	30.0	20.0	15.0	9.0	5.0	10.0	19.0	23.0	26.0	34.0	31.0	30.0
9	27.0	15.0	11.0	8.0	---	10.0	14.0	22.0	27.0	---	31.0	29.0
10	24.0	17.0	12.0	7.0	6.0	10.0	12.0	23.0	28.0	34.0	32.0	28.0
11	22.0	17.0	9.0	---	6.0	9.0	17.0	26.0	25.0	34.0	33.0	29.0
12	18.0	18.0	13.0	---	6.0	10.0	17.0	25.0	27.0	35.0	30.0	30.0
13	20.0	17.0	14.0	---	7.0	9.0	18.0	24.0	28.0	34.0	34.0	30.0
14	21.0	19.0	14.0	8.0	7.0	9.0	19.0	24.0	27.0	35.0	34.0	31.0
15	20.0	---	14.0	5.0	7.0	11.0	17.0	25.0	29.0	35.0	32.0	30.0
16	18.0	20.0	12.0	9.0	7.0	11.0	---	25.0	28.0	---	32.0	30.0
17	25.0	20.0	---	6.0	---	11.0	---	---	29.0	36.0	33.0	---
18	23.0	20.0	15.0	6.0	6.0	12.0	20.0	23.0	29.0	34.0	32.0	29.0
19	22.0	18.0	13.0	---	6.0	12.0	20.0	26.0	30.0	34.0	33.0	29.0
20	23.0	16.0	10.0	---	5.0	12.0	23.0	26.0	30.0	35.0	---	30.0
21	23.0	15.0	11.0	---	7.0	13.0	22.0	---	32.0	34.0	33.0	29.0
22	28.0	17.0	10.0	---	7.0	14.0	20.0	28.0	33.0	34.0	34.0	---
23	19.0	17.0	9.0	---	8.0	14.0	21.0	27.0	32.0	34.0	33.0	30.0
24	23.0	---	10.0	5.0	8.0	14.0	20.0	26.0	32.0	33.0	34.0	28.0
25	22.0	16.0	---	5.0	8.0	15.0	21.0	28.0	---	32.0	34.0	---
26	23.0	17.0	9.0	4.0	7.0	14.0	21.0	27.0	32.0	31.0	34.0	---
27	21.0	17.0	9.0	4.0	8.0	15.0	23.0	27.0	32.0	---	31.0	---
28	21.0	15.0	11.0	4.0	8.0	16.0	21.0	---	33.0	33.0	31.0	---
29	21.0	15.0	10.0	4.0	---	16.0	23.0	28.0	34.0	32.0	31.0	---
30	23.0	14.0	10.0	5.0	---	17.0	20.0	29.0	34.0	33.0	---	---
31	23.0	---	10.0	5.0	---	17.0	---	28.0	---	34.0	32.0	---
MEAN	23.5	17.5	12.0	6.5	6.5	11.5	19.0	25.0	29.0	34.0	32.5	29.5

08022060 MARTIN LAKE NEAR TATUM, TX

LOCATION.--Lat 32°15'42", long 94°34'23", Rusk County, Hydrologic Unit 12010002, on retaining wall, 30 ft (9 m) to right of intake to generating plant No. 1, 1.9 mi (3.1 km) upstream from Martin Dam on Martin Creek, 5.8 mi (9.3 km) southwest of Tatum, and 21.9 mi (35.2 km) upstream from mouth.

DRAINAGE AREA.--130 mi² (337 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 15, 1976, nonrecording gage near left end of dam 1.9 mi (3.1 km) downstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 8,675 ft (2,644 m) long, including a 1,000 ft (300 m) uncontrolled emergency spillway. Deliberate impoundment began in April 1974. The uncontrolled emergency spillway is an excavated channel cut through natural ground and located at the left end of the dam. The controlled spillway is a concrete ogee design with four 14.0- by 40.0-foot-wide (4.3 by 12.2 m) tainter gates located near the left end of the dam. The low-flow outlet works consist of a 3.0 by 5.0 ft (0.9 by 1.5 m) conduit with a sluice gate located in one of the gate piers. In addition, there is an 8 in (203 mm) pipe with sluice gate. The area and capacity tables are based on aerial survey made in October 1971. There are no known diversions. 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.....	321.5	
Crest of uncontrolled spillway.....	312.0	111,500
Top of gates.....	308.0	87,960
Top of conservation pool.....	306.0	77,500
Crest of gated spillway.....	294.0	31,040
Lowest gated outlet (invert).....	284.0	10,320

COOPERATION.--Area and capacity tables furnished by Forrest and Cotton, Consulting Engineers, for Texas Utilities Services, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 80,760 acre-ft (99.6 hm³) Mar. 28, 1977, elevation, 306.64 ft (93.464 m); minimum since first appreciable storage, 66,590 acre-ft (82.1 hm³) Sept. 13, 1978, elevation, 303.72 ft (92.574 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 80,140 acre-ft (98.8 hm³) Mar. 21, elevation, 306.52 ft (93.427 m); minimum, 66,590 acre-ft (82.1 hm³) Sept. 13, elevation, 303.72 ft (92.574 m).

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

303.0	63,360	306.0	77,500
304.0	67,880	307.0	82,620
305.0	72,580		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73650	72200	72830	73260	78960	79020	78760	77650	77500	75460	71440	67320
2	73410	72110	72830	73310	79270	79070	78760	78100	77450	75310	71340	67280
3	73210	72010	72870	73310	79730	79170	78860	78200	77450	75160	71150	67190
4	73120	71960	72870	73310	79680	79220	78910	78260	77450	75020	71010	67230
5	73070	72010	72830	73310	79630	79270	78960	78260	77400	74970	70960	67190
6	73020	72010	72730	73310	79630	79020	78960	78910	77700	74820	70870	67090
7	72920	71960	72680	73360	79630	78810	78960	78150	77600	74670	70770	67000
8	72730	72540	72590	73310	79580	78360	78960	77750	77600	74570	70680	66910
9	72680	71870	72490	73310	79370	78150	78960	77750	77550	74430	70540	66820
10	72920	72630	72440	73260	79320	78260	78710	77850	77500	74330	70440	66730
11	72830	72630	72390	73450	79220	78310	78100	78050	77450	74180	70350	66640
12	72680	72590	72540	73600	78610	78360	77900	78660	77400	72970	70210	66730
13	72630	72590	73310	73650	78510	78710	78050	78150	77300	72830	70060	66590
14	72590	72590	73550	73700	78860	78910	78050	78200	77150	72680	69920	69500
15	72390	72590	73600	73700	79420	78960	78000	78150	77100	72590	69740	69550
16	72340	72590	73750	74870	79830	79020	78000	78100	76900	72440	69590	69550
17	72340	72490	73750	75660	79630	79120	78310	78100	76800	72340	69450	69450
18	72300	72440	73750	76100	79420	79170	78460	78100	76850	72110	69220	69360
19	72250	72440	73650	76450	79320	79170	78310	78000	76750	71960	69130	69410
20	72250	72440	73550	76650	79320	79220	78310	78000	76600	71870	68990	69360
21	72200	72440	73450	76750	79320	80040	78260	78000	76500	71770	68850	69310
22	72150	72390	73450	76850	79320	79270	78260	78000	76450	71720	68710	69130
23	72150	72390	73410	77250	79370	79070	78260	77900	76300	71720	68620	69030
24	72250	72390	73360	78100	79320	79630	78260	77950	76250	71630	68430	68850
25	72300	72390	73360	78360	79320	79070	78100	77800	76150	71480	68340	68710
26	72250	72340	73310	78810	79370	78310	78050	77750	75950	71340	68150	68570
27	72250	72300	73260	79270	79170	78460	78000	77700	75810	72110	68010	68520
28	72300	72250	73260	79220	79070	78560	77900	77650	75710	71960	67880	68430
29	72250	72490	73310	79170	---	78610	77800	77550	75610	71870	67690	68290
30	72250	72780	73360	79070	---	78660	77750	77500	75560	71720	67510	68290
31	72200	---	73310	78710	---	78760	---	77450	---	71530	67460	---
MAX	73650	72780	73750	79270	79830	80040	78960	78910	77700	75460	71440	69550
MIN	72150	71870	72390	73260	78510	78150	77750	77450	75560	71340	67460	66590
(†)	304.92	305.04	305.15	306.24	306.31	306.25	306.05	305.99	305.61	304.78	303.91	304.09
(‡)	-1550	+580	+530	+5400	+360	-310	-1010	-300	-1890	-4030	-4070	+830

CAL YR 1977 MAX 79930 MIN 71870 ‡ -4740
WTR YR 1978 MAX 80040 MIN 66590 ‡ -5460

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

SABINE RIVER BASIN

08022060 MARTIN LAKE NEAR TATUM, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
JAN 25...	1500	237	7.9	5.5	75	34	18	7.2	16
APR 13...	0930	254	--	19.5	76	41	18	7.6	16
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HC03)	CARBONATE (MG/L AS C03)	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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
JAN 25...	.8	3.1	50	0	35	30	.2	5.3	139
APR 13...	.8	3.2	43	0	43	22	.2	4.1	135

08022070 MARTIN CREEK NEAR TATUM, TX

LOCATION (revised).--Lat 32°17'44", long 94°29'29", Panola County, Hydrologic Unit 12010002, on right bank 35 ft (11 m) downstream from right abutment and 360 ft (110 m) to right of bridge on State Highway 149, 50 ft (15 m) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.7 mi (2.7 km) upstream from Hogan Creek, 2.0 mi (3.2 km) southeast of Tatum, 5.0 mi (8.0 km) downstream from Martin Lake, and 15.0 mi (24.1 km) upstream from mouth. Prior to Mar. 31, 1978, at site 50 ft (15 m) upstream.

DRAINAGE AREA.--148 mi² (383 km²).

PERIOD OF RECORD.--April 1974 to current year. Prior to Mar 31, 1978 at site 50 ft (15 m) upstream.

REVISED RECORDS.--WDR TX-76-1: 1975.

GAGE.--Water-stage recorder. Datum of gage is 240.26 ft (73.231 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is largely regulated by Martin Lake located 5 mi (8 km) upstream. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,540 ft³/s (71.9 m³/s) Apr. 30, 1976, gage height, 13.76 ft (4.194 m); minimum, 0.25 ft³/s (0.007 m³/s) Oct. 17, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1948, 18.15 ft (5.532 m) April 1969. The flood in April 1957 reached a stage of 13.95 ft (4.252 m), from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,330 ft³/s (37.7 m³/s) Mar. 24, gage height, 12.31 ft (3.752 m); minimum, 0.25 ft³/s (0.007 m³/s) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.2	8.9	3.0	98	7.5	8.1	3.4	3.4	3.3	3.8	4.1
2	1.2	1.4	4.4	2.8	387	5.7	7.3	3.5	3.4	3.1	3.8	3.8
3	.89	1.4	3.1	2.7	455	5.4	6.5	19	3.8	3.6	3.8	3.6
4	1.0	1.1	2.6	2.6	312	4.6	6.1	9.5	3.6	3.8	3.6	3.5
5	2.6	1.0	2.2	2.6	27	4.2	5.6	6.5	3.5	3.6	3.6	3.4
6	1.6	1.0	2.0	2.7	12	14	5.3	5.7	3.5	3.5	3.5	3.2
7	1.6	.96	1.8	2.7	9.5	252	4.8	157	4.6	3.6	3.5	3.0
8	1.5	4.7	1.9	3.0	8.9	433	4.3	683	4.4	3.5	3.4	3.0
9	1.5	9.2	2.0	3.4	8.8	434	4.0	397	4.3	3.5	3.4	2.9
10	2.2	2.4	1.7	2.7	9.8	238	10	50	4.0	3.3	3.3	3.0
11	4.6	1.5	1.7	2.8	10	20	394	9.8	3.9	3.1	3.3	3.1
12	2.4	1.3	2.1	8.3	22	10	404	106	3.6	3.4	3.2	4.4
13	1.7	1.2	17	6.9	198	10	101	496	3.5	3.4	3.2	5.1
14	1.6	1.2	18	5.0	431	15	13	298	3.3	3.4	3.1	90
15	1.5	1.2	7.3	4.1	467	10	8.1	19	3.2	3.5	3.1	30
16	.66	1.2	4.8	38	464	7.3	6.8	10	3.4	3.5	3.1	4.2
17	.84	1.3	4.7	51	287	5.7	7.2	8.4	3.5	3.4	3.1	2.5
18	1.5	1.2	4.0	16	37	5.1	15	7.7	3.4	3.3	3.0	1.8
19	1.3	1.1	3.1	25	16	4.7	8.5	6.8	3.3	3.2	3.0	1.5
20	1.0	1.1	2.6	16	12	4.4	6.3	6.1	3.3	3.2	3.0	1.8
21	.90	1.3	2.2	10	8.3	121	5.4	5.7	3.3	3.9	3.1	1.8
22	.95	1.5	2.1	9.6	5.6	910	4.9	5.3	3.3	4.5	3.4	2.3
23	.96	1.5	2.1	11	2.0	1090	5.0	4.9	3.4	7.1	3.4	1.8
24	.90	1.7	2.4	75	8.3	903	4.9	4.7	3.3	4.0	3.4	1.8
25	.99	1.6	2.4	237	5.4	644	4.5	4.5	3.4	3.6	3.3	1.5
26	1.2	1.5	2.2	470	4.1	920	4.0	4.1	3.4	3.8	3.4	1.5
27	2.1	1.5	2.2	479	4.0	524	3.9	4.0	3.2	11	3.3	1.6
28	.88	1.6	2.2	369	11	37	3.5	3.8	3.0	9.9	3.8	1.7
29	.79	4.7	2.7	35	---	15	3.5	3.5	3.0	5.8	4.0	1.7
30	.68	11	3.8	14	---	11	3.4	3.4	3.2	4.6	3.6	1.7
31	.81	---	3.3	14	---	9.1	---	3.4	---	4.0	3.4	---
TOTAL	44.15	64.56	123.5	1924.9	3320.7	6674.7	1068.9	2349.7	105.4	130.4	104.9	195.3
MEAN	1.42	2.15	3.98	62.1	119	215	35.6	75.8	3.51	4.21	3.38	6.51
MAX	4.6	11	18	479	467	1090	404	683	4.6	11	4.0	90
MIN	.66	.96	1.7	2.6	2.0	4.2	3.4	3.4	3.0	3.1	3.0	1.5
AC-FT	88	128	245	3820	6590	13240	2120	4660	209	259	208	387
CAL YR 1977	TOTAL	27046.91	MEAN	74.1	MAX	1810	MIN	.66	AC-FT	53650		
WTR YR 1978	TOTAL	16107.11	MEAN	44.1	MAX	1090	MIN	.66	AC-FT	31950		

SABINE RIVER BASIN

08022200 MURVAUL LAKE NEAR GARY, TX

LOCATION.--Lat 32°02'04", long 94°25'15", Panola County, Hydrologic Unit 12010002, at outlet structure of Murvaul Lake Dam on Murvaul Bayou, 3.0 mi (4.8 km) west of Gary, and 9.0 mi (14.5 km) southwest of Carthage.

DRAINAGE AREA.--115 mi² (298 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1957 to September 1978 (discontinued).

REVISED RECORDS.--WSP 1732: Drainage area.

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

REMARKS.--The lake is formed by a rolled earthfill dam 8,300 ft (2,530 m) long. Spillway is an uncontrolled concrete flat-crested weir section 270 ft (82 m) long at right end of dam, designed to discharge 26,700 ft³/s (756 m³/s) under a 10 ft (3 m) head. Storage began in November 1957 and dam completed in June 1958. Outlet works consist of an outlet tower and a 36-inch-diameter (914 mm) pipe through the dam with flow controlled by a valve in control tower. The pipe terminates in a tee at downstream side of dam with one branch discharging below the dam and the other branch connected to a pipeline for municipal supply. The lake is the property of Panola County Fresh Water Supply District No. 1, Carthage, and was built to impound water for municipal and industrial uses. The capacity table is based on a survey made in 1955. 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.....	275.0	91,520
Crest of spillway.....	265.3	45,840
Invert of lowest sluice gate.....	235.0	25

COOPERATION.--Capacity table and records of diversions furnished by Panola County Fresh Water Supply District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 58,050 acre-ft (71.6 hm³) Mar. 30, 1965, elevation, 268.24 ft (81.760 m); minimum since lake first filled in 1958, 26,670 acre-ft (32.9 hm³) about Sept. 19, 1958, elevation, 259.9 ft (79.22 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 49,640 acre-ft (61.2 hm³) Jan. 25, elevation, 266.24 ft (81.150 m); minimum, 40,030 acre-ft (49.4 hm³) Sept. 11, 12, elevation, 263.80 ft (80.406 m).

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

263.0	37,090	266.0	48,660
264.0	40,790	267.0	52,780
265.0	44,650		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45520	44300	44570	45080	48580	47160	46800	46240	46240	44100	42310	40410
2	45360	44220	44530	45040	48580	47120	46760	46800	46160	44070	42230	40520
3	45240	44180	44570	45000	48370	47120	46680	46640	46120	43990	42160	40490
4	45200	44140	44610	45000	48090	47200	46680	46600	46080	43910	42080	40450
5	45200	44140	44570	45040	47840	47080	46640	46560	46040	43950	42080	40370
6	45080	44140	44420	45120	47520	47000	46560	47400	46120	43870	42040	40300
7	45040	44070	44380	45120	47520	47200	46520	48500	46120	43750	41970	40260
8	44960	44570	44490	45120	47360	47640	46520	48370	46040	43680	41850	40140
9	44810	44530	44380	45040	47400	47200	47200	48000	45960	43600	41820	40110
10	44960	44460	44260	44920	47280	47000	48950	47680	45880	43480	41780	40110
11	44880	44460	44300	45240	47240	46960	48870	47640	45840	43360	41700	40110
12	44770	44420	44300	45280	47520	46800	48580	48090	45760	43290	41630	40180
13	44690	44420	44960	45320	48700	46920	48170	48460	45680	43210	41510	40140
14	44650	44380	45080	45280	48540	46840	47840	48210	45560	43050	41440	42160
15	44650	44380	45080	45240	48250	46880	47600	47840	45520	43050	41320	42390
16	44610	44380	45160	46960	48000	46920	47400	47560	45360	42930	41250	42390
17	44530	44300	45120	47840	47880	46720	47400	47360	45280	42860	41130	42310
18	44490	44220	45120	48250	47760	46640	47280	47240	45240	42740	41020	42230
19	44490	44220	45160	48330	47600	46680	47080	47160	45160	42660	40980	42270
20	44460	44260	45120	48170	47560	48000	46960	47040	45040	42540	40870	42270
21	44420	44340	44960	48000	47400	48660	46760	46920	45000	42430	40870	42230
22	44380	44300	45000	47760	47200	48500	46760	46840	44920	42620	40750	42120
23	44340	44300	44960	48090	47160	48210	46720	46760	44850	42620	40680	42080
24	44340	44340	45000	49360	47000	47920	46680	46680	44770	42580	40600	42010
25	44340	44340	44960	49400	46960	47640	46600	46560	44650	42510	40520	41930
26	44300	44300	44920	48910	46840	47400	46520	46480	44530	42430	40410	41850
27	44220	44260	44880	48500	46800	47240	46440	46440	44460	42660	40300	41850
28	44220	44220	44850	48170	46840	47160	46400	46400	44380	42620	40450	41820
29	44180	44460	45040	47840	---	47040	46320	46320	44260	42540	40520	41740
30	44140	44570	45040	47800	---	46920	46280	46200	44180	42470	40450	41740
31	44100	---	45080	47920	---	46840	---	46120	---	42350	40370	---
MAX	45520	44570	45160	49400	48700	48660	48950	48500	46240	44100	42310	42390
MIN	44100	44070	44260	44920	46800	46640	46280	46120	44180	42350	40300	40110
(†)	264.86	264.98	265.11	265.82	265.55	265.55	265.41	265.37	264.88	264.41	263.89	264.25
(‡)	-1500	+470	+510	+2840	-1080	0	-560	-160	-1940	-1830	-1980	+1370
(††)	77	65	61	85	78	70	64	79	102	124	140	80
CAL YR 1977	MAX	51200	MIN	42470	†	-1440	††	942				
WTR YR 1978	MAX	49400	MIN	40110	†	-3860	††	1020				

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by city of Carthage.

SABINE RIVER BASIN

08022200 MURVAUL LAKE NEAR GARY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
MAR 01...	1315	289	7.0	9.5	59	28	11	7.7	28
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
MAR 01...	1.6	2.9	38	0	40	40	.1	7.3	156

SABINE RIVER BASIN

08022300 MURVAUL BAYOU NEAR GARY, TX

LOCATION.--Lat 32°02'54", long 94°22'31", Panola County, Hydrologic Unit 12010002, near center of main channel on downstream side of bridge on Farm Road 10, 0.3 mi (0.5 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 1.0 mi (1.6 km) downstream from Indian Creek, 1.5 mi (2.4 km) north of Gary, and 3 mi (5 km) downstream from Murvaul Lake.

DRAINAGE AREA.--134 mi² (347 km²).

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 217.82 ft (66.392 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Discharge largely regulated by Murvaul Lake (station 08022200). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--20 years (water years 1959-78), 81.3 ft³/s (2.302 m³/s), 58,900 acre-ft/yr (72.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,590 ft³/s (102 m³/s) Mar. 18, 1969, gage height, 11.57 ft (3.527 m); no flow at times in 1967-78.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, about 14.5 ft (4.42 m) in July 1933, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 899 ft³/s (25.5 m³/s) May 7, gage height, 10.36 ft (3.158 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	.69	2.7	3.8	228	33	55	4.6	.24	.00	.00	.00
2	10	1.5	2.4	3.7	282	27	44	4.1	.23	.00	.00	.00
3	7.9	1.0	2.2	3.7	274	35	38	15	.21	.00	.00	.00
4	8.0	.70	2.2	3.6	222	36	33	23	.13	.00	.00	.00
5	4.8	.67	2.2	3.3	169	29	29	16	.12	.00	.00	.00
6	2.2	.69	2.1	3.4	129	25	25	21	.08	.00	.00	.00
7	2.2	.70	2.2	3.1	95	33	22	615	.16	.00	.00	.00
8	2.3	1.6	2.2	3.1	86	61	19	338	.18	.00	.00	.00
9	2.5	2.8	2.1	2.9	78	55	16	225	.14	.00	.00	.00
10	2.9	1.3	2.1	3.1	77	48	63	145	.08	.00	.00	.00
11	2.9	.65	2.2	3.6	71	42	387	97	.05	.00	.00	.00
12	2.2	.65	2.3	4.5	74	43	377	113	.04	.00	.00	.00
13	2.1	.70	4.9	4.5	213	34	327	274	.03	.00	.00	.00
14	2.3	.72	6.2	4.1	284	49	228	245	.01	.00	.00	50
15	2.2	.77	5.0	3.8	264	49	156	178	.00	.00	.00	27
16	2.2	.88	4.2	32	203	51	111	117	.00	.00	.00	3.1
17	2.1	.92	3.9	50	156	33	82	74	.00	.00	.00	.55
18	2.2	.97	3.6	53	145	26	84	54	.00	.00	.00	.09
19	2.1	1.1	3.5	140	123	22	73	43	.00	.00	.00	.05
20	2.0	1.3	3.3	218	106	18	51	33	.00	.00	.00	.03
21	2.1	1.8	3.2	193	109	132	36	26	.00	.00	.00	.00
22	2.4	2.1	3.1	147	70	204	25	19	.00	.00	.00	.00
23	2.7	2.0	3.2	116	59	161	22	13	.00	.00	.00	.00
24	3.0	2.2	3.0	260	50	345	19	8.4	.00	.00	.00	.00
25	3.0	2.3	3.3	422	44	368	16	6.0	.00	.00	.00	.00
26	2.1	2.2	3.3	451	39	308	13	4.3	.00	.00	.00	.00
27	.55	2.3	3.3	367	33	225	9.9	3.4	.00	.00	.00	.00
28	.40	2.2	3.0	278	33	158	8.6	2.8	.00	.00	.00	.00
29	.38	2.4	3.3	197	---	116	6.8	1.9	.00	.00	.00	.00
30	.35	2.8	3.7	151	---	91	5.8	1.2	.00	.00	.00	.00
31	.34	---	3.9	141	---	71	---	.45	---	.00	.00	---
TOTAL	94.42	42.61	97.8	3270.2	3716	2928	2382.1	2721.15	1.70	.00	.00	80.82
MEAN	3.05	1.42	3.15	105	133	94.5	79.4	87.8	.057	.000	.000	2.69
MAX	12	2.8	6.2	451	284	368	387	615	.24	.00	.00	50
MIN	.34	.65	2.1	2.9	33	18	5.8	.45	.00	.00	.00	.00
AC-FT	187	85	194	6490	7370	5810	4720	5400	3.4	.00	.00	160
CAL YR 1977	TOTAL	18642.54	MEAN	51.1	MAX	767	MIN	.00	AC-FT	36980		
WTR YR 1978	TOTAL	15334.80	MEAN	42.0	MAX	615	MIN	.00	AC-FT	30420		

SABINE RIVER BASIN

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08022500 SABINE RIVER AT LOGANSPOUT, LA

LOCATION.--Lat 31°58'20", long 94°00'22", De Soto Parish, Louisiana-Shelby County, Texas State line at Logansport, Hydrologic Unit 12010004, just upstream from bridge on U.S. Highway 84, 3 mi (5 km) upstream from Bayou Castor, 111 mi (179 km) upstream from Toledo Bend Dam, and at mile 267.1 (429.8 km).

DRAINAGE AREA.--4,842 mi² (12,541 km²).

PERIOD OF RECORD.--Gage-height record March 1968 to current year. Discharge record July 1903 to February 1968.

REVISED RECORDS.--WSP 1312: 1903-6 (monthly and annual means). WSP 1732: 1929(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 147.72 ft (45.025 m) National Geodetic Vertical Datum of 1929. July 1, 1903, to Sept. 30, 1956, nonrecording gage. Oct. 1, 1956, to Jan. 16, 1964, water-stage recorder 4,600 ft (1,400 m) upstream. Jan. 16, 1964, to Dec. 10, 1968, water-stage recorder 4,700 ft (1,430 m) upstream. All gages to present datum except prior to Dec. 31, 1906, when datum was 2.00 ft (0.610 m) lower.

REMARKS.--Station discontinued as daily streamflow station Mar. 1, 1968, due to backwater from storage in Toledo Bend Reservoir (station 08025350). Eight major reservoirs, with a combined capacity of 1,068,000 acre-ft (1.32 km³), largely regulated the flow. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see Sabine River near Gladewater (station 08020000). Numerous diversions above station for oilfield operations, municipal, and industrial uses.

AVERAGE DISCHARGE.--64 years (water years 1904-67), 3,208 ft³/s (90.85 m³/s), 2,324,000 acre-ft/yr (2.87 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height (1968-78), 32.50 ft (9.906 m) Apr. 20, 1969; minimum since initial filling of Toledo Bend Reservoir in June 1968, 17.97 ft (5.477 m) Nov. 29, 1977.

Maximum discharge (1903-67), 92,000 ft³/s (2,610 m³/s) Apr. 8, 1945, gage height, 44.07 ft (13.433 m), from floodmark; minimum, 16 ft³/se (0.453 m³/s) Sept. 26-28, Oct. 3, 4, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1884, that of Apr. 8, 1945. Flood in May 1884 reached a stage of 39.4 ft (12.01 m), present site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 24.77 ft (7.550 m) May 10; minimum, 17.97 ft (5.477 m) Nov. 29.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.73	18.50	18.52	18.82	21.36	21.78	22.78	22.87	---	22.15	21.06	20.17
2	18.50	18.38	18.68	19.03	21.45	21.71	22.80	22.92	---	22.23	21.04	20.19
3	18.53	18.22	18.62	19.06	21.58	21.52	22.62	22.85	---	22.04	20.98	20.19
4	18.53	18.30	18.65	19.14	21.61	21.74	22.66	22.88	---	22.00	20.92	20.15
5	18.44	18.36	18.70	19.11	21.58	21.90	22.87	23.00	---	21.91	20.84	20.11
6	18.48	18.37	18.71	19.12	21.61	21.97	22.67	23.10	23.19	22.02	20.80	20.12
7	18.65	18.39	18.72	19.22	21.50	21.60	22.60	23.73	23.10	21.82	20.75	20.02
8	18.31	18.45	18.75	18.60	21.46	21.75	22.66	24.22	22.98	21.82	20.67	20.18
9	18.48	18.39	---	19.13	21.39	22.05	22.87	24.45	22.93	21.84	20.60	20.21
10	18.58	18.46	---	19.22	21.45	22.29	22.41	24.75	23.08	21.70	20.60	20.22
11	18.50	18.43	---	19.18	21.52	22.24	22.70	24.20	23.22	21.73	20.58	20.13
12	18.54	18.41	18.58	19.14	21.60	22.35	22.75	23.80	22.90	21.69	20.58	20.26
13	18.50	18.47	18.78	19.16	21.60	22.43	22.83	23.80	22.89	21.67	20.55	20.21
14	18.50	18.46	18.87	19.30	21.87	22.35	22.87	23.77	22.86	21.53	20.53	23.46
15	18.31	18.56	19.01	19.59	21.97	22.09	22.83	23.58	22.81	21.45	20.50	22.50
16	18.48	18.38	19.18	19.20	22.00	22.33	22.84	23.40	22.83	21.46	20.48	22.09
17	18.48	18.33	19.03	19.68	21.88	22.36	23.03	23.37	22.84	21.44	20.45	22.12
18	18.46	18.43	19.10	19.87	21.90	22.54	22.76	23.43	22.80	21.40	20.38	22.00
19	18.46	18.38	18.81	19.85	22.02	22.59	22.75	23.40	22.84	21.30	20.35	21.91
20	18.45	18.39	18.96	20.09	21.70	22.65	22.87	23.38	22.70	21.27	20.30	21.88
21	18.42	18.35	18.92	20.17	21.85	22.68	23.01	23.35	22.60	21.24	20.24	21.62
22	18.40	18.36	19.16	20.20	22.01	22.85	23.02	23.33	22.64	21.19	20.20	21.53
23	18.51	18.35	18.95	20.28	21.90	23.02	23.02	23.32	22.62	21.15	20.15	21.46
24	18.35	18.28	18.92	20.64	22.00	23.04	22.96	23.27	22.59	21.14	20.13	21.31
25	18.43	18.12	18.87	20.85	21.80	23.17	22.80	---	22.56	21.13	20.11	21.24
26	18.40	18.61	18.95	21.05	21.84	23.26	22.88	---	22.55	21.10	20.10	21.17
27	18.42	18.03	18.96	21.16	21.91	23.33	22.90	---	22.39	21.14	20.10	21.13
28	18.40	18.07	19.03	21.15	21.61	23.25	23.20	---	22.23	21.15	20.10	21.20
29	18.40	18.23	19.01	21.17	---	22.98	23.20	---	22.20	21.15	20.23	21.17
30	18.48	18.44	19.04	21.14	---	22.69	22.94	---	22.16	21.15	20.22	21.16
31	18.57	---	19.08	21.25	---	22.63	---	---	---	21.10	20.18	---
MAX	18.73	18.61	---	21.25	22.02	23.33	23.20	---	---	22.23	21.06	23.46
MIN	18.31	18.03	---	18.60	21.36	21.52	22.41	---	---	21.10	20.10	20.02

08023200 TENAHA CREEK NEAR SHELBYVILLE, TX

LOCATION.--lat 31°45'56", long 94°05'02", Shelby County, Hydrologic Unit 12010004, near center of span at downstream side of bridge on State Highway 87, 0.5 mi (0.8 km) northwest of Shelbyville, 4.2 mi (6.8 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 5.0 mi (8.0 km) upstream from Beauchamp Creek.

DRAINAGE AREA.--97.8 mi² (253.3 km²).

PERIOD OF RECORD.--March 1952 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Prior to May 9, 1963, nonrecording gage at same site and datum. Datum of gage is 205.71 ft (62.700 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Minor diversions for municipal supply by city of Center from Mill Creek, 165 acre-ft (0.203 hm³), a tributary of Tenaha Creek which enters above gage, and from Sandy Creek, 1,940 acre-ft (2.39 hm³), a tributary of Attoyac Bayou in the Neches River basin. A total of 1,360 acre-ft (1.68 hm³) of sewage effluent was returned to Prairie Creek, a tributary of Tenaha Creek that enters 1.0 mi (1.6 km) downstream from gage. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--26 years, 78.0 ft³/s (2.209 m³/s), 10.83 in/yr (275 mm/yr), 56,510 acre-ft/yr (69.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,900 ft³/s (620 m³/s) Sept. 14, 1978, gage height, 14.79 ft (4.508 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1884, 15.0 ft (4.57 m) Nov. 23, 1940, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Apr. 18	1200	1,190 33.7	9.66 2.944	Sept. 14	1700	*21,900 620	14.79 4.508

Minimum discharge, 0.21 ft³/s (0.006 m³/s) July 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	2.2	49	12	296	36	28	6.7	19	2.6	.60	1.6
2	5.6	2.4	18	7.4	325	32	24	5.3	69	2.1	.85	1.2
3	4.4	2.7	7.6	5.3	172	43	20	32	31	2.1	1.2	1.0
4	4.0	2.8	5.7	4.4	97	53	18	60	15	1.8	.67	1.0
5	4.5	2.6	4.3	4.3	73	41	16	29	11	1.7	.50	.84
6	4.5	2.9	2.7	5.0	61	35	15	15	9.5	1.8	.48	.67
7	4.6	2.8	2.3	8.5	53	245	12	19	22	1.5	.48	.51
8	5.1	2.9	2.2	142	53	360	9.4	131	38	1.4	.50	.46
9	6.3	13	2.9	78	52	201	8.3	93	19	2.0	.41	.43
10	8.1	10	1.8	36	59	92	16	31	10	2.0	.36	.43
11	11	4.1	2.0	23	59	69	131	15	8.1	2.0	.34	.70
12	10	3.0	2.0	219	83	55	116	163	7.6	1.9	.53	2.1
13	5.4	2.6	119	178	429	50	42	280	6.4	1.8	.40	2.9
14	2.9	2.5	330	73	296	103	24	231	5.9	1.8	10	10800
15	2.4	2.3	141	41	134	93	15	81	5.1	1.3	1.5	4760
16	2.3	2.7	46	159	82	56	9.6	42	4.9	.49	.52	954
17	2.2	2.9	28	659	82	39	59	29	4.7	.37	.32	183
18	2.1	1.9	15	482	199	32	938	23	4.8	.55	.31	56
19	2.0	1.8	10	286	154	29	809	20	4.7	.35	.34	35
20	2.0	1.9	6.0	241	94	25	316	16	4.2	.27	.35	32
21	2.0	3.1	4.0	118	70	180	66	14	3.9	.26	.38	24
22	2.0	13	3.2	84	54	318	43	13	4.0	.29	.36	19
23	2.0	12	3.5	97	49	169	62	11	3.6	2.3	.44	17
24	2.0	5.9	3.5	477	45	210	46	11	3.5	2.1	.44	16
25	2.2	4.2	3.8	653	42	301	31	9.5	3.4	1.3	.44	15
26	2.6	3.6	2.9	495	39	150	21	8.5	3.0	1.0	.48	13
27	3.0	3.6	2.8	199	35	74	16	8.1	2.9	5.3	.53	12
28	2.8	3.2	2.6	118	35	52	11	7.8	2.8	5.9	.73	12
29	2.6	39	4.9	95	---	43	9.6	14	2.5	2.9	30	13
30	2.4	80	32	81	---	36	7.5	20	2.5	1.2	25	12
31	2.3	---	20	97	---	32	---	10	---	.81	3.4	---
TOTAL	120.8	237.6	878.7	5177.9	3222	3254	2939.4	1448.9	332.0	53.19	82.86	16986.84
MEAN	3.90	7.92	28.3	167	115	105	98.0	46.7	11.1	1.72	2.67	566
MAX	11	80	330	659	429	360	938	280	69	5.9	30	10800
MIN	2.0	1.8	1.8	4.3	35	25	7.5	5.3	2.5	.26	.31	.43
CFSM	.04	.08	.29	1.71	1.18	1.07	1.00	.48	.11	.02	.03	5.79
IN.	.05	.09	.33	1.97	1.23	1.24	1.12	.55	.13	.02	.03	6.46
AC-FT	240	471	1740	10270	6390	6450	5830	2870	659	106	164	33690
CAL YR 1977	TOTAL	21266.83	MEAN	58.3	MAX	1530	MIN	.79	CFSM	.60	IN	8.09
WTR YR 1978	TOTAL	34734.19	MEAN	95.2	MAX	10800	MIN	.26	CFSM	.97	IN	13.21
									AC-FT	42180	AC-FT	68900

SABINE RIVER BASIN

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08025307 MILL CREEK NEAR BURKEVILLE, TX

LOCATION.--Lat 31°09'23", long 93°40'35", Newton County, Hydrologic Unit 12010004, about 500 ft (150 m) downstream from Mitchell Creek, 3.5 mi (5.6 km) east of State Highway 87, and 11 mi (18 km) north of Burkeville.

DRAINAGE AREA.--17.6 mi² (45.6 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to May 1974 (periodic discharge measurements only), June 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 166.45 ft (50.734 m) National Geodetic Vertical Datum of 1929 (Cooperator's Consulting Engineers bench mark).

REMARKS.--Water-discharge records good. No known diversion. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,250 ft³/s (35.4 m³/s) May 31, 1976, gage height, 18.28 ft (5.572 m), from rating curve extended above 610 ft³/s (17.3 m³/s) on basis of area-velocity study; minimum, 3.7 ft³/s (0.10 m³/s) Aug. 27, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 12, 1974, reached a stage of 20.5 ft (6.25 m) from levels.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)
Nov. 29	1030	*605	17.1	14.84	4.523	Feb. 1	0800	509	14.4	14.00	4.267
Jan. 24	1000	591	16.7	14.73	4.490						

Minimum discharge, 3.7 ft³/s (0.10 m³/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	9.6	58	19	258	20	11	6.9	9.2	3.9	4.9	15
2	10	19	41	17	92	19	11	6.6	9.5	3.9	4.6	8.7
3	9.9	7.1	31	16	64	24	11	11	8.6	4.6	4.3	10
4	6.7	6.3	25	15	53	19	11	9.2	9.0	4.9	4.4	14
5	7.1	6.3	21	15	48	18	10	8.2	8.7	5.2	4.2	7.2
6	7.5	6.3	18	15	42	18	10	8.8	9.4	5.0	6.9	6.3
7	7.1	6.1	16	36	41	25	10	11	68	4.7	5.4	5.7
8	7.5	9.6	16	152	44	20	9.9	10	19	4.2	4.6	5.1
9	7.4	15	16	36	41	18	9.8	9.5	14	4.6	4.4	5.0
10	7.2	8.2	15	25	40	17	9.9	8.2	12	4.1	4.7	5.1
11	10	7.3	15	23	36	17	12	8.2	11	3.9	5.6	5.4
12	7.9	7.3	14	125	100	16	10	8.2	10	4.6	4.4	5.6
13	7.2	6.8	134	43	105	16	9.9	7.8	9.4	4.2	6.5	9.1
14	7.3	6.7	66	32	50	15	8.9	7.3	8.6	4.1	13	59
15	7.2	6.7	36	28	40	14	8.9	7.3	8.0	4.6	5.9	17
16	7.2	6.8	29	137	32	14	9.0	7.2	7.5	6.5	5.0	12
17	6.8	6.9	24	91	35	14	9.1	7.6	6.9	4.4	4.6	10
18	6.9	6.9	20	57	47	14	9.1	7.9	6.3	4.1	4.6	9.1
19	6.9	7.0	19	81	30	13	8.0	7.2	5.9	3.9	4.4	8.9
20	6.7	7.4	17	52	28	14	7.8	7.2	5.2	4.4	4.4	8.4
21	6.7	60	16	42	25	19	7.8	6.9	5.0	4.6	4.3	8.4
22	6.7	20	16	43	23	15	7.7	6.8	4.9	4.7	4.1	8.2
23	6.8	13	16	67	22	14	7.6	6.3	4.9	5.6	4.0	8.2
24	7.1	11	15	356	22	18	7.5	6.3	4.7	6.1	4.1	7.7
25	9.9	11	14	145	22	14	7.3	6.5	4.6	6.7	4.0	7.1
26	8.0	11	13	78	20	13	6.9	6.4	4.4	5.0	4.1	7.3
27	7.4	10	13	59	20	12	6.6	6.6	4.4	7.1	4.0	6.9
28	7.3	21	14	55	20	12	6.6	6.7	4.2	7.1	3.8	6.5
29	7.1	308	43	47	---	11	6.8	6.7	4.2	5.4	11	6.1
30	7.1	173	28	77	---	11	6.7	12	4.1	4.9	10	5.7
31	7.2	---	21	62	---	11	---	11	---	4.7	11	---
TOTAL	233.4	801.3	840	2046	1400	495	267.8	247.5	291.6	151.7	171.2	298.7
MEAN	7.53	26.7	27.1	66.0	50.0	16.0	8.93	7.98	9.72	4.89	5.52	9.96
MAX	10	308	134	356	258	25	12	12	68	7.1	13	59
MIN	6.7	6.1	13	15	20	11	6.6	6.3	4.1	3.9	3.8	5.0
CFSM	.42	1.48	1.51	3.67	2.78	.89	.50	.44	.54	.27	.31	.55
IN.	.48	1.66	1.74	4.23	2.89	1.02	.55	.51	.60	.31	.35	.62
AC-FT	463	1590	1670	4060	2780	982	531	491	578	301	340	592

CAL YR 1977	TOTAL	6474.1	MEAN 17.7	MAX 308	MIN 3.8	CFSM .98	IN 13.38	AC-FT 12840
WTR YR 1978	TOTAL	7244.2	MEAN 19.8	MAX 356	MIN 3.8	CFSM 1.10	IN 14.97	AC-FT 14370

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: April 1974 to current year (periodic samples). Water temperatures: April 1974 to current year (periodic observations).

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT 13...	1130	6.4	37	6.6	12.0	40	10	10.4	100	1.0	9	2
NOV 16...	0845	8.4	39	6.8	15.0	40	10	9.6	98	.2	8	2
DEC 20...	1345	16	44	6.9	11.5	40	20	10.3	97	.7	10	4
JAN 31...	0930	50	36	6.3	6.5	50	20	12.3	103	.4	8	4
FEB 23...	1000	22	37	6.6	8.0	20	10	11.8	103	.4	8	3
MAR 14...	1015	16	38	6.7	13.0	20	10	10.2	100	.2	8	1
APR 25...	1125	6.4	40	6.6	19.5	40	20	9.3	104	1.0	8	2
MAY 24...	1020	4.9	36	6.4	21.5	40	10	9.1	106	.4	8	2
JUL 26...	1005	4.2	36	6.4	27.0	40	100	7.8	99	.5	10	4
AUG 17...	1245	4.1	48	6.7	25.5	40	9	7.2	90	1.0	11	3
SEP 21...	1045	7.2	38	6.3	24.0	40	10	8.5	104	1.0	8	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)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 13...	2.5	.7	3.3	.5	1.2	9	0	2.6	4.8	.1	19	39
NOV 16...	2.0	.7	2.8	.4	1.3	7	0	3.1	4.9	.1	19	38
DEC 20...	2.5	.8	3.2	.5	1.1	7	0	4.9	5.5	.0	22	44
JAN 31...	2.1	.6	2.5	.4	.9	5	0	5.8	3.6	.0	16	34
FEB 23...	1.9	.8	3.0	.5	1.0	6	0	3.9	5.3	.0	16	35
MAR 14...	1.8	.8	3.5	.5	1.0	8	0	3.0	6.7	.0	17	38
APR 25...	1.9	.8	2.7	.4	1.2	7	0	2.6	5.0	.0	16	34
MAY 24...	1.8	.9	3.7	.6	1.3	7	0	3.6	4.9	.0	17	37
JUL 26...	2.8	.8	3.2	.4	1.4	8	0	2.0	4.7	.0	16	35
AUG 17...	3.0	.8	3.7	.5	1.2	9	0	2.7	5.0	.0	17	38
SEP 21...	1.8	.8	3.0	.5	1.3	7	0	3.0	5.1	.0	17	35

SABINE RIVER BASIN

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08025307 MILL CREEK NEAR BURKEVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLATILE, SUS- PENDE (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 13...	13	1	.09	.00	.09	.00	.15	.15	.00	2.6	2	.00
NOV 16...	13	8	.18	.00	.18	.01	.14	.15	.02	4.3	2	.00
DEC 20...	15	5	.08	.03	.11	.02	.33	--	.00	3.5	2	.00
JAN 31...	26	13	.06	.00	.06	.00	.18	.18	.01	7.3	1	.00
FEB 23...	12	11	.13	.00	.13	.00	.01	.01	.02	2.8	2	.00
MAR 14...	12	6	.13	.01	.14	.01	.01	.02	.01	3.9	1	.00
APR 25...	21	19	.19	.01	.20	.03	.36	.39	.01	3.0	3	.10
MAY 24...	18	5	.26	.01	.27	.01	.65	.66	.02	2.0	2	.00
JUL 26...	21	16	.15	.00	.15	.02	.12	.14	.02	2.6	1	.10
AUG 17...	15	8	.15	.01	.16	.03	.32	.35	.05	2.3	2	.00
SEP 21...	17	14	.14	.01	.15	.02	1.5	1.5	.02	5.4	0	.00

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 13...	1130	1	0	0	10	0	20
NOV 16...	0845	1	500	0	0	0	60
DEC 20...	1345	0	0	0	10	4	50
JAN 31...	0930	0	0	2	10	1	70
FEB 23...	1000	0	100	1	0	2	50

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 13...	0	8	.0	0	0	0
NOV 16...	0	4	.0	0	0	0
DEC 20...	0	0	.0	0	0	0
JAN 31...	1	10	.0	0	0	10
FEB 23...	0	10	.0	0	0	10

SABINE RIVER BASIN

08025307 MILL CREEK NEAR BURKEVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
OCT 13...	1130	.0	.00	.00	.0	.00	.00	.00	.00
NOV 16...	0845	.0	.00	.00	.0	.00	.00	.00	.00
DEC 20...	1345	.0	.00	.00	.0	.00	.00	.00	.00
AUG 17...	1245	.0	.00	.00	.0	.00	.00	.00	.00

DATE	DI- ELDRIN 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)	METHYL PARA- THION, TOTAL (UG/L)
OCT 13...	.00	.00	.00	.00	.00	.00	.00	.00	.00
NOV 16...	.00	.00	.00	.00	.00	.00	.00	.00	.00
DEC 20...	.00	.00	.00	.00	.00	.00	.00	.00	.00
AUG 17...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 13...	.00	--	.00	0	.00	.00	.00	.00
NOV 16...	.00	--	.00	0	.00	.00	.00	.00
DEC 20...	.00	--	.00	0	.00	.00	.00	.00
AUG 17...	.00	.00	.00	0	.00	.00	.00	.00

SABINE RIVER BASIN

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08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010004, in powerhouse at right end of Toledo Bend Dam on Sabine River, 15 mi (24 km) northeast of Burkeville, and at mile 156.5 (251.8 km).

DRAINAGE AREA.--7,178 mi² (18,591 km²).

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sabine River Authority). Prior to July 20, 1967, nonrecording gage at same site and datum. July 20, 1967, to June 30, 1973, recording gage at south end of spillway 1.6 mi (2.6 km) north of present site and at same datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam. Closure of embankment completed and deliberate impoundment was begun Oct. 3, 1966. The reservoir is operated for hydro-electric power generation and water conservation. Releases during high inflow periods are controlled by eleven 40 by 28 ft (12 by 9 m) tainter gates. An 8.33 by 12 ft (2.54 by 4 m) gated conduit through the dam is used for low-flow releases. Two additional 20-inch-diameter (508 mm) conduits, which bypass the larger conduit, may also be used for low-flow releases. Water for turbines is admitted through four 16.75 by 29 ft (5.11 by 9 m) penstocks and controlled by vertically operated caterpillar-type gates. The capacity table is based on Geological Survey topographic maps. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see Lake Fork Creek near Quitman (station 08019000). For statement regarding regulation by upstream reservoirs, see Sabine River near Logansport (station 08022500). 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.....	185.0	-
Design flood.....	175.3	5,102,000
Top of gates.....	173.0	4,660,000
Top of power drawdown storage.....	172.0	4,476,000
Top of power head storage.....	162.2	2,922,000
Crest of spillway (controlled).....	145.0	1,162,000
Lowest gated outlet (invert).....	100.0	4,090

COOPERATION.--Capacity table furnished by the Sabine River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,739,000 acre-ft (5.84 km³) Mar. 21, 1969, elevation, 173.42 ft (52.858 m); minimum since initial filling of reservoir in June 1968, 3,433,000 acre-ft (4.23 km³) Nov. 27, 1977, elevation, 165.74 ft (50.518 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,324,000 acre-ft (5.33 km³) May 13, elevation, 171.15 ft (52.167 m); minimum, 3,433,000 acre-ft (4.23 km³) Nov. 27, elevation, 165.74 ft (50.518 m).

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

165.0	3,322,000	171.0	4,297,000
167.0	3,628,000	172.0	4,476,000
169.0	3,953,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3537000	3520000	3519000	3641000	4017000	4037000	4136000	4235000	4269000	4109000	3920000	3792000
2	3562000	3520000	3514000	3617000	4021000	4064000	4152000	4223000	4267000	4099000	3908000	3787000
3	3544000	3525000	3522000	3611000	4021000	4071000	4159000	4246000	4262000	4097000	3908000	3789000
4	3531000	3534000	3525000	3602000	4021000	4041000	4164000	4232000	4260000	4085000	3913000	3787000
5	3531000	3517000	3579000	3613000	4021000	4019000	4166000	4209000	4262000	4078000	3906000	3781000
6	3530000	3512000	3540000	3613000	4016000	4037000	4176000	4207000	4253000	4056000	3895000	3772000
7	3505000	3508000	3514000	3621000	4024000	4081000	4180000	4223000	4274000	4059000	3885000	3761000
8	3550000	3517000	3545000	3531000	4017000	4078000	4178000	4246000	4276000	4047000	3873000	3753000
9	3522000	3519000	3544000	3633000	4022000	4061000	4166000	4258000	4267000	4041000	3870000	3750000
10	3534000	3511000	3537000	3630000	4009000	4053000	4239000	4262000	4253000	4027000	3862000	3759000
11	3537000	3509000	3534000	3652000	3999000	4088000	4199000	4256000	4242000	4017000	3857000	3751000
12	3530000	3509000	3530000	3660000	4021000	4085000	4201000	4283000	4260000	4005000	3839000	3742000
13	3523000	3505000	3579000	3660000	4056000	4093000	4204000	4296000	4248000	4002000	3844000	3750000
14	3522000	3503000	3584000	3655000	4051000	4097000	4201000	4296000	4239000	3994000	3829000	3883000
15	3548000	3503000	3581000	3630000	4059000	4143000	4202000	4296000	4225000	4000000	3821000	4002000
16	3522000	3503000	3581000	3730000	4054000	4083000	4204000	4296000	4209000	4002000	3819000	4039000
17	3511000	3501000	3595000	3708000	4086000	4076000	4218000	4271000	4209000	3990000	3810000	4037000
18	3519000	3482000	3587000	3743000	4071000	4061000	4232000	4294000	4209000	3977000	3800000	4046000
19	3519000	3489000	3628000	3772000	4061000	4069000	4249000	4296000	4190000	3974000	3806000	4042000
20	3519000	3489000	3602000	3758000	4104000	4068000	4244000	4297000	4192000	3953000	3805000	4029000
21	3515000	3514000	3598000	3772000	4066000	4111000	4232000	4308000	4192000	3937000	3805000	4031000
22	3517000	3500000	3578000	3781000	4041000	4109000	4237000	4297000	4180000	3947000	3792000	4024000
23	3509000	3489000	3590000	3789000	4053000	4100000	4234000	4287000	4174000	3950000	3789000	4007000
24	3520000	3485000	3597000	3849000	4037000	4157000	4242000	4289000	4171000	3947000	3782000	4000000
25	3520000	3485000	3598000	3883000	4058000	4157000	4255000	4283000	4148000	3928000	3772000	3987000
26	3522000	3438000	3594000	3892000	4041000	4157000	4244000	4278000	4148000	3933000	3771000	3979000
27	3520000	3465000	3586000	3911000	4042000	4157000	4234000	4278000	4136000	3948000	3751000	3965000
28	3523000	3468000	3587000	3923000	4061000	4157000	4211000	4272000	4133000	3937000	3841000	3953000
29	3522000	3517000	3611000	3927000	---	4154000	4211000	4269000	4131000	3928000	3810000	3953000
30	3509000	3519000	3613000	3953000	---	4154000	4228000	4267000	4126000	3923000	3802000	3953000
31	3506000	---	3613000	3967000	---	4140000	---	4258000	---	3915000	3800000	---
MAX	3562000	3534000	3628000	3967000	4104000	4157000	4255000	4308000	4276000	4109000	3920000	4046000
MIN	3505000	3438000	3514000	3531000	3999000	4019000	4136000	4207000	4126000	3915000	3751000	3742000
(†)	166.22	166.30	166.90	169.08	169.64	170.10	170.61	170.78	170.22	168.77	168.07	169.00
(‡)	-29,000	+13,000	+94,000	+354,000	+94,000	+79,000	+88,000	+30,000	-132,000	-211,000	-115,000	+153,000
CAL YR 1977	MAX	4527000	MIN	3438000	‡	-225,000						
WTR YR 1978	MAX	4308000	MIN	3438000	‡	+418,000						

† Elevation, in feet, at end of month.
‡ Change in contents, in acre-feet.

SABINE RIVER BASIN

08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010005, in powerhouse at right end of Toledo Bend Dam, 10 mi (16 km) upstream from Sabine River near Burkeville gage, and at mile 156.5 (251.8 km).

DRAINAGE AREA.--7,178 mi² (18,591 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorders. Datum of gages is National Geodetic Vertical Datum of 1929 (levels by Sabine River Authority).

REMARKS.--Water-discharge records fair. Low flows are based on operation logs and discharge measurements and include tainter gate releases, turbine leakage, and low-flow sluiceway discharges. Discharges during turbine release periods are based on scroll case differential pressure-discharge relationships. Discharges above 16,000 ft³/s (453 m³/s) usually include tainter gate releases, which are computed using tainter gate rating.

AVERAGE DISCHARGE.--7 years, 5,688 ft³/s (161.1 m³/s), 4,121,000 acre-ft/yr (5.08 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 67,000 ft³/s (1,900 m³/s) Jan. 28, 1974; minimum daily, 30 ft³/s (0.85 m³/s) estimated Oct. 1-4, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 9,140 ft³/s (259 m³/s) Mar. 28; minimum daily, 37 ft³/s (1.05 m³/s) Mar. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	93	89	90	90	37	91	3110	2530	2810	2020	2140
2	89	93	89	90	5060	80	91	2940	2370	91	2000	2020
3	72	93	89	90	3760	3970	1980	58	91	3700	1980	2020
4	93	93	89	90	3600	3760	91	3040	91	3660	1970	2040
5	93	93	89	90	3320	3780	91	3170	2540	3660	1990	2170
6	93	93	89	90	3700	90	91	91	2170	3610	1910	2120
7	125	93	89	90	3700	90	91	91	2310	3580	1980	2060
8	93	93	89	90	3820	2710	91	3170	2520	3630	1980	1860
9	93	107	89	90	3560	2680	91	3050	2540	91	2000	91
10	106	106	89	90	3820	2670	91	3020	91	3620	2010	91
11	78	89	89	90	3880	90	91	2980	91	3550	1960	1990
12	100	89	89	90	3620	90	1320	2960	2530	1820	1990	2000
13	100	89	89	90	3840	2510	91	91	2570	1840	2100	2050
14	100	89	89	90	3900	4930	1230	91	2570	1880	1970	1960
15	100	89	89	90	3940	4990	91	2990	2600	91	2030	1900
16	100	2380	89	90	4870	7780	91	3010	2550	91	2150	1900
17	100	3500	89	90	5200	8470	104	2720	91	1880	2140	1950
18	100	2680	89	90	6150	3780	91	2870	91	4520	1990	3560
19	100	89	74	90	6480	3500	91	4410	2510	1480	91	4860
20	100	89	103	90	5110	3900	91	91	2930	4120	91	4840
21	968	2690	90	90	6680	2680	91	91	2550	1670	2120	4980
22	93	3260	90	90	7660	4530	91	3020	2450	91	2010	4950
23	93	4100	90	90	4570	7890	91	2620	2420	91	1990	4900
24	93	3970	90	90	5790	8460	70	2950	91	91	2100	4900
25	93	3940	90	90	6190	6030	102	3040	5100	3590	2060	3730
26	93	3720	90	90	3840	5930	102	2960	4700	91	91	4970
27	93	4000	90	90	3720	6030	499	91	2510	91	91	4960
28	93	89	90	90	3700	9140	95	91	3120	1930	91	91
29	93	89	90	90	---	7810	91	3030	2410	2020	91	91
30	93	89	90	90	---	8570	91	2940	2700	91	1970	91
31	93	---	90	90	---	3770	---	3020	---	1970	1970	---
TOTAL	3822	36087	2769	2790	123570	130747	7413	67806	63837	61450	50936	77285
MEAN	123	1203	89.3	90.0	4413	4218	247	2187	2128	1982	1643	2576
MAX	968	4100	103	90	7660	9140	1980	4410	5100	4520	2150	4980
MIN	72	89	74	90	90	37	70	58	91	91	91	91
AC-FT	7580	71580	5490	5530	245100	259300	14700	134500	126600	121900	101000	153300
CAL YR 1977	TOTAL	1395929	MEAN	3824	MAX	10700	MIN	34	AC-FT	2769000		
WTR YR 1978	TOTAL	628512	MEAN	1722	MAX	9140	MIN	37	AC-FT	1247000		

SABINE RIVER BASIN

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08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
OCT 13...	0945	252	6.7	16.0	3.2	33	1.4	36	0	9.5
DEC 20...	1515	224	7.2	13.5	7.6	75	.6	41	8	10
FEB 23...	1330	211	6.9	7.5	12.0	103	.5	41	15	10
APR 25...	1310	220	6.7	15.0	7.8	80	.9	37	0	9.1
JUL 05...	1010	220	6.3	27.5	7.4	95	.6	41	14	10
AUG 17...	1430	240	6.8	26.0	8.5	106	.8	44	15	11
DATE	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	
OCT 13...	2.9	35	2.6	3.0	65	0	19	28	.1	
DEC 20...	3.8	23	1.6	3.1	40	0	20	31	.1	
FEB 23...	4.0	20	1.4	3.1	32	0	19	32	.1	
APR 25...	3.4	28	2.0	3.1	49	0	18	29	.0	
JUL 05...	4.0	21	1.4	3.1	34	0	19	31	.1	
AUG 17...	4.1	25	1.6	3.0	36	0	20	32	.1	
DATE	SILICA, DIS-SOLVED (MG/L AS SiO2)	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)	
OCT 13...	24	154	.00	.00	.00	.05	.25	.30	.16	
DEC 20...	9.6	120	.02	.01	.03	.09	.41	.50	.02	
FEB 23...	6.8	111	.11	.00	.11	.04	.24	.29	.03	
APR 25...	17	132	.08	.02	.10	.10	.37	.47	.11	
JUL 05...	5.6	111	.02	.00	.02	.00	.40	.40	.00	
AUG 17...	5.9	119	.00	.01	.01	.03	.58	.61	.04	

SABINE RIVER BASIN

08026000 SABINE RIVER NEAR BURKEVILLE, TX

LOCATION.--Lat 31°03'50", long 93°31'10", Newton County, Texas-Vernon Parish, Louisiana State line, Hydrologic Unit 12010005, near left edge of low-water channel at downstream side of bridge on State Highway 63, about 200 ft (61 m) downstream from Pearl Creek, 10 mi (16 km) northeast of Burkeville, 16 mi (26 km) downstream from Bayou Toro, and at mile 139.7 (224.8 km).

DRAINAGE AREA.--7,482 mi² (19,378 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1955 to current year. Published as "below Toledo Bend near Burkeville" for 1955-75.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 70.59 ft (21.516 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 23, 1958, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records fair. Flow regulated by Toledo Bend Reservoir (station 08025350) 16.8 mi (27.0 km) upstream, capacity 4,660,000 acre-ft (5.75 km³).

AVERAGE DISCHARGE.--11 years (water years 1956-66) prior to completion of Toledo Bend Reservoir, 4,653 ft³/s (131.8 m³/s), 3,371,000 acre-ft/yr (4.16 km³/yr); 12 years (water years 1967-78) regulated, 4,864 ft³/s (137.7 m³/s), 3,524,000 acre-ft/yr (4.34 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,600 ft³/s (2,280 m³/s) Jan. 29, 1974, gage height, 34.20 ft (10.424 m); minimum daily, 38 ft³/s (1.08 m³/s) Sept. 14, 15, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860, 35.9 ft (10.94 m) in May 1884, from information by local resident. Flood of Apr. 15, 1945, reached a stage of 35.8 ft (10.91 m), and flood of May 23, 1953, reached a stage of 35.3 ft (10.76 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, estimated 9,000 ft³/s (255 m³/s) Mar. 29, gage height unknown; minimum daily, 96 ft³/s (2.72 m³/s) Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1720	140	1610	239	2510	1110	500	1380	2670	2650	2260	2060
2	220	198	951	174	5620	230	300	2890	2450	1720	2300	2050
3	172	172	513	147	5390	2620	1700	1700	1480	1880	2300	2060
4	144	154	329	134	4490	4010	500	1420	199	3810	2270	2080
5	144	159	255	135	4040	3910	192	2980	1090	3920	2040	2370
6	140	146	197	131	4930	1120	174	1740	2320	3770	2200	2250
7	134	139	174	162	4140	343	172	220	3010	3320	2140	2050
8	204	148	151	1050	3970	1900	167	1320	2950	3850	1790	2060
9	140	191	125	547	4040	2760	165	3210	2630	1970	2200	1030
10	131	170	116	279	4000	2970	163	3020	1560	1890	2220	110
11	156	156	102	220	4040	752	181	3010	182	3740	2200	903
12	145	160	114	439	3880	224	937	2990	1080	2880	2160	1850
13	206	146	284	565	5250	1830	329	1690	2430	1860	2170	1970
14	166	139	917	424	5190	4120	366	182	2450	2070	2180	2070
15	145	136	690	296	4710	4900	993	1390	2440	859	2220	2990
16	130	1230	450	382	4900	5850	194	2920	2450	145	2270	2610
17	119	3280	320	1900	5260	7960	167	2830	1490	946	2300	2180
18	118	2760	240	1590	5800	6210	172	2690	142	3020	2250	2680
19	117	1100	187	1190	6360	3690	151	3300	1020	3430	1210	4410
20	111	143	157	835	4890	3610	141	2430	2720	3230	163	4710
21	782	2000	146	615	6510	3060	139	198	2780	2930	1100	4800
22	435	2870	118	483	8280	4500	135	1420	2670	1020	2110	4760
23	153	3500	114	496	5250	6000	133	2720	2240	182	2030	4740
24	148	3910	113	2610	5490	8000	123	2800	1330	154	2100	4730
25	143	3900	106	3830	6160	8500	102	2990	2170	2130	2130	3960
26	135	3750	100	2810	4890	7000	110	3000	4450	1610	1210	3920
27	132	3750	99	2140	3950	7000	254	1680	3770	196	141	5030
28	132	1390	99	1100	3970	8000	185	162	2870	1130	96	2580
29	134	1030	168	681	---	9000	110	1400	2750	1950	235	208
30	131	2250	310	639	---	8500	100	2910	2490	1230	1160	125
31	132	---	264	916	---	5000	---	2950	---	2110	2100	---
TOTAL	7019	39217	9519	27159	137910	134679	9055	65542	64283	65602	55255	79346
MEAN	226	1307	307	876	4925	4344	302	2114	2143	2116	1782	2645
MAX	1720	3910	1610	3830	8280	9000	1700	3300	4450	3920	2300	5030
MIN	111	136	99	131	2510	224	100	162	142	145	96	110
AC-FT	13920	77790	18880	53870	273500	267100	17960	130000	127500	130100	109600	157400

CAL YR 1977 TOTAL 1439874 MEAN 3945 MAX 12000 MIN 99 AC-FT 2856000
WTR YR 1978 TOTAL 694586 MEAN 1903 MAX 9000 MIN 96 AC-FT 1378000

NOTE.--No gage-height record Mar. 22 to Apr. 4.

SABINE RIVER BASIN

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08026000 SABINE RIVER NEAR BURKEVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1968 to current year. Pesticide analyses: October 1972 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1968 to current year.

WATER TEMPERATURES: May 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1968-77): Maximum, 352 micromhos Mar. 15, 16, 1973; minimum, 31 micromhos Dec. 7, 1975.

WATER TEMPERATURES (water years 1968-76): Maximum, 32.0°C Aug. 20, 1975; minimum, 5.0°C Jan. 8, 10, 1970, Jan. 9, 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT 13...	0815	220	172	7.0	15.0	40	10	8.8	90	1.1	31	5
DEC 20...	1600	135	120	7.1	12.0	60	20	6.3	61	.6	25	7
FEB 23...	1438	5960	211	7.4	9.0	20	10	12.2	109	.7	41	14
APR 25...	1445	95	158	7.1	24.5	40	20	9.2	112	1.3	30	5
JUL 05...	1720	4180	200	6.4	29.0	20	10	7.2	95	.8	90	62
AUG 17...	1535	669	240	6.8	30.0	20	5	7.6	101	.9	44	14
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)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
OCT 13...		7.8	2.8	19	1.5	2.5	32	0	13	24	.1	15
DEC 20...		6.6	2.0	12	1.1	2.2	22	0	11	15	.1	18
FEB 23...		10	3.8	21	1.4	3.1	32	0	19	30	.1	7.1
APR 25...		7.5	2.8	16	1.3	2.5	31	0	12	21	.1	16
JUL 05...		25	6.7	36	1.7	2.7	34	0	18	35	.1	7.1
AUG 17...		11	3.9	20	1.3	3.0	36	0	19	30	.1	6.6
DATE		SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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)
OCT 13...		100	13	0	.02	.00	.02	.03	.24	.27	.02	4.2
DEC 20...		78	18	1	.04	.02	--	.03	.74	--	.00	6.9
FEB 23...		110	13	3	.11	.01	.12	.01	.39	.40	.03	6.6
APR 25...		93	10	10	.01	.01	.02	.04	.45	.49	.04	5.0
JUL 05...		148	61	21	.02	.00	.02	.00	.48	.48	.02	5.0
AUG 17...		112	13	9	.01	.00	.01	.02	.32	.34	.03	5.3

SABINE RIVER BASIN

08026000 SABINE RIVER NEAR BURKEVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 13...	0815	1	0	0	0	0	30
DEC 20...	1600	1	0	0	0	1	140
JUL 05...	1720	2	--	0	10	4	20
AUG 17...	1535	1	100	0	0	0	390

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 13...	0	220	.0	0	0	10
DEC 20...	0	160	.0	0	0	10
JUL 05...	0	0	.0	0	0	10
AUG 17...	0	0	.0	0	0	10

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216	171	---	---	31	139	---					
2	---	161	97	---	206	137	209					
3	180	159	90	---	120	138	172					
4	186	174	---	---	120	204	146					
5	179	171	---	---	191	206	166					
6	175	156	---	---	193	198	143					
7	175	156	---	---	189	194	151					
8	180	156	---	---	193	196	151					
9	156	149	---	---	193	194	136					
10	173	157	140	103	193	198	144					
11	157	150	137	101	182	198	165					
12	156	156	113	102	186	198	166					
13	156	115	59	101	170	198	161					
14	179	174	98	74	186	204	157					
15	158	156	---	74	193	202	157					
16	154	174	---	52	210	200	166					
17	156	---	---	52	211	193	152					
18	206	---	---	55	210	193	161					
19	205	116	---	53	210	195	161					
20	214	---	---	53	205	193	160					
21	176	---	---	49	195	193	160					
22	206	---	---	47	195	193	161					
23	209	218	---	45	194	193	---					
24	161	---	---	31	200	206	---					
25	182	---	---	39	199	227	---					
26	179	---	---	---	199	208	---					
27	177	---	---	---	197	208	---					
28	171	---	---	---	195	196	---					
29	171	---	---	34	---	---	---					
30	171	---	---	33	---	---	---					
31	167	---	---	35	---	---	---					
MEAN	178	159	105	60	185	193	159					

SABINE RIVER BASIN

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08026000 SABINE RIVER NEAR BURKEYVILLE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	22.0	---	---	---	9.0	---					
2	---	21.0	14.5	---	8.0	9.5	14.0					
3	24.5	18.0	14.0	---	8.0	10.0	14.0					
4	24.5	20.5	---	---	8.0	10.0	11.0					
5	24.5	20.5	---	---	8.0	10.0	18.0					
6	24.5	17.5	---	---	8.0	9.5	19.0					
7	24.5	11.5	---	---	8.0	9.0	20.0					
8	24.5	18.0	---	---	8.0	9.0	20.0					
9	20.5	17.5	---	---	8.0	8.5	21.0					
10	20.5	16.0	---	9.0	8.0	8.0	21.0					
11	20.5	16.0	---	9.0	8.0	8.0	22.0					
12	18.5	16.0	---	9.0	8.0	9.0	22.0					
13	18.5	16.0	---	9.0	9.0	9.5	22.0					
14	18.5	16.0	---	7.0	9.0	10.5	22.0					
15	18.5	16.0	---	7.0	8.5	10.5	22.0					
16	20.5	18.0	---	7.0	8.0	10.5	22.0					
17	20.5	---	---	8.0	8.0	11.0	22.0					
18	21.0	---	---	7.0	8.5	11.0	22.5					
19	20.0	16.0	---	7.0	7.0	12.0	23.0					
20	21.0	---	---	7.0	7.0	12.0	23.5					
21	21.5	---	---	7.0	7.0	12.0	24.0					
22	21.5	---	---	---	7.5	12.0	24.0					
23	21.5	17.5	---	---	8.0	12.0	---					
24	21.5	---	---	12.0	8.0	---	---					
25	22.5	---	---	13.0	8.0	---	---					
26	21.5	---	---	---	8.5	---	---					
27	21.5	---	---	---	8.5	---	---					
28	21.5	---	---	---	9.0	12.0	---					
29	22.0	---	---	8.0	---	---	---					
30	21.0	---	---	7.0	---	---	---					
31	22.5	---	---	---	---	---	---					
MEAN	21.5	17.5	14.5	8.5	8.0	10.0	20.5					

08028500 SABINE RIVER NEAR BON WIER, TX

LOCATION.--Lat 30°44'49", long 93°36'30", Beauregard Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, near left bank at downstream side of bridge on U.S. Highway 190, 0.7 mi (1.1 km) upstream from Quicksand Creek, 0.8 mi (1.3 km) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.0 mi (3.2 km) east of Bon Wier, 2.4 mi (3.9 km) upstream from Caney Creek, and at mile 97.7 (157.2 km).

DRAINAGE AREA.--8,229 mi² (21,313 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1312. Gage-height records collected in this vicinity since 1913 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: 1953. WSP 1442: 1924, 1926-27(M), 1929(M), 1939. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 43.42 ft (13.234 m) National Geodetic Vertical Datum of 1929. Prior to July 8, 1931, nonrecording gage at site 0.8 mi (1.3 km) downstream at datum 3.00 ft (0.914 m) higher. July 8, 1931, to Oct. 15, 1958, nonrecording gage at present site at datum 3.00 ft (0.914 m) higher. Oct. 16, 1958, to Sept. 30, 1975, water-stage recorder at present site at datum 3.00 ft (0.914 m) higher.

REMARKS.--Water-discharge records fair. Flow regulated by Toledo Bend Reservoir (station 08025350) located 58.8 mi (94.6 km) upstream. Gage-height telemeter at station maintained by the National Weather Service.

AVERAGE DISCHARGE.--43 years (water years 1924-66) prior to completion of Toledo Bend Reservoir, 6,846 ft³/s (193.9 m³/s), 4,960,000 acre-ft/yr (6.12 km³/yr); 12 years (water years 1967-78) regulated, 5,855 ft³/s (165.8 m³/s), 4,242,000 acre-ft/yr (5.23 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 115,000 ft³/s (3,260 m³/s) May 19, 1953, gage height, 28.70 ft (8.748 m); minimum daily, 134 ft³/s (3.79 m³/s) Nov. 9, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 33.5 ft (10.21 m) Apr. 23 or 24, 1913, from information by Gulf, Colorado, and Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of 29 ft (8.8 m). Floods occurring about 1844 and 1860 were higher than flood in May 1884, from information by local residents. All flood data referenced to current datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,700 ft³/s (331 m³/s) Jan. 25, gage height, 14.14 ft (4.310 m); minimum daily, 359 ft³/s (10.2 m³/s) Oct. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4900	365	7160	1380	4820	4530	5500	470	3360	2980	1370	2600
2	1680	440	4880	1220	7770	2380	2070	1520	3150	3040	2190	2550
3	716	605	3360	1090	9700	1600	1230	3010	3110	2100	2260	2470
4	549	613	2290	993	8530	3530	2140	2000	2300	2340	2240	2580
5	540	511	1780	927	7010	4530	1470	2030	1160	3840	2240	2550
6	506	457	1490	883	5860	4420	996	3190	2580	3930	2140	2730
7	476	426	1290	863	5840	2390	918	2080	4690	3860	2230	2580
8	447	407	1160	2710	5320	2190	884	960	7590	3670	2200	2390
9	485	484	1060	4710	5180	3370	855	1920	5680	3930	2220	2370
10	487	717	989	2950	5060	3820	836	3500	4390	2320	2240	1640
11	634	683	945	1870	4970	3770	866	3440	2790	2230	2270	834
12	739	544	884	1680	4950	2140	935	3430	1480	3710	2260	1140
13	583	471	1410	2200	6050	1540	1500	3410	1980	2900	2220	2200
14	541	428	6720	2080	7840	2680	1150	2160	3110	2210	2250	2420
15	502	406	5960	1740	7240	4820	1010	939	3070	2330	2240	2680
16	449	392	3700	1680	6290	5290	1460	1880	3010	1520	2280	3430
17	415	1110	2390	3240	6210	6940	826	3280	2940	790	2330	3290
18	395	2930	1790	4590	6470	8030	703	3220	2060	1150	2350	2950
19	384	2640	1470	4380	7020	5410	675	3190	945	3270	2280	3510
20	376	1390	1290	3750	7100	4190	635	3910	1460	3080	1570	4950
21	368	644	1150	3010	6340	4220	601	2590	3070	3360	686	5400
22	618	2120	1060	2470	7360	3670	585	985	3110	2990	1120	5420
23	732	3110	978	2250	7910	4950	580	1820	2980	1670	2140	5260
24	461	3800	927	4940	5770	7560	568	3060	2700	839	2140	5190
25	449	4050	883	11200	6160	9250	548	3230	1890	719	2200	5170
26	420	3970	854	9450	6640	7990	507	3390	2920	2210	2250	4400
27	395	3880	820	7430	5230	6750	481	3390	4900	2100	1610	4590
28	377	3920	792	6410	4630	6520	543	2130	3990	892	791	5220
29	370	2530	806	4680	---	7870	648	885	3470	1290	828	2800
30	363	6180	978	3230	---	8060	498	1790	3190	2150	1170	1010
31	359	---	1350	3290	---	8190	---	3250	---	1700	1790	---
TOTAL	20716	50223	62616	103296	179270	152600	32218	76059	93075	75120	60105	96324
MEAN	668	1674	2020	3332	6403	4923	1074	2454	3103	2423	1939	3211
MAX	4900	6180	7160	11200	9700	9250	5500	3910	7590	3930	2350	5420
MIN	359	365	792	863	4630	1540	481	470	945	719	686	834
AC-FT	41090	99620	124200	204900	355600	302700	63900	150900	184600	149000	119200	191100
CAL YR 1977	TOTAL	1727513	MEAN	4733	MAX	17900	MIN	359	AC-FT	3427000		
WTR YR 1978	TOTAL	1001622	MEAN	2744	MAX	11200	MIN	359	AC-FT	1987000		

SABINE RIVER BASIN

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: January 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1970 to current year.

WATER TEMPERATURES: January 1970 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 407 micromhos Aug. 31, 1978.

WATER TEMPERATURES: Maximum daily, 33.0°C July 17, 1978; minimum daily, 5.0°C Jan. 19-22, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 407 micromhos Aug. 31; minimum daily, 48 micromhos Jan. 26.

WATER TEMPERATURES: Maximum daily, 33.0°C July 17; minimum daily, 5.0°C Jan. 19-22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT							
07...	0825	486	297	22.0	20	37	35
14...	0820	551	251	16.0	130	32	28
21...	0820	365	223	21.0	70	26	27
28...	0805	374	265	21.0	80	37	33
NOV							
02...	1740	393	239	17.0	50	15	25
08...	0850	396	275	20.0	120	40	30
15...	0915	399	248	16.0	120	37	26
22...	0840	2200	170	17.0	40	14	24
DEC							
07...	1700	1100	164	12.0	140	23	15
14...	1650	7700	52	14.0	140	5.2	6.2
21...	1445	1050	145	8.0	100	18	16
28...	1315	711	303	11.0	80	6.0	15
JAN							
07...	0920	858	190	15.0	100	28	20
14...	1010	2080	108	6.0	110	14	12
21...	1200	2970	85	5.0	140	11	10
28...	1040	6560	52	7.0	140	6.8	6.4
FEB							
01...	1635	5430	58	6.0	100	18	29
07...	0625	5030	168	7.0	30	12	16
14...	1000	7440	115	9.0	70	15	26
21...	1755	6910	192	8.0	50	7.2	7.4
MAR							
07...	0810	2650	202	11.0	40	20	29
14...	0800	2490	180	15.0	60	22	23
21...	0810	4840	201	15.0	30	17	31
28...	0815	7460	200	13.0	30	18	31
APR							
07...	0810	907	220	21.0	70	30	26
14...	0805	1210	199	19.0	60	28	24
21...	1720	574	227	--	70	32	26
28...	0725	634	188	23.0	70	24	23
MAY							
07...	1005	2120	216	21.0	30	24	33
14...	1050	2130	206	22.0	30	18	32
21...	0930	2680	207	25.0	20	20	33
28...	0820	2330	207	25.0	30	16	33
JUN							
07...	0945	3550	177	24.0	60	24	10
14...	0735	2620	227	26.5	70	34	32
21...	1820	3770	208	30.0	20	23	32
28...	0810	3720	222	26.5	20	25	34
JUL							
07...	1820	4400	215	31.0	20	30	33
14...	0800	1820	228	29.0	30	28	34
21...	0815	2620	231	28.0	40	24	34
28...	0830	878	257	27.0	70	37	31
AUG							
07...	0800	1890	213	27.0	20	20	29
14...	0830	1850	224	28.0	20	23	35
21...	1745	548	258	32.0	60	30	36
28...	0810	711	241	27.5	30	26	34
SEP							
07...	1750	2900	206	28.0	20	30	31
14...	0745	2000	230	26.0	30	36	33
21...	0825	5420	207	27.0	20	28	31
28...	0900	5200	225	24.5	30	14	34

SABINE RIVER BASIN

08028500 SABINE RIVER NEAR BON WIER, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	215	241	65	176	58	196	202	206	210	232	248	310
2	227	239	75	175	58	200	212	207	203	233	217	306
3	240	230	86	180	51	192	225	203	203	235	219	263
4	262	212	111	185	89	171	230	210	231	262	218	240
5	250	313	126	194	134	203	210	216	248	228	218	236
6	280	348	134	196	156	200	224	205	110	213	209	223
7	297	297	164	190	168	202	220	216	177	215	213	210
8	302	275	172	183	154	170	218	210	144	226	212	206
9	275	223	183	70	168	145	220	212	143	220	216	205
10	240	267	198	88	174	185	214	209	194	227	217	216
11	252	357	209	116	183	192	210	206	283	209	223	242
12	229	398	233	124	180	185	204	210	224	223	227	258
13	222	365	211	125	177	178	221	212	276	219	220	222
14	251	298	52	108	115	180	199	206	227	228	224	230
15	261	248	54	140	90	198	228	214	224	229	226	211
16	235	258	79	136	125	201	206	197	213	232	228	212
17	225	246	92	96	154	201	246	200	216	268	230	208
18	238	220	112	80	156	202	253	205	211	310	231	203
19	239	222	135	76	160	198	228	208	245	211	234	197
20	237	216	112	79	189	204	217	204	253	220	229	211
21	223	208	145	85	192	201	227	207	208	231	258	207
22	218	170	151	92	198	201	252	211	219	223	261	211
23	196	186	158	109	196	194	221	190	219	234	220	216
24	221	200	163	74	168	190	222	204	224	252	221	217
25	279	210	179	52	192	185	220	206	224	290	224	221
26	217	212	187	48	198	190	235	208	258	246	231	225
27	234	208	215	50	198	192	246	207	207	235	232	230
28	265	205	303	52	202	200	188	207	222	257	241	225
29	278	203	180	60	---	213	185	219	227	262	228	233
30	249	91	171	73	---	212	215	225	225	215	163	251
31	251	---	192	84	---	211	---	212	---	212	407	---
MEAN	246	246	150	113	153	193	220	208	216	235	230	228

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	22.0	15.0	11.0	6.0	11.0	15.0	27.0	25.0	27.0	28.0	26.0
2	28.0	17.0	17.0	9.0	6.0	13.0	17.0	23.0	25.0	28.0	30.0	27.0
3	23.0	18.0	14.0	9.0	6.0	11.5	19.0	18.0	25.0	31.0	28.0	27.0
4	24.0	16.0	17.0	7.0	6.0	10.0	20.0	20.0	24.0	29.0	28.0	26.0
5	23.0	18.0	17.0	---	7.0	8.0	19.0	18.0	24.0	29.0	28.0	26.0
6	24.0	20.0	14.0	15.5	8.0	10.0	21.0	21.0	24.0	31.0	28.0	26.0
7	22.0	18.0	12.0	15.0	7.0	11.0	21.0	21.0	24.0	31.0	27.0	28.0
8	24.0	20.0	12.0	14.0	6.0	12.0	22.0	23.0	24.0	29.0	27.5	27.0
9	23.0	15.0	13.0	11.0	7.0	12.0	22.0	23.0	24.0	28.0	28.0	26.0
10	21.0	16.0	10.0	9.0	6.0	11.5	22.0	22.0	25.0	31.0	28.0	26.0
11	20.0	14.5	10.0	9.0	8.0	12.0	19.0	24.0	26.0	31.0	28.0	25.5
12	17.0	13.0	10.0	7.0	8.0	11.0	17.0	22.0	27.0	28.5	28.0	26.0
13	20.0	14.0	14.0	7.0	8.0	16.0	17.0	22.0	28.0	32.0	30.0	26.0
14	16.0	13.5	14.0	6.0	9.0	15.0	19.0	22.0	26.5	29.0	28.0	26.0
15	18.0	16.0	12.0	6.0	8.0	16.0	20.0	26.0	26.5	30.0	27.0	27.0
16	20.0	18.0	13.0	7.0	11.0	16.0	21.0	26.0	26.0	30.0	28.0	26.0
17	21.0	19.0	14.0	10.0	7.0	12.0	22.0	25.0	26.0	33.0	28.0	27.0
18	22.0	18.0	12.0	7.0	7.0	13.0	22.0	25.0	27.0	30.0	28.0	26.0
19	23.5	17.0	15.0	5.0	6.0	12.0	23.0	24.0	30.0	30.0	28.0	28.0
20	23.0	18.0	12.0	5.0	8.0	14.0	20.0	25.0	28.0	---	28.0	27.0
21	21.0	20.0	8.0	5.0	8.0	15.0	23.0	25.0	30.0	28.0	32.0	27.0
22	21.0	17.0	10.0	5.0	8.0	16.0	21.0	25.5	27.0	28.0	28.5	26.0
23	22.0	16.0	11.0	6.0	8.0	15.0	23.0	29.0	27.0	28.0	28.0	25.0
24	22.0	17.0	12.0	---	8.0	15.0	23.0	27.0	29.0	28.0	31.0	26.0
25	24.0	17.0	13.0	8.0	9.0	15.0	22.0	27.0	29.0	30.0	28.0	24.5
26	24.0	16.0	11.0	8.0	9.5	15.0	23.0	27.0	29.0	28.0	28.0	25.0
27	20.0	17.0	11.0	7.0	10.0	13.0	24.0	27.0	29.0	28.0	27.5	25.0
28	21.0	17.0	11.0	7.0	14.0	13.0	23.0	25.0	26.5	27.0	27.5	24.5
29	21.0	17.0	11.0	6.0	---	15.0	22.0	26.5	27.0	28.0	28.0	24.0
30	23.5	14.0	12.0	6.5	---	15.0	24.0	26.0	27.0	28.0	28.0	24.0
31	22.0	---	11.0	6.0	---	15.0	---	24.5	---	28.0	26.0	---
MEAN	22.0	17.0	12.5	8.0	8.0	13.0	21.0	24.0	26.5	29.0	28.0	26.0

SABINE RIVER BASIN

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08028500 SABINE RIVER NEAR BON WIER, TX--Continued

COLOR (PLATINUM-COBALT UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	80	160	120	100	30	30	70	30	30	60	120
2	20	50	140	120	120	30	50	70	30	30	30	100
3	20	70	140	120	140	30	70	30	40	30	40	60
4	20	100	120	120	100	35	70	40	60	40	30	60
5	20	140	120	120	60	30	50	50	80	40	30	50
6	20	140	140	100	50	30	60	40	80	30	20	30
7	20	110	140	100	30	40	70	30	60	30	20	20
8	20	120	140	120	50	80	70	40	140	20	30	20
9	100	120	140	200	40	70	70	60	120	30	30	20
10	70	140	140	200	30	40	70	30	120	20	30	30
11	120	200	140	140	30	30	70	30	140	30	30	60
12	120	240	140	140	30	40	70	30	100	30	30	70
13	120	240	140	140	30	60	80	40	140	30	20	30
14	130	160	140	110	70	60	60	30	70	30	20	30
15	120	120	140	120	80	30	70	40	50	30	30	30
16	70	140	140	120	40	20	40	30	40	30	30	50
17	70	120	140	140	50	20	70	30	40	50	30	40
18	70	30	140	140	60	20	70	20	40	70	40	40
19	80	30	140	140	60	30	60	30	70	20	40	40
20	80	30	100	140	50	30	70	30	70	---	30	30
21	70	30	100	140	50	30	70	20	20	40	60	20
22	80	40	120	120	40	30	80	30	30	20	70	30
23	40	30	70	100	40	30	70	30	30	30	30	30
24	50	30	120	120	40	30	70	20	30	60	30	30
25	80	30	120	120	30	40	80	20	30	70	30	30
26	70	20	80	140	40	30	90	20	40	70	30	30
27	70	30	70	140	40	40	100	20	20	40	20	30
28	80	30	60	140	40	30	70	30	20	70	30	30
29	80	50	100	140	---	30	60	40	30	80	70	30
30	80	140	100	120	---	30	70	70	30	40	80	30
31	80	---	120	100	---	30	---	40	---	40	280	---
MEAN	65	95	120	130	55	36	65	36	60	39	44	41

08029500 BIG COW CREEK NEAR NEWTON, TX

LOCATION.--Lat 30°49'08", long 93°47'07", Newton County, Hydrologic Unit 12010005, near center of span at downstream side bridge on State Highway 87, 2.6 mi (4.2 km) southwest of Newton, 5.0 mi (8.0 km) downstream from Melhones Creek, and 8.0 mi (12.9 km) upstream from White Oak Creek.

DRAINAGE AREA.--128 mi² (332 km²).

PERIOD OF RECORD.--April 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 134.69 ft (41.054 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 19, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--26 years, 109 ft³/s (3.087 m³/s), 11.56 in/yr (294 mm/yr), 78,970 acre-ft/yr (97.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,200 ft³/s (572 m³/s) Apr. 29, 1953, gage height, 19.45 ft (5.928 m); minimum daily, 10 ft³/s (0.28 m³/s) July 7, 8, 21-23, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 27.5 ft (8.38 m) in April 1922, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,100 ft³/s (31.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Nov. 30	2200	1,160	32.9	14.38	4.383		
Dec. 14	1500	1,460	41.3	14.88	4.535		
Jan. 8	2300	1,380	39.1	14.76	4.499		
				Jan. 25	0800	*1,570	44.5
				Feb. 2	0400	1,100	31.2
							15.02
							4.578
							14.21
							4.331

Minimum discharge, 27 ft³/s (0.76 m³/s) Aug. 26-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	32	876	84	710	96	68	43	43	30	31	95
2	30	76	263	77	887	93	67	44	42	30	31	90
3	32	102	141	73	347	92	66	55	45	29	30	118
4	32	55	112	70	204	95	65	68	51	29	30	147
5	31	45	95	69	167	90	65	62	50	29	30	88
6	31	42	82	69	148	87	64	51	50	29	31	53
7	30	40	74	83	140	116	63	52	358	29	34	40
8	30	43	69	898	170	161	62	58	478	31	33	35
9	30	74	68	796	171	117	61	58	151	31	31	33
10	31	104	66	204	178	99	62	51	69	31	31	34
11	41	63	63	137	155	93	70	44	54	31	32	36
12	48	48	61	339	148	89	74	43	51	30	32	42
13	41	44	446	311	553	87	67	44	47	30	31	45
14	35	42	1310	172	362	86	62	44	43	30	31	156
15	33	41	621	126	183	84	58	42	39	30	31	135
16	32	41	185	171	147	77	56	39	36	35	30	68
17	31	42	136	822	141	73	56	38	34	34	30	49
18	31	43	112	429	194	72	56	51	32	32	30	44
19	31	42	99	408	167	72	55	58	34	31	30	55
20	31	41	92	358	135	73	51	43	33	31	29	46
21	31	74	85	201	120	75	49	38	31	36	29	48
22	31	121	80	180	110	78	48	36	31	37	29	39
23	31	134	78	219	107	79	50	35	31	39	28	34
24	33	73	79	817	105	109	49	35	31	43	28	33
25	37	59	77	1400	101	186	47	35	31	36	28	32
26	39	56	74	790	100	112	45	35	31	35	27	31
27	36	55	70	286	96	86	43	35	30	38	27	31
28	34	56	70	220	96	78	43	34	30	37	34	31
29	33	495	79	190	---	74	43	34	30	51	147	31
30	32	1040	111	179	---	72	42	34	30	36	162	31
31	32	---	106	285	---	70	---	36	---	31	84	---
TOTAL	1031	3223	5880	10463	6142	2871	1707	1375	2046	1031	1241	1750
MEAN	33.3	107	190	338	219	92.6	56.9	44.4	68.2	33.3	40.0	58.3
MAX	48	1040	1310	1400	887	186	74	68	478	51	162	156
MIN	30	32	61	69	96	70	42	34	30	29	27	31
CFSM	.26	.84	1.48	2.64	1.71	.72	.45	.35	.53	.26	.31	.46
IN.	.30	.94	1.71	3.04	1.79	.83	.50	.40	.59	.30	.36	.51
AC-FT	2040	6390	11660	20750	12180	5690	3390	2730	4060	2040	2460	3470
CAL YR 1977	TOTAL	36731	MEAN 101	MAX 1310	MIN 24	CFSM .79	IN 10.67	AC-FT 72860				
WTR YR 1978	TOTAL	38760	MEAN 106	MAX 1400	MIN 27	CFSM .83	IN 11.26	AC-FT 76880				

SABINE RIVER BASIN

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08030000 CYPRESS CREEK NEAR BUNA, TX

LOCATION.--Lat 30°25'52", long 93°54'28", Jasper County, Hydrologic Unit 12010005, near center of span at downstream side of bridge on Farm Road 253, 0.3 mi (0.5 km) downstream from Boggy Creek, 3.2 mi (5.1 km) east of Buna, and 9.5 mi (15.3 km) upstream from Little Cypress Creek.

DRAINAGE AREA.--69.2 mi² (179.2 km²).

PERIOD OF RECORD.--March 1952 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 46.16 ft (14.070 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair. No known diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--26 years, 65.5 ft³/s (1.855 m³/s), 12.85 in/yr (326 mm/yr), 47,450 acre-ft/yr (58.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft³/s (201 m³/s) Sept. 18, 1963, gage height, 13.28 ft (4.048 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft³/s (36.0 m³/s) Jan. 25, gage height, 10.04 ft (3.060 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	135	4.9	275	11	.51	.00	.00	.00	.41	4.9
2	.00	.03	44	4.0	501	9.0	.38	.00	.00	.00	.24	1.2
3	.00	.00	27	4.6	334	11	.31	.00	.00	.00	.14	.62
4	.00	.15	14	4.7	200	11	.29	.00	.00	.00	.06	.41
5	.00	.36	7.8	3.4	116	7.3	.30	.00	.00	.00	.03	.53
6	.00	.37	4.3	2.4	59	5.6	.27	.00	2.9	.00	.07	2.5
7	.00	.20	2.4	2.1	50	13	.33	.00	155	.00	.06	1.2
8	.00	.20	1.3	54	231	79	.32	.00	178	.00	.03	.57
9	.00	.18	.69	38	189	63	.22	.00	27	.00	.01	.32
10	.00	.09	.32	14	166	37	.19	.00	8.1	.00	.77	.34
11	7.5	.51	.18	8.5	123	23	.27	.00	3.6	.00	23	.31
12	13	.66	.12	98	94	17	.22	.00	1.8	.00	7.3	.20
13	7.2	.42	146	92	151	13	.22	.00	1.1	.00	2.0	.16
14	2.0	.28	840	37	125	10	.23	.00	.81	.00	.82	.19
15	.57	.20	439	22	87	8.4	.25	.00	.57	.00	.37	.38
16	.19	.14	71	47	57	6.6	.21	.00	.48	.00	.11	.57
17	.07	.09	34	402	68	5.0	.21	.00	.43	.00	.04	.34
18	.02	.05	20	207	169	3.8	.14	.00	.30	.00	.01	.21
19	.00	.04	12	271	121	3.0	.10	.00	.20	.00	.00	.15
20	.00	.03	7.5	318	84	2.4	.05	.00	.13	.00	.00	.15
21	.00	.17	4.8	147	55	2.0	.03	.00	.08	.32	.00	.24
22	.00	.23	3.2	96	37	1.8	.01	.00	.05	8.8	.00	.26
23	.00	.17	2.3	105	27	1.6	.01	.00	.03	.00	.00	.34
24	.00	.09	1.7	596	22	3.1	.00	.00	.01	22	.00	.29
25	.00	.05	1.2	1200	17	3.3	.00	.00	.00	5.9	.00	.22
26	.00	.03	.87	894	15	2.2	.00	.00	.00	2.6	.00	.14
27	.00	.01	.60	644	12	1.6	.00	.00	.00	.79	.00	.09
28	.00	.17	.55	412	11	1.3	.00	.00	.00	.40	.24	.05
29	.00	56	1.0	175	---	1.1	.00	.00	.00	.18	6.3	.03
30	.00	332	5.0	98	---	.93	.00	.00	.00	.14	19	.02
31	.00	---	6.8	149	---	.72	---	.00	---	.47	14	---
TOTAL	30.55	392.92	1834.63	6150.6	3396	358.75	5.07	.00	380.59	55.60	75.01	16.93
MEAN	.99	13.1	59.2	198	121	11.6	.17	.000	12.7	1.79	2.42	.56
MAX	13	332	840	1200	501	79	.51	.00	178	22	23	4.9
MIN	.00	.00	.12	2.1	11	.72	.00	.00	.00	.00	.00	.02
CFSM	.01	.19	.86	2.86	1.75	.17	.002	.000	.18	.03	.04	.008
IN.	.02	.21	.99	3.31	1.83	.19	.00	.00	.20	.03	.04	.01
AC-FT	61	779	3640	12200	6740	712	10	.00	755	110	149	34
CAL YR 1977	TOTAL	16779.14	MEAN	46.0	MAX	902	MIN	.00	CFSM	.67	IN	9.02
WTR YR 1978	TOTAL	12696.65	MEAN	34.8	MAX	1200	MIN	.00	CFSM	.50	IN	6.83
									AC-FT	33280	AC-FT	25180

SABINE RIVER BASIN

08030500 SABINE RIVER NEAR RULIFF, TX
(Radiochemical and national stream-quality accounting network)

LOCATION.--Lat 30°18'13", long 93°44'37", Calcasieu Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, at downstream side of bridge on Texas State Highway 12, 2.4 mi (3.9 km) north of Ruliff, 4.2 mi (6.8 km) upstream from the Kansas City Southern Railway Co. bridge, 4.5 mi (7.2 km) downstream from Cypress Creek, and at mile 40.2 (64.7 km).

DRAINAGE AREA.--9,329 mi² (24,162 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1924 to current year.

REVISED RECORDS.--WSP 1282: 1941(M), 1942. WSP 1442: 1925-29, 1937-39, 1943. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.08 ft (1.244 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 1, 1941, nonrecording gage at Kansas City Southern Railway Co. bridge, 4.2 mi (6.8 km) downstream and at datum 2.02 ft (0.616 m) lower. Mar. 1, 1941, to Dec. 8, 1948, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Flow is partly regulated by Toledo Bend Reservoir (station 08025350) 116.3 mi (187.1 km) upstream.

AVERAGE DISCHARGE.--42 years (water years 1925-66) prior to completion of Toledo Bend Reservoir, 8,422 ft³/s (238.5 m³/s), 6,102,000 acre-ft/yr (7.52 km³/yr); 12 years (water years 1967-78) regulated, 7,278 ft³/s (206.1 m³/s), 5,273,000 acre-ft/yr (6.50 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 121,000 ft³/s (3,430 m³/s) May 22, 1953, gage height, 19.98 ft (6.090 m); minimum, 270 ft³/s (7.65 m³/s) Sept. 27-30, Oct. 1-3, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1835, 22.2 ft (6.77 m) in May or June 1884 (adjusted to present site and datum on basis of slope of flood of June 8, 9, 1950); flood of Apr. 26-29, 1913, reached a stage of 19.5 ft (5.94 m), present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,400 ft³/s (521 m³/s) Jan. 28, gage height, 14.05 ft (4.282 m); minimum daily, 530 ft³/s (15.0 m³/s) Oct. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4790	549	8290	1510	9180	7050	9140	838	2460	3500	2100	1650
2	4860	682	10000	1710	8290	6350	9190	758	3180	3180	1540	2390
3	4110	747	10800	1690	9140	5120	7220	870	3440	3080	1850	2740
4	2200	743	10100	1570	10600	3420	4130	2270	3390	2870	2220	2820
5	1220	880	7810	1430	11900	3340	2790	2760	3160	2150	2300	2920
6	937	869	4950	1340	12500	4550	2620	2140	2480	3090	2310	2980
7	831	747	3230	1270	11800	5150	1920	2800	3480	3670	2280	2990
8	767	696	2370	1240	10700	4570	1530	3000	5040	3830	2290	2980
9	709	700	1920	1880	9740	3640	1410	2010	6620	3800	2280	2800
10	663	676	1630	4170	8910	3860	1350	1460	7520	3840	2290	2690
11	876	744	1440	4920	8390	4510	1320	2600	7480	3510	2310	2450
12	1130	951	1280	4150	7970	4730	1300	3290	6220	2440	2320	1660
13	1160	928	1330	3230	7710	4070	1330	3420	3950	3100	2320	1170
14	1050	788	2730	3250	7830	2980	1500	3430	2640	3380	2330	1770
15	890	695	5720	3370	8650	2780	1750	3100	3050	2800	2330	2320
16	802	639	8570	3070	9570	4070	1460	1960	3370	2490	2330	2640
17	726	602	9920	3230	9900	5220	1610	1330	3350	2210	2320	3180
18	660	622	9000	4200	9490	5970	1520	2400	3280	1420	2360	3420
19	616	1890	6260	6220	9010	7020	1200	3050	3030	1040	2390	3270
20	584	2760	3960	7340	8960	7740	1070	3130	1980	2030	2370	3200
21	563	2510	2790	7510	9060	7170	1020	3390	1350	3190	2170	3940
22	547	1690	2190	6970	8990	6020	963	3520	2290	3120	1380	4690
23	550	1630	1850	5810	8850	5220	928	2270	3090	3380	919	5180
24	866	2940	1640	6710	9040	5110	898	1420	3180	2720	1610	5380
25	886	3560	1490	10300	9050	6040	877	2380	3030	1650	2070	5380
26	703	3960	1370	14100	8480	7360	848	2970	2690	1130	2170	5330
27	640	4180	1290	16800	8070	8690	816	3280	2230	1300	2230	5100
28	600	4260	1230	18100	7820	9370	776	3420	3610	2400	2190	4690
29	569	4550	1220	17900	---	9100	755	3150	4220	1720	1620	4870
30	547	6220	1220	15900	---	8640	854	2000	3790	1190	1190	4550
31	530	---	1280	12100	---	8770	---	1370	---	1780	1290	---
TOTAL	36582	53408	128880	192990	259600	177630	64095	75786	108600	81010	63679	101150
MEAN	1180	1780	4157	6225	9271	5730	2137	2445	3620	2613	2054	3372
MAX	4860	6220	10800	18100	12500	9370	9190	3520	7520	3840	2390	5380
MIN	530	549	1220	1240	7710	2780	755	758	1350	1040	919	1170
AC-FT	72560	105900	255600	382800	514900	352300	127100	150300	215400	160700	126300	200600
CAL YR 1977	TOTAL	2177470	MEAN	5966	MAX	20000	MIN	530	AC-FT	4319000		
WTR YR 1978	TOTAL	1343410	MEAN	3681	MAX	18100	MIN	530	AC-FT	2665000		

SABINE RIVER BASIN

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08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to September 1946, October 1947 to current year. Chemical and biochemical analyses: October 1967 to current. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1945 to September 1946, October 1947 to current year.

WATER TEMPERATURES: October 1947 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 779 micromhos Aug. 31, 1966; minimum, 28 micromhos Sept. 19, 1963.

WATER TEMPERATURES: Maximum, 36.0°C Aug. 14, 1962; minimum, 1.0°C Jan. 28, 1948.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 302 micromhos Nov. 16; minimum daily, 45 micromhos Jan. 27.

WATER TEMPERATURES: Maximum daily, 31.0°C on several days during summer months; minimum daily, 4.0°C Jan. 21-24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 26...	1145	700	180	7.5	23.0	90	20	7.2	86	.6	8300	40
NOV 29...	1125	4320	208	7.4	18.0	40	20	8.4	91	.8	4700	44
DEC 29...	1220	1220	141	6.8	10.0	80	20	9.4	86	1.2	2000	46
FEB 02...	1130	8230	67	6.6	6.5	160	40	11.2	94	1.8	2500	140
FEB 27...	1545	8010	183	7.1	10.5	40	20	10.2	94	1.5	460	4
APR 03...	1550	6360	191	6.8	19.5	50	20	8.1	91	.9	850	24
MAY 10...	1610	1330	188	6.9	25.5	40	20	7.0	88	1.0	25000	66
JUL 13...	1315	3170	220	7.2	32.0	30	20	7.8	107	1.3	6700	16
AUG 07...	1500	2260	200	7.0	30.0	30	10	8.4	112	1.1	950	6
SEP 13...	1020	1120	192	6.6	27.0	40	20	6.6	84	.8	--	24
DATE		STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 26...		94	29	0	7.8	2.3	21	1.7	2.5	39	0	19
NOV 29...		150	39	15	9.5	3.6	20	1.4	2.9	29	0	19
DEC 29...		1100	27	0	7.9	1.8	16	1.3	1.9	34	0	14
FEB 02...		62	12	3	3.3	.8	6.7	.9	1.2	10	0	10
FEB 27...		2	35	11	8.6	3.2	18	1.3	2.7	29	0	17
APR 03...		26	36	13	9.3	3.1	20	1.5	2.6	28	0	19
MAY 10...		94	32	9	8.7	2.6	22	1.7	2.9	29	0	19
JUL 13...		42	40	10	10	3.6	22	1.5	3.0	36	0	18
AUG 07...		8	38	9	9.3	3.5	19	1.3	2.9	35	0	19
SEP 13...		8	38	11	10	3.1	20	1.4	2.5	32	0	21

SABINE RIVER BASIN

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE D (MG/L)	SOLIDS, VOLATILE, SUS- PENDE D (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)
OCT 26...	19	.1	17	108	108	27	2	.07	.01	.08	.09
NOV 29...	26	.2	9.1	104	105	37	8	.06	.01	.07	.07
DEC 29...	15	.1	19	109	93	18	0	.08	.03	.11	.14
FEB 02...	7.6	.0	9.5	54	44	55	37	.09	.00	.09	.04
27...	23	.1	8.3	96	95	28	9	.07	.01	.08	.01
APR 03...	27	.1	7.0	116	102	30	23	.03	.00	.03	.01
MAY 10...	25	.1	9.7	102	104	18	5	.08	.01	.09	.04
JUL 13...	27	.1	8.5	114	110	52	22	.03	.00	.03	.01
AUG 07...	27	.1	8.0	108	106	35	10	.00	.00	.00	.00
SEP 13...	24	.1	9.4	129	106	31	23	.04	.01	.05	.04
DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDE D TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE D (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE D (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 26...	.21	.30	.49	.04	.01	4.5	--	--	10	19	94
NOV 29...	.42	.49	.49	.03	.05	5.8	--	--	221	2580	33
DEC 29...	.47	.61	.37	.07	.06	--	8.3	.1	15	49	79
FEB 02...	.54	.58	.29	.04	.14	9.5	--	--	58	1290	68
27...	.50	.51	.67	.05	.07	6.7	--	--	--	--	--
APR 03...	.40	.41	.15	.03	.05	--	7.2	.3	25	429	74
MAY 10...	.38	.42	.29	.03	.01	5.4	--	--	21	75	86
JUL 13...	.50	.51	.54	.03	.01	--	4.7	.5	62	531	60
AUG 07...	.68	.68	.35	.03	.00	5.2	--	--	61	372	50
SEP 13...	.43	.47	.78	.03	.02	--	7.1	.2	24	73	86
DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE D TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE D RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE D RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	
OCT 26...	1145	1	0	1	0	0	0	<10	<9	1	
DEC 29...	1220	1	0	1	0	0	0	3	3	0	
APR 03...	1550	0	0	1	200	100	100	1	1	0	
JUL 13...	1315	1	0	2	200	0	300	0	0	0	
SEP 13...	1020	0	--	0	0	0	0	0	0	1	
DATE	CHROMIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHROMIUM, SUS- PENDE D RECOV- ERABLE (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE D RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE D RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	
OCT 26...	10	5	5	<50	<50	0	10	10	0	1100	
DEC 29...	0	0	0	1	1	0	5	4	1	1200	
APR 03...	0	0	0	1	0	1	5	3	2	1100	
JUL 13...	10	10	0	2	2	0	3	1	2	1100	
SEP 13...	0	0	0	0	0	0	4	0	4	960	

SABINE RIVER BASIN

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08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	
OCT 26...	--	130	<100	<99	1	170	80	90	.0	.0	
DEC 29...	--	440	12	11	1	300	0	300	.1	.1	
APR 03...	1000	100	4	2	2	40	30	10	.0	.0	
JUL 13...	1100	50	2	2	0	140	140	0	.1	.1	
SEP 13...	690	270	4	2	2	130	130	0	.1	.1	
	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	
OCT 26...	.0	0	0	0	<10	<10	0	2	0	20	
DEC 29...	.0	0	0	0	0	0	0	20	0	20	
APR 03...	.0	0	0	0	0	0	0	10	0	10	
JUL 13...	.0	0	0	0	0	0	0	10	10	0	
SFP 13...	.0	0	0	0	0	0	0	10	0	20	
	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ATRA- ZINE, TOTAL (UG/L)	ATRA- ZINE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	
OCT 26...	1145	.0	0	.00	.00	.0	--	--	.0	0	.00
NOV 29...	1125	ND	ND	--	ND	101	ND	ND	ND	ND	ND
DEC 29...	1220	.0	0	.00	.00	16	--	--	.0	0	.00
FEB 27...	1545	ND	--	--	ND	--	ND	--	ND	--	ND
MAY 10...	1610	ND	ND	--	ND	ND	ND	--	ND	ND	ND
AUG 07...	1500	ND	--	--	ND	--	ND	--	ND	--	ND
	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)
OCT 26...	.0	.00	.0	.00	.0	.00	--	.00	.0	.00	.00
NOV 29...	ND	ND	ND	ND	ND	ND	ND	ND	14	--	ND
DEC 29...	.0	.00	.0	.00	.0	.00	--	.00	2.8	.00	.00
FEB 27...	--	ND	--	ND	--	ND	--	ND	--	--	ND
MAY 10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	ND
AUG 07...	--	ND	--	ND	--	ND	--	ND	--	--	ND

SABINE RIVER BASIN

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 26...	.0	.00	--	.00	.0	.00	.0	.00	.0	.00
NOV 29...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 29...	.0	.00	--	.00	.0	.00	.0	.00	.0	.00
FEB 27...	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 10...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 07...	--	ND	--	ND	--	ND	--	ND	--	ND

DATE	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI- THION, TOTAL (UG/L)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)	SIMA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)
OCT 26...	--	--	.00	--	.00	--	.00	.00	--	--	--
NOV 29...	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	ND
DEC 29...	--	--	.01	--	.00	--	.00	.00	--	--	--
FEB 27...	ND	--	ND	--	ND	--	--	ND	--	ND	--
MAY 10...	ND	ND	ND	ND	ND	ND	--	ND	ND	ND	--
AUG 07...	ND	--	ND	--	ND	--	--	ND	--	ND	--

DATE	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4,5-T TOTAL (UG/L)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SILVEX, TOTAL (UG/L)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 26...	0	0	.00	--	.00	--	.00	--	.00	--
NOV 29...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 29...	0	0	.00	--	.00	--	.00	--	.00	--
FEB 27...	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 10...	ND	66	ND	ND	--	--	--	--	--	--
AUG 07...	ND	--	ND	--	--	--	--	--	--	--

DATE	TIME	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 METHON (PCI/L)	UPANIUM DIS- SOLVED, EXTRAC- TION (UG/L)
AUG 07...	1500	1.8	<.4	4.1	<.4	3.4	<.4	.04	.02

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	APR 3,78 1550	MAY 10,78 1610	JUL 13,78 1315	AUG 7,78 1500	SEP 13,78 1020
TOTAL CELLS/ML	1500	1700	6600	4900	1000
DIVERSITY: DIVISION	0.9	1.4	1.3	0.9	1.2
..CLASS	1.0	1.4	1.3	0.9	1.2
..ORDER	2.2	1.5	1.6	1.0	1.4
...FAMILY	2.5	1.5	2.4	1.3	1.7
....GENUS	0.0	2.4	2.7	1.9	1.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
....COELASTRACEAE										
.....COELASTRUM	--	-	--	-	2400#	36	780#	16	--	-
.....NOCYSTACEAE										
.....ANKYSTRODESMUS	350#	24	--	-	*	0	43	1	--	-
.....CHLORELLA	--	-	--	-	--	-	--	-	55	5
.....CHODATELLA	--	-	--	-	*	0	*	0	--	-
.....DICTYOSPHAERIUM	--	-	--	-	91	1	--	-	--	-
.....KIRCHNERIELLA	18	1	--	-	--	-	100	2	--	-
.....NOCYSTIS	--	-	110	7	180	3	120	2	69	7
.....SELENASTRUM	36	2	--	-	--	-	--	-	--	-
.....TETRAEDRON	--	-	--	-	*	0	--	-	--	-
.....TREUBARIA	--	-	--	-	46	1	--	-	--	-
.....SCENEDESMACEAE										
.....ACTINASTRUM	--	-	--	-	180	3	120	2	--	-
.....CRUCIGENIA	73	5	--	-	180	3	--	-	--	-
.....SCENEDESMUS	91	6	--	-	530	8	86	2	83	8
...TETRASPORALES										
...PALMELLACEAE										
...SPHAEROCYSTIS	510#	35	--	-	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE	54	4	--	-	--	-	--	-	--	-
...CHLAMYDOMONAS	--	-	--	-	270	4	--	-	--	-
...PHACOTACEAE										
...PTEROMONAS	18	1	--	-	--	-	--	-	--	-
...VOLVOCAEEAE										
...GONTUM	--	-	--	-	91	1	--	-	--	-
...ZYGNEMATALES										
...DESMIDIACEAE										
...CLOSTERIUM	--	-	--	-	--	-	*	0	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCAEAE										
....CYCLOTELLA	110	7	150	9	210	3	--	-	--	-
....MELOSIRA	--	-	150	9	--	-	--	-	--	-
...PENNALES										
...FRAGILARIACEAE										
....SYNEDRA	91	6	19	1	*	0	--	-	--	-
....NAVICULACEAE	--	-	--	-	--	-	--	-	14	1
....CALONEIS	--	-	--	-	210	3	29	1	--	-
....NAVICULA	--	-	38	2	--	-	--	-	--	-
....STAURONEIS	--	-	--	-	--	-	--	-	--	-
....NITZSCHIAEAE										
....NITZSCHIA	--	-	--	-	160	2	*	0	110	11
..CHRYSOPHYCEAE										
...CHRYSONOMADALES										
...CHROMULINACEAE										
...CHRYSOCOCCLUS	73	5	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
....CRYPTOMONODACEAE										
.....CRYPTOMONAS	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
....CHROCOCCACEAE										
.....AGMENELLUM	--	-	610#	36	--	-	460	9	660#	64
.....ANACYSTIS	--	-	550#	32	2000#	30	3100#	63	--	-
...HORMOGONALES										
....OSCILLATORIACEAE										
.....OSCILLATORIA	36	2	--	-	--	-	--	-	41	4
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
....EUGLENACEAE										
.....PHACUS	--	-	--	-	--	-	*	0	--	-
.....TRACHELOMONAS	--	-	57	3	--	-	--	-	--	-
PYRPHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
....GLENODINIACEAE										
.....GLENODINIUM	--	-	19	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

SABINE RIVER BASIN

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	36582	211	110	10700	29	2860	20	1940	39
NOV. 1977.....	53408	200	110	15500	27	3870	19	2710	37
DEC. 1977.....	128880	92	65	22600	11	3950	12	4270	20
JAN. 1978.....	192990	69	51	26800	8	4270	10	5400	16
FEB. 1978.....	259600	129	82	57800	16	11300	14	10100	26
MAR. 1978.....	177630	182	100	48700	23	11000	18	8510	34
APR. 1978.....	64095	193	110	18400	25	4250	18	3200	36
MAY 1978.....	75786	196	110	22000	25	5090	19	3830	36
JUNE 1978.....	108600	184	100	30000	24	6990	18	5240	34
JULY 1978.....	81010	223	110	24500	32	7000	20	4450	41
AUG. 1978.....	63679	207	110	18900	27	4670	19	3320	38
SEPT 1978.....	101150	204	110	29800	27	7350	19	5220	38
TOTAL	1343410	**	**	326000	**	72600	**	58200	**
WTD.AVG.	3680.58	155	90	**	20	**	16	**	30

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	214	201	115	127	58	173	200	204	191	221	186	175
2	230	205	66	134	68	187	201	202	200	215	195	167
3	214	211	59	146	54	171	195	179	206	218	197	241
4	212	200	66	146	51	164	190	169	198	219	199	244
5	233	186	71	143	125	185	195	197	197	210	203	226
6	225	192	79	147	92	156	212	190	199	231	202	203
7	222	185	99	150	87	188	179	184	148	218	201	200
8	227	185	109	155	112	185	196	202	121	250	199	202
9	234	228	117	169	128	173	192	194	124	286	203	185
10	215	250	144	90	126	161	192	199	109	242	201	168
11	232	235	100	62	141	166	188	182	172	220	203	183
12	176	213	106	75	137	162	190	190	174	215	205	196
13	173	187	152	88	138	163	185	200	201	219	207	194
14	180	168	134	98	139	156	177	203	176	217	217	202
15	184	267	125	87	137	154	169	206	212	214	213	196
16	175	302	139	88	122	151	177	199	220	211	210	208
17	227	283	93	103	126	188	173	198	213	213	209	200
18	206	259	58	98	151	193	169	191	206	211	213	198
19	218	220	67	75	164	198	186	200	204	217	215	194
20	225	209	79	66	151	199	193	203	200	216	216	176
21	207	214	91	69	164	191	203	202	201	215	215	201
22	202	201	100	70	162	184	207	200	202	218	214	203
23	224	189	97	78	178	188	194	199	207	215	219	203
24	200	171	112	78	185	190	187	199	212	212	224	207
25	194	174	119	63	177	188	189	191	209	207	202	209
26	192	203	133	47	168	179	204	199	213	209	209	214
27	179	201	133	45	155	181	196	197	205	213	207	213
28	185	202	139	46	187	182	194	199	234	249	236	216
29	202	202	141	50	---	189	191	201	207	208	207	216
30	225	173	143	68	---	193	193	198	215	210	198	218
31	201	---	147	52	---	201	---	197	---	221	192	---
MEAN	208	211	108	94	132	179	191	196	193	221	207	202

SABINE RIVER BASIN

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08030500 SABINE RIVER NEAR RULIFF, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	21.0	18.0	11.0	7.0	11.0	16.0	23.0	27.0	28.0	26.0	29.0
2	28.0	21.0	18.0	9.0	6.0	12.0	16.0	24.0	27.0	28.0	26.0	29.0
3	26.0	21.0	18.0	9.0	6.0	12.0	17.0	23.0	26.0	---	26.0	28.0
4	26.0	21.0	18.0	7.0	6.0	10.0	20.0	21.0	26.0	29.0	30.0	28.0
5	26.0	20.0	18.0	21.0	7.0	9.0	20.0	21.0	26.0	31.0	30.0	28.0
6	27.0	21.0	17.0	11.0	7.0	10.0	22.0	21.0	25.0	31.0	29.0	28.0
7	26.0	21.0	16.0	13.0	7.0	11.0	22.0	22.0	26.0	31.0	29.0	29.0
8	26.0	20.0	16.0	13.0	7.0	11.0	22.0	23.0	24.0	---	29.0	29.0
9	25.0	20.0	16.0	12.0	7.0	11.0	22.0	23.0	25.0	31.0	29.0	---
10	25.0	19.0	16.0	11.0	7.0	12.0	22.0	24.0	24.0	30.0	29.0	28.0
11	24.0	18.0	16.0	9.0	7.0	16.0	23.0	24.0	24.0	29.0	29.0	28.0
12	24.0	19.0	19.0	8.0	7.0	12.0	23.0	25.0	26.0	29.0	---	28.0
13	24.0	19.0	16.0	6.0	8.0	13.0	23.0	25.0	28.0	30.0	29.0	27.0
14	23.0	19.0	15.0	7.0	8.0	15.0	24.0	26.0	28.0	31.0	29.0	27.0
15	26.0	20.0	15.0	7.0	8.0	16.0	21.0	25.0	28.0	31.0	29.0	27.0
16	22.0	20.0	15.0	8.0	8.0	14.0	22.0	24.0	29.0	30.0	29.0	28.0
17	22.0	20.0	15.0	8.0	8.0	14.0	22.0	24.0	29.0	30.0	30.0	28.0
18	22.0	20.0	14.0	7.0	8.0	14.0	22.0	26.0	29.0	31.0	31.0	28.0
19	22.0	19.0	15.0	6.0	7.0	14.0	23.0	26.0	29.0	31.0	29.0	28.0
20	22.0	19.0	13.0	5.0	7.0	14.0	23.0	26.0	29.0	30.0	29.0	28.0
21	22.0	19.0	13.0	4.0	7.0	14.0	22.0	26.0	27.0	29.0	29.0	28.0
22	21.0	19.0	14.0	4.0	7.0	14.0	22.0	27.0	27.0	---	29.0	28.0
23	21.0	19.0	13.0	4.0	8.0	16.0	22.0	26.0	28.0	28.0	29.0	28.0
24	21.0	19.0	10.0	4.0	8.0	17.0	23.0	27.0	28.0	27.0	29.0	28.0
25	21.0	---	13.0	9.0	8.0	17.0	24.0	27.0	29.0	27.0	29.0	26.0
26	21.0	18.0	14.0	9.0	8.0	16.0	23.0	27.0	29.0	28.0	31.0	26.0
27	20.0	18.0	12.0	8.0	9.0	16.0	23.0	27.0	29.0	29.0	31.0	26.0
28	21.0	18.0	11.0	7.0	11.0	14.0	23.0	27.0	29.0	28.0	31.0	26.0
29	21.0	18.0	11.0	7.0	---	15.0	23.0	27.0	29.0	29.0	28.0	26.0
30	21.0	18.0	10.0	7.0	---	15.0	23.0	26.0	28.0	29.0	29.0	26.0
31	21.0	---	10.0	7.0	---	15.0	---	26.0	---	26.0	29.0	---
MEAN	23.5	19.5	14.5	8.5	7.5	13.5	22.0	25.0	27.0	29.5	29.0	27.5

SABINE RIVER BASIN

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08031000 COW BAYOU NEAR MAURICEVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
DEC 06...	0930	162	16.0	38	17
JAN 17...	0915	440	7.0	399	474
FEB 14...	1815	211	10.0	52	30

08031290 LAKE ATHENS NEAR ATHENS, TX

LOCATION.--Lat 32°12'15", long 95°43'30", Henderson County, Hydrologic Unit 12020001, at upstream side of dam on Flat Creek, 5 mi (8 km) downstream from Underwood Lake, 8 mi (13 km) east of Athens, and 18 mi (29 km) upstream from Neches River.

DRAINAGE AREA.--21.6 mi² (55.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1972, published as Flat Creek 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 3,000 ft (910 m) long. Deliberate impoundment began Nov. 1, 1962, and the dam was completed in May 1963. The emergency spillway is an uncontrolled 300-foot-wide (91 m) channel cut through natural ground at the left end of the dam. The service spillway is an uncontrolled 6 by 6 ft (2 by 2 m) square drop inlet that is connected to a concrete conduit of the same size that extends through the dam. A 4.0 by 5.5 ft (1 by 1.7 m) inlet box with slide valve that connects to an 18-inch-diameter (457 mm) concrete conduit extends through the dam and serves as the low-flow service outlet. Water is used for municipal supply by the city of Athens. 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.....	453 +	-
Crest of spillway.....	446.0	42,600
Crest of drop inlet (top of conservation pool).....	440.0	32,790
Normal operating level.....	440.0	32,790
Lowest gated outlet (invert).....	396.5	100

COOPERATION.--The capacity table, furnished by the city of Athens, is based on Geological Survey topographic maps dated 1949-50.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 36,500 acre-ft (45.0 hm³) May 10, 1968, elevation, 442.37 ft (134.834 m); minimum since operating level was reached (May 7, 1968), 30,170 acre-ft (37.2 hm³) Oct. 23, 24, 1977, elevation, 438.24 ft (133.576 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 33,270 acre-ft (41.0 hm³) May 12, elevation, 440.31 ft (134.206 m); minimum 30,170 acre-ft (37.2 hm³) Oct. 23, 24, elevation, 438.24 ft (133.576 m).

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

438.0	29,820	440.0	32,790
439.0	31,290	441.0	34,340

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30830	30330	30480	30240	30990	32160	33100	32990	32950	31630	30680	30580
2	30770	30390	30480	30240	30990	32200	33070	33050	32960	31620	30670	30580
3	30700	30380	30480	30260	30990	32200	33080	33070	32960	31560	30620	30570
4	30670	30360	30480	30270	31020	32220	33100	33050	32920	31530	30600	30580
5	30620	30350	30400	30300	31020	32250	33050	33050	32900	31500	30860	30570
6	30600	30330	30390	30300	31020	32580	33050	33050	32980	31470	30850	30520
7	30570	30260	30380	30300	31110	33050	33050	33050	32920	31410	30850	30520
8	30510	30390	30350	30240	31110	33100	33040	33050	32890	31380	30830	30510
9	30480	30360	30350	30260	31190	33160	33020	33040	32840	31330	30800	30480
10	30510	30330	30290	30240	31220	33190	33110	32990	32790	31290	30790	30490
11	30460	30320	30270	30360	31260	33210	33100	33180	32730	31240	30770	30580
12	30430	30320	30270	30360	31560	33210	33070	33270	32720	31220	30730	30700
13	30390	30290	30380	30360	31630	33220	33070	33220	32660	31200	30700	30680
14	30380	30290	30380	30380	31720	33220	33050	33210	32580	31160	30670	30680
15	30350	30270	30360	30380	31680	33190	33040	33210	32490	31080	30620	30680
16	30330	30270	30420	30490	31720	33160	33020	33160	32390	31050	30580	30670
17	30300	30240	30400	30550	31900	33160	33010	33140	32290	31040	30580	30650
18	30270	30210	30380	30640	31930	33130	32990	33140	32230	30960	30520	30620
19	30260	30200	30360	30700	31980	33130	32960	33130	32110	30930	30510	30580
20	30240	30200	30350	30700	31980	33140	32920	33140	32010	30890	30490	30540
21	30210	30300	30320	30700	31990	33180	32920	33130	31980	30830	30580	30520
22	30180	30290	30300	30700	32020	33180	32950	33130	31960	30800	30520	30490
23	30170	30260	30300	30710	32050	33250	32960	33100	31920	30950	30490	30460
24	30270	30290	30290	30760	32080	33220	33010	33050	31870	30950	30460	30430
25	30270	30260	30290	30790	32100	33210	32980	33020	31840	30920	30450	30420
26	30270	30200	30270	30790	32100	33190	32980	33020	31800	30910	30420	30380
27	30260	30230	30240	30820	32130	33190	32950	32990	31770	30880	30380	30360
28	30230	30180	30230	30830	32170	33180	32950	32950	31750	30860	30350	30360
29	30260	30320	30240	30830	---	33160	32950	32920	31710	30800	30300	30350
30	30240	30450	30260	30850	---	33140	32980	32900	31680	30770	30270	30330
31	30260	---	30290	30930	---	33130	---	32870	---	30740	30240	---
MAX	30830	30450	30480	30930	32170	33250	33110	33270	32980	31630	30860	30700
MIN	30170	30180	30230	30240	30990	32160	32920	32870	31680	30740	30240	30330
(†)	438.30	438.43	438.32	438.76	439.59	440.22	440.12	440.05	439.26	438.63	438.29	438.35
(‡)	-580	+190	-160	+640	+1240	+960	-150	-110	-1190	-940	-500	+90
(††)	42.7	32.4	29.8	37.0	33.8	57.5	67.1	83.5	123	128	92.9	72.0

CAL YR 1977 MAX 34040 MIN 30170 ‡ -2890 †† 849
WTR YR 1978 MAX 33270 MIN 30170 ‡ -510 †† 800

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, by city of Athens.

NECHES RIVER BASIN

08031290 LAKE ATHENS NEAR ATHENS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD---Chemical analyses: October 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAY 17...	0900	99	6.9	22.5	24	6	6.8	1.7	6.9
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAY 17...	.6	2.9	22	0	8.2	10	.1	2.4	50

08031400 LAKE PALESTINE NEAR FRANKSTON, TX

LOCATION.--Lat 32°03'12", long 95°26'12", Anderson-Cherokee County line, Hydrologic Unit 12020001, in outlet tower near right bank, 140 ft (43 m) upstream from Blackburn Crossing Dam on Neches River, 5 mi (8 km) east of Frankston, 11 mi (18 km) upstream from gage (station 08032000), and at mile 354.0 (569.6 km).

DRAINAGE AREA.--839 mi² (2,173 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1962, nonrecording gage read once daily.

REMARKS.--The lake is formed by a rolled earthfill dam with a 500-foot-wide (150 m) uncontrolled emergency spillway near the left end of dam. Deliberate impoundment began May 1, 1962. The enlargement of lake began Sept. 26, 1969, and was completed on Mar. 3, 1971. The outlet works consist of two 5 by 7 ft (1.5 by 2.1 m) gates, located in concrete tower near center of dam and connected to an 8.5-foot-diameter (2.6 m) concrete conduit through the dam. The low-flow outlet consists of two 3.0 ft (0.9 m) iron pipes connected to the tower structure for low-flow releases. Water is used for municipal and industrial purposes in the Palestine area. The diversion point is downstream from gage (station 08032000). There are no large diversions above 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.....	364.0	-
Design flood.....	355.3	726,000
Crest of spillway (top of conservation pool).....	345.0	412,000
Lowest gated outlet (invert).....	298.0	550

COOPERATION.--The capacity table, furnished by the Upper Neches River Municipal Water Authority, is based on Geological Survey topographic maps dated 1946 and 1948-49.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 501,300 acre-ft (618 hm³) June 7, 1973, elevation, 348.29 ft (106.159 m); minimum since first appreciable storage, 11,450 acre-ft (14.1 hm³) Nov. 28, 1970, elevation, 310.00 ft (94.488 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 439,000 acre-ft (541 hm³) Mar. 11, elevation, 346.04 ft (105.473 m); minimum 362,400 acre-ft (447 hm³) Sept. 30, elevation, 342.99 ft (104.543 m).

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

342.0	339,500	345.0	411,800
343.0	362,600	346.0	437,900
344.0	386,700	347.0	469,900

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	375900	370300	375600	382800	406300	419600	417000	413900	412300	398000	380400	369800
2	376100	368900	374900	380700	405500	422200	417500	414400	412300	397500	378700	369400
3	374900	369400	375600	380400	406800	420200	417000	414400	411800	397200	378700	369100
4	373700	369100	377100	380000	407500	418100	417300	413900	411000	396700	378500	368900
5	373400	368400	378500	381200	407800	416500	417300	413100	410500	396000	382400	368400
6	373000	368100	376300	380900	407800	421700	417300	414400	410800	395000	381400	367900
7	371500	368600	375600	383100	409800	428800	416800	414700	411300	395000	381200	367400
8	373400	369100	379200	383300	410000	433700	416200	415500	411800	393700	380900	366700
9	371000	368600	376600	381400	411300	437700	416200	414900	410000	393000	380400	366000
10	372200	369600	376100	381200	411000	438700	418800	413400	409000	392000	379700	366000
11	372500	368900	375900	383600	411300	438700	416500	415700	408500	391200	379000	366000
12	372000	369400	375900	384500	415500	436400	416000	419100	408500	390200	378300	367400
13	370300	368900	378300	384800	417500	437400	415700	418600	408500	389700	377500	367400
14	369600	368100	378300	384300	418300	435800	414400	419100	407800	390000	376300	367400
15	369800	368600	377500	383100	418600	435300	414700	419100	407000	389000	375600	366900
16	368900	369800	379000	391700	419400	430900	414100	419100	406000	388700	375100	366700
17	368400	369100	379200	390200	421700	428500	414400	418100	405000	387700	373900	365500
18	368100	368600	378300	394200	420900	425600	414700	417500	405000	386700	373200	365300
19	368400	368100	381400	394700	420900	424600	414900	418100	404500	384800	374200	365000
20	367700	368400	380700	394500	422000	425400	413900	417500	404500	385500	373700	364500
21	367400	369400	378700	395500	422000	424600	412300	416500	404300	384500	373900	367200
22	367400	368900	378300	395700	419900	423000	413900	415700	403300	383800	373200	366500
23	367700	369600	378500	397000	420200	423000	414700	415200	403000	384000	372200	366000
24	368600	369800	380200	399000	419100	425400	414900	414400	402300	384000	371800	365500
25	368400	369400	379200	400500	420400	422800	414100	413400	400800	383100	371000	365000
26	368400	368600	378700	399800	419400	422000	413400	412800	400300	381900	370300	364100
27	367900	368900	378300	400500	419600	421500	412300	412100	400500	382600	369800	363300
28	368100	369800	378700	400800	420400	420700	410800	412100	400500	381900	370300	363300
29	367700	372700	380000	401000	---	420900	410500	411300	399800	380700	369100	362600
30	367200	372700	380200	402500	---	420400	411500	410500	399500	380400	368400	362400
31	365700	---	380900	403500	---	418600	---	410300	---	380000	367900	---
MAX	376100	372700	381400	403500	422000	438700	418800	419100	412300	398000	382400	369800
MIN	365700	368100	374900	380000	405500	416500	410500	410300	399500	380000	367900	362400
(†)	343.13	343.42	343.76	344.67	345.33	345.26	344.99	344.94	344.51	343.72	343.22	342.99
(#)	-9400	+7000	+8200	+22600	+16900	-1800	-7100	-1200	-10800	-19500	-12100	-5500
CAL YR 1977	MAX	471700	MIN	365700	#	-38200						
WTR YR 1978	MAX	438700	MIN	362400	#	-12700						

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

NECHES RIVER BASIN

08031400 LAKE PALESTINE NEAR FRANKSTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CAC03)	HARDNESS, NONCARBONATE (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
MAY 18...	0910	214	7.0	21.0	50	22	13	4.2	16
AUG 09...	1230	223	6.8	31.0	54	24	13	5.2	18
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	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 SI02)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
MAY 18...	1.0	3.9	34	0	25	23	.1	5.8	108
AUG 09...	1.1	4.0	36	0	26	26	.1	6.3	116

NECHES RIVER BASIN

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08032000 NECHES RIVER NEAR NECHES, TX

LOCATION.--Lat 31°53'32", long 95°25'50", Anderson-Cherokee County line, Hydrologic Unit 12020001, on left bank downstream from bridge on U.S. Highway 79, 1.0 mi (1.6 km) downstream from Missouri Pacific Railway Co. bridge, 1.4 mi (2.3 km) downstream from Walnut Creek, 4.4 mi (7.1 km) northeast of Neches, and at mile 333.2 (536.1 km),

DRAINAGE AREA.--1,145 mi² (2,966 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.06 ft (80.486 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1945, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good except those for period of no gage-height record, which are poor. Some regulation by Lake Palestine (station 08031400) 11 mi (18 km) upstream and by Lake Athens (station 08031290) 50 mi (80 km) upstream, capacity, 100,200 acre-ft (124 hm³). No large diversion above station.

AVERAGE DISCHARGE.--22 years (water years 1940-61) unregulated, 804 ft³/s (22.77 m³/s), 582,500 acre-ft/yr (718 hm³/yr); 17 years (water years 1962-78) regulated, 660 ft³/s (18.69 m³/s), 478,200 acre-ft/yr (590 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,500 ft³/s (1,290 m³/s), Apr. 2, 1945, gage height, 22.07 ft (6.727 m); no flow Oct. 3-5, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908, stage 24.3 ft (7.41 m), was the highest since flood in May 1884, which was probably higher.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, estimated 2,800 ft³/s (79.3 m³/s) Mar 11 or 12; maximum gage height, about 14.5 ft (4.42 m) Mar 11 or 12; minimum daily, 55 ft³/s (1.56 m³/s) July 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	90	345	104	287	640	658	160	114	63	75	75
2	64	192	269	102	359	640	583	188	135	65	75	78
3	63	198	210	99	359	700	526	275	208	62	76	77
4	63	147	167	92	302	650	496	370	184	61	76	77
5	63	118	136	91	253	600	486	327	159	60	78	77
6	63	107	118	91	240	580	461	272	145	59	82	76
7	66	101	107	92	220	1000	445	251	170	59	82	75
8	65	102	89	92	200	1500	437	269	192	58	81	74
9	64	149	83	112	190	2000	416	313	203	57	80	74
10	63	169	87	106	180	2500	399	307	175	57	79	75
11	65	153	81	87	180	2800	500	268	120	64	78	78
12	69	136	79	121	300	2800	558	302	95	61	77	85
13	67	119	105	161	400	2700	477	463	89	56	75	95
14	66	111	201	151	450	2600	429	544	92	57	75	97
15	65	107	183	139	500	2500	382	530	83	57	75	90
16	64	105	142	223	600	2440	348	494	76	57	74	88
17	65	105	121	555	700	2190	323	475	70	57	74	88
18	66	102	114	518	750	1890	311	450	68	56	74	84
19	65	101	106	436	800	1570	344	421	67	56	74	82
20	65	102	96	401	800	1370	380	407	69	56	74	81
21	66	104	91	311	750	1230	316	390	65	56	74	81
22	71	106	86	256	720	1130	248	373	64	55	76	93
23	73	108	83	236	760	1060	227	326	63	56	75	97
24	75	110	82	245	775	1010	294	285	65	57	74	91
25	93	121	85	277	740	998	309	311	65	57	73	86
26	101	130	83	299	700	1010	353	388	64	62	73	84
27	99	128	79	280	680	1000	291	338	62	75	73	82
28	93	121	77	232	660	949	220	202	62	83	73	83
29	90	139	82	209	---	857	176	169	61	85	73	84
30	87	278	104	196	---	777	149	161	63	78	73	84
31	85	---	111	201	---	719	---	134	---	76	73	---
TOTAL	2229	3859	3802	6515	13855	44410	11542	10163	3148	1918	2344	2491
MEAN	71.9	129	123	210	495	1433	385	328	105	61.9	75.6	83.0
MAX	101	278	345	555	800	2800	658	544	208	85	82	97
MIN	63	90	77	87	180	580	149	134	61	55	73	74
AC-FT	4420	7650	7540	12920	27480	88090	22890	20160	6240	3800	4650	4940

CAL YR 1977 TOTAL 309258 MEAN 847 MAX 8600 MIN 58 AC-FT 613400
WTR YR 1978 TOTAL 106276 MEAN 291 MAX 2800 MIN 55 AC-FT 210800

NOTE.--No gage-height record Feb. 7 to Mar. 15.

NECHES RIVER BASIN

08032000 NECHES RIVER NEAR NECHES, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1969 to current year.

INSTRUMENTATION.--Specific conductance is recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1973-78): Maximum daily, 1,190 micromhos Aug. 29, 1976; minimum daily, 106 micromhos Sept. 14, 1974.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 489 micromhos May 3; minimum daily, 151 micromhos Jan. 17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	TEMPER- ATURE (DEG C)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT					
12...	1510	70	200	19.0	25
NOV					
30...	1605	295	219	11.0	44
DEC					
14...	1245	212	250	10.5	48
JAN					
11...	1630	85	223	4.5	41
FEB					
06...	1430	236	218	5.5	40
24...	0840	775	190	6.0	27
MAR					
16...	1200	2390	176	12.0	23
APR					
06...	1720	451	202	18.5	30
07...	1125	437	198	18.5	29
27...	1300	291	199	19.5	29
MAY					
17...	1115	477	216	23.5	28
JUN					
26...	1545	64	236	31.0	36
JUL					
20...	1255	55	231	30.0	34
AUG					
10...	1410	79	238	30.0	30
SEP					
21...	1700	81	239	27.0	34

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	206	205	205	212	199	202	293	179	208	226	220	222
2	205	203	204	261	195	212	179	169	175	233	201	217
3	203	200	202	262	178	208	191	177	182	236	200	213
4	203	200	201	181	175	178	---	---	---	233	198	208
5	203	201	201	194	181	188	---	---	---	224	208	217
6	202	201	201	199	193	195	---	---	---	236	221	229
7	231	199	212	201	198	199	---	---	---	224	211	220
8	207	201	203	227	195	200	---	---	---	225	209	217
9	201	198	199	473	193	264	---	---	---	230	177	200
10	207	190	200	207	180	194	---	---	---	190	176	181
11	203	197	200	185	176	182	---	---	---	231	190	203
12	197	195	195	189	175	183	---	---	---	454	220	313
13	199	195	197	193	187	190	---	---	---	269	214	236
14	199	198	199	192	190	191	---	---	---	214	208	211
15	199	197	198	195	191	192	220	208	212	222	202	210
16	199	195	199	190	195	195	227	206	214	486	208	280
17	199	195	197	200	197	199	320	206	233	288	151	177
18	260	195	218	203	195	198	245	204	216	177	165	168
19	207	199	201	195	194	194	211	203	207	230	180	213
20	201	199	200	195	194	194	226	208	216	231	191	210
21	200	199	199	199	194	197	208	199	202	212	191	204
22	199	198	198	199	196	198	205	199	201	244	211	230
23	198	197	198	201	197	199	225	203	207	251	230	239
24	205	195	197	198	192	195	230	216	222	262	230	245
25	207	191	197	288	180	226	236	226	238	260	242	253
26	213	183	192	250	189	215	227	204	212	260	207	230
27	270	213	240	190	187	188	216	199	203	213	203	207
28	224	212	221	199	187	191	221	200	209	254	213	236
29	212	207	209	424	186	229	266	212	224	249	221	233
30	207	180	204	412	207	292	476	240	310	246	219	233
31	204	203	203	---	---	---	239	221	229	269	242	255
MONTH	270	180	203	473	175	203	476	169	216	486	151	223

NECHES RIVER BASIN

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08032000 NECHES RIVER NEAR NECHES, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	388	233	298	---	---	---	---	---	---	220	210	216
2	233	194	207	---	---	---	---	---	---	210	194	204
3	198	187	191	196	188	194	---	---	---	489	197	254
4	227	198	216	192	188	190	---	---	---	224	195	204
5	226	214	220	197	190	194	---	---	---	199	193	195
6	215	211	213	204	197	201	---	---	---	202	195	198
7	232	212	221	280	195	223	---	---	---	208	200	205
8	340	214	254	195	171	175	200	197	199	211	198	206
9	266	211	224	185	171	180	202	200	201	198	186	195
10	243	203	220	187	183	186	266	200	210	198	186	193
11	219	180	212	183	181	182	325	196	233	210	194	198
12	220	217	219	184	180	182	199	195	197	395	205	247
13	---	---	---	184	182	183	206	199	203	246	187	199
14	---	---	---	183	177	181	205	203	203	---	---	---
15	---	---	---	177	174	175	235	199	207	199	---	---
16	---	---	---	178	174	176	204	199	202	198	197	198
17	---	---	---	183	177	180	203	200	202	200	197	199
18	---	---	---	185	180	182	244	202	215	203	176	200
19	---	---	---	186	182	184	209	196	201	202	199	200
20	---	---	---	187	185	186	199	193	196	201	197	199
21	---	---	---	191	184	187	204	197	202	203	199	200
22	---	---	---	---	---	---	211	203	207	203	196	200
23	---	---	---	---	---	---	276	210	223	207	191	201
24	---	---	---	---	---	---	218	195	202	207	195	202
25	---	---	---	---	---	---	196	192	195	203	197	201
26	---	---	---	---	---	---	216	190	194	204	195	200
27	---	---	---	---	---	---	205	195	200	210	196	204
28	---	---	---	---	---	---	210	200	206	219	207	214
29	---	---	---	---	---	---	217	209	212	221	208	215
30	---	---	---	---	---	---	227	217	222	223	207	216
31	---	---	---	---	---	---	---	---	---	230	213	224
MONTH	388	180	225	280	171	186	325	190	206	489	176	206
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	245	200	229	264	212	237	223	219	221	231	---	196
2	245	200	226	241	232	238	226	217	223	---	---	---
3	242	176	209	---	---	---	227	220	223	221	204	218
4	203	175	191	---	---	---	225	218	222	220	215	218
5	213	202	207	---	---	---	222	191	210	---	---	---
6	236	184	206	---	---	---	221	175	208	---	---	---
7	---	197	---	---	---	---	221	215	218	---	---	---
8	272	195	219	237	222	233	221	215	219	231	---	135
9	196	192	194	---	---	---	228	218	223	231	227	230
10	207	191	201	---	---	---	230	222	226	231	225	229
11	227	207	217	---	---	---	230	213	225	230	---	223
12	---	---	---	---	---	---	226	207	216	230	---	196
13	238	228	233	---	---	---	234	---	---	---	---	---
14	235	---	---	---	---	---	---	---	---	---	---	181
15	238	208	227	---	---	---	---	---	---	---	---	---
16	252	225	243	---	---	---	---	---	---	292	244	---
17	251	241	248	---	---	---	---	---	---	---	---	264
18	249	245	248	---	---	---	---	---	---	---	---	---
19	249	229	240	---	---	---	---	---	---	---	---	---
20	288	242	253	---	---	---	---	---	---	229	---	---
21	260	246	253	---	---	---	---	---	---	---	---	70
22	253	248	250	---	207	---	240	221	226	243	234	237
23	260	243	250	236	227	232	230	223	226	241	231	235
24	265	238	251	234	227	231	233	223	229	235	221	226
25	378	241	279	235	226	231	233	227	231	233	227	231
26	459	322	385	233	228	---	233	225	230	233	231	232
27	437	321	335	243	221	226	233	226	230	231	229	230
28	321	240	239	223	216	220	---	---	---	230	227	229
29	241	236	---	222	207	216	---	---	---	230	226	228
30	---	---	---	224	208	221	---	---	---	232	228	230
31	---	---	---	223	211	218	---	---	---	---	---	---
MONTH	459	175	241	264	207	228	240	175	223	292	204	212

NECHES RIVER BASIN

08032500 NECHES RIVER NEAR ALTO, TX

LOCATION.--Lat 31°34'45", long 95°09'55", Houston-Cherokee County line, Hydrologic Unit 12020001, near left bank on downstream side of pier of bridge on State Highway 21, 600 ft (180 m) downstream from Bowles Creek, 7.5 mi (12.1 km) southwest of Alto, and at mile 273.9 (440.7 km).

DRAINAGE AREA.--1,945 mi² (5,038 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 198.29 ft (60.439 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Flow partly regulated since 1962 by Lake Athens (station 08031290) and Lake Palestine (station 08031400); minor regulation by Lake Jacksonville since 1957; combined capacity, 130,700 acre-ft (161 hm³). During the current year, Upper Neches River Municipal Water Authority diverted 3,115 acre-ft (3.84 hm³) from stream at Rocky Point Crossing 50 mi (80 km) upstream for municipal and industrial uses in the Palestine area.

AVERAGE DISCHARGE.--17 years (water years 1945-61) unregulated, 1,272 ft³/s (36.02 m³/s), 921,600 acre-ft/yr (1,140 hm³); 17 years (water years 1962-78) regulated, 1,003 ft³/s (28.40 m³/s), 726,700 acre-ft/yr (896 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft³/s (1,210 m³/s) Apr. 4, 1945, gage height, 26.85 ft (8.184 m); minimum, 0.1 ft³/s (0.003 m³/s) Sept. 27, 28, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1861, 28.2 ft (8.60 m) in May 1884, from information by local residents, discharge, about 50,000 ft³/s (1,420 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,340 ft³/s (66.3 m³/s) Mar. 21, gage height, 15.13 ft (4.612 m); minimum daily, 45 ft³/s (1.27 m³/s) July 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	112	285	217	541	958	1160	342	228	78	75	67
2	86	109	338	221	653	932	1070	302	232	74	73	67
3	83	106	386	226	675	902	988	301	243	69	68	68
4	80	118	423	221	677	884	910	352	225	63	66	73
5	78	160	389	219	670	872	837	421	229	59	68	78
6	77	188	324	218	629	866	768	476	256	54	72	76
7	76	179	269	213	575	920	723	495	268	52	74	74
8	79	171	230	208	557	1040	693	460	312	50	81	71
9	80	200	204	202	596	1040	667	414	296	49	84	70
10	86	234	192	196	636	1010	688	379	296	48	83	69
11	114	208	180	199	655	1060	978	384	272	47	79	73
12	149	211	170	259	690	1140	1040	401	249	46	75	88
13	136	216	189	329	785	1230	852	521	215	46	73	149
14	127	203	313	308	905	1440	787	523	174	46	69	185
15	124	187	401	303	1170	1600	759	543	147	48	67	169
16	110	173	361	440	1130	1720	700	587	132	51	69	148
17	98	163	390	666	1180	1840	636	607	118	50	68	122
18	93	157	364	746	1200	1970	632	598	109	50	64	103
19	91	151	303	985	1200	2090	601	573	105	49	63	91
20	90	144	260	1070	1150	2220	537	540	100	49	61	89
21	90	140	235	1000	1100	2320	491	503	95	48	61	89
22	90	140	216	872	1080	2310	487	477	90	48	61	85
23	87	143	201	753	1070	2170	587	465	87	48	65	83
24	88	146	195	675	1070	2000	650	456	82	45	64	82
25	92	151	191	657	1070	1860	614	428	78	45	65	82
26	98	156	187	631	1060	1690	487	376	78	48	64	85
27	102	159	180	605	1030	1540	448	345	82	58	63	83
28	109	164	178	587	989	1430	441	359	90	71	63	79
29	118	176	186	575	---	1340	431	390	86	93	65	76
30	118	202	205	540	---	1280	392	353	82	74	63	76
31	116	---	223	503	---	1230	---	267	---	73	63	---
TOTAL	3053	4967	8168	14844	24743	44904	21054	13638	5056	1729	2129	2750
MEAN	98.5	166	263	479	884	1449	702	440	169	55.8	68.7	91.7
MAX	149	234	423	1070	1200	2320	1160	607	312	93	84	185
MIN	76	106	170	196	541	866	392	267	78	45	61	67
AC-FT	6060	9850	16200	29440	49080	89070	41760	27050	10030	3430	4220	5450
CAL YR 1977	TOTAL	413121	MEAN	1132	MAX	7110	MIN	65	AC-FT	819400		
WTR YR 1978	TOTAL	147035	MEAN	403	MAX	2320	MIN	45	AC-FT	291600		

NECHES RIVER BASIN

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08032500 NECHES RIVER NEAR ALTO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1959 to current year. Biochemical analyses: October 1967 to current year. Water temperatures: October 1959 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 12...	1130	145	156	6.9	18.0	7.8	85	1.6	32	6
DEC 19...	1625	300	243	7.1	14.0	9.8	98	1.0	38	20
FEB 22...	0920	1070	199	7.0	5.0	12.2	98	1.2	41	25
APR 24...	1335	650	182	6.8	19.5	7.9	89	2.3	42	18
JUL 06...	1245	54	260	6.5	31.5	4.9	66	.8	49	17
AUG 16...	1510	64	240	7.0	31.5	7.0	95	1.3	50	23
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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 12...	7.3	3.4	14	1.1	3.3	32	0	11	19	.1
DEC 19...	8.8	4.0	26	1.8	4.1	22	0	19	43	.1
FEB 22...	9.0	4.4	18	1.2	3.3	19	0	25	28	.1
APR 24...	9.2	4.5	17	1.1	3.2	29	0	19	28	.1
JUL 06...	12	4.7	24	1.5	4.1	40	0	22	37	.1
AUG 16...	12	4.8	21	1.3	4.3	33	0	27	36	.1
DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	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)	
OCT 12...	13	87	.12	.00	.12	.00	.54	.54	.06	
DEC 19...	23	139	.15	.01	.16	.23	.54	.77	.03	
FEB 22...	12	109	.11	.01	.12	.03	.42	.45	.06	
APR 24...	11	106	.15	.01	.16	.08	.70	.78	.10	
JUL 06...	10	134	.09	.00	.09	.01	.57	.58	.04	
AUG 16...	9.1	131	.00	.01	.01	.01	.68	.69	.06	

NECHES RIVER BASIN

08033000 NECHES RIVER NEAR DIBOLL, TX

LOCATION.--Lat 31°07'58", long 94°48'35", Angelina-Polk County line, Hydrologic Unit 12020002, near center of main span on downstream side of downstream bridge on U.S. Highway 59, 700 ft (210 m) downstream from Texas and New Orleans Railroad Co. bridge, 2.9 mi (4.7 km) downstream from Alabama Creek, 3.8 mi (6.1 km) south of Diboll, and at mile 203.5 (327.4 km).

DRAINAGE AREA.--2,724 mi² (7,055 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1925, March 1939 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1242: 1950. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 134.46 ft (40.983 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1925, nonrecording gage at site 630 ft (192 m) upstream; July 10 to Aug. 31, 1925, and Mar. 30, 1939, to Sept. 24, 1943, nonrecording gage at site 500 ft (150 m) upstream; Sept. 25, 1943, to Aug. 16, 1973, nonrecording gage at site 70 ft (21 m) upstream; all at present datum.

REMARKS.--Water-discharge records fair. No large diversion above station. At times flow may be affected by discharge from upstream reservoirs.

AVERAGE DISCHARGE.--24 years (water years 1923-25, 1939-61) unregulated, 1,807 ft³/s (51.17 m³/s), 1,309,000 acre-ft/yr (1.61 km³/yr); 17 years (water years 1961-78) regulated, 1,311 ft³/s (37.13 m³/s), 949,800 acre-ft/yr (1.17 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,900 ft³/s (1,410 m³/s) May 4, 1944, gage height, 18.70 ft (5.700 m); no flow Aug. 15-22, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 21 ft (6.4 m) in May 1884, discharge, about 110,000 ft³/s (3,120 m³/s), from rating curve extended above 40,000 ft³/s (1,130 m³/s); flood in 1900 reached a stage of 19.9 ft (6.07 m), discharge, about 80,000 ft³/s (2,270 m³/s); from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,580 ft³/s (73.1 m³/s) Jan 20, gage height, 11.35 ft (3.459 m); minimum daily, 53 ft³/s (1.50 m³/s) July 18-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	116	215	274	1300	1220	1830	496	382	96	91	88
2	116	121	222	278	1640	1200	1690	475	364	95	98	93
3	106	122	247	282	1710	1180	1570	461	326	93	93	86
4	100	122	287	278	1660	1150	1460	438	304	87	90	80
5	94	121	328	278	1440	1120	1360	427	293	81	88	77
6	92	118	372	278	1220	1080	1260	426	294	76	83	77
7	88	119	394	278	1060	1050	1160	441	567	74	81	78
8	82	145	387	279	1010	1030	1050	472	748	74	79	80
9	86	186	358	275	1010	1130	948	502	827	73	78	82
10	87	207	319	298	1070	1300	867	512	784	71	78	85
11	89	223	281	389	1100	1350	835	501	587	68	81	94
12	101	235	254	458	1140	1300	855	471	444	66	89	98
13	165	240	286	461	1580	1240	915	438	376	64	94	100
14	182	237	600	482	1830	1200	968	424	339	60	93	106
15	175	230	597	463	1950	1180	1000	446	308	57	90	109
16	165	227	605	525	1890	1210	1000	491	274	55	85	139
17	151	221	527	1320	1760	1270	952	518	237	54	82	202
18	141	212	474	1700	1790	1330	883	539	205	53	78	216
19	131	199	438	2220	1790	1410	813	559	182	53	73	194
20	119	187	421	2560	1750	1490	788	572	166	53	72	168
21	110	181	400	2400	1650	1570	778	575	153	54	72	145
22	106	177	367	2140	1570	1650	730	564	140	55	71	126
23	105	178	332	1880	1500	1740	658	541	128	59	68	114
24	103	165	305	1850	1430	1850	612	517	119	61	66	110
25	101	159	283	2000	1370	1960	597	491	111	62	64	109
26	99	156	261	2070	1310	2060	619	467	106	62	65	104
27	95	160	252	1990	1270	2120	641	447	104	62	69	99
28	94	162	246	1760	1250	2140	619	423	103	62	69	95
29	96	171	242	1460	---	2130	565	395	101	62	72	95
30	102	198	243	1190	---	2080	521	382	98	68	72	96
31	108	---	255	1010	---	1970	---	379	---	77	74	---
TOTAL	3509	5295	10798	33126	41050	45710	28544	14790	9170	2087	2458	3345
MEAN	113	177	348	1069	1466	1475	951	477	306	67.3	79.3	112
MAX	182	240	605	2560	1950	2140	1830	575	827	96	98	216
MIN	82	116	215	274	1010	1030	521	379	98	53	64	77
AC-FT	6960	10500	21420	65710	81420	90670	56620	29340	18190	4140	4880	6630
CAL YR 1977	TOTAL	495510	MEAN	1358	MAX	6980	MIN	82	AC-FT	982800		
WTR YR 1978	TOTAL	199882	MEAN	548	MAX	2560	MIN	53	AC-FT	396500		

NECHES RIVER BASIN

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08033000 NECHES RIVER NEAR DIBOLL, TX--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to current year.

WATER TEMPERATURES: October 1969 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 614 micromhos May 2, 1971; minimum daily, 85 micromhos Jan. 27, 1974.

WATER TEMPERATURES: Maximum daily, 38.0°C Aug. 31, Sept. 6, 1970, Aug. 17, 18, 22, 1977; minimum daily, 3.0°C Jan. 21, 1970.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 314 micromhos Aug. 29; minimum daily, 164 micromhos Jan. 19.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 20-22; minimum daily, 4.0°C on several days during January, February, and March.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPECIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	
OCT											
12...	0945	94	256	7.2	18.5	7.4	81	1.4	44	14	
NOV											
03...	1005	125	215	7.0	18.0	--	--	--	41	5	
DEC											
19...	1445	435	208	7.0	14.0	9.4	94	.6	39	16	
JAN											
25...	1530	2090	184	6.3	5.0	--	--	--	35	25	
FEB											
21...	1550	1070	221	6.8	7.0	10.0	85	1.3	44	32	
MAR											
02...	1230	1220	224	7.1	--	--	--	--	43	26	
APR											
24...	1115	630	240	6.8	21.0	7.6	87	1.8	50	23	
MAY											
18...	1530	580	203	7.1	--	--	--	--	42	19	
JUL											
06...	1030	85	300	6.5	30.5	4.3	57	1.0	51	0	
14...	1650	76	274	7.4	31.0	--	--	--	47	9	
AUG											
16...	1325	90	260	6.9	29.5	6.4	84	1.2	44	16	
SEP											
17...	1640	180	241	6.8	31.0	--	--	--	41	12	
DATE		CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT											
12...	10		4.5	27	1.8	4.1	36	0	21	38	.1
NOV											
03...	9.2		4.3	23	1.6	3.9	44	0	19	28	.1
DEC											
19...	9.1		4.0	21	1.5	4.2	28	0	22	28	.1
JAN											
25...	8.2		3.5	18	1.3	3.4	12	0	29	28	.1
FEB											
21...	10		4.5	20	1.3	3.3	14	0	37	28	.1
MAR											
02...	9.8		4.4	20	1.3	3.4	20	0	31	32	.1
APR											
24...	11		5.5	21	1.3	3.5	33	0	26	32	.1
MAY											
18...	9.2		4.5	20	1.4	3.5	28	0	19	29	.1
JUL											
06...	12		5.1	33	2.0	4.2	62	0	25	37	.2
14...	11		4.8	31	2.0	5.0	47	0	26	36	.2
AUG											
16...	10		4.5	28	1.8	4.2	34	0	27	33	.1
SEP											
17...	9.4		4.3	25	1.7	4.5	36	0	26	30	.1

NECHES RIVER BASIN

08033000 NECHES RIVER NEAR DIBOLL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, 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 12...	14	136	.18	.01	.19	.02	.37	.39	.12
NOV 03...	12	121	--	--	--	--	--	--	--
DEC 19...	19	121	.13	.02	.15	.03	.48	.51	.08
JAN 25...	12	108	--	--	--	--	--	--	--
FEB 21...	13	123	.14	.01	.15	.09	.38	.47	.10
MAR 02...	11	122	--	--	--	--	--	--	--
APR 24...	12	127	.16	.03	.19	.03	.71	.74	.08
MAY 18...	12	111	--	--	--	--	--	--	--
JUL 06...	11	158	.17	.01	.18	.01	.80	.81	.25
JUL 14...	17	154	--	--	--	--	--	--	--
AUG 16...	9.8	133	.07	.01	.08	.03	.65	.68	.14
SEP 17...	11	128	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	3509	225	120	1160	31	290	26	244	43
NOV. 1977.....	5295	235	130	1840	32	463	27	382	44
DEC. 1977.....	10798	230	120	3640	32	921	26	765	43
JAN. 1978.....	33126	196	110	9570	26	2320	23	2060	40
FEB. 1978.....	41050	232	130	14200	32	3510	27	2940	44
MAR. 1978.....	45710	232	130	15700	32	3940	26	3260	44
APR. 1978.....	28544	251	130	10300	35	2680	28	2170	45
MAY 1978.....	14790	233	130	5070	32	1270	27	1060	44
JUNE 1978.....	9170	237	130	3180	33	806	27	667	44
JULY 1978.....	2087	284	150	872	40	227	31	175	49
AUG. 1978.....	2458	254	140	919	35	236	29	190	46
SEPT 1978.....	3345	233	130	1160	32	289	26	239	44
TOTAL	199882	**	**	67600	**	17000	**	14200	**
WTD.AVG.	547.62	230	130	**	32	**	26	**	43

NECHES RIVER BASIN

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08033000 NECHES RIVER NEAR DIBOLL, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	222	212	226	285	232	254	229	250	224	299	244	248
2	220	216	230	270	235	256	235	239	225	299	235	253
3	221	214	234	250	233	253	240	240	230	297	246	250
4	235	217	245	240	230	251	242	245	235	295	248	252
5	249	219	235	230	232	249	245	244	240	285	249	250
6	246	217	225	227	234	250	243	243	245	292	245	251
7	230	220	220	240	230	250	245	241	250	284	249	250
8	225	230	228	260	233	252	246	240	215	285	248	249
9	219	238	234	290	235	245	245	242	210	287	249	252
10	220	227	249	280	234	244	244	243	208	289	250	250
11	230	225	261	260	230	244	244	221	225	281	255	248
12	235	226	260	251	234	243	246	235	235	276	260	245
13	240	237	250	230	235	243	240	239	240	274	262	241
14	242	230	210	200	232	240	242	240	245	270	263	240
15	246	226	207	300	230	242	245	240	250	274	260	235
16	218	228	206	243	235	238	247	230	255	275	258	220
17	220	239	204	200	230	235	245	220	259	280	256	200
18	219	230	206	180	228	233	246	203	255	290	257	190
19	215	235	207	164	224	230	244	221	257	295	258	200
20	210	240	208	166	222	223	295	222	258	298	257	220
21	208	245	208	165	226	221	280	224	255	307	255	230
22	206	250	215	166	222	220	228	228	265	295	256	238
23	210	253	220	170	225	215	297	230	270	290	257	240
24	215	255	230	175	230	218	264	235	280	280	259	235
25	222	256	250	179	240	222	254	240	291	276	260	240
26	224	250	255	185	245	219	223	248	292	265	260	238
27	223	247	270	200	250	220	297	235	280	270	261	245
28	224	249	275	210	252	217	302	230	260	276	259	242
29	226	253	280	224	---	220	314	225	248	274	257	250
30	225	250	289	231	---	222	300	226	270	276	258	255
31	224	---	292	234	---	227	---	229	---	250	256	---
MEAN	225	234	236	223	233	235	256	234	249	283	254	239

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	22.0	14.0	8.0	6.0	14.0	17.0	20.0	28.0	31.0	31.0	32.0
2	---	22.0	16.0	9.0	5.0	14.0	5.0	20.0	29.0	30.0	31.0	32.0
3	25.0	19.0	17.0	9.0	6.0	6.0	19.0	22.0	29.0	31.0	31.0	30.0
4	26.0	10.0	16.0	8.0	6.0	6.0	20.0	24.0	32.0	31.0	31.0	31.0
5	27.0	18.0	16.0	9.0	6.0	6.0	20.0	22.0	30.0	31.0	31.0	31.0
6	26.0	18.0	15.0	10.0	5.0	6.0	19.0	24.0	28.0	31.0	31.0	30.0
7	---	18.0	15.0	9.0	5.0	6.0	16.0	25.0	27.0	31.0	30.0	30.0
8	---	17.0	14.0	---	4.0	5.0	19.0	25.0	28.0	31.0	30.0	30.0
9	24.0	16.0	13.0	10.0	5.0	6.0	---	25.0	29.0	---	31.0	31.0
10	25.0	15.0	12.0	10.0	6.0	7.0	18.0	25.0	29.0	31.0	31.0	30.0
11	24.0	15.0	10.0	---	6.0	7.0	19.0	25.0	29.0	31.0	31.0	30.0
12	24.0	15.0	10.0	11.0	7.0	8.0	19.0	25.0	30.0	31.0	31.0	30.0
13	25.0	13.0	---	10.0	7.0	7.0	---	25.0	30.0	30.0	31.0	29.0
14	24.0	14.0	---	10.0	6.0	8.0	18.0	25.0	31.0	31.0	31.0	29.0
15	24.0	15.0	11.0	9.0	5.0	9.0	18.0	25.0	31.0	30.0	31.0	30.0
16	25.0	14.0	11.0	7.0	4.0	9.0	17.0	25.0	---	32.0	31.0	31.0
17	24.0	16.0	10.0	7.0	5.0	10.0	17.0	---	30.0	31.0	31.0	31.0
18	25.0	15.0	11.0	4.0	6.0	9.0	19.0	25.0	30.0	31.0	31.0	31.0
19	25.0	14.0	12.0	4.0	6.0	9.0	19.0	25.0	30.0	31.0	31.0	28.0
20	26.0	15.0	12.0	4.0	7.0	9.0	20.0	25.0	31.0	31.0	33.0	29.0
21	25.0	14.0	13.0	4.0	---	8.0	20.0	26.0	30.0	31.0	33.0	---
22	25.0	13.0	12.0	4.0	8.0	8.0	20.0	27.0	30.0	31.0	33.0	28.0
23	20.0	---	12.0	5.0	8.0	7.0	21.0	26.0	31.0	29.0	32.0	28.0
24	21.0	---	13.0	5.0	9.0	6.0	21.0	27.0	31.0	29.0	31.0	30.0
25	21.0	13.0	12.0	6.0	10.0	4.0	21.0	27.0	31.0	30.0	32.0	30.0
26	21.0	14.0	10.0	6.0	12.0	5.0	20.0	27.0	31.0	29.0	31.0	30.0
27	21.0	13.0	10.0	6.0	13.0	7.0	20.0	28.0	31.0	31.0	30.0	---
28	22.0	14.0	11.0	6.0	13.0	7.0	21.0	29.0	31.0	30.0	30.0	---
29	22.0	14.0	10.0	6.0	---	10.0	21.0	29.0	30.0	31.0	31.0	---
30	23.0	13.0	9.0	---	---	12.0	20.0	29.0	30.0	31.0	31.0	---
31	24.0	---	9.0	5.0	---	15.0	---	28.0	---	31.0	31.0	---
MEAN	24.0	15.5	12.5	7.0	7.0	8.0	19.0	25.5	30.0	30.5	31.0	30.0

NECHES RIVER BASIN

08033300 PINEY CREEK NEAR GROVETON, TX

LOCATION.--Lat 31°08'25", long 95°05'11", Trinity County, Hydrologic Unit 120200002, on left bank at downstream side of bridge on State Highway 94, 6.3 mi (10.1 km) northeast of Groveton, and 7.3 mi (11.7 km) upstream from Caney Creek.

DRAINAGE AREA.--79.0 mi² (204.6 km²).

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 251.40 ft (76.627 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years, 30.7 ft³/s (0.869 m³/s), 5.28 in/yr (134 mm/yr), 22,240 acre-ft/yr (27.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,890 ft³/s (167 m³/s) Mar. 24, 1973, gage height, 15.43 ft (4.703 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1921, 17 ft (5.2 m) in May 1942, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 536 ft³/s (15.2 m³/s) Jan. 18, gage height, 11.19 ft (3.411 m), no other peak above base of 500 ft³/s (14.2 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	.00	.35	1.1	287	7.0	1.9	.68	.02	.02	.00	.00
2	.56	.00	.29	1.1	297	6.5	1.8	.70	.04	.02	.00	.00
3	.53	.00	.21	1.0	116	6.3	1.7	.58	.03	.01	.00	.00
4	.53	.00	.17	.96	56	5.8	1.6	.33	.03	.01	.00	.00
5	.53	.00	.14	.96	34	5.3	1.6	.29	.03	.00	.00	.00
6	.53	.00	.11	.96	24	5.2	1.5	.17	.09	.00	.00	.00
7	.53	.00	.09	.99	23	21	1.4	.13	93	.00	.00	.00
8	.54	.05	.07	.97	74	182	1.4	.11	109	.00	.00	.00
9	.52	.10	.06	.93	97	91	1.3	.09	120	.00	.00	.00
10	.84	.15	.04	.88	152	41	1.4	.08	32	.00	.00	.00
11	2.0	.13	.04	3.8	108	22	2.0	.08	4.6	.00	.00	.00
12	2.5	.08	.04	73	97	14	3.5	.08	1.5	.00	.00	.00
13	1.3	.10	129	50	270	9.7	4.1	.08	.86	.00	.00	.00
14	.59	.10	157	19	185	9.5	3.0	.07	.57	.00	.00	.00
15	.36	.09	28	8.8	91	13	2.1	.06	.39	.00	.00	.00
16	.25	.07	9.8	133	46	15	1.6	.06	.29	.00	.00	.00
17	.18	.05	4.4	393	49	8.7	1.4	.05	.23	.00	.00	.00
18	.15	.04	2.8	493	139	5.5	1.3	.05	.18	.00	.00	.00
19	.13	.03	2.1	520	71	4.4	1.1	.05	.14	.00	.00	.00
20	.10	.02	1.7	366	40	3.8	1.0	.04	.12	.00	.00	.00
21	.09	.06	1.4	114	26	3.5	.94	.04	.10	.00	.00	.00
22	.07	.06	1.3	50	19	3.3	.91	.04	.07	.00	.00	.00
23	.06	.05	1.2	41	15	3.1	.91	.03	.06	.00	.00	.00
24	.03	.07	1.1	195	13	2.9	.92	.03	.04	.00	.00	.00
25	.02	.08	1.1	210	11	2.7	.90	.02	.05	.00	.00	.00
26	.02	.07	1.0	113	9.5	2.5	.82	.02	.03	.00	.00	.00
27	.01	.07	.98	57	8.3	2.3	.76	.02	.46	.00	.00	.00
28	.01	.07	.97	40	7.6	2.2	.72	.01	.35	.00	.00	.00
29	.01	.16	1.1	33	---	2.1	.72	.01	.05	.00	.00	.00
30	.00	.24	1.2	25	---	2.0	.72	.02	.03	.00	.00	.00
31	.00	---	1.3	25	---	2.0	---	.02	---	.00	.00	---
TOTAL	13.59	1.94	349.06	2972.45	2365.4	505.3	45.02	4.04	364.36	.06	.00	.00
MEAN	.44	.065	11.3	95.9	84.5	16.3	1.50	.13	12.1	.002	.000	.000
MAX	2.5	.24	157	520	297	182	4.1	.70	120	.02	.00	.00
MIN	.00	.00	.04	.88	7.6	2.0	.72	.01	.02	.00	.00	.00
CFSM	.006	.001	.14	1.21	1.07	.21	.02	.002	.15	.000	.000	.000
IN.	.01	.00	.16	1.40	1.11	.24	.02	.00	.17	.00	.00	.00
AC-FT	27	3.8	692	5900	4690	1000	89	8.0	723	.1	.00	.00
CAL YR 1977	TOTAL	11490.75	MEAN	31.5	MAX	605	MIN	.00	CFSM	.40	IN	5.41
WTR YR 1978	TOTAL	6621.22	MEAN	18.1	MAX	520	MIN	.00	CFSM	.23	IN	3.12
									AC-FT	22790		
									AC-FT	13130		

NECHES RIVER BASIN

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08033500 NECHES RIVER NEAR ROCKLAND, TX

LOCATION.--Lat 31°01'29", long 94°23'55", Tyler County, Hydrologic Unit 12020003, on downstream side of bridge at U.S. Highway 69, 2,200 ft (671 m) upstream from abandoned ferry crossing, 0.8 mi (1.3 km) upstream from Texas and New Orleans Railway Co. bridge, 1.2 mi (1.9 km) north of Rockland, 3.2 mi (5.1 km) downstream from Williams Creek, and 32.4 mi (52.1 km) upstream from Angelina River.

DRAINAGE AREA.--3,636 mi² (9,417 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1903 to current year.

REVISED RECORDS.--WSP 878: 1926-27. WSP 1342: 1922(M), 1935. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 88.41 ft (26.947 m) National Geodetic Vertical Datum of 1929. Prior to May 23, 1973, nonrecording gage located 2,200 ft (671 m) downstream at datum 3.00 ft (0.914 m) higher. May 23, 1973, to Sept. 30, 1975, recording gage at present site at datum 3.00 ft (0.914 m) higher.

REMARKS.--Water-discharge records good. No large diversions above station. At times flow may be affected by discharge from upstream reservoirs.

AVERAGE DISCHARGE.--58 years (water years 1904-61) unregulated, 2,362 ft³/s (66.89 m³/s), 1,711,000 acre-ft/yr ft³/s (2.11 km³/yr), 17 years (water years 1962-78) regulated, 1,859 ft³/s (52.65 m³/s), 1,347,000 acre-ft/yr (1.66 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,800 ft³/s (1,410 m³/s) May 6, 1944, gage height, 35.04 ft (10.680 m), present site; minimum observed during period of daily records, 1.6 ft³/s (0.045 m³/s) Sept. 28-30, Oct. 1, 2, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with flood in May 1884 which reached a stage of 38.0 ft (11.58 m), present site, from information by local resident, discharge, about 62,000 ft³/s (1,760 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,800 ft³/s (136 m³/s) Jan. 24, gage height, 12.00 ft (3.658 m); minimum daily, 52 ft³/s (1.47 m³/s) July 19-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	105	332	237	3960	1540	2180	575	362	109	77	170
2	141	108	303	255	4200	1500	2110	522	368	151	82	108
3	126	113	295	263	4180	1460	2000	526	393	112	95	123
4	119	114	281	263	3780	1430	1860	503	362	102	100	136
5	111	118	281	260	3240	1400	1710	473	306	97	94	121
6	104	121	309	257	2810	1370	1570	447	286	90	94	105
7	99	121	338	289	2470	1340	1450	444	374	81	90	92
8	97	125	368	587	2250	1290	1340	447	946	75	87	85
9	93	140	381	643	2150	1250	1240	469	1160	73	83	82
10	91	149	368	571	2100	1260	1120	499	1100	71	81	83
11	98	173	335	540	2060	1380	1040	522	1080	70	78	96
12	98	190	303	1040	2210	1510	962	526	931	69	83	120
13	95	206	665	1080	3680	1600	939	488	688	65	92	139
14	103	222	1610	1050	3680	1560	986	451	534	62	92	202
15	156	232	1260	948	3300	1470	1050	423	440	61	92	183
16	175	230	992	1260	3010	1400	1110	426	368	65	91	167
17	173	220	951	2550	2870	1380	1150	458	317	63	88	156
18	162	215	906	2800	3080	1400	1120	492	273	55	84	174
19	151	211	858	3510	3300	1440	1040	538	240	52	80	216
20	140	202	679	3530	3190	1510	956	562	208	52	78	218
21	131	250	546	3440	2900	1570	892	566	182	52	74	204
22	120	268	480	3430	2650	1640	868	575	165	52	71	180
23	112	222	462	3480	2410	1710	839	583	151	56	70	153
24	108	202	451	4580	2180	1790	766	566	141	59	70	136
25	108	186	444	4590	1990	1870	693	530	130	60	68	122
26	106	169	437	4360	1830	1930	643	503	120	60	66	114
27	103	161	384	4100	1710	2000	639	476	113	71	64	112
28	111	178	284	3780	1620	2070	665	447	108	86	71	108
29	114	193	263	3450	---	2140	670	423	106	79	104	104
30	108	374	255	3140	---	2190	630	400	106	90	104	102
31	106	---	240	2730	---	2200	---	381	---	85	114	---
TOTAL	3718	5518	16061	63013	78810	49600	34238	15241	12058	2325	2617	4111
MEAN	120	184	518	2033	2815	1600	1141	492	402	75.0	84.4	137
MAX	175	374	1610	4590	4200	2200	2180	583	1160	151	114	218
MIN	91	105	240	237	1620	1250	630	381	106	52	64	82
AC-FT	7370	10940	31860	125000	156300	98380	67910	30230	23920	4610	5190	8150
CAL YR 1977	TOTAL	614242	MEAN	1683	MAX	7300	MIN	87	AC-FT	1218000		
WTR YR 1978	TOTAL	287310	MEAN	787	MAX	4590	MIN	52	AC-FT	569900		

NECHES RIVER BASIN

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to September 1947. Chemical and biochemical analyses: December 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV 15...	1350	255	230	7.4	16.0	110	30	9.4	98	1.0	40	1
JAN 30...	1515	3100	198	6.8	5.0	130	20	11.6	94	1.8	35	25
MAR 13...	1600	1165	292	6.9	13.5	40	30	9.6	95	1.4	59	41
MAY 23...	1615	620	220	6.9	27.5	60	50	7.0	90	.8	42	11
JUL 26...	1515	57	360	7.3	--	180	60	9.4	131	2.7	86	40
SEP 20...	1700	165	260	6.8	--	60	40	7.8	103	1.9	39	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
NOV 15...	9.4	4.0	26	1.8	4.0	48	0	19	30	.2	12	129
JAN 30...	8.7	3.1	16	1.2	2.9	12	0	--	--	--	--	--
MAR 13...	14	5.8	29	1.6	3.3	22	0	52	40	.1	12	167
MAY 23...	10	4.2	21	1.4	3.6	38	0	21	34	.1	11	124
JUL 26...	18	9.9	39	1.8	4.4	56	0	30	56	.2	12	197
SEP 20...	9.4	3.7	42	2.9	5.0	67	0	31	35	.2	11	170
DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLAT- ILE, SUS- PENDED (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)	PHENOLS (UG/L)	
NOV 15...	36	2	.12	.01	.13	.00	.35	.35	.15	5.3	2	
JAN 30...	24	11	.10	.01	.11	.02	.66	.68	.08	12	--	
MAR 13...	41	12	.06	.01	.07	.20	.16	.36	.07	9.1	2	
MAY 23...	63	9	.33	.01	.34	.03	1.2	1.2	.07	6.1	1	
JUL 26...	90	29	.01	.01	.02	.02	.68	.70	.07	7.6	0	
SEP 20...	58	36	.07	.01	.08	.04	.82	.86	.35	11	2	

NECHES RIVER BASIN

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08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 15...	1350	1	500	1	0	1	80
JAN 30...	1515	1	0	2	0	1	110
MAR 13...	1600	1	100	1	0	1	60
JUL 26...	1515	2	300	0	20	4	30

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 15...	0	8	.0	0	0	10
JAN 30...	1	60	.0	2	0	20
MAR 13...	0	40	.1	0	0	10
JUL 26...	0	0	.0	0	0	0

NECHES RIVER BASIN

08033600 BOWLES CREEK NEAR SELMAN CITY, TX
(Low-flow partial-record station)

LOCATION.--Lat 32°11'41", long 94°58'36", Rusk County, Hydrologic Unit 12020004, at bridge on State Highway 64 and 1.5 mi (2.4 km) west of Selman City.

DRAINAGE AREA.--14.5 mi² (37.6 km²).

PERIOD OF RECORD.--Occasional discharge measurements and water-quality data: November 1967 to current year.

DISCHARGE AND WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 13...	1240	.85	1730	4.5	12.5	90	90	22	8.5	290
NOV 30...	1055	554	1570	5.9	8.5	83	74	21	7.3	270
DEC 29...	0920	4.5	2450	5.9	4.0	120	120	30	11	420
JAN 11...	1215	1.7	1540	5.7	2.0	91	66	22	8.7	250
FEB 23...	1325	5.3	1540	4.9	8.5	96	95	23	9.4	260
APR 05...	1510	322	1660	6.0	21.5	100	97	26	8.9	270
MAY 17...	1415	3.1	1670	6.0	22.0	97	92	24	9.1	280
JUN 28...	0845	.01	1110	5.9	24.5	88	71	22	8.0	170
AUG 10...	0930	.01	2700	--	23.0	190	190	49	16	440
SEP 21...	0825	.01	741	5.7	27.0	70	61	18	6.1	110
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 13...	13		5.1	0	0	12	510	.1	23	871
NOV 30...	13		5.5	10	0	14	460	.1	17	800
DEC 29...	17		3.9	5	0	16	750	.1	27	1260
JAN 11...	11		3.9	30	0	11	450	.1	26	786
FEB 23...	12		3.6	1	0	27	450	.1	26	800
APR 05...	12		4.4	6	0	15	500	.1	26	853
MAY 17...	12		4.5	6	0	17	500	.1	25	863
JUN 28...	7.9		3.8	20	0	34	300	.1	20	568
AUG 10...	14		6.8	0	0	93	770	.1	31	1410
SEP 21...	5.7		3.2	11	0	45	190	.1	12	390

NECHES RIVER BASIN

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08033900 EAST FORK ANGELINA RIVER NEAR CUSHING, TX

LOCATION.--Lat 31°51'36", long 94°49'23", Rusk County, Hydrologic Unit 12020004, near left bank on downstream side of bridge on Farm Road 225, 0.1 mi (0.2 km) downstream from Everett Branch, 0.9 mi (1.4 km) upstream from Reagan Branch, 3.5 mi (5.6 km) north of Cushing, and 8 mi (13 km) upstream from Angelina River.

DRAINAGE AREA.--158 mi² (409 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 275.29 ft (83.908 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years, 98.2 ft³/s (2.781 m³/s), 8.44 in/yr (214 mm/yr), 71,150 acre-ft/yr (87.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s (314 m³/s), July 23, 1968, gage height, 11.66 ft (3.554 m), from rating curve extended above 4,600 ft³/s (130 m³/s); minimum, 0.7 ft³/s (0.020 m³/s) Aug. 14, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1800 ft³/s (51.0 m³/s) Feb. 14, gage height, 10.20 ft (3.109 m), no other peak above base of 900 ft³/s (25.5 m³/s); minimum, 2.1 ft³/s (0.059 m³/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	6.0	8.0	34	28	160	48	38	20	12	5.3	5.4	4.4		
2	5.9	9.1	30	24	233	47	37	20	17	5.5	7.6	7.0		
3	6.4	11	27	22	171	54	36	80	20	5.1	11	6.6		
4	6.1	11	23	20	97	68	35	151	16	4.7	6.4	7.8		
5	5.8	11	21	20	73	56	34	80	14	4.4	5.5	6.8		
6	6.1	11	20	21	61	50	33	47	71	6.5	6.1	6.3		
7	6.1	11	18	22	55	74	33	52	64	5.8	6.4	4.9		
8	6.0	17	17	22	72	139	31	115	45	4.5	5.5	4.1		
9	5.8	53	18	20	63	98	30	65	24	4.8	4.7	3.9		
10	6.8	50	17	20	86	68	60	40	16	6.2	4.2	3.9		
11	21	24	16	21	105	57	257	30	13	4.9	4.0	5.0		
12	18	17	17	34	124	52	244	167	12	5.1	3.6	8.5		
13	12	15	29	42	340	50	118	214	11	4.3	3.3	11		
14	11	14	74	37	343	67	63	101	10	3.8	3.2	455		
15	9.5	14	50	30	220	70	47	52	9.7	3.5	4.6	1170		
16	8.7	13	30	87	116	52	41	37	8.9	4.4	4.1	770		
17	8.3	13	28	303	91	44	40	31	8.4	7.4	3.3	233		
18	8.2	13	26	241	100	41	143	29	8.2	4.6	2.8	63		
19	8.2	13	23	148	100	40	139	26	7.9	3.8	2.5	42		
20	8.0	13	22	140	81	39	65	22	7.7	3.5	2.4	33		
21	7.7	13	20	87	68	45	43	20	7.2	3.8	2.4	32		
22	7.8	21	19	56	57	78	36	18	7.0	3.7	2.6	35		
23	8.2	22	19	53	53	66	34	18	6.8	6.9	2.6	35		
24	8.3	18	20	184	52	94	35	17	6.3	15	2.5	24		
25	8.6	18	20	314	50	161	31	16	6.1	13	2.4	18		
26	9.1	17	20	242	51	101	27	15	5.8	8.9	2.5	16		
27	9.2	16	19	122	47	62	24	14	5.4	12	2.3	15		
28	8.7	16	19	80	46	50	22	13	5.2	17	2.3	15		
29	8.4	19	23	67	---	45	22	12	5.2	11	4.2	15		
30	8.3	31	30	59	---	43	21	12	5.1	8.3	7.3	15		
31	8.0	---	30	71	---	40	---	11	---	6.2	4.8	---		
TOTAL	266.2	532.1	779	2637	3115	1999	1819	1545	455.9	203.9	132.5	3066.2		
MEAN	8.59	17.7	25.1	85.1	111	64.5	60.6	49.8	15.2	6.58	4.27	102		
MAX	21	53	74	314	343	161	257	214	71	17	11	1170		
MIN	5.8	8.0	16	20	46	39	21	11	5.1	3.5	2.3	3.9		
CFSM	.05	.11	.16	.54	.70	.41	.38	.32	.10	.04	.03	.65		
IN.	.06	.13	.18	.62	.73	.47	.43	.36	.11	.05	.03	.72		
AC-FT	528	1060	1550	5230	6180	3970	3610	3060	904	404	263	6080		
CAL YR 1977	TOTAL	21373.2	MEAN	58.6	MAX	906	MIN	3.9	CFSM	.37	IN	5.03	AC-FT	42390
WTR YR 1978	TOTAL	16550.8	MEAN	45.3	MAX	1170	MIN	2.3	CFSM	.29	IN	3.90	AC-FT	32830

08034000 LAKE TYLER NEAR WHITEHOUSE, TX

LOCATION.--Lat 32°14'30", long 95°10'33", Smith County, Hydrologic Unit 12020004, at city of Tyler pumphouse, 2.0 mi (3.2 km) north of Whitehouse Dam on Prairie Creek, 3.0 mi (4.8 km) northwest of Mud Creek, and 3.2 mi (5.1 km) northeast of Whitehouse.

DRAINAGE AREA.--107 mi² (277 km²). Prior to May 29, 1968, 45.3 mi² (117.3 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 3, 1949, nonrecording gage at dam. May 3, 1949, to July 11, 1951, nonrecording gage at pumphouse. July 12, 1951, to Feb. 1, 1968, water-stage recorder at intake tower in lake 660 ft (201 m) south of pumphouse. All gages at same datum.

REMARKS.--Originally Lake Tyler was formed by Whitehouse Dam. Deliberate impoundment began Jan. 8, 1949, and the dam was completed May 13, 1949. The construction of Mud Creek Dam began Feb. 11, 1966, and deliberate impoundment began Nov. 22, 1966; final completion of dam was in January 1967. Whitehouse Dam is a rolled earthfill dam with an uncontrolled concrete spillway 200 ft (61 m) wide near left end of dam. Mud Creek dam is a rolled earthfill dam with an uncontrolled concrete spillway 300 ft (90 m) wide near center of dam. On May 29, 1968, the lakes were joined through an interconnecting canal. An 18 in (457 mm) conduit through the embankment of Mud Creek Dam serves as a low-flow outlet. Water is used for municipal supply for the cities of Tyler, Troop, and Whitehouse. The dam is owned and operated by the city of Tyler. 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.....	390.0 to 391.5	-
Design flood.....	386.0	-
Crest of spillways.....	375.4	80,900
Bottom of interconnecting canal between lakes.....	355.0	14,480
Lowest gated outlet (invert at Mud Creek Dam).....	350.0	7,200

COOPERATION.--The capacity tables, furnished by the city of Tyler, are based on surveys made in 1948-49 and 1966-67.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 87,340 acre-ft (108 hm³) Feb. 3, 1975, elevation, 376.71 ft (114.821 m); maximum elevation, 378.3 ft (115.31 m) Apr. 24, 1966, prior to adjoining of lakes; minimum contents since joining of lakes, 65,300 acre-ft (80.5 hm³) Nov. 17, 1971, elevation, 371.96 ft (113.373 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 81,770 acre-ft (101 hm³) May 12, elevation, 375.58 ft (114.477 m); minimum 66,670 acre-ft (82.2 hm³) Sept. 30, elevation, 372.28 ft (113.471 m).

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

372.0	65,470	375.0	79,000
373.0	69,820	376.0	83,820
374.0	74,300		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70040	68240	69250	69380	73600	76730	81010	80240	79960	76360	72290	68550
2	69910	68240	69290	69340	73690	76830	81010	80290	79910	76220	72150	68460
3	69730	68160	69380	69290	73740	76970	81010	80530	79810	76040	71970	68420
4	69560	68110	69290	69250	73830	77110	81100	80530	79760	75850	71880	68330
5	69430	68070	69210	69380	73880	77160	81050	80530	79670	75810	72060	68200
6	69340	68070	69160	69380	73970	77770	81100	80580	79720	75580	71970	68020
7	69210	68070	69120	69290	74100	78670	81390	80620	79670	75350	71840	67940
8	69120	68420	69080	69250	74100	78720	81440	80860	79530	75120	71750	67760
9	69030	68290	69030	69210	74330	78810	81580	80810	79330	74980	71660	67630
10	69380	68240	68990	69160	74380	78950	81480	80670	79290	74840	71520	67540
11	69340	68200	68940	69910	74560	79000	81390	81240	79140	74560	71430	67720
12	69210	68160	68940	69910	75120	79000	81150	81720	79050	74380	71300	67890
13	69120	68110	69430	69950	75350	79100	81100	81480	78910	74190	71160	67850
14	69080	68020	69560	70000	75490	79100	81050	81390	78760	73970	71030	67760
15	68900	68020	69640	69910	75580	79330	80860	81290	78670	74100	70850	67670
16	68810	68070	69730	71070	75670	80670	80770	81150	78480	73880	70630	67630
17	68730	68070	69730	71340	75950	80770	80860	81150	78340	73650	70450	67500
18	68680	67890	69640	71750	76040	80720	80810	81050	78240	73470	70270	67410
19	68640	67890	69560	71880	76090	80770	80670	80960	78150	73330	70130	67370
20	68510	67940	69510	71880	76090	80860	80620	80960	78010	73200	70090	67280
21	68510	67980	69470	72020	76130	80960	80530	81100	77870	72920	70000	67540
22	68420	67850	69430	72110	76270	81050	80580	80770	77730	72830	69820	67460
23	68370	67850	69380	72240	76270	81440	80580	80770	77540	72740	69690	67320
24	68420	67850	69340	72510	76320	81480	80580	80720	77400	72650	69560	67190
25	68420	67810	69290	72650	76460	81340	80380	80580	77250	72560	69380	67060
26	68370	67590	69250	72700	76500	81290	80290	80530	77110	72380	69250	66980
27	68290	67670	69210	72700	76590	81200	80290	80380	76920	72880	69080	66890
28	68290	68070	69160	72700	76730	81200	80150	80240	76780	72830	69080	66840
29	68240	68730	69250	72700	---	81150	80100	80240	76640	72700	68810	66840
30	68240	69210	69290	72970	---	81100	80150	80100	76460	72600	68680	66670
31	68110	---	69340	73380	---	81050	---	80000	---	72380	68510	---
MAX	70040	69210	69730	73380	76730	81480	81580	81720	79960	76360	72290	68550
MIN	68110	67590	68940	69160	73600	76730	80100	80000	76460	72380	68510	66670
(†)	372.61	372.86	372.89	373.79	374.52	375.43	375.24	375.21	374.46	373.57	372.70	372.28
(#)	-1980	+1100	+130	+4040	+3350	+4320	-900	-150	-3540	-4080	-3870	-1840
(††)	1079	879	897	876	701	805	1142	1190	1535	1981	1745	1298

CAL YR 1977 MAX 85100 MIN 67590 † -11440 †† 12471
WTR YR 1978 MAX 81720 MIN 66670 † -3420 †† 14128

† Elevation, in feet, at end of month.

Change in contents, in acre-feet.

†† Diversions, in acre-feet, by city of Tyler.

NECHES RIVER BASIN

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08034000 LAKE TYLER NEAR WHITEHOUSE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAY 17...	1300	118	6.7	24.0	32	9	8.5	2.7	7.4
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
MAY 17...	.6	2.6	28	0	11	11	.1	10	67

08034500 MUD CREEK NEAR JACKSONVILLE, TX

LOCATION.--Lat 31°58'35", long 95°09'38", Cherokee County, Hydrologic Unit 12020004, on right bank on downstream side of pile bent of bridge on U.S. Highway 79, 0.6 mi (1.0 km) downstream from Caney Creek, 3.9 mi (6.3 km) downstream from another Caney Creek, 4 mi (6 km) downstream from Missouri Pacific Railroad Co. bridge, 6.9 mi (11.1 km) east of Jacksonville, and 25.9 mi (41.7 km) upstream from mouth.

DRAINAGE AREA.--376 mi² (974 km²).

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 271.64 ft (82.796 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some regulation by Lake Tyler (station 08034000), capacity 80,900 acre-ft (99.7 hm³). Several diversions above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years (water years 1940-48) prior to regulation by Lake Tyler, 383 ft³/s (10.85 m³/s), 277,500 acre-ft/yr (342 hm³/yr); 30 years (water years 1949-78) regulated, 216 ft³/s (6.117 m³/s), 156,500 acre-ft/yr (193 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s (779 m³/s) Apr. 25, 1966, gage height, 15.20 ft (4.633 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since May 1884, 20 ft (6.1 m) in May 1908 and December 1913; flood in May 1884 was higher (stage unknown), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 630 ft³/s (17.8 m³/s) Mar. 11, gage height, 6.91 ft (2.106 m), no other peak above base of 2,000 ft³/s (56.6 m³/s); minimum daily, 4.0 ft³/s (0.11 m³/s) July 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	21	127	53	114	94	145	40	15	4.4	7.2	9.2
2	9.8	25	131	45	166	94	133	40	29	5.1	6.1	9.7
3	9.1	37	124	41	171	108	120	63	27	8.6	5.9	11
4	8.5	39	108	39	165	132	110	113	30	11	5.9	12
5	8.3	30	69	37	150	136	105	120	24	8.7	5.7	14
6	8.2	23	48	38	115	122	102	105	23	7.8	6.5	12
7	8.9	20	41	39	96	176	98	79	38	7.5	7.8	11
8	9.4	22	36	40	95	400	93	65	27	7.1	14	10
9	11	28	34	39	101	414	89	74	37	7.0	14	9.5
10	13	35	32	36	119	499	92	108	26	6.9	8.7	9.2
11	15	41	31	35	137	604	118	81	15	6.9	7.4	9.7
12	19	34	31	44	149	475	135	113	12	6.5	6.7	14
13	27	24	41	65	288	225	145	149	10	6.3	6.3	20
14	22	20	87	79	359	219	109	208	9.6	6.3	6.1	19
15	18	19	82	84	283	235	91	248	8.9	6.3	6.1	30
16	16	19	79	88	250	304	79	275	8.4	6.5	5.9	17
17	15	19	63	269	236	444	72	173	7.8	6.5	5.5	10
18	15	19	52	307	183	389	78	107	7.4	6.5	5.3	7.8
19	15	18	50	279	158	198	72	83	7.1	6.4	5.0	6.3
20	15	18	48	269	159	138	74	60	6.9	6.0	4.8	5.7
21	15	18	41	229	155	132	73	47	6.5	5.5	5.0	5.0
22	15	20	37	188	124	132	62	39	6.3	4.4	6.9	4.3
23	16	21	35	147	107	133	55	36	6.3	4.2	7.6	4.3
24	17	26	34	121	98	200	54	31	6.1	4.2	7.8	6.3
25	18	26	34	136	95	257	64	31	5.9	4.1	8.3	7.2
26	21	24	34	160	92	291	56	25	5.7	4.0	8.3	6.0
27	23	24	33	158	88	330	54	21	5.5	5.4	8.5	5.5
28	24	23	32	140	90	355	50	18	5.0	16	8.5	5.3
29	22	24	34	116	---	243	42	17	4.5	15	8.7	5.2
30	22	63	44	97	---	176	39	16	4.5	16	9.0	5.0
31	20	---	49	93	---	158	---	15	---	11	9.0	---
TOTAL	487.2	780	1721	3511	4343	7813	2609	2600	425.4	228.1	228.5	301.2
MEAN	15.7	26.0	55.5	113	155	252	87.0	83.9	14.2	7.36	7.37	10.0
MAX	27	63	131	307	359	604	145	275	38	16	14	30
MIN	8.2	18	31	35	88	94	39	15	4.5	4.0	4.8	4.3
AC-FT	966	1550	3410	6960	8610	15500	5170	5160	844	452	453	597
CAL YR 1977	TOTAL	77409.1	MEAN	212	MAX	3710	MIN	7.3	AC-FT	153500		
WTR YR 1978	TOTAL	25047.4	MEAN	68.6	MAX	604	MIN	4.0	AC-FT	49680		

NECHES RIVER BASIN

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08036500 ANGELINA RIVER NEAR ALTO, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, near center of rectified channel at downstream side of pier of bridge on State Highway 21, 0.4 mi (0.6 km) upstream from Allen Creek, 1.5 mi (2.4 km) upstream from Bingham Creek, 7.5 mi (12.1 km) east of Alto, and 149.3 mi (240.2 km) upstream from mouth.

DRAINAGE AREA.--1,276 mi² (3,305 km²).

PERIOD OF RECORD.--May to August 1940 (discharge measurements only), September 1940 to March 1949 (fragmentary for 1941-42, 1944-49), February 1959 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 204.30 ft (62.271 m) National Geodetic Vertical Datum of 1929. May 9, 1940, to Mar. 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft (427 m) to right at same datum. Feb. 18 to Sept. 15, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good. No large diversion above station. Flow partly regulated since May 1957 by Lake Striker 35.5 mi (57.1 km) upstream and Lake Tyler 69.9 mi (112.5 km) upstream since January 1949, combined capacity, 110,700 acre-ft (136 hm³). Recording rain gage at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--20 years (water years 1943, 1960-78), 758 ft³/s (21.47 m³/s), 549,200 acre-ft/yr (677 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft³/s (867 m³/s), Apr. 28, 1966, gage height, 21.51 ft (6.556 m), but may have been higher during period of no gage-height record in November 1940; minimum, 2.0 ft³/s (0.057 m³/s) Aug. 14, 15, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, about 22 ft (6.7 m) in May 1908, from information by local residents. Flood in 1932 reached a stage of 21.5 ft (6.55 m), and flood in May 1958 reached a stage of 20.3 ft (6.19 m), from floodmarks and information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s (29.2 m³/s) Feb. 18, gage height, 8.91 ft (2.716 m); minimum daily, 5.8 ft³/s (0.16 m³/s) Aug. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	42	83	129	715	355	526	127	63	31	68	10
2	39	41	108	151	692	340	476	117	69	29	61	11
3	37	40	162	150	694	341	429	150	79	27	56	15
4	36	39	197	141	747	349	382	196	95	27	53	21
5	35	41	192	133	805	355	342	262	158	26	50	18
6	34	47	178	126	808	383	312	374	145	26	51	19
7	34	51	170	121	742	413	288	417	205	26	50	20
8	33	57	161	118	657	451	269	346	201	25	49	21
9	33	71	140	115	565	541	258	276	190	31	47	22
10	34	64	114	113	486	656	286	276	172	31	46	20
11	38	74	100	115	461	751	513	261	120	28	41	18
12	37	106	94	137	491	794	574	264	92	26	32	17
13	38	106	104	149	702	797	598	305	77	25	28	17
14	47	89	155	161	790	828	670	429	64	25	25	29
15	48	78	184	201	875	867	698	593	56	24	20	38
16	47	70	261	372	936	894	659	672	52	29	18	56
17	46	63	328	539	991	904	577	646	49	42	16	130
18	44	59	302	460	1030	863	491	470	47	46	13	318
19	42	57	231	579	991	723	367	331	44	47	11	424
20	40	57	187	702	926	566	346	298	42	48	9.6	338
21	38	56	157	803	883	528	380	256	41	48	8.5	139
22	38	55	135	883	844	538	330	195	39	47	7.4	72
23	37	54	123	921	791	525	262	149	38	49	7.1	60
24	36	54	114	955	728	518	227	121	36	49	6.4	49
25	36	60	106	924	616	531	203	106	35	49	5.8	46
26	37	62	100	865	481	557	185	104	34	51	6.3	43
27	37	61	97	851	407	672	170	95	33	64	7.8	38
28	39	63	97	891	375	775	158	83	32	63	10	34
29	40	67	101	919	---	806	145	76	31	59	11	32
30	41	73	109	878	---	757	134	69	31	61	12	31
31	42	---	114	773	---	630	---	65	---	69	11	---
TOTAL	1204	1857	4704	14375	20229	19008	11255	8129	2370	1228	837.9	2106
MEAN	38.8	61.9	152	464	722	613	375	262	79.0	39.6	27.0	70.2
MAX	48	106	328	955	1030	904	698	672	205	69	68	424
MIN	33	39	83	113	375	340	134	65	31	24	5.8	10
AC-FT	2390	3680	9330	28510	40120	37700	22320	16120	4700	2440	1660	4180
(††)	1.07	2.60	1.64	5.17	1.76	1.91	2.39	2.49	3.65	1.72	1.58	4.80

CAL YR 1977 TOTAL 210564.0 MEAN 577 MAX 4850 MIN 19 AC-FT 417700 †† 32.19
WTR YR 1978 TOTAL 87302.9 MEAN 239 MAX 1030 MIN 5.8 AC-FT 173200 †† 30.78

†† Rainfall, in inches.

08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX

LOCATION.--Lat 31°35'19", long 94°49'31", Nacogdoches County, Hydrologic Unit 12020004, at upstream side of dam on Bayou Loco near service outlet tower and 10 mi (16 km) west of Nacogdoches.

DRAINAGE AREA.--87.9 mi² (227.7 km²).

PERIOD OF RECORD.--March 1977 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. Deliberate impoundment began July 14, 1976. Water is used for industrial and municipal supply by the city of Nacogdoches. The emergency spillway is an uncontrolled 500-foot-wide (152 m) cut through natural ground located near the right end of the dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter (6.2 m) top opening that is connected to an 8 by 7 ft (2.4 by 2.1 m) conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve box by a 30 in (762 mm) conduit through the dam. The valve box directs water to a purification plant. 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.....	303.0	-
Top of design flood.....	298.5	102,900
Crest of spillway.....	286.0	59,570
Crest of drop inlet (top of conservation pool).....	279.0	42,320
Lowest gated outlet (invert of 30 in conduit).....	238.25	254

COOPERATION.--The capacity table, furnished by the city of Nacogdoches, is based on Geological Survey topographic maps date 1952.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 28,710 acre-ft (35.4 hm³) May 18, 19, 1978, elevation, 271.93 ft (82.884 m); minimum since first appreciable storage, 20,540 acre-ft (25.3 hm³) Nov. 26, 1977, elevation, 266.62 ft (81.266 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 28,710 acre-ft (35.4 hm³) May 18, 19, elevation, 271.93 ft (82.884 m); minimum, 20,540 acre-ft (25.3 hm³) Nov. 26, 27, elevation, 266.62 ft (81.266 m).

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

266.0	19,680	270.0	25,560
268.0	22,520	272.0	28,820

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20970	20680	20680	20830	23260	25500	26940	27940	28530	27740	26730	25830
2	20940	20640	20680	20820	23260	25510	26970	28090	28560	27710	26700	25800
3	20900	20620	20660	20800	23340	25580	26970	28170	28530	27660	26660	25770
4	20890	20620	20690	20820	23410	25590	27000	28310	28510	27610	26630	25780
5	20870	20620	20710	20820	23490	25610	26980	28360	28480	27560	26600	25750
6	20860	20610	20650	20800	23560	25640	27020	28390	28440	27560	26570	25720
7	20800	20610	20920	20800	23560	25820	27020	28460	28560	27440	26550	25690
8	20860	20710	20710	20820	23560	25880	27020	28510	28580	27390	26550	25670
9	20800	20720	20610	20780	23710	25960	27020	28510	28540	27380	26470	25640
10	20870	20680	20580	20750	23790	25990	27240	28490	28530	27340	26420	25690
11	20860	20650	20580	20830	23860	26060	27290	28530	28510	27280	26380	25690
12	20830	20650	20570	20830	24160	26060	27380	28640	28480	27190	26310	25720
13	20800	20640	20850	20850	24550	26140	27410	28680	28440	27140	26410	25700
14	20790	20640	20860	20830	24730	26180	27410	28690	28430	27080	26380	25750
15	20780	20610	20850	20830	24830	26260	27410	28680	28380	27050	26330	25770
16	20760	20620	20890	21570	24900	26280	27440	28690	28360	27000	26280	25740
17	20730	20620	20870	21940	25010	26300	27670	28690	28320	26940	26250	25700
18	20730	20610	20870	22230	25080	26310	27860	28710	28260	26900	26200	25690
19	20730	20590	20850	22230	25120	26310	27970	28710	28210	26840	26170	25700
20	20720	20580	20820	22230	25200	26340	27970	28690	28170	26790	26150	25690
21	20680	20610	20790	22300	25230	26440	27990	28640	28140	26730	26120	25740
22	20680	20590	20790	22370	25280	26460	27990	28630	28090	26730	26070	25700
23	20680	20590	20790	22450	25310	26540	28020	28590	28040	26780	26040	25670
24	20680	20590	20780	22590	25330	26680	28040	28580	27990	26740	25990	25640
25	20680	20590	20760	22670	25370	26780	28020	28540	27940	26700	25940	25590
26	20680	20540	20750	22670	25390	26840	28020	28510	27870	26650	25910	25560
27	20650	20570	20730	22670	25400	26840	27990	28510	27770	26820	25860	25510
28	20650	20550	20720	22670	25480	26890	27960	28440	27790	26810	25930	25500
29	20640	20660	20790	22670	---	26900	27920	28490	27740	26780	25850	25480
30	20640	20680	20790	22820	---	26940	27920	28530	27710	26730	25830	25450
31	20650	---	20800	23110	---	26950	---	28430	---	26700	25830	---
MAX	20970	20720	20920	23110	25480	26950	28040	28710	28580	27740	26730	25830
MIN	20640	20540	20570	20750	23260	25500	26940	27940	27710	26650	25830	25450
(†)	266.70	266.72	266.81	268.40	269.95	270.87	271.46	271.76	271.33	270.71	270.17	269.93
(+)	-350	+30	+120	+2310	+2370	+1470	+970	+510	-720	-1010	-870	-380
(††)	0	0	0	49.6	168	200	203	165	239	249	282	259

CAL YR 1977 MAX - MIN - † † -
WTR YR 1978 MAX 28710 MIN 20540 † +4450 †† 1815

† Elevation, in feet, at end of month.

† Change in contents, in acre-feet.

†† Diversions, in acre-feet, by the city of Nacogdoches.

NECHES RIVER BASIN

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08037000 ANGELINA RIVER NEAR LUFKIN, TX

LOCATION.--Lat 31°27'26", long 94°43'34", Angelina-Nacogdoches County line, Hydrologic Unit 12020004, near right bank at downstream side of bridge on U.S. Highway 59, 100 ft (30 m) upstream from Procella Creek, 1.5 mi (2.4 km) downstream from Bayou Loco, 1.5 mi (2.4 km) upstream from Southern Pacific Transportation Co. bridge, 8 mi (13 km) north of Lufkin, and 109.5 mi (176.2 km) upstream from mouth.

DRAINAGE AREA.--1,600 mi² (4,140 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1934, July 1939 to current year.

REVISED RECORDS.--WSP 718: 1924, 1926. WSP 1312: 1924(M). WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 164.72 ft (50.207 m) National Geodetic Vertical Datum of 1929. Oct. 29, 1923, to Jan. 17, 1926, nonrecording gage at Southern Pacific Transportation Co. bridge 1.5 mi (2.4 km) downstream at datum 1.39 ft (0.424 m) lower; Jan. 18, 1926, to Sept. 30, 1934, nonrecording gage at Lufkin-Nacogdoches highway bridge 1,400 ft (427 m) upstream at present datum.

REMARKS.--Water-discharge records fair. During the current year, flow may have been affected by the partial filling of Lake Nacogdoches (station 08036700). Flow may also be affected at times by releases from other upstream reservoirs. At times these releases are pumped from stream (within controlling reach of the gage) into Lake Kurth.

AVERAGE DISCHARGE.--20 years (water years 1924-34, 1940-48) unregulated, 1,438 ft³/s (40.72 m³/s), 1,042,000 acre-ft/yr (1.28 km³/yr); 30 years (water years 1949-78) regulated, 981 ft³/s (27.78 m³/s), 710,700 acre-ft/yr (876 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,200 ft³/s (1,080 m³/s) Feb. 24, 1932; maximum gage height, 18.55 ft (5.654 m) May 7, 1944; minimum discharge, 0.8 ft³/s (0.023 m³/s) Oct. 29, 30, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 26.5 ft (8.08 m) and is the highest since at least that date, and flood in May 1908 reached a stage of 25.0 ft (7.62 m); from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,550 ft³/s (43.9 m³/s) Jan. 25, gage height, 8.99 ft (2.740 m); minimum daily, 8.7 ft³/s (0.25 m³/s) Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	40	136	169	1290	587	848	211	99	27	48	14
2	37	43	138	164	1290	532	764	198	124	28	52	15
3	33	47	133	165	1190	497	669	221	120	27	54	15
4	30	47	138	171	1030	479	597	340	112	24	50	14
5	29	45	164	174	930	464	538	360	109	22	45	15
6	27	42	176	174	905	459	483	327	128	21	41	20
7	26	42	162	171	927	524	433	364	204	19	42	22
8	33	54	176	164	951	784	394	506	280	19	38	22
9	33	99	178	155	943	882	362	502	242	19	37	20
10	50	146	170	148	928	766	372	419	204	20	35	20
11	81	124	137	148	875	755	514	354	186	21	37	23
12	87	103	137	197	851	805	654	335	184	23	35	24
13	63	98	176	212	1040	879	688	348	152	23	37	22
14	50	113	261	194	1190	967	697	341	125	22	28	22
15	44	119	263	179	1150	1010	704	369	104	20	33	23
16	48	112	215	405	1080	984	735	461	87	20	31	29
17	54	103	200	860	1090	980	751	554	72	20	26	39
18	54	94	225	975	1180	991	782	606	62	19	22	54
19	51	85	256	1040	1210	998	990	598	55	24	18	118
20	49	77	249	960	1200	966	834	480	49	32	17	238
21	49	73	215	914	1160	881	593	365	45	32	16	320
22	53	70	187	883	1100	778	506	330	41	33	14	282
23	47	70	187	919	1040	712	491	285	39	34	13	164
24	43	71	173	1280	996	695	418	234	36	38	12	100
25	39	70	160	1480	949	747	340	191	34	38	11	67
26	37	69	148	1460	889	754	295	164	32	35	10	61
27	37	69	138	1290	793	702	283	147	29	36	9.3	56
28	37	73	133	1150	683	708	259	139	28	39	8.7	51
29	37	79	139	1070	---	772	239	128	27	49	9.8	47
30	37	99	169	1050	---	841	225	117	27	51	10	42
31	38	---	162	1080	---	872	---	105	---	48	12	---
TOTAL	1376	2376	5501	19401	28860	23771	16458	10099	3036	883	851.8	1959
MEAN	44.4	79.2	177	626	1031	767	549	326	101	28.5	27.5	65.3
MAX	87	146	263	1480	1290	1010	990	606	280	51	54	320
MIN	26	40	133	148	683	459	225	105	27	19	8.7	14
AC-FT	2730	4710	10910	38480	57240	47150	32640	20030	6020	1750	1690	3890
CAL YR 1977	TOTAL	260632.0	MEAN 714	MAX 5450	MIN 26	AC-FT 517000						
WTR YR 1978	TOTAL	114571.8	MEAN 314	MAX 1480	MIN 8.7	AC-FT 227300						

NECHES RIVER BASIN

08037000 ANGELINA RIVER NEAR LUFKIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1954 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1954 to current year.

WATER TEMPERATURES: October 1954 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,090 micromhos Nov. 10, 11, 1963; minimum daily, 38 micromhos Sept. 21, 1958, May 2, 1962.

WATER TEMPERATURES: Maximum daily, 32.0°C on several days during July 1966; minimum daily, 0.0°C Jan. 11, 12, 1962, Jan. 19, 1977.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 595 micromhos Aug. 3; minimum daily, 105 micromhos Sept. 22.

WATER TEMPERATURES: Maximum daily, 30.0°C July 4, 15; minimum daily, 1.0°C Jan. 20, 21.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 12...	1330	94	156	6.9	17.0	7.8	83	--	27	5
NOV 15...	0930	125	182	7.1	14.0	9.3	93	1.0	26	0
DEC 20...	0730	165	160	7.1	9.5	9.8	88	--	28	9
JAN 30...	1015	930	274	6.8	4.0	11.4	90	1.1	44	37
FEB 22...	1200	1050	249	6.8	7.5	13.0	112	--	46	38
MAR 13...	1215	860	297	6.7	14.5	9.2	93	1.0	50	39
APR 24...	1550	410	200	6.7	23.0	7.3	87	--	45	24
MAY 23...	1150	280	200	6.7	26.5	6.6	84	.6	37	17
JUL 06...	1445	21	200	6.7	32.0	6.6	90	--	40	1
AUG 27...	0705	33	240	7.2	28.0	6.2	79	--	35	0
SEP 16...	1715	31	520	7.1	31.0	6.2	84	--	54	30
SEP 20...	1200	220	194	6.9	27.5	6.4	82	--	21	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 12...	5.7	3.0	16	1.4	3.3	26	0	19	20	.1
NOV 15...	5.7	2.9	23	2.0	4.0	40	0	15	22	.1
DEC 20...	5.9	3.1	17	1.4	3.3	22	0	21	19	.1
JAN 30...	9.2	5.2	30	2.0	3.0	9	0	37	46	.0
FEB 22...	9.2	5.6	23	1.5	2.9	10	0	41	32	.1
MAR 13...	10	6.1	30	1.8	2.7	13	0	45	42	.0
APR 24...	8.6	5.6	19	1.2	2.6	25	0	28	26	.1
MAY 23...	7.6	4.4	22	1.6	2.9	24	0	24	28	.1
JUL 06...	8.1	4.8	23	1.6	3.5	48	0	18	24	.2
AUG 27...	7.1	4.2	32	2.4	4.1	65	0	17	26	.2
AUG 16...	12	5.9	69	4.1	4.0	30	0	28	110	.2
SEP 20...	4.8	2.3	30	2.8	4.7	53	0	19	19	.3

NECHES RIVER BASIN

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08037000 ANGELINE RIVER NEAR LUFKIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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, 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 12...	15	95	.06	.01	.07	.06	.43	.49	.16
NOV 15...	17	110	.32	.01	.33	.05	.43	.48	.12
DEC 20...	21	101	.33	.00	.33	.00	.63	.63	.09
JAN 30...	16	151	.15	.01	.16	.00	.24	.24	.06
FEB 22...	14	133	.06	.00	.06	.00	.32	.32	.07
MAR 13...	12	154	.04	.01	.05	.01	.35	.36	.05
APR 24...	16	118	--	--	--	--	--	--	--
MAY 23...	16	117	--	--	--	--	--	--	--
JUL 06...	14	120	--	--	--	--	--	--	--
AUG 27...	13	136	--	--	--	--	--	--	--
SEP 16...	13	257	--	--	--	--	--	--	--
SEP 20...	13	120	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICHO- MHOS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORINE (MG/L)	DIS- SOLVED CHLORINE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1977.....	1376	165	97	360	19	72	23	84	35
NOV. 1977.....	2376	166	97	623	20	126	23	146	36
DEC. 1977.....	5501	164	96	1430	19	287	23	336	35
JAN. 1978.....	19401	205	120	6140	27	1420	24	1240	38
FEB. 1978.....	28860	251	140	10900	36	2790	25	1920	41
MAR. 1978.....	23771	262	140	9250	39	2480	25	1600	42
APR. 1978.....	16458	250	140	6220	35	1570	25	1090	41
MAY 1978.....	10099	238	130	3640	34	930	24	659	40
JUNE 1978.....	3036	188	110	907	23	186	23	190	37
JULY 1978.....	883	245	150	360	45	100	25	60	43
AUG. 1978.....	851.8	506	240	560	110	243	30	69	57
SEPT 1978.....	1954	191	110	550	28	147	23	122	37
TOTAL	114571.75	**	**	41000	**	10400	**	7520	**
WTD.AVG.	313.9	237	130	**	34	**	25	**	40

NECHES RIVER BASIN

08037000 ANGELINA RIVER NEAR LUFKIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	188	152	163	236	258	313	218	208	217	575	506
2	162	185	153	161	250	240	311	217	212	218	585	509
3	163	181	152	171	260	233	271	217	191	217	595	510
4	166	178	150	173	263	231	238	203	200	211	506	505
5	169	173	168	169	265	225	220	186	205	213	474	497
6	170	170	165	165	268	224	221	189	203	216	503	477
7	173	168	167	161	274	223	224	193	228	219	483	483
8	165	167	161	170	270	234	223	196	185	220	452	484
9	170	189	157	165	276	208	223	202	182	222	433	469
10	169	155	158	167	284	214	220	193	179	223	457	437
11	181	161	167	165	278	224	235	202	171	221	460	395
12	153	160	170	194	262	283	217	209	149	223	473	358
13	151	162	172	169	223	297	214	199	157	220	494	338
14	155	195	168	166	213	305	205	190	161	219	487	322
15	160	181	157	159	200	310	224	187	174	218	518	307
16	163	163	152	165	206	307	246	194	180	219	514	296
17	153	162	185	151	215	294	288	259	182	222	505	265
18	165	159	166	141	220	293	318	346	186	225	501	247
19	175	155	160	134	204	292	290	375	187	227	500	220
20	172	159	152	140	202	297	280	381	188	231	514	209
21	173	155	150	161	211	305	271	340	191	225	512	118
22	157	160	154	183	247	289	244	269	197	231	491	105
23	156	167	160	211	274	251	229	218	204	233	481	107
24	158	162	163	185	290	226	211	201	215	232	489	114
25	162	159	170	225	303	211	208	200	213	235	504	119
26	160	156	176	240	316	214	214	202	212	239	515	127
27	161	155	179	258	319	218	218	206	214	241	525	135
28	165	157	194	272	295	222	219	207	215	285	529	146
29	172	159	177	280	---	251	218	207	216	543	509	158
30	182	160	183	274	---	282	216	206	216	586	518	167
31	189	---	167	266	---	302	---	205	---	575	519	---
MEAN	165	167	165	187	254	257	241	226	194	259	504	304

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	21.0	14.0	9.0	4.0	10.0	17.0	23.0	24.5	28.0	28.0	25.0
2	25.5	16.0	14.0	5.0	4.0	11.0	19.0	19.0	24.0	29.0	26.0	25.0
3	23.0	16.0	14.0	5.5	4.0	10.0	20.0	19.0	25.0	29.0	26.0	26.0
4	20.0	16.0	14.0	6.0	4.0	8.0	20.0	15.0	24.0	30.0	28.0	26.0
5	21.0	16.0	14.0	9.0	6.0	10.0	21.0	17.0	25.0	29.0	27.0	26.0
6	20.0	18.0	10.0	11.0	3.0	10.0	21.0	19.0	26.0	29.0	26.0	25.0
7	20.0	16.0	10.0	13.0	5.0	12.0	20.0	21.0	24.0	29.0	25.0	26.0
8	22.0	19.0	12.0	8.0	3.0	10.0	21.0	22.0	24.0	29.0	25.0	26.0
9	21.0	15.0	10.0	5.0	2.0	8.0	22.0	22.0	24.0	29.0	25.0	26.0
10	20.0	11.0	8.0	5.0	3.0	10.0	21.0	20.0	24.0	29.0	27.0	26.0
11	18.0	11.0	8.0	5.0	3.0	14.0	18.0	21.0	25.0	29.5	27.0	25.5
12	16.0	10.0	12.0	4.0	6.5	10.0	17.0	23.0	24.0	29.5	27.0	25.0
13	13.0	13.0	12.0	4.0	6.0	12.0	16.0	22.0	26.0	29.5	27.0	26.0
14	13.0	11.0	16.0	3.5	6.0	12.0	18.0	20.0	25.0	29.0	28.0	26.0
15	14.0	14.0	9.0	4.0	6.0	13.0	17.0	22.0	24.0	30.0	27.0	25.0
16	15.0	15.0	15.0	7.0	8.0	11.0	19.0	22.0	25.0	29.0	28.0	26.0
17	13.0	17.0	12.0	5.0	6.0	12.0	20.0	22.5	28.0	29.0	27.0	26.0
18	15.0	15.0	11.0	4.0	5.0	10.0	21.0	24.0	27.0	29.0	28.0	26.0
19	16.0	17.0	12.0	3.0	4.0	15.0	18.0	24.0	26.0	29.0	28.0	---
20	21.0	17.0	10.0	1.0	8.0	17.0	17.0	25.0	27.0	28.0	28.0	27.0
21	19.0	21.0	8.0	1.0	5.0	16.0	17.0	24.0	28.0	28.0	28.0	27.0
22	19.0	---	7.0	2.0	4.0	17.0	19.0	24.0	28.5	28.0	28.0	25.0
23	18.0	15.0	10.0	3.0	7.0	18.0	20.0	24.0	28.0	27.0	28.0	24.0
24	20.0	19.0	12.0	4.0	7.0	15.0	19.0	25.0	29.0	27.0	26.0	24.0
25	20.0	16.0	9.0	4.0	10.0	15.0	20.0	23.0	29.0	27.0	27.0	22.0
26	18.0	15.0	8.0	3.0	9.0	14.0	19.0	24.0	29.0	27.0	28.0	24.0
27	18.0	18.0	7.0	3.0	9.0	13.0	19.0	25.0	29.5	27.0	26.0	23.0
28	20.0	16.0	7.0	3.0	13.0	14.0	20.0	25.0	29.0	26.0	27.0	23.0
29	20.0	13.0	7.0	3.0	---	15.0	20.0	25.0	29.0	25.0	25.0	22.0
30	20.0	12.0	9.0	4.0	---	16.0	22.0	23.0	28.0	27.0	25.0	22.0
31	20.0	---	8.0	3.0	---	15.0	---	26.0	---	27.0	26.0	---
MEAN	19.0	15.5	10.5	5.0	5.5	12.5	19.5	22.5	26.5	28.5	27.0	25.0

NECHES RIVER BASIN

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08037050 BAYOU LANANA AT NACOGDOCHES, TX

LOCATION.--Lat 31°36'58", long 94°38'28", Nacogdoches County, Hydrologic Unit 12020005, on right bank at downstream side of bridge on Farm Road 1878 in Nacogdoches and 14.5 mi (23.3 km) upstream from mouth.

DRAINAGE AREA.--31.3 mi² (81.1 km²).

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

GAGE.--Water-stage recorder. Prior to July 1974, concrete control. Datum of gage is 264.23 ft (80.537 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No diversion above station. Several observations of water temperature in addition to those made during chemical-quality sampling were made during the year.

AVERAGE DISCHARGE.--14 years, 26.6 ft³/s (0.753 m³/s), 11.54 in/yr (293 mm/yr), 19,270 acre-ft/yr (23.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s (255 m³/s) Feb. 1, 1975, gage height, 19.85 ft (6.050 m), from rating curve extended above 2,800 ft³/s (79.3 m³/s) on basis of indirect measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1956, that of Feb. 1, 1975. Flood in April 1957 reached a stage of 19.6 ft (5.97 m), from information by Texas Department of Highways and Public Transportation and local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft³/s (29.5 m³/s) Apr. 17, gage height, 12.05 ft (3.673 m), no peak above base of 1,100 ft³/s (31.2 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.79	1.6	1.6	122	12	12	3.2	1.5	.05	.92	.02
2	.14	.51	1.0	1.3	49	13	10	12	2.0	.05	.03	.01
3	.13	.22	.88	1.1	32	15	9.2	80	1.2	.05	.02	.05
4	.15	.20	.85	1.0	25	13	8.9	21	.94	.05	.02	.02
5	.17	.20	.73	1.4	21	12	7.9	11	.70	.05	.03	.01
6	.20	.22	.50	1.4	19	12	7.2	18	33	.05	.03	.02
7	.18	.22	.51	1.2	19	227	6.2	70	34	.05	.03	.03
8	13	34	.69	1.2	19	56	5.7	30	5.8	.05	.03	.02
9	1.1	4.4	.76	.94	30	35	5.3	15	2.2	.04	.03	.02
10	18	1.2	.50	.78	38	28	58	9.9	1.3	.04	.02	.55
11	1.3	.90	.53	15	36	23	50	17	1.1	.04	.04	1.8
12	.27	.80	.58	17	116	19	17	54	.89	.04	.03	.89
13	.16	.80	57	6.6	222	35	12	19	.80	.03	2.8	.30
14	.14	1.1	16	3.8	52	48	8.3	11	.59	.03	.05	60
15	.13	.95	4.3	2.6	37	26	6.6	8.1	.47	1.2	.00	9.5
16	.11	.78	3.0	194	30	18	5.9	6.7	.30	.07	.00	.42
17	.11	.74	2.3	66	37	15	185	6.7	.20	.05	.00	.08
18	.13	.71	1.4	38	42	14	142	5.5	.15	.05	.00	.05
19	.13	.74	1.3	77	29	13	31	4.2	.11	.05	.00	.05
20	.12	.80	1.0	33	24	13	19	3.6	.07	.04	.00	.05
21	.13	1.0	.86	22	20	23	15	3.5	.07	.03	.01	.60
22	.15	.71	.83	20	17	17	15	3.2	.06	5.6	.02	.09
23	.16	.72	.95	32	17	14	14	2.5	.06	.04	.01	.06
24	.19	.77	1.1	224	15	153	10	2.1	.06	.02	.01	.05
25	.20	.80	1.0	72	15	48	7.9	1.7	.06	.02	.01	.05
26	.20	.71	1.3	38	13	29	6.1	1.5	.06	.02	.00	.05
27	.17	.71	.85	28	13	22	5.4	1.2	.06	.71	.00	.05
28	.16	.68	1.0	28	14	19	4.7	.95	.05	.04	2.0	.05
29	.16	11	17	22	---	17	4.0	11	.05	.01	2.8	.05
30	.18	5.5	3.6	28	---	15	3.5	1.7	.05	.01	.03	.06
31	.15	---	2.0	38	---	13	---	1.0	---	.01	.01	---
TOTAL	37.66	72.88	125.92	1016.92	1123	1017	692.8	436.25	87.90	8.59	8.98	75.00
MEAN	1.21	2.43	4.06	32.8	40.1	32.8	23.1	14.1	2.93	.28	.29	2.50
MAX	18	34	57	224	222	227	185	80	34	5.6	2.8	60
MIN	.11	.20	.50	.78	13	12	3.5	.95	.05	.01	.00	.01
CFSM	.04	.08	.13	1.05	1.28	1.05	.74	.45	.09	.009	.009	.08
IN.	.04	.09	.15	1.21	1.33	1.21	.82	.52	.10	.01	.01	.09
AC-FT	75	145	250	2020	2230	2020	1370	865	174	17	18	149
CAL YR 1977	TOTAL	5751.68	MEAN	15.8	MAX	521	MIN	.04	CFSM	.51	IN	6.84
WTR YR 1978	TOTAL	4702.90	MEAN	12.9	MAX	227	MIN	.00	CFSM	.41	IN	5.59
									AC-FT	11410	AC-FT	9330

NECHES RIVER BASIN

08037080 BAYOU LANANA NEAR NACOGDOCHES, TX

LOCATION.--Lat 31°31'10", long 94°39'21", Nacogdoches County, Hydrologic Unit 12020005, at bridge on county road, 2.6 mi (4.2 km) upstream from Southern Pacific Lines bridge, 5 mi (8 km) upstream from Black Bayou, and 6 mi (10 km) south of Nacogdoches.

PERIOD OF RECORD.--Periodic chemical analyses: June 1964 to current year. Biochemical analyses: October 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)
OCT 12...	1300	378	7.4	16.5	4.4	46	--	38	0	8.9
NOV 15...	1030	527	7.5	15.0	4.0	41	8.4	44	0	11
DEC 20...	0830	413	7.5	11.0	4.8	45	--	68	0	20
JAN 30...	1145	258	7.1	5.5	9.5	78	8.3	58	26	12
FEB 22...	1115	274	7.0	5.5	10.6	87	--	63	21	13
MAR 13...	1245	270	7.0	13.5	7.4	73	6.9	62	12	13
APR 24...	1510	260	7.0	22.0	4.4	52	--	60	2	13
MAY 25...	1240	450	7.5	25.5	3.2	40	8.5	62	0	14
JUL 06...	1545	660	7.1	33.5	9.7	135	--	96	0	22
JUL 27...	0755	580	7.4	26.0	4.8	60	--	56	0	14
AUG 16...	1635	540	7.6	29.5	2.4	32	--	56	0	16
SEP 20...	1300	600	7.4	27.0	1.0	13	--	66	0	18

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 12...	3.8	44	3.1	6.4	160	0	16	19	.2
NOV 15...	4.0	69	4.5	7.8	200	0	38	30	.3
DEC 20...	4.3	50	2.6	7.6	160	0	27	23	.2
JAN 30...	6.9	21	1.2	3.8	40	0	38	21	.1
FEB 22...	7.3	21	1.2	4.0	51	0	37	20	.1
MAR 13...	7.1	20	1.1	3.3	60	0	38	15	.1
APR 24...	6.8	21	1.2	4.6	71	0	28	19	.9
MAY 25...	6.6	43	2.4	7.1	180	0	24	19	.2
JUL 06...	9.9	80	3.6	4.6	150	0	48	81	.2
JUL 27...	5.2	74	4.3	11	240	0	20	38	.3
AUG 16...	4.0	68	3.9	9.1	230	0	18	29	.2
SEP 20...	5.2	73	3.9	11	270	0	22	32	.3

NECHES RIVER BASIN

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08037080 BAYOU LANANA NEAR NACOGDOCHES, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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, 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 12...	13	190	.08	.08	.16	3.1	13	16	4.8
NOV 15...	17	276	.63	.19	.82	12	2.0	14	2.5
DEC 20...	18	229	1.4	.18	1.6	7.8	.70	8.5	2.4
JAN 30...	15	138	.18	.01	.19	.04	.53	.57	.09
FEB 22...	14	142	1.1	.02	1.1	3.6	1.1	4.7	.94
MAR 13...	13	139	.89	.05	.94	3.4	1.2	4.6	.75
APR 24...	7.1	135	--	--	--	--	--	--	--
MAY 25...	16	219	--	--	--	--	--	--	--
JUL 06...	13	333	--	--	--	--	--	--	--
JUL 27...	14	295	--	--	--	--	--	--	--
AUG 16...	11	269	--	--	--	--	--	--	--
SEP 20...	15	310	--	--	--	--	--	--	--

NECHES RIVER BASIN

08037200 PAPER MILL CREEK NEAR HERTY, TX

LOCATION.--Lat 31°23'32", long 94°39'46", Angelina County, Hydrologic Unit 12020005, at bridge on county road, 2.0 mi (3.2 km) upstream from Mill Creek, and 2.3 mi (3.7 km) northeast of Herty.

PERIOD OF RECORD.--Periodic chemical analyses: June 1964 to current year. Biochemical analyses: October 1967 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L CaCO3)	CALCIUM DISSOLVED (MG/L AS Ca)
OCT 12...	1410	2660	7.3	33.0	5.2	72	--	63	0	17
NOV 15...	1115	2540	7.3	34.0	5.8	82	36	190	140	66
DEC 20...	0900	2620	7.5	32.0	5.8	79	--	140	0	46
JAN 30...	1315	2400	7.5	28.5	6.6	86	31	180	41	63
FEB 22...	1250	2570	7.5	29.5	5.5	72	--	250	0	91
MAR 13...	1335	2760	7.5	32.5	4.8	66	24	250	5	90
APR 24...	1645	2400	7.2	37.0	4.0	59	--	180	50	63
MAY 23...	1330	2600	7.1	38.0	4.8	72	29	130	54	44
JUL 27...	0945	2220	7.2	35.5	4.2	60	4.2	140	0	46
AUG 17...	0740	1960	7.3	37.0	5.8	85	--	88	0	28
SEP 20...	1335	2200	7.4	39.5	5.3	80	--	170	61	58

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 12...	5.1	500	27	10	210	0	--	--	.2	16
NOV 15...	5.9	450	14	11	59	0	320	580	.2	16
DEC 20...	5.2	540	20	14	220	0	330	540	.2	12
JAN 30...	5.5	480	16	11	170	0	310	560	.2	16
FEB 22...	5.7	470	13	14	360	0	240	500	.2	10
MAR 13...	6.3	520	14	14	300	0	340	550	.1	14
APR 24...	5.7	440	14	12	160	0	250	520	.2	15
MAY 23...	4.7	470	18	10	92	0	250	580	.0	15
JUL 27...	5.4	410	15	9.4	200	0	240	490	.1	10
AUG 17...	4.5	350	16	8.8	140	0	230	370	.2	.1
SEP 20...	5.5	400	13	10	130	0	300	460	1.0	14

[illegible]

NECHES RIVER BASIN

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08037250 ANGELINA RIVER BELOW PAPER MILL CREEK NEAR HERTY, TX

LOCATION.--Lat 31°26'22", long 94°37'11", Angelina County, Hydrologic Unit 12020004, at end of county road, 1.5 mi (2.4 km) downstream from Paper Mill Creek, and 7 mi (11 km) northeast of Herty.

PERIOD OF RECORD.--Periodic chemical analyses: June 1954 to current year. Biochemical analyses: October 1967 to current year.

WATER QUALITY DATA. WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
OCT 12...	1445	860	7.1	19.0	5.4	60	--	130	60	48
NOV 15...	1200	681	6.9	14.5	6.3	64	11	51	10	15
DEC 20...	1000	600	7.2	12.5	7.9	77	--	56	6	16
JAN 30...	1345	359	6.9	4.5	10.8	86	2.3	47	34	11
FEB 22...	1320	318	6.7	7.5	11.6	100	--	49	32	11
MAR 13...	1405	392	6.5	15.0	7.6	78	2.3	52	28	12
APR 24...	1745	500	6.8	22.5	6.2	73	--	59	21	14
MAY 23...	1415	560	7.0	26.0	4.2	52	3.2	60	30	15
AUG 17...	0835	1160	7.0	29.0	4.2	55	--	76	0	21
SEP 20...	1445	720	6.5	29.0	3.8	50	--	61	0	18

DATE	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	
OCT 12...	3.5	140		5.3	5.9	91	0	--	.1	
NOV 15...	3.2	110		6.7	5.9	50	0	77	130	.1
DEC 20...	3.8	91		5.3	6.1	61	0	72	97	.1
JAN 30...	4.8	45		2.9	3.4	16	0	47	60	.1
FEB 22...	5.3	37		2.3	3.5	21	0	53	42	.1
MAR 13...	5.4	46		2.8	3.0	30	0	59	54	.1
APR 24...	5.9	80		4.5	4.0	47	0	59	95	.1
MAY 23...	5.5	87		4.9	4.9	37	0	60	120	1.6
AUG 17...	5.6	210	11	7.0	7.0	94	0	130	230	.2
SEP 20...	4.0	120	6.7	6.5	6.5	79	0	85	130	.4

DATE	SILICA, DIS-SOLVED (MG/L AS SiO2)	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)
OCT 12...	14	--	.73	.08	.81	.95	1.4	2.3	.30
NOV 15...	16	383	.58	.04	.62	.59	1.3	1.9	.30
DEC 20...	20	336	.35	.05	--	.27	1.3	1.6	.16
JAN 30...	15	195	1.2	.02	1.2	1.2	1.9	3.1	.65
FEB 22...	12	174	.11	.01	.12	.03	.61	.64	.10
MAR 13...	11	206	.18	.01	.19	.12	.47	.59	.09
APR 24...	17	298	--	--	--	--	--	--	--
MAY 23...	11	325	--	--	--	--	--	--	--
AUG 17...	13	663	--	--	--	--	--	--	--
SEP 20...	12	415	--	--	--	--	--	--	--

NECHES RIVER BASIN

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX

LOCATION.--Lat 31°30'15", long 94°18'15", Nacogdoches-San Augustine County line, Hydrologic Unit 12020005, near right bank on downstream side of pier of bridge on State Highway 21, 2.2 mi (3.5 km) upstream from Amaladeros Creek, 2.8 mi (4.5 km) east of Chireno, 5.4 mi (8.7 km) downstream from Arenoso Creek, and 41 mi (66 km) upstream from mouth.

DRAINAGE AREA.--503 mi² (1,303 km²).

PERIOD OF RECORD.--January 1924 to September 1925, July 1939 to November 1954, and October 1955 to current year. Monthly discharge only for some periods, published in WSP 1312 and 1732.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 169.58 ft (51.688 m) National Geodetic Vertical Datum of 1929. Jan. 24, 1924, to Aug. 29, 1925, and Sept. 6, 1957, to Oct. 27, 1958, nonrecording gage at same site and datum.

REMARKS.--Records good. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--39 years, 432 ft³/s (12.23 m³/s), 11.66 in/yr (296 mm/yr), 313,000 acre-ft/yr (386 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s (903 m³/s), Nov. 24, 1940, gage height, 25.97 ft (7.916 m); minimum, 0.8 ft³/s (0.023 m³/s) Aug. 26, 27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft (9.11 m) June 29, 1902, from information by local residents. Flood in July 1933 reached a stage of 25.2 ft (7.68 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,930 ft³/s (140 m³/s) Sept 16, gage height, 18.24 ft (5.560 m), no other peak above base of 2,500 ft³/s (70.8 m³/s); minimum, 6.7 ft³/s (0.19 m³/s) Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	36	32	143	157	1210	248	260	106	82	19	23	32		
2	34	35	128	148	1100	239	236	101	68	19	18	31		
3	32	44	134	130	997	243	217	117	70	18	17	31		
4	31	45	137	116	899	279	199	201	65	17	17	30		
5	29	44	116	109	832	292	188	269	70	17	15	28		
6	29	45	99	105	773	299	188	276	70	17	15	21		
7	30	45	88	110	628	320	180	220	71	16	15	17		
8	31	46	80	184	445	515	165	305	116	15	14	16		
9	31	60	78	210	379	628	155	510	143	14	13	15		
10	61	121	80	162	376	667	146	582	126	13	12	15		
11	83	159	79	138	385	680	218	633	91	12	12	17		
12	103	167	74	270	423	544	440	686	67	12	11	21		
13	69	112	195	417	687	372	527	760	55	12	10	26		
14	64	78	496	376	812	344	487	807	46	12	39	128		
15	62	65	596	323	813	370	362	754	41	13	103	851		
16	49	59	485	509	794	397	249	752	37	14	51	3720		
17	42	55	391	934	812	365	192	776	34	12	24	3230		
18	38	54	261	988	840	302	250	779	31	10	17	786		
19	36	52	183	1070	753	260	581	620	31	9.9	15	1240		
20	35	50	150	1010	581	236	649	295	29	9.4	14	1520		
21	35	60	130	985	478	229	718	192	29	10	12	1320		
22	34	100	114	977	400	283	766	149	28	9.9	11	1090		
23	34	120	104	1010	347	380	559	126	26	11	10	545		
24	34	98	100	1190	313	470	330	108	24	16	9.3	235		
25	34	90	96	1270	288	553	246	95	23	18	8.7	180		
26	34	83	93	1280	272	617	200	85	22	17	8.0	145		
27	34	74	88	1190	256	657	168	76	21	22	7.4	122		
28	34	68	85	1100	248	681	143	68	19	47	7.1	107		
29	34	72	101	1080	---	631	126	63	19	51	18	99		
30	34	143	162	1110	---	417	114	72	19	36	72	95		
31	33	---	178	1120	---	299	---	111	---	30	49	---		
TOTAL	1299	2276	5244	19778	17141	12817	9259	10694	1573	549.2	667.5	15713		
MEAN	41.9	75.9	169	638	612	413	309	345	52.4	17.7	21.5	524		
MAX	103	167	596	1280	1210	681	766	807	143	51	103	3720		
MIN	29	32	74	105	248	229	114	63	19	9.4	7.1	15		
CFSM	.08	.15	.34	1.27	1.22	.82	.61	.69	.10	.04	.04	1.04		
IN.	.10	.17	.39	1.46	1.27	.95	.68	.79	.12	.04	.05	1.16		
AC-FT	2580	4510	10400	39230	34000	25420	18370	21210	3120	1090	1320	31170		
CAL YR 1977	TOTAL	94801.0	MEAN	260	MAX	1840	MIN	28	CFSM	.52	IN	7.01	AC-FT	188000
WTR YR 1978	TOTAL	97010.7	MEAN	266	MAX	3720	MIN	7.1	CFSM	.53	IN	7.17	AC-FT	192400

NECHES RIVER BASIN

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08039100 AYISH BAYOU NEAR SAN AUGUSTINE, TX

LOCATION.--Lat 31°23'46", long 94°09'03", San Augustine County, Hydrologic Unit 12020005, near center of span at downstream side of pier of bridge on State Highway 103, 3.0 mi (4.8 km) upstream from Turkey Creek, and 9.5 mi (15.3 km) south of San Augustine.

DRAINAGE AREA.--89.0 mi² (230.5 km²).

PERIOD OF RECORD.--February 1959 to current year.

REVISED RECORDS.--WSP 1922: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is 190.22 ft (57.979 m) National Geodetic Vertical Datum of 1929. Prior to June 2, 1959, nonrecording gage at same site and datum.

REMARKS.--Records fair. No known diversion above station. Recording rain gage at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years (water years 1960-78), 78.0 ft³/s (2.209 m³/s), 11.90 in/yr (302 mm/yr), 56,510 acre-ft/yr (69.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft³/s (515 m³/s), Sept. 14, 1978, gage height, 18.02 ft (5.492 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Between October 1957 and February 1959 the maximum discharge was 15,900 ft³/s (450 m³/s) Sept. 21 or 22, 1958, gage height, 17.5 ft (5.33 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 17	1100	1,740 49.3	12.30 3.749	Sept. 14	1400	*18,200 515	18.02 5.492

Minimum discharge, no flow July 9-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.7	64	48	576	72	39	6.1	2.6	.44	2.0	8.0
2	2.0	2.1	43	36	757	64	37	6.3	2.9	.35	1.9	4.7
3	1.8	2.1	27	28	325	75	34	7.2	4.1	.25	1.8	3.5
4	1.7	2.1	19	24	192	79	32	11	6.0	.18	1.6	2.5
5	1.5	2.2	16	23	151	65	31	17	4.2	.12	1.5	1.8
6	1.5	2.6	13	25	128	59	30	12	3.0	.06	1.1	1.5
7	1.4	2.7	10	26	115	64	28	9.5	3.8	.02	.89	1.2
8	1.7	2.9	9.3	108	115	94	26	12	9.0	.01	.75	1.1
9	1.7	3.7	9.7	116	109	73	25	12	7.7	.00	.56	.97
10	4.2	4.5	11	68	131	63	24	9.0	4.6	.00	.45	1.2
11	42	4.7	12	51	125	57	50	6.0	2.9	.00	.40	3.1
12	20	4.6	10	173	166	53	58	5.0	2.2	.00	.30	5.5
13	9.4	4.2	124	155	589	49	42	9.3	1.8	.00	.26	7.2
14	4.5	3.7	516	89	438	59	31	17	1.7	.00	.40	6890
15	3.0	3.5	193	64	213	57	25	11	1.6	.00	1.1	1380
16	2.3	3.4	74	253	159	47	22	7.0	1.4	.00	.97	478
17	1.9	3.5	50	1080	154	39	20	5.1	1.2	.00	.97	98
18	1.7	3.6	37	642	311	36	21	4.6	1.1	.00	.89	53
19	1.6	3.6	29	402	202	35	20	4.3	.94	.00	.82	40
20	1.5	3.7	26	314	146	35	15	3.9	1.0	.00	.75	33
21	1.6	30	21	177	118	43	13	3.3	1.1	.00	.68	25
22	1.5	81	18	145	97	84	12	2.9	.94	.00	.56	20
23	1.6	44	17	154	92	64	11	2.7	.86	.00	.45	17
24	1.7	23	17	515	85	85	12	2.6	.83	.00	.40	15
25	1.8	13	18	903	81	115	11	2.3	.77	.00	.40	13
26	1.9	8.8	16	577	77	81	8.7	2.1	.70	.00	.40	10
27	2.0	7.4	14	245	68	64	7.5	1.8	.62	.00	.40	9.1
28	2.1	6.8	13	177	70	54	7.0	1.7	.60	4.0	.45	8.5
29	2.1	9.5	68	144	---	49	6.6	1.7	.55	8.1	.82	8.7
30	1.8	43	143	144	---	45	6.3	2.0	.50	5.3	2.9	9.0
31	1.8	---	71	205	---	42	---	2.1	---	3.2	10	---
TOTAL	126.9	331.6	1709.0	7111	5790	1901	705.1	200.5	71.21	22.03	36.87	9149.57
MEAN	4.09	11.1	55.1	229	207	61.3	23.5	6.47	2.37	.71	1.19	305
MAX	42	81	516	1080	757	115	58	17	9.0	8.1	10	6890
MIN	1.4	1.7	9.3	23	68	35	6.3	1.7	.50	.00	.26	.97
CFSM	.05	.13	.62	2.57	2.33	.69	.26	.07	.03	.008	.01	3.43
IN.	.05	.14	.71	2.97	2.42	.79	.29	.08	.03	.01	.02	3.82
AC-FT	252	658	3390	14100	11480	3770	1400	398	141	44	73	18150
(††)	1.78	4.72	2.96	8.09	2.21	1.10	.25	2.54	1.10	1.78	1.90	5.82

CAL YR 1977	TOTAL	15693.06	MEAN 43.0	MAX 882	MIN .44	CFSM .48	IN 6.56	AC-FT 31130	†† 36.94
WTR YR 1978	TOTAL	27154.78	MEAN 74.4	MAX 6890	MIN .00	CFSM .84	IN 11.35	AC-FT 53860	†† 34.25

†† Rainfall, in inches.

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX

LOCATION.--Lat 31°03'38", Long 94°06'21", Jasper County, Hydrologic Unit 12020005, in the powerhouse-intake structure of Sam Rayburn Dam on the Angelina River, 10 mi (16 km) northwest of Jasper, and 25.2 mi (40.5 km) upstream from mouth.

DRAINAGE AREA.--3,449 mi² (8,933 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Stevens type AP recording transmitter. Datum of gage is National Geodetic Vertical Datum of 1929 (level by Corps of Engineers). Prior to Apr. 20, 1965, nonrecording gage at same site and datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam 19,430 ft (5,920 m) long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar. 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft (670 m) wide, on right bank 7,000 ft (2,100 m) to right of outlet works, and is designed to discharge 125,300 ft³/s (3,550 m³/s) at maximum flood design. The flood-control outlet works consists of two 10.0 by 20.0 ft (3.0 by 6.1 m) rectangular concrete-lined conduits controlled by two 10.0 by 20.0 ft (3.0 by 6.1 m) tractor-type service gates and one 10.0 by 20.0 ft (3.0 by 6.1 m) tractor-type emergency gate. Water for turbines is admitted through four 18.0 by 26.0 ft (5.5 by 7.9 m) penstocks and controlled by two wheeled-leaf-type headgates. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the Corps of Engineers and detailed sedimentation ranges established in 1961 and dated February 1965. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see station 08038000. 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.....	190.0	-
Design flood.....	183.0	5,610,000
Crest of spillway.....	176.0	4,442,400
Top of flood-control pool.....	173.0	3,997,600
Top of conservation pool (power pool).....	164.0	2,852,600
Top of power head and sediment pool.....	149.0	1,452,000
Lowest gated outlet (invert).....	105.0	21,940

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,881,000 acre-ft (4.79 km³) Feb. 7, 1974, elevation, 172.17 ft (52.477 m); minimum since conservation storage was reached in 1968, 1,797,000 acre-ft (2.22 km³) Nov. 15, 1977, elevation, 153.35 ft (46.741 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,457,000 acre-ft (3.03 km³) May 3, elevation, 160.35 ft (48.875 m); minimum, 1,797,000 acre-ft (2.22 km³) Nov. 15, elevation, 153.34 ft (46.738 m).

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

152.0	1,685,000	158.0	2,221,000
154.0	1,853,000	160.0	2,421,000
156.0	2,032,000	162.0	2,631,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1916000	1824000	1834000	1867000	2131000	2314000	2400000	2410000	2367000	2217000	2026000	1919000
2	1922000	1817000	1834000	1866000	2142000	2318000	2402000	2414000	2361000	2207000	2019000	1919000
3	1912000	1817000	1836000	1862000	2153000	2327000	2406000	2415000	2361000	2197000	2014000	1919000
4	1905000	1815000	1837000	1859000	2161000	2324000	2408000	2412000	2358000	2187000	2010000	1916000
5	1900000	1810000	1840000	1862000	2168000	2322000	2408000	2401000	2349000	2182000	2003000	1915000
6	1893000	1810000	1834000	1864000	2169000	2322000	2412000	2404000	2362000	2169000	2001000	1914000
7	1886000	1807000	1828000	1871000	2181000	2339000	2415000	2410000	2361000	2162000	1992000	1913000
8	1893000	1810000	1836000	1880000	2183000	2339000	2415000	2405000	2356000	2156000	1986000	1909000
9	1880000	1812000	1834000	1879000	2192000	2336000	2415000	2400000	2347000	2146000	1983000	1909000
10	1880000	1803000	1834000	1879000	2194000	2336000	2432000	2393000	2343000	2139000	1977000	1912000
11	1879000	1803000	1830000	1886000	2196000	2343000	2423000	2390000	2341000	2133000	1971000	1917000
12	1871000	1801000	1832000	1893000	2214000	2345000	2423000	2390000	2341000	2125000	1966000	1917000
13	1864000	1798000	1849000	1895000	2233000	2350000	2423000	2397000	2341000	2117000	1959000	1923000
14	1858000	1800000	1854000	1894000	2237000	2354000	2428000	2395000	2337000	2108000	1956000	1940000
15	1859000	1800000	1854000	1892000	2247000	2365000	2426000	2395000	2329000	2103000	1949000	1959000
16	1853000	1800000	1861000	1937000	2250000	2359000	2430000	2393000	2324000	2098000	1944000	1963000
17	1846000	1802000	1861000	1932000	2268000	2359000	2431000	2395000	2316000	2090000	1939000	1966000
18	1842000	1797000	1862000	1956000	2276000	2361000	2431000	2392000	2316000	2085000	1933000	1972000
19	1840000	1800000	1870000	1972000	2278000	2364000	2434000	2392000	2307000	2081000	1929000	1980000
20	1836000	1800000	1860000	1973000	2295000	2366000	2428000	2395000	2299000	2071000	1920000	1986000
21	1834000	1813000	1853000	1981000	2289000	2374000	2422000	2395000	2292000	2060000	1922000	1992000
22	1834000	1810000	1850000	1987000	2288000	2374000	2424000	2390000	2283000	2064000	1916000	1992000
23	1834000	1810000	1852000	1997000	2295000	2378000	2428000	2388000	2274000	2058000	1914000	1995000
24	1834000	1810000	1853000	2023000	2298000	2390000	2430000	2385000	2271000	2055000	1912000	1995000
25	1832000	1815000	1854000	2040000	2304000	2390000	2428000	2383000	2261000	2047000	1908000	1995000
26	1829000	1810000	1853000	2049000	2304000	2390000	2422000	2380000	2255000	2041000	1905000	1992000
27	1827000	1811000	1850000	2061000	2311000	2391000	2415000	2377000	2249000	2055000	1897000	1993000
28	1824000	1816000	1850000	2071000	2317000	2393000	2411000	2375000	2242000	2050000	1929000	1991000
29	1823000	1832000	1860000	2073000	---	2396000	2411000	2379000	2234000	2041000	1916000	1991000
30	1821000	1834000	1860000	2087000	---	2398000	2415000	2375000	2227000	2038000	1914000	1991000
31	1816000	---	1862000	2097000	---	2398000	---	2370000	---	2030000	1919000	---
MAX	1922000	1834000	1870000	2097000	2317000	2398000	2434000	2415000	2367000	2217000	2026000	1995000
MIN	1816000	1797000	1828000	1859000	2131000	2314000	2400000	2370000	2227000	2030000	1897000	1909000
(†)	153.57	153.77	154.10	156.70	158.98	159.78	159.95	159.50	158.06	155.98	154.75	155.55
(‡)	-102000	+18000	+28000	+235000	+220000	+81000	+17000	-45000	-143000	-197000	-111000	+72000
CAL YR 1977	MAX	2788000	MIN	1797000	‡	-336000						
WTR YR 1978	MAX	2434000	MIN	1797000	‡	+73000						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to current year. Biochemical analyses: November 1967 to current year.

310816094041401 - SAM RAYBURN RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
01...	1037	1.0	170	7.1	8.0	11.0	96
01...	1039	10	170	7.1	8.0	11.0	96
01...	1042	20	170	7.0	8.0	11.0	96
01...	1045	30	170	7.0	8.0	11.0	96
01...	1047	40	170	7.0	8.0	10.9	95
01...	1050	55	170	7.0	8.0	10.4	90

310544094042601 - SAM RAYBURN RES BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1147	1.0	175	7.1	10.0	10.9	100
28...	1149	10	175	7.1	9.0	10.8	96
28...	1151	20	175	7.1	9.0	10.7	96
28...	1153	30	175	7.1	9.0	10.6	95
28...	1155	40	175	7.0	9.0	10.4	93

310501094040601 - SAM RAYBURN RES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1110	1.0	175	7.1	10.0	10.7	98
28...	1112	10	175	7.1	9.0	10.7	96
28...	1114	20	175	7.1	9.0	10.6	95
28...	1116	30	175	7.2	8.5	10.6	94
28...	1118	40	175	7.2	8.5	10.4	92
28...	1120	50	175	7.3	8.0	10.4	90
28...	1123	60	175	7.3	8.0	10.3	90
28...	1125	73	175	7.2	8.0	10.3	90

310408094071401 - SAM RAYBURN RES CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1200	1.0	176	7.1	9.5	10.8	97
28...	1202	10	176	7.1	8.5	10.7	95
28...	1204	20	176	7.1	8.5	10.7	95
28...	1206	30	176	7.1	8.0	10.7	93
28...	1209	40	176	7.1	8.0	10.6	92
28...	1212	54	176	7.2	8.0	10.1	88

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310437094065501 - SAM RAYBURN RES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
FEB									
28...	1220	1.0	176	7.1	11.0	1.50	10.7	100	29
28...	1222	10	176	7.1	9.0	--	10.7	96	--
28...	1224	20	176	7.1	9.0	--	10.6	95	--
28...	1226	30	176	7.1	8.5	--	10.6	94	--
28...	1228	40	176	7.1	8.5	--	10.6	94	--
28...	1230	50	176	7.0	8.0	--	10.4	90	--
28...	1233	60	176	7.0	8.0	--	10.4	90	--
28...	1235	70	176	7.0	7.5	--	10.4	90	--
28...	1238	82	176	7.0	7.5	--	10.2	88	30

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
FEB									
28...	16	5.2	3.8	19	1.5	2.7	16	0	24
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	17	5.4	4.1	20	1.6	2.6	16	0	24

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED SOLIDS (SUM OF SILICA CON- STITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB									
28...	28	.1	11	102	.04	.01	.03	10	0
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	.05	.01	.03	160	40
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	28	.1	11	103	.08	.03	.10	80	60

310505094063501 - SAM RAYBURN RES CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1302	1.0	176	7.2	12.0	10.7	103
28...	1304	10	176	7.1	9.0	10.6	95
28...	1306	20	176	7.0	9.0	10.6	95
28...	1308	30	176	7.0	8.5	10.6	94
28...	1310	40	176	7.0	8.5	10.5	93
28...	1312	46	176	7.0	8.5	9.8	87

310802094112201 - SAM RAYBURN RES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1335	1.0	184	7.1	10.5	10.8	100
28...	1338	10	184	7.1	9.5	10.7	96
28...	1341	20	184	7.1	9.0	10.7	96
28...	1344	30	184	7.0	8.5	10.7	95
28...	1346	40	184	7.0	8.5	10.6	94
28...	1348	50	184	7.0	8.0	10.4	90
28...	1350	60	184	7.0	8.0	10.3	90
28...	1352	66	184	7.0	8.0	10.1	88

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311039094141201 - SAM RAYBURN RES GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1412	1.0	184	7.0	11.5	10.9	103
28...	1414	10	184	7.0	9.0	10.8	96
28...	1417	20	184	7.0	9.0	10.7	96
28...	1420	30	184	6.9	8.5	10.5	93
28...	1422	40	184	6.9	8.0	10.3	90
28...	1425	50	184	6.9	8.0	10.2	89
28...	1428	62	184	7.1	8.0	9.8	85

311254094194101 - SAM RAYBURN RES IR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1524	1.0	218	7.0	11.5	11.0	104
28...	1527	10	221	7.0	9.0	10.6	95
28...	1530	20	223	7.0	9.0	10.4	93
28...	1533	30	237	7.0	9.0	9.8	88

311828094191801 - SAM RAYBURN RES IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
FEB									
28...	1440	1.0	218	7.2	11.5	1.00	10.9	103	36
28...	1442	10	232	7.0	9.0	--	10.7	96	--
28...	1445	20	237	7.0	9.0	--	10.6	95	--
28...	1448	30	260	7.0	8.0	--	10.2	89	--
28...	1450	40	266	7.0	8.0	--	10.1	88	--
28...	1452	55	268	7.0	8.0	--	9.9	86	40

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
FEB									
28...	20	7.3	4.3	24	1.7	2.9	20	0	30
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	22	8.4	4.6	33	2.3	3.2	22	0	35

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB								
28...	34	11	124	.05	.00	.05	170	0
28...	--	--	--	--	--	--	--	--
28...	--	--	--	.13	.02	.05	190	0
28...	--	--	--	--	--	--	200	0
28...	--	--	--	--	--	--	--	--
28...	44	11	150	.07	.01	.05	270	10

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311402094185401 - SAM RAYBURN RES IL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1512	1.0	193	7.2	12.5	10.7	104
28...	1515	10	197	7.2	10.0	10.8	99
28...	1518	20	213	7.1	9.0	10.5	94
28...	1520	32	248	7.1	9.0	9.7	87

311804094234901 - SAM RAYBURN RES JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
FEB							
28...	1552	1.0	293	6.7	12.0	10.0	96
28...	1554	10	293	6.7	9.5	9.7	87
28...	1557	20	296	6.7	8.5	9.1	81
28...	1560	30	298	6.7	8.5	9.0	80
28...	1562	37	298	7.0	8.5	8.7	77

312216094280601 - SAM RAYBURN RES KC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
FEB									
28...	1632	1.0	269	6.6	15.0	.50	9.4	96	46
28...	1635	10	260	6.4	12.5	--	8.7	84	--
28...	1637	20	249	6.4	12.0	--	8.7	84	--
28...	1640	25	249	6.5	12.0	--	8.6	83	44

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
FEB									
28...	35	10	5.0	30	1.9	3.0	13	0	47
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	33	9.5	4.9	27	1.8	2.9	13	0	45

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB								
28...	40	11	153	.04	.00	.08	350	100
28...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
28...	35	12	144	.04	.01	.10	1500	130

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311000094010301 - SAM RAYBURN RES LC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
01...	1012	1.0	138	7.1	9.0	10.5	94
01...	1015	14	138	7.1	9.0	10.4	93

311137094051401 - SAM RAYBURN RES MC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
01...	1128	1.0	122	6.7	9.5	.50	10.1
01...	1130	10	122	6.7	9.0	--	10.1
01...	1132	20	117	6.7	8.5	--	9.3
01...	1135	30	117	6.7	8.0	--	8.3
01...	1138	35	117	6.9	8.0	--	8.5

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
01...	91	.15	.03	.06	410	50
01...	90	--	--	--	--	--
01...	82	--	--	--	--	--
01...	72	--	--	--	--	--
01...	74	.13	.05	.06	230	50

311817094190701 - SAM RAYBURN RES NC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
FEB							
28...	1720	1.0	164	7.0	13.5	.50	11.5
28...	1722	10	164	6.6	10.0	--	9.5
28...	1725	20	164	6.6	9.5	--	9.0
28...	1728	35	164	6.6	9.5	--	8.1

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
FEB						
28...	114	.04	.01	.07	10	80
28...	87	--	--	--	--	--
28...	81	--	--	--	--	--
28...	73	.10	.05	.07	780	100

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310816094041401 - SAM RAYBURN RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
28...	1050	1.0	192	7.1	30.5	7.1	96
28...	1052	10	192	7.0	29.5	7.0	93
28...	1054	20	192	6.1	26.5	2.7	35
28...	1056	30	192	5.9	21.0	.6	7
28...	1058	40	192	6.0	19.5	.2	2
28...	1100	55	220	6.4	18.0	.2	2

310544094042601 - SAM RAYBURN RES BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1100	1.0	192	7.2	30.5	7.0	95
27...	1102	10	192	7.1	29.0	6.9	92
27...	1104	20	192	6.0	25.0	1.3	16
27...	1106	30	192	5.9	21.5	.8	9
27...	1108	40	192	6.0	18.5	.8	9
27...	1110	48	192	6.0	18.0	.5	5

310501094040601 - SAM RAYBURN RES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1017	1.0	192	7.1	30.0	6.9	93
27...	1019	10	192	6.3	28.0	4.7	61
27...	1021	20	192	6.0	25.0	2.1	26
27...	1023	30	192	6.0	22.0	1.2	14
27...	1025	40	192	6.0	20.0	.9	10
27...	1027	50	192	6.0	17.0	.4	4
27...	1029	60	192	6.0	17.0	.4	4
27...	1031	73	192	6.1	16.5	.2	2

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310437094065501 - SAM RAYBURN RES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
27...	1125	1.0	200	6.8	30.0	2.60	6.9	93	33
27...	1127	10	213	6.3	27.5	--	4.5	58	--
27...	1129	20	222	6.1	26.0	--	1.6	20	--
27...	1131	30	200	6.0	22.0	--	1.3	15	--
27...	1134	40	196	6.0	20.0	--	1.1	13	--
27...	1136	50	196	6.0	17.5	--	.6	7	--
27...	1138	60	196	6.0	17.0	--	.5	5	--
27...	1141	70	196	6.0	17.0	--	.5	5	--
27...	1144	82	196	6.1	17.0	--	.2	2	40

DATE	HARD- NESS, NONCAR- BONATE, DIS- (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
27...	18	6.5	4.1	22	1.7	2.9	18	0	30
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	19	8.0	4.8	22	1.5	2.8	25	0	28

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
27...	29	.1	10	114	.08	.00	.01	200	60
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	.14	.00	.01	250	160
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	.13	.00	.01	250	780
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	29	.1	12	122	.14	.00	.02	1300	2000

310505094063501 - SAM RAYBURN RES CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)
JUN							
27...	1213	1.0	200	7.2	31.0	7.0	100
27...	1217	10	200	7.3	29.5	7.3	101
27...	1220	20	200	6.1	26.5	2.9	39
27...	1222	30	196	5.9	22.5	1.3	16
27...	1225	40	196	5.9	19.5	1.4	16
27...	1227	47	196	5.9	18.0	1.0	11

NECHES RIVER BASIN
SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310802094112201 - SAM RAYBURN RES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1250	1.0	208	7.3	31.5	7.0	96
27...	1252	10	208	7.4	30.0	7.3	99
27...	1254	20	208	6.8	29.5	6.7	89
27...	1256	30	208	6.0	22.5	.4	5
27...	1258	40	200	6.0	20.0	.3	3
27...	1300	50	196	6.0	18.5	.2	2
27...	1302	60	196	6.0	17.5	.3	3
27...	1305	72	196	6.0	17.0	.3	3

311039094141201 - SAM RAYBURN RES GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1330	1.0	212	7.3	32.0	7.0	97
27...	1332	10	212	7.4	30.5	7.2	97
27...	1334	20	212	7.0	30.0	6.6	89
27...	1336	30	252	6.3	24.5	.2	2
27...	1339	40	200	6.0	21.0	.3	3
27...	1342	50	196	6.0	18.5	.3	3
27...	1345	60	196	6.0	18.5	.3	3

311828094191801 - SAM RAYBURN RES IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
27...	1405	1.0	210	7.4	31.0	2.50	7.1	97	34
27...	1407	10	213	7.2	30.0	--	7.0	95	--
27...	1410	20	221	6.8	29.5	--	6.2	83	--
27...	1412	30	304	6.6	24.5	--	.2	2	--
27...	1414	40	285	6.7	21.5	--	.2	2	--
27...	1416	54	245	6.5	20.0	--	.3	3	43

DATE	HARD- NESS, NONCAR- BONATE, DIS, (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
27...	19	6.2	4.4	24	1.8	2.9	18	0	31
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	14	8.9	5.1	27	1.8	3.0	36	0	33

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN								
27...	32	10	119	.00	.01	.02	60	5
27...	--	--	--	--	--	--	--	--
27...	--	--	--	.00	.01	.02	90	40
27...	--	--	--	.00	.04	.06	5100	1600
27...	--	--	--	--	--	--	--	--
27...	34	12	147	.00	.00	.04	5000	1500

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311402094185401 - SAM RAYBURN RES IL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1703	1.0	210	7.4	31.0	7.2	99
27...	1705	10	210	7.6	31.0	7.2	99
27...	1707	20	213	7.1	30.0	6.8	92
27...	1710	29	289	6.5	26.0	.3	4

311804094234901 - SAM RAYBURN RES JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
27...	1457	1.0	260	7.4	32.0	7.0	97
27...	1500	10	270	6.9	30.5	6.2	84
27...	1502	20	297	6.1	30.0	.7	9
27...	1504	30	360	6.6	26.0	.2	3
27...	1507	37	360	6.8	25.0	.2	2

312216094280601 - SAM RAYBURN RES KC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
27...	1535	1.0	395	7.7	33.0	.60	7.8	109	58
27...	1538	10	458	6.6	30.0	--	4.1	55	--
27...	1540	25	454	6.6	30.0	--	3.6	49	62

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- SOLVED (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
27...	26	13	6.3	51	2.9	3.9	40	0	48	--
27...	--	--	--	--	--	--	--	--	--	--
27...	21	14	6.5	60	3.3	4.2	50	0	46	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
27...	66	10	219	.00	.01	.04	1200	20	--
27...	--	--	--	--	--	--	--	--	--
27...	80	11	249	.02	.01	.06	2100	410	--

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311000094010301 - SAM RAYBURN RES LC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JUN							
28...	1025	1.0	196	7.0	31.5	1.10	6.9
28...	1027	10	196	6.8	31.0	--	6.5
28...	1030	15	196	6.3	30.5	--	4.3

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN						
28...	95	.00	.01	.02	40	5
28...	89	--	--	--	--	--
28...	58	.00	.00	.02	130	140

311137094051401 - SAM RAYBURN RES MC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
28...	1122	1.0	187	7.4	32.0	7.2	100
28...	1124	10	187	6.8	31.0	6.5	89
28...	1126	20	187	6.1	29.0	.3	4
28...	1128	32	224	6.6	24.0	.2	2

311817094190701 - SAM RAYBURN RES NC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN												
27...	1630	1.0	215	7.3	32.0	7.2	100	.00	.01	.02	20	0
27...	1632	10	215	6.8	30.5	5.4	73	--	--	--	--	--
27...	1634	20	224	6.6	28.5	.2	3	--	--	--	--	--
27...	1637	31	281	6.9	22.5	.2	2	.00	1.6	.20	15000	3300

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310816094041401 - SAM RAYBURN RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
19...	1340	1.0	205	7.1	29.5	7.0	92
19...	1342	10	205	6.8	28.0	6.8	87
19...	1344	20	205	6.7	27.5	6.7	86
19...	1346	30	205	6.3	26.5	3.7	47
19...	1348	40	217	6.3	21.5	.4	5
19...	1350	50	224	6.4	19.5	.5	6
19...	1352	56	224	6.3	19.5	.5	6

310544094042601 - SAM RAYBURN RES BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
19...	1357	1.0	205	7.1	29.5	7.3	96
19...	1359	10	205	6.9	28.5	7.1	92
19...	1401	20	205	6.6	27.5	6.4	82
19...	1404	30	205	6.1	25.0	1.1	14
19...	1406	40	209	6.2	21.5	.4	5
19...	1408	46	209	6.2	20.5	.5	6

310501094040601 - SAM RAYBURN RES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
19...	1421	1.0	205	6.7	28.0	6.8	87
19...	1423	10	205	6.6	27.5	6.3	81
19...	1425	20	205	6.4	27.0	5.8	73
19...	1427	30	205	5.9	25.5	.9	11
19...	1429	40	209	6.2	21.0	.3	3
19...	1431	50	209	6.3	19.0	.3	3
19...	1433	60	209	6.3	18.0	.3	3
19...	1435	68	209	6.3	18.0	.3	3

310408094071401 - SAM RAYBURN RES CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
20...	1106	1.0	208	6.8	27.5	6.7	86
20...	1108	10	208	6.8	27.5	6.6	85
20...	1111	20	208	6.7	27.0	6.0	76
20...	1114	30	208	6.6	27.0	5.9	75
20...	1116	40	208	6.2	21.0	.2	2
20...	1118	50	208	6.3	20.0	.3	3

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310437094065501 - SAM RAYBURN RES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SFP									
20...	1122	1.0	208	7.0	28.0	2.50	6.9	88	34
20...	1125	10	208	7.0	27.5	--	6.9	88	--
20...	1128	20	208	6.9	27.5	--	6.7	86	--
20...	1130	30	208	6.6	26.5	--	5.8	73	--
20...	1133	40	208	6.3	21.0	--	.2	2	--
20...	1136	50	208	6.4	19.0	--	.2	2	--
20...	1139	60	208	6.5	18.5	--	.2	2	--
20...	1141	70	208	6.5	18.0	--	.3	3	--
20...	1143	77	208	6.5	17.5	--	.4	4	38

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SFP									
20...	17	7.0	4.1	23	1.7	2.9	21	0	30
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	2	7.9	4.5	24	1.7	2.8	44	0	21

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (MG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SFP									
20...	30	.1	11	119	.01	.01	.01	30	80
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	.01	.01	.01	50	460
20...	--	--	--	--	.01	.12	.01	490	4000
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	27	--	13	129	.01	.60	.11	4600	2900

310505094063501 - SAM RAYBURN RES CL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SFP							
20...	1148	1.0	208	7.0	28.0	6.8	87
20...	1150	10	208	6.9	27.5	6.6	85
20...	1152	20	208	6.8	27.0	6.4	81
20...	1154	30	208	6.2	25.5	2.7	34
20...	1156	40	208	6.3	21.5	.3	3
20...	1158	46	208	6.3	20.5	.4	5

NECHES RIVER BASIN

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SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310602094112201 - SAM RAYBURN RES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
20...	1217	1.0	208	7.0	29.5	6.9	91
20...	1219	10	208	7.0	28.5	6.8	88
20...	1221	20	208	6.6	28.5	6.8	88
20...	1223	30	215	6.5	27.5	4.5	58
20...	1225	40	215	6.4	22.0	.3	4
20...	1227	50	212	6.6	20.0	.3	3
20...	1228	60	210	6.4	19.0	.3	3
20...	1230	73	210	6.4	19.0	.5	6

311039094141201 - SAM RAYBURN RES GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
20...	1251	1.0	214	7.5	29.5	7.3	96
20...	1253	10	214	7.2	29.0	7.1	93
20...	1255	20	214	6.9	28.5	6.7	87
20...	1258	30	222	6.6	27.0	4.8	61
20...	1301	40	266	6.7	23.0	.3	4
20...	1304	50	227	6.6	20.5	.4	5
20...	1307	60	224	6.6	20.0	.5	6

311254094194101 - SAM RAYBURN RES IR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
20...	1325	1.0	225	7.6	29.0	7.5	99
20...	1327	10	225	7.4	28.5	7.2	94
20...	1329	20	225	6.6	28.0	5.2	67
20...	1331	25	244	6.6	28.0	5.0	64

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311828094191801 - SAM RAYBURN RES IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
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SEP									
20...	1355	1.0	225	7.8	29.5	2.30	7.6	100	36
20...	1358	10	225	7.6	29.0	--	7.4	97	--
20...	1401	20	225	6.8	28.5	--	5.9	77	--
20...	1405	30	244	6.4	28.0	--	2.8	36	--
20...	1409	40	244	6.4	27.0	--	1.4	18	--
20...	1412	50	287	6.9	22.0	--	.3	4	57

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
------	--	--	--	--	---	---	--	------------------------------------	---

SEP									
20...	18	7.0	4.4	25	1.8	3.0	22	0	31
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	0	12	6.5	28	1.6	3.3	84	0	18

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
------	---	---	---	--	--	---	--	--

SEP								
20...	33	10	124	.01	.01	.01	20	10
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.01	.01	.01	40	40
20...	--	--	--	--	--	--	--	--
20...	--	--	--	.02	.13	.02	910	560
20...	34	15	174	.01	1.9	.23	13000	2900

311402094185401 - SAM RAYBURN RES IL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
------	------	--------------------------------	--	---------------	-----------------------------	-------------------------------------	--

SEP							
20...	1341	1.0	225	7.8	29.5	7.6	100
20...	1343	10	225	7.6	28.5	7.4	96
20...	1345	20	225	6.9	28.5	6.4	83
20...	1347	25	225	6.4	28.0	3.4	44

311804094234901 - SAM RAYBURN RES JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
------	------	--------------------------------	--	---------------	-----------------------------	-------------------------------------	--

SEP							
19...	1542	1.0	260	7.8	29.5	7.6	100
19...	1544	10	279	7.2	28.5	7.0	91
19...	1546	20	335	6.4	27.5	2.0	26
19...	1548	34	335	6.3	27.0	1.1	14

NECHES RIVER BASIN
SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

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312216094280601 - SAM RAYBURN RES KC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
SFP									
19...	1737	1.0	561	6.8	30.5	.40	6.0	80	53
19...	1741	10	749	6.5	28.0	--	2.8	36	--
19...	1745	20	749	6.4	27.5	--	1.8	23	--
19...	1750	26	749	6.4	27.5	--	1.5	19	56

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SFP									
19...	17	12	5.7	86	5.1	4.5	44	0	58
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	10	14	5.2	120	7.0	4.6	57	0	76

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SFP								
19...	110	11	311	.14	.05	.10	2000	240
19...	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--
19...	140	11	403	.34	.15	.25	3800	540

311000094010301 - SAM RAYBURN RES LC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SFP							
19...	1200	1.0	199	7.2	29.5	1.70	7.4
19...	1205	10	199	6.8	29.0	--	7.1
19...	1210	18	199	6.2	28.0	--	4.7

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
19...	97	.01	.01	.01	30	10
19...	93	--	--	--	--	--
19...	60	.01	.01	.01	40	80

NECHES RIVER BASIN

SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311137094051401 - SAM RAYBURN RES MC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
19...	1300	1.0	193	6.9	30.0	7.1	95
19...	1302	10	187	6.5	28.5	6.6	86
19...	1304	20	85	5.7	27.0	1.6	20
19...	1306	34	78	5.6	26.5	.3	4

311817094190701 - SAM RAYBURN RES NC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
20...	1436	1.0	84	6.2	29.0	.40	5.1
20...	1440	10	125	6.2	28.0	--	2.3
20...	1443	20	189	6.3	27.0	--	.2
20...	1447	27	201	6.3	27.0	--	.2

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
20...	67	.06	.02	.05	--	--
20...	29	--	--	--	--	--
20...	3	--	--	--	--	--
20...	3	.01	.20	.03	130	740

NECHES RIVER BASIN

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08039400 ANGELINA RIVER BELOW SAM RAYBURN DAM NEAR JASPER, TX

LOCATION.--Lat 31°03'30", long 94°06'20", Jasper County, Hydrologic Unit 12020005, immediately below Sam Rayburn Dam, 7.6 mi (12.2 km) upstream from gaging station at Horger, and 10 mi (16 km) northwest of Jasper.

DRAINAGE AREA.--3,449 mi² (8,933 km²).

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1963 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1963 to current year.

WATER TEMPERATURES: October 1963 to current year.

REMARKS.--Water-discharge records are not available for most of year because of backwater from B. A. Steinhagen Lake.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1963-77): Maximum daily, 350 micromhos Sept. 21, 1969; minimum daily, 60 micromhos June 21, 1973.

WATER TEMPERATURES (1963-77): Maximum daily, 30.0°C Sept. 28, 1972; minimum daily, 4.0°C Jan. 20, 31, Feb. 8, 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SPF- CIFIC CON- DUCT- ANCE						OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)		HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
DATE	TIME	(MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)					
OCT												
12...	1615	212	6.9	22.0	--	--	7.8	92	--	32		9
NOV												
15...	1500	218	7.1	19.5	20	6	8.2	92	1.2	32		7
DEC												
20...	1015	204	7.0	13.5	--	--	9.2	91	--	34		17
JAN												
30...	1635	201	6.9	7.5	20	10	12.4	107	.9	32		13
FEB												
22...	1445	218	7.0	8.0	--	--	13.6	119	--	32		11
MAR												
14...	0735	248	7.0	9.0	10	5	11.6	104	.2	31		5
APR												
25...	0910	194	6.6	14.0	--	--	9.0	90	--	32		15
MAY												
24...	0810	200	6.4	17.0	--	--	6.0	64	.4	32		16
JUL												
06...	1340	240	6.4	27.0	--	--	3.8	48	--	33		18
26...	1255	220	6.5	25.5	--	--	8.2	102	--	34		18
AUG												
17...	1025	220	6.5	20.0	--	--	2.0	23	--	44		19
SEP												
21...	0815	220	6.5	19.5	--	--	3.0	44	--	35		5
		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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												
12...	6.2	3.9	24	1.9	3.0	28	0	25	30	.1		12
NOV												
15...	6.2	4.1	25	1.9	2.8	31	0	25	30	.2		12
DEC												
20...	7.0	4.0	21	1.6	5.5	21	0	25	29	.1		14
JAN												
30...	6.3	3.9	22	1.7	2.7	23	0	25	25	.1		12
FEB												
22...	6.3	3.9	25	1.9	4.3	25	0	30	31	.1		12
MAR												
14...	6.1	3.9	34	2.6	2.7	32	0	26	39	.1		12
APR												
25...	6.2	3.9	23	1.8	2.8	20	0	27	31	.1		13
MAY												
24...	6.3	3.9	24	1.9	2.8	19	0	27	30	.1		12
JUL												
06...	6.6	4.0	22	1.7	2.8	18	0	29	27	.1		11
26...	6.8	4.2	23	1.7	3.1	20	0	29	29	.1		11
AUG												
17...	11	3.9	24	1.6	2.7	30	0	27	30	.1		13
SEP												
21...	7.5	4.0	24	1.8	2.9	37	0	25	28	.1		13

NECHES RIVER BASIN

08039400 ANGELINA RIVER BELOW SAM RAYBURN DAM NEAR JASPER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS, VOLATILE, SUS- PENDED (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)
OCT 12...	118	--	--	.00	.00	.00	.03	.41	.44	.07	--
NOV 15...	121	13	8	.05	.00	.05	.06	.24	.30	.03	4.9
DEC 20...	116	--	--	.12	.01	.13	.09	.40	.49	.02	--
JAN 30...	108	17	2	.07	.01	.08	.01	.22	.23	.02	4.7
FEB 22...	125	--	--	.12	.00	.12	.03	.30	.33	.08	--
MAR 14...	140	12	10	.10	.01	.11	.05	.16	.21	.03	5.3
APR 25...	117	--	--	--	--	--	--	--	--	--	--
MAY 24...	115	--	--	--	--	--	--	--	--	--	--
JUL 06...	111	--	--	--	--	--	--	--	--	--	--
JUL 26...	116	--	--	--	--	--	--	--	--	--	--
AUG 17...	126	--	--	--	--	--	--	--	--	--	--
SEP 21...	124	--	--	--	--	--	--	--	--	--	--

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 15...	1500	--	--	--	--	--	20
JAN 30...	1635	1	0	1	0	0	10
MAR 14...	0735	1	100	1	0	1	30
MAY 24...	0810	--	--	--	--	--	20
JUL 06...	1340	--	--	--	--	--	50
JUL 26...	1255	--	--	--	--	--	40
SEP 21...	0815	--	--	--	--	--	160

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 15...	--	240	--	--	--	--
JAN 30...	1	10	.0	0	0	20
MAR 14...	0	10	.0	0	0	10
MAY 24...	--	0	--	--	--	--
JUL 06...	--	0	--	--	--	--
JUL 26...	--	390	--	--	--	--
SEP 21...	--	1400	--	--	--	--

NECHES RIVER BASIN

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08039400 ANGELINA RIVER BELOW SAM RAYBURN DAM NEAR JASPER, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	197	202	---	200	---	200	---	197	---	217	211
2	195	201	208	203	200	201	205	197	201	---	213	214
3	197	202	204	205	---	---	203	207	201	211	---	211
4	199	202	203	205	209	198	217	202	198	211	210	216
5	201	---	197	---	---	203	212	197	201	215	---	214
6	197	203	203	---	202	202	201	---	203	205	210	214
7	192	202	200	---	197	205	202	199	203	207	202	207
8	---	200	---	198	196	198	213	199	203	---	202	209
9	203	198	198	204	---	---	211	199	---	212	---	211
10	195	201	197	207	196	202	208	197	202	208	---	214
11	207	199	---	---	197	196	219	203	202	---	207	215
12	200	202	202	205	193	198	233	198	199	209	207	211
13	189	208	198	197	191	198	213	200	202	207	206	---
14	204	207	196	195	---	---	198	202	201	204	---	207
15	191	211	198	195	199	---	199	209	201	209	208	---
16	200	202	---	207	193	211	199	---	196	203	208	220
17	195	202	200	---	---	215	196	---	214	219	208	---
18	---	205	206	---	193	202	---	---	210	203	208	221
19	197	197	198	---	193	---	187	199	199	201	---	---
20	197	197	188	199	194	201	201	195	---	209	206	---
21	200	197	201	---	194	---	201	200	205	208	207	217
22	203	204	201	203	202	200	198	196	206	208	---	222
23	200	---	205	201	194	198	204	203	---	---	---	227
24	197	242	---	196	---	198	206	---	---	213	203	224
25	195	---	---	---	196	203	---	198	---	215	209	222
26	201	204	---	---	198	228	---	202	206	207	---	224
27	197	---	203	---	---	206	---	199	205	202	---	---
28	197	203	197	202	---	---	202	204	208	203	---	---
29	195	206	203	199	---	---	197	201	204	214	---	225
30	191	200	---	196	---	196	198	199	204	---	---	233
31	204	---	---	---	---	200	---	197	---	---	216	---
MEAN	199	204	200	201	197	203	205	200	203	208	208	217

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	18.0	14.0	---	4.0	---	10.0	---	13.0	---	18.0	18.0
2	21.0	18.0	14.0	9.0	---	---	9.0	---	12.0	---	17.0	18.0
3	17.0	18.0	14.0	4.0	---	---	10.0	11.0	16.0	21.0	---	21.0
4	20.0	18.0	14.0	10.0	4.0	5.0	10.0	12.0	13.0	21.0	20.0	17.0
5	20.0	---	13.0	---	---	6.0	10.0	12.0	13.0	18.0	---	17.0
6	18.0	18.0	12.0	---	4.0	6.0	10.0	---	15.0	19.0	20.0	17.0
7	18.0	18.0	12.0	---	4.0	7.0	14.0	13.0	15.0	17.0	17.0	17.0
8	---	18.0	---	9.0	4.0	6.0	11.0	13.0	14.0	---	17.0	---
9	21.0	15.0	---	9.0	---	---	10.0	16.0	---	21.0	---	17.0
10	17.0	14.0	13.0	9.0	2.0	7.0	10.0	17.0	14.0	---	---	20.0
11	20.0	16.0	---	---	3.0	7.0	10.0	17.0	14.0	---	18.0	---
12	19.0	17.0	13.0	4.0	4.0	7.0	10.0	18.0	13.0	18.0	19.0	17.0
13	17.0	16.0	12.0	6.0	3.0	10.0	11.0	13.0	14.0	18.0	18.0	---
14	17.0	16.0	12.0	7.0	---	---	11.0	13.0	13.0	18.0	---	17.0
15	19.0	18.0	10.0	6.0	3.0	---	10.0	13.0	13.0	18.0	18.0	---
16	21.0	18.0	---	7.0	4.0	7.0	10.0	---	14.0	16.0	18.0	17.0
17	14.0	17.0	10.0	---	---	---	10.0	---	18.0	21.0	19.0	---
18	---	17.0	11.0	---	5.0	7.0	---	---	17.0	16.0	19.0	17.0
19	17.0	17.0	12.0	---	6.0	---	16.0	16.0	12.0	16.0	---	---
20	18.0	17.0	11.0	---	4.0	10.0	14.0	14.0	---	19.0	18.0	---
21	19.0	16.0	10.0	---	3.0	---	14.0	13.0	16.0	19.0	13.0	17.0
22	19.0	16.0	---	5.0	4.0	8.0	12.0	16.0	16.0	18.0	---	17.0
23	19.0	---	10.0	4.0	4.0	8.0	12.0	17.0	---	---	---	---
24	19.0	16.0	---	4.0	---	10.0	12.0	---	---	17.0	16.0	17.0
25	19.0	---	---	---	5.0	9.0	---	16.0	---	19.0	18.0	16.0
26	21.0	16.0	---	---	6.0	9.0	---	17.0	16.0	18.0	---	17.0
27	18.0	---	10.0	---	---	9.0	---	14.0	16.0	16.0	---	---
28	18.0	16.0	9.0	4.0	---	---	14.0	15.0	18.0	17.0	---	---
29	19.0	16.0	9.0	4.0	---	---	12.0	14.0	18.0	16.0	---	17.0
30	16.0	14.0	---	3.0	---	10.0	12.0	16.0	16.0	---	---	17.0
31	19.0	---	---	---	---	9.0	---	13.0	---	---	17.0	---
MEAN	18.5	16.5	11.5	6.0	4.0	8.0	11.5	14.5	15.0	18.0	18.0	17.5

NECHES RIVER BASIN

08040000 B. A. STEINHAGEN LAKE AT TOWN BLUFF, TX

LOCATION.--Lat 30°47'43", Long 94°10'48", Tyler County, Hydrologic Unit 12020003, near right bank 70 ft (21 m) upstream from outlet structure of Town Bluff Dam on Neches River, 0.4 mi (0.6 km) north of Town Bluff, and at mile 113.7 (182.9 km).

DRAINAGE AREA.--7,573 mi² (19,614 km²).

PERIOD OF RECORD.--April 1951 to current year. Prior to October 1967, published as Dam B Reservoir at Town Bluff.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 25, 1954, at site 490 ft (149 m) upstream at same datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam with concrete spillway sections. The total length of dam is 6,698 ft (2,042 m), including a concrete spillway and nonoverflow section. Deliberate impoundment of water began Apr. 16, 1951, and the dam was completed in June 1951. The uncontrolled spillway is 6,100 ft (1,860 m) long. A 326-foot-long (99 m) gated service spillway with six 40.0 by 35.0 ft (12.2 by 10.7 m) tainter gates is located near right end of dam. The capacity of the spillways at maximum flood design is 218,300 ft³/s (6,180 m³/s). The capacity table is based on a survey made in 1945. Water is used for industrial, municipal, and irrigation supplies. 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 (nonoverflow).....	95.0	-
Design flood.....	93.0	306,400
Crest of uncontrolled spillway (top of tainter gates).....	85.0	124,700
Top of conservation pool.....	83.0	94,200
Bottom of tainter gates (sill).....	50.0	0

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128,400 acre-ft (158 hm³) May 22, 1953, elevation, 85.21 ft (25.972 m); no storage Sept. 18 to Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 96,460 acre-ft (119 hm³) Dec. 13, elevation, 83.16 ft (25.347 m); minimum, 45,270 acre-ft (55.8 hm³) Apr. 17, elevation, 78.43 ft (23.905 m).

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

78.0	41,830	82.0	81,280
79.0	50,090	84.0	108,700
80.0	59,320		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79820	66980	87720	77900	75430	49570	69890	68700	63740	73820	77190	86170
2	77540	66880	89160	77430	78260	50970	69130	72680	66880	75670	77780	86040
3	76720	66560	90480	77430	77780	53300	68810	77190	66980	77660	79450	85530
4	76720	65510	91680	77540	75900	53940	68590	75780	64360	80060	78020	85280
5	78140	64150	93980	78020	72570	55610	67840	75320	65400	80540	80910	85020
6	78850	62010	92480	77780	67840	56920	66980	81030	71110	80420	79330	84640
7	79210	61310	92080	80060	64880	60210	65720	80660	78020	80790	78380	83890
8	80660	62310	92620	82140	64050	61110	63840	80300	82510	80540	78500	83380
9	75090	62720	92620	79330	64360	61510	61710	86300	87590	80060	78850	83010
10	73590	64360	92350	78260	63840	61610	60310	89680	88500	80060	80420	83260
11	73820	64670	92220	79450	61810	63020	58550	92890	87850	80180	79450	85020
12	73360	64880	92080	83010	62820	63430	56080	95210	89160	78970	79820	85150
13	75090	65190	95910	83630	67410	64980	53760	92480	86430	79210	80540	87850
14	73480	66240	92080	81640	67940	66350	51150	88370	83010	79090	79940	88890
15	74510	65930	85020	79450	66770	70890	48620	84390	82010	78380	79700	89160
16	71560	66450	80660	84390	63130	70110	46100	81150	83380	77900	79450	89160
17	69670	66980	79210	85910	59320	69570	50790	79940	84520	77540	78970	88630
18	71110	66980	77070	87070	55890	69130	55050	78850	82880	77780	79090	88370
19	70890	67410	76840	85790	54960	69020	57880	78140	81770	76370	78380	88370
20	71220	67840	84010	83760	55790	68910	57400	76950	82510	78500	79090	88500
21	71560	71000	83630	81640	53390	69890	59320	73590	82260	78500	82140	88500
22	70220	71780	81890	78850	52130	69460	60310	72340	83380	75200	82760	88240
23	68370	72680	80300	77190	51770	69130	60310	70220	82630	74280	82880	87980
24	69020	73360	78850	83130	50440	70340	60810	70220	77070	73820	82630	87590
25	69240	74390	77310	82630	50090	70560	64050	69780	75090	74740	82630	87200
26	69670	74160	75550	77900	49480	70670	66450	69570	74390	77190	82630	86430
27	69670	75550	74740	76370	48710	70340	68590	68160	74620	74050	82260	86040
28	70000	76130	75320	73940	49920	70000	70450	66030	74390	74160	85660	85660
29	68270	83130	76130	70340	---	70220	70670	64360	74280	74860	85280	85280
30	66140	85910	76370	68590	---	70560	69350	63740	74510	75430	84900	84770
31	64980	---	76840	67840	---	70220	---	63130	---	75900	86170	---
MAX	80660	85910	95910	87070	78260	70890	70670	95210	89160	80790	86170	89160
MIN	64980	61310	74740	67840	48710	49570	46100	63130	63740	73820	77190	83010
(†)	80.56	82.37	81.63	80.83	78.98	81.05	80.97	80.38	81.43	81.55	82.39	82.28
(‡)	-11620	+20930	-9070	-9000	-17920	+20300	-870	-6220	+11380	+1390	+10270	-1400

CAL YR 1977 MAX 95910 MIN 36580 ‡ +4160

WTR YR 1978 MAX 95910 MIN 46100 ‡ +8170

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

08040500 NECHES RIVER AT TOWN BLUFF, TX

LOCATION.--Lat 30°47'36", long 94°10'28", Jasper-Tyler County line, Hydrologic Unit 12020003, on left bank 0.3 mi (0.5 km) downstream from Town Bluff Dam, 0.5 mi (0.8 km) northeast of Town Bluff, 2.5 mi (4.0 km) upstream from Walnut Run, 8 mi (13 km) downstream from Wolf Creek, and at mile 113.4 (182.5 km).

DRAINAGE AREA.--7,573 mi² (19,614 km²).

PERIOD OF RECORD.--March 1951 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec. 3, 1954, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated by B. A. Steinhagen Lake 0.3 mi (0.5 km) upstream (see preceding page) and by Sam Rayburn Reservoir (station 08039300) 37.9 mi (61.0 km) upstream. Some diversions above station. Several observations at water temperature were made during the year.

AVERAGE DISCHARGE.--13 years (water years 1952-64) prior to regulation by Sam Rayburn Reservoir, 4,406 ft³/s (124.8 m³/s), 3,192,000 acre-ft/yr (3.94 km³/yr); 14 years (water years 1965-78) regulated, 4,365 ft³/s (123.6 m³/s), 3,162,000 acre-ft/yr (3.90 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,900 ft³/s (2,570 m³/s), May 21, 22, 1953, elevation, 82.85 ft (25.253 m); no flow at times due to regulation of B. A. Steinhagen Lake.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1884, stage about 86.8 ft (26.46 m), discharge about 120,000 ft³/s (3,400 m³/s), is the highest since at least that date, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,900 ft³/s (252 m³/s) Jan. 26, elevation, 60.60 ft (18.471 m); minimum daily, 108 ft³/s (3.06 m³/s) Nov. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1850	1340	538	293	4530	1620	2700	1340	1910	3290	2020	483
2	1850	1500	278	303	4910	1290	2500	984	1920	3220	2030	493
3	1770	1350	169	301	5390	855	2450	752	1930	3200	2030	482
4	1700	1340	130	304	5320	865	2400	668	1910	3170	2020	482
5	1700	1330	110	345	5270	871	2350	837	1870	3170	2020	315
6	1690	1330	261	513	5250	853	2340	1080	1890	3150	2030	292
7	1700	1330	496	529	4890	863	2350	1150	2200	3150	2020	506
8	1970	1330	466	1320	3450	918	2340	1290	2150	3150	2020	388
9	2350	1210	440	2020	2820	1040	2330	1460	1660	3150	2020	382
10	1980	527	440	1490	2920	1170	2330	1490	1370	3060	2020	388
11	1970	618	437	962	3150	1170	2330	1570	1370	2980	2020	393
12	1960	353	476	1110	3300	1170	2320	2020	1770	2910	2020	393
13	1970	142	2020	1390	3620	1160	2300	2370	2250	2800	2020	397
14	1960	133	5510	1970	4070	999	2290	2370	2250	2650	2020	421
15	1960	225	4850	1970	4610	839	2260	2360	2150	2540	2020	427
16	1950	384	3910	1990	4950	1020	2260	2350	2200	2540	2020	401
17	1950	313	1970	2420	5400	1460	1280	2340	2280	2520	2020	395
18	1940	267	1880	3410	5400	1470	256	2400	2300	2520	2020	393
19	1940	273	1640	5140	4750	1470	1540	2360	2470	2520	2010	397
20	1490	253	1300	5200	3760	1460	1670	2170	3000	2520	2000	395
21	1100	214	1290	5090	3940	1560	1570	2010	3350	2530	1080	393
22	1090	160	1290	5050	3580	1990	1390	2000	3390	2540	532	391
23	1090	150	1300	5060	3030	2180	1310	2000	3420	2530	989	388
24	1080	124	1300	5630	3020	2260	1140	2000	3410	2410	985	385
25	1080	113	1280	7120	2630	2300	1130	1990	3390	2300	924	378
26	1070	108	1280	8300	2340	2210	1130	1990	3390	2250	748	378
27	1070	111	883	6220	2140	2190	1130	1990	3180	2180	742	381
28	1060	113	319	5570	1790	2190	1300	1980	3190	2100	653	388
29	1060	209	307	5520	---	2300	1560	1960	3350	2030	549	388
30	1060	811	307	5060	---	2500	1560	1920	3370	2020	541	384
31	1060	---	299	4350	---	2700	---	1920	---	2020	487	---
TOTAL	49470	17661	37176	95950	110230	46943	55816	55121	74290	83120	48630	12077
MEAN	1596	589	1199	3095	3937	1514	1861	1778	2476	2681	1569	403
MAX	2350	1500	5510	8300	5400	2700	2700	2400	3420	3290	2030	506
MIN	1060	108	110	293	1790	839	256	668	1370	2020	487	292
AC-FT	98120	35030	73740	190300	218600	93110	110700	109300	147400	164900	96460	23950
CAL YR 1977	TOTAL	1329597	MEAN	3643	MAX	13100	MIN	108	AC-FT	2637000		
WTR YR 1978	TOTAL	686484	MEAN	1881	MAX	8300	MIN	108	AC-FT	1362000		

NECHES RIVER BASIN

08041000 NECHES RIVER AT EVADALE, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°21'22", Long 94°05'36", Jasper-Hardin County line, Hydrologic Unit 12020003, near center of channel on downstream side of pier of bridge on U.S. Highway 96 at Evadale, 0.8 mi (1.3 km) upstream from Mill Creek, 16 mi (26 km) upstream from Village Creek, and at mile 55.6 (89.5 km).

DRAINAGE AREA.--7,951 mi² (20,593 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1904 to December 1906, April 1921 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 718: 1929. WSP 1342: 1905-7, 1924. WSP 1732: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 8.25 ft (2.515 m) National Geodetic Vertical Datum of 1929. July 1, 1904, to Dec. 31, 1906, nonrecording gage on Gulf, Colorado, and Santa Fe Railway Co. bridge at site 1.2 mi (1.9 km) downstream at datum 5.50 ft (1.676 m) lower; Apr. 1, 1921, to Dec. 7, 1948, nonrecording gages at site 1.2 mi (1.9 km) downstream at present datum; Dec. 8, 1948, to Nov. 8, 1963, water-stage recorder at site 1.2 mi (1.9 km) downstream at present datum.

REMARKS.--Water-discharge records good except those for November, which are poor. Flow regulated by B. A. Steinhagen Lake (station 08040000) 58.1 mi (93.5 km) upstream, capacity 124,700 acre-ft (154 hm³), and Sam Rayburn Reservoir (station 08039300), 95.7 mi (154.0 km) upstream, capacity 4,442,000 acre-ft (5.48 km³). Some diversions upstream from municipal use. Gage-height telemeter at station.

AVERAGE DISCHARGE.--45 years (water years 1905-6, 1922-64) prior to regulation by Sam Rayburn Reservoir, 6,308 ft³/s (178.6 m³/s), 4,570,000 acre-ft/yr (5.63 km³/yr); 14 years (water years 1965-78) regulated, 4,894 ft³/s (138.6 m³/s), 3,546,000 acre-ft/yr (4.37 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,100 ft³/s (2,610 m³/s), May 11, 1944, gage height, 23.58 ft (7.187 m), from floodmark, at site then in use; minimum daily, 63 ft³/s (1.78 m³/s) Nov. 26-28, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884, stage 26.2 ft (7.99 m) at former site and discharge about 125,000 ft³/s (3,540 m³/s), and flood in August 1915, stage 24.5 ft (7.47 m) at former site and discharge about 102,000 ft³/s (2,890 m³/s), are the highest since at least 1884. Stages by Gulf, Colorado, and Santa Fe Railway Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,000 ft³/s (283 m³/s) Jan. 28, gage height, 14.39 ft (4.386 m); minimum daily, about 220 ft³/s (6.23 m³/s) Nov. 25-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2100	1190	1080	623	6530	2850	2700	1690	2140	3620	2230	757
2	2100	1250	1290	600	6200	2480	2890	1650	2130	3620	2200	723
3	2100	1510	968	566	6350	2260	2990	1390	2160	3580	2170	690
4	2050	1470	595	551	6570	1770	2950	1180	2180	3490	2240	674
5	2000	1430	464	536	6640	1600	2790	1080	2160	3480	2230	651
6	1950	1410	371	532	6500	1600	2710	1050	2230	3470	2240	619
7	1950	1400	268	600	6420	1630	2730	1170	2540	3450	2280	600
8	1950	1410	335	719	6530	1710	2780	1290	2750	3440	2250	577
9	2200	1420	498	1010	5880	1770	2780	1360	2850	3470	2240	531
10	2600	1410	508	2090	4980	1720	2730	1560	2410	3450	2250	510
11	2430	1040	495	2110	4530	1790	2740	1630	1870	3420	2250	507
12	2250	700	489	1630	4420	1830	2760	1670	1680	3330	2250	518
13	2190	450	711	1560	4540	1830	2760	1910	1770	3260	2150	521
14	2180	350	2270	1770	4800	1830	2720	2410	2310	3150	2200	525
15	2170	300	5440	2350	5110	1760	2620	2520	2470	3040	2200	536
16	2150	350	6410	2720	5460	1560	2560	2550	2440	2920	2230	570
17	2150	500	6070	3080	5770	1460	2560	2560	2410	2850	2180	557
18	2140	400	4550	3630	6200	1760	2300	2550	2480	2800	2180	532
19	2130	400	3150	4370	6480	1900	1290	2590	2490	2770	2180	526
20	2120	350	2590	5630	6410	1920	950	2580	2570	2810	2170	534
21	1960	300	2020	6360	5670	1970	1170	2490	2900	2880	2200	534
22	1470	280	1790	6500	5140	2090	1690	2300	3330	3000	1860	519
23	1300	260	1690	6530	4960	2290	1830	2210	3550	3110	967	525
24	1260	240	1650	7070	4540	2530	1660	2190	3620	3120	979	522
25	1250	220	1620	7530	4290	2680	1450	2180	3660	2950	1070	509
26	1220	220	1590	8440	4010	2830	1340	2190	3670	2720	1050	478
27	1210	220	1590	9710	3640	2790	1300	2180	3680	2600	951	467
28	1210	220	1490	9760	3280	2690	1300	2170	3620	2480	922	460
29	1200	320	989	8560	---	2650	1310	2190	3500	2370	1000	460
30	1200	520	727	7610	---	2630	1570	2240	3570	2230	907	443
31	1190	---	678	7060	---	2660	---	2160	---	2190	844	---
TOTAL	57380	21540	54386	121807	151850	64840	65930	60890	81140	95070	57070	16575
MEAN	1851	718	1754	3929	5423	2092	2198	1964	2705	3067	1841	553
MAX	2600	1510	6410	9760	6640	2850	2990	2590	3680	3620	2280	757
MIN	1190	220	268	532	3280	1460	950	1050	1680	2190	844	443
AC-FT	113800	42720	107900	241600	301200	128600	130800	120800	160900	188600	113200	32880
CAL YR 1977	TOTAL	1573296	MEAN	4310	MAX	14700	MIN	220	AC-FT	3121000		
WTR YR 1978	TOTAL	848478	MEAN	2325	MAX	9760	MIN	220	AC-FT	1683000		

NECHES RIVER BASIN

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08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1947 to current year. Pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to current year.

WATER TEMPERATURES: October 1947 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 422 micromhos Jan. 25, 1957; minimum daily, 23 micromhos Sept. 19, 1963.

WATER TEMPERATURES: Maximum daily, 34.0°C June 29, 1953; minimum daily, 3.0°C Jan. 30, 31, 1948, Jan. 31, 1949, Jan. 24, 1963.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 290 micromhos Apr. 19; minimum daily, 88 micromhos Dec. 3.

WATER TEMPERATURES: Maximum daily, 32.0°C July 17, 18, Aug. 19.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
DATE	TIME											
OCT 26...	1000	1230	195	7.6	22.5	60	20	8.0	94	.9	4100	36
NOV 29...	0930	300	190	7.2	19.0	160	40	7.3	81	1.9	3900	150
DEC 29...	0845	1030	157	7.1	9.5	140	40	10.1	91	2.0	1500	40
FEB 01...	1115	6480	127	6.6	6.0	180	50	11.2	93	2.0	750	66
27...	1200	3620	181	6.8	11.5	130	60	9.8	92	2.0	500	40
APR 03...	1310	2900	214	7.0	21.0	90	40	8.4	97	1.0	3000	32
MAY 10...	1130	1420	192	6.9	24.5	160	60	7.6	93	1.9	7000	32
JUL 13...	1050	3200	200	6.9	30.5	50	30	7.8	104	2.0	29000	6
AUG 07...	1250	2250	220	6.7	30.0	40	20	8.2	109	.8	750	28
SEP 13...	1245	430	198	6.4	28.0	30	20	6.8	87	1.2	--	60
		STREP- TOCOCCT FECAL, KF AGAP (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
OCT 26...		62	33	12	7.2	3.7	20	1.5	2.8	26	0	24
NOV 29...		380	46	5	11	4.4	16	1.0	2.6	49	0	13
DEC 29...		750	32	12	8.2	2.9	12	.9	2.0	25	0	16
FEB 01...		28	26	15	7.1	2.0	12	1.0	2.4	13	0	21
27...		14	37	22	9.4	3.2	16	1.2	2.6	18	0	30
APR 03...		70	41	24	10	3.9	21	1.4	3.4	21	0	27
MAY 10...		114	39	20	9.2	3.9	22	1.5	3.3	23	0	26
JUL 13...		26	37	19	8.1	3.9	22	1.6	2.9	21	0	24
AUG 07...		22	34	14	7.3	3.9	20	1.5	2.7	25	0	26
SEP 13...		20	39	11	9.0	3.9	20	1.4	2.6	33	0	22

NECHES RIVER BASIN

08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C SUS- PENDED (MG/L)	SOLIDS, VOLATILE, SUS- PENDED (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)
OCT 26...	24	.1	13	103	108	40	0	.01	.01	.02	.04
NOV 29...	20	.1	18	114	109	58	11	.21	.02	.23	.27
DEC 29...	21	.1	14	107	89	62	3	.06	.04	.10	.09
FEB 01...	16	.1	11	87	78	67	37	.06	.01	.07	.01
27...	20	.1	12	120	102	74	14	.09	.01	.10	.04
APR 03...	28	.1	9.7	138	113	86	13	.01	.00	.01	.01
MAY 10...	28	.1	11	127	117	91	18	.05	.01	.06	.01
JUL 13...	29	.1	12	117	113	71	21	.00	.00	.00	.01
AUG 07...	27	.1	12	119	111	58	10	.01	.00	.01	.00
SEP 13...	28	.1	13	128	115	21	20	.01	.01	.02	.00
DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 26...	.37	.41	--	.04	.01	5.4	--	--	29	96	91
NOV 29...	.68	.95	.96	.03	.13	9.9	--	--	36	29	97
DEC 29...	.47	.56	.54	.04	.07	--	7.4	.7	11	31	80
FEB 01...	.58	.59	.49	.07	.09	13	--	--	56	980	65
27...	.57	.61	.63	.09	.09	11	--	--	128	1250	39
APR 03...	.51	.52	.50	.10	.10	--	7.9	.4	78	611	65
MAY 10...	.99	1.0	.68	.07	.10	7.5	--	--	79	303	73
JUL 13...	.56	.57	.52	.03	.00	--	5.2	.9	55	475	71
AUG 07...	.85	.85	3.3	.04	.00	5.6	--	--	21	128	87
SEP 13...	.40	.40	.62	.03	.02	--	5.8	.4	21	24	58

NECHES RIVER BASIN

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08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)		ARSENIC SUS-PENDED TOTAL (UG/L AS AS)		ARSENIC DIS-SOLVED (UG/L AS AS)		BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)		BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)		BARIUM, DIS-SOLVED (UG/L AS BA)		CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)		CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)		CADMIUM DIS-SOLVED (UG/L AS CD)	
OCT 26...	1000		2		1		1		200		200		0		<10		<10		0
DEC 29...	0845		1		0		1		100		100		0		0		0		1
APR 03...	1310		0		0		1		200		200		0		1		1		0
JUL 13...	1050		3		1		2		300		0		300		2		2		0
SEP 13...	1245		1		--		1		0		0		0		1		0		1
DATE		CHROMIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHROMIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)								
OCT 26...	10		5		5		<50		<50		0		<10		<10		0		950
DEC 29...	0		0		10		1		1		0		9		9		0		2000
APR 03...	0		1		0		2		1		1		3		3		0		1800
JUL 13...	0		0		0		5		5		0		4		1		3		1100
SEP 13...	0		0		0		0		0		2		2		0		2		900
DATE		IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGANESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)								
OCT 26...	--		20		<100		<100		0		180		180		4		.0		.0
DEC 29...	--		300		3		3		0		410		220		190		.1		.1
APR 03...	1800		10		5		2		3		190		194		0		.0		.0
JUL 13...	1100		40		5		5		0		240		240		0		.1		.1
SEP 13...	730		170		0		0		1		270		270		0		.0		.0
DATE		MERCURY DIS-SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)								
OCT 26...	.0		0		0		<10		<10		0		6		0		10		10
DEC 29...	.0		0		0		0		0		0		20		10		10		10
APR 03...	.0		0		0		0		0		0		30		20		10		10
JUL 13...	.0		0		0		0		0		0		10		10		0		0
SEP 13...	.0		0		0		1		0		0		0		20		20		0

NECHES RIVER BASIN

08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 26...	1000	--	0	--	--	.0	--	0	--	.0
DEC 29...	0845	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 26...	--	.0	--	.0	--	--	.0	--	--	.0
DEC 29...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
OCT 26...	--	--	.0	--	.0	--	.0	--	--
DEC 29...	.00	.00	.0	.00	.0	.00	.0	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 26...	--	.00	--	--	0	--	.00	.00	.00
DEC 29...	.00	.00	.00	0	0	.00	.00	.00	.00

NECHES RIVER BASIN

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08041000 NECHES RIVER AT EVADALE, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 29,77 0930	APR 3,78 1310	MAY 10,78 1130	JUL 13,78 1050	AUG 7,78 1250	SEP 13,78 1245				
TOTAL CELLS/ML	3300	9800	15000	14000	2000	10000				
DIVERSITY: DIVISION	1.0	1.3	1.4	1.4	1.4	1.2				
..CLASS	1.0	1.3	1.4	1.4	1.4	1.2				
...ORDER	1.2	1.6	1.7	1.9	2.0	1.7				
...FAMILY	2.0	2.3	2.0	2.5	2.9	2.2				
....GENUS	3.0	3.6	3.1	3.0	4.0	3.1				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...CHARACIACEAE										
...SCHROEDERIA	39	1	--	-	--	-	43	2	--	-
...COELASTRACEAE										
...COELASTRUM	--	-	--	-	--	-	110	6	180	2
...HYDRODICTYACEAE					290	2				
...PEDIASTRUM	--	-	--	-	--	-			--	-
...MICRACTINIACEAE					290	2				
...GOLENKINIA	--	-	--	-	--	-	14	1	*	0
...OOCYSTACEAE										
...ANKISTRODESMS	370	11	260	3	250	2	110	6	160	2
...CHLORELLA	--	-	--	-	--	-	--	-	--	-
...CHODATELLA	39	1	150	1	*	0	72	4	*	0
...DICTYOSPHAERIUM	240	7	1700#	17	910	6	680	5	110	6
...KIRCHNERIELLA	630#	19	150	1	1000	7	320	2	57	3
...OOCYSTIS	--	-	580	6	230	2	110	1	57	3
...SELENASTRUM	--	-	330	3	450	3	--	-	--	-
...TETRAEDRON	--	-	73	1	100	1	--	-	--	-
...TREUBARIA	--	-	--	-	--	-	14	1	*	0
...SCENEDESMACEAE										
...CRUCIGENIA	550#	17	730	7	1900	13	1500	10	110	6
...SCENEDESMUS	590#	18	1500#	16	--	-	1100	7	290	14
...TETRASTRUM	--	-	990	10	100	1	720	5	57	3
...TETRASPORALES										
...COCCOMYXACEAE										
...ELAKATOTHRIX	--	-	--	-	--	-	*	0	29	1
...PALMELLACEAE										
...SPHAEROCYSTIS	59	2	--	-	1100	7	470	3	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	*	0	--	-	*	0	--	-
...ZYGNEATALES										
...DESMIDIACEAE										
...COSMARUM	20	1	--	-	--	-	110	1	--	-
...STAUSTRUM	--	-	--	-	--	-	29	1	--	-
...CHLOROCOCCALES										
...OOCYSTACEAE										
...POLYEDRIOPSIS	--	-	--	-	--	-	14	1	--	-
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCACEAE										
...CYCLOTELLA	--	-	260	3	230	2	220	1	43	2
...MELOSIRA	--	-	150	1	910	6	--	-	29	1
...PENNALES										
...FRAGILARIACEAE										
...FRAGILARIA	--	-	--	-	--	-	14	1	*	0
...SYNEDRA	--	-	110	1	*	0	--	-	--	-
...NAVICULACEAE										
...DIPLONEIS	--	-	--	-	--	-	*	0	--	-
...NAVICULA	59	2	*	0	--	-	*	0	14	1
...NITZSCHIA										
...NITZSCHIA	20	1	800	8	*	0	790	5	--	-
...SURIPELLACEAE										
...SURIPELLA	20	1	--	-	--	-	--	-	--	-
...XANTHOPHYCEAE										
...HETEROCOCCALES										
...CENTRITRACTACEAE										
...CENTRITRACTUS	--	-	--	-	--	-	14	1	*	0
CRYPTOPHYTA (CRYPTOMONADS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
...CRYPTOCHRYSIDACEAE										
...CHROOMONAS	59	2	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

NECHES RIVER BASIN

08041000 NECHES RIVER AT EVADALE, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

(CONTINUED)

DATE TIME	NOV 29,77 0930		APR 3,78 1310		MAY 10,78 1130		JUL 13,78 1050		AUG 7,78 1250		SEP 13,78 1245	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...HORMOGONALES												
...OSCILLATORIAEAE												
...PHORMIDIUM	--	-	--	-	--	-	--	-	--	-	590	6
...CHROCOCCALES												
...CHROCOCCAEAE												
...AGMENELLUM	--	-	--	-	1400	9	--	-	--	-	910	9
...ANACYSTIS	--	-	1200	13	5400#	36	6500#	45	300#	15	4100#	40
...COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-	250	2
...HORMOGONALES												
...NOSTOCACEAE												
...ANABAENA	--	-	--	-	--	-	--	-	230	12	550	5
...CYLINDROSPERMUM	--	-	--	-	--	-	--	-	130	7	--	-
...OSCILLATORIAEAE												
...LYNGBYA	--	-	--	-	--	-	570	4	--	-	--	-
...OSCILLATORIA	570#	17	730	7	--	-	--	-	--	-	--	-
...CHROCOCCALES												
...CHROCOCCAEAE												
...GOMPHOSPHERIA	--	-	--	-	810	5	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)												
..EUGLENOPHYCEAE												
...EUGLENALES												
...EUGLENACEAE												
...TRACHELOMONAS	--	-	* 0		230	2	140	1	72	4	--	-
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...PERIDINIALES												
...PERIDINIAEAE												
...PERIDINIUM	--	-	--	-	--	-	* 0		--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	57380	192	110	17000	25	3910	26	3960	38
NOV. 1977.....	21540	193	110	6400	25	1480	26	1490	38
DEC. 1977.....	54386	135	81	11900	17	2430	21	3010	29
JAN. 1978.....	121807	134	81	26600	16	5400	21	6760	28
FEB. 1978.....	151850	157	92	37600	20	8140	23	9320	33
MAR. 1978.....	64840	204	110	19900	27	4750	26	4630	39
APR. 1978.....	65930	219	120	21800	30	5260	28	4900	41
MAY 1978.....	60890	212	120	19600	28	4670	27	4450	40
JUNE 1978.....	81140	202	110	24500	27	5870	26	5760	39
JULY 1978.....	95070	208	120	30200	28	7130	27	6920	40
AUG. 1978.....	57070	210	120	18300	28	4340	27	4150	40
SEPT 1978.....	16575	196	110	4910	26	1160	26	1150	38
TOTAL	848478	**	**	239000	**	54500	**	56500	**
WTD.AVG.	2324.6	182	100	**	24	**	25	**	36

NECHES RIVER BASIN

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08041000 NECHES RIVER AT EVADALE, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	190	193	122	175	137	189	212	227	211	210	205	190
2	191	192	94	164	126	190	214	228	213	209	211	195
3	191	194	88	160	124	190	213	225	210	210	213	198
4	192	187	100	162	125	189	214	220	209	211	211	197
5	193	194	117	164	157	190	212	218	210	210	210	198
6	195	188	118	165	152	192	211	204	193	209	208	202
7	194	194	122	164	148	190	212	210	200	208	205	206
8	195	192	124	165	133	187	215	211	201	209	208	211
9	193	191	144	160	138	183	218	218	168	206	212	203
10	190	190	147	157	140	180	207	211	183	209	208	199
11	191	192	160	163	142	178	210	213	195	208	209	201
12	193	196	175	166	155	183	208	215	203	207	208	203
13	191	208	150	157	156	189	209	212	202	208	211	201
14	193	194	101	158	189	198	213	210	197	208	213	200
15	191	200	105	160	138	212	208	211	195	210	207	194
16	190	206	115	163	169	197	224	207	199	207	210	190
17	191	208	124	162	179	198	268	210	198	206	208	185
18	193	198	140	156	176	202	255	208	199	209	210	179
19	191	199	157	134	173	200	290	206	200	207	212	178
20	193	199	159	145	172	202	288	203	203	209	215	186
21	194	194	156	152	173	219	213	207	202	206	213	192
22	195	196	160	150	175	220	217	209	203	204	212	190
23	197	194	158	147	172	220	218	211	204	209	216	193
24	193	196	160	125	175	222	220	210	205	202	217	195
25	195	194	162	116	178	224	218	214	206	206	216	196
26	192	193	160	112	180	219	215	212	206	207	216	198
27	193	194	159	116	182	222	212	214	207	206	219	200
28	195	192	160	114	189	220	213	215	206	209	220	202
29	192	184	164	118	---	219	212	212	207	208	207	203
30	194	175	163	119	---	222	213	213	208	209	202	213
31	193	---	170	125	---	221	---	212	---	209	195	---
MEAN	193	194	140	148	159	202	222	213	201	208	211	197

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	22.0	15.0	10.0			---	25.0	28.0	30.0	30.0	---
2	28.0	22.0	16.0	10.0			---	25.0	28.0	29.0	30.0	29.0
3	27.0	21.0	16.0	10.0			---	25.0	26.0	30.0	30.0	29.0
4	27.0	20.0	16.0	10.0			---	---	28.0	30.0	30.0	29.0
5	27.0	20.0	15.0	11.0			---	---	29.0	30.0	30.0	30.0
6	27.0	20.0	15.0	11.0			---	---	26.0	31.0	30.0	30.0
7	26.0	20.0	16.0	12.0			---	---	28.0	31.0	31.0	29.0
8	26.0	20.0	16.0	12.0			22.0	---	28.0	30.0	---	28.0
9	26.0	19.0	14.0	11.0			23.0	---	28.0	30.0	---	27.0
10	25.0	19.0	14.0	10.0			23.0	26.0	29.0	30.0	31.0	29.0
11	24.0	17.0	14.0	9.0			20.0	25.0	30.0	31.0	31.0	26.0
12	24.0	17.0	14.0	9.0			21.0	26.0	30.0	31.0	31.0	28.0
13	24.0	17.0	14.0	8.0			22.0	26.0	---	31.0	31.0	27.0
14	23.0	17.0	14.0	8.0			22.0	26.0	30.0	31.0	31.0	28.0
15	23.0	17.0	14.0	8.0			23.0	26.0	30.0	31.0	31.0	28.0
16	23.0	18.0	14.0	8.0			23.0	27.0	30.0	31.0	31.0	29.0
17	23.0	17.0	14.0	8.0			23.0	27.0	30.0	32.0	31.0	29.0
18	23.0	18.0	13.0	7.0			23.0	27.0	30.0	32.0	31.0	---
19	23.0	18.0	13.0	6.0			23.0	27.0	30.0	31.0	32.0	30.0
20	23.0	18.0	13.0	6.0			23.0	27.0	30.0	31.0	31.0	30.0
21	23.0	18.0	13.0	8.0			23.0	27.0	30.0	31.0	31.0	---
22	23.0	18.0	13.0	8.0			23.0	28.0	30.0	30.0	31.0	29.0
23	23.0	18.0	13.0	8.0			23.0	28.0	30.0	28.0	30.0	29.0
24	23.0	18.0	13.0	8.0			23.0	28.0	30.0	30.0	30.0	29.0
25	22.0	18.0	13.0	8.0			23.0	28.0	30.0	30.0	31.0	29.0
26	22.0	20.0	12.0	8.0			24.0	28.0	30.0	30.0	31.0	28.0
27	22.0	20.0	11.0	---			23.0	28.0	30.0	28.0	31.0	26.0
28	22.0	20.0	10.0	---			23.0	28.0	30.0	28.0	---	27.0
29	22.0	17.0	10.0	---			23.0	28.0	29.0	30.0	30.0	26.0
30	---	14.0	10.0	---			23.0	28.0	30.0	30.0	30.0	26.0
31	---	---	10.0	---			---	29.0	---	30.0	29.0	---
MEAN	24.0	18.5	13.5	9.0			22.5	27.0	29.0	30.5	30.5	28.5

NECHES RIVER BASIN

08041500 VILLAGE CREEK NEAR KOUNTZE, TX

LOCATION.--Lat 30°23'52", long 94°15'48", Hardin County, Hydrologic Unit 12020006, at downstream side of bridge on Farm Road 418, 1.6 mi (2.6 km) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.1 mi (5.0 km) upstream from Cypress Creek, 3.4 mi (5.5 km) northeast of Kountze, and 4.3 mi (6.9 km) downstream from Beech Creek.

DRAINAGE AREA.--860 mi² (2,227 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to September 1927, October 1927 to November 1929 (discharge measurements only), April 1939 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 25.12 ft (7.657 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 30, 1939, nonrecording gage at site 1.6 mi (2.6 km) downstream at different datum. Apr. 30, 1939, to Sept. 30, 1966, water-stage recorder at site 2,000 ft (610 m) downstream at present datum.

REMARKS.--Water-discharge records good. Small diversions above station.

AVERAGE DISCHARGE.--42 years, 806 ft³/s (22.83 m³/s), 12.73 in/yr (323 mm/yr), 583,900 acre-ft/yr (720 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,200 ft³/s (1,900 m³/s) Nov. 26, 1940, gage height, 27.6 ft (8.41 m), former site, from floodmark, from rating curve extended above 32,000 ft³/s (906 m³/s); minimum not determined, probably occurred during period of no gage-height record Sept. 16 to Oct. 3, 1956; minimum daily, 16 ft³/s (0.45 m³/s) Oct. 1, 2, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1884, about 34 ft (10.4 m) in August 1915 at site 2,000 ft (610 m) downstream at present datum. Flood of May 27, 1929, reached a stage of about 32 ft (9.8 m) at site 2,000 ft (610 m) downstream at present datum. Above stages were determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi (2.6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,340 ft³/s (123 m³/s) Jan. 28, gage height, 15.13 ft (4.612 m); minimum, 55 ft³/s (1.56 m³/s) Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	97	1300	435	1940	732	361	135	144	79	140	153
2	111	99	1540	422	2130	706	342	133	115	75	117	159
3	117	108	1670	399	2370	681	325	140	108	74	102	150
4	110	125	1500	381	2670	656	310	146	122	75	94	161
5	105	141	998	371	3020	636	297	160	130	99	101	191
6	102	139	640	358	3130	618	286	188	134	104	99	189
7	100	128	498	352	2530	657	277	193	303	92	119	172
8	100	123	422	387	2110	959	269	178	623	81	120	141
9	99	126	371	578	2180	1120	261	167	450	78	117	120
10	99	169	342	660	2350	1050	254	163	361	75	116	113
11	106	261	316	717	2410	837	250	159	287	72	104	142
12	145	284	293	728	2380	698	251	149	225	67	90	200
13	157	230	328	946	2390	628	261	136	173	65	82	229
14	143	184	1040	1180	2500	585	274	127	161	77	77	302
15	130	161	1640	1370	2730	562	271	123	143	99	76	441
16	119	148	2070	1280	3090	538	249	119	132	88	77	584
17	110	141	2280	1470	2990	499	231	113	130	97	90	518
18	106	138	2120	1840	2560	454	220	109	118	91	103	370
19	115	138	1540	2230	2180	424	214	106	108	86	85	248
20	117	137	978	2720	1880	407	207	102	107	81	74	202
21	112	141	658	3160	1680	399	198	102	100	82	67	192
22	105	276	521	3370	1510	398	185	100	94	84	63	169
23	100	520	456	3190	1300	398	174	96	93	90	60	153
24	97	616	430	2830	1050	400	168	93	89	85	58	142
25	97	564	411	3120	922	535	165	90	84	76	59	130
26	99	431	397	3800	853	792	160	87	79	86	60	120
27	100	352	379	4160	803	786	156	85	77	107	58	113
28	105	317	363	4320	764	617	148	83	74	138	60	108
29	106	353	359	3990	---	492	142	81	74	165	72	103
30	104	877	378	3100	---	425	138	80	78	163	89	98
31	100	---	416	2260	---	390	---	100	---	159	116	---
TOTAL	3430	7524	26654	56124	58422	19079	7044	3843	4916	2890	2745	6113
MEAN	111	251	860	1810	2087	615	235	124	164	93.2	88.5	204
MAX	157	877	2280	4320	3130	1120	361	193	623	165	140	584
MIN	97	97	293	352	764	390	138	80	74	65	58	98
CFSM	.13	.29	1.00	2.11	2.43	.72	.27	.14	.19	.11	.10	.24
IN.	.15	.33	1.15	2.43	2.53	.83	.30	.17	.21	.13	.12	.26
AC-FT	6800	14920	52870	111300	115900	37840	13970	7620	9750	5730	5440	12130
CAL YR 1977	TOTAL	226364	MEAN 620	MAX 3710	MIN 88	CFSM .72	IN 9.79	AC-FT 449000				
WTR YR 1978	TOTAL	198784	MEAN 545	MAX 4320	MIN 58	CFSM .63	IN 8.60	AC-FT 394300				

NECHES RIVER BASIN

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08041500 VILLAGE CREEK NEAR KOUNTZE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: November 1967 to current year. Water temperatures: November 1967 to September 1970.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
DEC 06...	1705	634	116	5.7	15.0	19	15	4.9	1.6	12
JAN 17...	1000	1250	107	5.7	7.0	17	13	4.6	1.3	12
FEB 22...	1490	1490	117	5.8	7.0	16	10	4.1	1.4	13
MAY 02...	1705	133	113	6.6	22.0	19	7	5.6	1.3	12
SEP 12...	1800	197	109	5.9	25.5	25	18	8.1	1.2	13
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
DEC 06...	1.2	1.4	5	0	5.3	26	.1	11		65
JAN 17...	1.3	1.1	5	0	5.1	25	.0	11		63
FEB 22...	1.4	1.1	7	0	7.3	24	.0	9.1		63
MAY 02...	1.2	1.1	15	0	3.1	22	.0	13		66
SEP 12...	1.1	1.5	9	0	7.8	27	.1	12		75

NECHES RIVER BASIN

08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX

LOCATION.--Lat 30°06'21", long 94°20'04", Jefferson-Hardin County line, Hydrologic Unit 12020007, on right bank at downstream side of bridge on county road 5.1 mi (8.2 km) southeast of Sour Lake.

DRAINAGE AREA.--336 mi² (870 km²).

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Water-discharge records fair. No known diversions. Low flow for period March through September was sustained by drainage from ricefields. National Weather Service gage-height telemeter at this station.

AVERAGE DISCHARGE.--11 years, 404 ft³/s (11.44 m³/s), 292,700 acre-ft/yr (361 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s (309 m³/s) June 11, 1975, elevation, 30.83 ft (9.400 m); minimum daily, 0.58 ft³/s (0.016 m³/s) Nov. 8, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1917, about 31 ft (9.4 m) in September 1963, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,230 ft³/s (148 m³/s) Nov. 24, elevation, 28.42 ft (8.662 m); minimum daily, 1.4 ft³/s (0.040 m³/s) Nov. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.2	3300	132	1500	114	44	55	12	33	84	15
2	3.0	11	3010	131	1310	98	39	61	12	34	63	11
3	7.6	21	2570	125	1130	86	42	63	53	35	54	11
4	12	18	2130	117	952	76	79	34	111	36	48	14
5	13	10	1700	109	813	70	64	33	85	42	34	8.4
6	7.3	5.4	1370	101	707	57	52	31	149	49	26	7.3
7	4.3	3.2	1080	93	650	131	40	42	778	49	22	7.3
8	3.2	2.3	855	89	855	220	65	30	961	52	21	7.3
9	3.7	2.4	665	83	966	211	52	31	681	54	15	7.3
10	3.1	2.4	513	79	1080	193	29	18	494	46	9.7	22
11	3.3	10	377	78	1160	189	27	13	406	46	6.9	46
12	4.5	11	264	254	1180	180	62	23	398	70	9.5	86
13	4.4	7.0	307	401	1200	158	96	20	415	77	4.9	115
14	4.0	4.0	608	499	1230	134	67	21	928	75	3.5	165
15	3.6	2.7	666	539	1240	112	45	22	767	70	3.2	122
16	3.4	2.7	793	645	1180	91	40	39	416	65	3.2	93
17	3.3	2.7	882	1110	1070	70	40	30	183	59	3.1	70
18	3.2	1.7	861	1330	1000	55	38	37	95	52	2.8	41
19	3.0	1.4	770	1720	973	44	36	25	66	41	2.5	28
20	2.8	2.2	665	1940	926	36	35	22	53	53	2.2	22
21	2.6	1310	574	2020	830	29	56	18	44	47	1.9	18
22	2.4	3470	455	2130	691	24	52	16	33	237	1.8	20
23	2.4	4980	318	2180	562	21	49	20	26	438	1.7	18
24	2.5	5200	208	2380	442	23	65	35	22	222	1.6	15
25	102	4920	151	2570	334	29	108	26	20	120	1.6	11
26	81	4260	124	2560	236	33	63	28	21	95	1.5	9.0
27	36	3540	104	2370	173	34	33	20	27	114	1.7	7.8
28	16	2900	89	2180	135	57	30	21	34	216	9.7	7.0
29	7.1	2600	93	2010	---	68	49	20	29	236	46	6.4
30	3.7	3320	113	1850	---	64	52	27	30	142	32	6.2
31	2.5	---	126	1660	---	56	---	21	---	89	17	---
TOTAL	354.0	36623.3	25741	33485	24525	2763	1549	902	7349	2994	535.0	1017.0
MEAN	11.4	1221	830	1080	876	89.1	51.6	29.1	245	96.6	17.3	33.9
MAX	102	5200	3300	2570	1500	220	108	63	961	438	84	165
MIN	2.4	1.4	89	78	135	21	27	13	12	33	1.5	6.2
AC-FT	702	72640	51060	66420	48650	5480	3070	1790	14580	5940	1060	2020
CAL YR 1977	TOTAL	141932.3	MEAN	389	MAX	5200	MIN	1.4	AC-FT	281500		
WTR YR 1978	TOTAL	137837.3	MEAN	378	MAX	5200	MIN	1.4	AC-FT	273400		

NECHES RIVER BASIN

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08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1968 to current year.

WATER TEMPERATURES: February 1968 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,600 micromhos Mar. 23, 1968; minimum daily, 34 micromhos June 12, 1975.

WATER TEMPERATURES (1968-76): Maximum daily, 37.0°C Sept. 15, 1972; minimum daily, 2.0°C Jan. 11, 1973.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 674 micromhos Mar. 27; minimum daily, 51 micromhos Nov. 25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 25...	1830	137	197	6.8	23.0	46	19	15	2.1	17
NOV 14...	1430	6.0	394	7.6	23.0	71	19	22	3.9	46
DEC 05...	1705	1610	96	6.1	18.0	18	7	5.4	1.0	9.7
JAN 12...	1050	243	205	6.8	8.0	41	19	13	2.0	21
FEB 13...	1545	1260	76	6.7	8.5	16	5	4.9	1.0	7.9
MAR 02...	1745	930	221	7.1	16.0	40	17	13	1.8	24
APR 24...	1615	840	367	6.7	28.0	83	66	26	4.3	31
MAY 01...	1610	62	618	6.8	25.0	100	86	31	6.1	70
JUN 26...	1800	22	251	7.1	34.0	49	12	15	2.9	26
JUL 10...	2315	42	271	7.4	29.0	48	5	14	3.1	29
AUG 03...	1815	70	299	7.8	31.0	49	0	15	2.8	34
SEP 17...	2200	42	245	7.4	--	47	6	15	2.4	31

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
OCT 25...	1.1	4.4	33	0	16	25	.1	8.0	104
NOV 14...	2.4	3.4	64	0	18	73	.1	3.9	202
DEC 05...	1.0	1.6	13	0	8.5	15	.1	5.3	53
JAN 12...	1.4	1.8	26	0	11	40	.1	6.0	108
FEB 13...	.9	.9	14	0	7.8	12	.0	3.7	45
MAR 02...	1.7	1.8	28	0	7.5	44	.0	2.5	108
APR 24...	1.5	3.7	20	0	52	54	.2	6.5	188
MAY 01...	3.0	4.0	20	0	34	140	.2	11	306
JUN 26...	1.6	2.0	46	0	17	35	.2	7.6	128
JUL 10...	1.8	1.6	52	0	18	40	.2	8.4	140
AUG 03...	2.1	2.1	67	0	11	42	.3	11	151
SEP 17...	2.0	3.6	51	0	13	41	.1	12	143

NECHES RIVER BASIN

08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	353	288	150	145	52	49	15	14	57
NOV. 1977.....	36623.29	75	40	3920	12	1200	4	384	15
DEC. 1977.....	25741	107	57	3940	17	1220	6	395	21
JAN. 1978.....	33485	86	46	4120	14	1270	5	413	17
FEB. 1978.....	24525	88	46	3080	14	956	5	306	17
MAR. 1978.....	2763	231	120	911	39	288	12	91	46
APR. 1978.....	1549	375	200	823	67	281	20	83	74
MAY 1978.....	902	402	210	518	75	184	21	52	80
JUNE 1978.....	7349	205	110	2160	34	666	11	215	41
JULY 1978.....	2994	217	110	924	35	286	11	92	43
AUG. 1978.....	534	316	170	241	55	79	17	24	62
SEPT 1978.....	1016	292	160	426	50	137	16	42	58
TOTAL	137837.12	**	**	21200	**	6620	**	2110	**
WTD.AVG.	377.64	108	57	**	18	**	5.9	**	21

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	417	275	90	231	88	205	327	622	328	238	215	613
2	435	270	76	228	95	221	343	350	320	240	259	532
3	460	263	62	224	103	231	340	347	290	260	299	521
4	456	386	93	232	109	240	331	345	250	276	277	475
5	432	362	97	240	100	246	352	351	288	298	305	463
6	400	330	105	234	95	266	438	356	224	275	350	445
7	360	300	119	239	94	204	450	339	201	255	395	429
8	381	280	117	248	87	250	375	450	189	249	329	425
9	374	309	126	259	80	225	345	521	200	272	370	421
10	425	316	142	279	74	185	359	530	230	271	395	196
11	478	394	159	286	72	180	353	538	279	271	480	230
12	483	393	174	233	76	177	337	470	285	252	416	260
13	487	394	160	216	78	174	330	460	155	278	421	308
14	545	395	130	145	73	170	379	471	140	234	418	260
15	580	392	124	131	78	185	330	441	150	240	417	240
16	475	394	112	122	82	197	328	400	209	243	415	286
17	400	397	115	106	81	205	325	361	249	238	417	245
18	386	402	120	88	83	215	340	410	294	251	416	258
19	407	420	127	81	85	223	356	450	310	239	419	285
20	418	429	132	67	86	242	374	456	303	255	420	313
21	430	64	138	54	97	252	387	440	300	274	424	316
22	444	54	139	63	90	285	379	419	298	213	420	305
23	455	74	151	83	84	320	374	377	299	119	417	315
24	464	60	162	70	103	349	366	353	279	261	406	347
25	179	51	171	77	123	355	368	358	263	247	395	343
26	227	82	174	75	142	412	425	325	251	235	388	339
27	289	85	192	77	161	674	375	333	244	142	359	384
28	285	91	187	76	182	392	400	339	232	185	254	375
29	282	97	200	74	---	327	520	343	236	227	295	359
30	279	100	230	75	---	318	575	310	238	214	416	342
31	257	---	256	77	---	308	---	306	---	216	515	---
MEAN	400	262	141	151	96	266	376	406	251	241	378	354

NECHES RIVER BASIN

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08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	---	22.0	12.0	9.0	17.0	---	---	28.0	---	30.0	25.0
2	---	18.0	---	---	---	16.0	22.0	---	28.0	31.0	30.0	29.0
3	---	25.0	21.0	11.0	---	14.0	23.0	---	---	30.0	31.0	28.0
4	20.0	19.0	22.5	9.0	10.0	---	24.0	---	---	30.0	30.0	---
5	20.0	20.0	19.0	13.0	---	13.0	23.0	24.0	29.5	30.0	28.0	29.0
6	---	---	17.5	13.0	9.0	14.0	24.0	24.0	27.0	---	---	---
7	23.0	---	16.0	17.0	7.0	18.0	---	25.0	29.0	---	29.5	27.0
8	25.5	21.0	16.0	---	---	13.0	---	---	28.0	28.0	30.0	---
9	22.0	20.0	15.0	9.5	---	13.0	---	21.0	---	29.0	30.0	25.0
10	---	20.0	---	8.0	---	13.0	22.0	---	27.0	29.0	32.0	25.0
11	21.0	18.0	13.0	9.0	---	---	18.5	---	27.0	---	29.0	---
12	19.0	20.0	14.5	9.0	---	---	17.0	---	28.0	27.5	30.5	27.0
13	18.0	21.0	---	9.0	8.5	---	---	---	26.5	32.0	29.0	---
14	---	23.0	---	7.5	9.0	18.0	21.0	30.0	---	31.0	---	27.0
15	20.0	20.0	15.0	---	---	17.0	26.0	29.0	27.0	---	---	28.0
16	---	22.0	16.0	10.0	8.0	18.0	24.0	---	28.0	32.0	28.0	27.0
17	20.0	---	---	9.0	---	16.5	28.0	29.0	29.0	---	---	27.0
18	17.0	19.0	---	8.0	8.0	---	---	---	29.0	32.0	---	27.0
19	21.0	---	---	7.0	---	18.0	---	30.5	---	32.0	---	---
20	22.5	20.0	---	---	---	---	---	31.0	---	---	30.5	27.0
21	---	19.0	10.0	7.0	---	20.0	25.0	25.0	---	31.0	30.5	---
22	---	20.0	12.0	6.0	---	---	20.0	29.0	30.0	25.0	---	25.0
23	---	19.0	14.0	8.0	11.0	---	---	27.0	32.0	25.0	29.0	---
24	24.0	19.0	---	---	11.0	20.5	28.0	25.0	32.0	29.0	---	---
25	23.5	20.0	16.0	9.0	15.0	15.0	26.0	---	32.0	---	---	---
26	24.0	---	11.5	---	---	16.0	25.0	---	34.0	---	30.0	23.0
27	22.0	---	10.5	11.0	12.0	14.0	---	30.0	29.0	25.0	30.0	25.0
28	---	---	---	---	16.0	20.0	---	---	29.0	---	24.0	---
29	---	---	---	---	---	19.0	---	28.0	30.0	28.0	28.0	---
30	22.0	18.0	---	11.0	---	---	---	28.0	---	27.0	28.5	---
31	22.0	---	13.0	11.0	---	21.0	---	30.0	---	---	---	---
MEAN	21.5	20.0	15.5	9.5	10.5	16.5	23.5	27.5	29.0	29.0	29.5	26.5

TAYLOR BAYOU BASIN

08042000 TAYLOR BAYOU NEAR LABELLE, TX

LOCATION.--Lat 29°52'30", long 94°09'34", Jefferson County, Hydrologic Unit 12040201, near center of stream at downstream side of bridge on county road, 0.7 mi (1.1 km) south of LaBelle, 6.0 mi (9.7 km) upstream from Hillebrandt Bayou, 7.2 mi (11.6 km) upstream from State Highway 73, and 11.2 mi (18.0 km) upstream from saltwater gates and barge locks. Distances are measured along rectified channel.

DRAINAGE AREA.--262 mi² (679 km²).

PERIOD OF RECORD.--April 1954 to current year, complete records for storms of 1.0 inch (25.4 mm) or more runoff, except for the period Sept. 10-22, 1961.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft (1.411 m) below National Geodetic Vertical Datum of 1929, determined by several comparisons of water surface with auxiliary water-stage recorder 7.2 mi (11.6 km) downstream during times of no flow and ideal weather conditions.

REMARKS.--Records good. Discharge is computed using fall as a factor. Discharge for recessions of large rises with insufficient fall are estimated. Small rises with insufficient fall are not computed. Low flow is regulated by drainage from ricefields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,590 ft³/s (272 m³/s) Sept. 22, 1963; maximum gage height, 11.78 ft (3.591 m) Sept. 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft (0.704 m) July 17, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1941, that of Sept. 20, 1963. Flood in 1941 reached a stage of 11.3 ft (3.44 m), from information by Corps of Engineers; flood in 1946 reached a stage of 10.4 ft (3.17 m), from county bridge plans; flood of Sept. 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft (3.508 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,910 ft³/s (167 m³/s) Dec. 2; maximum gage height, 8.92 ft (2.719 m) Dec. 1; minimum discharge not determined (affected by tides and pumping); minimum gage height, 3.47 ft (1.058 m) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Nov. 21	1,470	Dec. 1	5,580	Jan. 26	4,030
22	4,140	2	5,750	27	2,250
23	5,030	3	4,860	28	600
24	4,590	4	3,250	June 6	700
25	3,170	5	1,800	7	1,660
26	1,600	6	500	8	2,310
27	300	Jan. 23	350	9	2,170
29	850	24	2,840	10	1,210
30	4,130	25	4,520	11	300

CAL YR 1977..... MAX 5,750
WTR YR 1978..... MAX 5,750

TAYLOR BAYOU BASIN

405

08042500 HILLEBRANDT BAYOU NEAR LOVELL LAKE, TX

LOCATION.--Lat 29°55'44", long 94°06'35", Jefferson County, Hydrologic Unit 12040201, near center of stream at downstream side of bridge on county road, 1.3 mi (2.1 km) southeast of Lovell Lake, and 4.4 mi (7.1 km) upstream (along rectified channel) from Taylor Bayou.

DRAINAGE AREA.--128 mi² (332 km²).

PERIOD OF RECORD.--April 1954 to current year, complete records for storms of 1.0 inch (25.4 mm) or more runoff, except for the period Sept. 11-18, 1961.

GAGE.--Water-stage recorder. Auxiliary water-stage recorder 3.0 mi (4.8 km) downstream. Datum of gage is 4.63 ft (1.411 m) below National Geodetic Vertical Datum of 1929, determined by comparisons of water surface with Taylor Bayou near LaBelle, auxiliary gage 5.6 mi (9.0 km) downstream, during times of no flow and ideal weather conditions. Prior to Aug. 28, 1963, auxiliary water-stage recorder on Taylor Bayou 1.2 mi (1.9 km) downstream from Hillebrandt Bayou, nonrecording gages on Taylor Bayou 2.3 and 5.2 mi (3.7 and 8.4 km) downstream from Hillebrandt Bayou.

REMARKS.--Records poor. Discharge computed using fall as a factor. Discharge for recessions of large rises with insufficient fall are estimated. Small rises with insufficient fall are not computed. Low flow is regulated by drainage from ricefields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Sept. 18, 1963; maximum gage height, 12.34 ft (3.761 m) Sept. 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft (0.710 m) July 17, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1941, 12.34 ft (3.761 m) Sept. 19, 1963. A stage of 11.56 ft (3.523 m) occurred Sept. 13, 1961 (backwater caused by Hurricane Carla).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,700 ft³/s (133 m³/s) Nov. 30; maximum gage height, 8.89 ft (2.710 m) Dec. 1; minimum discharge not determined (affected by tides and pumping); minimum gage height, about 3.5 ft (1.07 m) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Nov. 21	1,400	Dec. 4	400	Jan. 24	3,410
22	2,100	Jan. 16	500	25	2,240
23	800	17	1,360	26	900
24	100	18	900	27	300
29	800	19	1,300	June 6	800
30	4,500	20	500	7	1,700
Dec. 1	3,800	21	100	8	1,400
2	2,200	23	600	9	400
3	1,000				

CAL YR 1977..... MAX 4,500
WTR YR 1978..... MAX 4,500

08042650 NORTH CREEK SUBWATERSHED NO. 28-A NEAR JERMYN, TX

LOCATION.--Lat 33°14'52", long 98°19'19", Jack County, Hydrologic Unit 12030101, near center of earthfill dam on unnamed tributary of North Creek, 0.2 mi (0.3 km) upstream from North Creek, and 4.0 mi (6.4 km) southeast of Jermyrn.

DRAINAGE AREA.--6.82 mi² (17.66 km²).

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Water-stage recorder and flat-crested weir on concrete drop inlet. Datum of gage is 1,090.39 ft (332.351 m) Soil Conservation Service Datum. Prior to Oct. 5, 1972, staff gage at same datum.

REMARKS.--Records poor. The pool is formed by a rolled earthfill dam 1,800 ft (549 m) long with a 100-foot-wide (30 m) earthen spillway at the left end of dam. The crest of emergency spillway is at gage height 33.5 ft (10.21 m). The dam was completed in March 1972, and storage began May 12, 1972. The outlet structure consists of a 2.5- by 7.5-foot (0.8 by 2.3 m) uncontrolled concrete drop-inlet structure that is connected to a 30-inch (762 mm) concrete outlet pipe. The drop-inlet structure is also equipped with a 12-inch-diameter (305 mm) slide gate near the bottom of the tower with invert at a gage height of 8.61 ft (2.62 m). The crest of the drop inlet is at gage height 18.12 ft (5.52 m). The capacity of pool at crest of emergency spillway is 1,940 acre-ft (2.39 hm³), the capacity at crest of the drop inlet is 245 acre-ft (302,000 m³), and the capacity at the crest of the controlled outlet pipe is 24 acre-ft (29,600 m³). The capacity table below 18.12 ft (5.52 m) was computed using the average-end-area method from a surface area table based on a survey of Mar. 14, 1972. The capacity table above 18.12 ft (5.52 m) was computed using the average-end-area method and based on an area table furnished by the Soil Conservation Service.

AVERAGE INFLOW.--6 years (water years 1973-78), 593 acre-ft/yr (731,000 m³/yr), 1.63 in/yr (41 mm/yr).

AVERAGE OUTFLOW.--6 years (water years 1973-78), 363 acre-ft/yr (448,000 m³/yr), 1.00 in/yr (25 mm/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum inflow, 1,430 ft³/s (40.5 m³/s), average for 5-minute interval, Oct. 30, 1974, computed from change in pool contents and adjusted for rainfall on pool surface during time of peak inflow; no inflow at times each year. Maximum outflow, 96.2 ft³/s (2.72 m³/s) Oct. 30, 1974, gage height, 22.80 ft (6.949 m); no outflow most of time each year.

EXTREMES FOR CURRENT YEAR.--Peak inflow above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Date	Time	Discharge (ft ³ /s) (m ³ /s)
Apr. 9	2045	*1,330 37.7	Aug. 5	0850	456 12.9

NOTE.--Average for 5-minute interval. Inflow computed and adjusted as explained above.

Minimum discharge, no inflow at times. Maximum outflow, 47.9 ft³/s (1.36 m³/s) Apr. 9, gage height, 19.14 ft, (5.834 m); no outflow October to March, May to July and September.

POOL WATER BUDGET, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Total 1/ Outflow	2.9	0.9	0.9	0.4	2.7	0.8	243	1.2	3.7	0.1	127	0.8
(†)	0	0	0	0	0	0	76.4	0	0	0	5.2	0
(††)	-19.3	-13.4	-13.5	-8.3	-2.8	-10.1	+150	-25.7	-28.3	-39.1	+97.7	-29.9
	.74	.93	.24	.70	1.79	1.42	4.86	1.89	1.58	0	7.34	.80
CAL YR 1977	INFLOW	761	OUTFLOW	637	†	-128	††	23.72				
WTR YR 1978	INFLOW	384	OUTFLOW	81.6	†	+57.3	††	22.29				

1/ Inflow adjusted for rainfall on pool and pool losses.

† Change in contents, in acre-feet.

†† Weighted-mean rainfall, in inches.

TRINITY RIVER BASIN

407

08042700 NORTH CREEK NEAR JACKSBORO, TX

LOCATION.--Lat 33°16'57", Long 98°17'53", Jack County, Hydrologic Unit 12030101, near left bank on downstream side of bridge on U.S. Highway 281, 1.7 mi (2.7 km) upstream from Henderson Creek, 8.4 mi (13.5 km) upstream from mouth, and 9.5 mi (15.3 km) northwest of Jacksboro.

DRAINAGE AREA.--21.6 mi² (55.9 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,016.33 ft (309.78 m) Texas Department of Highways and Public Transportation datum.

REMARKS.--Records good. No diversions above station. Five rain gages (two nonrecording and three recording) are operated in the basin. At end of year, flow from 16.3 mi² (42.2 km²) above this station was partly controlled by five floodwater-retarding structures with a total detention capacity of 3,940 acre-ft (4.86 hm³). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1957-70) prior to completion of floodwater-retarding structures, 5.75 ft³/s (0.163 m³/s), 3.62 in/yr (92 mm/yr), 4,170 acre-ft/yr (5.14 hm³/yr); 7 years (water years 1971-78) regulated, 2.09 ft³/s (0.0592 m³/s), 1.31 in/yr (33 mm/yr), 1,510 acre-ft/yr (1.86 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft³/s (198 m³/s), Apr. 28, 1957, gage height, 24.45 ft (7.452 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, that of Apr. 18, 1957. Significant floods occurred in April 1915, from information by local resident, and on May 3, 1956, which reached a stage of 21.58 ft (6.578 m), from floodmark, discharge 5,700 ft³/s (161 m³/s), from rating curve.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,610 ft³/s (45.6 m³/s) Apr. 9, gage height, 13.75 ft (4.191 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.17	.08	.11	.35	.00	.00	.00	.00
2	.00	.00	.00	.00	.10	.09	.09	.68	.00	.00	.00	.00
3	.00	.00	.00	.00	.08	.07	.09	.83	.01	.00	23	.00
4	.00	.00	.00	.00	.07	.05	.09	.43	.01	.00	.94	.00
5	.00	.00	.00	.00	.08	.03	.08	.38	.00	.00	19	.00
6	.00	.00	.00	.00	.08	.09	.21	.36	1.5	.00	1.0	.00
7	.00	.00	.00	.00	.07	.28	.07	.34	.43	.00	.21	.00
8	.00	.00	.00	.00	.06	.16	.06	.27	.25	.00	.01	.00
9	.00	.00	.00	.00	.06	.11	176	.23	.06	.00	.00	.06
10	.00	.00	.00	.00	.06	.11	125	.21	.01	.00	.00	.00
11	.00	.00	.00	.00	.09	.12	53	.22	.00	.00	.00	.00
12	.00	.00	.00	.00	.24	.10	6.4	.22	.00	.00	.00	.00
13	.00	.00	.00	.00	.19	.11	2.0	.13	.00	.00	.00	.00
14	.00	.00	.00	.00	.09	.10	1.3	.12	.00	.00	.00	.00
15	.00	.00	.00	.00	.13	.09	1.1	.13	.00	.00	.00	.00
16	.00	.00	.00	.06	.13	.07	.96	.07	.00	.00	.00	.00
17	.00	.00	.00	.06	.11	.08	.86	.06	.00	.00	.00	.00
18	.00	.00	.00	.04	.09	.10	.79	.05	.00	.00	.00	.00
19	.00	.00	.00	.02	.09	.10	.71	.01	.00	.00	1.4	.00
20	.00	.00	.00	.02	.13	.12	.69	.00	.00	.00	.18	.00
21	.00	.00	.00	.03	.11	.12	.65	.02	.00	.00	.00	.00
22	.00	.00	.00	.04	.10	.11	.66	.03	.00	.00	.00	.00
23	.00	.00	.00	.06	.11	.15	.65	.01	.00	.00	.00	.00
24	.00	.00	.00	.08	.11	.19	.60	.00	.00	.00	.00	.00
25	.00	.00	.00	.12	.09	.11	.52	.00	.00	.00	.00	.00
26	.00	.00	.00	.09	.07	.11	.43	.00	.00	.00	.00	.00
27	.00	.00	.00	.04	.08	.12	.42	.00	.00	.00	.00	.00
28	.00	.00	.00	.02	.10	.13	.42	1.0	.00	.00	.00	.00
29	.00	.00	.00	.03	---	.12	.38	.06	.00	.00	.00	.00
30	.00	.00	.00	.06	---	.11	.38	.01	.00	.11	.00	.00
31	.00	---	.00	.12	---	.11	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.89	2.89	3.44	374.72	6.22	2.27	.11	45.74	.06
MEAN	.000	.000	.000	.029	.10	.11	12.5	.20	.076	.004	1.48	.002
MAX	.00	.00	.00	.12	.24	.28	176	1.0	1.5	.11	23	.06
MIN	.00	.00	.00	.00	.06	.03	.06	.00	.00	.00	.00	.00
CFSM	.000	.000	.000	.001	.005	.005	.58	.009	.004	.000	.07	.000
IN.	.00	.00	.00	.00	.07	.01	.65	.01	.00	.00	.08	.00
AC-FT	.00	.00	.00	1.8	5.0	6.8	743	12	4.5	.2	91	.1
CAL YR 1977 TOTAL	1267.25			MEAN 3.47	MAX 446	MIN .00	CFSM .16	IN 2.18	AC-FT 2510			
WTR YR 1978 TOTAL	436.34			MEAN 1.20	MAX 176	MIN .00	CFSM .06	IN .75	AC-FT 865			

TRINITY RIVER BASIN

08042800 WEST FORK TRINITY RIVER NEAR JACKSBORO, TX

LOCATION.--Lat 33°17'36", long 98°04'43", Jack County, Hydrologic Unit 12030101, near left bank on downstream side of bridge on State Highway 59, 4 mi (6 km) downstream from Big Cleveland Creek, 7 mi (11 km) upstream from Carroll Creek, 7 mi (11 km) northeast of Jacksboro, and at mile 660 (1,060 km).

DRAINAGE AREA.--683 mi² (1,769 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stagerecorder. Datum of gage is 869.28 ft (264.96 m) Texas Department of Highways and Public Transportation datum. Sept. 20, 1960, to May 30, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good. At end of year, flow from 70.9 mi³ (183.6 km³) above this station was partly controlled by 21 floodwater-retarding structures with a combined detention capacity of 19,680 acre-ft (24.4 hm³). Tarrant County Water Control and Improvement District gage-height telemeter at station.

AVERAGE DISCHARGE.--22 years (water years 1957-78), 96.9 ft³/s (2.744 m³/s), 0.35 in/yr (9 mm/yr), 70,200 acre-ft/yr (86.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,100 ft³/s (994 m³/s) Apr. 27, 1957, gage height, 32.10 ft (9.784 m), from floodmark; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, that of Apr. 27, 1957. Flood in June 1941 reached a stage of 30 ft (9.1 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 837 ft³/s (23.7 m³/s) June 8, gage height, 13.23 ft (4.033 m), no peak above base of 1,200 ft³/s (34.0 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.04	13	.00	.00	30
2	.00	.00	.00	.00	.00	.00	.00	.19	6.1	.00	.00	.75
3	.00	.00	.00	.00	.00	.00	.00	.93	8.9	.00	.00	.50
4	.00	.00	.00	.00	.00	.00	.00	.29	3.4	.00	17	.25
5	.00	.00	.00	.00	.00	.00	.00	.45	1.8	.00	76	.07
6	.00	.00	.00	.00	.00	.00	.00	.95	142	.00	280	.05
7	.00	.00	.00	.00	.00	.00	.00	1.9	606	.00	160	.03
8	.00	.00	.00	.00	.00	.00	.00	1.2	803	.00	62	.02
9	.00	.00	.00	.00	.00	.00	.06	.88	739	.00	24	.01
10	.00	.00	.00	.00	.00	.00	218	.59	175	.00	12	.00
11	.00	.00	.00	.00	.00	.00	641	.46	38	.00	6.4	.00
12	.00	.00	.00	.00	.00	.00	677	.30	14	.00	4.1	.00
13	.00	.00	.00	.00	.00	.00	93	.16	6.9	.00	2.6	.00
14	.00	.00	.00	.00	.00	.00	16	.09	150	.00	2.7	.00
15	.00	.00	.00	.00	.00	.00	7.9	.07	509	.00	8.2	.00
16	.00	.00	.00	.00	.00	.00	4.5	.05	178	.00	8.9	.00
17	.00	.00	.00	.00	.00	.00	2.7	.04	40	.00	5.7	.00
18	.00	.00	.00	.00	.00	.00	1.8	.04	12	.00	3.6	.00
19	.00	.00	.00	.00	.00	.00	1.1	.03	5.3	.00	2.2	.00
20	.00	.00	.00	.00	.00	.00	.72	.02	2.6	.00	1.6	.00
21	.00	.00	.00	.00	.00	.00	.58	.07	1.4	.00	4.7	.00
22	.00	.00	.00	.00	.00	.00	.45	.25	.77	.00	5.1	.00
23	.00	.00	.00	.00	.00	.00	.33	.19	.42	.00	2.1	.00
24	.00	.00	.00	.00	.00	.00	.22	.12	.28	.00	1.2	.00
25	.00	.00	.00	.00	.00	.00	.14	.07	.20	.00	.69	.00
26	.00	.00	.00	.00	.00	.00	.10	.04	.12	.00	.43	.00
27	.00	.00	.00	.00	.00	.00	.07	.01	.04	.00	.31	.00
28	.00	.00	.00	.00	.00	.00	.06	37	.02	.00	.16	.00
29	.00	.00	.00	.00	---	.00	.06	115	.01	.00	.08	.00
30	.00	.00	.00	.00	---	.00	.05	329	.00	.00	.03	.00
31	.00	---	.00	.00	---	.00	---	72	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	1665.84	562.43	3457.26	.00	691.80	31.68
MEAN	.000	.000	.000	.000	.000	.000	55.5	18.1	115	.000	22.3	1.06
MAX	.00	.00	.00	.00	.00	.00	677	329	803	.00	280	30
MIN	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.000	.08	.03	.17	.000	.03	.002
IN.	.00	.00	.00	.00	.00	.00	.09	.03	.19	.00	.04	.00
AC-FT	.00	.00	.00	.00	.00	.00	3300	1120	6860	.00	1370	63
CAL YR 1977	TOTAL	33607.03	MEAN 92.1	MAX 2990	MIN .00	CFSM .14	IN 1.83	AC-FT 66660				
WTR YR 1978	TOTAL	6409.01	MEAN 17.6	MAX 803	MIN .00	CFSM .03	IN .35	AC-FT 12710				

TRINITY RIVER BASIN

409

08042800 WEST FORK TRINITY RIVER NEAR JACKSBORO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM
APR 10...	1040	43	17.0	2650	311	83	91	94	97	98	100

08043000 BRIDGEPORT RESERVOIR ABOVE BRIDGEPORT, TX

LOCATION.--Lat 33°13'22", Long 97°49'54", Wise County, Hydrologic Unit 12030101, at left end of Bridgeport Dam on West Fork Trinity River, 4.6 mi (7.4 km) west of Bridgeport, 13 mi (21 km) upstream from Big Sandy Creek, and at mile 626 (1,007 km).

DRAINAGE AREA.--1,111 mi² (2,877 km²).

PERIOD OF RECORD.--April 1932 to current year (prior to October 1950, monthend figures only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 26, 1944, non-recording gages at various sites in vicinity of present gage at present datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 2,040 ft (622 m) long. The dam was completed in December 1931 and storage began Apr. 1, 1932. The original dam was 1,900 ft (580 m) long, but was lengthened to the present length (2,040 ft or 622 m) in 1971-72. The original service spillway was eliminated during construction (1971-72), and a new spillway with approach and discharge channels was built through natural ground 2,800 ft (850 m) from the left end of dam. The new spillway is 90 ft (27 m) wide and has eight vertical lift gates that are 11.25 ft by 22 ft (3.43 by 7 m). The controlled outlet works consist of a 48-inch-diameter (1,219 mm) and an 18-inch-diameter (457 mm) pipe encased in a concrete conduit extending through the dam. In addition, a controlled 60-inch-diameter (1,524 mm) steel pipe extends through the service spillway wall to the spillway discharge basin. For elevations of outlet works, see table below. Capacity tables are based on surveys made in 1956 and 1968. 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.....	874.0	-
Crest of spillway.....	866.0	902,000
Top of gates.....	842.0	469,300
Top of conservation pool.....	836.0	387,000
Crest of spillway.....	820.0	812,400
Lowest gated outlet (spillway, at spillway).....	810.0	133,200
Lowest gated outlet (invert).....	751.4	0

COOPERATION.--Daily elevation and monthly diversion records furnished by Tarrant County Water Control and Improvement District No. 1. Capacity table furnished by Freese and Nichols, Consulting Engineers, for Tarrant County Water Control and Improvement District No. 1.

EXTREMES (at 0370) FOR PERIOD OF RECORD.--Maximum contents observed, 407,600 acre-feet (503 hm³) Apr. 29, 30, 1942, elevation, 836.2 ft (254.87 m); maximum elevation, 836.55 ft (254.980 m) May 27, 1977; minimum contents since first appreciable storage in 1935, 7,170 acre-ft (8.84 hm³) Oct. 12-16, 1956.

EXTREMES (at 0730) FOR CURRENT YEAR.--Maximum contents observed, 307,300 acre-ft (379 hm³) Oct. 1, elevation, 829.42 ft (252.807 m); minimum observed, 158,500 acre-ft (195 hm³) Sept. 30, elevation, 813.49 ft (247.952 m).

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

813.0	154,800	825.0	260,100
816.0	178,200	828.0	291,600
819.0	203,500	830.0	313,900
822.0	230,800		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 0730

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	307300	288900	273200	257000	244200	243400	242900	245100	246200	231400	198200	173400
2	306800	288300	272900	256300	244000	243500	242800	245100	246200	230100	196800	172900
3	306300	287400	272700	255700	243900	243400	242800	245600	246400	229200	195800	172200
4	305700	286800	272500	255200	243700	243300	242800	245500	246600	228200	195000	171500
5	304700	286100	272300	254800	243600	243200	242800	245300	246400	227100	194700	170900
6	303800	285600	272100	254500	243500	243100	242900	245300	246900	225900	194600	170200
7	303100	285200	271100	254000	243400	243600	242800	245200	247700	224600	194100	169300
8	302700	285000	270500	253400	243500	243600	242700	245200	249300	223600	193500	168500
9	302000	284400	269700	252900	243600	243500	242700	245100	249700	222400	192700	168700
10	301200	283600	268900	252300	243400	243200	244600	244900	250600	221300	191900	168700
11	300600	282800	268100	251900	243200	243200	244800	244800	250700	220300	191000	168300
12	299600	282400	267500	251600	243600	243200	245700	244700	250300	219200	190000	167600
13	299000	281900	267200	251100	243800	243200	246700	244500	249900	218000	189000	167100
14	298400	281300	266900	250600	243500	243300	247100	244400	249400	217000	188100	166600
15	297600	280900	266400	250100	243400	243300	247100	244200	249100	215800	187300	166200
16	296900	280500	265900	249800	243400	243200	247000	243600	249500	214700	186700	165700
17	296200	280100	265400	249500	243600	243100	247000	243200	247100	213500	185700	165100
18	295700	279300	265000	249100	243700	243100	246900	242900	246000	212200	184800	164500
19	295200	278700	264500	248900	243700	243000	246800	242200	245000	211200	183900	163900
20	294600	278300	263700	248400	243700	243000	246700	241800	244000	210100	183000	163300
21	294000	277700	263000	248000	243700	243000	246400	242900	242900	208900	182300	162800
22	293500	277100	262100	247600	243600	242900	246200	242600	241800	207800	181500	162200
23	293600	276500	261500	247200	243600	242900	246100	242200	240400	206700	180600	161600
24	293000	275700	261000	247000	243500	243500	245900	241600	239300	206100	179500	161100
25	292400	275200	260500	246800	243500	243300	245800	241000	238200	204900	178600	160700
26	292100	274600	259900	246500	243400	243200	245600	240500	237200	204000	177700	159800
27	291600	274100	259400	246000	243400	243100	245400	239900	236000	203600	176700	159500
28	291000	273500	258800	245600	243500	242900	245200	240100	234600	202600	175900	159400
29	290600	273500	258600	245200	---	242900	245000	245100	233400	201500	177100	159000
30	290000	273400	258100	244800	---	242900	244800	245600	232300	200400	175200	158500
31	289400	---	257600	244400	---	242900	---	246000	---	199400	174200	---
MAX	307300	288900	273200	257000	244200	243600	247100	246000	250700	231400	198200	173400
MIN	289400	273400	257600	244400	243200	242900	242700	239900	232300	199400	174200	158500
(†)	827.80	826.30	824.75	823.42	823.33	823.26	823.46	823.58	822.16	818.53	815.51	813.49
(‡)	-18300	-16000	-15800	-13200	-900	-600	+1900	+1200	-13700	-32900	-25200	-15700
(††)	482	254	337	241	241	307	322	324	356	466	401	327

CAL YR 1977 MAX 394100 MIN 257600 † -93900 †† 3780
WTR YR 1978 MAX 307300 MIN 158500 ‡ -149200 †† 4060

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses.

TRINITY RIVER BASIN

411

08044000 BIG SANDY CREEK NEAR BRIDGEPORT, TX

LOCATION.--Lat 33°13'54", long 97°41'40", Wise County, Hydrologic Unit 12030101, on downstream side of bridge on U.S. Highway 380, 1.9 mi (3.1 km) upstream from Greathouse Branch, 4.0 mi (6.4 km) east of Bridgeport, and 4.4 mi (7.1 km) upstream from mouth.

DRAINAGE AREA.--333 mi² (862 km²).

PERIOD OF RECORD.--October 1936 to current year.

REVISED RECORDS.--WSP 1148: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 727.44 ft (221.724 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Since May 1, 1956, flow from 100 mi² (259 km²) above station is affected at times by storage in Lake Amon G. Carter 30 mi (48 km) upstream, capacity 15,240 acre-ft (18.8 hm³) at elevation 920.0 ft (280.42 m), spillway crest. Records furnished by city of Bowie show that during the current year 968 acre-ft (1.19 hm³) was diverted from Lake Amon G. Carter for municipal use and 329 acre-ft (406,000 m³) of sewage effluent was discharged into tributaries above station. Flow also affected at times by discharge from 13 flood-detention pools of floodwater-retarding structures with a combined capacity of 10,840 acre-ft (13.4 hm³). The 13 structures control runoff from 37.5 mi² (97.1 km²) between this station and Lake Amon G. Carter. Tarrant County Water Control and Improvement District No. 1 gage-height telemeter at station.

AVERAGE DISCHARGE.--42 years, 71.5 ft³/s (2.025 m³/s), 51,800 acre-ft/yr (63.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s (1,500 m³/s) June 10, 1941, gage height, 15.69 ft (4.782 m), from floodmark, from rating curve extended above 22,000 ft³/s (623 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1887 occurred in 1908 and 1915 and reached about same stage as that of June 10, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 826 ft³/s (23.4 m³/s) May 28, gage height, 7.10 ft (2.164 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.16	2.9	4.0	4.4	1.3	21	.02	.00	.00
2	.00	.00	.00	.17	3.2	4.4	4.4	.85	262	.02	.00	.00
3	.00	.00	.00	.11	3.0	4.2	4.4	4.5	137	.02	.00	.00
4	.00	.00	.00	.09	2.9	4.2	4.9	4.6	64	.01	.00	.00
5	.00	.00	.00	.11	2.6	4.0	4.6	8.4	24	.01	4.8	.00
6	.00	.00	.00	.20	2.6	3.8	4.4	9.2	48	.00	5.3	.00
7	.00	.00	.00	.29	2.6	4.4	4.0	8.2	421	.00	1.8	.00
8	.00	.00	.00	.22	2.9	8.2	3.8	5.7	418	.00	.34	.00
9	.00	.00	.00	.17	3.7	10	3.6	3.8	144	.00	.06	.00
10	.00	.00	.00	.25	3.7	9.2	19	1.8	57	.00	.00	.23
11	.00	.00	.00	.26	4.0	7.7	72	1.0	27	.00	.00	.03
12	.00	.00	.00	.44	5.4	6.7	33	.85	15	.00	.00	.00
13	.00	.00	.00	.60	9.4	5.7	14	.58	10	.00	.00	.00
14	.00	.00	.00	.74	12	5.1	8.2	.50	8.2	.00	.00	.00
15	.00	.00	.00	.73	11	5.1	6.2	.30	7.0	.00	.00	.00
16	.00	.00	.00	1.0	7.9	5.1	4.6	.20	5.8	.00	.00	.00
17	.00	.00	.00	1.3	6.9	4.6	3.8	.30	4.5	.00	.00	.00
18	.00	.00	.00	1.8	6.7	4.4	3.8	.28	3.0	.00	.00	.00
19	.00	.00	.00	1.8	6.0	4.0	3.1	.27	2.0	.00	.00	.00
20	.00	.00	.00	1.8	5.1	3.6	1.9	.34	1.5	.00	.00	.00
21	.00	.00	.00	1.9	5.1	3.6	1.8	57	1.1	.00	.00	.00
22	.00	.00	.00	1.9	5.3	3.4	1.5	67	.83	.00	.00	.00
23	.00	.00	.00	2.1	6.4	3.6	1.4	13	.70	2.7	.00	.00
24	.00	.00	.00	2.1	5.7	5.7	1.4	4.1	.54	.86	.00	.00
25	.00	.00	.00	2.3	5.5	17	1.3	1.3	.39	.05	.00	.00
26	.00	.00	.00	2.4	5.1	14	1.2	1.0	.26	.00	.00	.00
27	.00	.00	.00	2.3	4.6	10	.85	.76	.09	3.2	.00	.00
28	.00	.00	.02	2.3	4.2	7.4	.85	196	.06	.02	.00	.00
29	.00	.00	.05	2.2	---	6.2	.85	606	.04	.00	.00	.00
30	.00	.00	.10	2.2	---	5.7	1.3	291	.03	.00	.00	.00
31	.00	---	.14	2.4	---	5.0	---	47	---	.00	.00	---
TOTAL	.00	.00	.31	36.34	146.4	190.0	220.55	1337.13	1684.04	6.91	12.30	.26
MEAN	.000	.000	.010	1.17	5.23	6.13	7.35	43.1	56.1	.22	.40	.009
MAX	.00	.00	.14	2.4	12	17	72	606	421	3.2	5.3	.23
MIN	.00	.00	.00	.09	2.6	3.4	.85	.20	.03	.00	.00	.00
AC-FT	.00	.00	.6	72	290	377	437	2650	3340	14	24	.5
CAL YR 1977	TOTAL	24180.68	MEAN	66.2	MAX	5400	MIN	.00	AC-FT	47960		
WTR YR 1978	TOTAL	3634.24	MEAN	9.96	MAX	606	MIN	.00	AC-FT	7210		

TRINITY RIVER BASIN

08044500 WEST FORK TRINITY RIVER NEAR BOYD, TX

LOCATION (revised).--Lat 33°05'07", long 97°33'30", Wise County, Hydrologic Unit 12030101, on right bank at downstream side of highway embankment 10 ft (3 m) right of right abutment of bridge on Farm Road 730, 0.6 mi (1.0 km) northeast of Boyd, 3.5 mi (5.6 km) downstream from Boggy Creek, and at mile 602 (969 km).

DRAINAGE AREA.--1,725 mi² (4,468 km²).

PERIOD OF RECORD.--January 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 660.57 ft (201.342 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 14, 1954, water-stage recorder at site 2.2 mi (3.5 km) downstream at datum 5.48 ft (1.670 m) lower.

REMARKS.--Records good. During the current year, sustained flows were the result of releases for water supply from Bridgeport Reservoir (station 08043000) 25 mi (40 km) upstream from this station, drainage area 1,111 mi² (2,877 km²). In addition, flow from 100 mi² (259 km²) is affected by storage in Lake Amon G. Carter, capacity 15,240 acre-ft (18.8 hm³), on Big Sandy Creek. Several observations of water temperature were made during the year. Tarrant County Water Control and Improvement District No. 1 gage-height telemeter at station.

AVERAGE DISCHARGE.--31 years, 217 ft³/s (6.145 m³/s), 157,200 acre-ft/yr (194 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,300 ft³/s (773 m³/s) Oct. 5, 1959, gage height, 22.17 ft (6.757 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 25 ft (7.6 m), present site and datum, in May 1908, from information by local residents, who also report a flood of about the same height in the period 1870-80. Flood in April 1942 reached a stage of 20.6 ft (6.28 m), present site and datum, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,070 ft³/s (30.3 m³/s) May 29, gage height, 15.09 ft (4.599 m); minimum daily, 3.6 ft³/s (0.10 m³/s) Apr. 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	241	79	185	136	10	4.0	4.3	89	435	413	339
2	5.0	245	78	184	134	10	3.6	6.1	94	435	414	352
3	4.5	239	78	181	83	9.0	3.6	119	201	434	417	336
4	30	236	75	184	64	8.4	4.5	43	101	432	423	335
5	210	235	45	185	63	8.2	6.8	15	60	429	440	333
6	220	236	7.7	184	63	8.5	4.8	14	42	428	445	331
7	220	236	55	183	63	10	4.5	16	152	427	424	330
8	220	248	197	180	63	10	4.4	15	403	427	417	329
9	220	232	196	181	64	10	4.7	12	353	427	413	179
10	220	231	196	180	64	11	123	10	265	426	413	206
11	220	230	197	184	63	10	90	8.1	217	423	412	152
12	220	228	198	186	71	8.7	49	6.9	197	422	411	151
13	220	228	201	184	78	8.2	22	5.7	187	421	412	151
14	220	229	198	183	72	7.3	13	5.5	182	422	410	150
15	220	229	199	182	72	7.1	9.3	5.1	179	420	391	150
16	220	228	200	185	43	6.8	7.7	48	179	420	377	148
17	220	228	196	147	18	6.5	6.9	120	410	420	378	148
18	218	236	196	134	14	6.3	5.9	124	450	420	378	149
19	216	242	196	136	14	5.9	6.0	156	450	419	378	151
20	215	237	193	134	15	5.9	5.7	182	451	419	379	154
21	218	235	193	133	12	5.8	4.9	494	449	420	378	162
22	225	235	194	133	12	5.4	4.6	402	449	419	378	162
23	234	232	196	133	12	5.8	4.9	238	449	422	378	164
24	230	222	195	134	12	7.8	4.9	193	447	428	377	164
25	228	221	191	134	11	6.5	4.7	184	446	425	375	161
26	227	220	190	134	11	11	4.5	180	444	422	376	161
27	227	224	188	134	10	9.4	4.4	179	441	430	376	163
28	235	224	188	133	10	7.0	4.4	260	439	424	375	165
29	236	122	190	132	---	5.4	4.4	923	436	417	234	163
30	240	82	189	133	---	4.8	4.4	826	436	416	184	162
31	242	---	188	134	---	4.3	---	261	---	414	314	---
TOTAL	6087.0	6711	5082.7	4949	1347	241.0	425.5	5055.7	9098	13143	11890	6201
MEAN	196	224	164	160	48.1	7.77	14.2	163	303	424	384	207
MAX	242	248	201	186	136	11	123	923	451	435	445	352
MIN	4.5	82	7.7	132	10	4.3	3.6	4.3	42	414	184	148
AC-FT	12070	13310	10080	9820	2670	478	844	10030	18050	26070	23580	12300
CAL YR 1977	TOTAL	107275.7	MEAN 294	MAX 5390	MIN 4.5	AC-FT 212800						
WTR YR 1978	TOTAL	70230.9	MEAN 192	MAX 923	MIN 3.6	AC-FT 139300						

08045000 EAGLE MOUNTAIN RESERVOIR ABOVE FORT WORTH, TX

LOCATION.--Lat 32°52'39", long 97°28'29", Tarrant County, Hydrologic Unit 12030101, at right end of main section (left) of Eagle Mountain Dam on West Fork Trinity River, 11.8 mi (19.0 km) northwest of Fort Worth, and at mile 583.3 (938.5 km).

DRAINAGE AREA.--1,970 mi² (5,102 km²).

PERIOD OF RECORD.--February 1934 to current year (prior to October 1950, monthend figures only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Feb. 24, 1943, nonrecording gages at several sites within 1.0 mi (1.6 km) of present site at present datum.

REMARKS.--The reservoir is formed by two sections of rolled earthfill and a concrete spillway separated by high natural ground. The total length of the dam, including spillway, is 4,800 ft (1,500 m). The dam was completed Oct. 24, 1932, and storage began Feb. 28, 1934. The emergency spillway is a 1,300-foot-wide (400 m) cut through natural ground located between the two sections of earthfill that make up the dam. The original service spillway, located in the section to the right of the main dam, contains a concrete spillway with four 25 ft (8 m) bays, three are equipped with vertical lift gates and the fourth is left open. In 1971, a side-channel spillway was constructed. The newest spillway is located 300 ft (90 m) to the left of the original service spillway and has six 11.25- by 22-foot-wide (3.43 by 7 m) roller lift gates. The main section of the dam contains the outlet works that consist of two concrete conduits with two 48-inch-diameter (1,219 mm) valves in each conduit. The reservoir is used for flood control and for part of the municipal water supply for the city of Fort Worth. Capacities are based on a survey made in 1968. For storage above the reservoir, see REMARKS for West Fork Trinity River near Boyd (station 08044500). 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.....	682.0	-
Crest of spillway.....	676.0	558,000
Top of gates (new side-channel spillway).....	659.0	295,400
Crest of (old service) spillway (top of conservation pool).....	649.1	190,400
Crest of spillway (new side-channel spillway).....	637.0	99,120
Lowest gated outlet (invert).....	599.9	94

COOPERATION.--Daily elevation and monthly diversion records furnished by Tarrant County Water Control and Improvement District No. 1. Capacity table furnished by Freese and Nichols, Consulting Engineers, for Tarrant County Water Control and Improvement District No. 1.

EXTREMES (at 0700) FOR PERIOD OF RECORD.--Maximum contents observed, 333,500 acre-feet (411 hm³) Apr. 26, 1942, elevation, 659.9 ft (201.14 m); minimum observed since first appreciable storage in 1935, 57,690 acre-ft (71.1 hm³) Nov. 19, 20, 1956.

EXTREMES (at 0700) FOR CURRENT YEAR.--Maximum contents observed, 176,200 acre-ft (217 hm³) Mar. 7, elevation, 647.52 ft (197.364 m); minimum observed, 167,100 acre-ft (206 hm³) May 18, 19, elevation, 646.45 ft (197.038 m).

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

646.0	163,300
647.0	171,700
648.0	180,400

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 0700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175200	169800	169200	169900	173700	175600	171500	169000	171800	168700	168100	168200
2	174500	169800	169000	170000	173800	175600	171300	168700	171900	168600	168000	168400
3	173800	169800	169200	169900	173900	175600	171200	169800	171500	168400	167900	168600
4	172700	169800	169500	169800	173700	175500	170900	170100	171500	168400	167900	168800
5	172100	169700	169300	170200	173600	175500	170600	170200	171300	168300	168200	168700
6	171900	169600	169200	170200	173300	175400	170500	169800	170900	168200	172600	168900
7	171800	169600	169100	170400	173400	176200	170200	169800	170600	168000	169400	168900
8	171700	170200	168800	170400	173500	176100	170000	169400	170500	167900	169400	168900
9	171700	170800	168700	170400	173500	175900	169800	169300	170400	168000	169500	169100
10	171500	170000	168700	170400	173500	175600	173600	169200	170400	168200	169600	169200
11	171500	169800	168700	170400	173500	175700	174000	168900	170300	168200	169700	169200
12	171300	169800	168800	170400	174200	175400	173900	168500	170000	168100	169600	169200
13	171100	169800	169000	171500	174600	175200	173900	168400	170100	168000	169600	169200
14	170900	169600	169100	172000	174700	175200	173700	168000	170000	168000	169600	169200
15	170800	169500	169100	172000	175100	175200	173300	167700	169800	167900	169400	169200
16	170700	169600	169000	172200	175300	175000	173000	167500	169500	168000	169400	169200
17	170400	169600	169100	172500	175500	174600	172700	167200	169200	167900	169200	169200
18	170400	169500	169200	172700	175700	174100	172700	167100	169400	167700	169000	169000
19	170400	169400	169200	172800	175800	173700	172600	167100	169700	167600	168900	168700
20	170300	169500	169400	172900	175800	173600	172000	167200	169600	167400	168900	168600
21	170100	169500	169400	173000	175900	173500	171600	167500	169800	167300	168800	168900
22	170100	169200	169100	173000	175700	173300	171300	167900	169800	167200	169000	168700
23	170300	169100	169200	173000	175700	173200	171200	168100	169400	167300	168900	168700
24	170300	169000	169200	173500	175600	173700	170800	168100	169300	168100	168800	168700
25	170300	168900	169200	173600	175600	173400	170600	167900	169200	168200	168700	168700
26	170200	168800	169200	173500	175700	173000	170300	167600	169100	168200	168700	168700
27	170200	168700	169400	173400	175700	172700	169800	167600	168900	168400	168600	168700
28	170100	168700	169300	173400	175700	172500	169300	167600	168900	168300	168500	168800
29	170000	168700	169600	173500	---	172400	169000	169600	168800	168200	169100	168800
30	170000	169200	169800	173400	---	172100	168900	170800	168700	168200	169000	168900
31	169800	---	169800	173500	---	171800	---	171700	---	168200	168500	---
MAX	175200	170800	169800	173600	175900	176200	174000	171700	171900	168700	172600	169200
MIN	169800	168700	168700	169800	173300	171800	168900	167100	168700	167200	167900	168200
(†)	646.78	646.70	646.78	647.21	647.46	647.01	646.67	647.00	646.65	646.58	646.62	646.67
(‡)	-5600	-600	+600	+3700	+2200	-3900	+2800	+2800	-3000	-500	+300	+400
(††)	278	278	299	358	242	217	265	355	579	760	495	301
CAL YR 1977	MAX	195300	MIN	168700	†	-200	††	4080				
WTR YR 1978	MAX	176200	MIN	167100	†	-6500	††	4430				

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses.

TRINITY RIVER BASIN

08045800 LAKE WEATHERFORD NEAR WEATHERFORD, TX

LOCATION.--Lat 32°46'21", long 97°40'28", Parker County, Hydrologic Unit 12030102, in pumphouse 168 ft (51 m) upstream from right end of dam on Clear Fork Trinity River, 2.4 mi (3.9 km) downstream from Hays Branch, 3.9 mi (6.3 km) upstream from Squaw Creek, and 7.3 mi (11.7 km) east of Weatherford.

DRAINAGE AREA.--109 mi² (282 km²).

PERIOD OF RECORD.--June 1976 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 earthfilled dam 4,055 ft (1,236 m) long. The dam was completed and deliberate impoundment began in March 1957. The service spillway is a semi-circular drop inlet with a crest length of 162 ft (49 m) located 550 ft (168 m) to the right of the pumphouse. The drop inlet discharges into a 9 by 9 ft (3 by 3 m) concrete conduit that extends 425 ft (130 m) under the dam. The emergency spillway is an uncontrolled excavated split-level cut channel located at the right of dam. The low-flow outlet works consist of an 18-inch-diameter (457 mm) concrete pipe with a valve control assembly. At end of year, flow from 43.9 mi² (113.7 km²) above this station was partly affected at times by discharge from the flood-detention pools of 22 floodwater-retarding structures with a combined detention capacity of 11,000 acre-ft (13.6 hm³). Records furnished by the city of Weatherford show that 2,480 acre-ft (3.06 hm³) was diverted from the lake for municipal use during the year. 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.....	914.0	-
Crest of spillway.....	903.0	28,530
Invert of drop inlet (spillway).....	896.0	19,070
Invert of lowest gated outlet pipe.....	857.0	88

COOPERATION.--Records of diversions were furnished by the city of Weatherford. The capacity table is based on an April 1973 report by the Soil Conservation Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 23,560 acre-ft (29.0 hm³) Mar. 27, 1977, elevation, 899.65 ft (274.213 m), from highwater mark; minimum, 14,100 acre-ft (17.4 hm³) Sept. 29, 30, 1978, elevation, 891.26 ft (271.656 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 17,330 acre-ft (21.4 hm³) Apr. 12, elevation, 894.42 ft (272.619 m); minimum, 14,100 acre-ft (17.4 hm³) Sept. 29, 30, elevation, 891.26 ft (271.656 m).

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

891.0	13,840
893.0	15,840
895.0	17,960

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16510	16080	15730	15320	15300	15450	15450	17100	17160	16390	15340	14650
2	16450	16030	15720	15310	15290	15450	15450	17190	17110	16400	15320	14640
3	16410	16010	15710	15290	15290	15430	15450	17300	17100	16370	15320	14620
4	16380	16000	15700	15290	15290	15410	15440	17300	17090	16330	15300	14610
5	16400	15990	15680	15290	15280	15390	15470	17280	17050	16290	15330	14590
6	16380	15990	15640	15290	15280	15400	15450	17300	17150	16230	15310	14570
7	16380	15990	15620	15290	15320	15460	15430	17310	17170	16200	15290	14560
8	16360	16060	15610	15260	15330	15450	15420	17290	17160	16170	15260	14540
9	16340	16000	15580	15240	15350	15450	16200	17270	17130	16130	15240	14530
10	16330	15990	15560	15330	15340	15440	17240	17250	17100	16090	15220	14510
11	16280	15970	15560	15330	15350	15440	17320	17240	17070	16050	15190	14490
12	16240	15950	15560	15330	15440	15430	17330	17230	17050	16010	15150	14470
13	16220	15940	15550	15330	15430	15440	17330	17200	17030	15960	15120	14460
14	16200	15930	15540	15330	15420	15430	17320	17180	17000	15930	15080	14430
15	16170	15920	15520	15330	15450	15420	17300	17160	16970	15890	15040	14420
16	16150	15920	15510	15330	15450	15400	17300	17150	16940	15860	14990	14380
17	16130	15900	15490	15330	15490	15390	17300	17130	16920	15800	14940	14340
18	16120	15870	15480	15330	15480	15360	17290	17120	16890	15760	14900	14310
19	16110	15870	15460	15330	15480	15360	17260	17100	16850	15710	14870	14260
20	16090	15880	15440	15320	15490	15420	17230	17140	16810	15670	14850	14240
21	16080	15850	15410	15310	15460	15410	17190	17140	16780	15620	14900	14210
22	16150	15830	15380	15320	15460	15400	17210	17110	16730	15590	14880	14170
23	16140	15820	15380	15310	15460	15570	17230	17100	16680	15650	14850	14150
24	16130	15810	15370	15300	15450	15550	17230	17070	16640	15610	14820	14140
25	16120	15800	15360	15290	15450	15540	17180	17040	16600	15580	14790	14140
26	16110	15770	15340	15280	15440	15530	17160	17020	16560	15560	14760	14140
27	16090	15760	15330	15270	15440	15520	17140	17000	16530	15550	14730	14120
28	16090	15740	15320	15260	15450	15510	17110	17170	16490	15510	14710	14110
29	16070	15740	15340	15260	---	15500	17120	17170	16460	15470	14690	14100
30	16080	15740	15340	15260	---	15490	17100	17150	16420	15440	14660	14100
31	16070	---	15350	15290	---	15480	---	17130	---	15380	14650	---
MAX	16510	16080	15730	15330	15490	15570	17330	17310	17170	16400	15340	14650
MIN	16070	15740	15320	15240	15280	15360	15420	17000	16420	15380	14650	14100
(†)	893.22	892.90	892.52	892.46	892.62	892.65	894.23	893.56	893.56	892.55	891.82	891.26
(+)	-460	-330	-390	-60	+160	+30	+1620	+30	-710	-1040	-730	-550
(††)	190	145	156	154	142	172	193	215	280	362	272	204

CAL YR 1977 MAX 22490 MIN 15320 † -2830 †† 2170
WTR YR 1978 MAX 17330 MIN 14100 † -2430 †† 2480

† Elevation, in feet, at end of month.

† Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by city of Weatherford.

08046500 BENBROOK LAKE NEAR BENBROOK, TX

LOCATION.--Lat 32°39'02", long 97°26'54", Tarrant County, Hydrologic Unit 12030102, in intake structure of Benbrook Dam on Clear Fork Trinity River, 2.5 mi (4.0 km) south of Benbrook, 3.5 mi (5.6 km) upstream from Marys Creek, and 14.6 mi (23.5 km) upstream from mouth.

DRAINAGE AREA.--429 mi² (1,111 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1952 to current year. Prior to October 1970, published as Benbrook Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 9,130 ft (2,780 m) long, including a 500 ft (150 m) uncontrolled off-channel concrete-gravity spillway with a 100 ft (30 m) notch in center of ogee weir section. The outlet works consist of a 13.0-foot-diameter (4.0 m) concrete conduit controlled by two 6.5 by 13.0 ft (2.0 by 4.0 m) broome-type gates and two 30 in (762 mm) steel pipes controlled by slide gates. Deliberate impoundment began Sept. 29, 1952. From August 1950 to Sept. 28, 1952, the lake was operated as a detention basin only. The capacity table is based on a survey made in 1945. The lake was built for flood control, navigation, and low-flow regulation. 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.....	747.0	-
Crest of spillway.....	724.0	258,600
Crest of notch in spillway.....	710.0	164,800
Top of conservation storage.....	694.0	88,250
Crest of intake to wet wells (inverts).....	656.0	6,550
Lowest gated outlet (invert).....	622.0	12

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 185,000 acre-ft (228 hm³) June 6, 1957, elevation, 713.35 ft (217.429 m); minimum since lake first filled in 1957, 64,630 acre-ft (79.7 hm³) Sept. 15, 1964, elevation, 687.18 ft (209.452 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 80,820 acre-ft (99.7 hm³) May 12, elevation, 691.98 ft (210.916 m); minimum, 70,600 acre-ft (87.0 hm³) Sept. 30, elevation, 689.02 ft (210.013 m).

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

689.0	70,530	691.0	77,350
690.0	73,900	692.0	80,890

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78370	76760	75580	74610	74960	76230	77030	80180	80570	78120	74720	72300
2	78190	76690	75580	74650	74990	76160	77030	80320	80530	78010	74650	72240
3	77980	76620	75580	74680	74990	76200	77100	80570	80500	77980	74510	72170
4	77870	76620	75540	74680	74990	76200	77070	80600	80430	77840	74410	72370
5	77840	76620	75370	74650	74990	76270	77170	80600	80350	77700	74580	72300
6	77840	76580	75400	74680	75090	76230	77140	80640	80500	77560	74540	72200
7	77840	76620	75400	74580	75200	76410	77170	80640	80530	77450	74440	72130
8	77700	76720	75230	74510	75270	76410	77140	80640	80500	77310	74340	72100
9	77630	76690	75130	74510	75340	76410	77420	80600	80460	77210	74270	72070
10	77630	76650	75130	74440	75340	76480	77570	80570	80350	77100	74200	72000
11	77380	76620	75130	74650	75370	76440	80070	80680	80280	76930	74100	71930
12	77310	76620	75160	74650	75780	76440	80280	80750	80210	76790	74030	71870
13	77310	76580	75130	74650	75780	76480	80430	80680	80140	76690	73930	71800
14	77240	76580	75160	74610	75820	76440	80530	80640	80070	76580	73790	71700
15	77100	76550	75160	74680	75920	76440	80530	80570	80000	76480	73660	71660
16	77070	76510	75130	74650	75960	76440	80570	80530	79890	76370	73560	71630
17	77000	76440	75090	74650	76200	76410	80570	80500	79750	76230	73450	71530
18	77000	76440	75060	74650	76130	76410	80530	80460	79680	76060	73280	71400
19	77000	76480	74960	74650	76130	76440	80390	80430	79570	75960	73150	71300
20	76960	76370	74850	74680	76130	76480	80320	80430	79460	75820	73080	71200
21	76930	76270	74820	74720	76130	76550	80320	80460	79320	75680	73080	71060
22	76930	76270	74820	74750	76200	76650	80640	80430	79220	75580	73010	71000
23	76890	76230	74780	74750	76160	76930	80710	80390	79070	75710	72910	71000
24	76860	76230	74780	74750	76230	77000	80710	80320	78970	75650	72840	70960
25	76860	76160	74680	74780	76200	77070	80680	80250	78790	75540	72740	70830
26	76860	76060	74650	74750	76200	77030	80680	80180	78680	75470	72640	70800
27	76790	75890	74610	74750	76230	77070	80640	80140	78540	75370	72540	70800
28	76790	75750	74650	74780	76200	77070	80680	80600	78440	75270	72440	70730
29	76760	75680	74720	74780	---	77070	80430	80710	78330	75160	72400	70660
30	76760	75610	74750	74780	---	77070	80210	80680	78230	75030	72340	70600
31	76760	---	74750	74890	---	77070	---	80600	---	74890	72270	---
MAX	78370	76760	75580	74890	76230	77070	80710	80750	80570	78120	74720	72370
MIN	76760	75610	74610	74440	74960	76160	77030	80140	78230	74890	72270	70600
(+)	690.83	690.50	690.25	690.29	690.67	690.92	691.81	691.92	691.25	690.29	689.52	689.02
(#)	-1820	-1150	-860	+140	+1310	+870	+3140	+390	-2370	-3340	-2620	-1670

CAL YR 1977 MAX 129900 MIN 74610 # -16160
WTR YR 1978 MAX 80750 MIN 70600 # -7980

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

TRINITY RIVER BASIN

08046500 BENBROOK LAKE NEAR BENBROOK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO_3)	HARDNESS, NONCARBONATE (MG/L AS CaCO_3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)
DEC 13...	1050	345	7.6	11.0	130	14	40	7.0	18
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO_3)	CARBONATE (MG/L AS CO_3)	SULFATE DIS-SOLVED (MG/L AS SO_4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO_2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
DEC 13...	.7	4.1	140	0	25	23	.3	6.4	193

TRINITY RIVER BASIN

417

08047000 CLEAR FORK TRINITY RIVER NEAR BENBROOK, TX

LOCATION.--Lat 32°39'54", long 97°26'30", Tarrant County, Hydrologic Unit 12030102, on left bank 1.5 mi (2.4 km) downstream from Benbrook Dam, 1.7 mi (2.7 km) southeast of Benbrook, 2.9 mi (4.7 km) upstream from Marys Creek, and 13.1 mi (21.1 km) upstream from mouth.

DRAINAGE AREA.--431 mi² (1,116 km²).

PERIOD OF RECORD.--July 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 604.22 ft (184.166 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good. Flow regulated by Benbrook Lake (station 08046500) since September 1952. Diversion 1.0 mi (1.6 km) upstream for Pecan Valley Golf Course. Several observations of water temperature were made during the year. A gage-height telemeter was installed by the Corps of Engineers on Nov. 29, 1977.

AVERAGE DISCHARGE.--5 years (water years 1948-52), prior to regulation by Benbrook Lake, 105 ft³/s (2.974 m³/s), 76,070 acre-ft/yr (93.8 hm³/yr); 26 years (water years 1953-77) regulated, unadjusted, 64.0 ft³/s (1.812 m³/s), 46,370 acre-ft/yr (57.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 82,900 ft³/s (2,350 m³/s) May 17, 1949, gage height, 28.72 ft (8.754 m), from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of velocity-area studies and slope-area measurement of 82,900 ft³/s (2,350 m³/s); no flow at times most years. Maximum discharge since construction of Benbrook Dam in 1952, 4,350 ft³/s (123 m³/s) June 26, 1957, gage height, 11.28 ft (3.438 m); maximum gage height, 12.20 ft (3.719 m) Apr. 7, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1922, that of May 17, 1949.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 311 ft³/s (8.81 m³/s) Apr. 19, gage height, 4.16 ft (1.268 m); minimum daily, 0.01 ft³/s (0.0003 m³/s) Oct. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.54	.12	19	.47	.66	.13	.12	.31	9.4	11	7.8	10
2	1.3	.14	.48	.47	.42	.13	.12	2.7	9.8	11	8.0	10
3	18	.10	.13	.47	.35	.13	.10	1.8	9.6	11	8.5	10
4	2.8	.13	.18	.47	.32	.15	.11	.35	9.6	11	7.2	10
5	2.1	.14	.20	.47	.39	.16	.14	.42	8.2	11	8.1	10
6	.26	.13	.13	.39	1.2	.19	.16	.49	10	10	8.1	10
7	.16	.16	.10	.32	.92	.37	.13	.47	10	11	8.1	10
8	.12	.76	.12	.56	.35	.23	.10	.46	11	11	7.2	10
9	.12	.19	.10	.56	.19	.23	.12	.18	11	11	7.2	11
10	.10	.10	.10	.56	.13	.26	1.3	.07	9.8	13	7.6	11
11	.10	.11	.21	.90	.11	.28	.18	.10	10	16	7.6	11
12	.06	.09	.39	.66	4.3	.32	.15	4.5	11	16	7.2	11
13	.06	.05	.32	.47	.45	.32	.21	15	11	15	6.8	8.1
14	.05	.07	.21	.39	.09	.39	.13	15	12	9.5	7.2	1.1
15	.03	.06	.32	.39	.09	.36	.09	12	11	9.5	7.2	.12
16	.02	.07	.39	.39	.09	.39	.11	8.7	12	9.6	7.2	.05
17	.90	.06	.26	.32	.11	.43	.12	9.9	12	9.0	6.8	.02
18	.07	.05	.26	.32	.07	.47	.12	9.7	12	9.5	6.8	8.3
19	.03	.06	.32	.47	.11	.44	65	8.5	11	8.5	7.6	6.8
20	.01	.10	.32	.32	.12	.50	.12	9.6	12	9.1	7.2	7.0
21	8.1	.16	.26	.32	.06	1.2	.05	10	12	9.3	7.6	8.2
22	.09	.13	.26	.32	.05	.91	1.2	10	12	8.7	8.5	5.6
23	.07	.08	.26	.32	.05	5.6	.67	10	11	9.1	9.0	.44
24	.07	.13	.32	.39	.05	1.0	.45	10	12	8.6	8.5	.09
25	.14	13	.32	.39	.08	.22	.47	9.7	11	9.0	8.5	14
26	.11	25	.32	.32	.10	.21	.18	10	11	8.1	9.0	12
27	5.5	25	.39	.26	.11	.20	.07	10	11	8.1	9.0	7.6
28	.08	38	.39	.32	.13	.10	.12	16	11	8.1	9.0	7.5
29	.03	48	.66	.32	---	.07	87	11	11	9.0	10	6.3
30	.02	36	.56	.36	---	.07	98	10	11	8.1	10	6.4
31	.05	---	.47	.62	---	.10	---	10	---	8.1	9.5	---
TOTAL	41.09	188.19	27.75	13.31	11.10	15.56	256.84	216.95	325.4	316.9	248.0	223.62
MEAN	1.33	6.27	.90	.43	.40	.50	8.56	7.00	10.8	10.2	8.00	7.45
MAX	18	48	19	.90	4.3	5.6	98	16	12	16	10	14
MIN	.01	.05	.10	.26	.05	.07	.05	.07	8.2	8.1	6.8	.02
AC-FT	82	373	55	26	22	31	509	430	645	629	492	444
CAL YR 1977	TOTAL	44829.74	MEAN	123	MAX	3540	MIN	.01	AC-FT	88920		
WTR YR 1978	TOTAL	1884.71	MEAN	5.16	MAX	98	MIN	.01	AC-FT	3740		

TRINITY RIVER BASIN

08047500 CLEAR FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°43'56", long 97°21'31", Tarrant County, Hydrologic Unit 12030102, at Fort Worth pumping station on left bank, 240 ft (73 m) upstream from the Texas and Pacific Railway Co. bridge in Fort Worth, 830 ft (253 m) upstream from East-West Expressway bridge, 2.5 mi (4.0 km) upstream from mouth, 5 mi (8 km) downstream from Marys Creek, and 10 mi (16 km) downstream from Benbrook Dam.

DRAINAGE AREA.--518 mi² (1,342 km²).

PERIOD OF RECORD.--March 1924 to current year.

REVISED RECORDS.--WSP 1392: 1924-25, 1927. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 532.91 ft (162.431 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 3, 1970, various nonrecording and recording gages within 650 ft (198 m) of present site at different datums.

REMARKS.--Records good below 30 ft³/s (0.85 m³/s) and above 1,000 ft³/s (28.3 m³/s) and fair between. Flow largely regulated by Benbrook Lake (station 08046500). Records furnished by city of Fort Worth show that 202 acre-ft (0.249 hm³) of water was pumped from pool behind dam. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--28 years (water years 1925-52) prior to regulation by Benbrook Lake, 112 ft³/s (3.172 m³/s), 81,140 acre-ft/yr (100 hm³/yr); 26 years (water years 1953-78) regulated, unadjusted, 94.7 ft³/s (2.682 m³/s), 68,610 acre-ft/yr (84.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107,000 ft³/s (3,030 m³/s), May 17, 1949, gage height, 28.20 ft (8.595 m), present datum, from rating curve extended above 16,000 ft³/s (453 m³/s) on basis of contracted-opening measurement of 107,000 ft³/s (3,030 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 28.20 ft (8.595 m) May 17, 1949, present datum. Flood of Apr. 25, 1922, reached a stage of 27.5 ft (8.38 m) present datum, discharge, 74,300 ft³/s (2,100 m³/s), by slope-area measurement of peak flow; data furnished by city engineer of Fort Worth.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,540 ft³/s (43.6 m³/s) Apr. 22, gage height, 10.25 ft (3.124 m); no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	5.1	30	1.9	17	2.1	2.9	12	11	.05	.00	18
2	.70	4.6	16	3.1	10	2.4	2.5	82	13	.22	.00	16
3	.47	2.4	7.7	3.8	5.5	1.7	2.4	88	8.1	1.1	.00	7.2
4	.80	1.5	4.5	4.1	5.0	1.6	3.1	12	7.2	.51	.06	34
5	4.9	1.7	5.0	3.5	4.5	1.8	4.7	3.5	5.8	.10	57	23
6	6.3	2.0	4.5	4.5	4.5	1.5	4.3	1.3	37	.02	15	11
7	2.1	1.8	4.5	5.0	33	71	1.2	1.2	16	.03	5.0	8.1
8	2.3	68	5.0	3.7	19	13	1.6	.22	16	.03	2.7	12
9	3.3	18	4.5	4.6	27	7.2	2.9	.09	8.1	.02	2.3	14
10	6.6	8.6	4.5	5.0	19	4.0	219	.01	5.4	.03	2.7	10
11	4.4	6.3	5.0	10	13	2.3	28	.19	6.3	.30	2.0	24
12	2.7	4.5	4.5	16	156	2.0	12	1.1	4.5	3.6	1.2	14
13	1.4	2.7	3.2	11	27	2.0	9.2	.92	3.6	4.0	.93	7.7
14	2.6	4.5	3.6	8.6	11	1.6	6.5	8.4	5.4	2.3	1.2	5.4
15	2.0	4.5	3.6	6.3	13	1.2	2.7	9.2	3.6	.06	.10	3.2
16	1.8	5.0	3.7	10	9.2	.47	1.8	3.3	2.3	.00	.00	.30
17	1.4	7.2	3.6	7.6	8.9	1.6	1.6	2.6	1.6	.00	.00	.10
18	.19	8.1	3.7	8.4	23	1.6	.64	5.0	2.3	.00	.00	.18
19	.09	9.1	3.6	9.1	22	1.2	28	3.3	2.7	.00	.00	.06
20	.46	7.2	3.5	12	17	3.2	13	22	.76	.00	.00	.00
21	.91	4.5	1.9	17	9.0	25	1.1	26	1.9	.00	1.6	.00
22	4.5	3.2	3.2	13	6.1	7.2	145	7.4	2.1	.00	8.1	.00
23	6.6	3.2	3.1	11	4.5	163	35	4.7	.70	22	4.5	.02
24	3.2	4.5	3.2	9.6	4.1	59	7.2	4.1	.22	5.4	2.0	.18
25	2.0	4.5	3.1	9.4	3.4	15	1.4	2.3	.64	.47	.70	.03
26	2.1	20	3.6	7.0	3.0	9.4	.33	1.9	1.7	.02	.18	.03
27	1.4	36	2.8	5.4	2.6	6.2	.35	2.0	.32	.00	.18	1.6
28	.28	36	1.6	5.1	2.4	6.7	.27	219	.02	.00	2.0	5.0
29	1.8	50	13	4.8	---	5.9	26	105	.08	.00	5.0	2.7
30	2.1	50	6.6	6.6	---	4.4	104	18	.12	.00	5.4	1.2
31	1.7	---	3.7	24	---	3.4	---	11	---	.00	3.0	---
TOTAL	72.20	384.7	170.0	251.1	479.7	428.67	668.69	657.73	168.46	40.26	122.85	219.00
MEAN	2.33	12.8	5.48	8.10	17.1	13.8	22.3	21.2	5.62	1.30	3.96	7.30
MAX	6.6	68	30	24	156	163	219	219	37	22	57	34
MIN	.09	1.5	1.6	1.9	2.4	.47	.27	.01	.02	.00	.00	.00
AC-FT	143	763	337	498	951	850	1330	1300	334	80	244	434
CAL YR 1977	TOTAL	60214.54	MEAN	165	MAX	4060	MIN	.08	AC-FT	119400		
WTR YR 1978	TOTAL	3663.36	MEAN	10.0	MAX	219	MIN	.00	AC-FT	7270		

TRINITY RIVER BASIN

419

08048000 WEST FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°45'39", long 97°19'56", Tarrant County, Hydrologic Unit 12030102, on left bank 125 ft (38 m) upstream from Texas Electric Service Co.'s concrete dam, 980 ft (299 m) downstream from centerline of Paddock Viaduct (North Main Street) at Fort Worth, 2,600 ft (792 m) downstream from Clear Fork Trinity River, and at mile 556.8 (895.9 km).

DRAINAGE AREA.--2,615 mi² (6,773 km²).

PERIOD OF RECORD.--October 1920 to current year. Gage-height records collected in this vicinity since 1910 are contained in reports of the National Weather Service.

Water-quality records: Chemical and biochemical analyses: October 1967 to September 1976.

REVISED RECORDS.--WSP 1392: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete dam control with angle-iron-crested notch for flow below 50 ft³/s (1.42 m³/s). Datum of gage is 519.24 ft (158.264 m) Texas Reclamation Department datum. Prior to Aug. 22, 1954, at site 1,200 ft (366 m) upstream at same datum. Aug. 22, 1954, to Oct. 15, 1955, at site 2,000 ft (610 m) upstream at same datum.

REMARKS.--Records good. Flow is largely regulated by Lake Worth on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. Records furnished by city of Fort Worth show that during the year 103,000 acre-ft (127 hm³) was diverted above station for municipal and industrial uses. Many small diversions above station. National Weather Service and Tarrant County Water Control and Improvement District No. 1 gage-height telemeters at station.

AVERAGE DISCHARGE.--58 years, 366 ft³/s (10.37 m³/s), 265,200 acre-ft/yr (327 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85,000 ft³/s (2,410 m³/s), Apr. 25, 1922, gage height, 23.95 ft (7.300 m), site then in use, by slope-area measurement of peak flow by city engineer of Fort Worth; maximum gage height, 25.91 ft (7.897 m) May 17, 1949, site then in use, discharge, 64,300 ft³/s (1,820 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1866, that of May 17, 1949. Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,860 ft³/s (52.7 m³/s) Mar. 23, gage height, 2.28 ft (0.695 m); no flow July 21, 22, Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	15	22	8.2	45	23	21	36	19	.95	2.5	75
2	3.7	21	16	6.7	29	25	21	217	22	1.2	2.2	35
3	3.3	18	13	7.2	24	23	21	291	17	1.7	2.5	22
4	3.1	15	8.4	9.3	21	22	21	34	14	2.5	2.4	24
5	7.7	13	6.7	10	19	22	22	29	13	2.1	146	47
6	17	12	7.7	9.9	19	22	26	26	42	1.2	33	18
7	13	10	7.7	9.9	47	217	20	24	34	.73	17	11
8	12	188	7.5	8.8	36	39	15	22	37	.61	11	9.8
9	11	30	6.2	7.2	52	29	22	20	20	.56	8.7	17
10	13	14	6.5	6.8	43	25	498	19	14	.33	7.5	17
11	14	10	6.7	17	36	24	50	19	12	.11	6.1	31
12	12	8.8	6.9	29	240	24	39	22	12	.65	5.6	27
13	11	7.2	6.9	22	141	27	32	17	10	2.1	5.7	16
14	9.7	6.2	6.2	14	39	26	27	19	12	3.1	5.0	10
15	9.7	9.3	6.4	10	37	26	23	26	11	2.7	3.6	8.7
16	9.1	8.8	6.4	13	37	25	20	27	8.1	2.0	1.8	7.1
17	8.2	8.2	5.9	12	30	24	19	24	6.4	1.2	.81	5.3
18	7.0	8.2	5.8	10	56	25	19	24	6.2	.52	.27	4.4
19	6.2	8.6	5.4	11	56	26	28	14	6.6	.20	.03	3.3
20	6.2	9.3	5.1	15	47	28	39	29	6.1	.04	.00	2.9
21	7.7	7.3	5.1	20	35	90	20	73	6.0	.00	2.6	2.2
22	18	6.0	5.2	24	26	40	186	24	5.6	.00	16	1.9
23	29	6.5	6.2	29	23	399	111	15	3.8	16	11	2.4
24	18	6.7	7.2	25	23	220	29	14	2.6	21	7.6	2.8
25	14	7.3	6.7	26	22	40	19	12	2.0	11	5.3	3.9
26	11	9.5	7.7	22	21	30	15	9.9	2.4	7.1	3.7	4.5
27	11	21	8.2	18	22	26	12	9.9	2.4	3.6	3.2	7.1
28	11	23	7.7	17	24	24	12	370	1.5	1.2	3.6	10
29	11	29	21	17	---	25	19	228	.98	1.5	9.5	9.9
30	12	35	19	17	---	26	141	33	.84	1.9	14	8.4
31	13	---	12	75	---	24	---	24	---	2.3	12	---
TOTAL	336.5	571.9	269.4	529.0	1250	1646	1547	1751.8	350.52	90.10	350.21	444.6
MEAN	10.9	19.1	8.69	17.1	44.6	53.1	51.6	56.5	11.7	2.91	11.3	14.8
MAX	29	188	22	75	240	399	498	370	42	21	146	75
MIN	3.1	6.0	5.1	6.7	19	22	12	9.9	.84	.00	.00	1.9
AC-FT	667	1130	534	1050	2480	3260	3070	3470	695	179	695	882
CAL YR 1977	TOTAL	129385.94	MEAN	354	MAX	7530	MIN	.84	AC-FT	256600		
WTR YR 1978	TOTAL	9137.03	MEAN	25.0	MAX	498	MIN	.00	AC-FT	18120		

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX

LOCATION.--Lat 32°45'06", long 97°17'21", Tarrant County, Hydrologic Unit 12030102, at downstream side of bridge on Beach Street, 1,700 ft (518 m) downstream from Sycamore Creek, 0.9 mi (1.4 km) downstream from Riverside Drive bridge, 2.6 mi (4.2 km) east of the Tarrant County Courthouse, and at mile 549.6 (884.3 km).

DRAINAGE AREA.--2,685 mi² (6,954 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 478.70 ft (145.908 m) Texas Department of Highways and Public Transportation datum.

REMARKS.--Water-discharge records good. Flow is largely regulated by Lake Worth on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. There are many diversions upstream from this station for municipal, industrial, and other uses. For diversions by city of Fort Worth, see West Fork Trinity River at Fort Worth (station 08048000).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft³/s (532 m³/s) Mar. 27, 1977, gage height, 34.27 ft (10.445 m); minimum, 0.84 ft³/s (0.024 m³/s) July 25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1866 probably occurred in May 1949, stage and discharge unknown. Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,590 ft³/s (73.3 m³/s) May 28, gage height, 10.76 ft (3.280 m); minimum daily, 1.2 ft³/s (0.034 m³/s) July 12, 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	22	30	13	90	28	20	62	42	3.1	3.1	224
2	4.0	21	19	11	44	31	19	306	30	3.3	4.0	95
3	3.3	18	18	11	32	29	19	604	26	4.1	4.5	32
4	3.1	15	13	13	28	25	19	54	21	5.4	4.4	25
5	11	13	11	15	26	24	21	27	20	4.0	318	82
6	16	13	10	14	25	26	24	22	132	4.5	67	35
7	12	12	12	14	118	336	19	19	70	3.7	26	25
8	10	333	12	14	78	64	17	17	80	2.8	17	22
9	8.0	60	11	13	121	44	19	15	32	2.3	14	35
10	12	22	11	14	88	35	713	14	22	3.4	12	30
11	13	16	11	39	64	32	84	19	16	1.9	11	43
12	12	13	11	64	823	28	40	23	15	1.2	10	67
13	9.2	11	12	42	198	26	29	16	15	1.2	9.9	36
14	7.9	9.6	11	29	73	27	24	13	16	3.2	10	28
15	7.4	9.5	11	23	76	24	20	16	15	5.4	9.5	22
16	7.2	13	11	30	62	23	18	20	13	5.1	8.0	19
17	7.2	10	11	27	52	22	18	16	9.6	4.3	7.4	19
18	6.7	10	10	24	111	21	17	16	8.3	4.3	5.5	17
19	6.4	10	10	25	122	21	16	18	9.1	2.8	4.7	17
20	5.7	11	9.1	33	92	28	44	75	9.7	2.7	4.5	14
21	5.6	10	8.9	41	56	101	24	142	11	1.8	18	13
22	23	8.2	8.7	47	42	41	187	31	11	1.8	24	14
23	25	7.7	9.9	53	37	420	229	22	8.6	29	20	13
24	15	9.0	12	49	34	403	41	18	7.9	30	18	12
25	12	8.7	12	44	32	54	25	17	6.3	15	14	13
26	10	8.7	12	34	30	36	20	14	5.0	9.8	12	14
27	9.4	18	12	29	26	30	17	20	5.2	7.1	11	17
28	8.7	25	13	25	28	24	15	651	5.3	4.5	21	20
29	8.7	33	41	24	---	22	15	600	6.2	2.8	19	24
30	9.5	43	25	24	---	22	102	54	3.6	2.6	19	23
31	12	---	17	98	---	22	---	34	---	2.6	21	---
TOTAL	304.5	813.4	425.6	936	2608	2069	1875	2975	671.8	175.7	747.5	1050
MEAN	9.82	27.1	13.7	30.2	93.1	66.7	62.5	96.0	22.4	5.67	24.1	35.0
MAX	25	333	41	98	823	420	713	651	132	30	318	224
MIN	3.1	7.7	8.7	11	25	21	15	13	3.6	1.2	3.1	12
AC-FT	604	1610	844	1860	5170	4100	3720	5900	1330	349	1480	2080
CAL YR 1977	TOTAL	150621.0	MEAN	413	MAX	10400	MIN	2.4	AC-FT	298800		
WTR YR 1978	TOTAL	14651.5	MEAN	40.1	MAX	823	MIN	1.2	AC-FT	29060		

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to current year.

pH: October 1976 to current year.

WATER TEMPERATURES: October 1976 to current year.

DISSOLVED OXYGEN: October 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1976.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,320 micromhos July 1, 1977; minimum, 170 micromhos Mar. 27, 1977.

pH: Maximum, 9.5 units July 20, 1978; minimum, 7.0 units Sept. 16, 1977.

WATER TEMPERATURES: Maximum, 38.0°C July 14, 16, 1978; minimum, 0.5°C Jan. 11, 19, 20, 1978.

DISSOLVED OXYGEN: Maximum, 17.6 mg/l Jan. 7, 1978; minimum, 0.0°C mg/l May 26, Oct. 5, 6, 1977.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,020 micromhos July 16; minimum, 198 micromhos June 6.

pH: Maximum, 9.5 units July 20; minimum, 7.2 units Oct. 23, July 23, 24.

WATER TEMPERATURES: Maximum, 38.0°C July 14, 16; minimum, 0.5°C Jan. 11, 19, 20.

DISSOLVED OXYGEN: Maximum, 17.6 mg/l Jan. 7; minimum, 0.0°C mg/l Oct. 5, 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	
OCT 20...	0815	5.6	648	7.5	19.0	7.3	81	5.4	200	35	
NOV 09...	1700	39	476	7.8	13.5	9.1	90	3.4	170	27	
DEC 15...	1130	11	758	8.0	12.0	11.3	109	6.2	230	37	
JAN 27...	1430	28	700	8.0	3.5	12.8	99	3.4	220	36	
FEB 15...	1100	71	556	7.7	4.5	10.0	80	8.7	180	41	
MAR 24...	0925	243	511	8.1	14.0	7.9	79	6.5	150	0	
APR 20...	0900	45	543	8.0	17.5	8.6	92	5.5	180	36	
MAY 18...	1125	16	598	7.6	26.0	8.0	100	39	170	15	
JUN 14...	0645	9.7	590	7.4	26.5	6.8	86	3.0	180	25	
JUL 20...	1250	2.7	778	8.4	31.5	14.3	193	2.3	150	53	
AUG 24...	1140	15	650	7.6	30.5	8.8	117	2.6	170	54	
SEP 21...	1810	13	540	8.3	24.5	13.4	163	1.3	140	26	
DATE		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 20...	65	8.8	55	1.7	6.0	200	0	64	67	.4	
NOV 09...	56	6.4	32	1.1	5.1	170	0	38	38	.3	
DEC 15...	78	9.6	68	1.9	7.2	240	0	69	80	.6	
JAN 27...	73	8.4	59	1.7	5.6	220	0	63	76	.5	
FEB 15...	61	6.8	39	1.3	8.6	170	0	65	45	.5	
MAR 24...	51	4.9	31	1.1	-	180	0	72	32	.4	
APR 20...	63	6.5	39	1.3	5.9	180	0	64	43	.4	
MAY 18...	59	5.8	51	1.7	6.8	190	0	54	50	.6	
JUN 14...	61	6.9	50	1.6	6.1	190	0	56	61	.5	
JUL 20...	43	10	91	3.3	8.4	110	3	90	120	.6	
AUG 24...	53	8.8	62	2.1	7.0	140	0	66	87	.5	
SEP 21...	44	7.4	49	1.8	5.0	140	0	48	65	.5	

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, 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...	3.8	369	.24	.02	.26	.06	1.0	1.1	.14
NOV 09...	6.3	266	.24	.01	.25	.06	.64	.70	.13
DEC 15...	5.2	436	.49	.05	.54	.68	1.0	1.7	.40
JAN 27...	4.8	399	.14	.02	.16	.09	.75	.84	.14
FEB 15...	6.0	316	1.1	.06	1.2	.76	.94	1.7	.44
MAR 24...	4.8	--	.09	.02	.11	.11	.99	1.1	.30
APR 20...	4.1	315	.12	.02	.14	.06	.92	.98	.12
MAY 18...	4.4	325	.11	.02	.13	1.4	1.7	3.1	.64
JUN 14...	6.7	342	.07	.05	.12	.48	.82	1.3	.21
JUL 20...	7.2	427	.05	.00	.05	.00	.75	.75	.04
AUG 24...	6.9	360	.02	.01	.03	.03	1.1	1.1	.07
SEP 21...	6.5	294	.46	.02	.48	.06	.66	.72	.06

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	304.5	617	350	287	64	52	60	49	190
NOV. 1977.....	813.4	558	320	694	53	117	53	117	170
DEC. 1977.....	425.6	710	400	463	81	93	72	82	220
JAN. 1978.....	936	690	390	987	77	195	69	175	210
FEB. 1978.....	2608	530	300	2100	48	340	50	350	170
MAR. 1978.....	2069	599	340	1890	61	340	58	324	190
APR. 1978.....	1875	500	280	1430	43	217	46	232	160
MAY 1978.....	2975	446	250	2020	33	268	40	318	140
JUNE 1978.....	671.8	452	260	466	35	63	40	73	140
JULY 1978.....	175.7	724	410	194	83	39	73	35	220
AUG. 1978.....	747.5	530	300	601	48	97	50	100	170
SEPT 1978.....	1050	483	270	775	40	113	44	125	150
TOTAL	14651.48	**	**	11900	**	1930	**	1980	**
WTD.AVG.	40.14	533	300	**	49	**	50	**	170

TRINITY RIVER BASIN

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08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	606	538	569	696	582	663	578	562	570	---	---	750
2	762	560	610	756	574	643	612	574	596	---	---	780
3	836	594	690	696	586	615	620	608	614	---	---	780
4	696	620	648	634	602	618	634	614	621	---	---	720
5	836	608	692	644	618	633	672	636	652	---	---	700
6	780	664	720	702	646	667	718	676	700	---	---	660
7	666	546	585	704	670	684	758	718	740	686	640	666
8	582	534	550	698	276	456	760	730	742	716	684	697
9	588	546	569	508	426	467	756	742	749	748	716	729
10	636	564	590	574	512	547	798	720	751	768	724	739
11	620	576	593	606	576	587	796	742	759	842	636	753
12	608	568	580	652	608	634	744	730	736	746	572	637
13	628	596	612	668	628	648	782	734	755	656	588	618
14	606	570	592	694	668	674	780	746	760	658	628	639
15	624	588	604	762	696	725	768	742	753	656	626	640
16	638	612	628	760	686	719	794	744	763	676	628	645
17	638	588	618	684	656	669	818	784	795	668	656	667
18	630	588	613	702	674	686	854	760	802	862	680	744
19	630	592	617	698	664	678	860	780	832	798	746	772
20	654	608	633	678	656	669	826	784	812	796	718	745
21	676	624	656	676	664	672	834	798	816	838	702	761
22	724	436	626	702	662	677	874	830	849	764	644	674
23	686	562	628	720	690	703	894	---	830	676	644	668
24	572	540	549	826	718	765	---	---	790	694	664	677
25	572	554	560	800	734	758	---	---	770	746	690	710
26	604	574	590	748	728	742	---	---	770	748	688	718
27	628	606	619	744	646	713	---	---	770	754	694	713
28	646	626	637	640	612	618	---	---	770	756	686	710
29	668	648	658	742	606	644	---	---	600	696	684	690
30	664	644	653	662	566	603	---	---	660	720	696	705
31	660	650	656	---	---	---	---	---	710	740	472	649
MONTH	836	436	618	826	276	653	894	562	737	862	472	702
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	618	552	584	652	602	620	628	586	608	510	432	480
2	614	604	610	702	356	574	614	588	603	516	238	410
3	630	612	618	658	332	523	644	576	615	498	306	444
4	654	628	638	684	652	664	658	636	649	742	480	531
5	682	648	669	724	672	705	712	658	674	716	496	566
6	740	660	699	748	710	720	806	656	715	708	564	602
7	716	496	560	812	746	765	788	686	719	604	558	574
8	600	520	571	814	680	764	694	678	687	646	556	574
9	584	490	539	674	600	630	734	690	711	700	566	599
10	588	510	528	672	612	645	652	330	446	594	530	555
11	596	536	563	720	674	688	512	474	490	722	546	616
12	574	---	450	752	712	725	544	512	530	638	562	585
13	---	---	500	762	724	746	574	544	556	570	482	522
14	---	---	550	750	690	715	600	552	569	506	468	485
15	---	---	530	740	720	734	578	552	564	522	502	514
16	584	476	511	688	634	667	590	556	577	522	496	513
17	602	506	539	690	636	665	610	580	597	632	516	573
18	592	428	531	668	646	658	604	580	593	620	520	564
19	508	418	448	658	620	640	614	590	602	552	506	533
20	632	504	553	722	616	650	636	502	554	518	220	462
21	656	630	640	612	388	529	604	530	561	---	---	450
22	708	628	679	562	538	549	636	212	551	---	---	500
23	774	678	734	560	---	500	458	384	426	---	---	510
24	778	726	754	---	---	510	484	460	476	514	498	520
25	758	740	750	466	446	455	530	482	504	538	508	527
26	752	736	745	---	---	500	550	522	531	566	524	543
27	782	536	635	---	---	550	582	548	560	588	532	559
28	676	550	613	668	---	600	608	584	597	---	---	450
29	---	---	---	668	606	643	606	580	596	---	---	380
30	---	---	---	622	572	597	602	406	473	---	---	460
31	---	---	---	640	610	624	---	---	---	478	430	451
MONTH	782	418	598	814	332	631	806	212	578	742	220	518

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	500	348	437	694	614	660	610	514	567	---	---	400
2	420	376	405	722	630	686	628	500	583	---	---	450
3	432	412	421	750	678	710	678	620	640	---	---	500
4	462	426	443	766	688	731	694	632	670	---	---	520
5	568	456	513	838	766	805	---	---	450	---	---	420
6	530	198	419	858	782	826	---	---	520	---	---	430
7	424	358	404	870	758	828	---	---	570	---	---	450
8	382	302	352	864	778	822	---	---	600	---	---	470
9	422	384	404	876	786	829	---	---	620	592	472	498
10	442	418	436	798	704	748	652	638	640	528	464	486
11	462	440	452	818	740	774	660	626	639	500	466	473
12	486	460	473	804	756	779	694	---	650	570	480	514
13	522	460	497	806	752	776	---	---	640	540	494	513
14	580	530	556	818	728	775	---	---	600	508	468	491
15	564	530	550	972	814	884	---	---	580	500	456	472
16	548	506	518	1020	978	993	---	---	570	490	452	471
17	552	492	512	1010	836	940	---	---	580	498	468	485
18	562	512	540	862	728	793	---	---	600	518	476	501
19	584	540	562	784	672	730	---	---	640	536	464	508
20	632	540	575	772	696	731	---	---	660	536	480	511
21	702	578	618	782	726	748	---	---	550	518	488	503
22	652	574	600	814	744	775	---	---	570	534	512	520
23	604	548	579	842	424	662	668	592	612	536	518	524
24	614	562	590	942	616	782	648	626	641	586	532	561
25	594	516	562	678	612	640	---	---	650	630	576	611
26	570	514	547	614	584	600	---	---	660	656	626	647
27	646	560	590	---	---	590	---	---	660	746	660	694
28	752	666	714	594	---	580	530	276	510	750	686	720
29	702	624	668	590	508	560	556	418	521	770	694	731
30	686	590	656	596	458	559	712	530	617	714	596	640
31	---	---	---	592	498	551	738	558	646	---	---	---
MONTH	752	198	520	1020	424	738	738	276	602	770	452	524

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.3	7.6	7.8	7.8	7.6	7.7	7.7	7.5	7.6	---	---	7.9
2	8.5	7.7	8.0	7.8	7.6	7.7	7.8	7.6	7.7	---	---	7.9
3	8.3	7.4	7.9	7.7	7.6	7.7	7.8	7.6	7.7	---	---	7.9
4	8.3	7.6	7.9	7.9	7.6	7.7	7.8	7.5	7.7	---	---	7.8
5	7.8	7.4	7.6	7.9	7.6	7.7	7.8	7.5	7.7	---	---	7.6
6	7.6	7.3	7.4	7.8	7.5	7.6	7.9	7.7	7.8	8.6	---	8.3
7	8.2	7.4	7.6	7.9	7.6	7.7	8.1	7.8	7.9	8.6	7.9	8.3
8	8.0	7.4	7.6	7.8	7.5	7.6	8.3	7.8	8.0	8.6	8.0	8.3
9	8.2	7.5	7.8	7.8	7.5	7.7	8.2	7.9	8.0	8.5	8.2	8.3
10	7.8	7.4	7.6	7.7	7.7	7.7	8.1	7.9	8.0	8.4	8.1	8.3
11	8.1	7.5	7.7	7.7	7.6	7.7	8.1	7.7	7.9	8.2	7.7	8.1
12	8.2	7.7	7.9	7.6	7.5	7.6	8.0	7.7	7.8	8.1	7.7	7.9
13	8.2	7.7	7.9	7.7	7.5	7.6	8.1	7.6	7.8	8.2	7.9	8.1
14	8.3	7.6	7.9	7.8	7.5	7.6	8.1	7.6	7.8	8.2	7.9	8.0
15	8.4	7.6	7.9	7.9	7.5	7.7	8.2	7.7	7.9	8.1	7.8	8.0
16	8.4	7.7	8.0	7.7	7.5	7.6	8.3	7.5	7.9	7.8	7.6	7.7
17	8.4	7.7	8.0	7.8	7.5	7.6	8.3	7.4	7.8	8.0	7.9	7.9
18	8.2	7.6	7.8	7.7	7.5	7.6	8.3	7.6	7.9	7.9	7.7	7.8
19	8.4	7.5	7.9	7.7	7.5	7.6	8.4	7.7	7.9	8.1	7.7	7.9
20	8.4	7.5	7.8	7.8	7.5	7.6	8.4	7.8	8.0	8.1	7.8	7.9
21	8.3	7.5	7.8	7.8	7.5	7.6	8.6	7.8	8.1	7.9	7.8	7.9
22	7.5	7.3	7.5	7.9	7.5	7.7	8.5	8.0	8.2	8.0	7.8	7.9
23	7.4	7.2	7.3	8.2	7.5	7.8	8.5	---	8.0	8.0	7.7	7.8
24	7.7	7.4	7.5	8.0	7.5	7.7	---	---	8.0	7.8	7.6	7.7
25	7.8	7.4	7.6	8.0	7.5	7.7	---	---	8.0	8.0	7.6	7.8
26	7.9	7.5	7.6	8.2	7.6	7.8	---	---	8.0	8.2	7.8	8.0
27	7.9	7.4	7.6	8.1	7.7	7.9	---	---	8.0	8.1	7.9	8.0
28	7.9	7.4	7.6	7.9	7.7	7.8	---	---	8.0	8.2	7.9	8.1
29	8.1	7.5	7.7	7.8	7.7	7.7	---	---	8.0	8.2	8.0	8.1
30	7.8	7.5	7.6	7.7	7.5	7.6	---	---	8.0	8.1	7.9	8.0
31	8.1	7.5	7.7	---	---	---	---	---	8.0	7.9	7.6	7.8
MONTH	8.5	7.2	7.7	8.2	7.5	7.7	8.6	7.4	7.9	8.6	7.6	8.0

TRINITY RIVER BASIN

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08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.8	7.8	7.8	8.3	7.7	8.0	8.5	7.7	8.1	8.2	7.7	7.9
2	7.9	7.7	7.8	8.0	7.7	7.8	8.5	7.7	8.1	8.0	7.5	7.7
3	8.0	7.8	7.9	8.5	8.0	8.6	8.2	7.7	7.9	7.9	7.6	7.7
4	8.0	7.8	7.9	8.4	8.0	8.2	8.5	7.7	8.1	7.7	7.4	7.5
5	8.1	7.8	7.9	8.2	7.8	8.0	8.2	7.7	8.0	7.5	7.3	7.5
6	8.2	7.9	8.1	8.2	7.7	7.9	8.4	7.6	8.0	7.7	7.3	7.5
7	8.1	7.7	7.8	8.4	7.8	8.0	8.6	7.7	8.1	7.5	7.3	7.4
8	7.8	7.7	7.8	8.5	7.9	8.2	8.4	7.8	8.0	8.2	7.4	7.7
9	7.7	7.6	7.7	8.7	7.7	8.2	8.3	7.7	7.9	7.9	7.3	7.6
10	7.8	7.7	7.7	8.6	7.9	8.1	7.8	7.6	7.7	7.6	7.5	7.5
11	8.7	7.6	7.8	8.7	7.9	8.3	7.7	7.6	7.6	7.7	7.3	7.5
12	7.8	7.6	7.7	8.8	7.7	8.3	7.8	7.6	7.7	7.6	7.5	7.6
13	---	---	7.7	8.8	7.7	8.3	8.2	7.6	7.9	7.7	7.6	7.6
14	---	---	7.7	8.7	7.6	8.2	8.4	7.7	8.0	7.8	7.7	7.8
15	7.7	---	7.6	8.0	7.6	7.8	8.5	7.8	8.1	7.9	7.8	7.9
16	7.6	7.5	7.6	8.7	7.9	8.2	8.6	7.8	8.1	7.8	7.7	7.8
17	7.7	7.5	7.6	8.7	7.8	8.3	8.5	7.8	8.1	8.2	7.6	7.8
18	7.9	7.6	7.7	8.7	7.8	8.2	8.4	7.8	8.1	8.2	7.4	7.8
19	7.8	7.5	7.6	8.6	7.8	8.2	8.4	7.8	8.1	7.9	7.4	7.6
20	8.0	7.5	7.6	8.5	7.8	8.1	8.5	7.8	8.2	7.9	7.4	7.6
21	7.8	7.7	7.7	8.0	7.5	7.7	8.6	7.8	8.2	---	---	7.6
22	7.7	7.6	7.6	8.2	7.6	7.9	8.5	7.7	8.1	8.6	---	7.7
23	7.6	7.5	7.6	9.1	7.7	7.9	7.9	7.6	7.7	8.8	7.8	8.4
24	7.6	7.5	7.6	8.1	7.7	7.9	8.1	7.6	7.8	8.7	7.4	7.9
25	7.7	7.5	7.6	7.8	7.7	7.8	8.3	7.6	7.9	8.7	7.6	8.1
26	7.9	7.6	7.7	8.0	7.7	7.8	8.5	7.8	8.1	8.5	7.5	8.0
27	8.1	7.6	7.9	8.1	7.7	7.8	8.4	7.7	8.1	8.5	7.5	8.0
28	8.2	7.7	7.9	8.3	7.7	8.0	8.3	7.8	8.0	8.0	7.5	7.7
29	---	---	---	8.4	7.7	8.0	8.5	7.8	8.1	7.6	7.4	7.5
30	---	---	---	8.8	7.8	8.3	8.0	7.6	7.8	8.3	7.4	7.7
31	---	---	---	8.4	7.5	7.9	---	---	---	8.6	7.6	8.0
MONTH	8.7	7.5	7.7	9.1	7.5	8.1	8.6	7.6	8.0	8.8	7.3	7.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	8.3	7.5	7.8	9.2	7.4	8.2	9.2	7.4	8.2	---	---	7.9
2	8.3	7.5	7.9	9.0	7.3	8.0	9.0	7.4	8.1	---	---	7.9
3	8.5	7.6	8.1	8.9	7.4	8.0	9.0	7.4	8.0	---	---	7.9
4	8.7	7.6	8.1	8.9	7.4	8.0	9.2	7.4	8.1	---	---	7.9
5	8.8	7.6	8.1	8.9	7.3	8.1	8.0	---	8.0	---	---	7.9
6	7.9	7.6	7.7	9.0	7.4	8.2	---	---	8.0	---	---	7.9
7	8.5	7.5	7.9	9.0	7.4	8.1	---	---	8.0	---	---	7.9
8	8.5	7.5	7.9	8.9	7.4	8.1	---	---	8.0	8.2	---	7.9
9	8.5	7.5	7.9	9.1	7.5	8.2	---	---	8.0	8.4	7.5	7.9
10	8.5	7.6	8.0	8.9	7.4	8.1	8.8	7.5	8.0	8.5	7.7	8.0
11	8.6	7.6	8.1	8.9	7.5	8.1	8.6	7.4	7.9	8.0	7.6	7.8
12	8.6	7.6	8.1	8.7	7.7	8.1	8.8	---	7.9	8.6	7.4	7.9
13	8.4	7.5	7.8	9.0	7.6	8.3	---	---	7.9	8.5	7.5	7.9
14	8.5	7.6	7.9	9.3	7.4	8.3	---	---	7.9	8.7	7.5	8.0
15	8.4	7.6	8.0	9.1	7.4	8.1	---	---	7.9	8.6	7.5	7.9
16	8.6	7.5	8.0	9.0	7.4	8.2	---	---	7.9	8.8	7.5	8.0
17	8.7	7.6	8.1	9.2	7.4	8.1	---	---	7.9	8.8	7.5	8.0
18	8.8	7.6	8.1	9.4	7.4	8.3	---	---	7.9	8.9	7.5	8.0
19	8.8	7.6	8.1	9.3	7.4	8.4	---	---	7.9	8.7	7.5	7.9
20	8.9	7.5	8.1	9.5	7.5	8.5	---	---	8.0	9.0	7.5	8.1
21	8.9	7.5	8.1	9.2	7.7	8.4	---	---	8.0	8.6	7.5	7.9
22	8.9	7.5	8.1	9.3	7.7	8.6	---	---	8.0	8.7	7.5	8.0
23	8.9	7.5	8.1	8.9	7.2	7.7	8.5	7.7	8.1	8.9	7.5	8.0
24	9.0	7.5	8.1	8.4	7.2	7.7	7.8	7.5	7.6	8.9	7.5	8.0
25	9.0	7.5	8.1	8.5	7.4	7.9	---	---	7.7	8.9	7.5	8.1
26	9.1	7.4	8.1	8.7	7.4	7.9	---	---	7.8	7.8	7.5	7.6
27	9.1	7.4	8.2	---	---	8.0	---	---	7.8	8.7	7.5	8.0
28	9.1	7.4	8.1	9.0	7.3	8.0	8.5	7.6	7.8	8.7	7.6	8.0
29	9.0	7.5	8.2	9.1	7.3	8.1	8.6	7.5	7.8	8.7	7.8	8.2
30	9.1	7.4	8.1	9.1	7.3	8.0	8.4	7.5	7.8	8.8	7.7	8.1
31	---	---	---	9.4	7.3	8.2	8.5	7.6	7.9	---	---	---
MONTH	9.1	7.4	8.0	9.5	7.2	8.1	9.2	7.4	7.9	9.0	7.4	8.0

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	31.5	25.5	28.0	23.0	18.0	21.5	13.5	10.0	11.5	---	---	7.5
2	28.0	23.0	25.5	17.5	14.0	15.0	14.0	10.5	12.0	---	---	4.5
3	27.0	20.5	23.5	15.5	13.5	14.0	16.0	11.5	13.5	---	---	2.5
4	24.0	20.0	21.5	18.5	14.0	16.0	17.0	12.5	14.5	---	---	3.5
5	22.0	20.0	20.5	21.0	16.0	18.5	15.5	10.0	13.0	---	---	6.0
6	22.5	19.5	20.5	21.5	17.5	19.0	10.5	7.0	9.0	---	---	9.5
7	23.0	20.5	21.5	21.5	18.0	19.5	10.5	6.0	8.0	14.0	10.5	11.5
8	25.0	21.5	23.0	19.5	16.5	17.5	16.5	9.5	12.5	10.0	4.5	8.0
9	24.0	19.0	21.5	16.5	12.0	14.0	10.0	5.5	8.0	6.5	2.5	4.0
10	20.5	19.5	20.0	14.5	10.5	12.5	6.0	4.5	5.0	2.5	2.0	2.0
11	20.5	17.0	18.5	16.0	11.5	13.5	8.0	5.0	6.5	2.0	.5	1.5
12	20.5	15.0	17.5	17.5	12.0	14.5	11.5	7.5	9.0	4.0	2.0	3.0
13	22.0	15.0	18.0	19.0	14.0	16.0	15.0	11.5	13.0	7.0	3.0	5.0
14	22.5	16.0	18.5	19.5	15.5	17.0	15.0	10.0	12.0	6.0	3.0	4.5
15	22.5	17.5	19.0	21.0	16.0	18.0	15.0	10.0	12.0	5.5	3.5	4.5
16	22.0	15.0	18.0	21.5	17.5	19.0	16.5	11.5	13.5	8.0	3.5	6.0
17	22.0	15.5	18.5	19.0	15.0	17.0	15.0	11.0	12.5	4.0	3.0	2.5
18	25.5	17.0	20.5	17.0	14.5	16.0	15.0	9.5	12.0	2.5	1.0	2.0
19	26.5	18.5	22.0	19.5	16.0	18.0	15.5	11.0	12.5	2.0	.5	1.5
20	26.5	19.5	22.5	22.5	18.5	20.0	12.5	8.5	10.0	2.0	.5	1.5
21	27.0	20.0	23.0	18.5	14.0	16.0	9.5	5.5	7.0	2.5	1.5	1.5
22	22.5	21.0	21.5	16.0	13.5	14.5	9.0	4.0	6.5	3.5	1.0	2.0
23	23.0	19.5	21.0	18.5	13.5	15.5	---	---	6.0	3.5	2.5	3.0
24	24.5	20.0	22.0	17.5	15.0	16.0	---	---	9.5	5.0	3.5	4.5
25	25.5	21.5	23.0	18.5	14.0	16.0	---	---	8.5	7.0	3.5	5.0
26	26.5	21.0	23.0	16.5	12.5	14.0	---	---	6.0	6.5	3.0	4.5
27	25.0	21.0	22.5	15.5	13.5	14.5	---	---	4.5	5.0	3.0	4.0
28	24.0	21.5	22.5	13.5	12.0	13.0	---	---	5.0	6.0	2.0	4.0
29	26.5	20.0	23.0	12.0	10.5	11.0	---	---	6.0	4.5	3.0	4.0
30	23.5	21.5	22.5	12.5	10.5	11.5	---	---	8.5	4.5	4.0	4.0
31	26.0	21.0	23.0	---	---	---	16.5	---	9.5	4.5	4.0	4.0
MONTH	31.5	15.0	21.5	23.0	10.5	16.0	17.0	4.0	9.5	14.0	.5	4.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.0	4.0	4.5	15.5	10.5	13.0	24.5	17.5	21.0	28.5	23.0	25.5
2	5.0	4.0	4.5	13.5	12.5	13.0	23.5	19.0	21.0	25.5	15.0	19.0
3	7.5	4.0	5.5	13.0	10.0	12.0	21.0	19.5	20.0	18.0	16.5	17.5
4	6.0	5.5	5.5	12.5	8.0	10.0	26.5	19.0	22.5	21.0	14.5	17.5
5	8.0	5.5	6.5	14.0	8.5	11.5	23.0	20.5	21.5	23.5	17.5	20.5
6	7.5	5.0	6.0	15.5	10.5	13.0	26.0	19.0	22.0	23.0	20.5	21.5
7	5.5	3.0	3.5	17.5	13.0	14.5	27.5	22.0	24.0	28.0	22.0	24.5
8	3.5	2.5	3.0	17.5	12.5	15.0	24.0	21.5	22.5	28.0	23.0	25.5
9	3.5	2.5	3.0	17.5	13.0	15.0	23.0	20.5	21.5	28.0	22.0	25.0
10	4.5	2.5	3.5	15.0	12.0	13.5	21.0	18.0	20.0	28.0	22.5	25.0
11	4.5	3.5	4.0	17.0	11.5	14.0	22.5	16.0	19.0	24.0	21.5	23.0
12	---	4.5	4.0	19.0	12.5	15.5	23.0	17.5	20.5	29.0	22.0	25.0
13	---	---	3.5	19.5	13.5	16.5	24.5	18.5	21.5	28.0	22.0	25.0
14	---	---	4.0	18.0	14.0	16.0	25.5	20.0	22.5	29.0	21.5	25.0
15	---	---	4.0	15.0	13.5	14.0	26.0	19.5	22.5	30.5	23.0	26.5
16	6.0	5.5	5.5	18.0	12.0	14.5	26.0	20.5	23.0	28.0	26.0	26.5
17	5.5	2.5	3.5	18.5	11.5	15.0	26.0	21.0	23.0	27.0	23.5	25.0
18	4.5	1.0	3.0	20.5	13.5	17.0	25.5	19.5	22.0	30.0	24.5	26.5
19	6.5	2.5	4.5	20.5	14.5	17.5	24.0	18.5	21.0	31.0	25.5	28.0
20	7.5	4.5	6.0	23.0	17.0	19.5	23.5	17.5	20.5	31.0	25.5	28.0
21	7.0	2.0	4.5	22.0	17.5	19.5	23.0	19.0	21.0	28.5	25.0	26.5
22	10.5	4.0	7.0	23.0	17.0	20.0	24.0	18.5	21.0	---	---	28.0
23	12.5	7.5	10.0	21.0	18.0	19.5	25.0	20.5	22.5	---	---	27.0
24	14.5	9.0	11.5	18.0	14.0	15.5	27.0	22.0	24.0	31.0	25.0	28.0
25	13.0	10.5	12.0	16.5	12.0	14.0	25.0	20.5	22.5	31.5	26.0	28.5
26	13.5	9.0	11.5	18.0	12.5	15.5	25.0	19.0	22.0	32.0	27.0	29.0
27	12.5	10.5	11.5	20.0	13.5	16.5	25.5	19.5	22.0	32.5	27.0	29.0
28	14.5	10.5	12.5	22.0	15.5	18.5	23.0	19.5	21.0	28.0	22.5	25.0
29	---	---	---	18.5	17.0	18.0	28.5	20.0	24.0	29.0	23.5	26.0
30	---	---	---	22.5	16.0	19.0	26.0	22.5	24.5	31.0	26.5	29.0
31	---	---	---	23.0	17.5	20.0	---	---	---	31.5	26.0	28.5
MONTH	14.5	1.0	6.0	23.0	8.0	15.5	28.5	16.0	22.0	32.5	14.5	25.5

TRINITY RIVER BASIN

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08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	29.0	26.5	27.5	36.5	27.5	31.5	31.0	26.5	28.5	---	---	28.0
2	27.5	25.0	26.0	37.0	28.0	32.0	29.5	26.5	28.0	---	---	28.0
3	29.0	25.5	27.0	37.5	29.0	33.0	29.5	26.5	27.5	---	---	28.5
4	31.0	26.0	28.5	37.5	28.5	32.5	30.0	25.5	27.0	---	---	29.0
5	32.5	27.0	29.5	36.5	28.5	32.0	28.5	23.5	26.0	---	---	29.0
6	28.5	22.5	26.5	36.5	28.0	32.0	---	---	26.0	---	---	29.5
7	31.0	26.0	28.0	37.0	27.5	31.5	---	---	27.0	33.5	25.5	29.5
8	30.5	25.0	27.5	36.0	28.5	32.0	---	---	28.0	28.0	25.5	26.5
9	30.5	24.5	27.5	36.5	29.5	32.5	---	---	29.0	29.5	25.0	27.0
10	31.0	25.0	28.0	35.5	27.5	31.5	---	---	29.0	30.0	26.5	28.0
11	32.5	25.5	29.0	34.5	29.5	32.0	---	---	30.0	27.5	26.5	27.0
12	34.0	27.0	30.5	34.5	29.5	32.0	---	---	30.5	30.0	26.0	27.5
13	30.5	28.0	29.5	35.5	29.5	32.5	---	---	31.0	31.0	27.5	29.0
14	33.0	27.0	29.5	38.0	28.5	33.0	---	---	31.0	32.5	27.0	29.5
15	33.5	27.5	30.5	37.5	29.5	33.0	---	---	31.0	33.0	28.0	30.0
16	33.5	27.5	30.0	38.0	30.0	33.5	---	---	31.0	33.0	28.0	30.0
17	34.0	27.0	30.0	37.0	29.0	32.0	---	---	31.0	32.0	27.0	29.0
18	35.5	27.0	30.5	36.5	28.5	31.5	---	---	30.5	31.5	25.5	28.0
19	35.5	27.5	31.0	36.0	27.5	31.5	---	---	30.5	31.0	26.0	28.0
20	35.0	27.5	30.5	36.0	28.0	32.0	---	---	30.5	32.0	25.5	28.5
21	35.0	27.0	30.5	34.5	30.0	32.0	---	---	30.5	29.0	24.0	25.5
22	34.5	27.0	30.5	34.5	29.0	31.0	---	---	30.5	24.5	21.5	23.0
23	35.5	27.0	30.5	30.5	27.0	29.0	---	---	31.0	27.5	21.5	24.5
24	36.0	27.5	31.0	33.5	28.0	30.5	30.5	29.0	29.5	28.5	24.0	26.0
25	35.5	27.5	31.0	---	29.0	32.0	---	---	31.0	27.0	24.0	25.5
26	35.5	27.0	30.5	---	---	31.0	---	---	31.0	25.0	23.5	24.0
27	36.0	27.0	31.0	---	---	31.5	---	---	30.5	24.5	22.5	23.5
28	36.5	27.5	31.0	---	---	31.0	30.5	27.5	29.0	28.0	22.0	24.5
29	36.0	28.0	31.5	34.5	26.5	30.5	31.5	26.5	28.5	28.0	22.5	25.0
30	35.5	27.5	31.0	36.5	27.5	31.5	31.0	27.0	28.5	29.0	23.0	25.5
31	---	---	---	34.0	27.0	30.5	29.5	26.0	27.5	---	---	---
MONTH	36.5	22.5	29.5	38.0	26.5	31.5	31.5	23.5	29.5	33.5	21.5	27.0

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.0	6.2	8.5	8.4	5.1	6.3	9.4	7.6	8.4	---	---	11.5
2	14.3	6.4	9.5	8.2	6.1	7.0	9.5	8.0	8.6	---	---	12.5
3	13.7	6.2	8.8	8.4	6.5	7.3	9.6	7.5	8.3	---	---	13.0
4	10.1	4.8	7.9	9.9	7.0	8.2	9.8	7.0	8.1	---	---	12.5
5	4.8	.0	3.2	9.6	6.1	7.5	10.5	7.1	8.5	---	---	12.0
6	7.6	.0	4.2	9.6	5.9	7.1	11.6	8.5	9.9	---	---	11.0
7	10.9	5.4	8.0	9.8	5.7	7.3	13.8	9.9	11.3	17.6	11.8	14.1
8	10.7	2.6	6.9	7.7	5.7	6.9	13.0	9.9	11.1	17.5	11.6	14.1
9	12.5	7.0	9.5	9.0	7.2	8.1	13.7	9.7	11.4	15.3	10.3	13.1
10	10.2	7.2	8.5	9.3	8.3	8.7	13.7	11.3	12.3	---	---	11.0
11	12.4	7.3	9.7	8.9	7.4	8.3	13.9	10.6	12.3	5.8	4.5	10.5
12	13.4	9.6	11.2	8.4	7.0	7.6	12.7	9.4	10.9	4.1	3.6	10.5
13	14.0	10.0	11.6	9.3	6.9	7.8	12.3	7.7	9.6	4.4	3.4	11.5
14	14.4	9.9	11.5	10.3	7.1	8.3	12.9	7.6	9.9	4.2	3.5	12.5
15	14.3	9.2	11.3	10.6	6.8	8.1	13.9	8.8	10.7	3.8	3.1	13.0
16	14.9	9.7	11.9	9.5	6.2	7.6	13.0	2.6	9.0	---	---	13.5
17	14.9	10.6	12.4	10.8	6.4	8.0	14.0	2.3	8.0	---	---	13.0
18	14.4	9.5	11.7	10.2	7.0	8.2	15.4	7.9	10.6	14.0	12.2	13.3
19	13.6	8.9	10.7	9.7	6.2	7.4	16.0	8.1	11.0	14.5	12.1	13.0
20	15.0	7.3	10.8	11.5	6.3	8.2	16.4	9.5	12.0	---	---	13.0
21	14.8	6.7	10.2	12.1	7.8	9.4	17.3	10.4	12.9	---	---	13.5
22	7.6	2.8	5.4	12.8	8.1	10.1	16.5	10.7	12.8	---	---	13.0
23	5.4	2.9	4.4	12.9	7.1	9.6	15.3	---	12.0	---	---	13.0
24	8.2	4.7	6.1	10.0	5.2	7.0	---	---	11.0	---	---	12.0
25	9.6	5.5	7.0	12.2	5.9	8.6	---	---	11.2	---	---	11.5
26	10.2	5.5	7.1	13.1	7.4	9.9	---	---	11.6	---	---	11.5
27	10.5	5.0	6.9	11.1	8.0	9.5	---	---	12.0	---	---	11.0
28	10.1	4.4	6.7	9.5	8.0	8.8	---	---	11.0	---	---	11.0
29	11.1	5.0	7.2	9.0	8.1	8.5	---	---	12.0	---	---	11.0
30	9.4	5.1	6.6	8.8	7.0	7.9	---	---	10.7	---	---	11.0
31	10.5	4.8	7.0	---	---	---	---	---	11.0	---	---	11.0
MONTH	15.0	.0	8.5	13.1	5.1	8.1	17.3	2.3	10.7	17.6	3.1	12.2

TRINITY RIVER BASIN

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	11.9	10.8	11.4	14.2	9.6	11.7	11.7	5.6	8.3	9.8	5.3	7.3
2	12.5	10.7	11.7	11.4	8.4	9.7	11.8	5.5	8.5	8.4	4.6	6.1
3	13.3	11.2	12.2	9.5	8.7	9.2	10.6	5.9	7.8	7.7	6.8	7.2
4	12.6	11.0	11.9	11.6	9.1	10.3	12.7	6.1	9.1	7.1	6.4	6.8
5	16.2	13.2	14.8	12.4	9.4	10.8	10.2	6.0	7.8	7.1	5.4	6.3
6	16.4	15.5	16.0	12.8	9.2	10.8	11.7	4.9	8.0	6.2	4.8	5.6
7	15.7	10.7	12.8	13.8	9.3	11.1	12.2	5.6	8.6	8.1	5.2	6.4
8	15.7	10.9	14.5	14.8	9.6	11.9	11.2	5.5	7.9	10.5	5.6	7.6
9	15.3	10.9	11.8	15.7	7.7	11.8	10.7	5.9	7.3	11.0	7.6	8.6
10	15.4	15.0	15.2	15.9	8.7	12.0	7.5	6.1	7.0	12.2	8.1	10.2
11	15.8	14.9	15.3	16.5	10.8	13.2	7.6	6.7	7.0	11.2	4.6	8.8
12	15.3	---	---	17.3	9.8	13.1	8.3	6.3	7.2	9.7	4.5	6.9
13	---	---	12.0	16.0	8.6	11.8	10.5	6.2	8.2	11.8	6.5	10.2
14	---	---	10.0	16.7	8.9	12.0	11.4	6.9	9.0	13.1	11.5	12.3
15	---	---	9.0	12.1	8.8	9.9	12.4	7.2	9.6	12.8	11.1	11.9
16	9.9	9.3	9.6	14.3	7.8	10.5	12.9	6.7	9.6	12.0	8.3	10.5
17	11.0	9.3	10.1	14.6	8.3	11.0	11.7	6.6	8.8	9.8	5.0	6.9
18	11.8	10.9	11.2	14.9	8.3	12.0	12.1	7.3	9.5	11.4	5.6	7.9
19	11.4	10.8	11.0	15.3	13.6	14.3	12.2	7.9	9.8	11.2	5.2	7.8
20	10.7	10.0	10.4	14.4	7.3	13.0	11.9	7.1	9.5	11.6	5.7	8.2
21	11.2	10.4	10.8	7.6	---	6.5	12.9	7.0	9.8	---	---	8.0
22	10.7	9.3	10.3	10.7	---	7.9	12.2	5.5	8.7	---	---	8.0
23	9.4	8.0	8.8	9.7	---	7.0	7.9	6.1	6.8	---	---	8.0
24	9.0	7.2	7.9	8.2	---	7.7	8.6	5.4	6.8	12.7	---	7.9
25	9.4	7.1	8.1	8.8	7.6	8.2	9.8	5.7	7.8	12.3	5.8	9.2
26	11.1	8.0	9.4	9.3	7.7	8.4	11.9	7.5	9.5	11.2	6.0	8.7
27	11.6	8.6	10.6	10.0	7.3	8.4	11.5	8.0	9.6	11.9	6.3	8.7
28	13.1	8.7	10.7	11.9	6.8	9.0	11.4	7.8	9.2	7.2	4.9	6.2
29	---	---	---	12.4	7.5	9.8	12.3	7.2	9.2	5.0	.1	.8
30	---	---	---	15.1	7.6	11.4	8.3	5.0	6.8	9.5	.1	5.0
31	---	---	---	9.5	.3	5.5	---	---	---	11.8	5.5	8.1
MONTH	16.4	7.1	11.5	17.3	.3	10.3	12.9	4.9	8.4	13.1	.1	7.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	10.2	5.2	7.3	15.4	3.1	8.7	15.8	1.5	9.1	11.7	4.8	6.4
2	10.7	5.8	7.9	13.4	2.3	8.2	14.3	2.2	7.7	---	---	6.8
3	11.5	6.2	8.9	12.7	2.9	7.3	14.9	1.6	7.1	---	---	7.0
4	12.7	6.4	9.4	14.1	2.3	7.8	15.6	2.2	7.8	---	---	7.0
5	12.8	6.3	9.5	12.7	1.8	7.6	---	---	8.0	---	---	7.0
6	7.9	5.3	6.6	12.3	1.8	7.8	---	---	8.0	---	---	7.0
7	10.6	4.4	7.0	13.1	2.1	7.3	---	---	8.0	---	---	7.0
8	10.1	4.7	7.1	12.4	2.9	7.9	---	---	8.0	11.4	---	7.5
9	11.0	4.5	7.6	11.7	4.6	7.8	---	---	8.0	11.7	4.9	7.7
10	11.4	5.7	8.4	10.7	1.5	6.5	12.9	5.8	8.3	12.4	6.2	9.0
11	11.6	6.1	8.6	14.1	5.2	8.4	11.8	4.6	7.8	---	---	7.4
12	11.6	5.8	8.5	13.9	7.0	9.4	14.3	4.1	6.8	11.6	2.3	6.4
13	10.8	5.5	7.6	14.5	7.4	10.3	---	---	6.9	11.6	3.6	7.2
14	11.9	5.9	8.3	14.3	1.8	8.3	---	---	7.5	12.7	4.8	7.9
15	11.9	7.3	9.2	13.8	2.3	7.4	---	---	7.5	12.8	4.7	7.6
16	12.5	6.6	9.5	14.3	2.1	8.0	---	---	7.6	12.8	4.3	7.6
17	13.1	6.4	9.3	14.2	1.9	7.1	---	---	7.8	12.7	4.0	7.6
18	13.3	5.8	9.1	14.2	2.4	8.1	---	---	8.0	12.9	3.8	7.4
19	13.6	5.5	9.0	14.1	1.7	8.2	---	---	8.0	12.3	3.6	7.0
20	13.1	5.1	8.7	15.2	2.2	9.2	---	---	8.0	14.0	3.3	7.9
21	13.1	4.4	8.1	16.5	5.9	10.4	---	---	8.0	13.2	3.8	7.3
22	13.1	4.6	8.2	17.0	5.4	11.5	---	---	8.0	14.3	4.7	8.6
23	13.0	4.5	8.1	10.8	.2	4.9	10.9	5.0	8.4	16.2	4.9	9.3
24	13.1	4.4	7.9	10.9	.2	4.8	7.6	3.7	4.9	15.4	5.0	9.6
25	13.4	4.2	8.1	13.9	4.6	9.3	---	---	5.0	15.3	5.1	10.0
26	13.4	4.8	8.3	14.2	4.4	8.7	---	---	5.0	8.9	4.9	6.4
27	14.3	5.2	8.4	---	---	9.0	---	---	5.0	12.7	4.2	7.9
28	13.3	4.4	7.7	14.5	4.8	9.1	12.0	3.0	5.2	13.1	4.4	8.1
29	13.9	4.4	7.8	15.2	1.3	8.4	12.3	2.7	6.3	13.3	6.7	9.2
30	14.7	2.5	7.6	15.6	1.6	8.4	12.1	3.7	6.7	13.7	6.4	9.2
31	---	---	---	15.8	1.2	8.1	12.5	4.8	7.5	---	---	---
MONTH	14.7	2.5	8.3	17.0	.2	8.2	15.8	1.5	7.3	16.2	2.3	7.7

08049200 LAKE ARLINGTON AT ARLINGTON, TX

LOCATION.--Lat 32°42'58", long 97°11'32", Tarrant County, Hydrologic Unit 12030102, in new pumphouse at right end of Arlington Dam on Village Creek near western boundary of Arlington, 1.5 mi (2.4 km) upstream from The Texas and Pacific Railway Co. bridge, and 7 mi (11 km) upstream from mouth.

DRAINAGE AREA.--143 mi² (370 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1957 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 9, 1957, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by a rolled earthfill dam 6,482 ft (1,976 m) long. The service spillway is a 10-foot-diameter (3 m) uncontrolled circular drop inlet. The emergency spillway is an 882-foot-wide (269 m) cut through natural ground near the right end of dam. The dam was completed and storage began Mar. 31, 1957. Capacities are based on 1955 survey. The dam was built by city of Arlington to impound water for municipal and industrial uses. Data derived from records furnished by the cities of Fort Worth and Mansfield and by the Tarrant County Water Control and Improvement District No. 1 show that 48,870 acre-ft (60.3 hm³) of water was diverted from Cedar Creek Reservoir (station 08063010) into Lake Arlington during the year. Water is circulated for cooling purposes from lake to generating plant of Texas Electric Service Co. 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.....	572.0	-
Crest of spillway.....	559.7	70,140
Crest of drop inlet (top of conservation pool).....	550.0	45,710
Lowest gated outlet (invert).....	505.0	180

COOPERATION.--Records of diversions furnished by city of Arlington, Texas Electric Service Co., and Tarrant County Water Control and Improvement District No. 1. Capacity table furnished by Freese and Nichols, Consulting Engineers, for the city of Arlington.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 56,620 acre-ft (69.8 hm³) May 1, 1966, elevation, 554.65 ft (169.057 m); minimum since lake first filled in April 1957, 18,110 acre-ft (22.3 hm³) Oct. 17, 1971, elevation, 534.27 ft (162.845 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 38,940 acre-ft (48.0 hm³) June 5, elevation, 546.78 ft (166.659 m); minimum, 25,710 acre-ft (31.7 hm³) Sept. 20, elevation, 539.51 ft (164.443 m).

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

539.0	24,880	544.0	33,570
540.0	26,520	546.0	37,390
542.0	29,950	547.0	39,380

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26520	28850	30630	30680	33070	35520	36460	37140	38820	35060	30660	27920
2	26450	28930	30660	30610	33150	35610	36300	37490	38760	34930	30790	27840
3	26440	29020	30610	30660	33150	35710	36400	37690	38820	34760	30950	27680
4	26450	29110	30480	30790	33200	35650	36520	37810	38900	34530	31040	27480
5	26440	29230	30470	30910	33220	35540	36610	37900	38860	34250	31470	27460
6	26570	29650	30560	31000	33290	35770	36730	37900	38900	33950	31690	27460
7	26670	29650	30660	30890	33390	35940	36810	37830	38860	33660	31650	27450
8	26760	29770	30720	30730	33370	35980	36690	37750	38780	33400	31720	27480
9	26810	29760	30750	30770	33350	36000	36710	37790	38720	33290	31850	27450
10	26870	29830	30680	30930	33390	36040	36920	37920	38620	33040	31940	27280
11	26890	29950	30570	31110	33550	35940	37040	38000	38520	32740	31960	27160
12	26960	30040	30680	31150	34430	35820	37080	38140	38380	32470	31830	27010
13	27040	30150	30790	31240	34590	35860	37180	38000	38280	32180	31670	26820
14	27120	30250	30930	31330	34680	35840	37250	37850	38160	31810	31540	26600
15	27210	30340	31090	31540	34760	35840	37180	37890	37960	31610	29330	26420
16	27210	30450	31160	31580	34680	35880	37000	38020	38000	31430	29180	26190
17	27340	30480	31040	31670	34800	35880	37020	38040	37730	31270	28970	25920
18	27390	30640	30910	31780	34780	35790	37100	38140	37650	31070	28760	25760
19	27460	30750	30860	31700	34720	35670	37060	38080	37450	30880	28520	25720
20	27500	30790	30950	31650	34640	35750	37080	38140	37290	30700	28280	25710
21	27580	30880	31020	31790	34700	35860	37200	38120	37100	30520	28190	25820
22	27700	31020	31110	31780	34830	36000	37230	38220	36810	30400	28260	26060
23	27750	31040	31020	31920	34890	36380	37200	38280	36540	30450	28300	26090
24	27870	30970	30880	32050	35020	36460	37160	38260	36420	30430	28280	26140
25	27970	30840	30800	32160	35060	36400	37250	38240	36290	30570	28210	26140
26	28070	30770	30720	32270	35190	36290	37310	38240	36090	30630	27990	26200
27	28300	30640	30680	32380	35290	36270	37370	38060	35840	30520	27730	26250
28	28450	30520	30730	32470	35380	36340	37430	38660	35630	30570	27650	26340
29	28540	30590	30790	32560	---	36420	37290	38620	35400	30610	27720	26390
30	28660	30610	30840	32710	---	36500	37180	38680	35190	30590	27730	26370
31	28740	---	30820	32930	---	36580	---	38760	---	30570	27750	---
MAX	28740	31040	31160	32930	35380	36580	37430	38760	38900	35060	31960	27920
MIN	26440	28850	30470	30610	33070	35520	36300	37140	35190	30400	27650	25710
(†)	541.31	542.37	542.49	543.65	544.96	545.58	545.89	546.69	544.86	542.35	540.73	539.91
(‡)	+2090	+1870	+210	+2110	+2450	+1200	+600	+1580	-3570	-4620	-2820	-1380
(††)	3350	2560	2320	2200	1910	2420	2970	3470	4170	6010	5050	3730
CAL YR 1977	MAX	55580	MIN	26440	†	+410	††	38790				
WTR YR 1978	MAX	38900	MIN	25710	†	-280	††	40160				

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses.

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued
WATER-QUALITY RECORDS

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

324304097113601 - LAKE ARLINGTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
JAN									
13...	1240	1.0	310	8.2	8.5	.70	10.4	93	110
13...	1242	10	310	8.1	8.5	--	10.4	92	--
13...	1245	20	310	8.1	8.5	--	10.4	92	--
13...	1247	30	310	8.1	8.5	--	10.4	92	--
13...	1250	41	310	8.1	8.0	--	10.4	90	110

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
JAN									
13...	19	35	5.2	18	.8	4.5	110	0	30
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	19	35	5.2	18	.8	4.5	110	0	30

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN									
13...	25	.2	1.9	174	.03	.07	.04	140	60
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	.03	.07	.05	0	0
13...	--	--	--	--	--	--	--	--	--
13...	25	.2	1.9	174	.04	.09	.04	190	80

324320097121101 - LAKE ARLINGTON AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
13...	1220	1.0	310	8.3	8.0	10.4	90
13...	1222	10	310	8.2	8.0	10.4	90
13...	1224	20	310	8.2	8.0	10.2	89
13...	1226	28	310	8.2	8.0	10.1	88

324253097121801 - LAKE ARLINGTON BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
13...	1305	1.0	310	8.2	8.5	10.6	94
13...	1307	10	310	8.2	8.5	10.5	93
13...	1308	20	310	8.1	8.0	10.2	89
13...	1309	30	310	8.1	8.0	10.2	89
13...	1311	37	310	8.0	8.0	10.0	87

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

431

324301097123301 - LAKE ARLINGTON BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
13...	1317	1.0	310	8.2	8.5	10.5	93
13...	1319	10	310	8.2	8.0	10.4	90
13...	1320	20	310	8.2	8.0	10.2	89
13...	1322	27	310	8.1	8.0	10.2	89

324257097130301 - LAKE ARLINGTON CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
13...	1340	1.0	310	8.2	11.0	10.5	98
13...	1342	10	310	8.2	11.0	10.5	98
13...	1344	14	310	8.1	11.0	10.4	97

324228097130301 - LAKE ARLINGTON DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN							
13...	1358	1.0	310	8.2	10.0	10.8	99
13...	1400	10	310	8.1	8.5	10.2	90
13...	1402	13	310	8.0	8.5	10.2	90

324143097132201 - LAKE ARLINGTON EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRAN- SPAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
JAN									
13...	1414	1.0	310	8.2	9.0	.70	11.1	94	110
13...	1416	10	310	8.2	8.5	--	11.0	97	--
13...	1419	23	301	8.1	7.0	--	11.0	98	110

DATE	TIME	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
JAN										
13...	18 35	--	--	5.1	19	.8	4.7	110	0	31
13...	--	--	--	--	--	--	--	--	--	--
13...	17 35	--	--	4.8	18	.8	4.4	110	0	30

DATE	TIME	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN									
13...	25	--	1.9	176	.03	.07	.04	170	70
13...	--	--	--	--	--	--	--	--	--
13...	25	--	1.8	173	.03	.04	.04	10	10

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

324133097130601 - LAKE ARLINGTON EL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
JAN 13...	1427	1.0	298	8.2	8.5	10.9	96
13...	1430	12	301	8.1	7.0	11.0	93

324041097134601 - LAKE ARLINGTON SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
JAN 13...	1450	1.0	221	7.9	8.0	.70	10.5	91	69
13...	1452	10	229	7.9	7.5	--	10.1	87	70

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
JAN 13...	14	21	3.9	13	.7	4.0	67	0	23
13...	12	21	4.2	14	.7	3.9	71	0	23

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
JAN 13...	17	1.6	117	.05	.07	.05	180	80
13...	19	1.6	122	.04	.06	.05	20	0

TRINITY RIVER BASIN

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LAKE ARLINGTON AT ARLINGTON, TX--Continued

324304097113601 LAKE ARLINGTON SITE AC
PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO JANUARY 1978

DATE	JAN 13, 78
TIME	1250
TOTAL CELLS/ML	19000
DIVERSITY: DIVISION	1.3
..CLASS	1.3
...ORDER	1.6
...FAMILY	2.2
...GENUS	2.7

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...OOCYSTACEAE		
....ANKISTRODESMUS	1400	7
....KIRCHNERIELLA	780	4
....SELENASTRUM	*	0
....TETRAEDRON	860	4
...SCENEDESMACEAE		
....SCENEDESMUS	1300	6
....TETRASTRUM	7400#	38
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	550	3
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	940	5
..PENNALES		
...FRAGILARIACEAE		
....SYNEDRA	1100	6
...NITZSCHACEAE		
....NITZSCHIA	550	3
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	4400#	23
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

324041097134601 LAKE ARLINGTON SITE FC
PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO JANUARY 1978

DATE	JAN 13, 78
TIME	1454
TOTAL CELLS/ML	120000
DIVERSITY: DIVISION	0.8
..CLASS	0.8
..ORDER	1.1
...FAMILY	0.0
....GENUS	0.0

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...OOCYSTACEAE		
....DICHOTOMOCOCCUS	1100	1
...HYDRODICTYACEAE		
....PEDIASTRUM	1500	1
...MICRACTINIACEAE		
....MICRACTINIUM	*	0
...OOCYSTACEAE		
....ANKISTRODESMUS	2200	2
....CHODATELLA	920	1
....DICTYOSPHAERIUM	740	1
....KIRCHNERIELLA	1100	1
...OOCYSTIS	*	0
....SELENASTRUM	*	0
....TETRAEDRON	*	0
...SCENEDESMACEAE		
....SCENEDESMUS	3100	3
....TETRASTRUM	4200	4
..ZYGNEMATALES		
...DESMIDIACEAE		
....EUASTRUM	*	0
CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	1800	2
....MELOSIRA	1100	1
..PENNALES		
...FRAGILARIACEAE		
....SYNEDRA	*	0
...NITZSCHACEAE		
....NITZSCHIA	920	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCOCCALES		
...CHROCOCCACEAE		
....AGMENELLUM	44000#	38
....ANACYSTIS	47000#	40
....COCCOCHLORIS	1800	2
...HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	*	0
...RIVULARIACEAE		
....RAPIDIOPSIS	*	0
...HORMOGONALES	4600	4
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

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LAKE ARLINGTON AT ARLINGTON, TX--Continued

324304097113601 - LAKE ARLINGTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
16...	0915	1.0	317	8.0	31.0	1.20	7.2	99	110
16...	0917	10	317	8.0	30.5	--	7.2	97	--
16...	0919	20	317	8.0	30.0	--	7.4	100	--
16...	0921	30	335	7.0	25.0	--	.1	1	--
16...	0923	40	343	7.0	24.0	--	.2	2	130

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
16...	12	37	4.7	19	.8	4.6	120	0	32	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	14	43	5.1	20	.8	4.5	140	0	27	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN										
16...	22	.2	2.7	182	.00	.00	.02	50	10	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	.01	.00	.02	40	50	--
16...	--	--	--	--	--	--	--	--	--	--
16...	20	.2	4.6	196	.00	.20	.06	1000	1100	--

324320097121101 - LAKE ARLINGTON AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
16...	0945	1.0	317	8.0	31.0	7.1	97
16...	0947	10	317	8.0	31.0	7.1	97
16...	0949	20	317	8.0	30.5	7.1	96
16...	0951	26	317	8.0	30.5	7.1	96

324253097121801 - LAKE ARLINGTON BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
16...	1000	1.0	317	8.0	30.5	7.2	97
16...	1002	10	317	8.0	30.5	7.1	96
16...	1004	20	317	8.0	30.0	7.1	96
16...	1006	30	335	7.1	25.0	.1	1
16...	1008	41	342	7.0	25.0	.2	2

TRINITY RIVER BASIN

LAKE ARLINGTON AT ARLINGTON, TX--Continued

324301097123301 - LAKE ARLINGTON BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
16...	1020	1.0	317	8.0	30.5	7.1	96
16...	1022	10	317	8.0	30.5	7.2	97
16...	1024	20	317	8.0	30.0	7.1	96
16...	1026	29	335	7.1	27.0	.2	3

324257097130301 - LAKE ARLINGTON CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
16...	1032	1.0	317	8.0	31.0	7.2	99
16...	1034	10	317	8.1	31.0	7.2	99
16...	1036	15	317	8.0	31.0	7.2	99

324228097130301 - LAKE ARLINGTON DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
16...	1055	1.0	317	7.9	32.0	6.5	90
16...	1057	10	317	7.8	30.0	5.9	80
16...	1059	16	317	7.4	29.5	3.6	48

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

324143097132201 - LAKE ARLINGTON EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
16...	1115	1.0	317	8.0	30.0	.60	6.6	89	110
16...	1117	10	317	8.0	29.5	--	6.6	88	--
16...	1119	22	317	7.1	28.5	--	.2	3	110

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
16...	11	36	4.7	19	.8	4.6	120	0	31	--
16...	--	--	--	--	--	--	--	--	--	--
16...	13	37	4.6	18	.7	4.4	120	0	29	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
16...	19	2.9	176	.01	.00	.02	10	0	0
16...	--	--	--	--	.00	.01	.02	0	10
16...	18	3.8	174	.01	.03	.06	20	410	

324133097130601 - LAKE ARLINGTON EL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
16...	1135	1.0	317	8.1	29.5	7.2	96
16...	1137	12	317	8.1	29.0	7.0	93

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

324041097134601 - LAKE ARLINGTON SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CAC03)
JUN										
16...	1155	1.0	320	8.0	30.0	.40	7.0	95	110	
16...	1157	10	320	7.8	29.5	--	6.1	81	--	
16...	1159	13	320	7.8	29.5	--	6.0	80	110	

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
16...	10	36	4.6	19	.8	4.6	120	0	31	
16...	--	--	--	--	--	--	--	--	--	--
16...	10	36	4.6	18	.8	4.6	120	0	31	

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
16...	23	2.9	180	.01	.00	.03	110	0	
16...	--	--	--	--	--	--	--	--	--
16...	23	3.0	179	.00	.00	.04	10	0	

324304097113601 - LAKE ARLINGTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
JUN							
16...	0915	1.0	1	200	0	0	4
16...	0919	20	--	--	--	--	--
16...	0923	40	6	200	0	0	0

DATE	TIME	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JUN								
16...	50	3	10	.0	0	0	5	
16...	40	--	50	--	--	--	--	--
16...	1000	5	1100	.0	0	0	5	

TRINITY RIVER BASIN

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LAKE ARLINGTON AT ARLINGTON, TX--Continued

324041097134601 LAKE ARLINGTON SITE FC
PHYTOPLANKTON ANALYSES, JUNE 1978 TO JUNE 1978

DATE	JUN 16, 78
TIME	1154
TOTAL CELLS/ML	40000
DIVERSITY: DIVISION	0.2
..CLASS	0.2
...ORDER	1.0
...FAMILY	1.2
...GENUS	1.8

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...MICRACTINIACEAE		
....GOLENKINIA	*	0
...OOCYSTACEAE		
....ANKISTRODESMUS	*	0
....TETRAEDRON	*	0
...VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	*	0
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...PENNALES		
...NITZSCHIACEAE		
....NITZSCHIA	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCCOCCALES		
...CHROCCOCCACEAE		
....AGMENELLUM	4900	12
....ANACYSTIS	24000#	61
...HORMOGONALES		
...NOSTOCACEAE		
....APHANIZOMENON	1700	4
...OSCILLATORIA		
....LYNGBYA	1900	5
....OSCILLATORIA	5900	15
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....EUGLENA	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

324304097113601 LAKE ARLINGTON SITE AC
PHYTOPLANKTON ANALYSES, JUNE 1978 TO JUNE 1978

DATE	JUN 16, 78
TIME	0916
TOTAL CELLS/ML	83000
DIVERSITY: DIVISION	0.1
..CLASS	0.1
..ORDER	0.9
...FAMILY	0.9
....GENUS	1.5

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....MICRACTINIACEAE		
....GOLENKINIA	*	0
...OOCYSTACEAE		
....ANKISTRODESMUS	*	0
..ZYGNEMATALES		
...DESMIDIACEAE		
....COSMARIUM	510	1
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
....COSCINODISCACEAE		
....CYCLOTELLA	*	0
..PENNALES		
...NITZSCHIACEAE		
....NITZSCHIA	*	0
..XANTHOPHYCEAE		
...HETEROCOCCALES		
...CENTRITRACTACEAE		
....CENTRITRACTUS	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
....CHROCOCCACEAE		
....AGMENELLUM	14000#	17
....ANACYSTIS	50000#	60
...HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	17000#	21
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

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324304097113601 - LAKE ARLINGTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
SFP									
09...	0923	1.0	324	8.2	30.0	1.20	6.2	84	110
09...	0925	10	324	7.6	29.5	--	3.2	43	--
09...	0927	20	324	7.3	29.5	--	.9	12	--
09...	0929	31	332	7.1	28.5	--	.2	3	110

DATE	TIME	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
SFP										
09...	9	34	5.0	20	.8	4.8	105	6	29	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	7	37	5.2	19	.8	4.8	130	0	25	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SFP										
09...	24	.2	3.8	179	.02	.04	.03	20	10	--
09...	--	--	--	--	.02	.04	.03	130	120	--
09...	--	--	--	--	.01	.04	.03	160	420	--
09...	25	--	5.0	186	.02	.53	.07	340	580	--

324320097121101 - LAKE ARLINGTON AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
09...	0945	1.0	324	8.3	30.0	6.5	87
09...	0947	10	324	8.3	30.0	6.3	85
09...	0949	20	327	7.3	29.5	1.0	13
09...	0951	32	332	7.2	28.5	.3	4

324253097121801 - LAKE ARLINGTON BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
09...	0957	1.0	324	8.2	30.0	5.9	80
09...	0959	10	324	8.2	30.0	5.7	77
09...	1001	20	324	7.8	29.5	4.2	56
09...	1003	30	340	7.1	28.5	.2	3
09...	1005	35	345	7.1	28.0	.3	4

TRINITY RIVER BASIN
LAKE ARLINGTON AT ARLINGTON, TX--Continued

324301097123301 - LAKE ARLINGTON BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
09...	1009	1.0	324	8.3	30.5	6.3	85
09...	1011	10	324	8.3	30.5	6.2	84
09...	1013	18	324	7.9	30.0	4.3	58

324257097130301 - LAKE ARLINGTON CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
09...	1029	1.0	322	8.3	33.5	6.2	87

324228097130301 - LAKE ARLINGTON DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
09...	1035	1.0	322	8.3	33.0	6.5	92
09...	1037	10	322	8.2	31.5	6.0	82

324143097132201 - LAKE ARLINGTON EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SFP									
09...	1050	1.0	322	8.2	30.0	1.00	6.2	84	110
09...	1052	10	298	8.3	28.5	--	6.2	82	--
09...	1054	21	292	8.1	28.0	--	5.9	77	110

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
09...	11	35	5.4	19	.8	4.6	120	0	30
09...	--	--	--	--	--	--	--	--	--
09...	23	34	4.9	17	.7	4.5	100	0	29

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
09...	22	3.8	179	.01	.03	.03	50	10
09...	--	--	--	.04	.05	.05	20	10
09...	25	3.4	167	.05	.05	.06	20	20

TRINITY RIVER BASIN

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LAKE ARLINGTON AT ARLINGTON, TX--Continued

324041097134601 - LAKE ARLINGTON SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, SATUR- ATION	HARD- NESS (MG/L AS CAC03)
SFP									
09...	1113	1.0	245	7.8	27.0	.50	6.6	85	71
09...	1115	7.0	245	7.8	27.0	--	6.5	83	74

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
09...	7	22	4.0	15	.8	4.0	78	0	24
09...	10	23	4.0	15	.8	4.0	78	0	24

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
09...	21	2.7	131	.11	.04	.05	20	20
09...	22	2.6	133	.12	.05	.05	30	20

324304097113601 - LAKE ARLINGTON SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
SEP							
09...	0923	1.0	1	0	0	0	4
09...	0925	10	--	--	--	--	--
09...	0927	20	--	--	--	--	--
09...	0929	31	5	100	0	0	1

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
SEP							
09...	20	0	10	.0	0	0	0
09...	130	--	120	--	--	--	--
09...	160	--	420	--	--	--	--
09...	340	0	580	.0	0	0	10

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°45'46", long 96°59'42", Dallas County, Hydrologic Unit 12030102, on left bank at upstream side of bridge on Belt Line Road, 1.3 mi (2.1 km) northeast of Grand Prairie, 3.7 mi (6.0 km) upstream from Bear Creek, 6.5 mi (10.5 km) upstream from Mountain Creek, and at mile 514.6 (828.0 km).

DRAINAGE AREA.--3,065 mi² (7,938 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1925 to current year.

REVISED RECORDS.--WSP 628: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 410.42 ft (125.096 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 6, 1933, nonrecording gage at bridge on old channel 2,500 ft (762 m) southeast of present site at datum 2.56 ft (0.780 m) higher. Dec. 6, 1933, to May 24, 1956, water-stage recorder at site 440 ft (134 m) downstream from site of nonrecording gage at datum 2.56 ft (0.780 m) higher than present datum. May 25, 1956, to Apr. 18, 1957, nonrecording gage at site 1.5 mi (2.4 km) downstream at different datum. Apr. 19 to Aug. 13, 1957, nonrecording gage on bridge at present site and datum.

REMARKS.--Water-discharge records good except those for Feb. 27 to Mar. 30, which are fair. Flow is affected at times by three upstream reservoirs with a combined capacity of 248,600 acre-ft (307 hm³), of which 76,550 acre-ft (94.4 hm³) is for flood control. During the current year, 74,660 acre-ft (92.1 hm³) of sewage effluent was discharged into river upstream from this station by the city of Fort Worth. There are many diversions upstream from this station for municipal, industrial, and other uses. The river channel at this station was relocated and rectified in 1956. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years (water years 1926-78), 540 ft³/s (15.29 m³/s), 391,200 acre-ft/yr (482 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,000 ft³/s (1,760 m³/s) May 17, 1949, gage height, 28.00 ft (8.534 m), site and datum then in use, from rating curve extended above 36,000 ft³/s (1,020 m³/s); minimum observed, 3.2 ft³/s (0.091 m³/s) June 6, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 30.6 ft (9.33 m) in May 1908, former site and datum, from information by local resident. Flood in April 1922 reached a stage of 29.0 ft (8.84 m) former site and datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,080 ft³/s (87.2 m³/s) May 29, gage height, 8.10 ft (2.469 m); minimum, 48 ft³/s (1.36 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	241	158	114	306	125	126	228	172	118	141	154
2	93	177	140	92	219	130	126	322	210	107	134	449
3	86	132	118	106	163	150	123	1650	153	97	132	243
4	95	116	114	109	141	135	131	431	138	118	130	173
5	97	102	104	111	127	130	162	204	125	110	477	174
6	117	97	104	115	120	125	160	157	216	117	622	225
7	119	96	97	120	164	530	134	141	340	119	225	177
8	128	326	99	126	284	370	115	131	383	117	370	155
9	106	560	106	120	284	205	116	129	218	113	148	161
10	118	182	102	125	332	160	954	119	162	107	140	158
11	201	133	99	128	259	140	738	121	118	136	133	169
12	118	109	104	203	1010	150	224	150	114	123	130	188
13	113	95	109	215	1610	140	170	138	128	126	118	186
14	105	93	110	166	310	145	144	118	121	125	114	153
15	93	97	105	134	210	140	135	109	124	129	129	139
16	101	99	105	136	214	140	122	122	128	130	126	123
17	94	101	108	148	198	125	116	129	116	125	122	111
18	98	96	109	136	234	120	123	117	109	134	120	107
19	99	95	100	132	326	115	119	118	107	140	119	111
20	101	95	105	126	290	105	125	211	120	138	114	106
21	102	92	102	146	243	240	166	1090	115	136	123	113
22	222	96	93	153	191	135	127	291	116	133	201	225
23	194	91	103	174	158	115	459	159	122	133	172	127
24	135	95	104	185	148	1410	222	138	117	198	157	79
25	123	79	98	185	137	280	146	122	113	200	150	68
26	117	83	83	172	126	160	118	122	103	176	138	76
27	100	83	94	150	115	150	114	112	118	161	140	72
28	92	103	101	135	121	140	108	954	123	167	146	69
29	91	146	134	128	---	130	105	2400	116	151	158	69
30	91	159	161	120	---	131	106	537	110	142	166	65
31	92	---	129	174	---	129	---	220	---	138	149	---
TOTAL	3538	4069	3398	4384	8040	6400	5834	10990	4455	4164	5244	4425
MEAN	114	136	110	141	287	206	194	355	149	134	169	148
MAX	222	560	161	215	1610	1410	954	2400	383	200	622	449
MIN	86	79	83	92	115	105	105	109	103	97	114	65
AC-FT	7020	8070	6740	8700	15950	12690	11570	21800	8840	8260	10400	8780
CAL YR 1977	TOTAL	249796	MEAN 684	MAX	14500	MIN 68	AC-FT	495500				
WTR YR 1978	TOTAL	64941	MEAN 178	MAX	2400	MIN 65	AC-FT	128800				

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1956 to current year. Chemical and biochemical analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to current year.

pH: October 1976 to current year.

WATER TEMPERATURES: October 1966 to current year.

DISSOLVED OXYGEN: October 1976 to current year.

INSTRUMENTATION.--Water-quality monitor since Oct. 29, 1976.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,290 micromhos July 22, 1977; minimum, 188 micromhos May 28, 1978.

pH: Maximum, 8.5 units Aug. 12, 1978; minimum, 7.0 units Nov. 9, 1977.

WATER TEMPERATURES: Maximum, 34.0°C Aug. 9, 1970, Aug. 2, 1974, July 12, 16, 1978; minimum, 3.0°C Jan. 9, 1973.

DISSOLVED OXYGEN: Maximum, 12.2 mg/l June 27, 1978; minimum, 0.0 mg/l on several days during Aug. 1977, Mar. Apr. and May 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,260 micromhos May 1; minimum, 188 micromhos May 28.

pH: Maximum, 8.5 units Aug. 12; minimum, 7.0 units Nov. 9.

WATER TEMPERATURES: Maximum, 34.0°C July 12, 16; minimum, 5.5°C Jan. 20.

DISSOLVED OXYGEN: Maximum, 12.2 mg/l June 27; minimum, 0.0°C mg/l Mar. 24, Apr. 8, 10, 11, May 2, 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 19...	1430	101	994	7.4	24.0	40	3	2.8	34	6.6	170	0
NOV 09...	1610	355	530	7.3	17.0	10	65	1.4	15	19	130	0
DEC 15...	0915	105	1030	7.3	13.0	45	10	1.7	17	12	--	--
JAN 27...	1330	156	1020	7.3	7.5	20	15	4.2	36	27	190	0
FEB 16...	0940	214	845	7.8	8.0	30	35	8.3	72	15	190	0
MAR 23...	1415	115	999	7.6	20.0	50	4	2.4	27	14	190	0
APR 19...	1530	118	1100	7.7	21.5	30	4	4.1	48	7.0	--	--
MAY 11...	1330	121	1100	7.5	23.0	30	7	1.7	20	5.2	200	0
JUN 08...	1105	383	610	7.2	26.0	50	65	1.4	18	20	--	--
JUL 20...	1100	138	1150	7.4	30.5	30	20	2.5	33	16	150	0
AUG 24...	1050	156	1070	7.5	30.5	45	8	3.4	45	8.4	150	0
SEP 13...	1250	186	1050	7.3	29.5	20	10	.8	11	7.2	160	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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...		52	10	130	4.3	14	280	0	100	110	1.2	13
NOV 09...		41	7.2	50	1.9	7.5	170	0	48	46	.6	6.5
DEC 15...		--	--	--	--	--	--	--	--	--	--	--
JAN 27...		59	9.6	120	3.8	12	310	0	110	95	.8	11
FEB 16...		63	8.1	89	2.8	11	240	0	120	60	.7	8.7
MAR 23...		61	9.4	120	3.8	15	300	0	110	94	.9	9.4
APR 19...		--	--	--	--	--	--	--	--	--	--	--
MAY 11...		64	9.2	140	4.3	14	340	0	130	87	.9	10
JUN 08...		--	--	--	--	--	--	--	--	--	--	--
JUL 20...		47	7.8	180	6.4	17	280	0	160	110	1.1	12
AUG 24...		46	9.1	150	5.3	17	270	0	110	120	1.1	12
SEP 13...		49	8.5	150	5.2	13	230	0	170	97	1.0	12

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, SUS- PENDED (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)
OCT 19...	568	10	6	1.6	.20	1.8	7.5	.60	8.1	10	14
NOV 09...	291	166	40	.20	.05	.25	4.6	1.4	6.0	7.3	15
DEC 15...	--	20	10	.02	.05	.07	10	.00	9.6	8.3	16
JAN 27...	570	33	20	.23	.10	.33	11	3.0	14	4.3	18
FEB 16...	479	52	14	.70	.11	.81	8.0	1.5	9.5	2.9	14
MAR 23...	568	29	14	.00	.01	.01	14	4.0	18	4.1	17
APR 19...	--	12	0	.29	.08	.37	6.0	6.0	12	4.3	16
MAY 11...	623	15	6	.02	.05	.07	13	.00	13	3.1	15
JUN 08...	--	130	34	.05	.04	.09	2.9	3.4	6.3	.07	14
JUL 20...	673	36	16	1.6	1.3	2.9	3.3	2.4	5.7	5.9	15
AUG 24...	598	20	11	1.7	.42	2.1	3.1	2.3	5.4	5.1	16
SEP 13...	614	20	6	4.2	.86	5.1	2.5	2.0	4.5	5.6	16

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 27...	1330	1	0	3	0	3	40
MAR 23...	1415	1	200	0	40	1	70
JUL 20...	1100	2	200	1	0	4	40
SEP 13...	1250	4	--	1	0	11	40

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 27...	2	110	.0	0	0	50
MAR 23...	2	160	.0	4	0	20
JUL 20...	0	40	.0	0	0	30
SEP 13...	0	50	.2	0	0	40

TRINITY RIVER BASIN

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08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	3538	1020	580	5560	94	903	130	1230	170
NOV. 1977.....	4069	912	520	5700	82	901	110	1250	160
DEC. 1977.....	3398	1060	600	5510	99	907	130	1230	170
JAN. 1978.....	4384	992	560	6670	91	1080	120	1480	170
FEB. 1978.....	8040	790	450	9770	68	1480	96	2080	160
MAR. 1978.....	6400	971	550	9540	89	1540	120	2080	170
APR. 1978.....	5834	926	530	8290	84	1330	110	1800	160
MAY 1978.....	10990	660	380	11200	53	1560	77	2300	150
JUNE 1978.....	4455	956	540	6540	87	1050	120	1440	160
JULY 1978.....	4164	1110	630	7100	100	1180	140	1600	170
AUG. 1978.....	5244	940	530	7560	85	1200	120	1660	160
SEPT 1978.....	4425	949	540	6460	86	1030	120	1410	160
TOTAL	64941	**	**	89900	**	14200	**	19600	**
WTD.AVG.	177.92	901	510	**	80	**	110	**	160

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	980	864	912	1100	508	901	1030	932	982	986	954	969
2	1000	982	992	1120	928	1040	990	908	960	984	962	973
3	1090	990	1040	1000	644	848	998	892	967	968	906	931
4	1120	1080	1100	1050	988	1010	1120	860	1020	910	890	901
5	1100	1050	1070	1140	1050	1090	1130	1010	1090	962	870	911
6	1220	1100	1170	1120	1070	1090	1060	954	988	968	946	956
7	1140	1060	1110	1130	1080	1110	1040	982	992	1030	954	975
8	1180	1060	1120	1080	506	861	1090	1030	1070	1100	1040	1070
9	1220	1140	1180	930	470	645	1030	978	999	1110	1010	1060
10	1150	984	1080	592	506	546	1040	960	997	1110	1080	1090
11	1040	512	888	658	598	634	1040	1020	1030	1120	1060	1080
12	1090	990	1040	804	660	730	1060	1010	1030	1140	1030	1090
13	1100	988	1040	984	808	896	1100	1060	1090	1160	1050	1100
14	1000	988	997	990	954	972	1160	1100	1150	1090	992	1040
15	1000	952	976	1040	986	1010	1160	1130	1150	984	938	950
16	1040	954	981	1080	1020	1050	1180	1160	1170	992	928	957
17	1050	982	1030	1100	998	1040	1170	1140	1160	996	948	976
18	1040	1010	1030	1160	1050	1120	1170	1140	1160	1010	972	990
19	1010	986	998	1150	1120	1140	1170	1150	1160	972	928	942
20	1020	1010	1020	1200	1160	1180	1150	1060	1120	952	912	929
21	1020	986	1000	1160	1120	1150	1100	1050	1070	970	928	950
22	1030	474	841	1120	1090	1100	1120	1070	1100	1060	970	1020
23	1170	726	996	1090	1040	1070	1080	1050	1070	1030	976	1010
24	1150	972	1080	1140	1080	1100	1090	1040	1060	1020	954	980
25	1130	1030	1090	1090	1010	1040	1140	1090	1120	992	950	971
26	1050	944	1000	1010	928	970	1230	1140	1200	970	944	954
27	984	898	925	984	910	953	1200	1090	1120	1020	972	999
28	1020	946	985	1010	896	950	1100	982	1040	994	980	986
29	1070	1030	1050	1000	862	936	1000	934	974	---	---	970
30	1100	1070	1080	1040	880	958	1010	922	968	---	---	950
31	1110	1070	1080	---	---	---	970	914	936	1020	850	928
MONTH	1220	474	1030	1200	470	971	1230	860	1060	1160	850	987

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH				APRIL			MAY	
1	1040	888	966	1010	974	994	1050	1030	1040	1260	1170	1220
2	922	846	889	1010	956	977	1100	1040	1070	1240	606	1030
3	840	790	810	---	---	960	1150	1080	1110	696	350	479
4	864	820	854	---	---	970	1150	1120	1140	610	414	519
5	1020	862	948	---	---	980	1170	862	1090	772	618	671
6	1020	992	1010	---	---	990	1140	1030	1120	870	776	832
7	1010	910	953	---	---	800	1130	948	1050	1000	870	947
8	1040	948	999	---	---	850	1180	1060	1130	1060	1010	1040
9	978	664	813	---	---	950	1200	1100	1160	1080	1040	1060
10	776	708	750	---	---	1110	1170	490	852	1130	1060	1100
11	748	---	730	---	---	1100	618	470	546	1140	1060	1120
12	---	---	710	---	---	1130	730	600	648	1130	978	1090
13	---	---	700	1170	1060	1140	864	742	802	1150	1130	1130
14	770	760	767	1150	1110	1130	918	880	902	1160	1130	1140
15	812	760	772	1190	1120	1160	1000	930	983	1140	1100	1130
16	862	820	838	1190	1140	1160	1060	1000	1040	1090	1040	1060
17	870	802	846	1210	1070	1120	1110	1050	1070	1230	1080	1170
18	828	736	790	1180	1150	1160	1110	1050	1080	1190	1130	1160
19	838	760	800	1190	1160	1170	1160	1050	1100	1180	1140	1160
20	756	676	720	1200	1180	1190	1170	1150	1160	1150	306	1050
21	678	640	662	1210	1100	1150	1220	1100	1160	804	372	643
22	740	678	708	1120	1020	1080	1200	1060	1160	586	496	532
23	810	742	778	1040	---	944	1210	830	1120	750	572	666
24	860	814	838	---	---	850	668	462	550	860	758	817
25	934	858	906	---	---	900	752	652	716	928	860	899
26	942	914	928	---	---	950	932	756	858	1030	930	977
27	952	930	943	---	---	1000	1040	932	990	1050	916	1010
28	1010	946	985	---	---	1000	1210	1040	1120	914	188	628
29	---	---	---	1000	---	1000	1230	1160	1200	564	310	399
30	---	---	---	1020	1000	1010	1240	1180	1210	472	398	439
31	---	---	---	1030	1010	1020	---	---	---	680	476	563
MONTH	1040	640	836	1210	956	1030	1240	462	1010	1260	188	893
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	794	688	746	1120	1060	1080	1070	1030	1050	1100	1080	1090
2	982	700	883	1120	1080	1100	1030	1010	1020	1140	768	1000
3	996	744	896	1130	1110	1120	1080	1020	1050	724	490	589
4	1070	958	1030	1140	1040	1100	1100	1070	1080	790	596	702
5	1040	984	1010	1040	1030	1030	1100	388	849	858	766	817
6	1080	656	943	1060	1030	1040	900	570	678	976	846	920
7	1050	748	916	1080	1030	1040	632	544	565	954	824	881
8	806	580	671	1130	1090	1120	788	650	746	1010	940	979
9	768	514	629	1120	1070	1090	876	744	833	990	924	958
10	884	792	866	---	---	1150	914	842	886	984	848	908
11	932	870	894	---	---	1170	982	896	939	966	790	905
12	946	880	918	1130	1070	1100	1050	968	1000	972	860	914
13	940	896	923	1210	1130	1160	1120	1040	1070	1030	924	980
14	1000	940	967	1220	1150	1180	1110	1050	1080	1010	942	980
15	1070	994	1030	1200	1150	1160	1050	1000	1010	992	946	973
16	1100	1060	1080	1210	1190	1200	1040	986	1010	938	878	900
17	1110	1080	1100	1210	1100	1150	1060	1030	1050	1020	944	994
18	1130	1050	1090	1160	1090	1130	1080	1030	1050	1050	1000	1020
19	1160	1100	1130	1150	1090	1110	1080	1050	1060	1050	1050	1050
20	1160	1080	1100	1180	1130	1150	1050	1020	1040	---	---	1040
21	1080	1030	1050	1190	1160	1180	1050	780	1010	---	---	1030
22	1100	1050	1080	1160	1120	1150	1020	756	935	---	---	1000
23	1170	1060	1090	1120	1070	1090	1030	990	1010	---	---	1030
24	1170	1130	1150	1160	1110	1140	1110	1030	1080	---	---	1060
25	1170	1080	1130	1130	1040	1080	1110	1090	1100	---	---	1080
26	1160	1100	1130	1090	1050	1070	1100	1020	1070	1110	1070	1100
27	1160	1110	1140	1070	996	1030	1090	1030	1060	1070	1010	1050
28	1140	1010	1070	1060	992	1030	1090	418	1030	1130	1000	1070
29	1150	1100	1120	1140	1030	1100	1110	1050	1080	1140	1130	1140
30	1170	1120	1140	1130	1100	1110	1090	1010	1050	1150	1090	1120
31	---	---	---	1100	1050	1070	1110	1090	1100	---	---	---
MONTH	1170	514	997	1220	992	1110	1120	388	987	1150	490	976

TRINITY RIVER BASIN

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08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.3	7.3	7.6	7.5	7.6
2	7.5	7.4	7.4	7.4	7.4	7.4	7.3	7.3	7.3	7.7	7.6	7.6
3	7.5	7.4	7.4	7.4	7.3	7.3	7.3	7.2	7.3	7.7	7.6	7.6
4	7.5	7.4	7.4	7.4	7.3	7.4	7.3	7.3	7.3	7.6	7.6	7.6
5	7.5	7.5	7.5	7.4	7.3	7.4	7.3	7.2	7.3	7.6	7.4	7.5
6	7.5	7.5	7.5	7.4	7.4	7.4	7.3	7.3	7.3	7.4	7.4	7.4
7	7.5	7.4	7.5	7.4	7.4	7.4	7.3	7.3	7.3	7.4	7.3	7.4
8	7.5	7.4	7.5	7.4	7.1	7.3	7.3	7.3	7.3	7.4	7.4	7.4
9	7.5	7.5	7.5	7.4	7.0	7.2	7.4	7.3	7.3	7.4	7.4	7.4
10	7.5	7.4	7.4	7.3	7.1	7.2	7.3	7.3	7.3	7.5	7.4	7.4
11	7.4	7.3	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.4	7.4	7.4
12	7.4	7.2	7.3	7.3	7.2	7.2	7.3	7.2	7.3	7.5	7.4	7.4
13	7.4	7.2	7.4	7.3	7.2	7.3	7.3	7.2	7.3	7.4	7.3	7.4
14	7.4	7.4	7.4	7.3	7.2	7.3	7.3	7.3	7.3	7.4	7.3	7.4
15	7.4	7.4	7.4	7.3	7.3	7.3	7.3	7.2	7.3	7.4	7.3	7.3
16	7.5	7.4	7.4	7.3	7.3	7.3	7.3	7.2	7.3	7.3	7.3	7.3
17	7.5	7.4	7.5	7.3	7.3	7.3	7.3	7.3	7.3	8.3	7.3	7.4
18	7.5	7.4	7.5	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
19	7.5	7.4	7.4	7.3	7.2	7.2	7.3	---	7.3	7.4	7.3	7.3
20	7.5	7.5	7.5	7.3	7.2	7.2	---	---	7.4	7.4	7.3	7.4
21	7.5	7.4	7.5	7.3	7.3	7.3	---	---	7.5	7.4	7.3	7.4
22	7.5	7.4	7.5	7.3	7.2	7.3	7.6	7.5	7.6	7.4	7.3	7.3
23	7.5	7.3	7.4	7.3	7.2	7.3	7.7	7.6	7.7	7.4	7.3	7.3
24	7.5	7.4	7.5	7.2	7.2	7.2	7.7	7.6	7.7	7.3	7.2	7.2
25	7.5	7.5	7.5	7.3	7.2	7.2	7.8	7.7	7.8	7.3	7.2	7.2
26	7.5	7.4	7.4	7.3	7.2	7.3	7.8	7.8	7.8	7.3	7.3	7.3
27	7.4	7.4	7.4	7.3	7.2	7.3	7.8	7.3	7.6	7.3	7.2	7.2
28	7.4	7.4	7.4	7.3	7.3	7.3	7.4	7.4	7.4	7.2	7.2	7.2
29	7.5	7.4	7.4	7.3	7.3	7.3	7.5	7.4	7.4	---	---	7.3
30	7.4	7.4	7.4	7.3	7.3	7.3	7.5	7.5	7.5	---	---	7.4
31	7.4	7.4	7.4	---	---	---	7.5	7.5	7.5	7.5	7.4	7.4
MONTH	7.5	7.2	7.4	7.4	7.0	7.3	7.8	7.2	7.4	8.3	7.2	7.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.4	7.3	7.4	7.5	7.4	7.4	7.6	7.6	7.6	7.6	7.5	7.5
2	7.3	7.3	7.3	7.5	7.4	7.4	7.6	7.5	7.6	7.7	7.4	7.5
3	7.3	7.3	7.3	---	---	7.4	7.6	7.5	7.6	7.8	7.4	7.5
4	7.3	7.3	7.3	---	---	7.4	7.7	7.6	7.6	7.5	7.4	7.4
5	---	---	7.3	---	---	7.4	7.6	7.6	7.6	7.5	7.5	7.5
6	7.7	7.4	7.5	---	---	7.4	7.7	7.6	7.6	7.5	7.5	7.5
7	7.4	7.4	7.4	---	---	7.5	7.7	7.5	7.6	7.5	7.5	7.5
8	7.4	7.4	7.4	---	---	7.5	7.6	7.6	7.6	7.5	7.5	7.5
9	---	7.3	7.4	---	---	7.5	7.6	7.6	7.6	7.5	7.5	7.5
10	7.3	7.3	7.3	---	---	7.5	7.6	7.4	7.6	7.6	7.5	7.5
11	7.3	7.2	7.3	---	---	7.5	7.4	7.3	7.4	7.6	7.5	7.6
12	---	---	7.5	---	---	7.5	7.6	7.4	7.5	7.6	7.5	7.6
13	---	---	7.6	7.6	7.5	7.5	7.6	7.5	7.5	7.6	7.5	7.6
14	7.8	7.7	7.7	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.6
15	7.8	7.8	7.8	7.5	7.4	7.5	7.5	7.5	7.5	7.6	7.5	7.6
16	7.8	7.6	7.7	7.6	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.5
17	7.7	7.6	7.6	7.6	7.6	7.6	7.6	7.5	7.5	7.6	7.5	7.6
18	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.5	7.6	7.6	7.5	7.5
19	7.6	7.5	7.5	7.6	7.5	7.6	7.7	7.6	7.6	7.7	7.5	7.6
20	7.6	7.5	7.6	7.6	7.5	7.5	7.7	7.6	7.6	7.7	7.5	7.6
21	7.6	7.6	7.6	7.6	7.5	7.5	7.7	7.6	7.6	7.7	7.3	7.4
22	7.6	7.6	7.6	7.5	7.5	7.5	7.6	7.6	7.6	7.3	7.2	7.3
23	7.6	7.5	7.5	7.6	7.5	7.5	7.6	7.4	7.5	7.4	7.3	7.3
24	7.5	7.5	7.5	7.7	7.3	7.4	7.4	7.3	7.4	7.5	7.4	7.4
25	7.5	7.5	7.5	7.7	---	7.4	7.5	7.4	7.4	7.5	7.4	7.0
26	7.5	7.5	7.5	7.7	---	7.4	7.6	7.5	7.5	7.5	7.4	7.5
27	7.4	7.4	7.4	7.7	---	7.4	7.6	7.6	7.6	7.5	7.4	7.5
28	7.5	7.4	7.4	7.7	---	7.4	7.6	7.5	7.6	7.7	7.3	7.4
29	---	---	---	7.6	---	7.4	7.6	7.5	7.6	7.5	7.3	7.4
30	---	---	---	7.6	7.6	7.6	7.6	7.5	7.6	7.5	7.2	7.3
31	---	---	---	7.6	7.6	7.6	---	---	---	---	---	7.4
MONTH	7.8	7.2	7.5	7.7	7.3	7.5	7.7	7.3	7.6	7.8	7.2	7.5

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.7	7.5	7.6	8.0	7.7	7.8	7.9	7.5	7.7	7.7	7.6	7.6
2	7.6	7.5	7.5	8.0	7.7	7.8	8.0	7.7	7.8	7.6	7.4	7.5
3	7.6	7.5	7.5	8.0	7.7	7.8	7.7	7.6	7.6	7.6	7.4	7.5
4	7.6	7.5	7.6	7.9	7.7	7.8	7.7	7.6	7.6	7.7	7.5	7.6
5	7.6	7.5	7.6	8.1	7.6	7.8	7.9	7.5	7.6	7.8	7.5	7.7
6	7.7	7.6	7.6	8.0	7.6	7.8	7.5	7.3	7.4	7.7	7.6	7.6
7	7.6	7.4	7.5	8.0	7.6	7.8	7.4	7.4	7.4	7.8	7.6	7.6
8	7.5	7.3	7.4	7.9	7.7	7.8	7.7	7.5	7.6	7.6	7.6	7.6
9	7.5	7.3	7.4	7.9	7.7	7.7	7.7	7.5	7.6	7.7	7.5	7.6
10	7.6	7.5	7.5	8.0	7.6	7.7	7.8	7.5	7.7	7.8	7.6	7.7
11	7.5	7.2	7.5	---	---	7.7	8.0	7.6	7.8	7.7	7.6	7.6
12	7.7	7.5	7.6	8.1	7.7	7.8	8.5	7.7	8.0	7.7	7.5	7.6
13	7.7	7.6	7.7	7.9	7.6	7.7	8.1	7.6	7.9	7.7	7.5	7.6
14	7.7	7.6	7.6	7.9	7.6	7.7	8.3	7.7	8.0	7.7	7.5	7.6
15	7.7	7.6	7.7	7.8	7.6	7.7	8.3	7.7	8.0	7.7	7.5	7.6
16	7.7	7.7	7.7	7.8	7.6	7.7	8.2	7.7	7.9	7.7	7.5	7.6
17	7.8	7.7	7.7	7.9	7.6	7.7	8.2	7.7	7.9	8.0	7.5	7.7
18	7.7	7.7	7.7	8.0	7.6	7.7	8.3	7.7	7.9	8.2	7.6	7.8
19	8.0	7.7	7.8	7.9	7.6	7.7	8.1	7.6	7.8	7.9	7.6	7.7
20	7.8	7.7	7.7	7.9	7.6	7.7	8.0	7.6	7.8	---	---	7.7
21	7.8	7.7	7.7	7.8	7.6	7.7	7.9	7.6	7.8	---	---	7.7
22	8.0	7.7	7.8	7.9	7.6	7.7	7.8	7.6	7.7	---	---	7.7
23	8.1	7.7	7.9	7.8	7.5	7.6	7.9	7.6	7.7	---	---	7.6
24	7.9	7.7	7.8	7.7	7.5	7.6	8.0	7.6	7.8	---	---	7.6
25	8.1	7.8	7.9	7.7	7.5	7.6	7.9	7.7	7.8	---	---	7.6
26	8.2	7.8	8.0	7.7	7.5	7.6	8.1	7.6	7.8	7.6	7.5	7.6
27	8.3	7.7	8.0	7.8	7.5	7.6	8.2	7.7	7.9	7.6	7.5	7.6
28	8.3	7.7	8.0	7.7	7.5	7.6	8.1	7.6	7.8	7.7	7.6	7.6
29	8.2	7.6	7.9	7.9	7.5	7.7	7.8	7.6	7.7	7.7	7.6	7.6
30	8.1	7.6	7.8	8.4	7.6	7.9	7.8	7.6	7.7	7.7	7.6	7.7
31	---	---	---	8.0	7.6	7.7	7.8	7.6	7.7	---	---	---
MONTH	8.3	7.2	7.7	8.4	7.5	7.7	8.5	7.3	7.8	8.2	7.4	7.6

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

TRINITY RIVER BASIN

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08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

TRINITY RIVER BASIN

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	4.0	2.3	3.0	4.2	.7	1.6	3.2	2.6	2.9	3.7	2.4	3.0
2	3.3	1.9	2.5	.7	.4	.5	2.8	2.0	2.6	4.6	3.0	3.7
3	2.8	1.9	2.4	1.5	.8	1.2	2.9	2.1	2.5	5.0	3.7	4.3
4	2.9	2.1	2.3	.9	.7	.8	2.9	2.2	2.5	5.0	4.3	4.6
5	2.1	.8	1.4	.6	.4	.5	2.7	1.9	2.3	5.4	4.0	4.6
6	2.7	1.4	2.0	.4	.3	.4	3.5	2.6	3.0	5.1	3.5	4.1
7	2.7	.9	1.8	.3	.1	.3	3.8	2.9	3.5	4.2	2.8	3.3
8	2.2	.7	1.3	1.3	.1	.4	3.4	2.8	3.1	3.7	2.2	2.9
9	2.6	.9	1.7	3.2	.1	.9	3.7	2.6	3.2	4.6	2.8	3.6
10	3.2	1.3	2.1	5.9	3.4	5.2	3.4	3.2	3.3	5.0	3.8	4.5
11	6.1	2.7	3.7	6.0	5.5	5.9	3.2	2.9	3.1	5.0	4.7	4.8
12	3.0	2.0	2.5	5.4	4.7	5.1	2.9	2.0	2.5	6.3	4.9	5.4
13	3.3	2.1	2.7	4.6	3.4	4.2	2.3	1.6	1.9	5.1	2.9	4.1
14	3.2	2.1	2.7	3.3	2.7	2.9	2.4	1.3	1.8	4.3	3.5	3.9
15	3.4	1.8	2.6	2.8	2.2	2.5	2.4	1.3	1.8	4.8	4.2	4.5
16	2.4	.1	1.6	2.3	2.0	2.1	2.4	1.6	1.9	4.5	4.1	4.3
17	2.3	1.0	1.7	2.4	1.8	2.1	2.4	1.4	1.8	5.0	4.1	4.4
18	1.7	.3	.7	2.3	1.8	2.0	2.5	1.5	2.0	4.9	4.3	4.6
19	3.2	.4	1.5	1.6	.3	1.0	2.8	1.6	2.1	5.4	4.4	5.0
20	3.0	.9	1.8	.9	.2	.4	2.9	1.8	2.3	6.8	5.5	6.3
21	2.8	.8	1.7	1.3	.2	.6	3.0	2.3	2.4	6.6	5.0	5.9
22	5.8	1.1	3.1	1.2	.7	1.0	4.1	2.8	3.5	6.4	4.6	5.1
23	3.6	.2	1.0	1.5	.7	1.1	4.5	3.6	3.9	6.4	4.3	5.3
24	2.1	.2	1.1	.7	.4	.5	4.6	3.2	3.7	4.7	2.6	3.7
25	.8	.1	.4	1.0	.5	.7	4.1	2.6	3.3	5.1	4.7	4.9
26	2.2	.5	1.3	1.4	.7	1.0	3.9	2.7	3.2	5.5	5.0	5.2
27	2.4	1.1	1.7	1.1	.9	1.0	3.7	2.4	3.1	5.1	4.0	4.6
28	1.8	.9	1.4	1.2	.9	1.0	2.3	.4	1.6	5.3	4.8	5.0
29	2.4	1.0	1.6	3.9	1.2	2.2	4.4	2.3	3.4	---	---	5.2
30	1.6	.9	1.2	3.4	2.6	2.9	3.3	3.0	3.1	---	---	5.4
31	.9	.1	.5	---	---	---	3.9	2.8	3.3	6.7	4.6	5.6
MONTH	6.1	.1	1.8	6.0	.1	1.7	4.6	.4	2.7	6.8	2.2	4.6
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.8	1.7	3.1	2.0	.9	1.5	3.7	.3	2.0	1.2	.1	.5
2	3.1	1.9	2.5	2.2	1.4	1.7	3.1	.1	1.3	5.7	.0	.9
3	4.4	3.0	3.9	---	---	1.5	1.7	.1	.8	5.8	.0	2.3
4	3.5	2.2	2.6	---	---	1.4	3.3	.1	1.3	4.8	3.5	4.4
5	2.2	.9	1.4	---	---	1.5	3.1	.1	1.3	4.6	4.0	4.4
6	.9	.3	.5	---	---	4.0	4.0	.5	2.0	3.9	3.0	3.5
7	3.0	.3	1.4	---	---	2.0	3.7	.1	1.5	2.9	1.5	2.4
8	3.0	1.7	2.4	---	---	1.8	.4	.0	.1	1.3	.3	.7
9	5.6	1.9	4.0	---	---	1.6	1.1	.1	.3	1.3	.4	.8
10	5.3	3.8	4.6	---	---	1.5	3.3	.0	1.1	3.0	.4	1.4
11	3.7	3.3	3.4	---	---	1.4	1.6	.0	.4	2.5	.9	1.5
12	---	---	7.5	---	---	1.3	4.9	2.1	3.7	3.6	1.0	2.2
13	---	---	8.5	1.8	.9	1.2	4.7	3.3	4.2	1.4	.4	.7
14	8.9	8.7	8.8	1.3	.6	1.0	4.5	2.4	3.8	.6	.4	.5
15	9.3	8.9	9.1	1.6	.4	.9	3.7	1.9	2.6	2.8	.5	1.2
16	9.1	6.0	7.9	2.6	1.0	1.7	3.9	1.8	2.6	2.1	.6	1.0
17	6.3	5.6	6.0	4.2	2.0	3.0	4.1	1.3	2.2	1.9	.4	.9
18	7.8	5.3	6.2	3.1	1.4	2.1	3.8	1.1	2.0	2.2	.5	1.1
19	6.8	4.7	6.1	2.7	.6	1.5	4.1	1.2	2.4	3.4	.5	1.7
20	7.3	6.2	6.7	2.4	.1	.9	4.1	1.5	2.7	5.3	.4	1.7
21	7.9	7.0	7.4	2.1	.1	.7	3.1	1.5	2.1	4.5	.4	1.8
22	7.9	6.6	7.5	1.2	.1	.4	1.7	1.2	1.3	1.5	.5	1.1
23	6.8	4.7	6.0	3.7	.2	.9	1.2	1.1	1.2	2.6	1.5	2.1
24	4.7	3.8	4.4	3.2	.0	.8	3.4	1.1	2.4	3.6	2.3	2.9
25	3.7	1.2	2.5	---	2.3	3.0	4.1	3.0	3.6	3.5	2.2	2.7
26	2.1	.6	1.4	4.6	2.7	3.6	4.1	2.7	3.5	3.3	1.8	2.4
27	1.6	.7	1.1	3.7	2.2	2.9	4.6	2.7	3.6	3.5	.9	2.1
28	1.4	.7	1.0	3.0	1.6	2.2	3.7	.3	2.5	5.4	1.8	3.1
29	---	---	---	4.8	1.1	2.5	3.3	.3	1.6	3.1	.7	1.6
30	---	---	---	5.3	3.8	4.5	1.8	.2	.9	3.8	3.1	3.6
31	---	---	---	5.2	2.8	4.1	---	---	---	3.9	3.4	3.7
MONTH	9.3	.3	4.6	5.3	.0	1.9	4.9	.0	2.1	5.8	.0	2.0

TRINITY RIVER BASIN

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08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	4.0	3.2	3.3	7.7	1.9	4.6	7.3	2.6	4.8	4.3	2.3	3.2
2	3.9	1.5	2.6	8.0	2.0	4.6	8.1	3.6	5.6	2.9	.5	1.5
3	2.7	1.5	2.3	7.3	1.8	4.2	4.8	2.3	3.6	4.4	.8	2.8
4	3.1	2.2	2.7	6.6	1.7	4.0	5.0	2.2	3.5	6.0	2.7	4.0
5	3.5	1.9	2.7	8.8	1.8	4.9	5.6	2.1	3.3	6.6	2.7	4.4
6	4.9	1.8	3.3	8.0	1.5	4.6	2.2	.2	.7	5.2	2.7	4.0
7	2.8	.3	1.3	7.8	2.1	4.7	2.9	1.2	2.1	6.6	3.0	4.3
8	2.3	.2	1.1	6.3	1.7	3.9	5.0	2.8	3.7	3.7	2.5	3.1
9	2.3	1.2	1.7	6.3	1.7	3.8	5.1	3.0	4.0	5.5	2.5	3.7
10	3.9	1.6	2.5	8.5	1.8	4.3	5.8	2.7	4.1	6.0	2.7	4.1
11	3.3	2.0	2.6	4.4	1.4	2.1	7.7	3.0	5.2	5.5	2.6	3.9
12	3.5	2.0	2.7	9.4	1.7	5.1	12.0	3.6	7.1	9.1	2.8	4.0
13	3.2	1.9	2.5	7.3	1.7	4.2	8.8	3.1	5.8	5.0	2.2	3.5
14	3.2	.5	2.0	7.0	1.1	3.7	10.3	3.0	6.3	5.6	2.3	3.9
15	4.4	.6	2.7	5.5	1.3	3.4	10.5	3.2	6.6	5.6	2.4	4.0
16	4.3	2.1	3.1	5.9	1.3	3.4	9.6	3.5	6.3	6.1	2.6	4.4
17	5.2	2.2	3.4	6.9	1.3	3.7	9.5	3.1	5.9	8.0	2.6	5.1
18	4.3	2.0	3.0	8.3	1.1	4.5	10.6	3.0	6.3	9.6	3.1	6.2
19	7.9	1.7	3.9	7.1	1.4	4.0	8.9	3.0	5.7	6.9	3.8	4.9
20	5.1	1.7	3.3	6.3	1.4	3.6	8.1	2.7	5.3	---	---	4.7
21	5.3	1.7	3.4	6.4	1.2	3.4	7.0	2.4	4.5	---	---	4.5
22	7.6	1.6	4.3	6.7	1.2	3.6	6.0	2.7	4.2	---	---	4.4
23	8.6	2.6	5.7	5.8	1.1	3.1	6.8	2.1	4.1	---	---	4.3
24	6.8	2.4	4.8	4.5	1.0	2.7	7.5	1.9	4.4	---	---	4.0
25	9.9	2.6	6.1	4.4	1.7	2.9	6.5	2.0	4.1	---	---	3.8
26	10.8	2.8	6.8	4.0	1.3	2.6	8.7	2.2	5.3	3.8	3.5	3.6
27	12.2	3.0	7.6	6.6	1.5	3.8	9.4	3.2	6.4	4.2	3.1	3.6
28	11.6	2.8	6.9	5.1	1.6	3.3	7.3	2.8	5.1	5.0	3.4	4.0
29	10.0	1.8	5.5	7.0	1.0	3.8	6.3	2.5	4.2	5.4	3.2	4.2
30	9.6	1.7	5.2	10.7	2.5	5.9	6.4	2.5	5.1	5.5	3.3	4.3
31	---	---	---	7.8	2.6	4.8	5.6	2.5	3.9	---	---	---
MONTH	12.2	.2	3.6	10.7	1.0	3.9	12.0	.2	4.8	9.6	.5	4.0

TRINITY RIVER BASIN

08049550 BIG BEAR CREEK NEAR GRAPEVINE, TX

LOCATION.--Lat 32°54'48", long 97°07'44", Tarrant County, Hydrologic Unit 12030102, at downstream side of bridge on State Highway 121, 100 ft (30 m) downstream from St. Louis Southwestern Railway Lines bridge, 3.5 mi (5.6 km) southwest of Grapevine, and 7 mi (11 km) upstream from confluence with Little Bear Creek.

DRAINAGE AREA.--29.6 mi² (76.7 km²).

PERIOD OF RECORD.--December 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 554.00 ft (168.859 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known diversion above station. Records furnished by the city of Keller show that 95.7 acre-ft (118,000 m³) of effluent was returned upstream from gage. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years (water years 1968-78), 6.95 ft³/s (0.197 m³/s), 3.19 in/yr (81 mm/yr), 5,040 acre-ft/yr (6.21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,750 ft³/s (77.9 m³/s) Mar. 27, 1977, gage height, 14.55 ft (4.435 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, about 20 ft (6.1 m) Sept. 21, 1964, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 245 ft³/s (6.94 m³/s) May 29, gage height, 6.41 ft (1.954 m), no peak above base of 600 ft³/s (17.0 m³/s); no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978												
DAY	OCT	NOV	DEC	JAN	FEB	MEAN VALUES MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.01	.75	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	2.5	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.47	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	12	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	80	.07	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.42	3.00	20.44	102.13	14.75	.00	.00	.00
MEAN	.000	.000	.000	.000	.015	.097	.68	3.29	.49	.000	.000	.000
MAX	.00	.00	.00	.00	.27	2.5	20	80	14	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.001	.003	.02	.11	.02	.000	.000	.000
IN.	.00	.00	.00	.00	.00	.00	.03	.13	.02	.00	.00	.00
AC-FT	.00	.00	.00	.00	.8	6.0	41	203	29	.00	.00	.00
CAL YR 1977	TOTAL	2375.08	MEAN	6.51	MAX	1150	MIN	.00	CFSM	.22	IN	2.98
WTR YR 1978	TOTAL	140.74	MEAN	.39	MAX	80	MIN	.00	CFSM	.01	IN	.18
									AC-FT	4710	AC-FT	279

TRINITY RIVER BASIN

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08049600 MOUNTAIN CREEK NEAR CEDAR HILL, TX

LOCATION.--Lat 32°35'03", long 97°01'23", Dallas County, Hydrologic Unit 12030102, on left bank at downstream side of county road bridge, 3.5 mi (5.6 km) downstream from Texas and New Orleans Railroad Co. bridge, 4.5 mi (7.2 km) southwest of Cedar Hill, and 12 mi (19 km) upstream from Mountain Creek Lake Dam.

DRAINAGE AREA.--119 mi² (308 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 478.31 ft (145.789 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1960, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. At end of year, flow from 14.2 m² (36.8 km²) above this station was affected at times by discharge from the flood-detention pools of three floodwater-retarding structures with combined detention capacity of 5,550 acre-ft (6.84 hm³). Dallas Power and Light Co. gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 50.2 ft³/s (1.422 m³/s), 36,370 acre-ft/yr (44.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,300 ft³/s (801 m³/s) May 7, 1969, gage height, 25.10 ft (7.650 m), from rating curve extended above 14,000 ft³/s (396 m³/s); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 30 ft (9.1 m) May 25, 1922, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 317 ft³/s (8.98 m³/s) Feb. 12, gage height, 11.36 ft (3.463 m), no peak above base of 1,500 ft³/s (42.5 m³/s); no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	.00	.00	.00	.14	.91	.10	.46	.00	.00	.00
2	.00	.00	.00	.00	.00	.15	.77	3.1	.33	.00	.00	.00
3	.00	.00	.00	.00	.00	.11	.72	44	.56	.00	.00	.00
4	.00	.00	.00	.00	.00	.10	.51	4.3	.24	.00	.00	.00
5	.00	.00	.00	.00	.00	.12	.46	1.3	.14	.00	.00	.00
6	.00	.00	.00	.00	.00	.13	.41	.96	.08	.00	.00	.00
7	.00	.00	.00	.00	.00	.11	.44	.70	.05	.00	.00	.00
8	.00	.00	.00	.00	.14	2.2	.38	.50	.05	.00	.00	.00
9	.00	.00	.00	.00	1.2	.97	.34	.27	.04	.00	.00	.00
10	.00	.00	.00	.00	.84	.40	.67	.16	.06	.00	.00	.00
11	.00	.00	.00	.00	.84	.27	1.1	27	.05	.00	.00	.00
12	.00	.00	.00	.00	85	.23	.50	125	.04	.00	.00	.00
13	.00	.00	.00	.00	77	.27	.35	14	.02	.00	.00	.00
14	.00	.00	.00	.00	8.4	.19	.25	4.1	.00	.00	.00	.00
15	.00	.00	.00	.00	2.3	.16	.21	1.2	.00	.00	.00	.00
16	.00	.00	.00	.00	1.2	.14	.18	.48	.00	.00	.00	.00
17	.00	.00	.00	.00	1.5	.12	.18	.39	.00	.00	.00	.00
18	.00	.00	.00	.00	2.5	.11	.13	.28	.00	.00	.00	.00
19	.00	.00	.00	.00	2.3	.14	.08	.20	.00	.00	.00	.00
20	.00	.00	.00	.00	8.4	.16	.05	2.0	.00	.00	.00	.00
21	.00	.00	.00	.00	15	11	.03	157	.00	.00	.00	.00
22	.00	.00	.00	.00	4.9	4.0	.02	34	.00	.00	.00	.00
23	.00	.00	.00	.00	3.0	18	.01	12	.00	.00	.00	.00
24	.00	.00	.00	.00	1.8	128	.11	5.8	.00	.00	.00	.00
25	.00	.00	.00	.00	.76	21	1.5	2.5	.00	.00	.00	.00
26	.00	.00	.00	.00	.32	9.6	.74	.95	.00	.00	.00	.00
27	.00	.00	.00	.00	.24	5.6	.33	.44	.00	.00	.00	.00
28	.00	.00	.00	.00	.19	3.1	.22	.37	.00	.00	.00	.00
29	.00	.00	.00	.00	---	1.9	.18	.65	.00	.00	.00	.00
30	.00	.00	.00	.00	---	1.4	.15	1.2	.00	.00	.00	.00
31	.00	---	.00	.00	---	1.1	---	.95	---	.00	.00	---
TOTAL	.00	.01	.00	.00	217.83	221.81	11.93	445.90	2.12	.00	.00	.00
MEAN	.000	.000	.000	.000	7.78	7.16	.40	14.4	.071	.000	.000	.000
MAX	.00	.01	.00	.00	85	128	1.5	157	.56	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.10	.01	.10	.00	.00	.00	.00
AC-FT	.00	.02	.00	.00	432	440	24	884	4.2	.00	.00	.00
CAL YR 1977	TOTAL	20734.75	MEAN	56.8	MAX	5270	MIN	.00	AC-FT	41130		
WTR YR 1978	TOTAL	899.60	MEAN	2.46	MAX	157	MIN	.00	AC-FT	1780		

TRINITY RIVER BASIN

08049600 MOUNTAIN CREEK NEAR CEDAR HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1974 to current year. Sediment analyses: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	
FEB 16...	1150	1.7	915	7.9	4.5	40	50	11.0	88	2.2	260	170	
MAR 23...	1245	2.5	1360	7.9	19.0	40	35	7.8	87	2.2	340	220	
APR 13...	1330	.35	1260	7.9	18.5	25	20	7.9	87	2.3	310	140	
MAY 11...	1430	.01	1160	7.4	20.0	10	25	3.8	43	2.3	310	170	
JUN 08...	0945	.04	1330	7.2	23.0	40	35	4.0	48	3.1	340	190	
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)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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 CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB 16...	95	6.5	85	2.3	6.3	120	0	260	51	.7	9.6	573	
MAR 23...	120	8.6	160	3.8	7.8	140	0	420	95	.8	4.5	886	
APR 13...	110	8.1	170	4.2	9.2	200	0	400	71	.3	16	883	
MAY 11...	110	7.7	130	3.2	8.2	170	0	350	62	.7	6.7	759	
JUN 08...	120	10	150	3.5	28	180	0	440	65	.9	3.6	906	
DATE		SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
FEB 16...	60	8	2.7	.08	2.8	.06	1.0	1.1	.21	7.2	1	.10	
MAR 23...	57	24	.08	.01	.09	.01	1.1	1.1	.08	7.2	0	.00	
APR 13...	28	0	.01	.01	.02	.04	.68	.72	.07	9.5	3	.10	
MAY 11...	24	4	.08	.04	.12	.12	.68	.80	.10	6.2	0	.00	
JUN 08...	44	9	.05	.01	.06	.08	1.0	1.1	.03	7.9	1	.10	
DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	
MAR 23...	1245	1	200	0	0	0	20	2	20	.0	7	0	

TRINITY RIVER BASIN

457

08049700 WALNUT CREEK NEAR MANSFIELD, TX

LOCATION.--Lat 32°34'51", Long 97°06'06", Tarrant County, Hydrologic Unit 12030102, on right bank at downstream side of bridge on county road, 2.6 mi (4.2 km) northeast of Mansfield, 3.3 mi (5.3 km) downstream from Texas and New Orleans Railroad Co. bridge, and 10.2 mi (16.4 km) upstream from mouth.

DRAINAGE AREA.--62.8 mi² (162.7 km²).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 531.08 ft (161.873 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. During the current year, the city of Mansfield diverted 1,060 acre-ft (1.31 hm³) from the Cedar Creek Reservoir pipeline to Fort Worth for municipal use and discharged 310 acre-ft (0.382 hm³) of sewage effluent into a tributary 2.5 mi (4.0 km) upstream from station. Recording rain gage at station. Several observations of water temperature were made during the year. Dallas Power and Light Co. gage-height telemeter located at station.

AVERAGE DISCHARGE.--18 years, 16.5 ft³/s (0.467 m³/s), 3.57 in/yr (91 mm/yr), 11,950 acre-ft/yr (14.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,680 ft³/s (246 m³/s) Mar. 27, 1977, gage height, 29.05 ft (8.854 m); no flow at times in 1960-74, 1976-78.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 420 ft³/s (11.9 m³/s) Mar. 23, gage height, 11.33 ft (3.453 m), no peak above base of 700 ft³/s (19.8 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	1.5	.00	.00	1.4	.13	.15	.11	.10	.00	.00	.00		
2	.00	.12	.00	.00	.17	.17	.14	.28	.10	.00	.00	.00		
3	.00	.02	.00	.00	.11	.18	.13	12	.11	.00	.00	.00		
4	.00	.00	.00	.00	.10	.16	.13	.28	.64	.00	.00	.00		
5	.00	.00	.00	.00	.10	.14	.17	.14	.11	.00	.00	.00		
6	.00	.00	.00	.01	.10	.15	.35	.12	.09	.00	.00	.00		
7	.00	.00	.00	.01	.37	4.0	.15	.12	.09	.00	.00	.00		
8	.00	.04	.00	.00	.79	.65	.13	.11	.92	.00	.00	.00		
9	.00	.00	.00	.00	1.6	.22	.14	.09	1.0	.00	.00	.00		
10	.00	.00	.00	.00	1.6	.16	6.0	.09	.11	.00	.00	.00		
11	.00	.00	.00	.02	1.5	.16	.39	58	.09	.00	.00	.00		
12	.00	.00	.00	.05	88	.13	.17	100	.08	.00	.00	.00		
13	.00	.00	.00	.05	9.3	.14	.14	2.8	.07	.00	.00	.00		
14	.00	.00	.00	.05	.57	.15	.12	.28	.06	.00	.00	.00		
15	.00	.00	.00	.05	.38	.16	.12	.13	.05	.00	.00	.00		
16	.00	.00	.00	.07	.46	.14	.12	.12	.04	.00	.00	.00		
17	.00	.00	.00	.07	.38	.13	.12	.11	.03	.00	.00	.00		
18	.00	.00	.00	.08	1.0	.13	.12	.11	.02	.00	.00	.00		
19	.00	.00	.00	.09	1.5	.13	.11	.11	.00	.00	.00	.00		
20	.00	.00	.00	.09	5.8	1.5	.11	4.1	.00	.00	.00	.00		
21	.00	.00	.00	.09	1.8	21	.11	17	.00	.00	.00	.00		
22	.00	.00	.00	.09	.38	.60	.12	.55	.00	.00	.00	.00		
23	.00	.00	.00	.10	.25	55	.22	.14	.00	.00	.00	.00		
24	.00	.00	.00	.47	.16	59	1.1	.12	.00	.00	.00	.00		
25	.00	.00	.00	.28	.16	2.0	.94	.11	.00	.00	.00	.00		
26	.00	.00	.00	.12	.14	.44	.14	.11	.00	.00	.00	.00		
27	.00	.00	.00	.09	.13	.25	.11	.11	.00	.00	.00	.00		
28	.00	.00	.00	.08	.13	.20	.10	.14	.00	.00	.00	.00		
29	.00	.00	.00	.08	---	.18	.10	6.9	.00	.00	.00	.00		
30	.00	.00	.00	.08	---	.16	.11	.18	.00	.00	.00	.00		
31	.00	---	.00	.56	---	.16	---	.11	---	.00	.00	---		
TOTAL	.00	1.68	.00	2.68	118.38	147.72	12.06	204.57	3.71	.00	.00	.00		
MEAN	.000	.056	.000	.086	4.23	4.77	.40	6.60	.12	.000	.000	.000		
MAX	.00	1.5	.00	.56	88	59	6.0	100	1.0	.00	.00	.00		
MIN	.00	.00	.00	.00	.10	.13	.10	.09	.00	.00	.00	.00		
CFSM	.000	.001	.000	.001	.07	.08	.006	.11	.002	.000	.000	.000		
IN.	.00	.00	.00	.00	.07	.09	.01	.12	.00	.00	.00	.00		
AC-FT	.00	3.3	.00	5.3	235	293	24	406	7.4	.00	.00	.00		
CAL YR 1977	TOTAL	8470.11	MEAN	23.2	MAX	4310	MIN	.00	CFSM	.37	IN	5.02	AC-FT	16800
WTR YR 1978	TOTAL	490.80	MEAN	1.34	MAX	100	MIN	.00	CFSM	.02	IN	.29	AC-FT	974

TRINITY RIVER BASIN

08049900 MOUNTAIN CREEK NEAR DUNCANVILLE, TX

LOCATION.--Lat 32°39'43", Long 96°58'56", Dallas County, Hydrologic Unit 12030102, at downstream side of bridge on Farm Road 1382, 2.3 mi (3.7 km) downstream from Walnut Creek, 4.5 mi (7.2 km) west of Duncanville, and 5.5 mi (8.8 km) upstream from Mountain Creek Lake Dam.

DRAINAGE AREA.--225 mi² (583 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to current year.

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

REMARKS.--Elevation records good. This station is used to aid in the operation of Mountain Creek Lake. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see Mountain Creek near Cedar Hill (station 08049600). Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 469.83 ft (143.204 m) Apr. 19, 1976; minimum daily, 453.69 ft (138.285 m) Sept. 29, 30, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 460.30 ft (140.299 m) May 12; minimum, 453.69 ft (138.285 m) Sept. 29, 30.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	455.35	455.51	456.82	457.27	457.40	456.29	456.38	456.84	456.31	455.54	454.53	453.94
2	455.31	455.66	456.84	457.27	457.42	456.27	456.35	456.88	456.27	455.51	454.52	453.94
3	455.29	455.73	456.85	457.26	457.43	456.26	456.33	458.25	456.25	455.48	454.50	453.93
4	455.25	455.79	456.86	457.25	457.42	456.28	456.32	457.16	456.25	455.44	454.48	453.91
5	455.24	455.84	456.87	457.26	457.41	456.31	456.31	456.52	456.21	455.40	454.47	453.90
6	455.22	455.89	456.87	457.25	457.40	456.33	456.33	456.27	456.21	455.37	454.46	453.90
7	455.20	455.92	456.87	457.24	457.43	456.86	456.33	456.20	456.23	455.34	454.45	453.89
8	455.17	456.16	456.88	457.21	457.45	456.79	456.33	456.19	456.28	455.31	454.44	453.87
9	455.15	456.46	456.88	457.18	457.49	456.50	456.29	456.23	456.26	455.28	454.43	453.87
10	455.18	456.57	456.89	457.17	457.50	456.38	456.35	456.24	456.26	455.25	454.42	453.86
11	455.27	456.57	456.90	457.22	457.54	456.33	456.49	456.79	456.29	455.24	454.41	453.85
12	455.24	456.57	456.94	457.28	458.27	456.26	456.46	459.82	456.27	455.22	454.39	453.84
13	455.22	456.57	456.98	457.32	459.22	456.23	456.41	457.95	456.23	455.20	454.38	453.84
14	455.20	456.56	457.00	457.32	457.69	456.26	456.33	456.93	456.21	455.19	454.37	453.83
15	455.17	456.56	457.02	457.32	457.43	456.27	456.28	456.48	456.18	455.17	454.36	453.81
16	455.15	456.56	457.03	457.34	457.35	456.26	456.25	456.30	456.16	455.16	454.35	453.81
17	455.13	456.55	457.04	457.33	457.35	456.25	456.27	456.22	456.13	455.11	454.34	453.80
18	455.11	456.55	457.05	457.34	457.42	456.25	456.30	456.17	456.09	455.07	454.32	453.79
19	455.09	456.56	457.06	457.35	457.47	456.25	456.31	456.14	456.05	455.03	454.31	453.78
20	455.06	456.57	457.09	457.35	457.60	456.30	456.31	456.12	456.01	454.97	454.30	453.77
21	455.04	456.57	457.10	457.36	457.73	456.69	456.31	458.54	455.97	454.93	454.29	453.76
22	455.19	456.59	457.10	457.36	457.53	456.96	456.32	458.48	455.93	454.88	454.28	453.74
23	455.18	456.61	457.11	457.39	457.42	456.79	456.35	457.32	455.88	454.84	454.27	453.74
24	455.29	456.62	457.14	457.42	457.39	459.44	456.39	456.82	455.83	454.80	454.25	453.73
25	455.33	456.64	457.19	457.43	457.35	457.98	456.53	456.47	455.79	454.70	454.24	453.72
26	455.34	456.65	457.21	457.42	457.18	457.11	456.60	456.30	455.74	454.63	454.23	453.72
27	455.34	456.66	457.21	457.41	456.51	456.74	456.68	456.22	455.70	454.62	454.21	453.71
28	455.36	456.66	457.21	457.38	456.35	456.56	456.70	456.36	455.66	454.61	454.20	453.70
29	455.36	456.74	457.24	457.36	---	456.47	456.74	457.29	455.62	454.59	454.19	453.69
30	455.37	456.80	457.25	457.35	---	456.43	456.77	456.81	455.58	454.57	454.18	453.69
31	455.38	---	457.26	457.37	---	456.39	---	456.44	---	454.55	454.03	---
MAX	455.38	456.80	457.26	457.43	459.22	459.44	456.77	459.82	456.31	455.54	454.53	453.94
MIN	455.04	455.51	456.82	457.17	456.35	456.23	456.25	456.12	455.58	454.55	454.03	453.69
CAL YR 1977	MEAN 456.84		MAX 466.70	MIN 455.04								
WTR YR 1978	MEAN 456.04		MAX 459.82	MIN 453.69								

TRINITY RIVER BASIN

459

08049900 MOUNTAIN CREEK NEAR DUNCANVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: July 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
OCT 19...	1510	1360	7.4	20.0	10	20	6.8	77	2.0	460	310	150
NOV 09...	1450	1260	7.5	15.0	5	20	5.2	53	1.6	430	270	140
DEC 15...	1000	1030	7.0	10.0	45	180	4.8	44	4.3	310	94	100
JAN 27...	1210	783	7.6	4.5	25	4	6.2	50	4.0	170	0	54
FEB 16...	1240	695	7.8	6.0	30	35	9.2	76	2.2	190	110	67
MAR 23...	1130	1250	8.0	18.0	45	20	7.0	76	8.7	--	--	--
APR 13...	1430	902	7.7	19.0	35	20	6.1	68	6.7	260	78	90
MAY 11...	1520	740	7.4	20.0	30	55	3.9	46	6.2	210	60	72
JUN 08...	0830	610	7.2	24.0	50	60	5.4	66	4.8	190	67	67
JUL 20...	0900	838	7.3	28.5	25	80	1.2	16	6.6	240	64	85
AUG 24...	0940	848	7.3	28.0	140	95	2.3	29	6.3	210	47	71
SEP 13...	1525	850	7.8	29.0	10	75	3.6	47	6.8	210	40	72
DATE	MAGNESIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	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)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)
OCT 19...	21	110	2.2	8.4	190	0	450	72	.8	7.8	914	43
NOV 09...	19	110	2.3	7.8	190	0	410	66	.6	7.6	855	52
DEC 15...	14	100	2.5	10	260	0	240	64	.6	9.6	666	303
JAN 27...	7.8	90	3.0	12	230	0	100	63	.4	3.3	444	11
FEB 16...	5.2	66	2.1	4.6	98	0	170	47	.7	8.0	417	40
MAR 23...	--	--	--	--	--	--	--	--	--	--	--	46
APR 13...	8.1	90	2.4	8.2	220	0	190	59	1.1	40	595	30
MAY 11...	6.8	73	2.2	6.9	180	0	170	42	.5	9.0	469	92
JUN 08...	5.6	52	1.6	8.0	150	0	140	23	.6	6.3	376	100
JUL 20...	7.7	79	2.2	10	220	0	170	39	.8	11	511	168
AUG 24...	8.3	88	2.6	10	200	0	170	49	.7	7.6	503	181
SEP 13...	7.9	87	2.6	9.9	210	0	180	44	.8	7.1	512	128

TRINITY RIVER BASIN

08049900 MOUNTAIN CREEK NEAR DUNCANVILLE, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, VOLATILE, SUSPENDED (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 19...	10	.00	.01	.01	.13	.64	.77	.06	6.3	0	.10
NOV 09...	6	.03	.00	.03	.04	.56	.60	.07	7.7	2	.10
DEC 15...	55	.00	.01	.01	.00	1.6	1.6	.37	9.9	2	.10
JAN 27...	2	.80	.04	.84	.98	3.0	4.0	2.8	13	4	.50
FEB 16...	2	1.7	.07	1.8	.13	.87	1.0	.10	6.1	0	.10
MAR 23...	17	.42	.08	.50	.54	2.4	2.9	.84	11	1	.14
APR 13...	5	.04	.01	.05	.03	1.3	1.3	.22	12	3	.10
MAY 11...	18	.47	.16	.63	.88	.92	1.8	.40	8.6	1	.10
JUN 08...	12	.06	.01	.07	.05	1.2	1.2	.01	6.8	1	.00
JUL 20...	46	.01	.00	.01	.01	1.6	1.6	.14	--	0	.10
AUG 24...	45	.01	.01	.02	.23	1.8	2.0	.17	12	0	.00
SEP 13...	28	.06	.02	.08	.17	1.7	1.9	.17	14	0	.00

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 27...	1210	5	0	1	0	1	0
JUL 20...	0900	4	200	1	0	1	10
SEP 13...	1525	3	0	1	10	2	20

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 27...	0	20	.1	0	0	10
JUL 20...	3	220	.0	0	0	10
SEP 13...	0	140	.1	0	0	0

08050050 MOUNTAIN CREEK LAKE NEAR GRAND PRAIRIE, TX

LOCATION.--Lat 32°43'55", Long 96°56'35", Dallas County, Hydrologic Unit 12030102, at right end of spillway in Mountain Creek Dam on Mountain Creek, 2.5 mi (4.0 km) upstream from Texas and Pacific Railway Co. bridge, and 3.7 mi (6.0 km) southeast of Grand Prairie.

DRAINAGE AREA.--295 mi² (764 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 21, 1960, nonrecording gage at powerplant at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 5,800 ft (1,770 m) long, including a controlled spillway with six 34 by 27 ft (10 by 8 m) tainter gates. The dam was completed in December 1936 and deliberate impoundment began on Mar. 24, 1937. The lake was built and is operated by Dallas Power and Light Co. to supply cooling water for their generating plant. The capacity curve is based on a survey made in 1963. For statement regarding regulation by Soil Conservation Service floodwater-retarding structures, see Mountain Creek near Cedar Hill (station 08049600). 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.....	467.0	-
Top of gates.....	458.0	25,720
Top of dry weather conservation pool.....	457.0	22,840
Top of wet weather conservation pool.....	456.0	20,260
Crest of spillway (sill of tainter gates).....	431.0	0

COOPERATION.--The capacity curve was furnished by the Dallas Power and Light Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 27,440 acre-ft (33.8 hm³) Mar. 27, 1977, elevation, 458.52 ft (139.757 m); minimum 14,120 acre-ft (17.4 hm³) Oct. 18, 1972, elevation, 453.25 ft (138.151 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 23,440 acre-ft (28.9 hm³) May 23, elevation, 457.21 ft (139.358 m); minimum 16,850 acre-ft (20.8 hm³) Sept. 30, elevation, 454.53 ft (138.541 m).

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

454.0	15,670	457.0	22,840
455.0	17,890	458.0	25,720
456.0	20,260		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17580	18060	17890	17360	17710	20930	22350	20880	22300	20670	18440	17600
2	17490	18010	17910	17380	17730	20850	22270	21210	22300	20620	18360	17580
3	17450	18010	17870	17380	17730	20850	22300	21500	22250	20520	18320	17560
4	17400	18010	17850	17380	17760	20880	22250	21500	22220	20440	18250	17580
5	17420	17980	17760	17420	17730	20910	22350	21500	22200	20340	18580	17560
6	17380	17980	17760	17470	17760	20930	22270	21550	22220	20260	18550	17490
7	17420	17960	17780	17360	17870	21240	22250	21550	22270	20170	18530	17450
8	17310	18340	17670	17290	17960	21290	22220	21500	22270	20070	18480	17420
9	17290	18170	17650	17290	18060	21340	22220	21450	22220	20050	18460	17400
10	17380	18170	17650	17290	18150	21450	21940	21550	22200	19950	18410	17400
11	17710	18150	17670	17420	18200	21340	21550	21630	22140	19860	18390	17400
12	17710	18130	17730	17450	19620	21340	21520	22010	22070	19790	18320	17420
13	17690	18150	17670	17360	20070	21370	21520	22300	21990	19710	18270	17400
14	17670	18150	17670	17450	20170	21370	21470	22220	21940	19670	18220	17340
15	17580	18220	17760	17470	20260	21320	21450	22090	21890	19600	18080	17310
16	17580	18130	17670	17420	20290	21290	21450	22090	21810	19500	18010	17270
17	17560	18060	17600	17420	20490	21340	21340	22010	21730	19410	17940	17200
18	17530	18080	17580	17400	20600	21370	21340	22010	21650	19340	17870	17140
19	17510	18100	17530	17450	20700	21320	21210	21960	21630	19260	17760	17090
20	17510	17940	17490	17450	20750	21290	21160	22070	21520	19170	17730	17050
21	17490	17960	17470	17470	20850	21270	21140	23010	21450	19120	17870	17050
22	17780	17960	17510	17490	20880	21340	21110	23330	21370	19080	17850	17050
23	17780	17910	17470	17530	20930	21760	21090	23360	21290	19050	17800	17050
24	17780	17910	17420	17580	21030	22170	21030	21940	21240	19080	17730	17020
25	17800	17890	17380	17530	20880	22400	20960	21520	21160	19030	17690	17000
26	17780	18100	17380	17580	20910	22430	20960	21500	21010	18980	17650	16960
27	17760	17820	17360	17560	20930	22450	20930	21450	20910	18840	17560	16980
28	17760	17780	17360	17580	20910	22450	20960	21890	20850	18840	17710	16940
29	17730	17850	17420	17580	---	22320	20880	22170	20830	18740	17690	16940
30	17760	17890	17420	17560	---	22320	20830	22200	20720	18670	17650	16890
31	17800	---	17400	17670	---	22380	---	22140	---	18510	17620	---
MAX	17800	18340	17910	17670	21030	22450	22350	23360	22300	20670	18580	17600
MIN	17290	17780	17360	17290	17710	20850	20830	20880	20720	18510	17560	16890
(†)	454.96	455.00	454.78	454.90	456.25	456.82	456.22	456.73	456.18	455.26	454.88	454.55
(‡)	+20	+90	-490	+270	+3240	+1470	-1550	+1310	-1420	-2210	-890	-730

CAL YR 1977 MAX 27210 MIN 17110 ‡ -4410
WTR YR 1978 MAX 23360 MIN 16890 ‡ -890

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

TRINITY RIVER BASIN

08050050 MOUNTAIN CREEK LAKE NEAR GRAND PRAIRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 11...	0950	539	7.8	8.0	160	79	54	6.3	45
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 11...	1.5	6.5	100	0	150	28	.7	2.3	342

TRINITY RIVER BASIN

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08050100 MOUNTAIN CREEK AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°44'52", long 96°55'33", Dallas County, Hydrologic Unit 12030102, on right bank at downstream side of downstream bridge on Jefferson Street, 1,000 ft (305 m) upstream from bridge on U.S. Highway 80, 1.2 mi (1.9 km) upstream from Texas and Pacific Railroad Co. bridge, 1.5 mi (2.4 km) downstream from Mountain Creek Lake Dam, and 4.4 mi (7.1 km) east of Grand Prairie.

DRAINAGE AREA.--298 mi² (772 km²).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 407.31 ft (124.148 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Mountain Creek Lake (station 08050050). Dallas Power and Light Co. gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 105 ft³/s (2,974 m³/s), 76,070 acre-ft/yr (93.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,100 ft³/s (1,080 m³/s) Apr. 19, 1976, gage height, 24.21 ft (7.379 m); maximum gage height, 24.62 ft (7.504 m) May 7, 1969; no flow in 1964, 1972-74.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,290 ft³/s (64.9 m³/s) May 24, gage height, 8.11 ft (2.472 m); minimum daily, 0.09 ft³/s (0.003 m³/s) Mar. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	4.4	1.3	.26	1.5	.25	1.4	1.1	1.6	.64	.51	.94
2	.34	2.5	.90	.32	.81	.22	1.9	4.7	2.9	.70	.56	.93
3	.50	.97	.65	.32	.50	.18	1.2	6.0	1.9	.71	.59	.91
4	.82	.50	1.1	.26	.36	.14	1.1	1.5	1.6	.61	.56	1.1
5	.89	.30	.52	.32	.28	.15	.93	.88	1.5	.62	2.2	1.3
6	.86	.23	.86	.40	.26	.15	1.4	.62	1.6	.69	1.6	.83
7	.68	.20	1.1	.26	.83	9.4	.76	.50	2.1	1.1	.88	.67
8	.56	5.5	.95	.15	1.2	1.3	.61	.38	3.7	.84	.74	.69
9	.36	2.3	.64	.15	1.4	.52	.71	.34	1.8	.61	.69	.96
10	.59	.91	.83	.26	2.1	.37	224	.41	1.4	.54	.75	.88
11	9.3	.62	.73	.93	2.8	.33	221	.90	1.2	.56	.69	.89
12	1.4	.41	.59	1.3	51	.25	1.9	2.4	1.1	.56	1.0	.99
13	.80	.34	.46	.78	6.1	.21	1.1	.65	1.1	.48	.61	.82
14	.67	.31	.35	.49	1.7	.17	.83	.44	1.2	.35	.61	.70
15	.46	.33	.31	.36	1.5	.13	.70	.54	1.1	.36	.56	.55
16	.48	.39	.37	.40	1.5	.10	.68	.59	1.2	.35	.55	.60
17	.59	.36	.28	.36	1.4	.10	.68	.76	1.1	.42	.59	.54
18	.49	.43	.24	.35	2.0	.09	.62	.78	1.1	.40	.56	.42
19	.42	.48	.26	.45	2.4	.11	.75	.63	.96	.39	.48	.40
20	.31	.43	.25	.44	4.8	.15	.92	.63	.88	.45	.63	.37
21	.22	.32	.28	.42	3.0	.32	.87	14	.83	.45	.80	1.7
22	3.3	.48	.43	.39	1.4	.16	.75	3.5	.80	.52	1.1	1.7
23	3.8	.51	.39	.42	1.0	5.3	.73	1.8	.74	.69	.76	.78
24	1.0	.49	.29	.59	.68	5.8	.62	660	.73	.68	.55	.61
25	.58	.49	.25	.75	.55	.67	.56	220	.65	.59	.47	.45
26	.45	.62	.39	.56	.43	.41	.66	3.0	.63	.56	.38	.41
27	.36	.60	.44	.34	.30	.33	.63	1.9	.68	.49	.62	.68
28	.42	.57	.41	.25	.32	.29	.52	2.6	.63	.58	.64	.73
29	.33	.93	.54	.21	---	51	.51	3.9	.52	.57	1.2	.55
30	.19	1.4	.44	.20	---	2.5	.46	2.2	.54	.51	.97	.49
31	.25	---	.32	.57	---	1.5	---	1.6	---	.50	.88	---
TOTAL	31.78	28.32	16.87	13.26	92.12	82.60	469.50	939.25	37.79	17.52	23.73	23.59
MEAN	1.03	.94	.54	.43	3.29	2.66	15.7	30.3	1.26	.57	.77	.79
MAX	9.3	5.5	1.3	1.3	51	51	224	660	3.7	1.1	2.2	1.7
MIN	.19	.20	.24	.15	.26	.09	.46	.34	.52	.35	.38	.37
AC-FT	63	56	33	26	183	164	931	1860	75	35	47	47
CAL YR 1977	TOTAL	54298.66	MEAN	149	MAX	12300	MIN	.13	AC-FT	107700		
WTR YR 1978	TOTAL	1776.33	MEAN	4.87	MAX	660	MIN	.09	AC-FT	3520		

TRINITY RIVER BASIN

08050500 ELM FORK TRINITY RIVER NEAR SANGER, TX

LOCATION.--Lat 33°23'11", Long 97°05'05", Denton County, Hydrologic Unit 12030103, on right bank on downstream side of pier of bridge on Farm Road 455, 4.1 mi (6.6 km) downstream from Spring Creek, 5.0 mi (8.0 km) upstream from Isle du Bois Creek, and 5.4 mi (8.7 km) northeast of Sanger.

DRAINAGE AREA.--381 mi² (987 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 553.72 ft (168.774 m) National Geodetic Vertical Datum of 1929. Prior to May 7, 1955, at site 500 ft (150 m) downstream at same datum.

REMARKS.--Water-discharge records good. Flow is affected at times by discharge from the flood-detention pools of 41 floodwater-retarding structures with combined capacity of 26,790 acre-ft (33.0 hm³). These structures control runoff from 94.7 mi² (245.3 km²) in the Elm Fork Trinity River watershed. Records furnished by the city of Gainesville show that 2,240 acre-ft (2.76 hm³) of sewage effluent was discharged into the river above station.

AVERAGE DISCHARGE.--29 years, 145 ft³/s (4.106 m³/s), 105,100 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Oct. 31, 1974, gage height, 29.10 ft (8.870 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903, 30.7 ft (9.36 m) in May 1908, from information by local residents. Flood of May 18, 1935, reached a stage of 29.7 ft (9.05 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,880 ft³/s (53.2 m³/s) Apr. 10, gage height, 14.01 ft (4.270 m), no peak above base of 4,000 ft³/s (113 m³/s); minimum, 0.26 ft³/s (0.007 m³/s) Apr. 19, 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.8	3.1	4.5	3.5	2.7	4.7	5.2	8.0	1.4	1.2	.85
2	2.5	3.0	3.3	4.3	3.5	2.7	4.6	6.2	18	1.4	1.1	1.1
3	2.2	2.6	3.2	4.0	3.6	2.5	4.4	120	18	1.3	1.1	1.0
4	2.1	2.6	3.2	3.7	3.6	2.3	4.2	34	8.7	1.2	1.7	1.2
5	2.7	2.8	3.4	3.8	3.5	2.2	4.2	237	5.9	1.1	5.0	1.0
6	2.8	3.0	3.6	4.0	3.4	2.3	4.3	88	256	1.0	13	1.0
7	3.0	2.9	3.4	4.1	3.9	92	4.6	51	303	.90	2.1	.82
8	3.0	3.6	3.2	4.2	4.0	156	4.3	22	98	1.0	.88	.81
9	2.8	6.3	3.2	4.2	4.6	29	4.4	14	53	.93	.68	.93
10	2.6	5.6	3.3	4.0	4.9	12	1070	10	35	.98	.60	1.7
11	2.6	3.0	3.4	5.0	4.6	7.4	330	8.0	25	1.0	.64	1.9
12	2.5	2.4	3.6	5.8	62	5.7	78	6.7	19	.95	.60	1.3
13	2.3	2.2	4.1	5.6	131	4.5	48	5.6	17	.93	.57	1.1
14	2.1	2.2	3.9	5.2	20	4.1	35	4.8	227	.95	.53	.92
15	2.2	2.1	3.7	6.8	8.8	3.8	28	4.5	59	.96	.53	.83
16	2.0	1.9	3.5	5.6	6.7	3.4	23	4.0	36	.96	.47	.75
17	1.8	1.8	3.3	5.9	7.2	3.3	20	3.9	24	.99	.34	.65
18	1.8	2.1	3.2	7.1	5.9	3.0	17	4.1	18	.88	.31	.62
19	1.5	2.2	3.9	5.1	4.7	2.8	13	3.8	13	.71	.30	.58
20	1.7	2.2	3.7	4.3	5.7	2.9	11	3.6	11	.58	.34	.60
21	1.9	2.0	3.5	3.9	9.3	117	9.3	4.0	8.2	.60	.46	.37
22	2.3	1.9	3.4	3.7	7.4	22	8.6	6.4	6.1	.80	.47	.73
23	13	1.8	3.4	3.7	6.8	66	8.1	5.0	4.3	1.0	.55	.98
24	7.1	1.9	3.7	3.7	6.2	495	7.6	4.4	3.3	1.3	.43	1.1
25	3.2	2.4	3.8	3.8	4.8	43	6.9	3.7	2.5	1.5	.29	1.0
26	2.1	2.3	3.8	4.5	3.6	17	6.5	3.3	2.0	1.4	.31	.84
27	2.1	2.3	3.7	5.4	2.9	10	5.9	2.6	1.6	2.2	.43	.72
28	1.9	2.3	3.6	4.4	2.7	7.7	5.5	121	1.6	2.0	.39	.73
29	2.0	2.2	4.1	3.7	---	6.4	5.3	82	1.6	1.4	.31	.71
30	2.4	2.6	4.4	3.6	---	5.5	5.3	22	1.5	1.3	.35	.76
31	2.6	---	4.6	3.5	---	5.1	---	12	---	1.2	.38	---
TOTAL	87.6	79.0	111.2	141.1	338.8	1139.3	1781.7	902.8	1285.3	34.82	36.36	27.60
MEAN	2.83	2.63	3.59	4.55	12.1	36.8	59.4	29.1	42.8	1.12	1.17	.92
MAX	13	6.3	4.6	7.1	131	495	1070	237	303	2.2	13	1.9
MIN	1.5	1.8	3.1	3.5	2.7	2.2	4.2	2.6	1.5	.58	.29	.37
AC-FT	174	157	221	280	672	2260	3530	1790	2550	69	72	55

CAL YR 1977 TOTAL 49030.30 MEAN 134 MAX 18700 MIN 1.5 AC-FT 97250
WTR YR 1978 TOTAL 5965.58 MEAN 16.3 MAX 1070 MIN .29 AC-FT 11830

TRINITY RIVER BASIN

465

08050500 ELM FORK TRINITY RIVER NEAR SANGER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to current year. Sediment records: January 1966 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV 07...	0700	2.9	931	8.0	16.0	30	15	6.3	66	1.4	140	0
JAN 23...	1245	3.7	948	8.1	1.5	20	5	13.2	97	1.4	160	0
MAR 13...	1335	4.2	464	7.9	11.5	60	65	8.5	80	5.0	140	12
MAY 18...	0945	4.2	845	7.8	21.5	10	25	5.7	66	2.1	230	0
JUL 12...	1230	.93	730	7.7	28.5	25	10	5.2	68	2.2	220	0
SEP 13...	1015	1.1	782	7.8	26.0	30	15	4.4	55	2.0	130	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 07...		51	2.8	160	5.9	6.9	460	0	49	40	.3	13
JAN 23...		57	5.3	160	5.4	6.2	450	0	59	47	.5	2.9
MAR 13...		50	4.3	42	1.5	5.5	160	0	34	41	.2	9.5
MAY 18...		83	6.7	86	2.4	5.9	290	0	56	87	.4	7.3
JUL 12...		79	6.3	74	2.2	5.1	280	0	39	76	.3	7.9
SEP 13...		44	3.8	130	5.1	6.4	380	0	41	43	.4	9.4
DATE		SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, SUS- PENDED (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 07...		550	24	1	.58	.03	.61	.01	.89	.90	4.5	8.7
JAN 23...		560	6	4	1.6	.03	1.6	.04	.76	.80	2.6	5.4
MAR 13...		266	108	20	1.2	.05	1.2	.38	1.4	1.8	.61	12
MAY 18...		475	42	4	.85	.05	.90	.06	.79	.85	.33	6.7
JUL 12...		426	22	12	.00	.01	.01	.01	.79	.80	.15	6.9
SEP 13...		466	23	5	.00	.02	.02	.04	.86	.90	1.3	8.7

TRINITY RIVER BASIN

08050500 ELM FORK TRINITY RIVER NEAR SANGER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 23...	1245	3	100	1	0	2	10
MAR 13...	1335	2	300	1	0	5	60
JUL 12...	1230	4	200	1	0	2	10
SEP 13...	1015	10	100	1	0	3	20
DATE		LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 23...		1	10	.0	1	0	20
MAR 13...		0	20	.0	0	1	10
JUL 12...		3	20	.0	0	0	10
SEP 13...		0	0	.2	0	0	20

TRINITY RIVER BASIN

467

08051000 ISLE DU BOIS CREEK NEAR PILOT POINT, TX

LOCATION.--Lat 33°24'23", long 97°00'45", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of bridge on Farm Road 372, 2.4 mi (3.9 km) downstream from Wolf Creek, 3.0 mi (4.8 km) west of Pilot Point, and 6.3 mi (10.1 km) upstream from mouth.

DRAINAGE AREA.--266 mi² (689 km²).

PERIOD OF RECORD.--April 1949 to current year.

Water-quality records: Chemical analyses: November 1961 to April 1963. Sediment records: February 1966 to September 1975.

REVISED RECORDS.--WSP 1512: 1950. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 555.48 ft (169.310 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Feb. 8, 1958, water-stage recorder at site 1.0 mi (1.6 km) upstream at datum 4.22 ft (1.286 m) higher.

REMARKS.--Records good except those for period of no gage-height record, Jan. 11 to Apr. 3, which are poor. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--29 years (water years 1950-78), 114 ft³/s (3.228 m³/s), 5.82 in/yr (148 mm/yr), 82,590 acre-ft/yr (102 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s) Oct. 31, 1974, gage height, 29.43 ft (8.970 m), present site and datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 30.4 ft (9.27 m) in May 1908, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 725 ft³/s (20.5 m³/s) Apr. 11, gage height, 8.74 ft (2.664 m), no peak above base of 2,500 ft³/s (70.8 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.20	.48	.40	.60	2.3	.00	.47	.00	.00	.00
2	.00	.00	.34	.40	.40	.40	2.0	.05	.00	.00	.00	.00
3	.00	.02	.47	.39	.40	.35	1.8	.77	.00	.00	.00	.00
4	.00	.13	.47	.36	.35	.30	1.6	119	.00	.00	.00	.00
5	.00	.10	.45	.38	.35	.30	1.1	197	.00	.00	.00	.00
6	.00	.04	.34	.50	.35	.30	.49	251	8.0	.00	.00	.00
7	.00	.02	.48	.58	.35	35	.26	67	163	.00	.00	.00
8	.00	.11	.59	.59	.35	70	.33	30	54	.00	.00	.00
9	.00	.52	.51	.36	.40	25	.26	13	7.4	.00	.00	.00
10	.00	1.5	.51	.32	.40	10	339	4.2	1.2	.00	.00	.00
11	.00	1.5	.77	.30	.50	5.5	549	1.4	.00	.00	.00	1.4
12	.00	.89	.81	.50	30	2.5	109	.24	.00	.00	.00	.00
13	.00	.55	.96	1.0	60	1.0	33	.00	42	.00	.00	.00
14	.00	.51	1.0	.70	20	.75	13	.00	37	.00	.00	.00
15	.00	.62	1.3	.50	10	.60	5.7	.00	4.0	.00	.00	.00
16	.00	.70	1.1	.45	5.0	.50	3.0	.00	.00	.00	.00	.00
17	.00	.63	.99	.45	3.0	.40	1.6	.00	.00	.00	.00	.00
18	.00	.58	.97	.65	2.0	.35	.63	.00	.00	.00	.00	.00
19	.00	.72	.85	.50	1.5	.35	.03	.00	.00	.00	.00	.00
20	.00	1.1	.85	.45	1.1	.30	.00	.00	.00	.00	.00	.00
21	.00	1.3	.86	.45	.80	45	.00	.96	.00	.00	.00	.00
22	.36	1.1	.85	.40	40	10	.00	32	.00	.00	.00	.00
23	5.5	1.3	.89	.40	65	40	.00	5.1	.00	5.8	.00	.00
24	.24	1.6	.92	.40	25	200	.00	.58	.00	.08	.00	.00
25	.06	1.9	.71	.35	5.0	40	.00	.00	.00	.00	.00	.00
26	.00	1.5	.84	.35	3.0	15	.00	.00	.00	.00	.00	.00
27	.00	.02	.93	.70	1.5	8.0	.00	.00	.00	.00	.00	.00
28	.00	.04	.96	.55	1.0	4.0	.00	93	.00	.00	.00	.00
29	.00	.04	1.0	.45	---	3.5	.00	96	.00	.00	.00	.00
30	.00	.09	.39	.40	---	3.0	.00	22	.00	.00	.00	.00
31	.00	---	.43	.40	---	2.6	---	4.6	---	.00	.00	---
TOTAL	6.16	19.13	22.74	14.71	278.15	525.60	1064.10	1014.13	317.07	5.88	.00	1.40
MEAN	.20	.64	.73	.47	9.93	17.0	35.5	32.7	10.6	.19	.000	.047
MAX	5.5	1.9	1.3	1.0	65	200	549	251	163	5.8	.00	1.4
MIN	.00	.00	.20	.30	.35	.30	.00	.00	.00	.00	.00	.00
CFSM	.001	.002	.003	.002	.04	.06	.13	.12	.04	.001	.000	.000
IN.	.00	.00	.00	.00	.04	.07	.15	.14	.04	.00	.00	.00
AC-FT	12	38	45	29	552	1040	2110	2010	629	12	.00	2.8
CAL YR 1977	TOTAL	40646.50	MEAN	111	MAX	18600	MIN	.00	CFSM	.42	IN	5.68
WTR YR 1978	TOTAL	3269.07	MEAN	8.96	MAX	549	MIN	.00	CFSM	.03	IN	.46
										AC-FT	80620	6480

TRINITY RIVER BASIN

08051500 CLEAR CREEK NEAR SANGER, TX

LOCATION.--Lat 33°20'21", long 97°10'51", Denton County, Hydrologic Unit 12030103, at the downstream side of left abutment of main channel bridge on Interstate Highway 35, 600 ft (180 m) downstream from Duck Creek, 1.3 mi (2.1 km) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 1.7 mi (2.7 km) south of Sanger.

DRAINAGE AREA.--295 mi². (764 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1949 to current year.

REVISED RECORDS.--WSP 1512: 1950, 1955. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 582.23 ft (177.464 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 18, 1975, water-stage recorder at site 950 ft (290 m) downstream at datum 5.00 ft (1.524 m) higher.

REMARKS.--Water-discharge records fair. No appreciable diversion above station. Flow is affected at times by discharge from flood-detention pools of 51 floodwater-retarding structures with combined detention capacity of 38,850 acre-ft (47.9 hm³). These structures control runoff from 149 mi² (386 km²) in the Clear Creek watershed. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--29 years (water years 1950-78), 77.0 ft³/s (2.181 m³/s), 55,790 acre-ft/yr (68.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft³/s (515 m³/s), Sept. 13, 1950, gage height, 24.80 ft (7.559 m), site and datum then in use; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 31.5 ft (9.60 m) in May 1908, from information by Gulf, Colorado, and Santa Fe Railway Co. Flood in May 1935 reached a stage of 29.0 ft (8.84 m), from information by Texas Department of Highways and Public Transportation. Both peaks referenced to site and datum used to prior to Apr. 18, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 515 ft³/s (14.6 m³/s) June 6, gage height, 10.25 ft (3.124 m), no peak above base of 3,000 ft³/s (85.0 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.07	5.2	5.6	12	.91	4.1	.00	.00	.00
2	.00	.00	.01	.06	5.2	6.0	8.9	2.1	78	.00	.00	.00
3	.00	.00	.04	.05	5.6	7.8	7.3	23	25	.00	.00	.00
4	.00	.00	.06	.09	5.5	7.8	6.9	12	14	.00	.00	.00
5	.00	.00	.01	.32	5.0	6.9	7.3	55	8.4	.00	.02	.00
6	.00	.00	.00	.82	5.2	7.8	7.8	27	167	.00	.00	.00
7	.00	.00	.00	1.7	5.2	8.3	10	20	222	.00	.00	.00
8	.00	.00	.00	2.7	5.2	32	9.4	9.4	46	.00	.00	.00
9	.00	.00	.00	4.1	5.2	26	8.3	5.6	18	.00	.00	.00
10	.00	.00	.00	5.6	7.0	18	137	3.2	6.8	.00	.00	.00
11	.00	.00	.00	30	12	13	106	2.3	2.7	.00	.00	.00
12	.00	.00	.00	45	20	12	27	2.1	1.1	.00	.00	.00
13	.00	.00	.00	20	34	10	14	1.7	.66	.00	.00	.00
14	.00	.00	.00	1.7	23	9.4	7.3	1.3	77	.00	.00	.00
15	.00	.00	.00	3.5	12	8.9	4.8	.99	61	.00	.00	.00
16	.00	.00	.00	5.1	11	7.3	3.5	1.2	21	.00	.00	.00
17	.00	.00	.00	15	10	6.9	3.0	.76	5.0	.00	.00	.00
18	.00	.00	.00	5.4	7.9	6.9	2.5	.69	1.6	.00	.00	.00
19	.00	.00	.00	7.1	6.8	6.9	1.9	.62	.77	.00	.00	.00
20	.00	.00	.00	4.1	11	7.3	1.5	.63	.44	.00	.00	.00
21	.00	.00	.00	3.1	11	6.9	1.2	.89	.23	.00	.00	.00
22	.00	.00	.00	4.4	7.8	6.9	1.4	9.6	.13	.00	.00	.00
23	.00	.00	.00	4.4	7.8	41	1.7	5.7	.10	.00	.00	.00
24	.00	.00	.00	4.7	6.9	59	1.5	2.1	.07	.00	.00	.00
25	.00	.00	.00	6.4	6.0	60	1.2	1.0	.00	.00	.00	.00
26	.00	.00	.00	7.6	5.2	43	1.1	.60	.00	.00	.00	.00
27	.00	.00	.00	4.7	5.2	46	1.0	.38	.00	.00	.00	.00
28	.00	.00	.00	3.7	5.6	65	1.0	95	.00	.00	.00	.00
29	.00	.00	.00	3.7	---	47	1.0	97	.00	.00	.00	.00
30	.00	.00	.00	4.3	---	28	1.0	22	.00	.00	.00	.00
31	.00	---	.00	5.2	---	19	---	7.7	---	.00	.00	---
TOTAL	.00	.00	.12	204.61	257.5	636.6	398.5	412.47	761.10	.00	.02	.00
MEAN	.000	.000	.004	6.60	9.20	20.5	13.3	13.3	25.4	.000	.001	.000
MAX	.00	.00	.06	45	34	65	137	97	222	.00	.02	.00
MIN	.00	.00	.00	.05	5.0	5.6	1.0	.38	.00	.00	.00	.00
AC-FT	.00	.00	.2	406	511	1260	790	818	1510	.00	.04	.00
CAL YR 1977	TOTAL	25713.63	MEAN	70.4	MAX	5660	MIN	.00	AC-FT	51000		
WTR YR 1978	TOTAL	2670.92	MEAN	7.32	MAX	222	MIN	.00	AC-FT	5300		

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX

LOCATION.--Lat 33°04'09", long 96°57'51", Denton County, Hydrologic Unit 12030103, in intake structure of Lewisville Dam on Elm Fork Trinity River, 2 mi (3 km) upstream from bridge on State Highway 121, 2.4 mi (3.9 km) northeast of Lewisville, 12 mi (19 km) upstream from Denton Creek, and 30.0 mi (48.3 km) upstream from mouth.

DRAINAGE AREA.--1,660 mi² (4,299 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1954 to current year. Prior to October 1970, published as Garza-Little Elm Reservoir near Lewisville.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 17, 1955, nonrecording gage at site 4,000 ft (1,220 m) upstream at same datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 32,888 ft (10,024 m) long, including a 560 ft (171 m) uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov. 1, 1954, and the dam was completed in August 1955. The controlled low-flow outlet works consist of a 16.0-foot-diameter (4.9 m) conduit that is controlled by three 6.5 by 13.0 ft (2.0 by 4.0 m) broome-type gates and two 60 in (1,524 mm) steel pipes with service valves. The lake was built for flood control and water conservation. The city of Dallas obtains most of its water for municipal use from this lake. The capacity table is based on a survey made in 1965. Inflow is affected at times by discharge from the flood-detention pools of 118 floodwater-retarding structures with combined detention capacity of 81,670 acre-ft (101 hm³). These structures control runoff from 298 mi² (772 km²) in the Elm Fork Trinity River, Clear, Little Elm, and Hickory Creeks watersheds. 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.....	560.0	-
Crest of spillway.....	532.0	981,800
Top of conservation pool.....	515.0	457,600
Lowest intakes to wet wells (invert).....	481.0	42,560
Invert of three broome-type gates.....	448.0	0

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,146,000 acre-ft (1.41 km³) June 3, 1957, elevation, 535.57 ft (163.242 m); minimum since initial filling in 1957, 271,800 acre-ft (335 hm³) Sept. 30, 1978, elevation, 505.16 ft (153.973 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 370,800 acre-ft (457 hm³) June 8, elevation, 511.01 ft (155.756 m); minimum, 271,800 acre-ft (335 hm³) Sept. 30, elevation, 505.16 ft (153.973 m).

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

504.0	254,900	510.0	351,900
506.0	284,800	512.0	391,000
508.0	317,300		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368900	348600	335500	323700	316000	322500	340700	350400	370100	351000	314000	288900
2	367800	347900	334900	323400	315700	322700	340700	351900	369300	350100	312700	288700
3	366600	347700	334600	322400	315500	322500	340700	356100	369100	349000	312000	288100
4	365500	347400	334400	322400	315200	321900	340000	357200	368300	347900	311900	287600
5	364500	346500	334300	322400	315000	321000	340500	359400	367600	346900	312400	287300
6	363400	346000	333200	322000	315200	321500	339800	361900	368700	345100	311500	286400
7	363200	346000	332200	321700	315200	322700	339300	363200	369900	343800	311200	285300
8	362400	346300	332000	321200	315200	322700	339100	363200	370700	342800	310200	284900
9	361300	345800	332000	320700	315000	322700	340500	363000	370500	341600	309900	284600
10	360900	344700	331000	320000	315000	322000	348600	362400	369100	340000	308900	283700
11	360200	344200	330700	320500	315200	322500	354100	362200	368500	338600	308100	283500
12	358900	343700	330500	320500	318500	322000	356300	360500	368300	337500	307100	283000
13	358300	343300	330300	320500	320700	322000	356600	361500	367400	336000	306300	282400
14	357400	342600	330300	320000	322000	321700	356300	360500	367900	334800	304600	281800
15	356800	342400	329100	319800	322900	321700	355900	360400	367200	333600	303600	281300
16	355700	342300	329600	320000	323200	321200	355500	359200	366600	332000	302500	280500
17	355000	341600	329100	319200	323700	320500	355300	358900	366000	330700	301400	279900
18	354600	340500	328600	320000	323700	319800	355300	358300	365700	329100	300000	278500
19	353700	340500	328400	319000	323500	319500	354800	357700	364700	327600	299200	277900
20	353100	340500	328100	318500	323700	320200	353900	357700	363600	326100	298400	277300
21	352400	339800	327300	318500	323500	319500	353000	359600	362400	324900	297400	276700
22	353100	338800	325900	318000	323500	319500	353000	359200	361300	323400	296500	276400
23	353100	338800	325900	317700	323400	319000	354200	358900	360200	323200	295500	275600
24	353000	338400	325700	317700	323400	330500	354800	358500	358900	322400	294500	275000
25	352600	337900	325200	317300	323500	339600	353700	357700	357200	321700	293700	274700
26	351900	337400	325200	317000	322700	342400	352800	357400	356600	320700	292700	273800
27	351300	337200	324200	316800	322900	342600	352000	356800	355200	319800	291600	273300
28	350600	336700	324200	316800	322900	342400	351300	363700	354600	318700	290800	272700
29	349900	336200	324400	316200	---	342400	351100	369300	353300	317300	291100	272300
30	349500	336000	324000	316000	---	342400	350800	370500	352200	316200	291000	271800
31	348800	---	323900	315800	---	341700	---	370100	---	315000	289500	---
MAX	368900	348600	335500	323700	323700	342600	356600	370500	370700	351000	314000	288900
MIN	348800	336000	323900	315800	315000	319000	339100	350400	352200	315000	289500	271800
(†)	509.83	509.10	508.39	507.91	508.33	509.43	509.94	510.97	510.02	507.86	506.30	505.16
(+)	-20700	-12800	-12100	-8100	+7100	+18800	+9100	+19300	-17900	-37200	-25500	-17700
(††)	1080	828	843	873	769	887	997	1050	1380	1930	1640	1290

CAL YR 1977 MAX 745400 MIN 323900 † -43100 †† 12240
WTR YR 1978 MAX 370700 MIN 271800 † -97700 †† 13570

† Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by cities of Denton and Lewisville.

TRINITY RIVER BASIN
LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

WATER-QUALITY RECORDS

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

330419096575401 - LEWISVILLE LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
MAR									
22...	0932	1.0	363	8.3	12.0	.80	10.5	101	130
22...	0934	10	363	8.3	12.0	--	10.4	100	--
22...	0936	20	363	8.3	11.5	--	10.3	97	--
22...	0939	30	363	8.3	11.0	--	10.3	96	--
22...	0942	40	363	8.3	11.0	--	10.2	95	--
22...	0944	50	363	8.3	11.0	--	10.2	95	--
22...	0946	55	363	8.3	11.0	--	10.0	93	140

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR									
22...	20	47	4.2	21	.8	4.0	140	0	31
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	25	49	4.3	21	.8	4.1	140	0	31

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR									
22...	22	.3	.9	199	.05	.00	.03	0	0
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	.04	.01	.03	0	0
22...	--	--	--	--	--	--	--	--	--
22...	24	.3	1.0	204	.03	.01	.04	0	0

330410096584501 - LEWISVILLE LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
22...	0917	1.0	363	8.4	11.5	10.5	99
22...	0919	10	363	8.4	11.5	10.5	99
22...	0921	20	363	8.3	11.0	10.4	97
22...	0923	30	363	8.3	11.0	10.2	95
22...	0925	39	363	8.2	10.5	10.1	94

330450096560501 - LEWISVILLE LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
22...	1250	1.0	381	8.4	15.5	10.2	105
22...	1253	10	381	8.4	15.0	10.2	104
22...	1255	20	381	8.4	15.0	10.1	103
22...	1258	25	381	8.2	14.5	9.0	91

TRINITY RIVER BASIN
LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

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330606097025601 - LEWISVILLE LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
22...	1222	1.0	371	8.2	17.0	9.2	98
22...	1225	10	371	8.1	16.5	9.0	95
22...	1227	19	371	7.9	15.0	7.8	80

330755096572001 - LEWISVILLE LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
22...	1007	1.0	371	8.3	14.0	.40	9.8
22...	1010	10	371	8.3	14.0	--	9.8
22...	1012	20	371	8.2	12.0	--	9.6
22...	1015	26	371	8.2	12.0	--	9.4

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
22...	98	.05	.00	.04	0	0
22...	98	--	--	--	--	--
22...	92	--	--	--	--	--
22...	90	.02	.01	.06	0	0

330959096565301 - LEWISVILLE LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA,MG) (MG/L)
MAR									
22...	1034	1.0	374	8.0	16.0	.30	9.0	94	140
22...	1036	10	374	8.0	15.0	--	8.6	88	--
22...	1040	20	374	7.9	14.5	--	7.8	79	140

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR									
22...	37	50	4.5	21	.8	3.8	130	0	47
22...	--	--	--	--	--	--	--	--	--
22...	26	49	4.4	21	.8	3.8	140	0	38

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR								
22...	21	2.1	214	.50	.01	.07	10	0
22...	--	--	--	--	--	--	--	--
22...	22	1.8	209	.39	.08	.12	0	0

TRINITY RIVER BASIN

LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330722046592201 - LEWISVILLE LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
22...	1101	1.0	404	8.5	15.5	.40	9.9
22...	1105	10	404	8.4	15.0	--	9.4
22...	1108	17	404	8.3	14.5	--	8.6

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
22...	102	.14	.01	.10	10	0
22...	96	--	--	--	--	--
22...	87	.19	.05	.14	0	0

330944097003601 - LEWISVILLE LAKE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
22...	1132	1.0	427	8.2	18.5	.10	8.2
22...	1136	4.0	427	8.1	18.5	--	7.9

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
22...	90	.25	.04	.27	20	0
22...	87	--	--	--	--	--

TRINITY RIVER BASIN

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LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330419096575401 - LEWISVILLE LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN									
14...	1115	1.0	367	7.8	27.5	1.00	7.6	99	130
14...	1117	10	367	7.7	27.0	--	7.1	91	--
14...	1119	20	367	7.4	26.0	--	5.5	70	--
14...	1121	30	391	7.0	23.5	--	1.6	19	--
14...	1123	43	396	6.9	22.0	--	.2	2	150

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
14...	26	46		4.4	22	.9	4.1	130	0	35
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	26	52		4.6	22	.8	4.1	150	0	35

DATE	TIME	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)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN										
14...	27	.3		1.7	205	.10	.00	.01	110	0
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	.12	.01	.01	110	20
14...	--	--	--	--	--	--	--	--	--	--
14...	27	.3		3.1	223	.05	.03	.05	600	120

330450096560501 - LEWISVILLE LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
14...	1200	1.0	385	7.9	28.0	7.5	97
14...	1202	10	385	7.9	28.0	7.6	99
14...	1204	20	385	7.7	26.5	6.9	88
14...	1206	29	385	7.7	26.0	6.9	87

330606097025601 - LEWISVILLE LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
14...	1500	1.0	366	7.8	29.5	6.8	91
14...	1502	13	366	7.6	29.0	5.6	75

TRINITY RIVER BASIN
LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330755096572001 - LEWISVILLE LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, SATUR- ATION	HARD- NESS, DIS- SOLVED (MG/L AS CAC03)
JUN									
14...	1230	1.0	368	7.8	28.0	.60	7.3	95	130
14...	1232	10	368	7.8	28.0	--	7.2	94	--
14...	1234	20	368	7.7	27.5	--	6.8	88	--
14...	1236	27	376	7.2	26.0	--	3.0	38	130

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS. (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
JUN										
14...	21	44	4.4	22	.8	4.2	130	0	34	--
14...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
14...	16	45	4.5	22	.8	4.1	140	0	34	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
14...	26	--	2.5	201	.15	.01	.03	10	0
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	.18	.01	.02	10	0
14...	25	--	2.8	207	.24	.04	.04	160	20

330959096565301 - LEWISVILLE LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, SATUR- ATION	HARD- NESS, DIS- SOLVED (MG/L AS CAC03)
JUN									
14...	1300	1.0	354	7.6	28.0	.30	6.4	83	130
14...	1302	10	358	7.3	27.5	--	4.7	61	--
14...	1304	23	366	7.1	27.5	--	2.8	36	130

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS. (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
JUN										
14...	26	46	4.2	20	.8	4.2	130	0	38	--
14...	--	--	--	--	--	--	--	--	--	--
14...	26	46	4.4	20	.8	4.2	130	0	38	--

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
14...	22	--	3.5	202	.15	.01	.04	50	20
14...	--	--	--	--	--	--	--	--	--
14...	25	--	3.5	206	.31	.03	.14	390	100

TRINITY RIVER BASIN

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LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330722096592201 - LEWISVILLE LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN										
14...	1346	1.0	398	7.6	28.5	.20	6.3	83	140	
14...	1347	10	398	7.6	28.0	--	6.2	81	--	
14...	1348	17	398	7.3	27.0	--	4.9	63	140	

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
14...	21	47	4.6	26	1.0	4.5	140	0	34	
14...	--	--	--	--	--	--	--	--	--	--
14...	24	48	4.5	26	1.0	4.6	140	0	33	

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
14...	34	4.9	224	.08	.00	.08	20	0	
14...	--	--	--	--	--	--	--	--	--
14...	31	5.1	221	.44	.01	.12	10	30	

330944097003601 - LEWISVILLE LAKE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS, DIS- SOLVED (MG/L AS CACO3)
JUN										
14...	1411	1.0	400	7.6	29.0	.20	6.4	85	140	
14...	1413	8.0	400	7.6	28.5	--	6.2	82	140	

DATE	TIME	HARD- NESS, NONCAR- BONATE, DIS- (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN										
14...	26	49	4.6	25	.9	4.8	140	0	31	
14...	21	47	4.4	27	1.0	4.7	140	0	34	

DATE	TIME	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
14...	32	5.4	221	.24	.01	.15	30	10	
14...	34	5.3	225	.26	.10	.15	30	0	

TRINITY RIVER BASIN
LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330419096575401 - LEWISVILLE LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CACO3)
SEP									
26...	1205	1.0	369	8.1	25.5	1.20	7.7	96	120
26...	1208	10	369	8.1	25.5	--	7.7	96	--
26...	1210	20	369	8.1	25.5	--	7.4	92	--
26...	1213	30	369	7.8	25.5	--	5.9	74	--
26...	1215	40	371	7.6	25.0	--	4.6	57	--
26...	1217	45	380	7.2	24.5	--	.8	10	--
26...	1219	50	380	7.2	24.5	--	.4	5	130

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
26...	16	42	4.3	25	1.0	4.8	130	0	35
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	18	46	4.4	25	.9	4.7	140	0	31

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (MG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP									
26...	28	.4	2.2	206	.03	.02	.03	10	0
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	.04	.02	.02	50	30
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	.07	.10	.05	20	160
26...	--	--	--	--	--	--	--	--	--
26...	28	--	6.2	215	.07	.19	.06	20	560

330410096584501 - LEWISVILLE LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
26...	1230	1.0	369	8.2	25.5	8.0	100
26...	1233	10	369	8.2	25.5	7.9	99
26...	1236	20	369	8.2	25.5	7.8	98
26...	1239	30	369	7.7	25.5	5.5	69
26...	1241	38	371	7.7	25.5	5.1	64

330450096560501 - LEWISVILLE LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
26...	1145	1.0	381	8.2	25.0	8.0	99
26...	1147	10	381	8.1	25.0	7.7	95
26...	1149	15	381	8.0	25.0	6.9	85
26...	1152	23	381	7.6	24.5	4.4	54

TRINITY RIVER BASIN

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LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330606097025601 - LEWISVILLE LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
26...	1050	1.0	369	8.1	25.0	8.1	100
26...	1055	10	369	8.1	24.0	7.8	95
26...	1059	16	369	8.0	23.5	7.6	92

330755096572001 - LEWISVILLE LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
26...	1305	1.0	369	8.1	25.0	.30	7.0
26...	1307	10	369	8.1	25.0	--	6.8
26...	1309	20	383	7.6	24.5	--	5.0
26...	1311	25	392	7.4	24.0	--	3.0

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
26...	.86	.01	.03	.03	20	0
26...	.84	.01	.03	.03	20	10
26...	.61	--	--	--	--	--
26...	.37	.05	.11	.06	10	20

330959096565301 - LEWISVILLE LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
SEP									
26...	1335	1.0	374	8.2	25.0	.30	7.7	95	130
26...	1338	10	374	8.0	24.5	--	6.7	82	--
26...	1340	15	392	7.4	24.5	--	3.1	38	130

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
26...	21	44	4.3	26	1.0	4.9	130	0	37
26...	--	--	--	--	--	--	--	--	--
26...	16	45	4.5	27	1.0	4.9	140	0	37

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
26...	32	2.4	215	.01	.05	.06	10	0
26...	--	--	--	--	--	--	--	--
26...	30	3.5	221	.03	.18	.09	10	10

TRINITY RIVER BASIN
LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330722096592201 - LEWISVILLE LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP 26...	1410	1.0	422	8.1	24.5	6.9	84	.05	.04	.08	50	0
SEP 26...	1415	11	435	8.0	24.0	6.4	78	.08	.16	.18	130	20

330944097003601 - LEWISVILLE LAKE GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SEP 26...	1435	1.0	445	8.2	24.0	.20	7.0	85	150
SEP 26...	1440	9.0	445	7.9	24.0	--	5.2	63	150

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP 26...	16	51	4.8	33	1.2	5.5	160	0	39
SEP 26...	16	51	4.8	32	1.1	5.4	160	0	39

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP 26...	36	.6	249	.02	.06	.12	20	40
SEP 26...	36	1.0	248	.05	.14	.28	10	60

TRINITY RIVER BASIN

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08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX

LOCATION.--Lat 33°02'43", long 96°57'41", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of pier of bridge on State Highway 121, 1.8 mi (2.9 km) east of Lewisville, 1.9 mi (3.1 km) downstream from Lewisville Lake, 8.3 mi (13.4 km) upstream from Denton Creek, and 28.2 mi (45.4 km) upstream from mouth.

DRAINAGE AREA.--1,673 mi² (4,333 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 432.39 ft (131.792 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Jan. 6, 1950, nonrecording gage 0.6 mi (1.0 km) upstream at datum 3.26 ft (0.994 m) lower.

REMARKS.--Water-discharge records good. Flow regulated by Lewisville Lake (see station 08052800) since November 1954. Most of low flow is used by city of Dallas for municipal supply (see station 08055500). Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--29 years, 584 ft³/s (16.54 m³/s), 423,100 acre-ft/yr (522 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,700 ft³/s (615 m³/s) Sept. 15, 1950, gage height, 30.75 ft (9.373 m); minimum daily, 0.8 ft³/s (0.023 m³/s) Jan. 19, 1955. Maximum discharge since construction of Lewisville Dam in 1954, 11,400 ft³/s (323 m³/s) May 27, 1957, and does not include about 4,000 ft³/s (113 m³/s) that discharged over spillway of Lewisville Dam and by-passed this gaging station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 33.8 ft (10.30 m) in 1908, present site and datum, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 503 ft³/s (14.2 m³/s) Oct. 28, gage height, 7.30 ft (2.225 m); minimum daily, 64 ft³/s (1.81 m³/s) Mar. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	308	164	124	80	110	118	189	188	195	335	278	190
2	307	187	122	83	70	147	184	179	188	313	277	169
3	278	187	122	93	95	137	120	136	245	313	274	169
4	235	187	121	98	143	99	135	87	246	312	238	181
5	229	186	120	116	145	93	168	88	226	332	144	212
6	205	185	119	146	145	93	128	77	215	382	202	229
7	224	186	118	153	145	98	127	67	224	355	236	234
8	226	190	116	142	112	64	143	82	198	388	185	220
9	228	189	113	116	82	70	137	143	196	392	210	194
10	228	188	112	98	82	100	186	142	228	418	230	175
11	212	187	111	91	83	125	119	102	244	398	239	170
12	189	187	110	70	124	124	112	125	219	381	259	143
13	207	187	109	108	90	124	129	150	176	404	287	156
14	232	188	107	146	82	124	150	150	170	405	279	182
15	232	172	105	147	82	117	169	151	206	404	263	165
16	233	155	104	149	82	111	178	146	233	402	262	192
17	232	176	103	149	82	116	180	138	233	414	282	229
18	232	169	102	148	83	128	161	162	233	421	299	222
19	247	152	100	148	86	129	168	235	232	409	298	212
20	264	150	100	128	84	130	197	214	238	409	298	230
21	266	149	100	111	98	129	209	154	259	417	294	201
22	244	148	101	123	132	130	211	102	269	396	224	173
23	191	146	102	126	160	149	171	96	292	305	181	172
24	178	144	102	126	134	120	150	103	332	229	214	184
25	189	142	102	131	96	99	170	163	323	229	253	197
26	190	144	102	138	96	133	171	198	308	270	294	183
27	293	138	101	122	97	135	177	144	315	329	283	157
28	354	129	96	102	97	135	184	193	333	351	268	157
29	189	127	97	102	---	135	233	96	343	331	217	163
30	187	127	89	116	---	136	99	113	356	310	210	202
31	172	---	81	131	---	137	---	222	---	312	216	---
TOTAL	7201	4966	3311	3737	2917	3685	4855	4346	7475	11066	7694	5663
MEAN	232	166	107	121	104	119	162	140	249	357	248	189
MAX	354	190	124	153	160	149	233	235	356	421	299	234
MIN	172	127	81	70	70	64	99	67	170	229	144	143
AC-FT	14280	9850	6570	7410	5790	7310	9630	8620	14830	21950	15260	11230
CAL YR 1977	TOTAL	244827	MEAN 671	MAX 5250	MIN 81	AC-FT 485600						
WTR YR 1978	TOTAL	66916	MEAN 183	MAX 421	MIN 64	AC-FT 132700						

TRINITY RIVER BASIN

08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: November 1976 to current year.

INSTRUMENTATION.--Water temperature is recorded continuously at this station.

REMARKS.--Water temperature record is good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 33.0°C July 27, 1977; minimum, 1.0°C Feb. 18, 1978.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 31.5°C July 16, 30; minimum, 1.0°C Feb. 18.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

TRINITY RIVER BASIN

481

08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.0	3.0	3.5	7.0	5.5	6.0	15.0	12.0	13.0	20.5	18.0	19.0
2	4.0	3.0	3.5	8.0	5.5	6.5	16.5	12.0	14.0	20.0	16.0	19.0
3	6.0	3.0	4.0	6.0	4.5	5.5	16.0	13.5	14.5	19.0	16.0	17.5
4	4.0	3.0	3.5	8.0	3.0	5.0	18.5	14.0	16.0	20.5	17.0	18.5
5	5.0	3.0	4.0	8.5	4.5	6.0	16.5	14.5	15.5	20.5	17.0	18.5
6	5.0	3.0	3.5	7.5	5.0	6.5	19.5	14.5	16.0	19.0	18.0	18.5
7	3.5	2.5	3.0	9.0	6.5	7.5	18.5	14.5	16.0	22.0	18.0	19.5
8	3.5	2.5	3.0	7.5	5.5	6.0	18.0	15.0	16.5	23.0	18.5	20.5
9	3.5	2.5	3.0	10.5	5.5	7.0	17.5	16.0	17.0	22.5	19.0	20.5
10	4.0	2.5	3.0	9.5	5.5	7.0	18.0	16.0	17.5	21.5	19.0	20.0
11	3.5	2.5	3.0	9.0	6.5	7.5	20.0	15.5	17.0	20.0	17.5	19.0
12	6.0	3.0	4.5	8.5	6.5	7.0	19.5	16.0	17.0	23.0	18.5	20.0
13	6.0	2.5	4.5	9.5	6.5	8.0	19.5	15.5	17.0	23.0	19.0	20.5
14	5.5	2.0	3.5	10.5	7.0	8.0	20.0	16.5	17.5	23.0	19.5	21.0
15	4.5	2.5	3.5	12.0	6.5	9.0	19.5	16.0	17.0	24.0	19.5	21.0
16	4.0	3.0	3.5	11.5	8.0	9.5	18.5	16.0	17.0	21.5	20.0	20.5
17	3.5	1.5	3.0	12.0	8.0	9.5	19.0	17.0	17.5	22.0	20.0	20.5
18	5.0	1.0	2.5	12.5	8.5	10.0	21.0	16.5	18.5	23.0	20.0	21.0
19	5.5	1.5	3.0	12.5	9.0	10.5	20.5	17.5	18.5	23.5	20.0	21.5
20	6.0	2.0	3.0	13.5	10.0	11.5	19.5	17.0	18.5	24.0	21.0	22.0
21	5.0	1.5	3.0	13.5	10.0	11.5	19.5	17.0	18.0	25.5	21.5	23.0
22	5.5	2.0	3.5	14.5	10.0	12.0	19.0	17.0	18.0	25.5	21.5	22.5
23	5.5	2.5	4.0	16.0	11.5	13.0	20.0	17.0	18.5	25.5	21.0	22.5
24	7.5	3.0	5.0	15.0	11.0	12.5	20.5	18.0	19.0	25.5	21.0	23.0
25	6.0	4.0	5.0	14.0	10.0	11.5	20.5	18.0	19.0	25.5	21.5	23.5
26	7.5	4.0	5.5	14.5	11.0	12.0	21.0	18.0	19.0	26.0	22.0	24.0
27	5.5	4.5	5.0	15.0	11.0	12.5	20.5	18.0	19.0	27.0	23.5	24.5
28	9.0	5.5	6.5	15.5	11.0	12.5	19.5	17.5	18.5	26.5	21.5	24.0
29	---	---	---	13.0	11.5	12.0	22.0	18.0	19.0	29.0	22.0	24.5
30	---	---	---	15.0	11.0	13.0	21.5	18.0	19.5	27.0	23.0	24.5
31	---	---	---	15.5	12.0	13.5	---	---	---	26.5	24.0	25.0
MONTH	9.0	1.0	4.0	16.0	3.0	9.5	22.0	12.0	17.5	29.0	16.0	21.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	25.5	24.0	24.5	28.5	26.5	27.5	28.5	26.5	27.5	27.5	26.0	27.0
2	26.5	24.0	25.5	29.5	26.5	27.5	28.5	26.5	27.5	28.0	26.0	27.0
3	27.0	25.0	26.0	29.0	27.0	28.0	29.0	26.5	28.0	29.0	26.0	27.5
4	28.0	25.0	26.5	29.0	26.5	28.0	28.5	26.0	27.0	29.5	26.5	27.5
5	27.5	24.5	26.0	30.0	27.0	28.0	28.5	25.0	27.0	29.0	26.5	27.5
6	28.0	25.0	26.5	29.0	26.5	28.0	28.5	25.0	26.5	28.0	26.5	27.0
7	27.5	25.0	26.0	28.5	26.5	27.5	29.0	26.0	27.0	28.5	25.5	27.0
8	27.5	24.5	26.5	30.5	27.5	29.0	28.5	26.0	27.0	27.5	26.0	26.5
9	28.0	25.0	26.0	30.0	27.5	28.5	28.5	25.5	26.5	28.0	26.0	27.0
10	27.0	23.5	25.0	29.0	27.5	28.5	29.0	26.0	27.0	29.0	25.5	27.0
11	26.0	23.5	24.5	29.5	27.5	28.5	28.0	26.5	27.0	27.0	25.5	26.5
12	28.0	24.0	25.5	29.5	27.0	28.0	28.0	25.5	26.5	28.0	25.0	26.0
13	27.5	24.5	26.0	29.5	27.5	28.5	28.0	25.5	26.5	27.5	25.0	26.0
14	28.5	25.5	27.0	30.0	28.0	29.0	28.0	25.0	26.5	28.0	25.5	26.5
15	28.0	25.5	26.5	30.5	28.5	29.0	28.0	25.0	26.0	28.0	26.0	26.5
16	27.5	24.5	25.5	31.5	28.5	30.0	28.0	26.0	26.5	27.5	25.5	26.5
17	27.0	24.0	25.5	31.0	28.0	29.5	28.0	25.5	26.5	27.0	25.5	26.0
18	28.0	25.0	26.5	30.0	28.5	29.0	28.5	26.0	27.0	27.0	25.0	26.0
19	28.5	26.0	27.0	30.0	28.0	29.0	29.0	26.5	27.5	28.0	25.5	26.0
20	28.0	25.5	26.5	30.0	28.0	29.0	29.5	27.0	28.0	27.5	25.5	26.0
21	28.0	25.0	26.0	30.0	28.0	29.0	29.0	27.5	28.0	26.5	24.5	25.5
22	27.5	25.5	26.5	30.0	27.5	28.5	29.5	27.0	28.0	26.5	24.5	25.5
23	27.5	25.0	26.0	30.0	27.5	28.5	29.0	26.0	27.0	27.0	24.0	25.5
24	28.0	25.5	26.5	30.0	28.0	29.0	29.5	26.5	27.5	26.5	24.0	25.0
25	28.0	25.0	26.5	30.0	28.0	29.0	29.0	26.0	27.5	27.0	24.5	25.5
26	28.0	25.0	26.0	30.0	27.5	28.5	29.0	26.5	27.5	25.5	24.5	25.0
27	28.0	26.0	27.0	30.5	27.5	29.0	28.5	26.0	27.0	26.0	23.5	24.5
28	28.5	26.0	27.0	30.5	28.5	29.5	28.5	25.5	27.0	26.5	23.0	24.5
29	28.5	26.5	27.5	31.0	28.0	29.0	28.5	26.0	27.0	26.5	23.5	24.5
30	28.5	26.0	27.5	31.5	28.0	29.0	28.5	26.0	27.0	25.0	23.0	24.0
31	---	---	---	29.5	26.5	28.5	28.5	26.5	27.0	---	---	---
MONTH	28.5	23.5	26.0	31.5	26.5	28.5	29.5	25.0	27.0	29.5	23.0	26.0

TRINITY RIVER BASIN

08053500 DENTON CREEK NEAR JUSTIN, TX

LOCATION.--Lat 33°07'08", long 97°17'25", Denton County, Hydrologic Unit 12030104, on right bank at downstream side of bridge on Farm Road 156, 100 ft (30 m) upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.2 mi (3.5 km) north of Justin, 3.0 mi (4.8 km) upstream from Olivers Creek, 12.9 mi (20.8 km) upstream from Harriet Creek, and 32.9 mi (52.9 km) upstream from Grapevine Dam.

DRAINAGE AREA.--400 mi² (1,036 km²).

PERIOD OF RECORD.--October 1949 to current year.

Water-quality records: Sediment records: February 1966 to September 1975.

REVISED RECORDS.--WSP 1732: 1950(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 606.66 ft (184.910 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several small diversions above station. Flow is affected at times by discharge from the flood-detention pools of 84 floodwater-retarding structures with combined detention capacity of 52,750 acre-ft (65.0 hm³). These structures control runoff from 197 mi² (510 km²) in the Denton Creek watershed. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--29 years, 80.6 ft³/s (2.283 m³/s), 58,390 acre-ft/yr (72.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft³/s (844 m³/s) May 24, 1957, gage height, 17.64 ft (5.377 m); no flow at times in 1949-65, 1967-74, 1976-78.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1935 was the highest since 1908 and reached a stage of 20.6 ft (6.28 m) at site about 1,500 ft (457 m) upstream, from information by local resident. Flood in May 1908 reached a stage about 1.0 ft (0.30 m) higher than flood in May 1935, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 524 ft³/s (14.8 m³/s) May 28, gage height, 6.10 ft (1.859 m), no peak above base of 3,000 ft³/s (85.0 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	13	1.9	.50	1.7	13	.00	.00	.00
2	.00	.00	.00	.00	14	2.5	.67	2.4	108	.00	.00	.00
3	.00	.00	.00	.00	14	2.3	.58	34	94	.00	.00	.00
4	.00	.00	.00	.00	11	2.6	.63	32	56	.00	.00	.00
5	.00	.00	.00	.00	8.8	2.1	1.4	15	35	.00	.00	.00
6	.00	.00	.00	.00	8.0	2.1	2.4	17	43	.00	.00	.00
7	.00	.00	.00	.00	9.6	5.4	2.3	11	278	.00	.00	.00
8	.00	.00	.00	.00	11	5.4	2.7	8.3	164	.00	.00	.00
9	.00	.00	.00	.00	9.8	7.1	3.8	5.3	89	.00	.00	.00
10	.00	.00	.00	.13	13	9.4	53	3.7	44	.00	.00	.00
11	.00	.00	.00	3.7	17	6.5	84	2.1	26	.00	.00	.00
12	.00	.00	.00	17	30	4.8	17	1.5	16	.00	.00	.00
13	.00	.00	.00	37	65	4.1	4.4	1.0	9.4	.00	.00	.00
14	.00	.00	.00	50	37	4.1	1.5	.82	6.2	.00	.00	.00
15	.00	.00	.00	42	11	5.1	.70	.50	3.9	.00	.00	.00
16	.00	.00	.00	32	8.0	4.8	.40	.16	5.9	.00	.00	.00
17	.00	.00	.00	31	8.9	4.4	.24	.04	5.4	.00	.00	.00
18	.00	.00	.00	20	6.0	4.4	.41	.00	2.6	.00	.00	.00
19	.00	.00	.00	14	3.2	6.2	.39	.00	1.6	.00	.00	.00
20	.00	.00	.00	9.6	6.9	7.1	.16	.00	1.4	.00	.00	.00
21	.00	.00	.00	7.9	7.7	7.7	.06	1.9	.30	.00	.00	.00
22	.00	.00	.00	8.3	3.5	8.7	.05	10	.03	.00	.00	.00
23	.00	.00	.00	9.8	3.6	11	.32	13	.00	.00	.00	.00
24	.00	.00	.00	12	4.3	20	.71	5.4	.00	.00	.00	.00
25	.00	.00	.00	16	3.4	20	.98	2.1	.00	.00	.00	.00
26	.00	.00	.00	21	2.5	8.0	.94	.43	.00	.00	.00	.00
27	.00	.00	.00	17	2.0	2.2	.61	.05	.00	.00	.00	.00
28	.00	.00	.00	12	1.7	.99	.62	.95	.00	.00	.00	.00
29	.00	.00	.00	9.1	---	.43	.91	247	.00	.00	.00	.00
30	.00	.00	.00	7.3	---	.36	1.3	58	.00	.00	.00	.00
31	.00	---	.00	9.6	---	.36	---	27	---	.00	.00	---
TOTAL	.00	.00	.00	386.43	333.9	172.04	183.68	596.40	1002.73	.00	.00	.00
MEAN	.000	.000	.000	12.5	11.9	5.55	6.12	19.2	33.4	.000	.000	.000
MAX	.00	.00	.00	50	65	20	84	247	278	.00	.00	.00
MIN	.00	.00	.00	.00	1.7	.36	.05	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	766	662	341	364	1180	1950	.00	.00	.00
CAL YR 1977	TOTAL	23489.91	MEAN	64.4	MAX	6820	MIN	.00	AC-FT	46590		
WTR YR 1978	TOTAL	2675.18	MEAN	7.33	MAX	278	MIN	.00	AC-FT	5310		

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX

LOCATION.--Lat 32°58'21", long 97°03'22", Tarrant County, Hydrologic Unit 12030104, in intake structure of Grapevine Dam on Denton Creek, 2.7 mi (4.3 km) northeast of Grapevine, 4.3 mi (6.9 km) upstream from bridge on State Highway 121, and 11.7 mi (18.8 km) upstream from mouth.

DRAINAGE AREA.--695 mi² (1,800 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1952 to current year. Prior to October 1970, published as Grapevine Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 16, 1953, nonrecording gage at site 1,000 ft (305 m) upstream at present datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 12,850 ft (3,917 m) long, including a 500 ft (150 m) uncontrolled off-channel concrete-gravity spillway with an ogee weir section. The dam was completed in June 1952 and deliberate impoundment began July 3, 1952. The controlled outlet works consist of a 13.0-foot-diameter (4.0 m) concrete conduit that is controlled by two 6.5 by 13.0 ft (2.0 by 4.0 m) broome-type gates and two 30 in (762 mm) steel pipes with service vales. The capacity table used since April 1972 is based on a survey made in October 1966. The lake was built for flood control, navigation, and water conservation. The city of Dallas uses part of this water for their municipal supply. Inflow is affected at times by discharge from the flood-detention pools of 87 floodwater-retarding structures with a combined detention capacity of 57,850 acre-ft (71.3 hm³). These structures control runoff from 217 mi² (562 km²) in the Denton Creek watershed. 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.....	588.0	-
Crest of spillway.....	560.0	425,500
Top of conservation pool.....	535.0	181,100
Lowest intake to wet wells (invert).....	500.5	22,140
Invert of two broome-type gates.....	475.0	100

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 445,800 acre-ft (550 hm³) June 6, 1957, elevation, 560.80 ft (170.932 m); minimum since lake first filled in 1957, 109,000 acre-ft (134 hm³) Sept. 30, 1978, elevation, 523.47 ft (159.554 m); minimum elevation, 523.33 ft (159.511 m) Mar. 6, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 154,100 acre-ft (190 hm³) Oct. 1, elevation, 531.12 ft (161.885 m); minimum, 109,000 acre-ft (134 hm³) Sept. 30, elevation, 523.47 ft (159.554 m).

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

522.0	101,300	528.0	134,300
524.0	111,800	530.0	146,800
526.0	123,700	532.0	160,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153900	148000	143100	137900	134600	133600	130800	128600	130000	125100	118000	112400
2	153600	147900	142900	137700	134500	133600	130800	128600	129900	125000	117800	112400
3	153100	147700	142700	137500	134400	133500	130700	129500	129900	124800	117700	112100
4	152800	147500	142600	137400	134300	133200	130600	129400	129900	124600	117500	112000
5	152600	147300	142400	137300	134100	133000	130600	129200	129800	124300	117700	111900
6	152400	147100	142100	137300	134100	133200	130500	129200	129800	124000	117800	111800
7	152200	147100	141900	137200	134200	133500	130300	129200	129900	123600	117500	111600
8	152000	147100	141700	136900	134300	133300	130200	129100	130100	123400	117400	111500
9	151600	147000	141700	136700	134200	133100	130200	128900	130100	123200	117200	111300
10	151400	146700	141200	136500	134100	133000	131700	128800	129900	123000	117000	111200
11	151100	146500	141100	136500	134000	132800	131700	128700	129700	122700	116800	111100
12	150700	146200	141000	136500	134700	132700	131700	128500	129600	122600	116600	111100
13	150500	146100	140900	136500	134800	132600	131600	128300	129400	122400	116300	111000
14	150300	145900	140700	136200	134700	132500	131400	128100	129200	122000	116100	110800
15	150000	145900	140600	136100	134700	132400	131300	127900	129000	121800	116000	110700
16	149700	145700	140600	136200	134700	132200	131200	127700	128800	121500	115700	110500
17	149500	145500	140300	136100	134900	132100	131100	127600	128500	121300	115400	110400
18	149300	145300	140100	136700	134800	131900	130900	127500	128300	121000	115000	110200
19	149200	145200	140100	136000	134700	131800	130700	127400	128100	120800	114800	110000
20	149000	145100	139900	135700	134700	131800	130400	127600	127800	120500	114700	109900
21	148900	144800	139600	135600	134500	131700	130300	127800	127700	120300	114500	109700
22	149500	144600	139200	135500	134300	131500	130200	127700	127400	120100	114300	109900
23	149400	144400	139100	135400	134200	131900	129900	127500	127000	119900	114200	109700
24	149200	144300	139000	135500	134200	132700	129800	127300	126800	119800	114000	109600
25	149100	144100	138800	135300	134000	132100	129600	127100	126600	119600	113800	109500
26	149000	143900	138600	135100	133800	131800	129400	126900	126300	119500	113500	109500
27	148800	143700	138400	135000	133800	131600	129200	127000	126100	119300	113300	109400
28	148600	143400	138300	134800	133700	131500	129000	129000	125800	119100	113100	109200
29	148500	143400	138300	134700	---	131400	128800	130200	125600	118800	112900	109100
30	148400	143300	138200	134700	---	131300	128800	130200	125300	118600	112800	109000
31	148200	---	138100	134700	---	131100	---	130100	---	118400	112500	---
MAX	153900	148000	143100	137900	134900	133600	131700	130200	130100	125100	118000	112400
MIN	148200	143300	138100	134700	133700	131100	128800	126900	125300	118400	112500	109000
(†)	530.22	529.45	528.63	528.06	527.90	527.46	527.07	527.30	526.48	525.21	524.13	523.47
(†)	-5900	-4900	-5200	-3400	-1000	-2600	-2300	+1300	-4800	-6900	-5900	-3500
(††)	122	89	94	96	88	86	103	108	169	280	246	157

CAL YR 1977 MAX 240800 MIN 138100 † -5900 †† 332
WTR YR 1978 MAX 153900 MIN 109000 † -45100 †† 16400

† Elevation, in feet, at end of month.

† Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by city of Grapevine.

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO_3)	HARDNESS, NONCARBONATE (MG/L AS CaCO_3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)
NOV 18...	1149	373	7.9	16.0	140	24	45	6.5	20
DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO_3)	CARBONATE (MG/L AS CO_3)	SULFATE DIS-SOLVED (MG/L AS SO_4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO_2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
NOV 18...	.7	4.4	140	0	30	26	.3	5.5	207

TRINITY RIVER BASIN

485

08055000 DENTON CREEK NEAR GRAPEVINE, TX

LOCATION.--Lat 32°59'13", long 97°00'45", Denton County, Hydrologic Unit 12030104, on left bank at downstream side of left pier of bridge on State Highway 121, 1.3 mi (2.1 km) downstream from Bakers Branch, 4.1 mi (6.6 km) downstream from Grapevine Dam, 5.0 mi (8.0 km) northeast of Grapevine, and 6.1 mi (9.8 km) upstream from mouth.

DRAINAGE AREA.--705 mi² (1,826 km²).

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 439.11 ft (133.841 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Grapevine Lake since July 1952 (see preceding page). Much of flow is used by city of Dallas for municipal supply (see station 08055500). Records furnished by the Corps of Engineers indicated that 1,640 acre-ft (2.02 hm³) was diverted during year from Denton Creek just downstream from Grapevine Dam. Several observations of water temperature were made during the year. Corps of Engineers gage-height telemeter (DARDC) at station.

AVERAGE DISCHARGE.--5 years (water years 1948-52) prior to regulation, 140 ft³/s (3.965 m³/s), 101,400 acre-ft/yr (126 hm³/yr); 26 years (water years 1953-78) regulated, unadjusted, 142 ft³/s (4.021 m³/s), 102,900 acre-ft/yr (127 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,900 ft³/s (394 m³/s), Feb. 26, 1948, gage height, 30.38 ft (9.260 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of conveyance-slope study; no flow at times. Maximum discharge since construction of Grapevine Dam in 1952, 6,430 ft³/s (182 m³/s) Sept. 21, 1964, gage height, 26.50 ft (8.077 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 was slightly higher than the flood in April 1942, which reached a stage of 35.9 ft (10.94 m), from floodmarks, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 264 ft³/s (7.48 m³/s) May 28, gage height, 7.69 ft (2.344 m); minimum daily, 21 ft³/s (0.595 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	32	30	35	44	44	42	37	50	42	41	41
2	34	32	30	34	44	45	42	41	50	42	42	43
3	33	30	30	35	44	44	42	47	49	42	43	42
4	33	30	30	35	44	44	40	39	48	41	42	41
5	32	30	30	36	44	44	40	39	47	40	47	42
6	33	30	31	35	44	47	39	39	50	40	46	34
7	32	29	30	36	45	50	39	38	46	40	46	23
8	33	31	31	36	44	46	38	37	47	40	45	23
9	32	30	31	37	44	47	39	36	45	40	43	25
10	32	30	30	38	44	47	58	36	46	40	42	24
11	32	29	29	39	45	47	39	37	47	40	41	23
12	32	29	29	39	57	47	38	38	46	42	41	25
13	31	29	30	39	41	45	38	38	46	42	41	25
14	31	30	29	39	42	46	38	37	45	41	41	24
15	31	30	28	39	42	46	38	33	46	40	40	23
16	32	30	29	41	42	46	38	33	46	41	40	22
17	32	30	30	41	42	47	38	34	45	42	39	22
18	32	30	29	42	42	47	36	33	45	43	40	23
19	31	31	28	41	42	47	36	31	44	43	41	23
20	32	32	29	42	42	48	36	33	44	42	39	22
21	31	31	30	42	42	48	35	40	44	42	38	23
22	34	31	31	42	42	49	36	34	43	42	40	27
23	32	30	31	42	42	57	37	34	42	42	40	25
24	32	30	33	43	42	54	37	32	43	45	38	24
25	31	30	33	43	43	45	37	32	43	45	37	23
26	31	31	33	44	43	44	36	31	42	43	37	23
27	31	31	33	44	44	43	36	31	40	41	37	23
28	32	31	34	45	44	43	38	100	42	42	37	22
29	31	31	34	44	---	43	38	72	42	42	42	22
30	31	31	35	45	---	42	38	53	41	41	42	21
31	31	---	34	47	---	42	---	51	---	40	40	---
TOTAL	992	911	954	1240	1220	1434	1162	1246	1354	1288	1268	803
MEAN	32.0	30.4	30.8	40.0	43.6	46.3	38.7	40.2	45.1	41.5	40.9	26.8
MAX	35	32	35	47	57	57	58	100	50	45	47	43
MIN	31	29	28	34	41	42	35	31	40	40	37	21
AC-FT	1970	1810	1890	2460	2420	2840	2300	2470	2690	2550	2520	1590
CAL YR 1977	TOTAL	44918.7	MEAN	123	MAX	1750	MIN	3.3	AC-FT	89100		
WTR YR 1978	TOTAL	13872.0	MEAN	38.0	MAX	100	MIN	21	AC-FT	27520		

TRINITY RIVER BASIN

08055500 ELM FORK TRINITY RIVER NEAR CARROLLTON, TX

LOCATION.--Lat 32°57'57", Long 96°56'39", Dallas County, Hydrologic Unit 12030103, near left bank at downstream side of bridge on Sandy Lake Road, 40 ft (12 m) upstream from Carrollton Dam, 0.3 mi (0.5 km) downstream from Denton Creek, 1.0 mi (1.6 km) upstream from St. Louis Southwestern Railway Lines bridge, 2.3 mi (3.7 km) northwest of Carrollton, and 18.2 mi (29.3 km) upstream from mouth.

DRAINAGE AREA.--2,459 mi² (6,369 km²).

PERIOD OF RECORD.--January 1907 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to November 1923, published as "near Dallas".

REVISED RECORDS.--WSP 788: 1924. WSP 1148: Drainage area at former site. WSP 1632: 1908(M). WSP 1922: Drainage area.

GAGE.--Water stage recorder and concrete control. Datum of gage is 433.40 ft (132.100 m) National Geodetic Vertical Datum of 1929. Prior to November 1923, nonrecording gage at site 15.5 mi (24.9 km) downstream at different datum. Nov. 1, 1923, to Nov. 13, 1934, nonrecording gage, and Nov. 14, 1934, to July 6, 1938, water-stage recorder at present site and datum. July 7, 1938, to Apr. 14, 1939, nonrecording gage at site 9.3 mi (15.0 km) downstream at datum 22.94 ft (6.992 m) lower. Apr. 15, 1939, to Sept. 30, 1955, water-stage recorder at site 8.5 mi (13.7 km) downstream at datum 22.94 ft (6.992 m) lower.

REMARKS.--Records good. Flow largely regulated by Lewisville Lake (station 08052800) since November 1954 and by Grapevine Lake (station 08054500) since July 1952. Records furnished by the city of Dallas show that during the year 109,300 acre-ft (135 hm³) was diverted from pool at gage and 51,700 acre-ft (63.7 hm³) was diverted from river channel 14 mi (23 km) downstream for municipal use. Also, 3,730 acre-ft (4.60 hm³) was returned from a water treatment plant to the river below this station. Records furnished by the Dallas Power and Light Co. show that during the year 4,960 acre-ft (6.12 hm³) was diverted from pool at gage into North Lake for cooling water at electric generating plant. National Weather Service and Corps of Engineers gage-height telemeters at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--71 years (water years 1908-78), 777 ft³/s (22.00 m³/s), 562,900 acre-ft/yr (694 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, about 17 ft (5.2 m) May 25, 1908, present site and datum, from information by local resident, estimated discharge, 145,000 ft³/s (4,110 m³/s), at site 8.5 mi (13.7 km) downstream (from information by Corps of Engineers); maximum gage height subsequent to 1908, 14.5 ft (4.42 m) Apr. 26, 1942, present site and datum, from observation by National Weather Service; discharge at site 8.5 mi (13.7 km) downstream, 90,700 ft³/s (2,570 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1866 reached about the same stage as flood of May 25, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 795 ft³/s (22.5 m³/s) May 28, gage height, 2.31 ft (0.704 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	3.0	.00	.00	54	37	61	105	81	187	134	137
2	110	26	.00	.00	5.4	86	134	143	43	160	125	103
3	104	36	.10	.00	.00	84	108	296	124	168	182	107
4	62	36	2.1	.00	19	51	162	35	132	178	134	81
5	72	38	4.1	.00	56	32	115	78	117	158	89	102
6	52	41	3.4	29	47	34	105	77	153	183	71	101
7	65	35	2.7	69	71	30	95	47	118	179	176	69
8	61	30	2.6	58	46	.30	111	35	130	198	100	93
9	54	17	1.2	42	4.5	.00	123	117	68	172	91	90
10	65	9.7	.53	18	2.0	2.8	195	129	75	209	113	72
11	70	9.7	3.8	16	.86	47	60	79	112	206	114	58
12	31	34	.59	2.4	96	58	62	92	105	159	113	58
13	29	57	.03	1.1	29	65	72	136	121	194	153	16
14	65	38	.00	34	.00	82	103	125	53	197	147	58
15	69	31	.00	46	.00	73	115	121	88	188	131	50
16	66	4.0	.00	64	.00	62	131	118	97	173	126	40
17	66	13	.00	49	.00	52	131	110	109	180	133	57
18	64	20	.00	49	.00	62	107	111	112	210	161	82
19	69	22	.00	55	.00	47	89	160	94	195	154	32
20	94	17	.00	75	.00	36	135	172	99	185	151	68
21	104	9.3	.00	35	.00	47	143	173	104	220	154	83
22	105	12	.00	49	.01	42	149	86	116	197	115	72
23	26	7.1	.00	47	37	67	108	83	117	216	80	67
24	35	11	.00	35	75	138	85	69	127	106	95	65
25	37	19	.32	36	27	2.3	117	99	137	119	109	56
26	43	3.2	2.0	50	32	57	106	131	121	90	150	75
27	79	.00	.81	51	28	59	122	117	102	151	151	44
28	228	.00	.00	21	28	44	106	355	161	175	147	29
29	27	.00	.05	18	---	37	162	203	188	184	104	28
30	14	.00	.00	14	---	40	24	45	189	141	88	34
31	9.8	---	.00	45	---	35	---	102	---	135	165	---
TOTAL	2085.8	579.00	24.33	1008.50	657.77	1509.40	3336	3749	3393	5413	3956	2027
MEAN	67.3	19.3	.78	32.5	23.5	48.7	111	121	113	175	128	67.6
MAX	228	57	4.1	75	96	138	195	355	189	220	182	137
MIN	9.8	.00	.00	.00	.00	.00	24	35	43	90	71	16
AC-FT	4140	1150	48	2000	1300	2990	6620	7440	6730	10740	7850	4020
CAL YR 1977	TOTAL	233807.13	MEAN	641	MAX	7140	MIN	.00	AC-FT	463800		
WTR YR 1978	TOTAL	27738.80	MEAN	76.0	MAX	355	MIN	.00	AC-FT	55020		

08055700 BACHMAN BRANCH AT DALLAS, TX

LOCATION.--Lat 32°51'37", long 96°50'13", Dallas County, Hydrologic Unit 12030105, on left bank at downstream side of bridge on Midway Road in Dallas, 1,300 ft (400 m) south of Northwest Highway (Loop 12), 1.5 mi (2.4 km) upstream from Bachman Lake Dam, and 6.0 mi (9.7 km) northwest of Dallas City Hall.

DRAINAGE AREA.--10.0 mi² (25.9 km²).

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

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is National Geodetic Vertical Datum of 1929. From May 1, 1970, to Feb. 28, 1974, at site 2,300 ft (700 m) upstream at same datum.

REMARKS.--Records good except those for Jan. 18 to Feb. 14 and Feb. 19 to Mar. 19, which are poor. Flow is slightly affected by several small channel dams above station. Two recording rain gages are operated in basin above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 8.94 ft³/s (0.253 m³/s), 12.14 in/yr (308 mm/yr), 6,480 acre-ft/yr (7.99 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) Apr. 28, 1966, elevation, 467.97 ft (142.637 m), from rating curve extended above 4,000 ft³/s (113 m³/s) on basis of contracted-opening measurements of 5,300, 9,200, and 16,000 ft³/s (150, 261, and 453 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, that of Apr. 28, 1966. Flood of Oct. 8, 1962, the second highest flood since 1900, reached an elevation of 465.6 ft (141.91 m), discharge 9,200 ft³/s (261 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)
Mar. 23	2000	2,210 62.6	455.74 138.910	Aug. 5	1015	2,180 61.7	455.67 138.888
May 28	0640	*4,320 122	460.28 140.293	Aug. 21	2115	1,030 29.2	452.31 137.864

Minimum discharge, 0.04 ft³/s (0.001 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	32	1.1	.73	3.5	4.9	2.5	25	3.6	.12	.66	.73
2	.10	3.3	.73	.68	2.2	5.6	2.5	13	1.9	.10	.64	.89
3	.19	2.3	.68	.84	2.0	4.3	2.4	15	1.7	.14	.73	.64
4	.10	1.6	.68	.68	1.9	4.2	3.0	1.7	1.9	.22	1.2	.89
5	.12	1.9	.64	.84	1.8	4.0	5.6	5.2	1.6	.24	158	.73
6	.19	1.7	.54	.78	1.9	11	2.4	1.5	18	.24	3.2	.78
7	.19	1.6	.59	1.1	5.5	54	1.8	1.3	.49	.32	2.2	.64
8	.19	36	.68	.68	2.9	8.0	1.8	1.1	3.6	.39	1.8	1.3
9	.27	6.7	.59	.73	7.9	5.6	2.0	1.3	.94	.36	1.9	4.7
10	.30	4.7	.64	.68	7.9	4.9	20	1.2	.68	.41	1.9	.84
11	.30	4.0	.64	1.7	31	4.6	3.0	1.1	.59	.39	2.0	1.6
12	.33	3.8	.68	3.3	125	4.8	2.6	1.2	.50	.54	1.7	14
13	.27	3.5	.78	1.3	11	5.4	2.2	.84	.43	.49	1.7	1.3
14	.30	3.3	.84	.97	6.2	4.1	2.1	.68	.46	.42	1.6	.84
15	.24	2.9	.84	.81	8.9	3.9	2.0	.59	.36	.48	1.6	.68
16	.30	2.8	.78	3.2	5.2	3.4	2.0	.59	.33	.44	1.5	.64
17	.33	2.5	.73	85	7.9	3.8	2.6	.73	.30	.41	1.4	1.3
18	.36	2.3	.84	2.8	16	4.3	1.9	.68	.27	.42	1.5	.64
19	.36	2.5	.73	2.2	15	3.7	1.7	.68	.22	.41	1.3	.59
20	.40	2.2	.59	2.2	11	4.1	1.7	10	.22	.43	1.3	.46
21	.50	1.6	.89	1.9	9.0	4.0	1.7	90	.19	.27	38	13
22	7.7	1.7	.73	2.9	7.5	3.8	33	7.6	.17	.19	5.2	1.1
23	1.0	1.6	.89	3.0	7.3	115	8.5	4.0	.12	10	.94	.72
24	2.0	1.6	.78	4.0	6.6	11	1.7	2.9	.14	1.3	.64	.60
25	.89	1.5	.73	5.0	5.9	5.6	1.5	2.3	.10	.85	.64	.53
26	.68	1.9	.73	2.4	5.4	3.3	1.4	2.1	.06	.72	.64	.54
27	.64	1.7	.78	2.0	6.8	3.2	1.4	1.9	.06	.77	.46	.57
28	.59	1.3	.73	1.9	5.4	2.9	1.6	289	.06	.81	27	.57
29	.54	2.3	3.6	1.8	---	2.6	1.5	7.6	.12	.75	4.1	.46
30	.54	3.6	1.1	2.1	---	2.5	1.4	3.6	.14	.61	.94	.44
31	1.4	---	.84	14	---	2.5	---	2.5	.14	.58	.73	---
TOTAL	21.51	140.4	26.12	152.22	328.6	305.0	119.5	496.89	87.76	23.82	267.12	52.72
MEAN	.69	4.68	.84	4.91	11.7	9.84	3.98	16.0	2.93	.77	8.62	1.76
MAX	7.7	36	3.6	85	125	115	33	289	.49	1.0	158	14
MIN	.10	1.3	.54	.68	1.8	2.5	1.4	.59	.06	.10	.46	.44
CFSM	.07	.47	.08	.49	1.17	.98	.40	1.60	.29	.08	.86	.18
IN.	.08	.52	.10	.57	1.22	1.13	.44	1.85	.33	.09	.99	.20
AC-FT	43	278	52	302	652	605	237	986	174	47	530	105
(††)	.68	2.17	.25	1.52	4.02	2.28	1.60	7.52	1.58	.50	4.88	1.65
CAL YR 1977	TOTAL	2786.24	MEAN 7.63	MAX 891	MIN .10	CFSM .76	IN 10.36	AC-FT 5530	†† 29.16			
WTR YR 1978	TOTAL	2021.66	MEAN 5.54	MAX 289	MIN .06	CFSM .55	IN 7.52	AC-FT 4010	†† 28.65			

†† Weighted-mean rainfall, in inches, based on two rain gages.

NOTE.--No elevation record Jan. 18 to Feb. 14 and Feb. 19 to Mar. 19.

TRINITY RIVER BASIN

08056500 TURTLE CREEK AT DALLAS, TX

LOCATION.--Lat 32°48'26", long 96°48'08", Dallas County, Hydrologic Unit 12030105, on left bank 68 ft (21 m) upstream from Hall Street Dam, 210 ft (64 m) upstream from Hall Street in Dallas, and 2.0 mi (3.2 km) north of Dallas County Courthouse.

DRAINAGE AREA.--7.98 mi² (20.67 km²).

PERIOD OF RECORD.--Water years 1948-51 (annual maximums only), October 1951 to current year. Daily discharge records for April 1948 to September 1951, published in WSP 1392, are unreliable and should not be used.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 428.13 ft (130.494 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 17, 1951, at site 52 ft (16 m) upstream at same datum.

REMARKS.--Records good. Flow slightly affected by eight small channel dams above station. Five recording rain gages are operated in basin above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--27 years, 8.12 ft³/s (0.230 m³/s), 13.82 in/yr (351 mm/yr), 5,880 acre-ft/yr (7.25 hm³/yr),

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s (346 m³/s) Apr. 28, 1966, gage height, 10.54 ft (3.213 m), from rating curve extended above 2,460 ft³/s (69.7 m³/s) on basis of contracted-opening measurement of 12,200 ft³/s (346 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903, that of Apr. 28, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,410 ft³/s (39.9 m³/s) Mar. 23, gage height, 4.69 ft (1.430 m), no other peak above base of 1,200 ft³/s (34.0 m³/s); minimum daily, 0.56 ft³/s (0.016 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.62	44	2.7	1.5	6.5	5.1	6.6	54	4.6	1.2	.91	.98
2	.91	2.3	1.5	1.2	4.3	4.5	3.7	89	3.2	1.2	1.1	1.2
3	1.1	1.3	1.5	1.2	4.0	4.2	3.9	4.9	3.0	1.2	.96	1.2
4	.75	1.1	1.4	1.2	4.0	4.3	3.4	16	3.2	1.2	10	3.0
5	.75	1.0	1.8	1.5	3.7	4.3	5.8	4.6	2.5	1.2	107	2.2
6	.90	.73	1.1	2.0	4.0	17	4.1	3.4	21	1.4	3.0	.98
7	1.1	1.4	.75	1.2	12	46	3.4	2.7	80	1.1	1.6	.75
8	1.2	61	1.2	1.2	6.0	5.2	3.6	2.5	11	1.1	1.4	3.9
9	.83	2.6	1.5	.90	15	5.2	5.5	2.5	3.0	1.0	1.1	4.2
10	3.9	1.5	.83	.98	13	4.9	43	2.3	2.7	.98	1.0	3.7
11	1.2	1.3	1.1	6.5	91	4.6	4.8	14	2.7	1.1	.89	2.1
12	1.5	1.2	2.0	8.0	17	5.1	4.2	2.7	2.3	1.3	.81	11
13	1.5	1.4	1.4	4.6	12	5.3	4.0	2.2	2.0	1.1	.85	1.9
14	1.4	1.5	1.2	2.5	9.0	4.0	4.0	1.8	2.3	1.1	.80	1.1
15	1.8	1.6	1.5	2.5	15	4.4	3.8	2.2	2.2	1.2	.69	.98
16	1.8	1.6	1.4	9.8	7.7	3.7	3.7	2.2	2.2	1.2	.69	.90
17	1.4	1.5	1.8	2.3	15	4.1	3.4	2.3	2.0	.95	.86	.75
18	1.4	1.5	.83	5.6	20	5.1	3.0	2.5	1.5	1.1	.83	.62
19	1.4	1.6	.98	4.3	15	3.6	2.5	2.5	1.4	1.2	.72	.68
20	1.6	1.7	1.2	4.3	12	4.0	2.5	71	1.5	1.0	.72	.62
21	3.0	1.9	1.4	3.4	8.5	4.3	2.7	150	1.5	1.2	9.7	3.1
22	10	1.9	1.2	6.5	7.5	3.6	7.0	6.0	1.8	.98	5.7	.83
23	5.0	2.8	1.5	5.6	7.6	99	5.3	4.0	1.5	1.5	1.3	.62
24	10	3.4	1.1	6.9	6.7	10	3.4	3.7	1.2	5.6	1.0	.90
25	3.7	2.5	.98	9.1	6.2	5.7	2.5	3.2	1.2	1.8	.94	.98
26	2.7	2.2	.83	4.9	6.0	5.0	2.5	2.7	1.2	1.2	.82	.68
27	2.5	3.4	.75	4.0	9.1	5.5	2.5	1.8	1.4	1.1	.84	.75
28	2.3	1.5	.98	3.7	6.0	4.4	2.5	102	1.2	1.7	.87	.68
29	2.2	9.8	9.8	3.4	---	4.5	3.0	8.5	1.2	.96	10	.62
30	2.2	13	1.7	4.6	---	4.2	3.2	3.4	1.4	.93	1.8	.56
31	8.0	---	1.5	14	---	4.2	---	3.0	---	.87	.90	---
TOTAL	78.66	174.23	49.43	129.38	343.8	295.0	153.5	573.6	167.9	40.67	169.80	52.48
MEAN	2.54	5.81	1.59	4.17	12.3	9.52	5.12	18.5	5.60	1.31	5.48	1.75
MAX	10	61	9.8	14	91	99	43	150	80	5.6	107	11
MIN	.62	.73	.75	.90	3.7	3.6	2.5	1.8	1.2	.87	.69	.56
CFSM	.32	.73	.20	.52	1.54	1.19	.64	2.32	.70	.16	.69	.22
IN.	.37	.81	.23	.60	1.60	1.38	.72	2.67	.78	.19	.79	.24
AC-FT	156	346	98	257	682	585	304	1140	333	81	337	104
(††)	1.48	2.75	.29	1.71	4.46	2.26	1.11	6.05	1.40	.36	2.79	.90
CAL YR 1977	TOTAL	3097.20	MEAN 8.49	MAX 718	MIN .45	CFSM 1.06	IN 14.44	AC-FT 6140	†† 30.96			
WTR YR 1978	TOTAL	2228.45	MEAN 6.11	MAX 150	MIN .56	CFSM .77	IN 10.39	AC-FT 4420	†† 25.56			

†† Weighted-mean rainfall, in inches, based on five rain gages.

08057000 TRINITY RIVER AT DALLAS, TX

LOCATION.--Lat 32°46'29", long 96°49'18", Dallas County, Hydrologic Unit 12030105, on right bank (levee) 90 ft (27 m) downstream from Commerce Street viaduct in Dallas, 5.2 mi (8.4 km) downstream from confluence of West and Elm Forks, and at mile 500.3 (805.0 km).

DRAINAGE AREA.--6,106 mi² (15,815 km²).

PERIOD OF RECORD.--October 1898 to December 1899 (gage heights only published in WSP 28 and 37), July 1903 to current year.

REVISED RECORDS.--WSP 850: 1903-6 (monthly and annual means). WSP 1732: 1937(M). WSP 1922: Drainage area. WDR TX-73-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 368.02 ft (112.172 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1898, to Dec. 31, 1899, nonrecording gage at site 2 mi (3 km) upstream at different datum. July 1, 1903, to July 20, 1930, nonrecording gage at present site and datum. July 21, 1930, to Sept. 30, 1932, nonrecording gage at site 6 mi (10 km) downstream at datum 3.08 ft (0.939 m) lower.

REMARKS.--Records good. At times flow is affected by storage in seven upstream reservoirs, combined capacity 1,703,700 acre-ft (2.10 km³), of which 846,200 acre-ft (1.04 km³) is for flood control. During the year, the city of Dallas reported the diversion for municipal use of 160,900 acre-ft (198 hm³) from the Elm Fork, 23,560 acre-ft (29.0 hm³) from Lake Tawakoni (on Sabine River), the purchase of 8,930 acre-ft (11.0 hm³) from North Texas Municipal Water District (from the East Fork), and the return of 166,900 acre-ft (206 hm³) of sewage effluent to the river 4 mi (6 km) downstream from station. The Trinity River Authority reported a discharge of 56,560 acre-ft (69.7 hm³) of sewage effluent into the river above the station. For other diversions and effluent returns above station, see stations 08048000, 08049200, and 08049500. City of Dallas gage-height telemeter at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--75 years, 1,490 ft³/s (42.20 m³/s), 1,080,000 acre-ft/yr (1.33 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 184,000 ft³/s (5,210 m³/s) May 25, 1908, gage height, 52.6 ft (16.03 m), from rating curve extended above 109,000 ft³/s (3,090 m³/s); minimum observed for periods 1903-6, 1920-75, 1.2 ft³/s (0.034 m³/s) July 4, 1953, result of storage behind temporary dam 4 mi (6 km) upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1840, that of May 25, 1908. Flood in 1866 reached about the same stage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,540 ft³/s (129 m³/s) May 28, gage height, 24.37 ft (7.428 m); minimum daily, 173 ft³/s (4.90 m³/s) July 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	704	376	223	389	239	245	377	301	206	186	212
2	260	621	325	194	326	241	238	813	342	187	183	378
3	285	411	255	211	247	252	228	2760	296	173	186	339
4	265	368	242	231	245	229	227	1250	254	187	307	272
5	258	346	227	231	252	225	230	472	234	188	1290	279
6	296	331	219	238	247	266	245	344	356	197	1050	291
7	282	324	217	235	354	891	290	279	611	198	406	260
8	288	807	234	229	371	722	256	250	1010	195	280	247
9	263	912	296	225	403	317	222	240	466	186	246	254
10	308	447	245	235	408	266	425	224	320	178	232	256
11	500	354	228	277	412	239	1000	298	271	200	226	270
12	337	331	227	301	916	217	420	298	255	196	219	334
13	302	342	237	318	3320	221	331	241	259	195	197	310
14	286	351	237	262	1030	224	294	211	260	188	188	258
15	269	340	229	249	450	220	273	199	258	188	205	247
16	285	328	232	314	398	212	254	217	261	184	199	235
17	282	304	225	312	398	212	241	223	245	182	197	217
18	270	300	220	283	486	212	243	222	227	192	198	217
19	269	315	218	270	565	199	233	214	225	191	189	225
20	270	301	235	224	559	207	230	387	244	186	181	222
21	272	294	211	247	498	245	269	3020	231	196	212	313
22	464	315	219	243	406	330	243	1770	232	191	354	394
23	614	273	219	267	328	513	620	408	231	249	251	296
24	383	277	237	288	293	2130	434	693	229	303	223	241
25	337	265	224	308	276	1000	261	571	216	250	211	237
26	312	271	183	260	254	332	221	207	206	220	192	239
27	291	262	190	223	247	275	211	191	217	202	187	241
28	466	273	202	198	243	271	208	2850	223	383	189	231
29	412	352	319	190	---	255	206	4050	218	210	358	237
30	308	442	317	181	---	260	202	1640	213	179	245	231
31	306	---	273	282	---	257	---	433	---	178	212	---
TOTAL	10006	11561	7518	7749	14321	11679	9000	25352	8911	6358	8999	7983
MEAN	323	385	243	250	511	377	300	818	297	205	290	266
MAX	614	912	376	318	3320	2130	1000	4050	1010	383	1290	394
MIN	258	262	183	181	243	199	202	191	206	173	181	212
AC-FT	19850	22930	14910	15370	28410	23170	17850	50290	17670	12610	17850	15830
CAL YR 1977	TOTAL	597554	MEAN	1637	MAX	33300	MIN	171	AC-FT	1185000		
WTR YR 1978	TOTAL	129437	MEAN	355	MAX	4050	MIN	173	AC-FT	256700		

08057100 WHITE ROCK CREEK AT KELLER SPRINGS ROAD, DALLAS, TX

LOCATION (revised).--Lat 32°58'10", long 96°48'18", Dallas County, Hydrologic Unit 12030105, on left bank 300 ft (90 m) downstream from bridge on Keller Springs Road, 0.5 mi (0.8 km) upstream from St. Louis Southwestern Railway Lines bridge, 0.9 mi (1.4 km) upstream from Spanky Branch, and 13 mi (21 km) north of Dallas County Courthouse. Prior to Sept. 22, 1977, at site 300 ft (90 m) upstream.

DRAINAGE AREA.--29.4 mi² (76.1 km²).

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. From Oct. 25, 1961, to Sept. 27, 1977, at site 300 ft (90 m) upstream at same datum. Prior to Oct. 25, 1961, nonrecording gage at site 300 ft (90 m) upstream at same datum.

REMARKS.--Records good except those after May 24, which are fair, and those for periods of no elevation record, which are poor. The city of Dallas reported that the Preston Trails Golf Club, 0.5 mi (0.8 km) upstream, diverted 21 acre-ft (25,900 m³) and that the Bent Tree Country Club, 1.0 mi (1.6 km) upstream, diverted about 64 acre-ft (7,890 m³) during the current year for irrigation. Flow is slightly affected by two small floodwater-retarding structures above station. Three recording rain gages are operated in the basin above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years, 17.4 ft³/s (0.493 m³/s), 8.04 in/yr (204 mm/yr), 12,610 acre-ft/yr (15.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,900 ft³/s (1,070 m³/s) Sept. 21, 1964, elevation, 574.51 ft (175.111 m), from rating curve extended above 5,000 ft³/s (142 m³/s) on basis of contracted-opening measurement of 37,900 ft³/s (1,070 m³/s); no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1886, that of Sept. 21, 1964. Flood of Apr. 19, 1942, reached an elevation of 569.6 ft (173.61 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,900 ft³/s (53.8 m³/s) Apr. 23, elevation, 553.00 ft (168.554 m), no other peak above base of 1,500 ft³/s (42.5 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.07	.73	100	.46	.00	.18	1.3
2	.00	.00	.00	.00	.00	.60	.61	150	.20	.00	.11	1.8
3	.00	.00	.00	.00	.00	1.2	.35	30	.13	.00	.11	1.2
4	.00	.00	.00	.00	.00	1.1	.29	6.0	.13	.00	.09	.50
5	.00	.00	.00	.00	.00	1.3	.88	20	.13	.00	18	.30
6	.00	.00	.00	.00	.00	1.9	2.7	5.0	.20	.00	1.0	.25
7	.00	.00	.00	.00	.00	26	.76	1.5	3.3	2.8	.32	.21
8	.00	.00	.00	.00	.00	3.8	.72	1.2	10	10	.32	.16
9	.00	.00	.00	.00	.00	1.5	.41	.95	.09	.16	.32	.14
10	.00	.00	.00	.00	.63	.97	32	.78	.07	.28	.32	.12
11	.00	.00	.00	.00	2.7	.96	6.9	2.0	.06	2.5	.32	.12
12	.00	.00	.00	.00	34	1.2	2.0	1.0	.04	.04	.13	1.8
13	.00	.00	.00	.00	9.3	1.8	.49	.65	.04	.03	.11	.61
14	.00	.00	.00	.00	.06	.50	.46	.58	.04	.02	.11	.38
15	.00	.00	.00	.00	.03	.62	1.0	.50	.03	.01	.06	.22
16	.00	.00	.00	.00	.03	1.3	.91	.48	.03	.00	.26	.19
17	.00	.00	.00	.00	.03	1.3	.48	.45	.02	.05	.19	.13
18	.00	.00	.00	.00	.06	.76	.17	.42	.02	.02	.16	.10
19	.00	.00	.00	.00	.04	2.7	.61	.40	.06	.00	.32	.04
20	.00	.00	.00	.00	.10	.71	.45	10	.22	.01	.32	.07
21	.00	.00	.00	.00	.05	.71	.14	110	.06	.01	.13	.07
22	.00	.00	.00	.00	.03	.83	47	30	.06	.01	.28	.07
23	.00	.00	.00	.00	.03	22	310	7.0	.04	13	.33	.04
24	.00	.00	.00	.00	.28	42	50	2.0	.02	21	.30	.01
25	.00	.00	.00	.00	.51	6.6	10	1.1	.02	6.8	.32	.02
26	.00	.00	.00	.00	.29	2.4	2.5	1.1	.01	1.2	.37	.02
27	.00	.00	.00	.00	.31	1.8	1.0	.66	.00	.20	.86	.01
28	.00	.00	.00	.00	.19	.46	.75	132	.00	.07	8.4	.01
29	.00	.00	.00	.00	---	.85	.60	74	.00	.05	6.8	.01
30	.00	.00	.00	.00	---	.74	.48	2.4	.00	.02	2.1	.00
31	.00	---	.00	.00	---	.63	---	.63	---	1.7	.95	---
TOTAL	.00	.00	.00	.00	48.67	129.31	475.39	692.80	15.48	59.98	43.59	9.90
MEAN	.000	.000	.000	.000	1.74	4.17	15.8	22.3	.52	1.93	1.41	.33
MAX	.00	.00	.00	.00	34	42	310	150	10	21	18	1.8
MIN	.00	.00	.00	.00	.00	.07	.14	.40	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.06	.14	.54	.76	.02	.07	.05	.01
IN.	.00	.00	.00	.00	.06	.16	.60	.88	.02	.08	.06	.01
AC-FT	.00	.00	.00	.00	.97	256	943	1370	.31	119	86	20
(+)	.95	1.62	.22	1.59	3.25	2.48	2.80	6.34	.89	1.00	3.70	1.18

CAL YR 1977 TOTAL 5324.43 MEAN 14.6 MAX 2450 MIN .00 CFSM .50 IN 6.74 AC-FT 10560 †† 26.02
WTR YR 1978 TOTAL 1475.12 MEAN 4.04 MAX 310 MIN .00 CFSM .14 IN 1.87 AC-FT 2930 †† 26.44

†† Weighted-mean rainfall, in inches, based on three rain gages.
NOTE.--No elevation record Jan. 7 to Feb. 9 and Apr. 23 to May 24.

08057200 WHITE ROCK CREEK AT GREENVILLE AVENUE, DALLAS, TX

LOCATION.--Lat 32°53'21", long 96°45'23", Dallas County, Hydrologic Unit 12030105, on left bank 20 ft (6 m) downstream from bridge on Greenville Avenue in Dallas, 1.1 mi (1.8 km) downstream from Texas and New Orleans Railroad Co. bridge, 1.2 mi (1.9 km) downstream from Cottonwood Creek, 2.9 mi (4.7 km) upstream from White Rock Lake, and 8.2 mi (13.2 km) northeast of Dallas County Courthouse.

DRAINAGE AREA.--66.4 mi² (172.0 km²).

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1961, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation at low flow by on- and off-channel dams from which many small diversions are made. The city of Dallas reported that the Royal Oaks Country Club, 0.1 mi (0.2 km) upstream, diverted 70.5 acre-ft (86,990 m³) during the water year; Lambert Landscape Co., 3.1 mi (5.0 km) upstream, diverted 42.0 acre-ft (51,800 m³), and Prestonwood Country Club, about 7.0 mi (11.3 km) upstream, diverted 134 acre-ft (165,000 m³). Six recording rain gages were operated in basin above station during the year. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--17 years (water years 1962-78), 55.4 ft³/s (1.569 m³/s), 11.33 in/yr (288 mm/yr), 40,140 acre-ft/yr (49.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,100 ft³/s (1,080 m³/s) Sept. 21, 1964, elevation, 490.43 ft (149.483 m); minimum daily, 0.01 ft³/s (0.0003 m³/s) July 8, 1970, June 27, July 14, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1886, that of Sept. 21, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,900 ft³/s (82.1 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)
Mar. 23	2030	3,150 89.2	484.17 147.575	Aug. 5	1115	3,660 104	484.72 147.743
May 28	0730	*7,860 22.3	487.38 148.553				

Minimum daily discharge, 0.77 ft³/s (0.022 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.77	119	16	5.3	14	16	16	46	22	2.5	2.3	5.8
2	1.7	9.2	11	5.1	8.2	22	15	232	21	2.5	2.4	6.4
3	1.5	5.1	10	5.1	6.9	15	15	402	17	2.4	2.4	5.3
4	2.2	4.8	11	5.0	5.6	14	15	39	20	2.3	3.4	4.7
5	2.1	4.7	11	6.6	5.6	13	36	80	13	2.3	522	4.1
6	1.9	4.9	12	5.8	5.9	50	18	35	72	2.3	17	4.5
7	1.8	4.6	11	5.9	17	147	13	26	87	2.2	8.7	5.2
8	2.8	126	11	6.5	9.6	25	12	19	41	2.2	12	43
9	3.1	19	8.5	6.5	27	20	14	16	12	2.2	12	20
10	2.8	14	9.0	6.3	34	17	124	13	10	2.2	9.4	7.4
11	4.6	12	9.0	12	26	16	20	16	8.9	2.2	8.3	8.6
12	2.4	12	9.0	29	595	16	14	19	6.5	2.1	6.8	63
13	3.5	12	8.5	13	69	19	13	14	8.9	2.1	7.0	8.2
14	3.5	12	8.9	9.4	32	14	12	13	6.8	2.1	5.5	5.2
15	3.3	11	8.5	6.6	40	12	13	10	6.0	2.1	4.2	4.3
16	4.4	11	9.0	28	25	11	12	9.3	4.6	2.1	4.4	4.0
17	4.3	10	8.4	8.7	28	12	12	10	5.9	2.1	3.9	4.0
18	3.8	10	8.5	9.1	50	12	11	11	6.2	2.0	3.3	3.2
19	3.3	11	8.7	8.5	48	13	9.5	8.8	4.8	2.0	3.0	3.2
20	3.4	16	8.6	7.8	42	14	11	68	4.4	2.0	3.6	2.6
21	3.8	13	9.2	7.7	30	18	11	384	4.2	2.0	49	13
22	7.4	12	9.4	7.7	25	16	46	45	2.7	2.0	12	6.5
23	7.9	11	11	12	24	318	309	22	3.2	2.0	4.5	4.2
24	6.8	10	10	17	22	101	20	18	3.1	27	4.0	3.6
25	3.6	10	9.7	21	19	30	13	16	4.2	9.9	3.4	3.6
26	3.4	10	9.3	9.1	17	23	11	13	2.8	3.9	3.4	4.5
27	3.4	12	9.7	7.2	17	20	9.5	13	2.7	3.3	3.4	3.8
28	3.4	12	10	6.8	17	20	7.7	999	2.7	3.0	73	3.5
29	3.4	20	23	6.6	---	19	8.3	87	2.6	2.7	57	2.6
30	3.4	43	6.6	6.8	---	18	8.1	32	2.6	2.4	8.5	3.2
31	4.3	---	5.7	30	---	17	---	23	---	2.3	5.5	---
TOTAL	107.97	581.3	311.2	322.1	1259.8	1078	849.1	2739.1	408.8	104.4	865.3	261.2
MEAN	3.48	19.4	10.0	10.4	45.0	34.8	28.3	88.4	13.6	3.37	27.9	8.71
MAX	7.9	126	23	30	595	318	309	999	87	27	522	63
MIN	.77	4.6	5.7	5.0	5.6	11	7.7	8.8	2.6	2.0	2.3	2.6
CFSM	.05	.29	.15	.16	.68	.52	.43	1.33	.21	.05	.42	.13
IN.	.06	.33	.17	.18	.71	.60	.48	1.53	.23	.06	.48	.15
AC-FT	214	1150	617	639	2500	2140	1680	5430	811	207	1720	518
(††)	.79	1.91	.23	1.58	3.37	2.49	2.42	6.58	.97	.96	3.64	1.19
CAL YR 1977 TOTAL	16948.51											
WTR YR 1978 TOTAL	8888.27											
MEAN	46.4											
MAX	6730											
MIN	.41											
CFSM	.70											
IN	9.50											
AC-FT	33620											
††	27.54											
MEAN	24.4											
MAX	999											
MIN	.77											
CFSM	.37											
IN	4.98											
AC-FT	17630											
††	26.13											

†† Weighted-mean rainfall, in inches, based on six rain gages.

TRINITY RIVER BASIN

08057300 WHITE ROCK CREEK AT WHITE ROCK LAKE, DALLAS, TX

LOCATION (revised).--Lat 32°49'18", long 96°43'32", Dallas County, Hydrologic Unit 12030105, on right bank 2,500 ft (760 m) upstream from right end of White Rock Lake spillway, 3,700 ft (1,100 m) upstream from bridge on Garland Road (State Highway 78) in Dallas, and 10.4 mi (16.7 km) upstream from mouth. Prior to Sept. 23, 1977, at site about 2,000 ft (600 m) downstream.

DRAINAGE AREA.--100 mi² (259 km²).

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR TX-74-1: 1968-70, 1972-73.

GAGE.--Water-stage recorder, crest-stage gage, and flat-crested concrete dam. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 23, 1977, at site about 2,000 ft (600 m).

REMARKS.--Records fair except those below 50 ft³/s (1.42 m³/s), which are poor. Discharge is outflow of White Rock Lake, capacity 10,700 acre-ft (13.2 hm³) in 1970 at spillway crests. Storage in White Rock Lake began in 1910 and has been used at times by city of Dallas as a source of municipal water supply. Records furnished by city of Dallas show that during year 0.12 acre-ft (148 m³) was diverted from the lake for irrigation. Seven recording rain gages are operated in the basin above this station. A lake sedimentation survey by the Soil Conservation Service was made in October 1970. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years, 77.6 ft³/s (2.198 m³/s), 10.54 in/yr (268 mm/yr), 56,220 acre-ft/yr (69.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,300 ft³/s (801 m³/s) Sept. 21, 1964, elevation, 465.60 ft (141.915 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since 1910, that of Sept. 21, 1964. Flood of Apr. 20, 1942, reached an elevation of 465.2 ft (141.79 m), from information by city of Dallas.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,520 ft³/s (71.4 m³/s) Feb. 12, elevation, 459.47 ft (140.046 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	5.1	7.5	3.3	77	13	35	22	112	1.5	.00	9.6
2	.00	13	7.5	3.3	35	20	23	187	97	1.3	.00	9.6
3	.00	10	7.3	3.3	40	8.3	23	1020	83	.90	.00	9.3
4	.00	8.7	7.1	3.3	38	7.8	30	260	89	.50	.00	8.1
5	.00	8.2	6.4	3.8	14	7.9	23	144	78	.00	257	7.6
6	.00	7.8	5.6	3.9	11	18	76	105	156	.00	200	6.9
7	.00	7.3	5.5	4.1	23	328	63	72	197	.00	76	6.3
8	.00	133	5.1	2.9	47	123	55	41	357	.00	47	6.5
9	.00	108	3.8	2.5	74	76	35	16	143	.00	35	14
10	.00	32	4.2	2.3	120	60	232	11	100	.00	14	55
11	.00	16	4.0	3.3	136	56	153	13	60	.00	10	41
12	.00	11	4.2	5.5	1130	43	100	28	48	.00	9.1	100
13	.00	9.7	4.3	7.0	641	56	76	18	25	.00	8.1	116
14	.00	8.9	4.5	6.7	164	48	55	11	19	.00	7.3	63
15	.00	8.5	4.1	7.0	121	32	41	11	12	.00	6.5	41
16	.00	8.2	4.0	8.6	109	13	35	9.0	9.9	.00	5.7	14
17	.00	7.2	4.2	8.4	88	13	30	8.2	8.5	.00	5.1	9.6
18	.00	7.0	4.0	8.6	88	11	30	8.2	8.2	.00	4.3	8.6
19	.00	6.7	3.5	7.9	148	10	12	8.1	7.8	.00	3.9	7.8
20	.00	6.7	2.7	7.4	137	10	9.3	46	7.1	.00	3.5	6.9
21	.00	5.5	2.3	8.3	80	11	8.6	1340	6.7	.00	3.9	7.1
22	.00	5.4	2.1	8.9	79	11	8.5	422	5.9	.00	8.1	6.9
23	.00	5.1	2.3	9.2	73	105	405	164	5.4	.00	7.8	6.3
24	.00	5.0	2.5	12	68	684	202	97	4.8	.50	7.1	5.9
25	.00	4.7	1.5	17	50	134	60	70	4.2	.50	6.5	5.7
26	.00	4.2	1.9	14	32	84	35	61	3.3	.50	6.1	5.3
27	.00	3.9	1.7	15	34	69	22	41	2.9	.00	5.1	5.1
28	.00	3.4	1.9	14	31	69	14	1030	2.5	.00	5.1	4.9
29	.00	3.5	3.1	14	---	63	10	635	2.5	.00	9.1	4.3
30	.00	5.6	4.1	12	---	55	10	240	2.1	.00	23	4.1
31	.00	---	4.3	23	---	47	---	142	---	.00	12	---
TOTAL	.00	469.3	127.2	250.5	3688	2286.0	1911.4	6280.5	1657.8	5.70	786.30	596.4
MEAN	.000	15.6	4.10	8.08	132	73.7	63.7	203	55.3	.18	25.4	19.9
MAX	.00	133	7.5	23	1130	684	405	1340	357	1.5	257	116
MIN	.00	3.4	1.5	2.3	11	7.8	8.5	8.1	2.1	.00	.00	4.1
CFSM	.000	.16	.04	.08	1.32	.74	.64	2.03	.55	.002	.25	.20
IN.	.00	.17	.05	.09	1.37	.85	.71	2.34	.62	.00	.29	.22
AC-FT	.00	931	252	497	7320	4530	3790	12460	3290	11	1560	1180
(††)	.78	2.20	.24	1.62	3.58	2.55	2.08	6.50	1.11	.84	3.39	1.26

CAL YR 1977 TOTAL 24072.30 MEAN 66.0 MAX 9190 MIN .00 CFSM .66 IN 8.95 AC-FT 47750 †† 28.70
WTR YR 1978 TOTAL 18059.10 MEAN 49.5 MAX 1340 MIN .00 CFSM .50 IN 6.72 AC-FT 35820 †† 26.15

†† Weighted-mean rainfall, in inches, based on ten gages.

TRINITY RIVER BASIN

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08057400 WHITE ROCK CREEK AT SCYENE ROAD, DALLAS, TX

LOCATION.--Lat 32°45'57", long 96°43'49", Dallas County, Hydrologic Unit 12030105, on left bank 30 ft (9 m) downstream from Texas and New Orleans Railroad Co. bridge, 125 ft (38 m) downstream from Scylene Road (State Highway 352) in Dallas, 4.5 mi (7.2 km) east of Dallas County Courthouse, and 5.8 mi (9.3 km) upstream from mouth.

DRAINAGE AREA.--122 mi² (316 km²).

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Dec. 7, 1962, nonrecording gage 30 ft (9 m) upstream at same datum.

REMARKS.--Records good. Flow is partly regulated by White Rock Lake, capacity 10,700 acre-ft (13.2 hm³) at normal level, 4.5 mi (7.2 km) upstream. The Dallas Power and Light Co. reported diversion of 1,200 acre-ft (1.48 hm³) to off-channel reservoir at generating plant 0.8 mi (1.3 km) upstream from station. Low flow is sustained by wastewater. Seven recording rain gages (fourteen prior to Sept. 30, 1972) above station and one at station have been operated in basin since 1962. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years, 108 ft³/s (3.059 m³/s), 12.02 in/yr (305 mm/yr), 78,250 acre-ft/yr (96.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,200 ft³/s (855 m³/s) Sept. 21, 1964, elevation, 404.30 ft (123.231 m), from rating curve extended above 20,000 ft³/s (566 m³/s) on basis of contracted-opening measurement of 30,200 ft³/s (855 m³/s); minimum daily, 0.4 ft³/s (0.011 m³/s) Aug. 2, 3, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since at least 1886, 409.2 ft (124.72 m) May 26, 1908 (affected by backwater from the Trinity River); maximum discharge since at least 1886, that of Sept. 21, 1964; the second highest discharge occurred Apr. 20, 1942, 28,000 ft³/s (793 m³/s), from Geological Survey Open-File Report "Frequency and Extent of Flooding on Lower White Rock Creek at Dallas, Tex."

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,840 ft³/s (80.4 m³/s) Feb. 12, elevation, 400.11 ft (121.954 m); minimum daily, 1.8 ft³/s (0.051 m³/s) May 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1	6.2	45	14	6.0	106	55	28	51	61	3.1	5.1	7.5				
2	5.5	16	9.9	6.1	53	36	26	243	50	3.1	5.0	8.2				
3	4.4	11	7.0	6.5	27	79	25	1020	17	3.1	4.7	7.5				
4	4.4	10	2.5	6.9	20	42	23	314	48	3.1	13	6.8				
5	5.5	9.0	8.4	7.0	27	20	50	185	34	3.1	225	9.5				
6	7.5	7.9	19	4.0	23	52	50	147	112	3.1	358	16				
7	7.2	7.9	8.3	2.9	38	453	36	86	170	3.1	56	15				
8	8.9	117	5.2	4.9	42	224	28	56	414	3.3	15	25				
9	7.3	187	7.9	12	68	81	26	41	132	3.2	17	27				
10	20	60	9.3	8.2	82	49	330	26	19	3.3	37	139				
11	17	24	6.9	24	92	48	182	60	18	3.6	35	66				
12	7.9	7.8	7.1	19	1190	43	71	83	20	3.4	21	464				
13	6.2	7.9	5.7	15	899	30	51	57	22	3.5	3.6	870				
14	5.9	7.9	2.6	17	152	31	40	27	19	3.8	8.2	390				
15	5.9	7.9	1.9	16	100	42	35	20	16	3.7	15	129				
16	6.1	7.8	1.9	23	88	44	31	20	15	3.5	13	95				
17	6.4	7.1	2.2	33	108	30	28	18	12	3.3	10	66				
18	6.5	7.2	3.7	23	121	26	28	12	3.4	3.8	7.8	44				
19	6.2	5.5	2.4	46	120	23	35	1.8	5.0	4.8	3.5	36				
20	6.6	5.2	2.0	26	156	23	27	98	15	4.4	2.4	46				
21	7.6	9.6	2.4	17	115	26	17	1340	15	4.2	28	54				
22	12	8.2	4.1	7.7	58	83	15	533	14	4.2	9.5	48				
23	13	2.9	4.9	14	60	226	298	159	13	4.2	7.8	44				
24	13	4.0	4.5	21	36	815	184	60	12	4.3	5.8	39				
25	9.5	5.6	2.3	38	51	223	93	31	5.0	4.2	4.9	32				
26	7.1	5.6	2.0	35	50	80	37	8.4	3.5	4.2	3.3	25				
27	6.1	5.5	2.1	13	35	47	18	25	3.0	4.2	2.3	32				
28	6.6	5.2	3.5	18	39	41	15	744	3.9	22	2.3	30				
29	7.1	14	12	19	---	39	13	734	4.7	4.6	4.4	28				
30	7.1	21	6.3	18	---	37	12	228	3.4	3.8	5.2	26				
31	8.1	---	5.8	27	---	33	---	93	---	4.5	6.8	---				
TOTAL	248.8	640.7	177.8	534.2	3956	3081	1852	6521.2	1279.9	133.7	935.6	2825.5				
MEAN	8.03	21.4	5.74	17.2	141	99.4	61.7	210	42.7	4.31	30.2	94.2				
MAX	20	187	19	46	1190	815	330	1340	414	22	358	870				
MIN	4.4	2.9	1.9	2.9	20	20	12	1.8	3.0	3.1	2.3	6.8				
CFSM	.07	.18	.05	.14	1.16	.82	.51	1.72	.35	.04	.25	.77				
IN.	.08	.20	.05	.16	1.21	.94	.56	1.99	.39	.04	.29	.86				
AC-FT	493	1270	353	1060	7850	6110	3670	12930	2540	265	1860	5600				
(††)	.70	2.18	.23	1.55	3.48	2.54	1.98	6.39	1.00	.80	3.13	1.26				
CAL YR 1977	TOTAL	38214.4	MEAN	105	MAX	9870	MIN	1.9	CFSM	.86	IN	11.65	AC-FT	75800	††	28.02
WTR YR 1978	TOTAL	22186.4	MEAN	60.8	MAX	1340	MIN	1.8	CFSM	.50	IN	6.76	AC-FT	44010	††	25.24

†† Weighted-mean rainfall, in inches, based on eight rain gages.

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX

LOCATION.--Lat 32°42'26", Long 96°44'08", Dallas County, Hydrologic Unit 12030105, on right bank at downstream side of bridge on South Loop Highway 12, 1.0 mi (1.6 km) downstream from White Rock Creek, 1.5 mi (2.4 km) upstream from Fivemile Creek, 6.4 mi (10.3 km) southeast of Dallas County Courthouse in Dallas, and at mile 491.8 (791.3 km).

DRAINAGE AREA.--6,278 mi² (16,260 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1956 to September 1961 (monthly records only), October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 365.89 ft (111.523 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow is affected at times by eight upstream reservoirs with a combined capacity of 1,714,400 acre-ft (2.11 km³), of which 846,200 acre-ft (1.04 km³) is for flood control. Several cities within the Fort Worth-Dallas metroplex divert water for municipal use and return it to the river as sewage effluents above this station. Low flows are sustained by sewage effluents.

AVERAGE DISCHARGE.--21 years (water years 1958-78), 1,669 ft³/s (47.27 m³/s), 1,209,000 acre-ft/yr (1.49 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,700 ft³/s (1,860 m³/s) May 27, 1957, gage height, 32.02 ft (9.760 m); minimum daily, 131 ft³/s (3.71 m³/s) Dec. 9, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 25, 1908, reached a stage of 41.1 ft (12.53 m), from information by Corps of Engineers, and is the highest since that time. Floods in 1866 and 1908 reached about the same stage at Dallas.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,290 ft³/s (150 m³/s) Feb. 13, gage height, 19.12 ft (5.828 m); minimum daily, 327 ft³/s (9.26 m³/s) Dec. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	450	827	619	385	838	549	566	623	712	364	395	466
2	435	1070	499	371	756	539	542	1230	663	346	403	589
3	464	635	411	388	576	585	542	3260	625	344	390	638
4	470	547	388	413	547	555	551	2600	530	344	499	471
5	452	503	392	411	538	516	597	1120	465	356	1630	532
6	479	462	402	413	547	583	712	860	549	361	1700	514
7	473	472	397	401	774	1610	601	705	1000	359	843	491
8	483	980	392	392	805	1700	538	633	1520	352	549	468
9	445	1450	432	408	1020	911	520	601	1200	351	483	467
10	518	845	402	417	1070	696	1340	579	666	356	477	472
11	782	526	388	493	1000	608	2400	644	474	368	473	478
12	545	445	392	677	2790	562	972	823	444	371	450	640
13	501	426	402	695	4960	562	700	612	453	368	420	639
14	489	495	395	566	2410	552	628	542	466	368	420	539
15	472	473	387	545	1030	548	585	536	448	368	443	489
16	464	454	388	700	888	553	547	549	437	351	435	462
17	485	422	380	626	859	528	545	555	428	361	434	423
18	477	411	371	633	983	516	553	557	393	371	439	417
19	481	415	382	594	1090	492	547	545	391	373	415	424
20	485	404	388	555	1110	486	540	646	408	378	404	421
21	489	406	376	538	1040	526	559	3460	402	380	434	521
22	592	432	376	553	902	638	528	3220	394	366	683	612
23	962	401	373	615	733	760	873	1300	396	364	517	501
24	588	375	362	656	665	3060	1100	1060	390	524	473	417
25	542	364	352	720	606	2240	677	1210	367	445	458	404
26	462	366	327	597	586	879	581	560	369	406	439	401
27	437	361	349	505	563	692	538	501	378	388	422	402
28	585	376	375	473	555	646	524	2170	390	640	430	394
29	673	489	454	456	---	622	507	4870	386	438	624	397
30	454	703	449	462	---	619	505	3460	379	378	533	387
31	447	---	413	735	---	583	---	1160	---	387	466	---
TOTAL	16081	16535	12413	16393	30241	24916	20918	41191	16123	11926	17181	14476
MEAN	519	551	400	529	1080	804	697	1329	537	385	554	483
MAX	962	1450	619	735	4960	3060	2400	4870	1520	640	1700	640
MIN	435	361	327	371	538	486	505	501	367	344	390	387
AC-FT	31900	32800	24620	32520	59980	49420	41490	81700	31980	23660	34080	28710
CAL YR 1977	TOTAL	699728	MEAN	1917	MAX	32200	MIN	327	AC-FT	1388000		
WTR YR 1978	TOTAL	238394	MEAN	653	MAX	4960	MIN	327	AC-FT	472900		

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1971 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

pH: January 1977 to current year.

WATER TEMPERATURES: October 1967 to current year.

DISSOLVED OXYGEN: January 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since Jan. 6, 1977.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1967-68, 1972-78): Maximum, 1,130 micromhos Dec. 17, 1977; minimum, 164 micromhos Aug. 20, 1977.

pH: Maximum, 8.1 units Jan. 13, 1977; minimum, 6.9 units Aug. 10, 1977.

WATER TEMPERATURES (1967-68, 1973-78): Maximum, 34.0°C June 30, Aug. 31, 1977; minimum, 4.0°C Jan. 10, 1968.

DISSOLVED OXYGEN: Maximum, 11.4 mg/l Feb. 13, 1978; minimum, 0.0 mg/l on many days during spring and summer of 1977 and 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,130 micromhos Dec. 17; minimum, 284 micromhos Mar. 23.

pH: Maximum, 7.7 units Feb. 14; minimum, 7.0 units Nov. 12, 13, 30, Dec. 1, Sept. 24.

WATER TEMPERATURES: Maximum, 33.0°C July 14, 15; minimum, 6.5°C Feb. 8-10.

DISSOLVED OXYGEN: Maximum, 11.4 mg/l Feb. 13; minimum, 0.0 mg/l on several days during spring and summer.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 19...	1310	470	980	7.4	23.0	30	20	2.6	31	12	150	0
NOV 09...	1345	1480	728	7.5	17.5	50	90	4.1	44	20	140	0
DEC 14...	1510	402	1070	7.3	17.0	50	35	3.8	40	14	--	--
JAN 24...	1345	656	894	7.3	10.5	30	30	6.7	61	16	160	0
FEB 23...	1150	717	783	7.5	11.0	35	20	6.8	64	9.9	190	8
MAR 23...	0940	551	1026	7.5	20.0	55	15	2.1	24	12	190	0
APR 13...	0955	631	734	7.3	20.0	35	25	3.1	35	4.6	--	--
MAY 11...	1130	497	995	7.3	23.5	40	15	.2	2	20	210	0
JUN 12...	1730	406	810	7.1	29.5	40	20	4.4	58	10	--	--
JUL 12...	1515	378	990	7.2	31.0	35	5	2.5	34	13	140	0
AUG 17...	0915	378	940	7.1	30.0	50	10	2.0	27	14	140	0
SEP 14...	1030	509	860	7.1	28.0	40	30	2.3	29	9.0	140	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 19...	46	7.3	140	5.1	14	280	0	130	96	1.5	16	589
NOV 09...	47	6.0	86	3.1	10	200	0	100	53	1.0	9.7	411
DEC 14...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 24...	54	6.8	110	3.8	13	240	0	110	85	1.1	12	511
FEB 23...	65	6.3	78	2.5	10	220	0	110	58	1.1	12	449
MAR 23...	61	8.3	130	4.1	17	280	0	140	89	1.4	12	597
APR 13...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 11...	73	6.7	120	3.6	16	290	0	130	82	1.6	12	584
JUN 12...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 12...	44	7.1	130	4.8	16	240	0	130	89	1.6	13	549
AUG 17...	45	6.0	120	4.5	17	220	0	110	94	2.5	12	515
SEP 14...	45	5.6	110	4.1	13	200	0	120	75	1.2	12	481

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLATILE, SUS- PENDE (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 19...	40	12	.24	.33	.57	16	.00	15	14	16	4	.70
NOV 09...	202	32	.78	.18	.96	5.0	.70	5.7	7.5	16	7	.50
DEC 14...	64	12	.33	.28	.61	13	1.0	14	7.5	17	6	.80
JAN 24...	63	25	.61	.17	.78	10	3.0	13	4.8	16	6	.40
FEB 23...	33	12	.61	.10	.71	6.6	1.8	8.4	3.2	15	11	.90
MAR 23...	30	12	.08	.05	.13	12	5.0	17	5.3	16	5	.50
APR 13...	44	8	.16	.05	.21	2.7	5.2	7.9	2.4	13	6	.40
MAY 11...	42	22	.02	.04	.06	12	3.0	15	4.0	26	10	.60
JUN 12...	38	11	1.4	.68	2.1	7.4	14	21	4.7	13	4	.50
JUL 12...	25	16	.14	.16	.30	11	3.0	14	6.8	21	9	.80
AUG 17...	24	14	.24	.16	.40	10	3.0	13	5.3	19	12	1.0
SEP 14...	54	20	1.1	.29	1.4	6.9	1.7	8.6	5.4	17	3	.70

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 24...	1345	2	100	2	10	3	50
MAR 23...	0940	3	300	0	0	0	120
JUL 12...	1515	4	100	2	10	5	100
SEP 14...	1030	7	--	0	10	8	30

DATE	TIME	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 24...		4	110	.2	1	0	40
MAR 23...		2	140	.0	3	0	20
JUL 12...		4	100	.1	0	0	30
SEP 14...		0	50	.2	1	0	30

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 24...	1345	2.0	180	.00	.00	.0	.0	110	.00	3.4
MAR 23...	0940	.0	0	.00	.00	.1	.0	0	.00	.0
JUL 12...	1515	.0	44	.00	.00	.0	.0	14	.00	1.9
SEP 14...	1030	.0	470	.00	.00	.0	.0	150	.00	6.5

TRINITY RIVER BASIN

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08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 24...	.00	1.7	.00	.0	.80	.00	11	.00	.00	.0
MAR 23...	.00	.0	.00	.0	.48	.01	.3	.00	.00	.0
JUL 12...	.00	1.5	.00	.0	7.7	.01	1.1	.00	.00	.0
SEP 14...	.00	--	.00	.0	.71	.01	14	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JAN 24...	.00	.00	.0	.00	.9	.03	.0	.07	.00
MAR 23...	.00	.00	.1	.00	.0	.04	.1	.09	.00
JUL 12...	.00	.00	.0	.01	.1	.10	.0	.00	.00
SEP 14...	.00	.00	.0	.00	1.0	.03	.0	.05	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 24...	.00	--	.00	0	0	.00	.37	.04	.10
MAR 23...	.00	--	.00	0	0	.00	.27	.04	.00
JUL 12...	.00	.00	.00	0	0	.00	.42	.10	.00
SEP 14...	.00	.00	.00	0	0	.00	2.6	.48	.38

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	16081	872	500	21600	77	3350	120	5080	170
NOV. 1977.....	16535	811	460	20700	70	3140	110	4800	170
DEC. 1977.....	12413	965	550	18400	88	2930	130	4380	180
JAN. 1978.....	16393	899	510	22600	80	3550	120	5350	180
FEB. 1978.....	30241	679	390	31800	55	4500	88	7170	170
MAR. 1978.....	24916	797	460	30700	69	4620	110	7100	170
APR. 1978.....	20918	865	490	27800	76	4310	120	6510	170
MAY 1978.....	41191	609	350	38900	47	5250	78	8650	160
JUNE 1978.....	16123	811	460	20100	70	3050	110	4670	170
JULY 1978.....	11926	941	530	17200	85	2740	130	4060	180
AUG. 1978.....	17181	800	460	21200	69	3200	110	4940	170
SEPT 1978.....	14476	874	500	19400	77	3020	120	4590	170
TOTAL	238394	**	**	200000	**	43700	**	67300	**
WTD.AVG.	653.13	790	450	**	68	**	110	**	170

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	840	806	824	954	530	823	900	722	809	944	852	904
2	842	772	820	768	546	656	938	878	912	926	812	867
3	872	768	811	848	700	795	966	894	938	924	842	873
4	916	826	869	890	796	847	962	866	925	962	898	932
5	970	872	924	872	808	853	878	806	852	962	920	941
6	1020	950	985	870	852	859	916	862	892	992	948	969
7	988	934	961	896	840	868	922	898	910	984	954	964
8	1090	996	1040	908	884	895	926	898	916	1000	930	976
9	1120	934	1020	764	498	630	952	898	926	980	912	938
10	942	726	852	702	662	684	1020	880	949	1020	948	982
11	938	372	752	736	638	685	1010	932	976	1010	770	955
12	904	740	801	766	696	731	982	916	945	890	770	843
13	928	776	878	750	692	717	1030	986	1010	972	894	939
14	960	904	932	774	706	729	1070	1030	1050	982	932	956
15	986	884	944	832	776	801	1110	1060	1090	964	866	923
16	918	806	869	850	816	835	1110	1070	1090	870	766	821
17	876	772	824	868	834	854	1130	1050	1090	824	770	798
18	924	806	902	926	872	896	1090	996	1060	856	822	839
19	980	912	948	906	870	892	1060	954	1000	854	824	835
20	998	950	974	898	814	864	1090	988	1020	890	844	865
21	1010	936	973	900	822	854	1050	980	1010	896	852	874
22	1010	696	950	990	878	943	1030	972	1000	876	846	858
23	760	612	679	1030	918	963	1020	970	993	910	850	872
24	870	606	728	1020	944	995	1020	964	997	930	894	916
25	948	806	899	974	888	947	996	940	971	950	872	911
26	958	878	927	1000	926	967	1020	878	958	908	864	884
27	974	910	945	942	880	911	964	894	921	932	896	914
28	976	702	912	934	858	901	1050	946	996	970	918	940
29	794	664	722	966	790	891	1030	884	968	960	876	923
30	870	794	832	928	708	837	978	878	939	930	852	889
31	914	844	882	---	---	---	968	920	947	964	778	907
MONTH	1120	372	883	1030	498	837	1130	722	970	1020	766	903
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	870	776	831	970	938	950	996	956	977	1030	912	958
2	892	804	857	1020	978	993	960	912	939	1020	470	734
3	890	854	874	1020	970	997	970	912	940	604	428	491
4	888	828	855	1040	976	1000	1010	972	989	536	434	484
5	852	752	793	1060	970	1010	1010	874	957	672	548	609
6	828	774	795	1010	778	959	950	850	910	740	626	674
7	848	768	809	812	388	636	946	844	897	792	716	748
8	880	760	806	822	576	739	982	924	961	864	800	819
9	886	734	819	794	718	760	936	890	908	960	872	912
10	728	662	697	844	784	816	906	512	706	976	936	960
11	738	670	706	872	832	852	808	574	667	994	418	897
12	724	308	508	914	862	877	828	626	719	922	530	744
13	502	334	439	974	894	925	848	770	827	920	900	911
14	652	474	536	1020	962	993	934	840	877	964	904	927
15	710	616	657	1030	982	1010	938	894	920	968	900	927
16	752	698	723	1000	964	980	930	884	905	1010	952	971
17	750	740	745	1030	994	1010	940	862	906	1020	948	978
18	746	738	741	1040	992	1020	966	934	950	986	942	960
19	750	736	743	1000	966	983	1020	962	983	1050	984	1010
20	740	728	736	1020	966	987	994	960	970	1050	624	937
21	744	730	738	1030	980	1000	1020	964	997	---	---	550
22	772	728	747	1070	950	1020	1060	982	1020	---	---	400
23	812	762	784	1010	284	900	1080	604	896	---	---	450
24	870	802	828	632	354	510	914	812	861	---	---	500
25	904	856	879	564	464	513	912	666	770	---	---	550
26	858	820	838	692	572	634	866	776	820	---	---	650
27	902	846	874	788	694	728	900	870	883	---	---	700
28	938	896	916	872	790	823	940	904	916	---	---	750
29	---	---	---	916	868	888	974	942	956	---	---	500
30	---	---	---	950	890	921	1010	908	965	512	---	400
31	---	---	---	976	940	956	---	---	---	656	512	581
MONTH	938	308	760	1070	284	884	1080	512	900	1050	418	732

TRINITY RIVER BASIN

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08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	732	510	664	1010	912	969	978	926	946	972	934	954
2	824	710	760	1000	902	945	978	904	943	1000	944	967
3	878	798	839	944	860	901	970	916	943	1030	892	972
4	852	726	807	958	888	917	974	616	937	894	756	817
5	858	784	811	980	870	916	654	322	490	762	590	681
6	904	778	861	994	926	946	740	424	583	856	776	830
7	792	684	748	974	902	938	756	654	695	880	854	871
8	772	452	561	982	904	941	804	692	740	930	882	903
9	674	598	643	984	882	929	810	740	780	892	858	879
10	770	670	718	978	890	936	920	864	890	902	816	862
11	792	726	761	1010	950	974	954	918	933	864	---	830
12	818	754	788	1040	958	992	1030	---	950	---	---	800
13	864	822	851	1040	950	989	---	---	930	930	---	880
14	878	850	870	1020	946	980	---	---	900	974	914	937
15	890	850	874	1050	958	1010	---	---	880	1060	868	941
16	930	892	908	1030	912	982	---	---	910	942	882	915
17	966	908	940	982	874	924	---	---	900	912	818	871
18	968	902	924	1030	928	966	914	882	895	854	798	825
19	948	868	909	1030	960	984	936	880	913	906	860	882
20	950	910	927	1030	972	993	936	836	890	952	890	921
21	984	912	942	1010	980	997	888	762	836	960	762	915
22	972	924	942	1030	962	993	880	498	737	838	740	803
23	992	924	957	1040	916	995	820	760	783	930	764	836
24	996	904	953	1000	632	838	882	830	853	888	776	829
25	956	882	910	968	838	916	904	870	886	880	---	850
26	964	886	918	1040	938	986	950	884	911	---	---	860
27	980	928	956	994	926	962	930	836	880	---	---	880
28	1010	932	969	1020	510	824	916	824	856	---	---	910
29	1020	956	988	934	674	873	944	760	864	---	---	900
30	992	932	959	950	864	910	906	726	798	---	---	910
31	---	---	---	946	860	894	966	928	943	---	---	---
MONTH	1020	452	855	1050	510	946	1030	322	851	1060	590	874

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.3	7.2	7.3	7.4	7.2	7.3	7.1	7.0	7.1	7.4	7.3	7.3
2	7.3	7.2	7.3	7.3	7.2	7.2	7.1	7.1	7.1	7.4	7.2	7.3
3	7.3	7.2	7.3	7.3	7.2	7.2	7.2	7.1	7.1	7.4	7.3	7.3
4	7.3	7.2	7.2	7.3	7.2	7.2	7.2	7.1	7.2	7.3	7.3	7.3
5	7.4	7.2	7.2	7.2	7.2	7.2	7.2	7.1	7.2	7.3	7.3	7.3
6	7.4	7.2	7.3	7.2	7.1	7.2	7.3	7.1	7.2	7.3	7.2	7.3
7	7.4	7.3	7.3	7.2	7.2	7.2	7.3	7.2	7.3	7.3	7.3	7.3
8	7.4	7.3	7.3	7.4	7.2	7.2	7.2	7.2	7.2	7.4	7.3	7.3
9	7.4	7.2	7.3	7.3	7.2	7.2	7.3	7.2	7.3	7.4	7.3	7.4
10	7.3	7.2	7.2	7.2	7.1	7.2	7.3	7.2	7.3	7.4	7.3	7.4
11	7.3	7.1	7.2	7.2	7.1	7.1	7.3	7.2	7.3	7.5	7.3	7.4
12	7.3	7.1	7.2	7.1	7.0	7.1	7.3	7.2	7.3	7.4	7.3	7.4
13	7.3	7.2	7.2	7.1	7.0	7.1	7.3	7.2	7.2	7.4	7.3	7.3
14	7.3	7.2	7.2	7.2	7.1	7.1	7.3	7.2	7.2	7.4	7.3	7.3
15	7.3	7.2	7.2	7.2	7.1	7.1	7.3	7.2	7.2	7.4	7.3	7.3
16	7.3	7.2	7.2	7.2	7.1	7.1	7.3	7.2	7.2	7.4	7.3	7.3
17	7.3	7.1	7.2	7.2	7.1	7.1	7.3	7.2	7.3	7.4	7.3	7.3
18	7.4	7.2	7.3	7.2	7.1	7.1	7.3	7.2	7.2	7.4	7.3	7.3
19	7.4	7.2	7.3	7.2	7.1	7.2	7.3	7.2	7.2	7.4	7.3	7.4
20	7.4	7.2	7.4	7.2	7.1	7.2	7.3	7.2	7.3	7.4	7.3	7.4
21	7.4	7.3	7.3	7.2	7.1	7.1	7.3	7.3	7.3	7.4	7.3	7.3
22	7.4	7.3	7.3	7.2	7.1	7.1	7.3	7.2	7.3	7.4	7.3	7.3
23	7.3	7.1	7.3	7.2	7.1	7.2	7.3	7.2	7.3	7.4	7.3	7.4
24	7.3	7.1	7.2	7.2	7.1	7.2	7.3	7.2	7.3	7.5	7.3	7.4
25	7.3	7.2	7.3	7.2	7.2	7.2	7.4	7.3	7.3	7.4	7.3	7.4
26	7.4	7.2	7.3	7.3	7.2	7.2	7.4	7.3	7.4	7.4	7.2	7.3
27	7.4	7.3	7.3	7.3	7.2	7.2	7.4	7.2	7.3	7.3	7.2	7.2
28	7.4	7.2	7.3	7.2	7.1	7.2	7.4	7.2	7.3	7.4	7.2	7.3
29	7.3	7.2	7.2	7.2	7.1	7.1	7.4	7.3	7.3	7.3	7.2	7.3
30	7.3	7.2	7.2	7.2	7.0	7.1	7.3	7.2	7.3	7.3	7.2	7.3
31	7.4	7.2	7.3	---	---	---	7.3	7.2	7.3	7.4	7.3	7.4
MONTH	7.4	7.1	7.3	7.4	7.0	7.2	7.4	7.0	7.3	7.5	7.2	7.3

TRINITY RIVER BASIN

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.4	7.4	7.4	7.5	7.4	7.4	7.4	7.3	7.4	7.4	7.3	7.3
2	7.4	7.4	7.4	7.4	7.2	7.3	7.4	7.3	7.3	7.4	7.2	7.3
3	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.3	7.3	7.2	7.2
4	7.4	7.3	7.3	7.4	7.2	7.3	7.3	7.3	7.3	7.3	7.2	7.3
5	7.4	7.3	7.4	7.3	7.2	7.3	7.3	7.2	7.3	7.3	7.2	7.2
6	7.4	7.3	7.4	7.3	7.2	7.3	7.3	7.2	7.3	7.3	7.2	7.2
7	7.5	7.3	7.4	7.4	7.2	7.3	7.3	7.2	7.2	7.3	7.2	7.3
8	7.4	7.4	7.4	7.3	7.2	7.3	7.3	7.2	7.2	7.3	7.2	7.3
9	7.5	7.4	7.4	7.2	7.2	7.2	7.2	7.2	7.2	7.3	7.2	7.3
10	7.4	7.4	7.4	7.3	7.2	7.2	7.2	7.2	7.2	7.3	7.2	7.3
11	7.4	7.3	7.4	7.2	7.2	7.2	7.3	7.1	7.2	7.3	7.2	7.3
12	7.6	7.3	7.4	7.2	7.2	7.2	7.2	7.1	7.2	7.3	7.2	7.3
13	7.6	7.4	7.5	7.2	7.2	7.2	7.3	7.2	7.2	7.3	7.2	7.3
14	7.7	7.5	7.5	7.3	7.2	7.2	7.3	7.2	7.3	7.3	7.3	7.3
15	7.5	7.4	7.5	7.4	7.2	7.3	7.3	7.2	7.3	7.3	7.3	7.3
16	7.5	7.4	7.5	7.4	7.3	7.3	7.3	7.2	7.3	7.3	7.3	7.3
17	7.4	7.4	7.4	7.3	7.2	7.3	7.3	7.3	7.3	7.3	7.2	7.3
18	7.5	7.4	7.4	7.4	7.3	7.3	7.3	7.2	7.3	7.3	7.3	7.3
19	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.2	7.3	7.3	7.3	7.3
20	7.4	7.3	7.4	7.4	7.3	7.4	7.3	7.2	7.3	7.3	7.2	7.3
21	7.4	7.4	7.4	7.4	7.3	7.3	7.3	7.2	7.3	---	7.2	7.3
22	7.4	7.3	7.4	7.4	7.3	7.4	7.3	7.2	7.3	---	---	7.3
23	7.4	7.3	7.3	7.4	7.3	7.4	7.3	7.2	7.3	---	---	7.3
24	7.4	7.3	7.3	7.3	7.2	7.3	7.3	7.3	7.3	---	---	7.3
25	7.4	7.4	7.4	7.3	7.2	7.2	7.3	7.2	7.3	---	---	7.3
26	7.4	7.4	7.4	7.3	7.2	7.3	7.3	7.2	7.2	---	---	7.3
27	7.5	7.4	7.4	7.3	7.2	7.3	7.3	7.2	7.2	---	---	7.3
28	7.4	7.3	7.4	7.3	7.2	7.3	7.3	7.2	7.2	---	---	7.3
29	---	---	---	7.3	7.2	7.3	7.3	7.2	7.3	---	---	7.3
30	---	---	---	7.4	7.2	7.3	7.3	7.2	7.3	---	---	7.3
31	---	---	---	7.4	7.3	7.3	---	---	---	7.3	7.2	7.2
MONTH	7.7	7.3	7.4	7.5	7.2	7.3	7.4	7.1	7.3	7.4	7.2	7.3
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.3	7.2	7.3	7.4	7.3	7.3	7.4	7.2	7.3	7.3	7.2	7.2
2	7.3	7.2	7.3	7.4	7.3	7.3	7.3	7.2	7.2	7.3	7.2	7.2
3	7.3	7.2	7.2	7.4	7.3	7.4	7.2	7.2	7.2	7.3	7.2	7.3
4	7.3	7.2	7.2	7.4	7.3	7.4	7.4	7.2	7.2	7.3	7.2	7.2
5	7.3	7.2	7.2	7.4	7.3	7.4	7.4	7.1	7.2	7.4	7.1	7.2
6	7.3	7.3	7.3	7.4	7.3	7.4	7.2	7.1	7.2	7.3	7.1	7.2
7	7.4	7.3	7.3	7.4	7.3	7.4	7.2	7.1	7.2	7.2	7.1	7.2
8	7.4	7.3	7.3	7.4	7.3	7.4	7.2	7.1	7.2	7.2	7.1	7.2
9	7.3	7.2	7.2	7.3	7.3	7.3	7.2	---	7.2	7.2	7.2	7.2
10	7.2	7.1	7.1	7.3	7.2	7.3	7.2	7.1	7.2	7.2	7.2	7.2
11	7.3	7.1	7.1	7.3	7.2	7.3	7.2	7.2	7.2	---	---	7.2
12	7.3	7.2	7.3	7.3	7.2	7.3	7.2	---	7.2	---	---	7.2
13	7.3	7.2	7.3	7.3	7.3	7.3	---	---	7.2	7.3	7.2	7.2
14	7.4	7.2	7.3	7.3	7.2	7.3	---	---	7.2	7.2	7.2	7.2
15	7.4	7.3	7.3	7.3	7.3	7.3	---	---	7.3	7.3	7.2	7.2
16	7.3	7.3	7.3	7.4	7.3	7.3	---	---	7.3	7.3	7.2	7.2
17	7.3	7.3	7.3	7.4	7.2	7.3	7.3	---	7.3	7.3	7.2	7.3
18	7.4	7.3	7.3	7.4	7.3	7.3	7.4	7.3	7.3	7.3	7.2	7.2
19	7.4	7.3	7.3	7.4	7.3	7.3	7.3	7.2	7.3	7.3	7.2	7.2
20	7.4	7.3	7.4	7.4	7.3	7.3	7.3	7.2	7.3	7.3	7.2	7.2
21	7.4	7.3	7.3	7.5	7.3	7.4	7.3	7.2	7.3	7.3	7.2	7.2
22	7.4	7.3	7.4	7.4	7.3	7.4	7.4	7.1	7.2	7.3	7.2	7.2
23	7.4	7.3	7.4	7.4	7.3	7.3	7.2	7.2	7.2	7.2	7.1	7.1
24	7.5	7.3	7.4	7.4	7.2	7.3	7.3	7.2	7.2	7.1	7.0	7.1
25	7.5	7.3	7.4	7.4	7.3	7.3	7.3	7.2	7.2	7.2	---	7.1
26	7.5	7.3	7.4	7.4	7.3	7.3	7.3	7.2	7.3	---	---	7.1
27	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.3	---	---	7.1
28	7.4	7.3	7.4	7.4	7.2	7.3	7.4	7.2	7.3	---	---	7.2
29	7.4	7.3	7.4	7.3	7.2	7.3	7.4	7.2	7.3	---	---	7.2
30	7.4	7.3	7.4	7.3	7.3	7.3	7.3	7.1	7.2	---	---	7.2
31	---	---	---	7.3	7.2	7.3	7.3	7.2	7.2	---	---	---
MONTH	7.5	7.1	7.3	7.5	7.2	7.3	7.4	7.1	7.2	7.4	7.0	7.2

TRINITY RIVER BASIN

501

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	30.0	29.0	29.5	26.0	23.0	24.5	17.0	14.5	16.0	16.0	13.5	14.5
2	29.5	27.5	28.5	22.5	20.0	21.0	18.0	16.0	17.0	13.5	11.5	12.5
3	27.0	25.5	26.5	21.5	19.5	20.5	19.5	17.0	18.0	13.5	11.5	12.5
4	26.0	25.0	25.5	22.5	20.0	21.0	20.0	18.5	19.0	14.0	12.0	13.0
5	26.0	24.5	25.5	23.0	21.5	22.0	19.5	18.0	18.5	16.5	14.0	15.0
6	26.0	24.0	25.0	23.5	21.5	22.5	17.5	15.0	16.0	17.0	15.0	16.5
7	26.5	25.0	25.5	23.5	22.0	23.0	16.0	14.5	15.0	18.0	16.5	17.0
8	26.5	25.5	26.0	23.5	20.0	22.5	18.5	16.0	17.0	17.0	13.5	15.0
9	26.0	24.5	25.0	19.5	17.0	18.5	17.5	14.5	15.5	13.0	10.5	12.0
10	25.0	22.5	23.5	18.5	16.5	17.5	14.5	12.5	13.5	12.5	10.5	12.0
11	23.5	20.0	21.5	19.0	17.0	18.0	15.5	13.5	14.0	12.5	8.5	10.5
12	22.5	20.5	21.5	20.0	17.5	18.5	16.5	14.0	15.0	11.5	9.0	10.0
13	23.5	21.0	22.0	20.0	18.0	19.0	18.5	16.5	17.5	12.5	9.5	11.0
14	24.0	22.0	23.0	20.5	18.5	19.5	18.0	16.5	17.5	12.0	10.0	11.5
15	23.5	22.5	23.0	21.5	19.5	20.5	18.0	16.5	17.5	12.0	9.5	11.0
16	23.0	21.5	22.0	22.5	20.5	21.5	19.0	17.5	18.0	12.0	10.5	11.5
17	23.0	21.0	22.0	21.5	20.5	21.0	18.5	17.0	18.0	11.0	8.5	10.0
18	24.0	22.0	23.5	21.0	19.5	20.5	18.0	16.0	17.0	10.5	8.5	10.0
19	25.0	23.5	24.5	21.5	20.0	20.5	18.5	17.0	17.5	10.0	7.5	8.5
20	25.5	24.0	25.0	22.5	21.0	22.0	17.5	16.0	16.5	10.0	7.0	8.5
21	25.5	24.0	25.0	22.0	20.0	21.0	15.5	13.5	14.5	10.5	8.5	9.5
22	25.0	23.0	24.5	20.0	18.5	19.5	15.0	13.0	14.0	10.5	8.0	9.5
23	23.5	22.0	23.0	21.5	19.0	20.0	16.0	13.5	14.5	11.0	8.5	10.0
24	24.5	22.5	23.5	21.5	20.5	21.0	16.5	14.5	15.5	12.0	9.5	11.0
25	25.0	23.5	24.5	21.0	20.5	20.5	16.0	14.0	15.0	11.5	9.5	11.0
26	25.5	24.0	25.0	20.0	18.5	19.0	14.5	12.5	13.5	11.5	8.5	10.5
27	25.5	24.0	25.0	19.5	18.5	19.0	15.0	13.0	13.5	11.5	9.5	11.0
28	25.5	24.0	25.0	19.0	17.5	18.5	16.0	13.0	14.5	12.0	10.0	11.0
29	25.0	23.0	24.0	18.0	15.5	17.0	15.0	13.5	14.0	12.0	10.0	11.0
30	25.5	24.5	25.0	16.5	15.0	15.5	15.5	14.0	14.5	11.5	10.0	11.0
31	26.0	24.5	25.0	---	---	---	16.0	14.0	15.0	11.5	9.5	10.5
MONTH	30.0	20.0	24.5	26.0	15.0	20.0	20.0	12.5	16.0	18.0	7.0	11.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	10.0	8.5	9.5	15.5	14.0	15.0	22.0	20.0	21.0	25.5	24.0	24.5
2	10.5	8.5	9.5	16.5	14.0	15.0	22.0	20.5	21.5	25.0	18.5	22.0
3	11.5	9.5	11.0	16.5	14.0	15.0	21.5	21.0	21.5	19.0	18.0	18.5
4	12.0	10.5	11.5	14.5	12.5	13.5	23.5	21.0	22.5	18.5	16.5	17.5
5	11.5	9.5	11.0	15.5	13.0	14.5	23.0	21.5	22.0	21.0	18.5	19.5
6	11.5	9.5	11.0	16.0	14.0	15.0	23.5	21.0	22.5	21.5	20.5	21.0
7	11.5	8.0	9.0	14.5	12.5	13.5	24.0	23.0	23.5	24.5	21.5	22.5
8	9.0	6.5	8.0	12.5	11.5	11.5	23.5	23.0	23.0	25.0	23.0	24.0
9	8.5	6.5	7.5	14.5	11.0	12.5	23.0	22.0	22.5	25.0	23.5	24.0
10	8.0	6.5	7.5	16.0	13.0	14.5	22.5	20.0	21.0	25.0	23.5	24.5
11	12.0	7.5	11.0	17.0	15.0	16.0	20.5	19.5	20.0	24.5	23.0	23.5
12	12.0	11.5	12.0	16.5	14.5	16.0	21.5	19.5	20.5	25.5	22.5	24.0
13	12.0	11.5	12.0	17.5	15.5	16.5	22.5	20.5	21.5	25.0	23.5	24.5
14	12.0	11.5	12.0	18.0	16.0	17.0	23.0	21.5	22.0	25.0	23.0	24.0
15	12.0	11.5	12.0	18.5	16.5	17.5	23.5	21.5	22.5	26.0	24.0	25.0
16	12.0	11.5	12.0	17.5	16.0	17.0	23.5	22.0	23.0	26.0	25.5	25.5
17	12.0	12.0	12.0	18.0	16.0	17.0	23.5	22.5	23.0	26.0	25.0	25.5
18	12.5	12.0	12.0	18.5	17.0	18.0	23.5	22.5	23.0	26.5	25.5	26.0
19	12.5	11.5	12.0	19.0	17.5	18.0	23.0	21.5	22.0	27.0	26.0	26.5
20	12.0	11.5	12.0	19.5	18.5	19.0	22.5	20.5	21.5	28.0	26.0	27.0
21	12.5	11.5	12.0	21.0	19.5	20.0	22.0	21.0	21.5	26.0	23.5	25.0
22	12.5	10.0	11.5	21.0	19.5	20.5	22.0	21.0	21.5	29.5	24.0	26.5
23	13.5	10.5	12.0	21.0	19.0	20.5	22.5	21.5	22.0	30.5	24.5	27.5
24	15.0	12.0	13.5	19.0	17.0	17.5	24.0	21.5	23.0	31.5	24.0	28.0
25	15.0	13.5	14.5	16.5	15.0	16.0	23.5	22.0	23.0	32.5	24.5	28.0
26	14.5	12.5	14.0	17.5	15.0	16.5	23.0	21.5	22.0	---	---	29.0
27	14.5	13.5	14.0	18.5	16.0	17.0	23.5	21.5	22.5	---	---	29.0
28	16.0	14.0	15.0	19.5	17.0	18.5	23.0	22.0	22.5	---	---	27.0
29	---	---	---	19.5	18.5	19.5	24.0	22.5	23.5	---	---	26.5
30	---	---	---	20.5	19.5	19.5	25.0	23.5	24.0	---	---	28.0
31	---	---	---	21.5	19.5	20.5	---	---	---	---	---	26.5
MONTH	16.0	6.5	11.5	21.5	11.0	16.5	25.0	19.5	22.0	32.5	16.5	25.0

TRINITY RIVER BASIN
08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	27.5	25.5	26.5	31.5	30.5	31.0	30.5	29.5	30.0	29.0	28.0	29.0
2	26.5	25.5	26.0	32.0	30.5	31.0	29.5	29.0	29.5	29.5	28.0	28.5
3	27.0	26.0	26.5	32.0	31.0	31.5	30.0	29.0	29.5	30.0	28.5	29.0
4	28.0	26.0	27.0	32.0	31.0	31.5	30.0	28.5	29.0	30.0	29.0	29.5
5	28.0	26.5	27.5	32.0	31.0	31.5	28.0	24.5	26.5	30.0	28.0	29.5
6	28.0	27.0	27.5	32.0	31.0	31.5	28.0	26.0	27.0	30.0	29.0	29.5
7	28.0	27.0	27.5	32.0	30.5	31.0	29.0	27.0	28.0	30.0	28.5	29.5
8	27.0	25.0	26.5	32.0	31.0	31.5	30.0	28.0	29.0	29.5	28.5	29.0
9	27.0	26.0	26.5	32.5	31.0	31.5	31.0	28.0	29.5	29.5	28.0	29.0
10	27.5	26.0	26.5	32.0	31.0	31.5	30.5	26.5	29.0	29.5	28.5	29.0
11	28.5	26.5	27.5	32.5	31.0	31.5	30.5	29.5	30.0	31.0	28.0	29.0
12	30.0	27.5	28.5	32.0	31.0	31.5	---	29.5	30.0	31.0	27.0	29.0
13	29.5	29.0	29.0	32.5	31.0	31.5	---	---	30.5	29.5	27.5	28.5
14	29.5	28.5	29.0	33.0	31.5	32.0	---	---	30.5	30.0	28.5	29.5
15	30.0	28.5	29.5	33.0	31.5	32.0	---	---	30.5	30.5	29.0	30.0
16	30.0	29.0	29.5	32.5	32.0	32.0	---	---	30.0	30.5	29.5	30.0
17	30.0	29.0	29.5	32.0	31.5	31.5	---	---	30.0	30.0	29.0	29.5
18	30.5	29.0	29.5	32.0	31.0	31.5	31.0	29.5	30.5	29.5	28.5	29.0
19	30.5	29.5	30.0	31.5	31.0	31.0	30.5	30.0	30.5	30.0	28.5	29.0
20	30.5	29.5	30.0	31.5	30.5	31.0	31.0	29.5	30.5	30.0	28.5	29.5
21	30.5	29.5	30.0	32.0	30.5	31.0	31.5	30.0	30.5	29.5	26.5	28.5
22	30.5	29.5	30.0	31.0	30.5	30.5	31.0	29.0	30.0	27.0	25.5	26.5
23	31.0	29.5	30.0	30.5	29.5	30.0	30.5	29.5	30.5	27.5	26.0	26.5
24	31.0	30.0	30.5	30.0	29.5	29.5	31.0	30.0	30.5	28.0	26.5	27.5
25	31.0	30.0	30.5	31.0	29.5	30.5	31.5	30.0	30.5	28.0	25.0	27.0
26	31.0	30.0	30.5	31.5	30.5	31.0	31.0	30.5	31.0	---	---	26.0
27	31.0	30.0	30.5	31.5	30.5	31.0	31.0	30.0	30.5	---	---	25.5
28	31.0	30.0	30.5	31.5	28.5	30.5	30.5	29.5	30.0	---	---	25.5
29	31.5	30.5	31.0	31.5	30.0	31.0	30.0	29.0	29.5	---	---	25.0
30	31.5	30.5	31.0	31.5	30.5	31.0	29.5	28.0	29.0	---	---	25.5
31	---	---	---	31.0	30.0	30.5	29.5	28.5	29.0	---	---	---
MONTH	31.5	25.0	29.0	33.0	28.5	31.0	31.5	24.5	29.5	31.0	25.0	28.5

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1.5	1.2	1.3	1.6	1.4	1.5	5.9	5.0	5.6	5.8	4.6	5.2
2	1.6	1.3	1.4	2.0	1.7	1.9	5.6	4.4	5.1	6.5	5.4	5.9
3	1.6	1.5	1.6	2.3	2.0	2.2	6.0	4.4	5.3	6.5	5.8	6.3
4	1.7	1.6	1.6	2.6	2.3	2.5	4.9	4.4	4.7	6.5	5.7	6.3
5	1.8	1.7	1.7	3.0	2.6	2.8	4.8	3.8	4.5	6.4	5.6	6.0
6	3.3	1.6	2.3	3.3	3.0	3.2	4.5	3.8	4.2	5.7	4.7	5.3
7	3.2	2.1	2.8	3.7	3.3	3.5	4.4	3.8	4.1	5.3	4.1	4.8
8	3.0	1.7	2.4	3.9	3.7	3.8	4.3	3.5	3.9	6.1	4.4	5.0
9	3.2	1.9	2.5	5.7	3.7	4.6	4.6	3.5	3.9	6.5	5.6	6.2
10	3.9	3.0	3.4	5.5	4.4	4.8	4.9	4.7	4.8	6.9	5.7	6.5
11	5.9	3.3	4.2	5.6	5.1	5.4	4.9	4.5	4.7	8.3	6.0	6.9
12	3.9	3.2	3.6	5.8	4.5	5.4	4.9	4.0	4.4	8.1	6.4	7.1
13	3.3	.2	2.5	6.0	5.2	5.6	4.0	3.2	3.7	6.7	5.9	6.3
14	2.7	1.9	2.3	5.8	4.6	5.5	4.1	2.9	3.8	6.0	4.9	5.7
15	2.3	1.4	1.9	5.2	4.2	4.8	4.2	2.9	3.8	6.7	4.9	5.9
16	2.0	1.0	1.4	4.8	4.0	4.5	4.2	3.4	3.9	7.0	6.0	6.3
17	1.6	.9	1.3	4.8	4.0	4.3	4.2	3.1	3.7	7.0	6.1	6.6
18	3.7	.9	3.5	4.5	3.6	4.1	4.3	3.4	3.9	7.6	6.5	7.2
19	3.7	2.5	3.0	4.9	3.7	4.4	4.5	3.2	4.0	7.9	7.0	7.6
20	3.2	2.1	2.7	4.4	3.4	4.0	4.9	3.4	4.3	8.1	7.2	7.7
21	3.1	1.7	2.5	4.9	3.7	4.3	5.6	4.7	5.1	7.6	7.0	7.2
22	3.6	2.1	2.7	4.7	3.7	4.2	5.7	5.1	5.5	7.8	6.7	7.1
23	3.5	2.5	3.2	4.3	1.0	3.4	5.8	4.9	5.5	7.6	6.3	7.1
24	2.9	1.8	2.5	3.7	2.7	3.3	5.8	4.6	5.2	6.7	4.5	5.8
25	2.6	1.7	2.1	3.9	2.5	3.4	5.7	4.4	5.1	5.6	3.8	4.5
26	2.1	.9	1.5	4.3	2.8	3.6	6.2	5.2	5.7	6.9	5.2	6.2
27	2.1	.8	1.4	4.9	3.8	4.4	6.3	5.3	5.9	6.7	5.7	6.1
28	2.3	1.0	1.5	5.3	4.5	4.9	6.3	5.3	5.8	7.1	6.4	6.8
29	2.5	1.6	2.1	6.1	4.6	5.1	6.0	4.9	5.5	7.1	6.0	6.7
30	1.6	1.2	1.4	6.0	4.7	5.3	5.6	4.0	4.9	7.4	5.8	6.7
31	1.5	1.2	1.4	---	---	---	5.5	4.6	5.1	9.1	6.7	7.8
MONTH	5.9	.2	2.3	6.1	1.0	4.0	6.3	2.9	4.7	9.1	3.8	6.4

TRINITY RIVER BASIN

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08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	8.8	7.5	8.2	5.2	4.0	4.8	5.0	.8	3.1	2.0	.1	1.1
2	8.0	6.8	7.5	5.2	4.2	4.9	4.1	.1	2.2	4.2	.1	1.0
3	8.1	7.1	7.9	5.1	4.0	4.7	2.4	.0	.8	3.7	.1	1.5
4	8.3	7.1	7.8	5.1	4.7	4.9	1.2	.0	.3	1.0	.0	.4
5	8.9	7.8	8.4	5.1	3.7	4.4	2.0	.6	1.2	.3	.1	.2
6	8.8	8.1	8.5	6.8	4.6	5.2	2.0	.1	1.1	.6	.3	.4
7	9.2	6.7	8.1	8.0	1.1	5.0	2.0	1.5	1.8	3.8	1.0	3.1
8	8.4	7.2	7.8	5.6	1.4	3.5	2.0	.3	1.3	4.2	2.7	3.6
9	9.7	7.7	8.9	5.8	4.0	5.1	1.9	.6	1.2	4.3	2.4	3.6
10	10.4	9.1	9.6	6.4	5.1	5.8	1.9	.0	1.0	3.2	.8	2.1
11	9.8	8.4	9.1	5.7	5.0	5.4	1.8	.0	.7	4.3	.8	2.1
12	11.2	8.0	9.3	5.0	3.4	4.5	3.2	.8	2.1	2.4	1.1	1.7
13	11.4	4.7	8.1	4.8	4.0	4.5	4.3	1.7	3.4	2.8	1.9	2.4
14	7.4	3.9	6.6	4.8	3.1	4.0	4.1	3.2	3.6	2.6	1.5	2.2
15	5.7	1.0	3.3	4.8	3.4	4.2	3.4	.8	2.8	2.1	1.5	1.9
16	5.6	.8	4.0	4.8	3.6	4.4	3.6	2.3	3.1	1.8	1.3	1.6
17	---	---	4.3	5.0	2.6	4.1	3.5	2.2	3.0	1.8	1.4	1.6
18	---	---	4.7	4.5	2.2	3.7	3.5	.6	2.6	3.1	1.4	2.1
19	---	---	5.0	4.5	2.3	3.8	3.8	1.9	3.2	2.9	.7	2.0
20	---	---	5.5	4.4	1.7	3.6	3.8	2.0	3.3	2.9	.1	1.2
21	---	---	5.8	3.8	1.9	3.0	3.7	1.1	3.2	---	.0	1.1
22	7.4	---	6.0	3.6	1.8	2.9	3.9	2.0	3.2	---	---	2.0
23	6.7	4.2	6.2	4.6	1.7	2.9	3.6	.3	2.1	2.8	2.0	2.4
24	6.6	5.4	5.9	4.1	.0	1.9	1.4	.0	.6	2.6	1.9	2.2
25	5.3	3.9	4.8	4.0	.9	2.4	3.4	.0	2.2	2.7	2.1	2.3
26	5.8	4.9	5.4	5.6	3.7	4.8	3.8	2.4	3.2	2.6	1.9	2.3
27	5.6	4.7	5.3	5.5	4.7	5.3	3.5	2.1	3.0	3.4	2.1	2.6
28	5.3	4.4	4.9	5.3	4.7	5.0	3.5	1.8	2.9	2.7	2.1	2.4
29	---	---	---	6.5	4.1	5.2	3.0	1.7	2.6	2.9	2.2	2.6
30	---	---	---	5.8	.1	3.9	2.4	.5	1.7	3.5	1.9	2.7
31	---	---	---	5.9	1.7	4.3	---	---	---	3.2	1.5	2.6
MONTH	11.4	.8	6.7	8.0	.0	4.3	5.0	.0	2.2	4.3	.0	2.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	4.7	2.5	3.2	3.9	1.2	2.5	4.7	1.8	3.5	3.1	1.4	2.3
2	3.7	2.2	3.0	3.7	1.1	2.4	4.8	1.7	3.4	2.9	1.3	2.1
3	3.5	1.9	2.7	4.0	1.2	2.8	3.9	1.4	2.9	3.0	1.4	2.1
4	3.8	2.3	3.0	3.7	1.3	2.7	3.8	.1	2.6	4.2	1.5	2.9
5	4.1	2.8	3.4	3.7	1.3	2.7	4.6	.0	1.6	4.3	2.4	3.4
6	4.2	2.5	3.2	3.4	1.4	2.6	1.3	.3	.9	4.0	2.1	3.3
7	3.6	1.8	2.5	3.7	1.3	2.7	2.5	1.3	1.9	4.3	2.0	3.3
8	3.0	1.3	2.1	4.2	1.3	2.9	3.1	2.1	2.7	4.1	1.8	3.1
9	3.7	2.0	2.9	3.8	1.3	2.5	---	2.2	3.3	3.7	1.7	2.8
10	3.7	2.3	2.9	3.5	1.3	2.6	---	1.8	3.0	3.5	1.7	2.8
11	3.3	2.0	2.6	3.1	.2	2.4	3.7	1.4	2.7	4.4	2.1	3.1
12	4.9	2.4	3.5	3.5	1.0	2.4	---	1.5	3.1	4.6	1.5	2.3
13	4.7	2.0	3.6	2.8	1.2	2.3	---	---	3.5	3.0	1.6	2.3
14	5.6	2.3	3.4	2.6	1.0	1.9	---	---	3.6	3.0	1.0	2.2
15	4.0	1.8	3.1	2.5	1.0	1.7	---	---	3.5	3.1	.7	2.1
16	4.3	2.3	3.3	4.1	1.0	2.0	---	---	3.3	3.4	.2	1.7
17	4.4	2.5	3.4	4.4	1.5	3.2	---	2.4	3.2	4.3	2.0	3.3
18	4.7	2.3	3.5	4.3	1.3	3.1	4.8	1.4	3.0	5.0	2.9	3.9
19	5.5	2.6	4.0	3.8	1.4	3.0	3.7	1.1	2.3	4.8	2.5	3.8
20	5.3	.7	2.8	3.9	1.4	2.8	3.8	.9	2.5	4.4	2.1	3.4
21	5.9	.9	3.0	4.6	1.4	2.9	4.0	1.1	2.7	4.2	2.2	3.1
22	5.7	2.1	3.8	3.5	1.2	2.2	4.3	.1	1.2	2.9	1.5	2.4
23	4.1	1.9	2.9	3.1	.9	2.0	2.2	.6	1.4	2.7	1.2	2.2
24	3.7	1.7	2.6	2.2	.5	1.1	2.0	.6	1.4	2.9	1.9	2.4
25	3.6	1.9	2.8	3.5	.4	1.5	1.9	.5	1.2	---	1.7	2.5
26	3.5	1.8	2.8	2.7	.3	1.1	2.2	.6	1.3	---	---	2.4
27	4.5	1.7	3.0	2.3	.3	.7	3.4	.6	2.0	---	---	2.3
28	4.4	1.2	3.2	.9	.2	.4	3.9	1.1	2.6	---	---	2.5
29	4.4	1.3	3.1	2.8	.7	1.5	3.5	.8	2.3	---	---	2.6
30	4.3	1.4	2.9	3.2	.9	2.0	3.4	1.1	2.1	---	---	2.7
31	---	---	---	3.6	.9	2.4	4.1	1.6	2.7	---	---	---
MONTH	5.9	.7	3.1	4.6	.2	2.2	4.8	.0	2.5	5.0	.2	2.7

TRINITY RIVER BASIN

08057445 PRAIRIE CREEK AT U.S. HIGHWAY 175, DALLAS, TX

LOCATION.--Lat 32°42'17", long 96°40'11", Dallas County, Hydrologic Unit 12030105, on left bank at downstream side of the downstream access road bridge on U.S. Highway 175, 3.4 mi (5.5 km) upstream from mouth, and 9.0 mi (14.5 km) southeast of Dallas City Hall.

DRAINAGE AREA.--9.03 mi² (23.39 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 390.00 ft (118.872 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Four recording rain gages were operated in basin above station during the year. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,970 ft³/s (55.8 m³/s) Apr. 19, 1976, gage height, 22.38 ft (6.821 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 429 ft³/s (12.1 m³/s) Feb. 12, gage height, 15.59 ft (4.752 m), no peak above base of 900 ft³/s (25.5 m³/s); no flow Oct. 1-9 and June 30 to July 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.66	2.2	.70	1.4	1.0	.29	.10	.69	.00	.01	.02
2	.00	.59	.56	.72	1.3	1.1	.30	1.0	1.3	.00	.02	.04
3	.00	.55	.29	.69	1.3	1.0	.33	22	.32	.00	.01	.04
4	.00	.66	.43	.96	.70	1.0	.34	.67	.17	.00	.02	.04
5	.00	.62	.18	.90	.42	1.1	.31	.30	.13	.00	3.1	.04
6	.00	.66	.14	1.0	.29	8.0	.62	.13	1.6	.00	.19	.03
7	.00	.66	.13	1.0	.67	69	.50	.14	2.5	.00	.09	.03
8	.00	1.7	.20	.66	1.0	2.5	.37	.10	1.4	.00	.05	.02
9	.00	1.9	.12	.69	1.1	1.5	.29	.08	.35	.00	.02	.03
10	.55	.67	.15	.66	2.8	1.3	13	.08	.13	.01	.02	.03
11	.52	.50	.15	1.6	3.0	.56	1.6	4.2	.08	.02	.02	.03
12	.33	.42	.23	3.4	133	.47	.50	6.4	.07	.02	.02	.66
13	.29	.44	.17	3.0	18	.58	.20	1.0	.14	.02	.02	.10
14	.25	.44	.21	1.5	3.7	.60	.14	.17	.15	.02	.02	.05
15	.33	.40	.23	1.0	2.8	.58	.13	.09	.09	.02	.02	.04
16	.38	.42	.31	1.5	2.4	.45	.09	.06	.06	.01	.02	.03
17	.45	.37	.28	1.4	2.5	.39	.07	.07	.05	.01	.02	.02
18	.38	.41	.37	.78	6.8	.32	.08	.07	.05	.01	.02	.02
19	.52	.40	.35	.87	6.5	.37	.06	.07	.04	.01	.02	.02
20	.38	.40	.36	.79	5.9	.40	.06	.96	.04	.01	.02	.01
21	.38	.32	1.3	.66	3.5	.37	.07	69	.03	.01	.02	.01
22	.38	.36	.39	.78	2.5	.36	.06	2.7	.04	.02	.02	.01
23	.59	.42	.32	.89	2.5	17	.06	.60	.05	.01	.02	.02
24	.78	.39	.37	.96	2.3	29	.05	.17	.03	.01	.02	.02
25	.59	.35	.35	1.2	1.3	1.6	.03	.09	.03	.01	.02	.02
26	.59	.40	.41	.89	1.3	1.1	.05	.07	.02	.01	.02	.01
27	.55	.33	.45	.62	1.1	.53	.06	.06	.01	.01	.02	.02
28	.55	.23	.45	.62	1.2	.45	.05	1.0	.01	.01	.04	.02
29	.59	.57	.54	.49	---	.37	.07	7.4	.01	.01	.02	.02
30	.59	2.2	.62	.34	---	.37	.08	2.5	.00	.01	.02	.01
31	.73	---	.80	.66	---	.32	---	.56	---	.01	.02	---
TOTAL	10.70	18.44	13.06	31.93	211.28	143.69	19.86	121.84	9.59	.28	3.97	1.46
MEAN	.35	.61	.42	1.03	7.55	4.64	.66	3.93	.32	.009	.13	.049
MAX	.78	2.2	2.2	3.4	133	69	13	69	2.5	.02	3.1	.66
MIN	.00	.23	.12	.34	.29	.32	.03	.06	.00	.00	.01	.01
CFSM	.04	.07	.05	.11	.84	.51	.07	.44	.04	.001	.01	.005
IN.	.04	.08	.05	.13	.87	.59	.08	.50	.04	.00	.02	.01
AC-FT	21	37	26	63	419	285	39	242	19	.6	7.9	2.9
(††)	1.55	2.50	.33	1.49	4.32	3.15	1.48	6.40	1.28	.13	2.20	1.61
CAL YR 1977 TOTAL	1944.91			MEAN 5.33	MAX 367	MIN .00	CFSM .59	IN 8.01	AC-FT 3860	†† 32.14		
WTR YR 1978 TOTAL	586.10			MEAN 1.61	MAX 133	MIN .00	CFSM .18	IN 2.41	AC-FT 1160	†† 26.44		

†† Weighted-mean rainfall, in inches, based on four rain gages.

08057450 TENMILE CREEK AT STATE HIGHWAY 342 AT LANCASTER, TX

LOCATION.--Lat 32°34'42", long 96°45'21", Dallas County, Hydrologic Unit 12030105, on left bank at downstream side of bridge on State Highway 342, 0.1 mi (0.2 km) downstream from Missouri, Kansas, and Texas Railroad Co. bridge, 0.5 mi (0.8 km) downstream from Deep Branch, 1.0 mi (1.6 km) south of Lancaster, and 14.1 mi (22.7 km) upstream from mouth.

DRAINAGE AREA.--52.8 mi² (136.8 km²).

PERIOD OF RECORD.--October 1969 to current year.

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

REMARKS.--Records good. Flow is slightly regulated by numerous small ponds above station. Low flows are partly sustained by effluent from the municipalities of Duncanville and De Soto. Five recording rain gages are operated in basin above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 35.4 ft³/s (1.003 m³/s), 9.10 in/yr (231 mm/yr), 25,650 acre-ft/yr (31.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s (365 m³/s) Sept. 27, 1973, elevation, 466.00 ft (142.037 m), from floodmarks, from rating curve extended above 5,100 ft³/s (144 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation since 1942, 468.4 ft (142.77 m) June 1, 1964 (discharge not determined), from information by Corps of Engineers. Other outstanding floods occurred in 1908, 1942, 1949, 1957, and 1966 (elevations and discharges unknown) according to the Corps of Engineers. The flood of May 6, 1969, reached an elevation of 466.0 ft (142.04 m), from floodmarks at downstream side of bridge, and a discharge of 12,900 ft³/s (365 m³/s), on the basis of a contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s (19.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Elevation (ft) (m)				
Feb. 12	1600	707	20.0	447.85	136.505	May 11	2130	737	20.9	448.08	136.575
Apr. 24	2045	*1,270	36.0	451.76	137.696	May 21	0830	1,080	30.6	450.56	137.331

Minimum discharge, 0.01 ft³/s (0.0003 m³/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP				
1	1.1	15	7.4	2.0	15	20	20	36	19	.76	.05	.18				
2	1.0	9.5	2.7	2.0	7.8	21	19	91	18	.60	.06	.51				
3	1.3	3.0	2.4	2.0	5.3	19	17	111	16	.47	.05	.43				
4	1.3	3.2	2.3	2.1	4.1	18	17	28	15	.47	.05	.22				
5	1.1	3.4	2.2	2.3	4.0	18	17	22	13	.42	.73	1.7				
6	2.4	3.3	1.7	2.2	4.0	31	19	20	13	.32	5.4	.20				
7	2.0	3.4	1.4	2.4	14	142	15	19	13	.24	1.2	.06				
8	1.6	47	1.9	2.0	10	40	14	16	12	.19	.58	.03				
9	1.5	9.5	2.0	1.9	15	35	14	14	9.3	.13	.33	.02				
10	14	3.9	1.8	1.4	16	32	56	13	8.2	.13	.28	.04				
11	29	3.1	2.1	10	18	29	18	101	7.3	.15	.19	.05				
12	3.8	2.9	2.5	12	266	26	15	57	6.4	.16	.12	1.1				
13	1.8	2.8	3.3	4.6	62	29	13	20	5.3	.08	.09	.76				
14	1.8	2.8	2.8	3.7	28	25	12	17	5.4	.07	.07	.18				
15	2.0	3.4	3.8	3.2	26	24	12	15	4.9	.07	.04	.06				
16	2.0	3.5	4.4	7.3	23	22	11	14	4.2	.05	.04	.06				
17	2.8	3.1	5.0	5.5	31	22	10	14	3.5	.03	.04	.07				
18	2.1	2.9	4.0	3.6	34	21	8.6	13	3.2	.03	.04	.07				
19	2.2	3.5	2.9	5.2	35	20	7.8	11	2.8	.04	.04	.07				
20	1.9	4.3	2.3	3.1	42	22	7.8	110	2.4	.04	.03	.08				
21	2.3	3.4	2.3	3.2	37	50	7.5	331	2.2	.02	.33	.08				
22	21	3.7	2.7	3.8	31	24	8.0	58	2.0	.02	9.4	.08				
23	17	3.1	3.2	5.1	29	50	8.6	38	1.8	.02	.48	.08				
24	4.9	3.2	3.3	5.5	26	73	155	32	1.5	.25	.09	.08				
25	2.7	4.0	2.7	7.4	24	34	41	28	1.6	.19	.06	.09				
26	2.3	3.8	2.4	5.9	22	30	15	25	1.1	.09	.03	.08				
27	2.2	3.6	2.5	3.9	21	28	13	22	.94	.06	.02	.09				
28	2.1	4.1	2.7	3.9	21	27	12	37	.77	.04	.20	.09				
29	2.9	16	3.4	4.0	---	24	11	51	.82	.07	6.5	.11				
30	2.4	13	3.3	3.2	---	22	9.3	22	.82	.07	.44	.12				
31	4.6	---	2.5	9.9	---	21	---	19	---	.05	.18	---				
TOTAL	141.1	191.4	89.9	134.3	871.2	999	603.6	1405	195.45	5.33	119.23	6.79				
MEAN	4.55	6.38	2.90	4.33	31.1	32.2	20.1	45.3	6.52	.17	3.85	.23				
MAX	29	47	7.4	12	266	142	155	331	19	.76	.73	1.7				
MIN	1.0	2.8	1.4	1.4	4.0	18	7.5	11	.77	.02	.02	.02				
CFSM	.09	.12	.06	.08	.59	.61	.38	.86	.12	.003	.07	.004				
IN.	.10	.13	.06	.09	.61	.70	.43	.99	.14	.00	.08	.00				
AC-FT	280	380	178	266	1730	1980	1200	2790	388	11	236	13				
(††)	2.34	2.15	.19	1.64	3.53	2.57	2.22	6.50	.19	.27	3.05	.73				
CAL YR 1977	TOTAL	12000.39	MEAN	32.9	MAX	1750	MIN	.57	CFSM	.62	IN	8.45	AC-FT	23800	††	32.29
WTR YR 1978	TOTAL	4762.30	MEAN	13.0	MAX	331	MIN	.02	CFSM	.25	IN	3.36	AC-FT	9450	††	25.38

†† Weighted-mean rainfall, in inches, based on five rain gages.

TRINITY RIVER BASIN

08058900 EAST FORK TRINITY RIVER AT MCKINNEY, TX

LOCATION.--Lat 33°14'38", long 96°36'31", Collin County, Hydrologic Unit 12030106, on downstream side of highway embankment near left end of main channel bridge on State Highways 5 and 121, 750 ft (230 m) downstream from Honey Creek, 1.2 mi (1.9 km) upstream from Southern Pacific Railway Co. bridge, 1.7 mi (2.7 km) upstream from Clemons Creek, 3.3 mi (5.3 km) north of McKinney, 26.1 mi (42.0 km) upstream from Lavin Dam, and 86.5 mi (139.2 km) upstream from mouth.

DRAINAGE AREA.--164 mi² (425 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 528.74 ft (161.160 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. At end of year, flow from 89.1 mi² (230.8 km²) above this station was affected at times by the discharge from the flood-detention pools of 49 floodwater-retarding structures with a combined detention capacity of 26,080 acre-ft (32.2 hm³). Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft³/s (371 m³/s) Mar. 27, 1977, gage height, 19.84 ft (6.047 m), from rating curve extended above 800 ft³/s (22.7 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1913, about 28 ft (8.5 m) in April 1942, discharge not determined, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR 1977 WATER YEAR.--Maximum discharge, 13,100 ft³/s (371 m³/s) Mar. 27, gage height, 19.84 ft (6.047 m), from rating curve extended above 800 ft³/s (22.7 m³/s); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 985 ft³/s (27.9 m³/s) Mar. 24, gage height, 14.68 ft (4.474 m), from rating curve extended above 800 ft³/s (22.7 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	4.2	1.6	.87	17	30	960	150	6.4	45	136	.00
2	.00	2.6	1.5	.76	20	28	792	130	5.8	35	31	.00
3	.00	1.8	1.5	.81	557	472	579	110	5.4	28	16	.00
4	.00	1.4	1.4	1.1	340	350	460	90	5.0	22	11	.00
5	.00	1.3	1.4	1.1	199	168	358	80	4.4	19	7.0	.00
6	.00	1.3	8.2	1.4	150	119	296	70	3.8	17	4.8	.00
7	.00	1.1	14	1.2	113	94	252	60	3.5	16	3.5	.00
8	.00	1.3	6.0	1.4	86	76	206	50	3.5	13	2.7	.00
9	.00	1.3	4.2	1.5	68	65	134	45	3.3	12	2.3	.00
10	.00	1.3	3.3	1.4	53	60	69	40	3.0	10	1.8	.00
11	.00	1.4	7.2	1.4	1570	64	55	35	2.9	11	1.4	.00
12	.00	1.4	6.0	1.2	2200	58	51	30	15	9.7	5.5	.00
13	.00	1.4	5.2	46	489	42	43	27	110	9.3	3.5	.00
14	.00	1.3	4.2	292	320	35	42	24	10	7.9	2.3	.00
15	.00	1.5	3.8	385	241	32	366	22	6.8	7.2	2.4	.00
16	.00	1.8	3.5	249	188	29	91	20	17	6.6	2.4	.00
17	.00	1.8	3.0	113	147	28	71	18	17	6.0	2.1	.00
18	.00	1.7	3.0	72	121	28	5560	15	6.7	5.3	2.3	.00
19	.00	1.7	2.4	37	102	24	1420	14	5.0	4.8	.51	.00
20	.00	1.7	2.8	27	82	23	1830	14	4.2	4.1	.07	.00
21	.00	1.7	3.2	14	76	22	862	22	3.7	2.3	.04	.00
22	.00	1.7	2.8	9.1	71	20	644	22	3.3	1.6	.20	.00
23	.00	1.7	2.7	30	92	19	528	15	3.2	.09	.76	.00
24	.00	1.6	2.4	120	83	18	441	12	3.2	2.0	1.8	.00
25	20	1.7	2.4	82	62	18	371	11	3.3	4.5	1.2	.00
26	6.3	1.7	2.1	43	51	19	300	9.4	3.3	2.7	.10	.00
27	2.2	1.5	1.4	27	38	5990	260	8.5	565	17	.00	.00
28	1.8	1.5	1.4	18	33	4820	230	10	211	9.3	.00	.00
29	5.8	1.5	1.2	8.8	---	2760	200	8.4	106	6.6	.00	.00
30	51	1.5	1.2	7.6	---	1710	170	7.6	67	6.2	.00	.00
31	11	---	1.0	6.8	---	1320	---	6.7	---	5.5	.00	---
TOTAL	98.10	49.4	106.0	1601.44	7569	18541	17641	1176.6	1207.7	346.69	242.68	.00
MEAN	3.16	1.65	3.42	51.7	270	598	588	38.0	40.3	11.2	7.83	.000
MAX	51	4.2	14	385	2200	5990	5560	150	565	45	136	.00
MIN	.00	1.1	1.0	.76	17	18	42	6.7	2.9	.09	.00	.00
AC-FT	195	98	210	3180	15010	36780	34990	2330	2400	688	481	.00
CAL YR 1976	TOTAL	5863.25	MEAN	16.0	MAX	511	MIN	.00	AC-FT	11630		
WTR YR 1977	TOTAL	48579.61	MEAN	133	MAX	5990	MIN	.00	AC-FT	96360		

TRINITY RIVER BASIN

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08058900 EAST FORK TRINITY RIVER AT MCKINNEY, TX--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3.7	14	2.6	50	.05	.00	.00
2	.00	.00	.00	.00	.00	3.8	13	23	42	.03	.00	.00
3	.00	.00	.00	.00	.00	3.7	12	245	36	.05	.00	.00
4	.00	.00	.00	.00	.00	3.6	11	53	32	.04	.00	.00
5	.00	.00	.00	.00	.00	3.2	10	280	75	.01	.00	.00
6	.00	.00	.00	.00	.00	3.0	9.9	177	78	.00	.00	.00
7	.00	.00	.00	.00	.00	4.5	9.2	103	37	.00	.00	.00
8	.00	.00	.00	.00	.00	5.5	8.0	56	26	.00	.03	.00
9	.00	.00	.00	.00	.00	6.2	7.2	28	18	.00	.00	.00
10	.00	.00	.00	.00	.00	5.8	84	18	12	.00	.00	.00
11	.00	.00	.00	.00	.00	5.2	72	14	9.0	.00	.00	.00
12	.00	.00	.00	.00	12	4.9	33	13	6.9	.00	.00	.00
13	.00	.00	.00	.00	96	4.7	22	11	119	.00	.00	.00
14	.00	.00	.00	.00	9.0	4.7	17	8.2	19	.00	.00	.00
15	.00	.00	.00	.00	3.3	4.9	13	6.7	9.3	.00	.00	.00
16	.00	.00	.00	.00	3.2	4.7	11	5.6	6.3	.00	.00	.00
17	.00	.00	.00	.00	4.1	4.4	9.5	5.2	4.5	.00	.00	.00
18	.00	.00	.00	.00	4.2	4.3	8.2	4.9	3.1	.21	.00	.00
19	.00	.00	.00	.00	4.1	4.2	6.8	4.3	2.4	.28	.00	.00
20	.00	.00	.00	.00	4.3	3.9	5.8	3.6	1.7	.29	.00	.00
21	.00	.00	.00	.00	3.9	4.0	5.3	6.5	1.3	.17	.00	.00
22	.00	.00	.00	.00	4.3	5.0	4.9	8.9	1.0	.00	.00	.00
23	.00	.00	.00	.00	5.0	7.3	5.0	6.4	.77	.00	.00	.00
24	.00	.00	.00	.00	6.5	601	5.2	4.7	.57	.00	.00	.00
25	.00	.00	.00	.00	5.1	156	4.3	4.0	.45	.00	.00	.00
26	.00	.00	.00	.00	4.4	92	3.7	3.3	.35	.00	.00	.00
27	.00	.00	.00	.00	3.7	51	3.3	2.9	.27	.00	.00	.00
28	.00	.00	.00	.00	3.7	33	3.1	134	.17	.00	.00	.00
29	.00	.00	.00	.00	---	25	3.8	407	.10	.00	.00	.00
30	.00	.00	.00	.00	---	20	3.1	108	.07	.00	.00	.00
31	.00	---	.00	.00	---	17	---	69	---	.00	.00	---
TOTAL	.00	.00	.00	.00	176.80	1100.2	418.3	1816.8	592.25	1.13	.03	.00
MEAN	.000	.000	.000	.000	6.31	35.5	13.9	58.6	19.7	.036	.001	.000
MAX	.00	.00	.00	.00	96	601	84	407	119	.29	.03	.00
MIN	.00	.00	.00	.00	.00	3.0	3.1	2.6	.07	.00	.00	.00
AC-FT	.00	.00	.00	.00	351	2180	830	3600	1170	2.2	.06	.00
CAL YR 1977	TOTAL	48326.11	MEAN	132	MAX	5990	MIN	.00	AC-FT	95850		
WTR YR 1978	TOTAL	4105.51	MEAN	11.2	MAX	601	MIN	.00	AC-FT	8140		

08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX

LOCATION.--Lat 33°17'40", long 96°28'58", Collin County, Hydrologic Unit 12030106, on left bank at upstream side of highway embankment of bridge on Farm Road 545, 3.5 mi (5.6 km) upstream from Hatler Ranch, 4.8 mi (7.7 km) west of Blue Ridge, 7.4 mi (11.9 km) upstream from Stiff Creek, 14.7 mi (23.7 km) upstream from mouth, and 24.7 mi (39.7 km) upstream from Lavan Dam.

DRAINAGE AREA.--83.1 mi² (215.2 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 536.29 ft (163.461 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for Aug. 2 to Sept. 7, which are fair. At end of year, flow from 47.4 mi² (122.8 km²) above this station was affected at times by discharge from the flood-detention pools of 34 floodwater-retarding structures with a combined detention capacity of 12,710 acre-ft (15.7 hm³). Recording rain gage located at station. Several observations of water temperature were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,650 ft³/s (132 m³/s) Apr. 19, 1977, gage height, 16.93 ft (5.160 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1900, 20.7 ft (6.31 m) probably in July 1913. From information furnished by Texas Department of Highways and Public Transportation. The probable date is from published records for discontinued station 08059500 located 9.7 mi (15.6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 515 ft³/s (14.6 m³/s) Mar. 24, gage height, 9.02 ft (2.749 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.38	2.9	11	2.2	7.1	.00	.00	.00
2	.00	.00	.00	.07	.40	3.0	10	4.9	4.0	.00	.00	.00
3	.00	.00	.00	.08	.42	3.1	9.2	114	3.0	.00	.00	.00
4	.00	.00	.00	.07	.42	3.0	9.0	37	2.2	.00	.00	.00
5	.00	.00	.00	.08	.46	2.1	9.5	89	16	.00	.00	.00
6	.00	.00	.00	.12	.37	1.8	11	65	127	.00	.00	.00
7	.00	.00	.00	.22	.37	3.3	11	40	46	.00	.00	.00
8	.00	.00	.00	.15	.37	6.0	9.4	26	30	.00	.00	.00
9	.00	.00	.00	.12	.58	6.6	8.2	16	17	.00	.00	.00
10	.00	.00	.00	.69	.59	5.4	30	11	8.5	.00	.00	.00
11	.00	.00	.00	3.6	.55	4.7	37	8.3	5.2	.00	.00	.00
12	.00	.00	.00	2.6	3.9	4.9	22	7.2	3.5	.00	.00	.00
13	.00	.00	.00	2.9	47	4.9	17	6.2	3.5	.00	.00	.00
14	.00	.00	.00	4.4	9.7	4.7	13	3.6	5.7	.00	.00	.00
15	.00	.00	.00	4.6	4.0	5.1	11	2.7	5.1	.00	.00	.00
16	.00	.00	.00	4.6	2.8	4.9	9.4	2.0	3.2	.00	.00	.00
17	.00	.00	.00	2.9	2.5	4.8	8.7	1.7	2.0	.00	.00	.00
18	.00	.00	.00	2.7	1.8	7.9	8.5	1.6	1.5	.00	.00	.00
19	.00	.00	.00	3.1	1.7	8.3	7.0	1.6	1.4	.00	.00	.00
20	.00	.00	.00	2.4	2.2	7.0	5.3	1.4	.83	.00	.00	.00
21	.00	.00	.00	1.7	1.6	8.0	4.6	1.9	.43	.00	.00	.00
22	.00	.00	.00	1.7	2.1	8.7	3.1	8.7	.44	.00	.00	.00
23	.00	.00	.00	1.7	2.6	14	2.2	6.6	.32	.00	.00	.00
24	.00	.00	.00	2.4	7.0	242	4.4	4.1	.15	.00	.00	.00
25	.00	.00	.00	4.0	7.3	87	3.6	3.0	.06	.00	.00	.00
26	.00	.00	.00	4.0	5.1	35	2.9	2.4	.00	.00	.00	.00
27	.00	.00	.00	4.2	3.4	24	2.5	1.9	.00	.00	.00	.00
28	.00	.00	.00	4.0	2.9	19	2.4	21	.00	.00	.00	.00
29	.00	.00	.00	1.5	---	15	2.2	68	.00	.00	.00	.00
30	.00	.00	.00	.74	---	13	2.0	31	.00	.00	.00	.00
31	.00	---	.00	.35	---	12	---	15	---	.00	.00	---
TOTAL	.00	.00	.00	61.69	112.51	572.1	287.1	605.0	294.13	.00	.00	.00
MEAN	.000	.000	.000	1.99	4.02	18.5	9.57	19.5	9.80	.000	.000	.000
MAX	.00	.00	.00	4.6	47	242	37	114	127	.00	.00	.00
MIN	.00	.00	.00	.00	.37	1.8	2.0	1.4	.00	.00	.00	.00
AC-FT	.00	.00	.00	122	223	1130	569	1200	583	.00	.00	.00
CAL YR 1977	TOTAL	22650.84	MEAN	62.1	MAX	2150	MIN	.00	AC-FT	44930		
WTR YR 1978	TOTAL	1932.53	MEAN	5.29	MAX	242	MIN	.00	AC-FT	3830		

TRINITY RIVER BASIN

509

08060500 LAVON LAKE NEAR LAVON, TX

LOCATION.--Lat 33°01'54", Long 96°28'56", Collin County, Hydrologic Unit 12030106, in right abutment of spillway in dam on East Fork Trinity River, 3,850 ft (1,170 m) upstream from St. Louis Southwestern Railway Lines bridge, 4,000 ft (1,200 m) upstream from bridge on State Highway 78, 2.9 mi (4.7 km) west of Lavon, and 55.9 mi (89.9 km) upstream from mouth.

DRAINAGE AREA.--770 mi² (1,990 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1953 to current year. Prior to October 1970, published as Lavon Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 20, 1954, nonrecording gage in the approach channel at same datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 18,860 ft (5,749 m) long, including a 568 ft (173 m) gated spillway with twelve 40.0 by 28.0 ft (12.2 by 8.5 m) tainter gates. The original dam was 9,499 ft (2,895 m) long, but conservation capacity was increased to the present size in December 1975. Deliberate impoundment began Sept. 14, 1953, and the dam was completed in October 1953. The low-flow outlets consists of five 36-inch-diameter (914 mm) controlled sluice gates. The capacity table is based on Table No. 9 (Design Memo 1970 Conditions). The lake was designed for flood control and water conservation. Water for municipal supply can be released down to elevation 453.0 (138.07 m). Flow is affected at times by discharge from flood-detention pools of 147 floodwater-retarding structures with combined detention capacity of 68,450 acre-ft (84.4 hm³). These structures control runoff from 239 mi² (619 km²) in the East Fork Trinity River, Pilot Grove Creek, and Sister Grove Creek drainage basins. 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.....	514.0	-
Design flood.....	509.0	921,200
Top of tainter gates.....	503.5	748,200
Top of conservation pool.....	492.0	456,500
Crest of spillway (sill of tainter gates).....	475.5	178,300
Lowest gated outlet (invert).....	453.0	12,700

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 462,800 acre-ft (571 hm³) May 26, 1957, elevation, 491.90 ft (149.931 m); minimum since lake first filled in 1957, 80,150 acre-ft (98.8 hm³) Apr. 17, 1976, elevation, 465.96 ft (142.025 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 346,600 acre-ft (427 hm³) Oct. 1, elevation, 486.41 ft (148.258 m); minimum, 283,100 acre-ft (349 hm³) Sept. 30, elevation, 482.73 ft (147.136 m).

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

482.0	271,400	486.0	339,200
484.0	304,300	488.0	376,200

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	346100	333100	325900	316400	312300	319400	327500	323800	340100	334900	309200	292500
2	345400	332800	325200	316100	312300	319900	327100	327600	339900	334400	308700	292000
3	344100	332400	325000	315800	312000	319400	327300	328900	339600	333500	308500	291700
4	343600	332200	325000	315400	312000	319000	327100	329400	339200	332800	307800	291500
5	343000	331900	325000	315400	311800	318400	326900	331500	339600	331900	309400	291400
6	342500	331500	324100	315400	311800	319700	327500	333500	341800	331200	308900	290400
7	342100	331200	323600	315200	312000	321500	327300	334200	344600	329900	308500	290000
8	341600	332400	323400	314700	312100	321500	326900	334600	345400	329200	307800	289700
9	340900	332200	323200	314400	312100	321300	327600	334600	345000	328300	307500	289400
10	340700	331500	322500	314000	312000	321300	328500	334400	344100	327600	306800	289000
11	339600	331400	321800	314400	311800	321300	328900	334200	343700	326800	306300	288700
12	338700	331000	321800	314400	313800	321300	329100	333900	343900	325900	305600	290700
13	338300	330500	321800	314500	313800	321300	329100	333300	345600	325000	305100	290500
14	338000	330300	321500	314000	313800	321100	329400	333300	346100	324100	303900	290000
15	337400	329800	321500	314000	313800	321100	328500	333000	345700	323600	303100	289700
16	336500	329900	322000	314200	313800	320800	328300	332800	345000	322400	302600	289200
17	336000	329600	320800	314000	313800	320400	328500	332200	344300	321500	301900	288400
18	335800	329200	320300	314500	315800	319900	328200	331900	344500	320800	300700	288100
19	335500	328700	320100	314000	315800	319400	327500	331700	343700	319600	300400	287600
20	334900	328500	319600	313500	315100	320100	327100	332100	343600	318900	299900	287200
21	334600	328200	318900	313300	314900	320300	326200	334000	342500	318000	299200	287200
22	334400	327600	318200	313200	314900	320100	326200	333900	341400	317100	298500	286700
23	334200	327600	318200	313000	315100	321500	326400	333900	340500	316800	297900	286200
24	334000	327500	318000	313300	315900	325900	326400	333500	339800	316300	297400	285800
25	333900	326900	317700	313200	317000	327100	325900	333300	339000	315400	296900	285300
26	333300	326600	317500	313200	317500	327500	325300	332800	338300	314500	296200	284800
27	333100	326200	317000	313700	317700	327800	324600	332100	337600	313800	295200	284400
28	333000	326100	316800	313500	317700	327800	324100	335100	337300	312800	294500	284000
29	332400	325500	317100	312600	---	327800	323900	338700	336500	312300	294000	283600
30	332100	326200	316800	312300	---	327800	323600	339900	335500	311300	293700	283100
31	332100	---	316400	312300	---	327500	---	339900	---	310100	293200	---
MAX	346100	333100	325900	316400	317700	327800	329400	339900	346100	334900	309400	292500
MIN	332100	325500	316400	312300	311800	318400	323600	323800	335500	310100	293200	283100
(+)	485.60	485.27	484.71	484.47	484.78	485.34	485.12	485.04	485.79	484.34	483.34	482.73
(+)	-14000	-5900	-9800	-4100	+5400	+9800	-3900	+16300	-4400	-25400	-16900	-10100
(++)	6500	4530	4880	4480	4450	4960	5580	5980	7950	12430	9380	6810

CAL YR 1977 MAX 408800 MIN 96440 + 219600 †† 70540
WTR YR 1978 MAX 346100 MIN 283100 + -63000 †† 77930

† Elevation, in feet, at end of month.

± Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal and industrial uses by the North Texas Municipal Water District and the city of Garland.

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to September 1974, October 1975 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
NOV 16...	1403	328	8.0	140	5	49	3.4	10	.4
DATE		POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 16...		4.4	160	0	22	7.1	.3	2.2	177

511

LOCATION.--Lat 33°01'25", Long 96°28'31", Collin County, Hydrologic Unit 12030106, on left bank at downstream side of St. Louis Southwestern Railway Lines bridge, 150 ft (46 m) upstream from bridge on State Highway 78, 3,550 ft (1,082 m) downstream from Lavan Dam, 2.5 mi (4.0 km) west of Lavan, and 54.9 mi (88.3 km) upstream from mouth.

REVISÉD RECORDS.--WSP 1922: Drainage area.

REMARKS.--Records good except those for Jan. 2-31, which are fair. Flow is regulated by Lavan Lake (station 08060500). Several observations of water temperature were made during the year. Corps of Engineers gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s (1,100 m³/s) May 26, 27, 1957, from records of released flow from Lavan Lake furnished by Corps of Engineers; maximum gage height, 17.34 ft (5.285 m) May 26, 1957; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1894, 22.3 ft (6.80 m) in 1913 and in April 1942, from information by St. Louis Southwestern Railway Lines and local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39 ft³/s (1.10 m³/s) Feb. 12, May 28, gage height, 9.54 ft (2.908 m); no flow for many days.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.01	.11	1.0	.61	.11	.00	.05	.00	.00	.00
2	.00	.01	.00	.11	.75	.73	.11	.71	.02	.00	.00	.00
3	.00	.01	.00	.11	.57	.79	.11	5.9	.01	.00	.00	.00
4	.00	.01	.00	.11	.31	.81	.11	.17	.01	.00	.00	.00
5	.00	.01	.00	.11	.43	.51	.13	5.0	.00	.00	.00	.00
6	.00	.01	.00	.11	.61	1.3	.14	.26	.00	.00	.00	.00
7	.00	.03	.00	.07	1.1	3.8	.11	.14	.00	.00	.00	.00
8	.00	.10	.00	.07	1.2	.75	.11	.10	.00	.00	.00	.00
9	.00	.01	.00	.07	1.0	.37	.11	.05	.00	.00	.00	.00
10	.00	.00	.00	.07	.82	.25	.50	.05	.00	.00	.00	.00
11	.00	.00	.00	.16	.82	.27	.15	.04	.00	.00	.00	.00
12	.00	.00	.00	.22	13	.37	.09	.05	.00	.00	.00	.00
13	.00	.00	.00	.16	2.1	.42	.07	.04	.89	.00	.00	.00
14	.00	.00	.00	.16	1.0	.22	.07	.01	.21	.00	.00	.00
15	.00	.00	.00	.16	.82	.29	.05	.00	.04	.00	.00	.00
16	.00	.07	.01	.22	.74	.30	.04	.00	.00	.00	.00	.00
17	.00	.00	.01	.36	.97	.18	.03	.00	.00	.00	.00	.00
18	.00	.00	.01	.36	.94	.15	.03	.00	.00	.00	.00	.00
19	.00	.01	.11	1.2	.73	.13	.02	.00	.00	.00	.00	.00
20	.00	.03	1.2	1.5	1.1	.12	.01	.00	.00	.00	.00	.00
21	.00	.00	.07	1.5	.76	.19	.01	4.7	.00	.00	.00	.00
22	.00	.00	.07	1.5	.47	.16	.02	.52	.00	.00	.00	.00
23	.00	.00	.07	1.2	.47	1.7	.16	.06	.00	.00	.00	.00
24	.00	.00	.07	1.2	.42	1.8	.11	.02	.00	.00	.00	.00
25	.00	.00	.07	1.2	.50	.20	.04	.00	.00	.00	.00	.00
26	.00	.00	.07	1.2	.53	.14	.01	.00	.00	.00	.00	.00
27	.00	.01	.07	1.2	.54	.11	.00	.00	.00	.00	.00	.00
28	.00	.00	.07	1.2	.57	.11	.00	9.6	.00	.00	.00	.00
29	.00	.01	.11	1.2	---	.11	.00	3.7	.00	.00	.00	.00
30	.00	.03	.11	1.2	---	.11	.00	.40	.00	.00	.00	.00
31	.00	---	.11	1.2	---	.11	---	.12	---	.00	.00	---
TOTAL	.00	.35	2.24	19.24	34.27	17.11	2.45	31.64	1.23	.00	.00	.00
MEAN	.000	.012	.072	.62	1.22	.55	.082	1.02	.041	.000	.000	.000
MAX	.00	.10	1.2	1.5	13	3.8	.50	9.6	.89	.00	.00	.00
MIN	.00	.00	.00	.07	.31	.11	.00	.00	.00	.00	.00	.00
AC-FT	.00	.7	4.4	38	68	34	4.9	63	2.4	.00	.00	.00
CAL YR 1977	TOTAL	375.61	MEAN	1.03	MAX 130	MIN .00	AC-FT 745					
WTR YR 1978	TOTAL	108.53	MEAN	.30	MAX 13	MIN .00	AC-FT 215					

08061540 ROWLETT CREEK NEAR SACHSE, TX

LOCATION.--Lat 32°57'35", Long 96°36'51", Dallas County, Hydrologic Unit 12030106, on left bank at downstream side of bridge on State Highway 78, 150 ft (46 m) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 250 ft (76 m) downstream from Spring Creek, and 1.5 mi (2.4 km) southwest of Sachse.

DRAINAGE AREA.--120 mi² (311 km²).

PERIOD OF RECORD.--March 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 450.00 ft (137.160 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods Mar. 25, 26, Apr. 5-26, and May 3, 21-23, which are fair. No known diversion above station. The North Texas Municipal Water District reported the discharge of 16,080 acre-ft (7.50 hm³) of sewage effluent into a tributary above station. The city of Dallas maintains rain gage and gage-height telemeters at station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--10 years (water years 1969-78), 80.6 ft³/s (2.283 m³/s), 58,390 acre-ft/yr (72.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,500 ft³/s (835 m³/s) Mar. 27, 1977, gage height, 29.31 ft (8.934 m); no flow Aug. 24 to Sept. 2, 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1942, 35.4 ft (10.79 m) in 1942, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,880 ft³/s (81.6 m³/s) May 28, gage height, 19.28 ft (5.877 m), no other peaks above base of 2,000 ft³/s (56.6 m³/s); minimum, 0.66 ft³/s (0.019 m³/s) Aug. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	70	18	9.2	20	24	22	25	40	7.7	6.6	4.5
2	4.8	17	8.0	8.0	10	29	22	47	37	7.3	7.7	3.9
3	5.2	8.4	5.8	8.8	7.7	24	22	218	34	8.0	6.2	5.2
4	4.8	7.3	5.8	8.0	6.6	21	23	72	32	8.0	6.9	4.8
5	4.8	6.2	5.5	7.3	6.2	21	22	293	28	8.8	264	5.5
6	5.2	6.2	3.9	8.0	6.2	29	22	85	162	7.3	25	3.9
7	5.8	7.3	4.2	6.6	8.0	163	22	61	51	6.6	36	3.9
8	4.8	77	4.5	6.6	9.6	47	22	47	40	6.6	11	5.2
9	5.2	21	4.5	6.9	11	34	25	38	27	5.8	8.4	22
10	5.5	7.7	4.8	6.6	24	30	80	36	22	6.2	6.6	10
11	5.8	6.2	4.8	6.6	28	26	28	36	21	6.6	6.9	7.7
12	6.6	5.2	6.2	13	697	24	22	39	20	6.9	5.5	87
13	6.9	5.5	5.5	20	126	25	22	31	75	6.2	5.5	18
14	7.3	5.8	5.8	13	42	26	22	29	35	5.2	5.5	8.8
15	6.9	5.8	7.7	7.3	38	22	24	27	24	5.8	4.5	6.9
16	7.7	5.8	8.4	20	37	21	24	26	20	5.5	4.8	5.5
17	7.7	5.5	8.4	13	31	18	23	24	19	6.2	4.5	5.2
18	6.9	5.5	7.7	7.3	39	18	22	25	17	5.5	4.5	5.2
19	6.9	5.5	8.4	6.2	53	18	23	24	17	6.6	3.4	4.2
20	6.6	6.2	7.3	6.2	65	20	22	20	14	6.2	3.7	3.9
21	6.6	6.2	5.8	6.2	51	28	25	700	13	6.2	4.5	3.7
22	6.6	5.8	8.0	6.2	38	22	26	93	13	6.2	6.6	9.2
23	8.4	5.8	7.7	6.9	35	190	115	36	11	59	4.5	5.5
24	8.8	6.6	8.8	10	39	287	55	34	10	18	3.9	4.5
25	8.8	6.2	9.6	18	26	48	34	32	10	9.6	4.8	4.8
26	8.8	6.2	6.9	18	25	29	28	30	9.6	8.0	5.5	4.5
27	7.7	6.6	6.6	6.2	24	24	29	29	9.6	7.7	4.8	4.5
28	7.7	6.6	5.2	6.2	25	27	29	685	10	5.8	5.8	5.2
29	8.0	8.0	16	5.2	---	25	26	381	8.4	5.2	15	4.2
30	8.8	17	14	5.5	---	24	26	69	8.4	6.2	11	4.5
31	8.8	---	9.2	8.0	---	22	---	47	---	7.3	5.2	---
TOTAL	208.9	360.1	233.0	285.0	1528.3	1366	907	3339	838.0	272.2	498.8	271.9
MEAN	6.74	12.0	7.52	9.19	54.6	44.1	30.2	108	27.9	8.78	16.1	9.06
MAX	8.8	77	18	20	697	287	115	700	162	59	264	87
MIN	4.5	5.2	3.9	5.2	6.2	18	22	20	8.4	5.2	3.4	3.7
AC-FT	414	714	462	565	3030	2710	1800	6620	1660	540	989	539
CAL YR 1977	TOTAL	29905.5	MEAN 81.9	MAX 10400	MIN 1.9	AC-FT 59320						
WTR YR 1978	TOTAL	10108.2	MEAN 27.7	MAX 700	MIN 3.4	AC-FT 20050						

08061550 LAKE RAY HUBBARD NEAR FORNEY, TX

LOCATION.--Lat 32°48'00", long 96°29'45", Kaufman County, Hydrologic Unit 12030106, near right end of spillway in Forney Dam on East Fork Trinity River, 0.5 mi (0.8 km) upstream from Duck Creek, 1.8 mi (2.9 km) upstream from bridge on Interstate Highway 20, 3.8 mi (6.1 km) northwest of Forney, 24 mi (39 km) downstream from Lavan Dam, and 31.8 mi (51.2 km) upstream from mouth.

DRAINAGE AREA.--1,071 mi² (2,774 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1968 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 12,500 ft (3,810 m) long, including a 664 ft (202 m) gated spillway with fourteen 40 by 28 ft (12 by 9 m) tainter gates. Closure was made in September 1967, but the gates were not closed until Mar. 22, 1970. Low-flow releases are made through three 4.5 by 6.75 ft (1.4 by 2.06 m) sluiceways. Flow in each sluiceway is controlled by three sluice gates. The lake was built by the city of Dallas for municipal water supply. During the current year, records furnished by the city of Dallas show that they diverted 75,530 acre-ft (93.1 hm³) from the lake for municipal use, 3,040 acre-ft (3.75 hm³) was diverted for consumptive cooling by the Dallas Power and Light Co. electric generating plant, 74 acre-ft (91,200 m³) was diverted for irrigation by the Eastern Hills Country Club of Garland, and 47 acre-ft (58,000 m³) was diverted for irrigation by private individuals. The North Texas Municipal Water District reported 6,910 acre-ft (8.52 hm³) of sewage effluent returned to lake. At end of year, flow from 44.5 mi² (115.3 km²) above this station and below Lavan Lake (station 08060500) was partly controlled by 14 floodwater-retarding structures with a combined capacity of 14,470 acre-ft (17.8 hm³) below the flood-spillway crests, of which 1,950 acre-ft (2.40 hm³) is sediment-pool capacity. The capacity is these pools allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The area and capacity tables are based on surveys made in 1953 and 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.....	450.0	-
Design flood.....	440.5	611,500
Top of tainter gates.....	437.5	536,700
Top of conservation pool.....	435.5	489,900
Crest of spillway (sill of tainter gates).....	409.5	83,130
Lowest gated outlet (invert).....	388.0	80

COOPERATION.--Record of diversions were furnished by the city of Dallas. The area and capacity tables were furnished by Forrest and Cotton, Consulting Engineers for the city of Dallas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 500,900 acre-ft (618 hm³) June 4, 1973, elevation, 435.98 ft (132.887 m); minimum since first appreciable filling following closure of gates on Mar. 22, 1970, 326,600 acre-ft (403 hm³) Sept. 29, 30, 1978, elevation, 427.48 ft (130.296 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 402,700 acre-ft (497 hm³) Oct. 1, elevation, 431.45 ft (131.506 m); minimum 326,600 acre-ft (403 hm³) Sept. 29, 30, elevation, 427.48 ft (130.296 m).

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

427.0	318,000	430.0	373,900
428.0	336,100	431.0	393,700
429.0	354,700	432.0	414,000

CONTENTS, IN ACRE-Feet, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400500	391700	383300	372900	370000	376800	379200	375100	384300	369000	347400	334800
2	399300	390100	382900	371900	369400	378200	380400	377600	384100	368500	347200	334400
3	397700	389500	382900	371600	368800	377800	380600	378600	383300	367500	347000	334000
4	396900	389500	382900	371000	369000	376000	380000	378400	383300	366300	346400	334800
5	396900	388900	384100	371400	368800	375100	379400	378400	384100	365600	349400	333900
6	396100	388300	381100	371200	368300	377400	380600	379200	384300	364800	349200	333300
7	394900	387500	380200	372700	368800	380700	380200	379400	384900	363800	349000	332800
8	395900	389300	383500	371400	368800	380700	380000	380000	383900	363100	348700	333100
9	394700	389500	380600	370800	369400	380000	380200	379600	383100	362100	348100	332800
10	395500	388500	379200	369800	368500	378800	382100	379000	382300	361300	347500	331800
11	394500	388500	378200	370800	368800	379800	381100	379000	382300	360400	346800	332000
12	392900	388100	378600	371400	376800	379600	380900	379200	382100	359200	346200	331100
13	392300	387300	379000	371700	377000	379800	380700	378600	383100	358500	344900	332900
14	391700	387300	378400	370200	376800	379600	380200	378000	382300	357500	344400	332800
15	391900	386900	377400	369800	376800	379400	379600	377800	381300	357000	343800	332400
16	390900	386900	378000	372700	377200	378800	379200	377000	380400	356400	343100	331800
17	390300	386700	377600	370400	379800	378400	380900	376400	380000	355300	342100	330900
18	390500	385300	376800	372700	377800	376800	379000	376200	379600	354100	341400	330800
19	390100	384500	378000	370800	377600	376800	378800	376200	378800	353200	341400	330200
20	389300	387700	377000	370000	377800	376800	378000	378000	377800	352600	340700	329700
21	389300	384700	375300	370400	377600	377800	376600	380600	377800	351700	340300	330200
22	389100	383500	374300	370000	377800	377200	377400	381100	376400	351900	339700	329700
23	389100	384300	374100	369200	377400	383300	378400	380900	375500	352800	339200	329300
24	389500	384300	375500	370000	376800	384900	378400	380700	374500	352200	338600	328900
25	389500	383500	373700	370600	377800	384300	377600	380400	373300	351900	337900	328600
26	389100	380700	373300	369400	377000	384100	377000	379800	372500	351100	337200	328000
27	388900	383100	373100	369000	376800	383700	376000	379400	372100	350700	336800	328000
28	388700	382500	373100	368800	377600	382500	375300	384900	371400	350500	337200	327300
29	388100	383100	373300	369200	---	382300	374500	384900	370200	350200	336200	326600
30	387300	383700	373300	369000	---	381900	373900	384500	369600	349200	335900	326800
31	389500	---	373300	369000	---	380600	---	384300	---	348500	334800	---
MAX	400500	391700	384100	372900	379800	384900	382100	384900	384900	369000	349400	334800
MIN	387300	380700	373100	368800	368300	375100	373900	375100	369600	348500	334800	326600
(+)	430.79	430.50	429.97	429.75	430.19	430.34	430.00	430.53	429.78	428.67	427.93	427.49
(+)	-9000	-5800	-10400	-4300	+8600	+3000	-6700	+10400	-14700	-21100	-13700	-8000
(++)	4820	5700	6310	5640	5770	5640	7190	7140	9260	10110	6720	4350
CAL YR 1977	MAX	493600	MIN	373100	+	-68100	++	63180				
WTR YR 1978	MAX	400500	MIN	326600	+	-71700	++	78650				

† Elevation, in feet, at end of month.

± Change in contents, in acre-feet.

++ Diversions, in acre-feet, for irrigation, municipal, and industrial uses.

TRINITY RIVER BASIN

08061700 DUCK CREEK NEAR GARLAND, TX

LOCATION.--Lat 32°49'58", long 96°35'43", Dallas County, Hydrologic Unit 12030106, on right bank in the median area between the dual bridges on Belt Line Road, 6.0 mi (9.7 km) southeast of Garland, and 7.7 mi (12.4 km) upstream from mouth.

DRAINAGE AREA.--31.6 mi² (81.8 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 430.02 ft (131.070 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1962, at datum 4.00 ft (1.219 m) higher.

REMARKS.--Records good. Flow slightly regulated by several small on-channel dams. Small diversions for irrigation of golf course above station. Low flows may be sustained by effluents from city of Garland. A recording rain gage is located at station and three rain gage above station are operated in basin.

AVERAGE DISCHARGE.--20 years, 26.0 ft³/s (0.736 m³/s), 11.17 in/yr (284 mm/yr), 18,840 acre-ft/yr (23.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) July 27, 1962, gage height, 20.80 ft (6.340 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1895, 21.5 ft (6.55 m), present datum, June 13, 1949, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,460 ft³/s (69.7 m³/s) Feb. 12, gage height, 15.80 ft (4.816 m), no other peak above base of 2,000 ft³/s (56.6 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	140	19	.94	34	4.5	2.4	1.7	6.3	.41	.00	.63
2	.51	18	2.4	.59	5.7	7.1	2.2	57	6.8	.29	.01	.26
3	.18	3.3	1.3	.43	3.1	5.3	2.1	301	4.5	.16	.01	.38
4	.04	2.2	.95	.28	2.4	5.9	2.0	11	3.7	.05	.01	.40
5	.00	1.8	.70	.16	1.9	7.5	54	43	3.2	.01	361	.39
6	.00	1.4	.50	.45	1.7	71	10	16	92	.00	12	.17
7	.24	1.1	.53	.41	5.6	258	5.0	6.9	51	.00	4.1	.02
8	1.9	135	.61	.42	7.9	20	4.0	4.7	80	.01	5.9	.25
9	1.7	16	.70	.12	30	15	3.0	3.2	6.2	.01	2.1	28
10	2.6	2.4	.70	.10	60	12	2.4	2.6	4.0	.01	1.2	5.9
11	2.4	1.6	.70	7.9	44	11	44	12	3.1	.01	.91	4.9
12	1.9	1.1	.70	37	799	9.3	17	20	2.5	.02	.67	154
13	1.6	.94	1.1	19	82	11	8.5	4.0	16	.01	.48	13
14	1.3	.71	1.0	3.9	16	9.7	5.4	2.1	6.9	.00	.10	4.0
15	.97	.60	.81	2.5	18	8.6	3.7	1.9	2.6	.00	.02	2.0
16	.71	.59	.61	44	14	4.2	2.9	1.9	2.0	.00	.02	.81
17	.51	.44	.49	7.6	12	2.9	2.3	1.8	1.7	.00	.01	.40
18	.31	.56	.45	2.8	17	2.4	2.1	1.9	1.3	.00	.01	.18
19	.06	2.1	.27	4.4	22	2.4	1.9	1.9	1.2	.00	.00	.06
20	.00	1.2	.63	3.3	35	2.5	1.8	3.9	1.1	.00	.00	.06
21	.13	.36	.72	2.4	14	2.5	1.7	642	1.1	.01	1.3	.11
22	2.6	.05	.46	2.8	11	2.4	1.6	45	.81	.02	8.3	3.5
23	2.2	.00	.17	5.3	9.3	75	50	12	.66	35	1.1	1.7
24	3.7	.07	.04	9.6	6.8	103	21	6.1	.64	15	.91	.77
25	5.7	.48	.10	20	6.5	20	10	3.9	.56	1.9	.43	.43
26	3.8	.48	.15	5.0	5.6	11	4.0	3.1	.43	.96	.19	.10
27	3.2	.07	.10	3.0	4.7	8.0	1.8	2.3	.28	.75	.20	.09
28	3.0	.08	.10	2.3	4.5	6.4	1.5	418	.24	22	20	.04
29	3.0	13	17	2.0	---	4.2	1.4	94	.24	.55	21	.03
30	2.7	59	3.5	2.0	---	3.0	1.5	15	.48	.11	2.6	.01
31	12	---	1.6	27	---	2.5	---	11	---	.01	1.2	---
TOTAL	59.82	404.63	58.09	217.70	1273.7	708.3	271.2	1750.9	301.54	77.30	445.78	222.59
MEAN	1.93	13.5	1.87	7.02	45.5	22.8	9.04	56.5	10.1	2.49	14.4	7.42
MAX	12	140	19	44	799	258	54	642	92	35	361	154
MIN	.00	.00	.04	.10	1.7	2.4	1.4	1.7	.24	.00	.00	.01
CFSM	.06	.43	.06	.22	1.44	.72	.29	1.79	.32	.08	.46	.24
IN.	.07	.48	.07	.26	1.50	.83	.32	2.06	.35	.09	.52	.26
AC-FT	119	803	115	432	2530	1400	538	3470	598	153	884	442
(††)	.48	2.82	.25	1.12	3.52	2.90	1.53	6.40	1.25	1.33	2.76	1.69
CAL YR 1977	TOTAL	9913.71	MEAN	27.2	MAX	2350	MIN	.00	CFSM	.86	IN	11.67
WTR YR 1978	TOTAL	5791.55	MEAN	15.9	MAX	799	MIN	.00	CFSM	.50	IN	6.82
									AC-FT	19660	††	30.27
										11490	††	26.05

†† Weighted-mean rainfall, in inches, based on four rain gages.

TRINITY RIVER BASIN

08061700 DUCK CREEK NEAR GARLAND, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
NOV					
01...	1500	387	19.5	1160	1210
02...	0907	9.1	10.0	116	2.9
FEB					
16...	1140	11	--	41	1.3
SEP					
12...	1225	391	24.5	1420	1500

TRINITY RIVER BASIN

08061750 EAST FORK TRINITY RIVER NEAR FORNEY, TX

LOCATION.--Lat 32°46'27", long 96°30'12", Kaufman County, Hydrologic Unit 12030106, on right bank 25 ft (8 m) downstream from bridge on Interstate Highway 20, 0.2 mi (0.3 km) downstream from Duck Creek, 1.9 mi (3.1 km) downstream from Lake Ray Hubbard Dam, 2.5 mi (4.0 km) upstream from Texas and Pacific Railroad Co. bridge, 2.6 mi (4.2 km) northwest of Forney, and 30.8 mi (49.6 km) upstream from mouth.

DRAINAGE AREA.--1,118 mi² (2,896 km²), of which 1,071 mi² (2,774 km²) is above Lake Ray Hubbard. Prior to May 12, 1977, 105 ft (32 m) downstream.

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

GAGE.--Water-stage recorder. Datum of gage is 377.86 ft (115.17 m) National Geodetic Vertical Datum of 1929 (from Texas Department of Highways and Public Transportation bridge plans). Prior to Aug. 26, 1975, recording gage at same datum located at site 126 ft (38 m) upstream and 868 ft (265 m) to left.

REMARKS.--Records good except those for Jan. 9 to Mar. 27, Apr. 27 to Aug. 1, which are poor. Flow is regulated by Lake Ray Hubbard (station 08061550). Low flow is sustained by sewage effluent from the city of Garland. Records furnished by the city of Garland show that 115,510 acre-ft (19.1 hm³) of sewage effluent was discharged into Duck Creek which enters East Fork Trinity River 0.2 mi (0.3 km) upstream from this station. The city of Dallas maintains gage-height telemeter at this station. Several observations of water temperature were made during this year.

AVERAGE DISCHARGE.--5 years (water years 1974-78), 579 ft³/s (16.40 m³/s), 419,500 acre-ft/yr (517 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,400 ft³/s (861 m³/s) Mar. 27, 1977, gage height, 16.34 ft (4.980 m); minimum daily, 13 ft³/s (0.37 m³/s) Oct. 18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,230 ft³/s (34.8 m³/s) Feb. 12, gage height, 8.47 ft (2.582 m), from floodmark; minimum daily, 13 ft³/s (0.37 m³/s) Oct. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	34	51	19	52	19	30	25	23	19	22	19
2	17	97	41	19	39	18	30	34	21	18	24	17
3	15	39	28	20	26	18	27	404	20	18	26	15
4	14	23	23	22	23	20	27	76	20	19	22	14
5	15	18	21	22	20	30	27	67	20	20	187	15
6	15	14	18	21	20	300	54	76	56	20	165	19
7	16	14	19	20	30	250	33	40	88	20	29	18
8	17	42	19	20	35	110	27	33	136	20	23	18
9	17	114	19	19	40	55	26	28	37	19	22	20
10	17	50	20	25	60	40	158	26	23	19	20	30
11	16	33	20	60	70	33	79	27	20	19	18	24
12	15	24	20	50	435	30	39	47	19	20	17	34
13	17	21	20	50	492	28	33	31	25	20	16	134
14	18	20	19	40	89	26	31	25	33	19	16	33
15	17	19	20	35	55	25	28	22	22	19	17	23
16	16	20	21	40	40	25	27	23	19	19	17	20
17	14	23	21	55	35	24	25	23	18	17	16	16
18	13	22	19	50	45	24	27	23	17	16	16	19
19	15	21	19	35	60	23	26	23	17	16	17	18
20	15	21	18	30	70	23	24	25	17	16	18	19
21	16	20	21	30	50	22	24	575	18	17	18	19
22	18	19	20	25	35	22	23	274	21	19	21	19
23	17	20	20	25	28	230	51	44	23	20	20	17
24	16	20	22	30	23	200	39	31	22	22	19	19
25	16	20	21	36	21	80	29	27	18	23	16	19
26	14	19	18	37	20	45	25	25	17	24	16	19
27	14	20	18	29	20	38	24	25	18	24	17	19
28	15	19	19	25	19	37	25	287	20	23	16	19
29	16	20	22	23	---	35	26	250	20	22	30	19
30	17	30	29	21	---	33	27	44	19	22	27	18
31	18	---	24	22	---	31	---	26	---	22	20	---
TOTAL	491	876	690	955	1952	1894	1071	2686	847	611	928	712
MEAN	15.8	29.2	22.3	30.8	69.7	61.1	35.7	86.6	28.2	19.7	29.9	23.7
MAX	18	114	51	60	492	300	158	575	136	24	187	134
MIN	13	14	18	19	19	18	23	22	17	16	16	14
AC-FT	974	1740	1370	1890	3870	3760	2120	5330	1680	1210	1840	1410
CAL YR 1977	TOTAL	76925	MEAN	211	MAX	12000	MIN 13	AC-FT	152600			
WTR YR 1978	TOTAL	13713	MEAN	37.6	MAX	575	MIN 13	AC-FT	27200			

TRINITY RIVER BASIN

517

08061950 SOUTH MESQUITE CREEK AT MERCURY ROAD NEAR MESQUITE, TX

LOCATION.--Lat 32°43'32", long 96°34'12", Dallas County, Hydrologic Unit 12030106, on left bank at downstream side of bridge on Mercury Road, 3.3 mi (5.3 km) southeast of Mesquite, and 3.6 mi (5.8 km) upstream from mouth.

DRAINAGE AREA.--23.0 mi² (59.6 km²).

PERIOD OF RECORD.--October 1968 to current year.

REVISED RECORDS.--WDR TX-74-1: 1972(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 389.91 ft (118.845 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow is slightly affected by numerous small stock ponds. Three recording rain gages are operated in basin above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--10 years, 22.4 ft³/s (0.634 m³/s), 13.23 in/yr (336 mm/yr), 16,230 acre-ft/yr (20.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s (255 m³/s) June 4, 1973, gage height, 12.10 ft (3.688 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1918, 14.3 ft (4.36 m) Apr. 27, 1957 (discharge not determined), from information by Corps of Engineers. Floods in April 1942, April 1958, and in 1962 reached stages almost as high as the flood of Apr. 27, 1957, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 12	1845	*1,690 47.9	9.06 2.761	Mar. 24	0300	1,120 31.7	8.46 2.579

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	12	5.6	.33	16	.17	1.2	.09	.35	.00	.00	.05
2	.00	13	.00	.15	4.9	.15	1.1	5.9	.26	.00	.00	.01
3	.00	2.4	.00	.25	.73	.23	1.5	89	.17	.00	.00	.00
4	.00	2.4	.03	.11	.37	.12	2.4	1.3	.16	.00	.00	.00
5	.00	2.2	.03	.23	.38	.20	1.4	6.2	.12	.00	23	.90
6	.00	2.6	.05	.35	.33	22	9.2	1.6	26	.00	4.0	.12
7	.00	2.5	.04	.50	1.5	299	3.2	.44	3.4	.00	.42	.01
8	.00	122	.04	1.0	2.2	14	2.9	.25	3.9	.00	.10	.00
9	.00	22	.02	.85	17	4.0	3.6	.16	.86	.00	.01	2.8
10	.00	3.3	.02	.90	28	2.2	67	.05	.37	.00	.00	5.2
11	6.3	1.7	.04	5.4	22	1.2	2.9	3.6	.15	.00	.00	.41
12	1.7	2.0	.15	22	557	.93	.32	29	.06	.00	.00	34
13	.90	1.6	.40	5.3	97	.99	.35	2.4	21	.00	.00	3.5
14	2.4	.76	.81	1.7	5.7	2.6	.29	1.1	2.4	.00	.00	.26
15	1.9	.72	1.2	1.1	3.3	.10	.31	.68	.52	.00	.00	.06
16	1.4	.64	.85	9.3	7.3	.11	.50	.34	.69	.00	.00	.02
17	1.0	.68	.61	2.4	9.6	.08	.50	.27	.15	.00	.00	.00
18	.57	.50	.81	.76	33	.04	.54	.42	.03	.00	.00	.00
19	.31	.35	1.3	1.2	34	.21	.61	.24	.01	.00	.00	.00
20	.18	.27	1.0	.89	37	.23	.53	.15	.00	.00	.00	.00
21	1.7	.18	.90	.63	23	.81	.43	267	.00	.00	.00	.00
22	2.9	.14	.81	.65	11	.78	.28	8.5	.00	.00	29	.00
23	2.2	.10	.72	1.8	5.5	10	.26	1.9	.00	.00	.56	.00
24	35	.09	.64	2.2	1.9	240	.58	1.1	.00	.00	.14	.00
25	9.8	.06	.53	3.0	.39	4.9	.19	.61	.00	.00	.04	.00
26	1.7	.05	.40	1.3	.45	1.2	.16	1.0	.00	.00	.02	.00
27	.95	.04	.45	.43	.37	.60	.14	.39	.00	.00	.00	.00
28	.85	.03	.72	.31	.28	.94	.07	5.9	.00	.00	.00	.00
29	.57	15	1.8	.38	---	.41	.09	19	.00	.00	3.1	.00
30	.37	25	1.1	.33	---	.22	.09	3.1	.00	.00	.38	.00
31	.40	---	.42	5.8	---	.92	---	.70	---	.00	.14	---
TOTAL	73.10	234.31	21.49	71.55	920.20	609.34	102.64	452.39	60.60	.00	60.91	47.34
MEAN	2.36	7.81	.69	2.31	32.9	19.7	3.42	14.6	2.02	.000	1.96	1.58
MAX	35	122	5.6	22	557	299	67	267	26	.00	29	34
MIN	.00	.03	.00	.11	.28	.04	.07	.05	.00	.00	.00	.00
CFSM	.10	.34	.03	.10	1.43	.86	.15	.64	.09	.000	.09	.07
IN.	.12	.38	.03	.12	1.49	.99	.17	.73	.10	.00	.10	.08
AC-FT	145	465	43	142	1830	1210	204	897	120	.00	121	94
(††)	1.71	2.26	.24	.82	4.13	2.56	.99	4.90	1.40	.24	3.13	1.36

CAL YR 1977 TOTAL 7244.83 MEAN 19.8 MAX 1710 MIN .00 CFSM .86 IN 11.72 AC-FT 14370 †† 26.47
WTR YR 1978 TOTAL 2653.87 MEAN 7.27 MAX 557 MIN .00 CFSM .32 IN 4.29 AC-FT 5260 †† 23.74

†† Weighted-mean rainfall, in inches, based on three rain gages.

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX

LOCATION.--Lat 32°38'19", long 96°29'17", Kaufman County, Hydrologic Unit 12030106, on right bank 15 ft (5 m) downstream from downstream eastbound bridge on U.S. Highway 175, 0.7 mi (1.1 km) downstream from Mustang Creek, 1.8 mi (2.9 km) northwest of Crandall, 4.0 mi (6.4 km) upstream from Buffalo Creek, and 11.0 mi (17.7 km) upstream from mouth.

DRAINAGE AREA.--1,256 mi² (3,253 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area. WDR TX-75-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 343.69 ft (104.757 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Flow largely regulated by Lavon Lake (station 08060500) since September 1953 and Lake Ray Hubbard (station 08061550) since Mar. 22, 1970. Records furnished by the city of Forney show that 120 acre-ft (148,000 m³) of sewage effluent was returned to a tributary below Lake Ray Hubbard and above station. Records furnished by the North Texas Municipal Water District show that 5,930 acre-ft (7.31 hm³) of sewage effluent was returned to tributaries above station from the Mesquite and Chandler's Landing sewage treatment plants. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--4 years (water years 1950-53) prior to regulation by Lavon Lake, 652 ft³/s (18.46 m³/s), 472,400 acre-ft/yr (582 hm³/yr); 25 years (water years 1954-78) regulated, 589 ft³/s (16.68 m³/s), 426,700 acre-ft/yr (526 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s), May 28, 1957, gage height, 22.81 ft (6.952 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,860 ft³/s (52.7 m³/s) Feb. 13, gage height, 13.44 ft (4.097 m); minimum daily, 22 ft³/s (0.62 m³/s) Dec. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	114	92	35	63	44	52	38	48	30	27	38
2	41	162	76	27	94	42	49	44	45	29	27	37
3	45	139	53	28	74	41	48	249	33	24	28	28
4	40	96	37	30	48	41	50	272	29	30	31	26
5	37	79	29	34	40	42	48	59	25	28	32	31
6	39	71	26	35	35	49	55	70	30	29	283	36
7	42	63	23	34	39	578	67	50	129	33	110	41
8	44	83	25	29	51	596	46	36	92	32	46	37
9	45	219	26	30	66	197	40	31	111	29	43	38
10	62	78	28	26	101	126	136	30	42	28	40	59
11	67	44	29	31	143	100	331	37	28	27	39	65
12	54	29	31	62	421	85	136	136	24	29	36	59
13	49	23	34	69	1630	70	86	80	28	28	33	197
14	50	35	33	70	696	66	64	41	84	31	31	127
15	51	32	32	53	106	62	51	30	49	32	34	64
16	51	23	36	46	85	55	45	26	33	30	35	53
17	49	25	38	67	81	52	43	29	30	31	35	49
18	52	33	39	70	83	46	41	29	25	31	30	47
19	57	32	31	54	93	42	43	27	25	28	33	54
20	57	25	29	45	102	41	40	30	26	30	34	53
21	59	23	30	39	117	40	39	276	30	29	32	56
22	69	26	35	35	87	42	39	657	28	34	77	58
23	72	28	30	36	66	42	38	174	26	34	52	47
24	76	28	29	51	59	495	69	66	29	24	37	50
25	115	27	30	62	56	417	51	42	31	43	35	50
26	69	26	28	71	50	118	42	35	26	34	32	51
27	60	26	22	64	47	76	36	28	29	33	34	51
28	65	27	23	47	47	64	36	26	32	28	34	50
29	70	30	30	40	---	60	38	366	24	36	41	49
30	76	65	41	36	---	54	38	171	27	34	65	51
31	79	---	44	37	---	53	---	59	---	25	48	---
TOTAL	1785	1711	1089	1393	4580	3836	1897	3244	1218	943	1494	1652
MEAN	57.6	57.0	35.1	44.9	164	124	63.2	105	40.6	30.4	48.2	55.1
MAX	115	219	92	71	1630	596	331	657	129	43	283	197
MIN	37	23	22	26	35	40	36	26	24	24	27	26
AC-FT	3540	3390	2160	2760	9080	7610	3760	6430	2420	1870	2960	3280
CAL YR 1977 TOTAL	105617			289		17300	MIN 22	AC-FT	209500			
WTR YR 1978 TOTAL	24842			68.1		1630	MIN 22	AC-FT	49270			

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

pH: March to September 1977.

WATER TEMPERATURES: October 1967 to current year.

DISSOLVED OXYGEN: March to September 1977.

INSTRUMENTATION.--Water-quality monitor since Mar. 24, 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,010 micromhos Nov. 23, 1968; minimum, 200 micromhos Mar. 27, Apr. 21, 1977.

WATER TEMPERATURES: Maximum, 33.0°C on many days during summer months; minimum, 1.5°C Jan. 11, 1973 and Jan. 22, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 827 micromhos Dec. 27; minimum daily, 288 micromhos May 22.

WATER TEMPERATURES: Maximum, 33.0°C on several days during July; minimum daily, 1.5°C Jan. 22.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT 19...	1145	57	740	7.6	19.5	60	15	.1	1	37	110	0
NOV 09...	1240	219	389	7.7	15.5	30	95	3.2	33	14	84	0
DEC 13...	1600	34	806	6.7	12.0	30	15	.2	2	18	--	--
JAN 24...	1545	51	719	7.3	5.0	40	20	.0	0	44	160	0
FEB 23...	1040	54	500	7.6	7.0	25	20	5.9	50	14	150	4
MAR 22...	1430	42	714	8.1	20.5	65	10	7.5	85	28	160	0
APR 13...	1140	85	508	7.6	19.0	30	30	3.4	38	9.9	--	--
MAY 17...	1630	30	663	7.8	25.0	60	15	4.5	56	37	130	0
JUN 13...	1700	26	670	7.6	29.5	70	10	3.1	41	20	--	--
JUL 13...	0700	27	600	7.7	30.5	55	8	4.0	5	18	100	0
AUG 17...	1045	37	644	7.5	29.5	55	9	3.3	43	31	130	0
SEP 14...	1200	121	350	7.2	28.0	20	20	.6	8	10	82	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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)
OCT 19...	39	3.4	92	3.8	12	230	0	42	71	2.1	11	386
NOV 09...	30	2.1	38	1.8	7.1	130	0	29	29	.8	6.2	206
DEC 13...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 24...	57	3.8	70	2.4	12	220	0	64	67	1.4	7.3	391
FEB 23...	55	3.5	37	1.3	6.0	180	0	58	22	1.2	7.8	279
MAR 22...	57	3.8	70	2.4	10	220	0	62	61	1.3	4.9	379
APR 13...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 17...	47	3.5	70	2.7	11	220	0	60	47	1.7	7.1	356
JUN 13...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	35	3.1	63	2.7	11	150	0	60	53	1.7	8.7	310
AUG 17...	46	3.1	62	2.4	11	180	0	55	65	1.3	8.6	341
SEP 14...	30	1.7	24	1.2	6.1	120	0	29	21	.9	6.0	178

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 19....	28	20	.01	.01	.02	17	1.0	18	7.8	25	24	1.4
NOV 09....	278	40	.23	.04	.27	3.8	1.2	5.0	4.3	16	4	.20
DEC 13....	22	8	.07	.01	.08	16	3.0	19	5.5	16	10	1.3
JAN 24....	50	42	.05	.01	.06	16	3.0	19	4.6	20	42	1.5
FEB 23....	28	9	.88	.12	1.0	4.2	1.8	6.0	2.7	10	9	1.1
MAR 22....	35	26	.00	.01	--	3.0	12	--	4.5	22	10	.40
APR 13....	49	3	.15	.05	.20	1.8	5.0	6.8	1.3	14	6	.20
MAY 17....	24	8	.01	.01	.02	9.1	4.9	14	3.7	31	3	.80
JUN 13....	48	40	.01	.01	.02	7.7	17	25	3.5	19	3	.90
JUL 13....	34	28	.00	.04	.03	8.4	3.6	12	2.7	22	3	.40
AUG 17....	34	28	.02	.06	.08	10	5.0	15	3.5	45	5	.40
SEP 14....	30	10	.02	.01	.03	3.0	2.4	5.4	1.3	12	7	.50

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FF)
JAN 24....	1545	2	0	2	10	1	80
MAR 22....	1430	2	200	0	0	0	30
JUL 13....	0700	4	200	0	0	3	30
SEP 14....	1200	3	0	1	10	2	40

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 24....	5	120	.0	0	0	60
MAR 22....	0	60	.0	5	0	20
JUL 13....	3	40	.0	0	0	10
SEP 14....	2	80	.2	2	0	10

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 24....	1545	.0	13	.00	.00	.0	.1	19	.00
JUL 13....	0700	.0	11	.00	.00	.0	.0	7	1.2

TRINITY RIVER BASIN

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08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER QUALITY DATA: WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 24...	.00	1.6	.01	.0	.83	.01	1.4	.00	.00	.0
JUL 13...	.00	1.9	.00	.7	.52	.00	.5	.00	.00	.0
DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	
JAN 24...	.00	.00	.0	.01	.0	.03	.0	.15	.00	
JUL 13...	.00	.00	.0	.00	.0	.00	.0	.00	.00	
DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	
JAN 24...	.00	--	.00	0	0	.00	.05	.01	.01	
JUL 13...	.00	.00	.00	0	0	.00	.06	.00	.00	

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	1785	589	320	1530	45	215	54	259	120
NOV. 1977.....	1711	552	300	1370	40	184	49	228	120
DEC. 1977.....	1089	655	350	1040	54	158	61	180	130
JAN. 1978.....	1393	689	370	1390	58	220	65	246	130
FEB. 1978.....	4580	444	240	2950	25	311	37	454	110
MAR. 1978.....	3836	468	250	2610	28	294	39	409	110
APR. 1978.....	1897	604	320	1660	47	240	55	283	120
MAY 1978.....	3244	462	250	2170	28	247	39	339	110
JUNE 1978.....	1218	523	280	922	36	118	46	151	120
JULY 1978.....	943	598	320	819	46	117	55	139	120
AUG. 1978.....	1494	540	290	1170	38	154	49	193	120
SEPT 1978.....	1652	561	300	1350	41	183	50	225	120
TOTAL	24842	**	**	19000	**	2440	**	3110	**
WTD. AVG.	68.06	526	280	**	36	**	46	**	120

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	606	680	515	773	724	608	667	693	523	646	570	551
2	614	544	591	678	620	600	620	686	570	659	604	590
3	604	333	458	748	525	682	653	526	626	657	548	601
4	632	320	502	786	595	700	673	450	631	640	559	633
5	629	467	563	697	697	716	640	485	636	570	633	640
6	615	558	587	652	714	796	613	519	631	586	388	598
7	538	648	633	688	690	413	716	510	411	586	391	566
8	569	590	668	723	670	371	645	572	390	583	450	564
9	609	485	654	786	650	424	631	643	358	594	491	671
10	607	319	636	800	680	421	667	614	452	626	546	648
11	636	386	690	817	663	466	455	604	563	633	540	606
12	473	468	702	766	527	498	470	572	599	591	590	534
13	549	558	741	606	317	545	514	587	617	554	611	375
14	536	579	735	714	370	572	582	572	372	544	621	332
15	571	604	730	620	435	553	628	596	521	599	616	441
16	626	620	665	580	409	587	670	648	489	640	630	562
17	642	643	642	690	466	631	674	606	552	599	592	597
18	651	630	650	655	494	644	686	584	567	586	617	594
19	671	688	705	543	504	706	661	652	659	531	639	625
20	577	650	682	574	477	702	617	712	689	537	645	624
21	532	660	790	709	448	740	673	648	649	563	682	551
22	578	764	748	720	452	716	677	288	605	617	688	602
23	635	796	649	748	489	664	694	393	635	669	450	626
24	613	764	727	741	539	378	758	521	634	669	528	718
25	354	703	784	739	626	426	595	539	645	646	635	730
26	540	782	779	659	656	456	552	634	654	622	661	673
27	628	805	827	663	724	476	587	650	712	517	678	659
28	616	823	744	659	719	500	683	664	599	544	620	557
29	626	769	763	671	---	534	740	330	582	580	678	625
30	649	736	649	700	---	578	787	356	629	607	547	743
31	711	---	690	758	---	608	---	452	---	541	616	---
MEAN	595	612	674	699	567	571	641	558	573	598	583	595

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	22.0	10.0	9.0	5.5	11.5	20.5	24.0	27.0	29.0	28.0	26.0
2	26.0	17.0	14.0	7.0	5.5	12.0	21.0	21.5	25.0	33.0	28.0	26.0
3	24.0	17.0	15.0	7.0	5.0	10.0	21.0	17.5	26.0	33.0	27.5	28.5
4	23.0	16.5	17.0	6.0	5.0	8.0	23.0	15.0	27.0	30.0	28.0	28.5
5	21.0	19.0	14.5	10.0	7.0	8.0	21.5	17.0	27.0	33.0	26.0	27.0
6	20.0	19.5	11.0	11.0	6.0	10.0	21.0	19.0	28.0	33.0	25.0	28.0
7	21.0	20.0	9.0	12.0	5.0	11.0	23.0	22.0	25.0	32.0	26.0	27.5
8	22.0	18.0	14.0	11.0	---	9.0	22.0	23.0	25.0	31.0	27.0	25.5
9	22.0	15.0	10.0	8.0	---	10.0	21.0	23.0	25.0	32.0	29.0	25.5
10	20.0	13.5	6.5	4.5	---	9.0	20.0	24.0	25.0	33.0	29.0	25.5
11	18.5	13.0	8.0	2.5	6.0	12.0	19.0	23.0	29.0	33.0	30.0	25.5
12	18.5	13.0	9.0	3.0	8.0	13.0	19.0	23.0	28.0	32.0	30.0	25.0
13	18.0	15.0	12.0	5.0	7.0	13.0	20.0	23.0	29.0	33.0	30.5	25.5
14	18.0	15.0	13.0	5.0	7.0	16.0	20.5	23.0	26.0	33.0	29.0	25.5
15	18.0	17.0	12.0	5.0	6.0	15.0	22.0	23.0	27.0	32.0	29.5	30.0
16	18.0	18.0	14.0	7.0	6.0	16.0	23.0	24.0	30.0	32.0	29.0	25.5
17	18.0	18.0	13.0	5.5	5.0	16.0	22.0	24.0	28.0	31.0	29.0	30.0
18	19.0	17.0	13.0	4.0	4.5	16.5	22.0	25.0	28.0	32.0	29.0	25.5
19	19.0	17.0	14.0	3.0	4.5	17.0	21.0	26.0	30.0	30.0	30.0	30.0
20	21.0	19.0	12.0	2.5	5.5	18.0	20.0	27.0	29.0	30.0	30.0	25.5
21	21.0	16.0	9.0	2.0	6.0	18.0	20.5	26.0	29.0	31.0	30.0	26.0
22	21.0	15.0	8.0	1.5	7.0	20.0	19.0	24.0	29.0	30.0	29.0	26.0
23	21.5	15.0	8.0	3.5	8.0	20.0	21.0	25.0	28.0	28.0	28.0	26.0
24	21.0	18.0	10.0	4.5	10.0	15.0	23.0	26.0	29.0	28.0	29.0	25.0
25	19.5	17.0	9.0	4.5	11.5	13.0	22.0	26.0	30.0	29.0	29.0	25.0
26	20.0	16.0	8.0	6.0	13.0	14.0	21.0	28.0	31.0	30.0	29.0	24.0
27	21.0	16.0	7.0	4.0	11.0	16.0	21.0	28.0	31.0	30.0	30.0	23.0
28	21.0	14.0	7.0	5.0	12.0	16.0	21.0	29.0	31.0	30.0	29.0	24.0
29	22.0	12.0	8.0	4.5	---	18.0	22.5	24.0	32.0	30.0	29.0	24.0
30	22.0	11.0	8.0	5.0	---	18.0	23.0	25.0	31.0	31.0	27.0	24.0
31	22.5	---	9.0	5.0	---	19.0	---	26.0	---	29.0	26.0	---
MEAN	21.0	16.5	10.5	5.5	7.0	14.0	21.0	23.5	28.0	31.0	28.5	26.0

TRINITY RIVER BASIN

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08062500 TRINITY RIVER NEAR ROSSER, TX

LOCATION.--Lat 32°25'35", Long 96°27'46", Ellis-Kaufman County line, Hydrologic Unit 12030105, on right bank at downstream side of right pier of bridge on State Highway 34, 2.5 mi (4.0 km) south of Rosser, 8.5 mi (13.7 km) downstream from East Fork Trinity River, and at mile 451.4 (726.3 km).

DRAINAGE AREA.--8,147 mi² (21,101 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to September 1925, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1922: Drainage area. WDR TX-77-1: 1942(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 302.65 ft (92.248 m) National Geodetic Vertical Datum of 1929. July 25, 1924, to Sept. 30, 1925, nonrecording gage at abandoned lock and dam No. 7, 1.7 mi (2.7 km) upstream from present site at datum 6.94 ft (2.115 m) higher.

REMARKS.--Water-discharge records good. At times, flow is affected by storage in 15 upstream reservoirs having a combined capacity of 3,572,000 acre-ft (4.40 km³), of which 1,138,000 acre-ft (1.40 km³) is for flood control. A levee system constructed in 1916 extends several miles upstream and downstream from station. The cities of Fort Worth and Dallas and several small cities divert considerable water for municipal use, of which about 60 percent is returned as sewage effluents which sustain low flows at this site. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--41 years (water years 1925, 1939-78), 2,558 ft³/s (72.44 m³/s), 1,853,000 acre-ft/yr (2.28 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 150,000 ft³/s (4,250 m³/s) Apr. 23, 1942, following numerous breaks in levee systems along both banks; maximum gage height, 41.55 ft (12.664 m) Apr. 22, 1942, just prior to levee breaks; minimum discharge, 32 ft³/s (0.91 m³/s) for several days in 1924-25.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 reached a stage of about 33 ft (10.1 m), present site and datum, from information by Corps of Engineers (discharged believed to have been about the same as that of Apr. 22, 1942).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,820 ft³/s (193 m³/s) Feb. 14, gage height, 17.85 ft (5.441 m); minimum daily, 331 ft³/s (9.37 m³/s) Dec. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	451	477	729	456	704	582	636	462	1060	449	448	501
2	413	1080	608	405	872	563	614	890	865	434	464	490
3	390	951	517	388	796	546	586	2110	807	403	470	661
4	427	645	433	416	633	577	589	3940	700	403	466	599
5	421	545	387	439	586	538	601	2510	610	400	724	509
6	409	495	384	446	580	541	690	1200	617	406	2130	531
7	440	465	400	447	598	2350	770	887	871	422	1730	534
8	433	508	393	420	779	3570	658	717	1380	422	868	505
9	439	1480	385	410	838	2530	570	632	1700	410	615	490
10	404	1420	430	400	1120	1320	698	592	1000	391	579	499
11	685	723	403	415	1230	992	2320	589	648	406	566	518
12	859	521	389	535	1370	862	2440	1690	523	428	554	554
13	502	458	400	750	5710	764	1010	1210	548	428	526	715
14	439	445	407	700	6100	723	735	727	536	425	511	744
15	419	500	399	680	2770	670	633	582	542	425	505	608
16	391	479	391	645	1300	648	573	525	545	412	498	522
17	398	460	391	693	1060	633	548	520	483	403	486	475
18	410	432	384	674	1190	601	540	511	492	419	468	435
19	412	422	377	645	1320	576	542	516	449	431	454	443
20	406	428	383	620	1420	548	529	501	434	428	429	452
21	410	399	393	570	1350	554	536	2390	477	437	414	467
22	412	401	380	564	1250	630	574	6110	480	440	491	556
23	743	436	385	561	1040	733	541	3820	465	434	695	641
24	839	397	382	623	857	1700	1140	1600	443	471	540	520
25	592	365	369	667	747	3940	1300	1420	400	570	491	420
26	526	350	353	700	679	2430	727	1180	403	526	468	421
27	458	355	331	650	620	1020	565	667	431	489	441	423
28	428	348	361	571	597	828	508	607	455	511	437	423
29	630	384	400	526	---	750	494	3750	465	670	478	416
30	573	583	514	505	---	713	473	5160	455	501	663	420
31	440	---	500	514	---	670	---	2780	---	439	564	---
TOTAL	15199	16952	12958	17035	38116	34102	23140	50795	19284	13833	19173	15492
MEAN	490	565	418	550	1361	1100	771	1639	643	446	618	516
MAX	859	1480	729	750	6100	3940	2440	6110	1700	670	2130	744
MIN	390	348	331	388	580	538	473	462	400	391	414	416
AC-FT	30150	33620	25700	33790	75600	67640	45900	100800	38250	27440	38030	30730
CAL YR 1977	TOTAL	914163	MEAN	2505	MAX	46100	MIN 331	AC-FT	1813000			
WTR YR 1978	TOTAL	276079	MEAN	756	MAX	6110	MIN 331	AC-FT	547600			

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1954 to current year. Chemical, biochemical, and pesticide analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1954 to current year.

pH: March 1977 to current year.

WATER TEMPERATURES: October 1954 to current year.

DISSOLVED OXYGEN: March 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since Mar. 1, 1977.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,990 micromhos Oct. 13, 1956; minimum, 200 micromhos July 30, 1962.

pH: Maximum, 7.8 units Mar. 3, 5, 6, 1977; minimum, 7.0 units July 10, 1977.

WATER TEMPERATURES: Maximum, 36.0°C July 1, 1955; minimum, 1.0°C on many days during winter months.

DISSOLVED OXYGEN: Maximum, 10.7 mg/l Nov. 9, 1977; minimum, 0.1 mg/l on many days during 1977 and 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,130 micromhos Nov. 27, Apr. 24; minimum, 276 micromhos May 29.

pH: Maximum, 7.7 units Feb. 23; minimum, 7.1 units on many days during year.

WATER TEMPERATURES: Maximum, 34.0°C July 16; minimum, 5.5 °C Jan. 20-23.

DISSOLVED OXYGEN: Maximum, 10.7 mg/l Nov. 9; minimum, 0.1 mg/l on several days during year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	
DATE	TIME												
OCT 19...	1020	394	922	7.2	21.5	30	30	2.4	28	19	140	0	
NOV 09...	1130	1700	856	7.4	18.0	30	150	3.2	35	40	140	0	
DEC 13...	1000	376	902	7.3	13.0	35	20	5.2	51	25	--	--	
JAN 25...	0945	658	862	7.4	7.0	30	20	6.4	54	18	170	0	
FEB 22...	0950	1260	702	7.5	7.0	30	65	7.0	59	19	180	12	
MAR 22...	1605	630	895	7.6	20.0	55	20	4.0	45	20	170	0	
APR 18...	1635	545	888	7.5	22.5	30	30	3.6	42	21	--	--	
MAY 17...	1740	554	876	7.5	25.5	40	25	3.4	40	16	170	0	
JUN 12...	1900	530	685	7.2	29.5	40	25	3.9	51	13	--	--	
JUL 12...	1725	474	920	7.4	32.0	40	15	5.4	74	52	150	0	
AUG 17...	1300	471	880	7.2	31.0	55	15	3.8	51	29	140	0	
SEP 19...	1120	437	940	7.2	28.5	50	8	.9	12	16	140	0	
		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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)
OCT 19...	44	6.2	120	4.5	14	230	0	110	88	1.6	16	513	
NOV 09...	47	5.2	110	4.1	11	220	0	100	74	1.2	13	470	
DEC 13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 25...	57	6.1	99	3.3	12	230	0	110	75	1.3	2.9	477	
FEB 22...	62	5.2	63	2.1	8.2	200	0	97	48	.9	8.8	392	
MAR 22...	60	5.8	100	3.3	14	240	0	120	66	1.3	9.2	495	
APR 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY 17...	59	6.1	100	3.3	14	260	0	120	64	1.2	11	503	
JUN 12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 12...	47	6.8	120	4.3	15	230	0	120	83	1.4	14	521	
AUG 17...	45	5.7	110	4.1	13	200	0	110	86	1.3	10	480	
SEP 19...	45	5.8	120	4.5	14	230	0	120	81	1.4	12	513	

TRINITY RIVER BASIN

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08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
OCT 19...	54	4	1.5	.58	2.1	14	.00	13	6.3	14	2	.40
NOV 09...	282	54	1.1	.40	1.5	8.8	1.0	9.8	11	11	3	.30
DEC 13...	32	9	2.5	.63	3.1	15	.00	12	6.5	13	4	.40
JAN 25...	42	19	1.6	.35	1.9	12	2.0	14	4.3	15	6	.60
FEB 22...	122	32	1.2	.13	1.3	7.0	1.6	8.6	3.0	19	5	.60
MAR 22...	38	10	.16	.09	.25	7.3	5.7	13	3.9	13	1	.30
APR 18...	58	5	.65	.45	1.1	11	1.0	12	8.1	13	0	.30
MAY 17...	43	16	.58	.39	.97	11	1.0	12	3.9	14	1	.20
JUN 12...	35	6	.90	.60	1.5	4.7	10	15	2.4	--	3	--
JUL 12...	36	22	1.3	.69	2.0	6.2	2.5	8.7	5.6	16	2	.60
AUG 17...	26	9	1.8	.80	2.6	6.2	3.1	9.3	4.9	17	0	.50
SEP 19...	14	2	.76	.44	1.2	9.0	2.0	11	6.3	14	0	.80

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
JAN 25...	0945	5	100	2	0	4	20
MAR 22...	1605	3	300	0	0	1	30
JUL 12...	1725	5	200	0	0	4	30
SEP 19...	1120	16	0	0	0	2	20

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 25...	3	90	.6	0	0	30
MAR 22...	1	60	.0	5	0	20
JUL 12...	3	60	.0	0	0	20
SEP 19...	0	60	.0	0	0	10

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 25...	0945	.7	74	.00	.00	.0	.0	92	.00	3.0
MAR 22...	1605	.0	15	.00	.00	.3	.0	44	.00	.0
JUL 12...	1725	.0	730	.00	.00	.0	.0	100	.00	7.1
SEP 19...	1120	.0	240	.00	.00	.0	.0	68	.00	2.2

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JAN 25...	.00	2.5	.00	.0	.74	.00	8.4	.00	.00	.0
MAR 22...	.00	3.8	.00	.0	.00	.01	4.9	.00	.00	.0
JUL 12...	.00	5.3	.00	.0	.53	.01	8.2	.00	.00	.0
SEP 19...	.00	1.0	.00	.0	.31	.01	7.4	--	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
JAN 25...	.00	.00	.0	.00	.6	.00	.0	.05	.00
MAR 22...	.00	.00	.0	.00	.0	.02	.0	.00	.00
JUL 12...	.00	.00	.0	.00	.0	.00	.0	.00	.00
SEP 19...	.00	.00	.0	.00	.0	.04	.0	.01	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JAN 25...	.00	--	.00	0	0	.00	.05	.02	.02
MAR 22...	.00	--	.00	0	0	.00	.01	.00	.00
JUL 12...	.00	.00	.00	0	0	.00	.16	.04	.03
SEP 19...	.00	.00	.00	0	0	.00	.30	.11	.23

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	15199	864	480	19700	73	3000	110	4340	150
NOV. 1977.....	16952	806	450	20600	66	3040	98	4470	150
DEC. 1977.....	12958	917	510	17800	79	2770	110	3950	150
JAN. 1978.....	17035	896	500	22900	77	3530	110	5070	150
FEB. 1978.....	38116	663	370	38300	50	5180	78	8040	150
MAR. 1978.....	34102	684	380	35400	53	4850	81	7420	150
APR. 1978.....	23140	814	450	28300	68	4220	99	6180	150
MAY 1978.....	50795	563	320	43700	39	5340	64	8750	140
JUNE 1978.....	19284	750	420	21800	60	3130	90	4660	150
JULY 1978.....	13833	907	500	18800	78	2910	110	4170	150
AUG. 1978.....	19173	785	440	22700	64	3330	94	4870	150
SEPT 1978.....	15492	848	470	19700	71	2980	100	4280	150
TOTAL	276079	**	**	310000	**	44300	**	66200	**
WTD.AVG.	756.38	743	410	**	59	**	89	**	150

TRINITY RIVER BASIN

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08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	1020	968	995	798	720	756	860	700	757	---	---	950
2	964	844	893	926	798	855	856	684	746	---	---	900
3	---	---	870	926	606	717	844	580	671	---	---	870
4	---	---	860	740	604	673	942	856	890	---	---	880
5	864	828	850	756	630	696	942	898	920	930	852	891
6	856	814	832	848	760	810	942	880	912	898	850	875
7	894	822	866	858	776	822	956	904	940	948	888	927
8	934	868	910	---	---	830	900	854	876	---	---	970
9	988	938	970	---	---	800	896	860	881	---	---	980
10	978	928	945	670	496	594	942	900	923	---	---	940
11	1000	942	970	766	582	698	942	926	935	---	---	980
12	976	734	844	716	648	699	956	926	942	---	---	960
13	720	528	627	722	698	712	942	900	919	---	---	840
14	896	614	829	782	702	741	948	884	922	---	---	880
15	878	766	808	800	764	784	904	874	881	---	---	940
16	908	782	855	790	758	768	944	910	933	---	---	960
17	438	910	927	840	768	798	976	938	963	974	930	958
18	988	960	963	876	842	856	1010	972	994	918	784	853
19	952	650	916	886	868	877	1000	988	994	818	776	795
20	894	830	874	928	890	907	1040	990	1020	854	806	833
21	906	828	873	948	928	939	1020	982	1010	852	830	842
22	958	898	934	1080	818	949	---	---	990	862	830	843
23	1000	944	969	1110	1030	1080	---	---	1000	872	862	867
24	984	698	863	1050	714	871	---	---	990	876	850	865
25	734	682	710	1120	734	966	---	---	970	864	854	860
26	706	662	677	1100	1050	1080	---	---	960	932	866	908
27	916	714	813	1130	1070	1100	---	---	960	928	892	919
28	948	878	907	1120	1040	1070	---	---	920	892	878	886
29	960	---	900	1030	740	889	---	---	1000	916	884	898
30	---	---	800	864	742	804	---	---	970	922	898	914
31	---	---	780	---	---	---	---	---	940	920	896	910
MONTH	1020	528	865	1130	496	838	1040	580	927	974	776	900
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	918	872	895	890	836	855	892	844	873	912	878	891
2	908	822	885	926	872	899	906	856	884	972	756	910
3	854	800	826	956	916	937	---	---	900	894	532	758
4	862	808	824	982	940	960	---	---	940	614	466	504
5	876	858	871	980	964	972	---	---	980	494	438	465
6	868	846	859	962	924	941	---	---	960	568	496	534
7	842	770	824	896	480	629	---	---	910	654	568	620
8	790	756	774	618	432	527	---	---	900	704	632	654
9	810	760	788	632	462	550	---	---	910	738	704	722
10	864	766	810	652	566	626	---	---	850	788	744	776
11	844	688	760	670	622	642	---	---	700	854	788	811
12	702	558	662	720	670	686	754	552	651	858	592	731
13	---	---	500	752	722	734	620	554	583	744	526	615
14	---	---	440	776	756	770	712	624	659	708	530	610
15	---	---	540	830	778	811	768	716	742	844	718	806
16	---	---	660	920	822	873	810	774	798	866	846	856
17	---	---	720	946	904	927	876	810	854	898	868	881
18	---	---	740	946	916	926	884	856	873	920	870	890
19	---	---	740	950	918	929	904	872	886	964	920	931
20	---	---	740	956	942	949	942	884	912	958	912	932
21	---	---	740	958	924	940	960	924	943	432	348	394
22	---	---	740	932	876	908	978	942	957	476	424	450
23	---	---	750	968	---	960	998	936	949	476	424	450
24	---	---	780	---	---	650	1130	962	1010	574	476	516
25	---	---	830	---	---	500	1050	640	772	678	542	603
26	---	---	880	---	---	500	786	662	749	746	664	691
27	---	---	840	---	---	630	836	692	781	702	682	694
28	874	836	858	---	---	730	786	698	746	766	704	726
29	---	---	---	724	---	750	858	780	816	874	276	571
30	---	---	---	808	728	767	876	844	857	456	392	422
31	---	---	---	850	812	836	---	---	---	472	396	445
MONTH	918	558	760	982	432	784	1130	552	845	972	276	673

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	530	474	500	---	---	910	872	708	807	892	742	813
2	632	528	573	---	---	905	878	---	850	872	734	782
3	682	632	650	---	---	900	874	---	870	924	880	899
4	764	688	717	---	---	890	918	868	902	930	904	917
5	800	768	779	---	---	900	916	866	903	960	914	933
6	822	742	796	---	---	910	938	412	659	970	838	908
7	798	702	753	---	---	925	588	432	499	836	708	766
8	832	712	779	---	---	915	672	596	633	770	622	680
9	778	500	606	---	---	910	690	656	672	820	780	798
10	614	538	569	---	---	900	730	656	706	840	818	830
11	642	588	613	---	---	890	788	702	746	876	838	856
12	670	644	658	906	---	900	850	768	798	---	---	830
13	784	672	716	912	860	883	864	832	845	---	---	850
14	890	716	756	936	914	926	872	838	856	---	---	855
15	1020	750	789	958	916	941	868	836	856	---	---	845
16	842	814	825	944	912	929	866	836	850	---	---	840
17	862	836	847	936	908	923	870	838	849	---	---	845
18	868	840	852	964	910	939	920	876	903	---	---	850
19	902	870	882	972	900	941	928	888	907	896	---	855
20	926	886	910	916	876	896	902	878	893	---	812	859
21	920	884	899	954	900	928	918	876	893	---	790	820
22	910	878	894	960	920	938	982	894	922	890	824	849
23	946	892	909	942	914	929	---	840	894	928	890	907
24	966	908	926	944	926	935	---	706	791	---	784	835
25	---	918	933	976	936	955	---	750	802	860	802	828
26	---	900	932	978	908	938	852	798	813	926	794	862
27	946	898	925	930	888	782	894	856	872	882	798	843
28	916	888	898	924	832	885	912	888	902	986	840	858
29	---	890	909	974	914	937	942	902	920	888	852	865
30	938	---	900	924	788	898	914	858	887	934	894	923
31	---	---	---	818	652	743	914	852	885	---	---	---
MONTH	1020	474	790	978	652	906	982	412	825	986	622	847

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.3	7.2	7.3	7.2	7.1	7.1	7.3	7.2	7.3	---	---	7.4
2	7.2	7.2	7.2	7.3	7.2	7.2	7.3	7.2	7.2	---	---	7.4
3	7.2	7.2	7.2	7.3	7.2	7.2	7.2	7.1	7.1	---	---	7.4
4	7.2	7.1	7.2	7.2	7.1	7.2	7.2	7.1	7.2	7.4	7.3	7.4
5	7.3	7.2	7.2	7.1	7.1	7.1	7.2	7.2	7.2	7.3	7.3	7.3
6	7.3	7.2	7.2	7.2	7.2	7.2	7.4	7.2	7.3	7.3	7.2	7.3
7	7.3	7.2	7.2	7.2	7.2	7.2	7.4	7.3	7.3	7.2	7.2	7.2
8	7.3	7.2	7.2	7.3	---	7.2	7.3	7.3	7.3	7.3	7.2	7.3
9	7.3	7.2	7.3	7.3	---	7.2	7.4	7.3	7.4	---	---	7.3
10	7.2	7.2	7.2	7.3	7.1	7.2	7.4	7.3	7.4	---	---	7.3
11	7.3	7.2	7.2	7.3	7.2	7.3	7.4	7.3	7.3	---	---	7.3
12	7.3	7.2	7.2	7.3	7.2	7.3	7.3	7.3	7.3	---	---	7.3
13	7.2	7.1	7.1	7.3	7.2	7.2	7.3	7.3	7.3	---	---	7.3
14	7.2	7.1	7.2	7.2	7.2	7.2	7.3	7.3	7.3	---	---	7.3
15	7.2	7.1	7.1	7.2	7.2	7.2	7.3	7.2	7.3	---	---	7.3
16	7.2	7.1	7.2	7.2	7.2	7.2	7.3	7.2	7.3	---	---	7.3
17	7.2	7.2	7.2	7.2	7.2	7.2	7.3	7.2	7.3	7.3	7.2	7.3
18	7.2	7.2	7.2	7.2	7.2	7.2	7.3	7.2	7.3	7.4	7.3	7.3
19	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.4	7.3	7.3
20	7.2	7.2	7.2	7.2	7.1	7.2	7.3	7.2	7.3	7.4	7.3	7.4
21	7.2	7.2	7.2	7.2	7.2	7.2	7.4	7.3	7.4	7.4	7.3	7.4
22	7.2	7.2	7.2	7.3	7.2	7.2	7.4	7.4	7.4	7.4	7.4	7.4
23	7.3	7.2	7.2	7.3	---	7.2	---	---	7.4	7.4	7.3	7.4
24	7.3	7.2	7.2	7.2	7.2	7.2	---	---	7.4	7.4	7.3	7.3
25	7.2	7.1	7.1	7.2	7.2	7.2	---	---	7.4	7.4	7.3	7.3
26	7.1	7.1	7.1	7.2	7.2	7.2	---	---	7.4	7.3	7.3	7.3
27	7.2	7.1	7.1	7.3	7.2	7.2	---	---	7.4	7.3	7.3	7.3
28	7.2	7.2	7.2	7.3	7.2	7.2	---	---	7.4	7.3	7.2	7.3
29	7.2	7.2	7.2	7.3	7.3	7.3	---	---	7.4	7.3	7.2	7.2
30	7.3	7.2	7.2	7.3	7.3	7.3	---	---	7.4	7.4	---	---
31	7.2	7.1	7.1	---	---	---	---	---	7.4	---	---	---
MONTH	7.3	7.1	7.2	7.3	7.1	7.2	7.4	7.1	7.3	7.4	7.2	7.3

TRINITY RIVER BASIN

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08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.4	7.4	7.4	7.5	7.4	7.5	7.5	7.4	7.4	7.4	7.4	7.4
2	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.5	7.4	7.4
3	7.4	7.4	7.4	7.5	7.4	7.4	7.4	---	7.4	7.5	7.3	7.4
4	7.5	7.4	7.4	7.5	7.4	7.5	---	---	7.4	7.4	7.3	7.3
5	7.5	7.4	7.4	7.5	7.4	7.5	---	---	7.4	7.3	7.1	7.2
6	7.5	7.4	7.4	7.5	7.4	7.4	---	---	7.4	7.1	7.1	7.1
7	7.5	7.4	7.4	7.5	7.4	7.5	---	---	7.4	7.2	7.1	7.2
8	7.5	7.4	7.4	7.4	7.2	7.4	---	---	7.4	7.3	7.2	7.2
9	7.5	7.4	7.4	7.4	7.3	7.3	---	---	7.4	7.3	7.2	7.3
10	7.4	7.4	7.4	7.4	7.3	7.4	---	---	7.4	7.4	7.3	7.3
11	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4	7.4	7.3	7.3
12	7.3	7.2	7.3	7.4	7.4	7.4	7.4	7.3	7.4	7.4	7.2	7.3
13	7.6	7.2	7.3	7.4	7.4	7.4	7.4	7.3	7.4	7.3	7.1	7.2
14	---	---	7.3	7.4	7.4	7.4	7.4	7.4	7.4	7.3	7.2	7.3
15	---	---	7.3	7.4	7.4	7.4	7.5	7.4	7.4	7.4	7.3	7.3
16	---	---	7.4	7.5	7.4	7.4	7.5	7.4	7.4	7.4	7.3	7.3
17	---	---	7.4	7.5	7.4	7.4	7.5	7.4	7.5	7.4	7.3	7.4
18	---	---	7.4	7.5	7.4	7.5	7.5	7.4	7.5	7.4	7.3	7.4
19	---	---	7.4	7.5	7.4	7.5	7.5	7.4	7.5	7.4	7.3	7.4
20	---	---	7.4	7.4	7.4	7.4	7.5	7.5	7.5	7.4	7.3	7.4
21	---	---	7.5	7.5	7.4	7.4	7.5	7.5	7.5	7.4	7.2	7.4
22	7.6	7.5	7.5	7.5	7.4	7.4	7.5	7.4	7.5	7.2	7.2	7.2
23	7.7	---	7.5	---	---	7.4	7.5	7.3	7.5	7.2	7.2	7.2
24	---	---	7.5	---	---	7.4	7.5	7.4	7.4	7.3	7.2	7.2
25	---	---	7.5	---	---	7.4	7.4	7.3	7.4	7.3	7.3	7.3
26	---	---	7.5	---	---	7.4	7.4	7.4	7.4	7.3	7.3	7.3
27	7.5	---	7.5	---	---	7.4	7.5	7.4	7.4	7.3	7.3	7.3
28	7.5	7.5	7.5	---	---	7.4	7.4	7.4	7.4	7.3	7.2	7.2
29	---	---	---	7.5	---	7.4	7.4	7.4	7.4	7.5	7.2	7.3
30	---	---	---	7.4	7.4	7.4	7.4	7.4	7.4	7.3	7.2	7.2
31	---	---	---	7.4	7.4	7.4	---	---	---	7.2	7.2	7.2
MONTH	7.7	7.2	7.4	7.5	7.2	7.4	7.5	7.3	7.4	7.5	7.1	7.3
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.3	7.2	7.3	---	---	7.4	7.3	7.2	7.2	7.3	7.2	7.3
2	7.3	7.3	7.3	---	---	7.4	7.2	7.2	7.2	7.3	7.2	7.2
3	7.3	7.3	7.3	---	---	7.4	7.3	7.2	7.2	7.3	7.2	7.3
4	7.4	7.3	7.3	---	---	7.4	7.3	7.2	7.2	7.3	7.2	7.3
5	7.4	7.3	7.4	---	---	7.4	7.3	7.2	7.2	7.4	7.3	7.3
6	7.4	7.4	7.4	---	---	7.4	7.3	7.2	7.2	7.3	7.3	7.3
7	7.4	7.4	7.4	---	---	7.4	7.2	7.1	7.2	7.3	7.2	7.2
8	7.4	7.3	7.4	---	---	7.4	7.2	7.2	7.2	7.2	7.1	7.2
9	7.4	7.2	7.3	---	---	7.4	7.2	7.2	7.2	7.2	7.2	7.2
10	7.4	7.3	7.3	---	---	7.4	7.2	7.1	7.2	7.2	7.2	7.2
11	7.3	7.3	7.3	---	---	7.4	7.2	7.1	7.2	7.2	7.2	7.2
12	7.4	7.3	7.3	7.5	7.3	7.4	7.2	7.2	7.2	7.2	---	7.2
13	7.3	7.2	7.3	7.5	7.3	7.4	7.3	7.2	7.2	---	---	7.2
14	7.4	7.2	7.3	7.4	7.3	7.3	7.3	7.2	7.2	---	---	7.2
15	7.4	7.1	7.3	7.3	7.2	7.3	7.2	7.2	7.2	---	---	7.2
16	7.4	7.4	7.4	7.3	7.3	7.3	7.2	7.1	7.2	---	---	7.3
17	7.4	7.3	7.4	7.4	7.3	7.3	7.2	7.1	7.1	---	---	7.3
18	7.4	7.3	7.4	7.4	7.3	7.4	7.2	7.1	7.2	---	---	7.3
19	7.4	7.3	7.3	7.5	7.2	7.4	7.2	7.1	7.2	7.4	---	7.3
20	7.4	7.3	7.4	7.5	7.4	7.4	7.2	7.1	7.1	7.4	7.3	7.3
21	7.4	7.4	7.4	7.4	7.3	7.4	7.2	7.1	7.1	7.3	7.2	7.3
22	7.4	7.4	7.4	7.4	7.3	7.3	7.2	7.1	7.1	7.3	7.3	7.3
23	7.5	7.4	7.4	7.3	7.3	7.3	7.2	7.1	7.2	7.3	7.2	7.3
24	7.5	7.4	7.4	7.3	7.2	7.3	7.2	7.1	7.2	7.3	7.2	7.2
25	7.4	7.3	7.4	7.3	7.3	7.3	7.2	7.2	7.2	7.2	7.2	7.2
26	7.4	7.1	7.2	7.3	7.2	7.3	7.2	7.2	7.2	7.2	7.1	7.2
27	7.3	7.1	7.2	7.3	7.2	7.2	7.2	7.2	7.2	7.2	7.1	7.2
28	7.4	7.3	7.3	7.3	7.2	7.2	7.2	7.2	7.2	7.2	7.1	7.2
29	7.4	7.2	7.4	7.3	7.2	7.3	7.3	7.2	7.3	7.2	7.2	7.2
30	7.4	---	7.4	7.3	7.2	7.3	7.3	7.3	7.3	7.2	7.2	7.2
31	---	---	---	7.3	7.2	7.2	7.4	7.2	7.3	7.2	7.2	7.2
MONTH	7.5	7.1	7.3	7.5	7.2	7.4	7.4	7.1	7.2	7.4	7.1	7.2

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	27.5	26.5	27.0	---	---	31.0	31.0	30.0	30.5	28.5	28.0	28.0
2	27.5	26.5	27.0	---	---	31.0	---	29.0	31.0	29.0	28.0	28.5
3	27.5	27.0	27.0	---	---	31.5	31.0	29.0	30.0	29.5	28.5	29.0
4	28.0	27.0	27.5	---	---	31.5	30.0	29.0	29.5	30.0	29.0	29.5
5	28.5	27.5	28.0	---	---	31.5	29.0	28.0	28.5	30.0	28.5	29.0
6	28.5	28.0	28.5	---	---	31.5	28.5	27.0	27.5	30.0	29.5	29.5
7	28.5	27.5	28.0	---	---	31.0	28.5	27.0	27.5	29.5	29.0	29.5
8	29.0	27.5	28.0	---	---	31.5	29.0	27.5	28.5	29.5	28.5	29.0
9	28.0	26.0	27.0	---	---	31.5	29.5	28.5	29.0	29.0	28.5	28.5
10	28.0	26.5	27.0	---	---	31.5	30.0	28.5	29.5	29.0	28.5	29.0
11	28.5	27.5	28.0	---	---	31.5	31.0	29.5	30.0	29.0	28.0	28.5
12	30.0	28.5	29.0	33.5	32.0	32.5	31.0	30.0	30.5	---	---	28.5
13	30.0	29.0	29.5	33.0	32.0	32.5	32.0	31.0	31.5	---	---	28.5
14	30.5	29.5	30.0	33.5	32.0	32.5	32.0	31.0	31.5	---	---	29.5
15	30.5	29.5	30.0	33.5	32.5	33.0	32.0	31.0	31.5	---	---	30.0
16	30.5	30.0	30.0	34.0	32.5	33.0	32.0	31.0	31.5	---	---	30.0
17	30.5	29.5	30.0	33.5	32.5	33.0	32.0	31.0	31.5	---	---	29.5
18	31.0	30.0	30.5	33.0	32.0	32.5	31.5	30.5	31.0	---	---	29.0
19	31.5	30.5	31.0	32.5	31.5	32.0	31.5	31.0	31.0	29.5	---	29.0
20	31.5	30.5	31.0	32.5	31.5	32.0	31.5	31.0	31.0	29.5	29.0	29.5
21	31.5	30.5	31.0	32.5	31.5	32.0	31.5	30.5	31.0	29.5	27.5	28.5
22	31.5	30.5	31.0	32.0	31.0	31.5	31.5	30.5	31.0	27.5	26.5	27.0
23	31.5	30.5	31.0	31.0	29.5	30.0	31.5	30.5	31.0	28.0	27.0	27.5
24	32.0	31.0	31.5	30.5	29.5	30.0	31.5	30.5	31.0	27.5	26.5	27.0
25	32.0	31.0	31.5	31.5	30.5	31.0	31.5	30.5	31.0	26.5	26.0	26.0
26	32.0	31.0	31.5	32.0	30.5	31.0	31.5	31.0	31.5	26.0	25.5	25.5
27	32.0	31.0	31.5	31.5	31.0	31.0	31.5	31.0	31.0	25.5	25.0	25.0
28	32.0	31.0	31.5	32.0	30.5	31.0	31.0	30.5	30.5	25.5	25.0	25.0
29	32.5	31.5	31.5	31.5	31.0	31.5	30.0	29.5	30.0	25.5	25.0	25.5
30	---	30.5	31.5	32.0	31.0	31.5	29.5	29.0	29.0	26.0	25.0	25.5
31	---	---	---	31.5	30.5	31.0	29.0	28.5	28.5	---	---	---
MONTH	32.5	26.0	29.5	34.0	29.5	31.5	32.0	27.0	30.5	30.0	25.0	28.0

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	2.0	.8	1.4	3.1	2.7	2.9	3.9	2.8	3.6	---	---	5.0
2	2.2	.9	1.5	2.8	2.1	2.5	3.5	2.4	3.0	---	---	5.2
3	2.6	1.3	1.8	2.8	1.4	2.1	3.4	3.1	3.2	---	---	5.3
4	2.5	1.4	2.0	3.3	2.8	3.1	3.4	2.8	3.1	5.4	5.3	5.4
5	2.5	1.3	1.8	3.4	3.2	3.3	3.7	2.8	3.2	5.6	5.2	5.4
6	2.9	1.9	2.4	3.4	2.9	3.1	5.0	3.3	4.2	5.2	4.4	4.9
7	2.8	2.2	2.5	3.0	2.7	2.9	4.7	4.0	4.3	4.4	3.4	4.0
8	2.8	1.8	2.2	9.4	2.6	5.5	4.9	4.1	4.4	---	3.4	4.0
9	2.7	1.8	2.3	10.7	1.3	5.9	5.0	4.0	4.5	---	---	4.1
10	2.4	2.0	2.2	4.2	1.4	2.9	5.6	4.7	5.0	---	---	4.0
11	2.8	2.0	2.4	4.2	3.3	3.7	5.3	4.6	4.9	---	---	4.1
12	2.6	2.0	2.3	4.3	4.0	4.1	5.2	4.5	4.9	---	---	4.2
13	3.1	2.4	2.8	4.2	3.5	3.8	5.2	4.4	4.8	---	---	4.3
14	3.2	2.8	3.0	3.9	3.5	3.7	4.8	4.1	4.4	---	---	4.5
15	3.2	2.6	2.9	3.5	2.8	3.2	4.3	3.0	3.9	---	---	4.7
16	3.1	2.7	2.9	3.2	3.0	3.1	4.2	2.6	3.5	---	---	4.8
17	3.0	2.5	2.8	3.2	2.7	3.0	3.8	3.2	3.4	5.7	4.1	4.9
18	2.9	2.5	2.7	3.0	2.6	2.8	4.0	3.4	3.7	6.4	5.2	5.8
19	2.7	2.2	2.5	2.9	2.6	2.7	4.1	3.4	3.7	7.1	5.5	6.0
20	2.7	2.2	2.5	2.6	2.3	2.5	4.4	3.4	3.9	8.2	6.5	7.2
21	2.6	2.2	2.4	2.9	2.5	2.7	5.2	4.2	4.7	7.9	6.6	7.1
22	2.1	1.9	2.0	4.0	2.6	3.2	5.3	5.1	5.2	7.9	7.2	7.6
23	2.2	1.9	2.0	3.2	2.7	2.9	---	---	5.3	8.1	6.6	7.2
24	2.5	1.7	2.0	3.0	2.4	2.7	---	---	5.5	7.5	6.4	6.8
25	2.7	2.4	2.5	2.9	2.3	2.6	---	---	5.3	7.2	6.4	6.7
26	2.7	2.0	2.4	2.8	2.3	2.6	---	---	5.1	6.0	5.0	5.5
27	2.7	2.3	2.5	2.9	2.5	2.7	---	---	5.5	5.7	4.3	4.9
28	2.5	2.3	2.3	3.6	2.7	3.0	---	---	5.7	6.3	4.8	5.2
29	3.1	2.0	2.2	3.9	3.4	3.6	---	---	5.6	6.7	5.2	5.8
30	3.2	2.0	2.2	3.7	3.4	3.6	---	---	5.5	6.2	5.6	6.0
31	3.1	2.2	2.7	---	---	---	---	---	5.0	6.8	6.3	6.5
MONTH	3.2	.8	2.3	10.7	1.3	3.2	5.6	2.4	4.5	8.2	3.4	5.4

TRINITY RIVER BASIN

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.8	6.2	6.5	5.2	5.1	5.2	4.6	3.6	4.0	2.7	2.0	2.4
2	6.5	5.9	6.1	5.2	4.7	5.0	4.2	3.5	3.8	2.3	.4	1.7
3	6.7	6.1	6.3	5.2	4.4	4.7	5.0	1.6	2.5	1.5	.1	.7
4	6.8	6.4	6.6	5.8	5.2	5.6	2.4	1.4	1.7	.3	.1	.1
5	6.5	5.9	6.1	6.3	5.6	5.9	2.0	1.6	1.8	.6	.1	.4
6	6.3	5.9	6.1	6.3	5.6	6.0	---	1.8	2.6	.3	.1	.1
7	6.5	5.9	6.2	7.5	5.9	6.7	---	---	2.5	.4	.1	.2
8	7.0	6.6	6.8	6.3	2.2	5.0	---	---	2.3	2.1	.1	.6
9	7.0	6.4	6.8	5.4	4.0	4.8	---	---	2.0	3.8	.1	2.2
10	6.4	5.8	6.2	5.2	4.5	4.9	---	---	1.5	4.4	2.9	3.6
11	6.9	6.2	6.6	6.3	4.6	5.4	---	.1	1.0	3.5	2.8	3.2
12	7.0	6.2	6.6	5.8	4.5	5.1	1.3	.1	.5	3.2	.4	1.9
13	---	4.2	6.6	5.3	5.2	5.3	3.1	1.3	2.3	1.6	.5	1.2
14	---	---	6.8	5.2	4.8	5.1	3.7	3.1	3.4	3.7	1.6	2.5
15	---	---	6.7	5.4	5.0	5.2	3.9	3.2	3.6	3.7	2.4	3.2
16	---	---	7.0	5.3	4.8	4.9	3.5	3.1	3.3	3.0	2.1	2.6
17	---	---	6.9	5.1	4.6	4.9	3.4	2.7	3.0	3.3	2.0	2.6
18	---	---	6.8	5.3	4.6	5.0	3.3	2.7	2.9	3.3	2.2	2.6
19	---	---	6.4	5.2	4.4	4.8	3.8	2.7	3.2	3.6	1.7	2.6
20	---	---	6.3	4.7	4.3	4.5	4.2	2.9	3.4	3.2	1.7	2.5
21	---	---	6.2	4.5	4.2	4.4	4.0	2.8	3.3	2.7	.7	1.9
22	---	---	6.1	4.2	3.6	3.9	3.5	3.0	3.3	1.1	.5	.7
23	---	---	6.2	7.2	2.9	3.9	3.5	2.8	3.1	1.8	.4	1.2
24	---	---	6.3	7.1	6.4	6.8	2.8	1.2	2.3	2.5	.2	1.2
25	---	---	6.2	8.7	.1	5.5	1.5	.1	.7	2.5	.1	1.7
26	---	---	6.4	8.3	1.1	6.7	2.0	.7	1.7	3.0	.1	1.8
27	---	4.6	6.6	6.9	5.0	5.9	2.8	.3	1.6	3.5	2.7	3.0
28	5.2	4.9	5.1	6.2	4.5	5.3	3.8	2.6	3.1	3.4	2.6	2.9
29	---	---	---	7.6	4.7	5.1	3.5	2.9	3.2	2.9	.1	1.0
30	---	---	---	4.6	4.2	4.4	3.3	2.6	2.9	1.6	.6	1.1
31	---	---	---	4.3	3.8	4.0	---	---	---	2.3	1.2	1.8
MONTH	7.0	4.2	6.4	8.7	.1	5.2	5.0	.1	2.6	4.4	.1	1.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	2.9	2.2	2.5	3.4	1.1	1.9	3.4	.9	2.1	3.2	1.3	2.1
2	2.9	2.6	2.7	2.1	1.1	1.4	---	1.0	2.5	2.9	1.3	2.0
3	3.1	2.5	2.8	1.8	1.2	1.4	3.2	1.7	2.5	2.8	1.4	2.2
4	3.2	2.1	2.7	2.1	1.4	1.7	3.2	1.2	2.1	2.5	1.1	1.9
5	3.2	2.4	2.7	2.0	1.6	1.8	2.3	1.3	1.8	3.6	1.3	2.3
6	3.0	2.1	2.6	2.5	1.9	2.2	1.5	.1	.4	3.6	1.6	2.5
7	3.0	2.5	2.7	---	---	2.3	1.0	.3	.6	4.0	1.6	2.7
8	2.9	1.9	2.3	---	---	2.4	1.9	1.0	1.4	3.1	1.4	2.3
9	2.3	.6	1.6	---	---	2.3	2.7	1.8	2.2	2.8	1.5	2.0
10	3.7	2.1	2.8	---	---	2.5	2.7	1.7	2.2	2.5	1.5	1.9
11	3.7	2.7	3.3	---	---	2.6	2.6	1.6	2.0	2.8	1.5	2.0
12	3.8	2.5	3.1	4.4	1.2	2.7	2.6	1.5	2.0	2.6	---	2.0
13	3.3	2.4	2.9	4.6	1.4	2.8	3.6	1.5	2.5	---	---	2.1
14	3.7	2.3	2.9	4.8	1.1	2.8	4.3	1.5	2.7	---	---	2.2
15	3.7	2.1	2.9	4.7	1.1	2.6	4.7	1.3	2.8	---	---	2.3
16	3.8	2.6	3.2	4.5	.9	2.4	4.6	1.4	2.7	---	---	2.2
17	3.6	2.3	2.8	3.4	.7	1.9	4.7	1.4	2.8	---	---	2.1
18	3.2	2.2	2.6	3.7	.8	2.1	4.2	1.2	2.5	---	---	2.0
19	2.9	1.9	2.4	4.1	1.2	2.5	4.4	1.2	2.5	2.8	---	2.0
20	3.6	2.0	2.7	4.1	1.5	2.8	3.4	.9	2.1	2.7	1.2	1.9
21	3.1	1.9	2.5	4.4	1.5	2.8	3.9	.9	2.3	2.4	1.3	1.9
22	3.7	1.9	2.7	4.3	1.4	2.7	4.0	1.0	2.3	2.6	1.5	2.1
23	4.7	2.1	3.3	2.2	1.0	1.7	3.9	.6	2.1	2.9	1.3	2.2
24	5.1	2.6	3.8	3.4	1.0	2.2	4.3	.7	2.4	2.7	1.5	2.1
25	4.3	2.0	3.2	3.6	1.0	2.3	3.8	1.0	2.4	3.5	1.6	2.4
26	4.8	.2	2.4	3.8	1.2	2.4	3.4	1.1	2.2	3.0	1.7	2.3
27	2.9	.1	1.5	3.2	.9	2.1	4.0	1.1	2.5	3.2	1.5	2.3
28	3.3	.5	2.0	4.6	.8	2.5	3.9	1.0	2.4	3.6	1.7	2.6
29	3.8	1.2	2.5	4.0	.7	2.3	3.1	.8	1.9	3.6	2.1	2.9
30	---	1.4	2.4	4.5	.8	2.5	2.6	1.0	1.9	3.5	2.1	2.8
31	---	---	---	3.8	.9	2.2	3.0	1.2	1.9	---	---	---
MONTH	5.1	.1	2.7	4.8	.7	2.3	4.7	.1	2.2	4.0	1.1	2.2

TRINITY RIVER BASIN

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08062650 CEDAR CREEK RESERVOIR SPILLWAY OUTFLOW NEAR TRINIDAD, TX

LOCATION.--Lat 32°14'18", Long 96°08'38", Henderson County, Hydrologic Unit 12030107, near center of channel at downstream side of bridge on State Highway 274, 0.2 mi (0.3 km) downstream from Cedar Creek Reservoir Spillway, 1.8 mi (2.9 km) upstream from mouth of cut channel at Trinity River, and 7.6 mi (12.2 km) north of Trinidad.

DRAINAGE AREA.--1,007 mi² (2,608 km²), that of Cedar Creek Reservoir.

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 9, 1966, nonrecording gage at same site and datum. Auxiliary water-stage recorder 6,000 ft (1,830 m) downstream from base gage at same datum.

REMARKS.--Records fair. Except for a small amount of local runoff and seepage around gates, all flow is water released from Cedar Creek Reservoir (station 08063010). Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--13 years, 582 ft³/s (16.48 m³/s), 421,700 acre-ft/yr (520 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 110,000 ft³/s (3,120 m³/s) June 4, 1973, elevation, 300.75 ft (91.669 m); no flow at times each year except 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,280 ft³/s (206 m³/s) Mar. 9, elevation, 278.80 ft (84.978 m); maximum elevation, 279.55 ft (85.207 m) Mar. 9 (backwater from Trinity River); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.04	.18	.53	.67	.29	.24	.49	.00	.00	.00
2	.00	.00	.00	.21	.47	.91	.29	2.5	.34	.00	.00	.00
3	.00	.00	.03	.33	.42	.49	.33	1.2	.40	.00	.00	.00
4	.42	.00	.03	.33	.43	.64	.32	.18	.40	.00	.00	.00
5	.00	.00	.03	.32	.42	.65	.33	.55	.33	.00	1.2	.00
6	.00	.00	.00	.33	.45	2.0	.33	.17	.33	.00	1.3	.00
7	.00	.00	.04	.29	.72	1.5	4.1	.17	.33	.00	.70	.93
8	.00	.17	.05	.26	.46	2490	.42	.17	.42	.00	.61	.35
9	.00	.00	.00	.28	.50	4740	.42	.18	.42	.00	.23	.27
10	.00	.00	.00	.33	.50	725	.41	.17	.33	.00	.00	.18
11	.17	.00	.00	.31	.50	.45	.40	.62	.25	.00	.00	.27
12	.00	.00	.04	.28	1.1	.52	.30	966	.27	1.2	.00	1.0
13	.00	.00	.09	.33	.41	1790	.25	602	.43	.52	.00	.32
14	.00	.00	.10	.38	.42	.74	.25	.09	.41	.19	.00	.24
15	.00	.00	.08	.42	.42	.65	.25	4.7	.35	.00	.00	.17
16	.00	.00	.05	.40	.42	.72	.25	.27	.27	.03	12	.16
17	.00	.08	.08	.34	.86	.44	.28	.28	.33	.00	.53	.07
18	.00	.00	.09	.39	.55	.40	.32	.10	.39	4.9	.25	.00
19	.00	.00	.25	1.1	.47	.42	.22	.03	.35	.89	.04	.00
20	.00	.00	.17	1.4	.47	.54	.17	.05	.33	.39	.00	.00
21	.00	.00	.17	1.4	.42	.88	.24	.16	.29	.27	.00	.53
22	.00	.00	.17	2.1	.53	.38	.17	.05	.32	.05	.08	.28
23	.00	.02	.17	1.9	.60	168	.17	.02	3.4	.22	.28	.24
24	.08	.02	.17	.90	.75	2660	.22	.00	.48	.39	.25	.09
25	.00	.01	.15	.45	.63	.38	.31	.02	.32	.32	.10	.11
26	.00	.00	.17	.54	.85	.32	.21	.11	.24	.35	.00	.17
27	.00	.03	.19	.50	1.0	.28	.36	.12	.08	.13	.00	.13
28	.00	.04	.17	.50	.84	.28	.17	.33	.00	.00	.00	.17
29	.00	.11	.24	.50	---	.29	.17	.25	.00	.00	.00	.20
30	.00	.08	.25	.50	---	.32	.18	.24	.00	.00	.00	.25
31	.00	---	.25	.61	---	.25	---	.18	---	.00	.00	---
TOTAL	.67	.56	3.27	18.11	16.14	12588.12	12.13	1581.15	12.30	9.85	17.57	6.13
MEAN	.022	.019	.11	.58	.58	406	.40	51.0	.41	.32	.57	.20
MAX	.42	.17	.25	2.1	1.1	4740	4.1	966	3.4	4.9	12	1.0
MIN	.00	.00	.00	.18	.41	.25	.17	.00	.00	.00	.00	.00
AC-FT	1.3	1.1	6.5	36	32	24970	24	3140	24	20	35	12
CAL YR 1977 TOTAL	217740.01			597		27900			431900			
WTR YR 1978 TOTAL	14266.00			39.1		4740			28300			

TRINITY RIVER BASIN

08062700 TRINITY RIVER AT TRINIDAD, TX

LOCATION.--Lat 32°08'05", Long 96°06'20", Henderson County, Hydrologic Unit 12030105, on left bank at pumping station of Texas Power and Light Co., near southwest boundary of Trinidad, 0.5 mi (0.8 km) downstream from St. Louis Southwestern Railway Lines bridge, 0.9 mi (1.4 km) downstream from bridge on State Highway 31, 8 mi (13 km) upstream from Cedar Creek, and at mile 391.2 (629.4 km).

DRAINAGE AREA.--8,538 mi² (22,113 km²), not including 1,007 mi² (2,608 km²) upstream from Cedar Creek Reservoir.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. Records of gage height collected in the vicinity for period October 1913 to September 1915 are contained in reports of Corps of Engineers, and records collected since October 1915 are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 239.21 ft (72.911 m) National Geodetic Vertical Datum of 1929. Prior to May 3, 1967, at site 0.9 mi (1.4 km) upstream at datum 1.28 ft (0.390 m) higher.

REMARKS.--Water-discharge records good. For regulation by upstream reservoirs, see Trinity River near Rosser (station 08062500). The spillway outflow from Cedar Creek Reservoir (station 08062650) enters the Trinity River 13 mi (21 km) upstream from station. Many diversions above station for municipal supply for cities of Fort Worth, Dallas, and several small towns. Sewage effluent from the Fort Worth-Dallas area maintains low flows. National Weather Service gage-height telemeter at this station.

AVERAGE DISCHARGE.--14 years, 3,702 ft³/s (104.8 m³/s), 2,682,000 acre-ft/yr (3.31 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 83,000 ft³/s (2,350 m³/s) May 8, 1969, gage height, 44.10 ft (13.442 m); minimum daily, 312 ft³/s (8.84 m³/s) Aug. 9, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, 49.8 ft (15.18 m) Apr. 25, 1942 (present site and datum), from records of the National Weather Service. Flood in 1908 reached a stage of 48.3 ft (14.72 m), present site and datum, from records of the National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,370 ft³/s (265 m³/s) May 9, gage height, 24.96 ft (7.608 m); minimum daily, 383 ft³/s (10.8 m³/s) Dec. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	477	598	525	524	648	739	518	2870	430	416	590
2	446	479	744	488	631	640	682	516	1180	426	408	512
3	412	938	678	444	824	622	660	864	840	416	420	496
4	395	970	588	416	787	608	640	2180	785	403	425	582
5	412	661	507	430	630	628	636	3820	676	394	468	625
6	429	554	455	455	562	735	646	2510	598	389	703	503
7	413	504	439	461	572	6070	717	1160	582	392	1890	527
8	437	497	452	464	592	6920	805	878	797	403	1590	525
9	440	533	453	441	732	8750	698	724	1240	411	847	519
10	448	1290	443	425	818	6630	636	632	1460	406	577	500
11	456	1400	470	444	1060	2500	798	594	968	396	509	502
12	608	858	466	475	1290	1140	2290	710	650	392	506	669
13	838	596	459	554	2580	2150	2320	2840	523	407	501	845
14	544	523	459	674	5930	1680	1080	1340	510	415	478	686
15	454	501	466	658	6440	771	780	821	516	415	447	726
16	430	540	461	620	3340	692	674	616	544	415	439	619
17	410	531	453	590	1450	654	618	552	514	411	454	534
18	395	512	452	648	1360	636	584	550	494	396	455	490
19	415	490	446	674	1310	608	568	546	477	390	456	460
20	416	482	439	635	1320	582	556	542	439	396	457	453
21	416	490	435	612	1380	632	544	538	432	403	444	536
22	414	470	441	569	1400	755	546	2450	450	417	432	609
23	418	462	435	548	1270	688	566	5680	448	432	466	540
24	664	488	435	542	1060	2870	558	3990	444	439	664	628
25	851	470	435	586	906	4780	924	1620	444	424	569	562
26	605	435	421	631	799	4060	1210	1340	452	509	509	465
27	546	417	414	661	725	2470	790	1120	430	484	483	452
28	474	419	383	638	676	1130	614	674	416	456	464	453
29	446	443	403	566	---	894	542	689	422	464	449	456
30	557	468	435	517	---	821	520	3680	431	593	466	450
31	594	---	508	504	---	787	---	5010	---	479	610	---
TOTAL	15245	17898	14673	16895	40968	63551	23941	49704	21032	13203	18002	16514
MEAN	492	597	473	545	1463	2050	798	1603	701	426	581	550
MAX	851	1400	744	674	6440	8750	2320	5680	2870	593	1890	845
MIN	395	417	383	416	524	582	520	516	416	389	408	450
AC-FT	30240	35500	29100	33510	81260	126100	47490	98590	41720	26190	35710	32760
CAL YR 1977 TOTAL	1232044			3375		39900	MIN 383	AC-FT	2444000			
WTR YR 1978 TOTAL	311626			854		8750	MIN 383	AC-FT	618100			

TRINITY RIVER BASIN

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year.

SPECIFIC CONDUCTANCE: November 1977 to September 1978.

WATER TEMPERATURES: November 1977 to September 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,000 micromhos Dec. 28; minimum daily, 370 micromhos Feb. 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 18...	1350	383	596	7.1	20.0	--	2.1	24	16	--	--
NOV 08...	1720	512	697	7.5	19.0	35	4.5	50	16	26000	1100
DEC 13...	1200	475	886	7.1	12.0	15	6.4	62	17	890	44
JAN 25...	1400	651	857	7.6	5.5	10	7.6	62	14	18000	530
FEB 21...	1450	1410	729	7.9	6.5	80	7.0	59	20	260000	14000
MAR 16...	1040	700	713	7.6	14.5	40	5.2	53	20	22000	33
APR 19...	0950	560	821	8.0	21.0	20	4.5	52	30	30000	110
MAY 23...	1100	5930	421	7.3	25.5	600	.2	2	28	1400000	50000
JUN 13...	0950	516	555	7.3	28.5	25	4.3	56	16	81000	230
JUL 19...	1220	391	934	7.2	31.0	15	3.6	49	24	680000	380
AUG 23...	0930	430	920	7.2	30.0	15	2.9	39	18	3500	240
SEP 19...	1400	453	730	7.5	29.5	15	3.8	50	16	--	12000
DATE	TIME	STRF- TOCOC- CI FECAL KF AGAR (COLS. PER 100 ML)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 18...	--	110	0	39	4.2	70	2.8	8.6	160	0	82
NOV 08...	730	130	15	47	3.1	76	2.9	11	140	0	100
DEC 13...	610	150	0	50	6.2	110	3.9	14	200	0	120
JAN 25...	480	150	0	51	6.3	98	3.4	13	220	0	110
FEB 21...	6700	180	17	64	5.2	64	2.1	9.8	200	0	100
MAR 16...	470	180	27	65	4.9	73	2.4	10	190	0	100
APR 19...	840	180	0	61	5.6	78	2.6	13	230	0	100
MAY 23...	9200	110	0	38	3.0	37	1.6	6.6	140	0	48
JUN 13...	540	140	5	51	4.1	55	2.0	8.0	170	0	76
JUL 19...	560	140	0	46	6.2	130	4.8	16	180	0	130
AUG 23...	60	140	4	48	5.7	120	4.4	16	170	0	120
SEP 19...	5800	130	0	44	5.0	90	3.4	12	160	0	100

TRINITY RIVER BASIN
08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, 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)
OCT 18...	49	.9	9.4	--	342	3.5	.40	3.9	4.5	2.1
NOV 08...	56	.9	11	390	374	4.3	.40	4.7	10	.00
DEC 13...	78	1.3	3.9	497	482	5.4	.34	5.7	9.8	4.2
JAN 25...	73	.4	7.5	473	468	1.1	.14	1.2	9.3	1.7
FEB 21...	46	.8	8.9	409	397	1.6	.11	1.7	8.1	2.9
MAR 16...	49	.9	9.9	387	407	1.9	.32	2.2	5.5	2.9
APR 19...	55	.9	9.0	435	436	1.2	.22	1.4	6.3	12
MAY 23...	23	.6	7.9	238	233	.20	.22	.42	3.8	1.1
JUN 13...	39	.8	7.7	332	325	1.6	.41	2.0	1.5	1.4
JUL 19...	87	1.4	12	553	518	4.7	2.2	6.9	.25	2.7
AUG 23...	98	1.4	12	547	505	4.5	.91	5.4	2.2	2.4
SEP 19...	66	1.2	11	420	408	3.1	.77	3.9	3.0	1.8
DATE	NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 18...	6.6	--	5.2	--	--	--	--	--	--	--
NOV 08...	8.8	8.8	6.8	6.5	9.8	--	--	52	72	96
DEC 13...	14	14	6.1	4.4	12	--	--	15	19	94
JAN 25...	11	9.8	3.8	4.1	--	12	1.1	19	33	96
FEB 21...	11	12	2.3	1.8	15	--	--	89	339	97
MAR 16...	8.4	5.9	2.2	1.0	--	15	2.4	95	180	100
APR 19...	18	19	5.6	1.1	13	--	--	38	57	88
MAY 23...	4.9	4.0	1.4	.82	33	--	--	1090	17500	97
JUN 13...	2.9	2.8	1.4	1.3	9.8	--	--	38	53	95
JUL 19...	2.9	1.8	5.7	5.4	--	11	--	30	32	95
AUG 23...	4.6	3.8	5.0	5.0	13	--	--	27	31	97
SEP 19...	4.8	4.1	5.8	4.1	--	9.6	1.3	30	37	94

TRINITY RIVER BASIN

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)		ARSENIC SUS-PENDED TOTAL (UG/L AS AS)		ARSENIC DIS-SOLVED (UG/L AS AS)		BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)		BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)		BARIUM, DIS-SOLVED (UG/L AS BA)		CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)		CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)		CADMIUM DIS-SOLVED (UG/L AS CD)	
JAN 25...	1400		5		1		4		0		0		100		3		0		3
MAR 16...	1040		11		5		6		300		0		300		1		0		2
JUL 19...	1220		8		0		7		200		0		200		3		3		0
SEP 19...	1400		19		--		18		0		0		0		2		2		0
DATE		CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)								
JAN 25...	10		10		0		1		1		0		15		14		1		460
MAR 16...	20		20		0		0		0		0		19		12		7		1900
JUL 19...	0		0		0		2		0		2		7		3		4		430
SEP 19...	10		10		0		0		0		2		5		3		2		560
DATE		IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)								
JAN 25...	--		10		1		0		3		120		20		100		.3		.3
MAR 16...	--		10		1		1		0		120		110		10		.0		.0
JUL 19...	410		20		8		6		2		100		100		0		.1		.1
SEP 19...	480		80		27		26		1		90		50		40		.0		.0
DATE		MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)								
JAN 25...	.0		0		0		2		2		0		60		20		40		
MAR 16...	.0		2		2		0		0		1		30		10		20		
JUL 19...	.0		0		0		0		0		0		20		10		10		
SEP 19...	.0		0		0		0		0		0		20		0		20		

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PERIPHYTON

DATE	LENGTH OF EXPOSURE (DAYS)	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	SAMPLING METHOD
DEC 13...	35	9.35	11.5	7.10	2.17	POLYETHYLENE STRIP
JUL 19...	36	15.0	17.5	55.9	7.78	POLYETHYLENE STRIP
SEP 19...	27	50.9	57.2	12.6	4.65	POLYETHYLENE STRIP

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

TRINITY RIVER BASIN

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 8,77 1720	MAR 16,78 1040	MAY 23,78 1100	JUN 13,78 0950	JUL 19,78 1220	SEP 19,78 1400				
TOTAL CELLS/ML	13000	10000	300	45000	46000	43000				
DIVERSITY: DIVISION	1.4	0.8	1.0	0.7	1.0	1.1				
..CLASS	1.4	0.8	1.0	0.7	1.0	1.1				
...ORDER	1.6	1.2	1.4	0.8	1.1	1.4				
...FAMILY	2.1	1.5	2.4	2.3	2.5	2.3				
...GENUS	2.3	1.8	2.6	2.7	3.2	3.2				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALFS										
...OOCYSTACEAE										
...DICHOTOMOCOCCLUS	--	-	--	-	230	1	--	-	--	-
...CHAPACIACEAE					*	0				
...SCHROEDERIA	--	-	--	-			--	-	--	-
...COELASTRACEAE										
...COFLASTRUM	--	-	--	-	2300	5	10000#	22	--	-
...HYDRODICTYACEAE										
...PEDIASTRUM	--	-	--	-	--	-	1500	3	--	-
...MICRACTINIACEAE										
...GOLENKINIA	--	-	170	2	--	-	--	-	490	1
...MICRACTINIUM	--	-	170	2	--	-	760	2	1500	3
...OOCYSTACEAE					17000#	37				
...ANKISTRODESMUS	--	-	500	5	400	1	1100	2	1700	4
...CHODATELLA			--	-	--	-	--	-	490	1
...DICTYOSPHAERIUM	3500#	27	--	-	1300	3	--	-	250	1
...KIPCHNERIELLA	--	-	--	-	--	-	760	2	1500	3
...OOCYSTIS	--	-	7000#	69	1900	4	3600	8	2200	5
...QUADRIGULA	--	-	--	-	--	-	--	-	990	2
...SELENASTRUM	--	-	--	-	*	0	480	1	5200	12
...TETRAEDRON	--	-	--	-	--	-	--	-	490	1
...SCENEDESMACEAE										
...ACTINASTRUM	1200	9	*	0	12000#	27	--	-	--	-
...CORONASTRUM	--	-	--	-	--	-	1300	3	--	-
...CRUCIGENIA	--	-	--	-	--	-	2700	6	990	2
...SCENEDESMUS	1200	9	--	-	4000	9	14000#	29	15000#	34
...TETRASTRUM	--	-	--	-	--	-	380	1	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	410	4	*	0	--	-	1700	4
...PHACOTACEAE	--	-	83	1	--	-	--	-	--	-
...PHACOTUS	--	-								
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCAEAE										
...CYCLOTELLA	870	7	990	10	29	10	1500	3	380	1
...CYCLOTELLA									4200	10
..PENNALES										
...ACHNANTHACEAE										
...ACHNANTHES	--	-	*	0	--	-	--	-	--	-
...CYMBELLACEAE	--	-	*	0	--	-	--	-	--	-
...AMPHORA	--	-			--	-	--	-	--	-
...FRAGILARIACEAE	--	-	--	-	43	14	--	-	--	-
...SYNEDRA	--	-	--	-			--	-	--	-
...NAVICULACEAE	--	-	--	-			--	-	--	-
...NAVICULA	290	2	43	1	100#	33	--	-	--	-
...NITZSCHIAEAE	--	-	--	-			--	-	--	-
...NITZSCHIA	580	5	410	4	57#	19	230	1	670	1
..CHRYSOPHYCEAE									990	2
...CHRYSOMONADAE										
...OCHROMONADACEAE										
...OCHROMONAS	--	-	--	-	--	-	290	1	--	-
...XANTHOPHYCEAE										
...HETEROCOCCALFS										
...CHLOROTHECIACEAE										
...OPHIOCYTIUM	--	-	--	-	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
..CRYPTOPHYCEAE										
...CRYPTOMONADAE										
...CRYPTOMONADACEAE										
...CRYPTOMONAS	--	-	--	-	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM: EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED: LESS THAN 1/2%

TRINITY RIVER BASIN

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 8 1977 1720	MAR 16 1978 1040	MAY 23 1978 1100	JUN 13 1978 0950	JUL 19 1978 1220	SEP 19 1978 1400
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCALES						
...CHROCOCCACEAE						
....ANACYSTIS	--	--	330	3	290	1
....HORMOGONIALES					5500	12
....NOSTOCACEAE					5700	13
....APHANIZOMENON	5200	41	--	--	--	--
....OSCILLATOACEAE						
....OSCILLATORIA	--	--	*	0	2400	5
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE	--	--	--	--	--	--
....EUGLENA	--	--	29	10	350	1
....LEPOTINCLIS	--	--	--	--	230	1
....PHACUS	--	--	*	0	*	0
....TRACHELOMONAS	--	--	29	10	760	2
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
...GLENODINIACEAE						
...GLENODINIUM	--	--	14	5	--	--

NOTE: * - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%.

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%.

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	****	****	****	****	****	****	****	****	****
NOV. 1977.....	17898	695	390	18700	55	2660	91	4420	140
DEC. 1977.....	14673	856	480	18800	76	3000	120	4660	150
JAN. 1978.....	16895	876	490	22200	78	3580	120	5480	150
FEB. 1978.....	40968	608	340	37400	45	5030	78	8610	140
MAR. 1978.....	63551	534	300	51100	36	6110	66	11300	130
APR. 1978.....	23941	653	360	23400	50	3220	85	5490	140
MAY 1978.....	49704	533	300	39800	25	4720	66	8820	130
JUNE 1978.....	21032	612	340	19300	44	2510	78	4450	140
JULY 1978.....	13203	872	490	17300	78	2780	120	4270	150
AUG. 1978.....	18002	756	420	20400	63	3040	100	4920	140
SEPT 1978.....	18514	717	400	17800	57	2560	96	4270	140
TOTAL	296381	**	**	246000	**	39200	**	66700	**
WTD.AVG.	887	643	360	**	48	**	83	**	140

TRINITY RIVER BASIN

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		.600	.890	.935	.965	.775	.680	.800	.500	.890	.877	.680
2		.580	.720	.913	.870	.800	.700	.852	.603	.900	.885	.847
3		.420	.670	.869	.690	.830	.715	.740	.645	.915	.865	.856
4		.400	.700	.820	.720	.850	.740	.630	.660	.926	.860	.880
5		.600	.730	.840	.850	.840	.750	.568	.682	.961	.830	.722
6		.645	.750	.866	.940	.700	.745	.450	.680	.930	.750	.785
7		.660	.781	.869	.935	.482	.660	.480	.678	.911	.490	.760
8		.684	.760	.859	.920	.430	.580	.530	.560	.918	.570	.765
9		.644	.832	.885	.800	.381	.690	.562	.440	.896	.600	.780
10		.767	.851	.900	.710	.571	.878	.675	.400	.900	.680	.800
11		.801	.894	.870	.670	.588	.750	.700	.480	.915	.750	.790
12		.529	.870	.880	.620	.625	.440	.640	.545	.925	.826	.620
13		.637	.841	.900	.580	.500	.420	.460	.555	.896	.848	.550
14		.574	.860	.885	.400	.629	.500	.480	.590	.890	.859	.630
15		.734	.877	.872	.370	.703	.579	.650	.585	.896	.870	.590
16		.684	.860	.885	.550	.713	.650	.770	.570	.910	.890	.620
17		.692	.845	.910	.666	.765	.748	.860	.595	.920	.860	.660
18		.721	.850	.850	.671	.820	.796	.862	.630	.937	.850	.700
19		.725	.864	.830	.690	.866	.821	.872	.660	.934	.845	.730
20		.730	.854	.850	.710	.910	.815	.885	.710	.938	.840	.770
21		.738	.905	.870	.729	.850	.878	.895	.745	.910	.880	.710
22		.793	.920	.880	.720	.720	.875	.520	.730	.900	.940	.630
23		.837	.940	.900	.735	.770	.850	.421	.740	.850	.920	.700
24		.800	.966	.920	.753	.509	.875	.500	.800	.840	.716	.660
25		.840	.975	.857	.752	.420	.620	.509	.820	.860	.800	.720
26		.890	.980	.823	.752	.495	.510	.514	.800	.720	.899	.740
27		.978	.990	.810	.753	.515	.650	.484	.850	.750	.890	.770
28		.899	1000	.820	.754	.525	.767	.630	.896	.785	.880	.800
29		.917	.960	.890	---	.540	.759	.720	.885	.771	.840	.820
30		.899	.950	.960	---	.560	.780	.417	.878	.720	.788	.843
31		---	.927	.970	---	.661	---	.413	---	.810	.568	---
MEAN		.714	.865	.877	.724	.656	.707	.629	.664	.878	.805	.728

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	13.0	13.0	---	11.0	21.0	19.0	21.0	---	18.0	---
2		---	---	8.0	---	---	18.0	19.0	19.0	21.0	---	16.0
3		---	---	8.0	---	---	18.0	---	18.5	21.0	20.0	---
4		---	---	---	---	---	15.0	21.0	18.0	18.0	---	---
5		---	---	---	---	9.0	---	21.0	18.0	24.0	---	18.0
6		---	---	13.0	---	---	---	---	---	24.0	---	17.0
7		22.0	11.0	8.0	---	12.0	15.0	20.0	16.0	23.0	---	17.0
8		19.0	14.0	8.0	---	13.0	10.0	20.0	---	21.0	19.0	20.0
9		15.0	11.0	5.0	---	9.0	11.0	22.0	---	24.0	20.0	---
10		16.0	11.0	---	---	13.0	---	21.0	18.0	21.0	18.0	21.0
11		17.0	10.5	---	---	13.0	15.0	21.0	18.0	21.0	21.0	16.0
12		17.5	12.0	---	---	8.0	15.0	18.0	18.0	18.0	21.0	---
13		15.0	13.0	---	---	---	15.0	20.0	21.0	20.0	21.0	18.0
14		17.0	---	6.0	---	15.0	23.0	---	21.0	23.0	21.0	21.0
15		17.5	12.0	6.0	---	12.0	23.0	---	19.0	24.0	---	19.0
16		18.0	---	8.0	---	13.0	23.0	---	20.0	24.0	18.0	24.0
17		18.0	---	---	8.0	---	24.0	---	---	24.0	23.0	20.0
18		18.0	15.0	---	6.0	---	23.0	21.0	---	21.0	24.0	20.0
19		---	15.5	---	9.0	19.0	21.0	21.0	---	23.0	---	16.0
20		20.5	---	---	9.0	---	22.0	---	---	20.0	18.0	20.0
21		17.0	10.0	---	11.0	---	20.0	---	---	24.0	---	---
22		16.0	11.0	---	---	---	---	13.0	21.0	20.0	20.0	19.0
23		17.5	11.0	---	---	---	24.0	21.0	19.0	18.0	21.0	18.0
24		---	11.5	---	11.0	8.0	24.0	23.0	21.0	20.0	24.0	18.0
25		---	---	6.0	11.0	---	---	18.0	21.0	19.0	24.0	18.0
26		---	---	5.0	11.0	8.0	23.0	21.0	21.0	23.0	22.0	---
27		17.5	---	---	---	11.0	21.0	21.0	19.0	24.0	---	---
28		16.5	---	---	10.0	11.0	23.0	20.0	21.0	21.0	16.0	21.0
29		15.0	---	---	---	15.0	25.0	23.0	18.0	21.0	18.0	21.0
30		13.0	---	---	---	18.0	---	---	20.0	---	21.0	21.0
31		---	9.5	---	---	18.0	---	18.0	---	---	19.0	---
MEAN		17.0	12.0	8.0	9.5	12.5	19.5	20.0	19.5	21.5	20.5	19.0

TRINITY RIVER BASIN

08062800 CEDAR CREEK NEAR KEMP, TX

LOCATION.--Lat 32°30'11", Long 96°06'43", Kaufman County, Hydrologic Unit 12030107, on left bank at downstream side of bridge on Farm Road 1836, 3.6 mi (5.8 km) upstream from Williams Creek, 8.1 mi (13.0 km) northeast of Kemp, and 51.5 mi (82.9 km) upstream from mouth.

DRAINAGE AREA.--189 mi² (490 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 341.48 ft (104.083 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Flow is also affected at times by storage in Terrell Municipal Lake, capacity 8,300 acre-ft (10.2 hm³). Records furnished by the city of Terrell show that during the current year 3,040 acre-ft (3.75 hm³) was diverted from Terrell Municipal Lake for municipal use and 2,190 acre-ft (2.70 hm³) of sewage effluent was returned to a tributary of Kings Creek that enters downstream from this station. Flow is affected at times by discharge from the flood-detention pools of 18 floodwater-retarding structures with a combined detention capacity of 18,380 acre-ft (22.7 hm³). These structures control runoff from 54.2 mi² (140.4 km²). A recording rain gage at this station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years (water years 1964-78), 118 ft³/s (3.342 m³/s), 85,490 acre-ft/yr (105 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s (821 m³/s) Apr. 26, 1966, gage height, 16.8 ft (5.12 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1889, about 20.5 ft (6.25 m) in 1945, from information by Texas Department of Highways and Public Transportation and local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,870 ft³/s (53.0 m³/s) Mar. 8, gage height, 13.26 ft (4.042 m), no peak above base of 2,000 ft³/s (56.6 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	36	.00	2.3	2.9	9.5	2.0	.16	.00	.52	.00
2	.00	74	36	.00	25	4.9	9.3	1.9	.22	.00	.42	.00
3	.00	34	16	.00	29	10	9.1	2.4	.28	.00	.28	.00
4	.00	19	6.5	.00	19	9.0	8.8	2.2	.39	.00	.17	.00
5	.00	13	2.0	.00	12	4.3	8.5	2.1	.35	.00	.67	.00
6	.00	8.2	.58	.00	6.5	17	8.5	2.0	.22	.00	27	.00
7	.00	3.6	.28	.00	3.7	585	8.6	2.0	.13	.00	73	.00
8	.00	1.9	.25	.00	2.1	1360	8.6	1.9	.07	.00	24	.00
9	.00	8.2	.22	.00	1.6	881	8.6	1.9	.04	.00	12	.00
10	.00	38	.19	.00	1.6	248	9.3	1.9	.04	.00	6.0	.00
11	.00	13	.16	.00	27	144	9.3	2.9	.04	.00	3.6	.00
12	.00	2.5	.13	.01	158	100	9.3	194	.03	.00	2.1	.23
13	.00	.44	.11	.06	621	75	9.1	269	.03	.00	.88	.14
14	.00	.16	.10	.11	889	58	9.0	74	.03	.00	.58	.06
15	.00	.11	.07	.10	269	42	9.0	29	.02	.00	.34	.02
16	.00	.10	.04	.06	100	30	8.8	16	.02	.00	.28	.01
17	.00	.10	.02	41	82	21	8.7	7.7	.02	.00	.20	.00
18	.00	.10	.01	35	311	16	8.6	3.7	.02	.00	.10	.00
19	.00	.11	.00	18	203	14	8.6	.87	.02	.00	.06	.00
20	.00	.11	.00	16	83	12	9.2	.58	.02	.00	.02	.00
21	.00	.16	.00	12	39	11	9.2	1.9	.02	.00	.29	.00
22	.00	.16	.00	6.5	27	11	8.6	54	.02	.00	.32	.00
23	.00	.11	.00	3.6	20	11	8.8	45	.01	.00	.16	.00
24	.00	.08	.00	2.0	13	41	8.8	13	.01	58	.10	.00
25	.00	.06	.00	3.8	8.0	57	82	3.3	.01	98	.06	.00
26	.00	.04	.00	18	5.0	52	132	1.1	.01	43	.04	.00
27	.00	.03	.00	27	4.3	27	21	.64	.01	25	.02	.00
28	.00	.03	.00	19	3.4	17	5.6	.35	.01	16	.01	.00
29	.00	.03	.00	8.8	---	13	2.7	.28	.00	8.3	.00	.00
30	.00	.04	.00	3.8	---	10	2.2	.22	.00	3.4	.00	.00
31	.00	---	.00	2.1	---	9.3	---	.11	---	1.2	.00	---
TOTAL	.00	217.37	98.66	216.94	2965.5	3893.4	459.3	737.95	2.25	252.90	153.22	.46
MEAN	.000	7.25	3.18	7.00	106	126	15.3	23.8	.075	8.16	4.94	.015
MAX	.00	74	36	41	889	1360	132	269	.39	98	73	.23
MIN	.00	.00	.00	.00	1.6	2.9	2.2	.11	.00	.00	.00	.00
AC-FT	.00	431	196	430	5880	7720	911	1460	4.5	502	304	.9

CAL YR 1977 TOTAL 40772.02 MEAN 112 MAX 5320 MIN .00 AC-FT 80870
WTR YR 1978 TOTAL 8997.95 MEAN 24.7 MAX 1360 MIN .00 AC-FT 17850

NOTE.--No gage-height record Dec. 6 to Jan. 16 and June 9 to July 23.

TRINITY RIVER BASIN

543

08062900 KINGS CREEK NEAR KAUFMAN, TX

LOCATION.--Lat 32°30'48", long 96°19'44", Kaufman County, Hydrologic Unit 12030107, on left bank at downstream side of bridge on Farm Road 1388, 3.6 mi (5.8 km) upstream from Big Cottonwood Creek, 4.8 mi (7.7 km) downstream from Big Brushy Creek, and 5.3 mi (8.5 km) south of Kaufman.

DRAINAGE AREA.--233 mi² (603 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 343.24 ft (104.620 m) Texas Department of Highways and Public Transportation datum.

REMARKS.--Water-discharge records good. During the year, the city of Terrell diverted 3,040 acre-ft (3.75 hm³) from Terrell Municipal Lake in the Cedar Creek basin and returned 2,190 acre-ft (2.70 hm³) of sewage effluent into the creek above this station. The city of Kaufman diverted 695 acre-ft (0.857 hm³) from Lavon Lake (on East Fork Trinity River) during year and returned 262 acre-ft (0.323 hm³) of sewage effluent into Kings Creek above this station. Flow is affected at times by discharge from the flood-detention pools of 27 floodwater-retarding structures with combined detention capacity of 14,340 acre-ft (17.7 hm³). These structures control runoff from 46.2 mi² (119.7 km²) in the Cedar Creek drainage basin. A recording rain gage is located at this station. Tarrant County Water Control and Improvement District No. 1 gage-height telemeter at station.

AVERAGE DISCHARGE.--15 years (water years 1964-78), 159 ft³/s (4.503 m³/s), 115,200 acre-ft/yr (142 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,200 ft³/s (1,590 m³/s) Apr. 19, 1976, gage height, 26.19 ft (7.983 m), from rating curve extended above 50,000 ft³/s (1,420 m³/s); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1942, that of Apr. 19, 1976. Flood in 1949 reached a stage of 23.1 ft (7.04 m), from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 13	1300	*5,650 160	19.19 5.849	Mar. 7	1715	4,720 134	18.84 5.742

Minimum discharge, no flow Aug. 28, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	441	192	3.4	22	14	7.4	3.1	2.2	1.3	.38	.54
2	1.5	1440	103	3.2	115	9.0	6.5	3.1	1.9	1.3	.25	.54
3	.87	249	30	3.0	76	7.4	6.1	4.4	2.1	1.3	.58	.39
4	.85	72	15	2.8	35	5.8	5.3	8.9	2.2	1.4	.98	.44
5	.85	47	10	2.8	18	5.5	5.1	6.5	2.1	1.4	4.8	.49
6	.85	29	7.8	2.9	12	99	5.1	4.2	1.9	1.3	88	.54
7	.99	14	6.3	3.0	9.9	3170	4.9	3.1	2.4	1.2	79	.28
8	1.0	33	5.8	3.0	9.6	2870	4.2	2.8	2.8	1.2	32	.27
9	1.2	800	5.3	2.8	11	353	3.9	2.6	2.2	1.2	12	.57
10	1.3	218	4.5	2.4	51	144	4.7	2.1	2.2	1.2	3.2	.37
11	1.9	50	4.2	2.6	296	93	186	2.7	2.4	1.2	1.2	.28
12	2.8	25	3.9	4.0	685	56	57	62	2.2	1.5	.34	36
13	2.8	14	4.0	6.5	3900	33	26	66	1.7	1.5	.22	159
14	1.9	9.6	4.0	7.8	1590	23	15	21	1.6	1.2	.08	242
15	1.4	7.1	4.1	6.1	225	16	10	9.2	1.6	1.1	.02	48
16	1.2	5.8	4.4	5.6	123	11	7.8	5.2	1.6	3.0	.08	22
17	1.4	5.3	4.2	7.1	150	8.4	6.5	3.7	1.5	2.4	.10	8.2
18	1.4	4.5	4.0	12	236	6.9	6.1	3.4	1.5	2.3	.01	2.9
19	1.4	4.4	3.5	13	154	4.7	4.9	3.0	1.5	1.5	.01	1.5
20	1.2	4.3	2.9	19	188	4.0	4.4	2.7	1.5	1.1	.04	.85
21	1.5	4.0	2.6	13	383	3.2	4.4	206	1.5	.72	.10	20
22	1.5	3.6	2.8	8.4	145	3.7	4.0	115	1.5	.49	.16	315
23	1.5	3.3	3.1	7.1	75	6.3	3.9	46	1.5	.74	.39	175
24	1.7	3.6	3.2	8.7	50	192	4.4	19	1.5	26	.44	70
25	23	4.3	3.2	92	33	162	4.7	9.7	1.5	66	.39	50
26	7.9	4.1	3.2	167	22	56	6.1	5.3	1.4	31	.39	33
27	3.1	3.6	3.1	64	16	30	4.4	3.9	1.3	7.5	.22	23
28	1.9	3.6	2.8	24	14	18	3.7	4.2	1.3	.80	.00	16
29	1.4	3.7	2.7	14	---	13	3.4	3.2	1.3	.07	.00	10
30	1.3	8.1	2.8	9.6	---	11	3.4	3.1	1.3	14	.22	7.0
31	1.6	---	3.2	7.1	---	8.4	---	2.4	---	2.8	.60	---
TOTAL	74.03	3514.9	451.6	527.9	8644.5	7437.3	419.3	637.5	53.2	179.72	226.20	1244.16
MEAN	2.39	117	14.6	17.0	309	240	14.0	20.6	1.77	5.80	7.30	41.5
MAX	23	1440	192	167	3900	3170	186	206	2.8	66	88	315
MIN	.82	3.3	2.6	2.4	9.6	3.2	3.4	2.1	1.3	.07	.00	.27
AC-FT	147	6970	896	1050	17150	14750	832	1260	106	356	449	2470
CAL YR 1977	TOTAL	55791.70	MEAN	153	MAX	8710	MIN	.05	AC-FT	110700		
WTR YR 1978	TOTAL	23410.31	MEAN	64.1	MAX	3900	MIN	.00	AC-FT	46430		

TRINITY RIVER BASIN

08062900 KINGS CREEK NEAR KAUFMAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment records: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
FEB 14...	1615	989	5.0	1270	3390	44	45
		SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM
FEB 14...	47	48	56	98	99	99	100

08063010 CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX

LOCATION.--Lat 32°14'35", long 96°08'26", Henderson County, Hydrologic Unit 12030107, inside pumphouse on lower level, 1,000 ft (300 m) north of spillway, 5.5 mi (8.8 km) upstream from Joe B. Hogsett Dam on Cedar Creek, and 8.0 mi (12.9 km) northwest of Trinidad.

DRAINAGE AREA.--1,007 mi² (2,608 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to May 15, 1972, at unfinished pumphouse at same site and datum. May 16, 1972, to Sept. 8, 1975, at site 0.25 mi (0.40 km) north and upstream from pumphouse at same datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 17,539 ft (5,346 m) long. The spillway is located on the right bank 5.5 mi (8.8 km) upstream from the dam and discharges into the Trinity River through a cut channel 2 mi (3 km) long. Deliberate impoundment began July 2, 1965, and the dam was completed in February 1966. The spillway is 474 ft (144 m) long and has eight 40 by 24 ft (12 by 7 m) radial gates and two automatically operated 40 by 8.5 ft (12 by 2.6 m) hinged gates. Low-flow releases may be made downstream through a 5.0-foot-diameter (1.5 m) conduit through the dam. The dam is the property of Tarrant County Water Control and Improvement District No. 1 and was built for municipal and industrial supply and for recreational purposes. The area and capacity tables were based on a survey during the period 1940-58. During the current year, records furnished by Tarrant County Water Control and Improvement District No. 1 show that a total of 55,990 acre-ft (69.0 hm³) was diverted from the reservoir for municipal and industrial uses by lakeside developments and by the cities of Arlington, Fort Worth, Mansfield, Kemp, Trinidad, and Mabank. Flow is also affected at times by discharge from the flood-detention pools of 76 floodwater-retarding structures with a combined detention capacity of 53,070 acre-ft (65.4 hm³). These structures control runoff from 168 mi² (435 km²). 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.....	340.0	
Top of radial gates.....	325.0	785,100
Top of automatic gates.....	322.5	696,400
Top of conservation pool.....	322.0	679,200
Crest of spillway (automatic gates).....	314.0	441,000
Crest of spillway (radial gates).....	302.0	197,800
Lowest gated outlet (invert).....	263.5	430

COOPERATION.--Records of diversions furnished by the Tarrant County Water Control and Improvement District No. 1. The area and capacity tables were furnished by Freese and Nichols, Consulting Engineers, for Tarrant County Water Control and Improvement District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 722,000 acre-ft (890 hm³) June 4, 1973, elevation, 323.24 ft (98.524 m); minimum since first appreciable storage in 1966, 332,900 acre-ft (410 hm³) Mar. 19, 1967, elevation, 309.42 ft (94.311 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 684,400 acre-ft (844 hm³) May 23, elevation, 322.15 ft (98.191 m); minimum, 604,200 acre-ft (745 hm³) Jan. 10, elevation, 319.69 ft (97.442 m).

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

319.0	582,600	321.0	646,000
320.0	613,800	322.5	696,400

 CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
 INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	630600	616100	618700	609500	609800	644100	675600	674600	677200	654700	630300	612600
2	628600	617700	617700	607300	609500	645400	676600	674300	676900	653700	631900	612300
3	627000	617700	618000	606300	609800	644100	677900	675600	676600	653000	631200	612000
4	625700	618300	619000	606300	610400	643100	676900	675200	675900	652300	630900	612300
5	625400	617700	619900	606000	610100	641500	675600	674900	675600	651300	630600	611000
6	624500	617100	617100	606000	609500	652700	676900	674900	675200	650300	629900	610100
7	623800	617700	615100	609200	611600	676200	676200	674300	674300	649700	629000	609500
8	624100	620300	619600	607300	612000	681600	675900	674300	673900	648700	628300	609200
9	621900	620300	615800	605100	612600	679600	677600	673900	673900	647700	627700	608800
10	623500	619600	614500	604200	612000	679200	677900	672300	671300	646700	626700	608200
11	624800	619900	614200	607300	612000	681300	677200	677600	670300	645400	626100	607900
12	623200	619300	613800	607000	619900	682000	678200	680300	670600	644700	624800	612100
13	621900	619000	614500	607900	625400	678900	677600	679900	670300	643800	623000	612800
14	621200	618300	613800	605700	632200	679600	676200	679600	668900	643500	623200	612300
15	621600	618000	612900	605700	635400	680600	676600	679600	667900	642500	621900	612300
16	619900	618000	613500	610100	636400	679200	675600	679900	666900	641500	621600	612800
17	618700	617400	612900	607600	640900	678200	676200	678200	666300	639900	621600	612900
18	618700	616400	612000	612000	640900	677200	676200	677900	665600	638900	620900	612900
19	618300	616400	614200	609500	642200	676900	675600	677600	665000	638000	620600	612300
20	617700	616100	612300	608800	644400	678600	674900	679200	664300	637000	619600	612300
21	617700	616100	610100	608800	642800	679900	672300	680600	664000	635400	619300	612100
22	617400	615100	608500	608800	643800	678900	673300	680300	662600	634400	618700	612300
23	617100	616700	608800	608500	643100	683300	673900	681300	661600	637300	618000	612300
24	618300	616100	610400	609200	642800	678900	675900	679600	660300	636400	616700	619600
25	618000	616100	608800	609500	643800	678200	674900	679200	659300	635700	616100	619000
26	617400	613800	608500	608800	643500	678600	674300	677900	658600	635100	615800	618300
27	617100	615100	607900	608800	643100	678200	673900	677900	657700	634100	615800	618000
28	617100	616700	607900	608500	645100	677900	671300	677600	657300	633500	614800	617400
29	616100	617400	607900	607900	---	677900	671600	676600	657000	631900	612900	616700
30	615100	619000	608500	608500	---	677900	672600	676200	656300	631200	612300	616700
31	614200	---	608200	609500	---	676900	---	675900	---	629900	612300	---
MAX	630600	620300	619900	612000	645100	683300	678200	681300	677200	654700	656300	623200
MIN	614200	613800	607900	604200	609500	641500	671300	672300	656300	629900	612300	607900
(+)	320.01	320.16	319.82	319.86	320.97	321.93	321.80	321.90	321.31	320.50	319.95	320.09
(+)	-14400	+4800	-10800	+1300	+35600	+31800	-4300	+3300	-19600	-26400	-17600	+4400
(+)	6520	5510	3830	5170	3770	4030	4360	4660	3340	6300	4890	3620

CAL YR 1977 MAX 685100 MIN 607900 + -68700 ++ 31920
 WTR YR 1978 MAX 683300 MIN 604200 + -11900 ++ 56000

+ Elevation, in feet, at end of month.

+ Change in contents, in acre-feet.

++ Diversions, in acre-feet, for municipal use by private lakeside companies, nearby cities, and cities of Arlington, Fort Worth, and Mansfield.

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

WATER-QUALITY RECORDS

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

321111096042901 - CEDAR CR RES AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
09...	1245	1.0	205	7.8	7.0	11.4	97
09...	1247	10	205	7.8	7.0	11.4	97
09...	1250	20	205	7.8	7.0	11.4	97
09...	1252	30	205	7.7	7.0	11.3	96
09...	1254	40	205	7.7	7.0	11.2	95

321113096041201 - CEDAR CR RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA+MG) (MG/L)
MAR									
09...	1303	1.0	205	7.8	7.5	1.30	11.4	98	61
09...	1307	10	205	7.8	7.5	--	11.3	97	--
09...	1310	20	205	7.8	7.0	--	11.2	95	--
09...	1314	30	205	7.8	7.0	--	11.2	95	--
09...	1317	40	205	7.8	7.0	--	11.2	95	--
09...	1320	50	205	7.8	7.0	--	11.2	95	--
09...	1325	58	205	7.7	7.0	--	11.2	95	62

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR									
09...	14	18	4.0	14	.8	3.8	58	0	21
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	14	18	4.0	14	.8	3.7	58	0	21

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR									
09...	19	.1	.5	109	.04	.01	.08	60	40
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	.04	.03	.08	90	40
09...	--	--	--	--	--	--	--	--	--
09...	19	.2	.6	109	.05	.02	.08	10	10

321116096035301 - CEDAR CR RES AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
09...	1330	1.0	205	7.8	7.5	11.4	98
09...	1332	10	205	7.8	7.5	11.3	97
09...	1334	20	205	7.8	7.5	11.2	97
09...	1336	30	205	7.7	7.5	11.2	97
09...	1338	40	205	7.6	7.5	11.2	97
09...	1340	49	205	7.5	7.0	11.1	94

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321227096032701 - CEDAR CR RES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
07...	1600	1.0	205	7.9	7.0	1.10	11.8
07...	1610	10	205	7.9	7.0	--	11.8
07...	1615	20	205	7.9	7.0	--	11.7
07...	1620	30	205	7.9	7.0	--	11.7
07...	1625	40	205	7.7	7.0	--	11.7
07...	1630	50	205	7.7	7.0	--	11.7

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
07...	100	.03	.01	.08	50	20
07...	100	--	--	--	--	--
07...	99	--	--	--	--	--
07...	99	--	--	--	--	--
07...	99	--	--	--	--	--
07...	99	.04	.02	.08	20	40

321403096060601 - CEDAR CR RES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
09...	1222	1.0	205	7.9	7.5	11.4	98
09...	1225	10	205	7.7	7.5	11.4	98
09...	1228	20	205	7.6	7.0	11.4	97
09...	1231	30	205	7.6	7.0	11.3	96
09...	1233	40	205	7.5	7.0	11.2	95
09...	1235	52	205	7.5	7.0	10.8	92

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321548096082301 - CEDAR CR RES DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA+MG) (MG/L)
MAR									
09...	1158	1.0	205	7.8	6.5	.80	11.3	95	59
09...	1202	10	205	7.8	6.5	--	11.3	95	--
09...	1205	20	205	7.7	6.5	--	11.3	95	--
09...	1209	30	205	7.6	6.5	--	11.2	94	--
09...	1212	38	205	7.5	6.5	--	11.0	92	59

DATE	TIME	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR										
09...	11	17	3.9	14	.8	3.7	58	.0	22	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	11	17	4.0	15	.9	3.7	58	.0	23	--

DATE	TIME	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR									
09...	19	.0	108	.01	.02	.09	10	.0	--
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	.01	.03	10	40	--
09...	--	--	--	--	--	--	--	--	--
09...	18	.0	109	.01	.01	.09	20	10	--

321818096064301 - CEDAR CR RES EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
09...	1130	1.0	225	7.3	8.0	.40	10.4
09...	1137	10	225	7.2	8.0	--	10.4
09...	1144	20	225	7.2	7.5	--	10.2

DATE	TIME	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR							
09...	90	.01	.01	.12	40	30	--
09...	90	--	--	--	--	--	--
09...	88	.01	.01	.12	40	40	--

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321843096101701 - CEDAR CR RES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
09...	1103	1.0	196	7.5	7.0	11.2	95
09...	1107	10	196	7.5	7.0	11.2	95
09...	1111	20	196	7.5	7.0	11.2	95
09...	1115	34	196	7.5	7.0	11.2	95

322119096104901 - CEDAR CR RES GR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
09...	1037	1.0	194	7.6	6.5	11.2	94
09...	1040	10	194	7.6	6.5	11.2	94
09...	1044	20	194	7.6	6.5	11.2	94

322119096095401 - CEDAR CR RES GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA/MG)
MAR									
09...	0938	1.0	198	7.6	6.5	.50	11.3	95	58
09...	0958	10	198	7.6	6.5	---	11.3	95	---
09...	1010	20	198	7.6	6.5	---	11.2	94	---
09...	1028	28	198	7.6	6.5	---	11.2	94	57

DATE	TIME	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR										
09...	11	17	3.8	14	.8	3.5	58	10	23	---
09...	---	---	---	---	---	---	---	---	---	---
09...	---	---	---	---	---	---	---	---	---	---
09...	10	17	3.6	14	.8	3.4	58	10	22	---

DATE	TIME	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MANG- ANESE (MN) (UG/L)
MAR									
09...	18	.0	108	.00	.01	.12	210	40	---
09...	---	---	---	---	---	---	---	---	---
09...	---	---	---	---	---	---	---	---	---
09...	18	.0	107	.00	.05	.13	20	0	---

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321113096041201 - CEDAR CR RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)
MAR							
09...	1303	1.0	1	0	0	0	2
09...	1314	30	--	--	--	--	--
09...	1325	58	0	100	0	0	1

DATE	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
MAR							
09...	60	6	40	.0	0	0	10
09...	90	--	40	--	--	--	--
09...	10	5	10	.0	0	0	0

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321113096041201 CEDAR CR RES AC
 PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO MARCH 1978

DATE	MAR 9, 78
TIME	1305
TOTAL CELLS/ML	53000
DIVERSITY: DIVISION	1.0
..CLASS	1.0
..ORDER	1.1
...FAMILY	1.3
....GENUS	1.7

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...CHARACIACEAE		
....SCHROEDERIA	*	0
...OOCYSTACEAE		
...ANKISTRODESMUS	490	1
...CHODATELLA	*	0
...DICTYOSPHAERIUM	3500	7
...KIRCHNERIELLA	*	0
...OOCYSTIS	920	2
...TETRAEDRON	*	0
...SCENEDESMACEAE		
...CRUCIGENIA	700	1
...SCENEDESMUS	440	1
...TETRASTRUM	570	1
...ZYGNEMATALES		
...DESMIDIACEAE		
...COSMARIUM	*	0
...CHLOROCOCCALES		
...OOCYSTACEAE		
...GLOEOACTINIUM	520	1
CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
...CYCLOTELLA	610	1
...MELOSIRA	2800	5
...PENNALES		
...NAVICULACEAE		
...NAVICULA	*	0
...NITZSCHACEAE		
...NITZSCHIA	1300	2
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCACEAE		
...AGMENELLUM	1000	2
...ANACYSTIS	39000#	74
...HORMOGONALES		
...NOSTOCACEAE		
...APHANIZOMENON	*	0
...OSCILLATORIACEAE		
...OSCILLATORIA	*	0
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
...PHACUS	*	0
...TRACHELOMONAS	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

322119096095401 CEDAR CR RES GC
 PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO MARCH 1978

DATE	MAR 9, 78
TIME	0936
TOTAL CELLS/ML	17000
DIVERSITY: DIVISION	0.9
..CLASS	0.9
...ORDER	1.4
....FAMILY	1.7
.....GENUS	2.4

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....OOCYSTACEAE		
.....ANKISTRODESMUS	130	1
.....CHODATELLA	270	2
.....KIRCHNERIELLA	130	1
.....OOCYSTIS	930	5
.....TETRAEDRON	130	1
...SCENEDESMACEAE		
....SCENEDESMUS	800	5
....TETRASTRUM	530	3
...OOCYSTACEAE		
....GLOEOACTINIUM	1600	9
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCEAE		
....CYCLOTILLA	9800#	57
....MELOSIRA	800	5
...PENNALES		
...FRAGILARIACEAE		
....SYNEDRA	660	4
....NITZSCHIA		
....NITZSCHIA	1200	7
...SURIPELLACEAE		
....SURIPELLA	130	1
PYRRHOPHYTA (FIRE ALGAE)		
..DINOPHYCEAE		
...PERIDINIALES		
...PERIDINIAEAE		
....PERIDINIUM	130	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321111096042901 - CEDAR CR RES AH

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
22...	0950	1.0	214	7.4	27.5	6.7	87
22...	0952	10	214	7.4	27.0	6.3	81
22...	0954	20	214	7.2	26.6	5.8	74
22...	0956	32	214	6.6	23.5	.2	2

321113096041201 - CEDAR CR RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JUN									
22...	1015	1.0	214	7.8	28.0	1.70	7.5	97	63
22...	1020	10	214	7.7	27.5	--	7.3	95	--
22...	1025	20	214	7.0	26.5	--	4.8	62	--
22...	1030	30	214	6.6	24.0	--	.7	9	--
22...	1035	40	214	6.7	22.0	--	.2	2	--
22...	1040	50	223	6.7	20.5	--	.2	2	--
22...	1045	59	244	6.8	19.5	--	.2	2	69

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
22...	14	18	4.3	15	.8	3.9	59	0	23
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	0	20	4.5	15	.8	4.0	88	0	17

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN									
22...	19	.2	1.8	115	.10	.00	.00	80	20
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	.23	.01	.02	120	40
22...	--	--	--	--	.21	.00	.01	290	190
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	17	.2	7.9	134	.01	.43	.35	2500	2000

321116096035301 - CEDAR CR RES AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
22...	1100	1.0	214	8.0	28.5	7.6	100
22...	1102	10	214	8.0	28.0	7.6	99
22...	1104	20	214	7.0	26.5	4.5	58
22...	1106	30	214	6.7	24.5	1.4	17
22...	1107	40	214	6.7	21.5	.2	2
22...	1113	46	214	6.7	21.0	.2	2

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321227096032701 - CEDAR CR RES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JUN							
22...	1120	1.0	214	8.1	28.5	1.80	7.7
22...	1123	10	214	8.0	28.5	--	7.7
22...	1126	20	214	7.1	26.5	--	5.2
22...	1129	30	214	6.7	25.0	--	1.3
22...	1132	40	214	6.6	22.0	--	.2
22...	1135	49	226	6.7	20.0	--	.2

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN						
22...	101	.07	.00	.01	30	60
22...	101	--	--	--	--	--
22...	65	--	--	--	--	--
22...	16	--	--	--	--	--
22...	2	--	--	--	--	--
22...	2	.03	.13	.09	40	1700

321403096060601 - CEDAR CR RES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JUN							
22...	0920	1.0	214	7.8	28.0	7.6	99
22...	0922	10	214	7.8	28.0	7.2	94
22...	0924	20	214	7.6	27.5	7.1	92
22...	0926	30	214	6.7	25.0	3.0	38
22...	0928	40	214	6.7	21.5	.2	2
22...	0930	50	227	6.7	21.0	.2	2

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321548096082301 - CEDAR CR RES DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JUN								
22...	0818	1.0	214	7.4	28.0	6.5	84	61
22...	0824	10	214	7.4	28.0	6.4	83	--
22...	0830	20	214	7.4	28.0	6.4	83	--
22...	0836	30	214	6.9	27.0	4.2	54	--
22...	0846	42	225	6.7	21.5	.2	2	65

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
22...	12	18	4.0	15	.8	3.9	60	0	23
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	4	19	4.3	15	.8	3.9	70	0	22

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN								
22...	20	1.3	115	.17	.01	.02	40	0
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.15	.00	.03	220	70
22...	--	--	--	.24	.04	.04	310	300
22...	19	5.2	125	.02	.11	.13	550	1400

321818096064301 - CEDAR CR RES EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
JUN							
22...	1200	1.0	214	8.1	29.5	.90	7.3
22...	1207	10	214	8.1	29.5	--	7.3
22...	1215	20	214	6.9	28.5	--	2.5

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN						
22...	97	.03	.00	.03	20	10
22...	97	--	--	--	--	--
22...	33	.05	.08	.05	50	220

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321843096101701 - CEDAR CR RES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED CENT SATUR- ATION)
JUN							
22...	0759	1.0	218	7.9	28.5	7.3	96
22...	0801	10	218	7.9	28.5	7.3	96
22...	0803	20	218	7.6	28.5	6.7	88
22...	0807	32	218	7.1	28.0	5.3	69

322119096104901 - CEDAR CR RES GR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED CENT SATUR- ATION)
JUN							
22...	1340	1.0	218	8.0	29.5	7.5	100
22...	1342	10	218	7.7	29.0	6.9	92
22...	1346	19	218	7.3	28.5	5.7	75

322119096095401 - CEDAR CR RES GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
JUN									
22...	1300	1.0	218	8.1	29.5	50	7.5	100	64
22...	1305	10	218	7.8	29.5	--	7.1	95	--
22...	1310	20	218	7.5	28.5	--	6.6	87	--
22...	1320	26	218	7.2	28.5	--	5.0	66	62

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JUN									
22...	13	14	4.1	16	9	4.0	62	0	24
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	11	18	4.1	16	9	4.0	62	0	23

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
JUN								
22...	19	2	118	88	80	84	430	40
22...	--	--	--	--	--	--	--	--
22...	--	--	--	14	80	11	20	10
22...	14	1.9	117	15	85	10	20	100

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321113096041201 - CEDAR CR RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM DIS- SOLVED (UG/L AS CR)	COPPER DIS- SOLVED (UG/L AS CU)
JUN 22...	1015	1.0	2	300	1	0	1
22...	1025	20	--	--	--	--	--
22...	1030	30	--	--	--	--	--
22...	1045	50	26	300	1	0	1

DATE	IRON DIS- SOLVED (UG/L AS FE)	LEAD DIS- SOLVED (UG/L AS PB)	MANGA- NESE DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM DIS- SOLVED (UG/L AS SE)	SILVER DIS- SOLVED (UG/L AS AG)	ZINC DIS- SOLVED (UG/L AS ZN)
JUN 22...	80	1	20	.0	0	0	0
22...	120	--	40	--	--	--	--
22...	290	--	190	--	--	--	--
22...	2500	2	2000	.0	0	0	100

PHYTOPLANKTON ANALYSES, JUNE 1978 TO JUNE 1978

DATE TIME	JUN 22, 78 1017
TOTAL CELLS/ML	10000
DIVERSITY: DIVISION	1.0
..CLASS	1.0
..ORDER	1.8
...FAMILY	2.3
....GENUS	2.6

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....CHARACIACEAE		
...SCHROEDERIA	700	7
...COELASTRACEAE		
....COELASTRUM	2500	25
...OOCYSTACEAE		
....ANKISTROOESMUS	*	0
....DICTYOSPHAERIUM	530	5
...OOCYSTIS	230	2
..TETRASPORALES		
...PALMELLACEAE		
...SPHAEROCYSTIS	3900	38
..ZYGNEMATALES		
...DESMIDIACEAE		
....COSMARITUM	*	0
....EUASTRUM	*	0

CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCAEAE		
....CYCLOTELLA	57	1
...MELOSIRA	900	9
..PENNALES		
...NITZSCHIAEAE		
....NITZSCHIA	*	0

CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCOCCALES		
....CHROCOCCOCCAEAE		
...ANACYSTIS	790	8
....GOMPHOSPHAERIA	420	4

EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
....EUGLENACEAE		
...TRIACHELOMONAS	*	0

NOTE: * - DOMINANT ORGANISM: EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM: MAY NOT HAVE BEEN COUNTED: LESS THAN 1/2%

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

322119096095401 CEDAR CR RES GC
PHYTOPLANKTON ANALYSES, JUNE 1978 TO JUNE 1978

DATE	JUN 22, 78
TIME	1255
TOTAL CELLS/ML	6100
DIVERSITY: DIVISION	1.3
.CLASS	1.3
..ORDER	1.6
...FAMILY	1.9
....GENUS	1.9

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...COELASTRACEAE		
....COELASTRUM	530	9
...OOCYSTACEAE		
....ANKISTRODESMUS	130	2
....OOCYSTIS	59	1
...SCENEDESMACEAE		
....CRUCIGENIA	59	1
....SCENEDESMUS	150	2
..ZYGNEMATALES		
...DESMIDIACEAE		
....EUASTRUM	*	0
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....MELOSIRA	3900#	64
..PENNALES		
...FRAGILARIACEAE		
....ASTERIONELLA	120	2
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..CHROCOCCALES		
...CHROCOCCACEAE		
....AGMENELLUM	470	8
..HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	620	10
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....PHACUS	*	0
PYRRHOPHYTA (FIRE ALGAE)		
.DINOPHYCEAE		
..PERIDINIALES		
...CERATIAEAE		
....CERATIUM	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

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CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321111096042901 - CEDAR CR RES AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
08...	1420	1.0	224	8.2	29.5	7.9	105
08...	1422	10	224	7.7	29.0	6.6	88
08...	1424	20	224	7.1	28.5	4.5	59
08...	1426	30	224	7.0	28.5	2.9	38

321113096041201 - CEDAR CR RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CaCO3)
SFP									
08...	1346	1.0	224	7.7	29.0	1.80	6.8	91	64
08...	1348	10	224	7.4	28.5	--	5.7	75	--
08...	1350	20	224	7.4	28.5	--	4.5	59	--
08...	1352	30	224	6.9	27.5	--	1.9	25	--
08...	1354	40	233	6.9	25.0	--	.2	3	--
08...	1356	50	240	6.8	23.0	--	.2	2	--
08...	1358	59	244	6.7	22.5	--	.4	5	85

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
08...	10	19	4.0	15	.8	4.1	66	0	23
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	3	27	4.3	15	.7	3.9	100	0	10

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SFP									
08...	18	.2	2.0	118	.02	.03	.03	20	10
08...	--	--	--	--	.00	.03	.02	40	140
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	.00	.01	.02	50	550
08...	--	--	--	--	.00	.46	.04	490	3300
08...	--	--	--	--	--	--	--	--	--
08...	20	--	9.0	146	.00	1.9	.68	3800	3600

321116096035301 - CEDAR CR RES AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SFP							
08...	1434	1.0	224	7.8	29.0	7.0	93
08...	1436	10	224	7.3	28.5	5.7	75
08...	1438	20	224	7.2	28.5	5.1	67
08...	1440	30	224	7.2	27.5	4.7	61
08...	1442	40	236	6.9	25.5	.3	4
08...	1444	49	241	6.4	24.5	.3	4

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321227096032701 - CEDAR CR RES BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
08...	1325	1.0	224	8.5	29.5	1.80	8.1
08...	1327	10	224	8.0	29.0	--	7.1
08...	1329	20	224	7.0	28.5	--	3.3
08...	1331	30	224	6.9	27.5	--	1.9
08...	1333	45	236	6.8	25.0	--	.4

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
08...	108	.02	.03	.02	20	270
08...	95	--	--	--	--	--
08...	43	--	--	--	--	--
08...	25	--	--	--	--	--
08...	5	.02	.87	.10	1100	3500

321403096060601 - CEDAR CR RES CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
08...	1256	1.0	224	8.3	30.0	7.8	104
08...	1258	10	224	7.4	29.0	5.5	73
08...	1300	20	224	7.2	28.5	4.8	63
08...	1302	30	224	7.1	28.5	3.9	51
08...	1304	40	247	7.0	28.0	.3	4
08...	1306	49	256	6.9	25.0	.4	5

321548096082301 - CEDAR CR RES DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SEP								
08...	1222	1.0	226	8.5	29.5	8.2	109	76
08...	1224	10	226	8.2	29.0	7.5	100	--
08...	1226	20	226	7.4	28.5	5.4	71	--
08...	1228	30	232	6.8	28.5	.8	11	--
08...	1230	39	237	6.8	28.5	.3	4	67

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
08...	18	24	4.0	15	.7	4.0	63	4	23
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	8	20	4.2	16	.9	4.0	72	0	24

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
08...	20	2.1	127	.02	.02	.03	10	20
08...	--	--	--	--	--	--	--	--
08...	--	--	--	.02	.04	.03	10	60
08...	--	--	--	.03	.12	.04	10	160
08...	20	3.8	128	.01	.21	.06	10	360

TRINITY RIVER BASIN

561

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

321818096064301 - CEDAR CR RES EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
08...	1156	1.0	230	8.7	30.0	.90	8.0
08...	1158	10	230	8.5	29.5	--	7.6
08...	1200	18	230	7.8	29.5	--	5.9

DATE	TIME	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP							
08...	10H		.02	.02	.04	30	20
08...	101		--	--	--	--	--
08...	79		.02	.05	.03	10	0

321843096101701 - CEDAR CR RES FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
08...	1136	1.0	230	8.7	30.0	8.5	115
08...	1138	10	230	8.5	29.5	8.0	106
08...	1140	20	238	7.2	28.5	3.6	48
08...	1142	28	238	7.2	29.0	3.6	48

322119096104901 - CEDAR CR RES GP

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
08...	1112	1.0	234	8.6	29.5	8.1	108
08...	1114	10	234	8.3	29.0	7.2	96
08...	1116	17	242	7.9	29.0	6.1	81

TRINITY RIVER BASIN

CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX--Continued

322119096095401 - CEDAR CR RES GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, SATUR- ATION	HARD- NESS (MG/L AS CAC03)
SEP									
08...	1045	1.0	234	8.5	29.0	.70	7.9	105	67
08...	1047	10	234	8.1	28.5	--	6.8	89	--
08...	1049	20	242	7.0	28.5	--	1.7	22	--
08...	1051	26	242	6.8	28.5	--	.6	8	71

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	SULFATE DIS- SOLVED (MG/L AS S04)
SEP									
08...	9	20	4.2	16	.9	4.1	61	5	24
08...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
08...	10	21	4.6	17	.9	4.2	75	0	24

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
08...	19	2.6	125	.01	.01	.06	10	10
08...	--	--	--	.02	.06	.06	40	80
08...	--	--	--	--	--	--	--	--
08...	21	3.8	133	.02	.21	.08	40	270

321113096041201 - CEDAR CR RES AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
SEP							
08...	1346	1.0	2	0	1	0	2
08...	1348	10	--	--	--	--	--
08...	1352	30	--	--	--	--	--
08...	1354	40	--	--	--	--	--
08...	1358	59	15	100	10	0	3

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
SEP							
08...	20	0	10	.0	0	0	0
08...	40	--	140	--	--	--	--
08...	50	--	550	--	--	--	--
08...	490	--	3300	--	--	--	--
08...	3800	90	3600	.0	0	0	10

TRINITY RIVER BASIN

563

08063050 NAVARRO MILLS LAKE NEAR DAWSON, TX

LOCATION.--Lat 31°57'27", long 96°41'21", Navarro County, Hydrologic Unit 12030108, in left abutment of spillway of Navarro Mills Dam on Richland Creek, 1.7 mi (2.7 km) upstream from bridge on State Highway 31, 3.0 mi (4.8 km) upstream from St. Louis Southwestern Railway Lines bridge, 4.2 mi (6.8 km) upstream from Post Oak Creek, 4.6 mi (7.4 km) north of Dawson, and 63.9 mi (102.8 km) upstream from mouth.

DRAINAGE AREA.--320 mi² (829 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1962 to current year. Prior to October 1970, published as Navarro Mills Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 8, 1962, nonrecording gage in low-water channel at same datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 7,570 ft (2,310 m) long, including a 240 ft (73 m) off-channel gated spillway with six 40.0 by 29.0 ft (12.2 by 8.8 m) tainter gates. From Aug. 27, 1962, to Mar. 14, 1963, the lake was operated as a detention basin only. Deliberate impoundment began Mar. 15, 1963, and the dam was completed in September 1963. The low-flow outlet works consist of two 36-inch-diameter (914 mm) gate-controlled conduits. The lake was built for flood control and water conservation. The capacity table prior to September 1976 is based on a survey made in February 1956 by the Corps of Engineers. Capacity table after Aug. 31, 1976, is based on a sedimentation survey made in September 1972. Flow is affected at times by discharge from flood-detention pools of 48 floodwater-retarding structures with combined detention capacity of 24,990 acre-ft (30.8 hm³). These structures control runoff from 82.6 mi² (213.9 km²) in the Richland Creek drainage basin. 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.....	457.0	-
Design flood.....	451.9	329,500
Top of gates (top of flood-control storage pool).....	443.0	206,200
Top of conservation pool.....	424.5	56,960
Crest of spillway.....	414.0	18,840
Lowest gated outlet (invert).....	400.0	1,150

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 183,300 acre-ft (226 hm³) May 18, 1968, elevation, 440.36 ft (134.222 m); minimum since initial filling in May 1965, 35,630 acre-ft (43.9 hm³) Sept. 30, 1978, elevation, 419.73 ft (127.934 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 50,360 acre-ft (62.1 hm³) May 23, elevation, 423.16 ft (128.979 m); minimum, 35,630 acre-ft (43.9 hm³) Sept. 30, elevation, 419.73 ft (127.934 m).

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

418.0	29,530	422.0	45,020
420.0	36,660	424.0	54,460

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45380	43010	41760	39790	39260	43530	48660	47050	49500	45690	41000	37800
2	45070	42960	41640	39670	39260	43530	48660	47050	49450	45560	40880	37680
3	44930	42830	41640	39630	39220	43530	48610	47730	49360	45420	40750	37610
4	44800	42790	41590	39590	39170	43440	48570	47500	49270	45240	40590	37530
5	44710	42660	41510	39590	39130	43350	48570	47410	49220	45070	41130	37370
6	44670	42580	41340	39540	39170	45070	48470	47500	49220	44930	41090	37290
7	44670	42490	41340	39540	39340	49270	48430	47460	49030	44710	41000	37170
8	44580	43050	41210	39380	39500	49590	48380	47370	48890	44580	40920	37090
9	44580	42880	41090	39260	39590	49690	48430	47230	48750	44450	40920	37050
10	44490	42750	40960	39170	39540	49640	48840	47230	48660	44310	40840	36900
11	44450	42660	40880	39460	39500	49640	48800	47870	48520	44140	40590	36820
12	44270	42580	40880	39460	42100	49690	48800	49220	48430	44010	40420	36860
13	44140	42530	40880	39420	43050	49780	48660	49270	48290	43880	40290	36780
14	44100	42490	40800	39340	43050	49830	48660	49220	48190	43700	40170	36700
15	43920	42450	40800	39300	43270	49740	48570	49220	48010	43480	40040	36660
16	43830	42360	40670	39540	43180	49690	48520	49120	47870	43270	39790	36550
17	43750	42280	40590	39340	43610	49640	48570	49120	47780	43140	39670	36430
18	43660	42190	40540	39460	43660	49880	48470	49030	47690	43090	39500	36280
19	43570	42150	40460	39420	43700	49880	48240	49030	47500	42830	39380	36240
20	43440	42100	40380	39300	43750	49880	48100	49220	47370	42660	39220	36200
21	43480	41980	40250	39340	43700	49840	48010	50210	47230	42490	39130	36280
22	43440	41930	40120	39260	43700	49890	48060	50300	47050	42360	39050	36130
23	43440	41850	40080	39260	43570	49120	47960	50300	46910	42230	38930	36090
24	43400	41850	40000	39380	43530	49080	47960	50210	46820	42150	38770	36010
25	43350	41760	39960	39260	43570	49030	47780	50110	46640	42020	38650	35940
26	43270	41640	39880	39170	43440	48980	47730	50070	46370	41890	38520	35860
27	43180	41510	39670	39170	43570	48890	47640	50020	46190	41760	38360	35820
28	43140	41430	39750	39130	43530	48840	47550	49920	46100	41590	38240	35820
29	43050	41810	39880	39050	---	48840	47460	49740	45920	41470	38080	35710
30	43010	41810	39830	39090	---	48800	47410	49690	45780	41340	37960	35630
31	42920	---	39790	39220	---	48750	---	49590	---	41170	37840	---
MAX	45380	43050	41760	39790	43750	49830	48840	50300	49500	45690	41130	37800
MIN	42920	41430	39670	39050	39130	43350	47410	47050	45780	41170	37840	35630
(†)	421.52	421.26	420.78	420.64	421.66	422.82	422.53	423.00	422.17	421.11	420.30	419.73
(#)	-2680	-1110	-2020	-570	+4310	+5220	-1340	+2180	-3810	-4610	-3330	-2210
(††)	566	480	487	505	455	480	508	539	720	869	741	586
CAL YR 1977	MAX 89680	MIN 39670	† -17280	†† 6180								
WTR YR 1978	MAX 50300	MIN 35630	† -9970	†† 6940								

† Elevation, in feet, at end of month.

Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by the cities of Dawson, Corsicana, and Post Oak.

TRINITY RIVER BASIN

08063050 NAVARRO MILLS LAKE NEAR DAWSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO_3)	HARDNESS-NONCARBONATE (MG/L AS CaCO_3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM DIS-SOLVED (MG/L AS Mg)	SODIUM DIS-SOLVED (MG/L AS Na)
NOV 08...	1525	403	7.6	17.5	140	29	50	4.6	24
DATE	SODIUM ADSORPTION RATIO	POTASSIUM DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO_3)	CARBONATE (MG/L AS CO_3)	SULFATE DIS-SOLVED (MG/L AS SO_4)	CHLORIDE DIS-SOLVED (MG/L AS Cl)	FLUORIDE DIS-SOLVED (MG/L AS F)	SILICA DIS-SOLVED (MG/L AS SiO_2)	SOLIDS SUR OF CONSTITUENTS DIS-SOLVED (MG/L)
NOV 08...	.9	4.4	140	0	53	18	.6	7.8	231

TRINITY RIVER BASIN

565

08063100 RICHLAND CREEK NEAR DAWSON, TX

LOCATION.--Lat 31°56'18", long 96°40'52", Navarro County, Hydrologic Unit 12030108, at downstream side of bridge on State Highway 31, 1.3 mi (2.1 km) upstream from St. Louis Southwestern Railway Lines bridge, 1.7 mi (2.7 km) downstream from Navarro Mills Dam, 2.5 mi (4.0 km) upstream from Post Oak Creek, and 3.6 mi (5.8 km) northeast of Dawson.

DRAINAGE AREA.--333 mi² (862 km²).

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 370.52 ft (112.934 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated since Mar. 15, 1963, by Navarro Mills Lake (station 08063050). Water is diverted from Navarro Mills Lake for municipal use. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--18 years, 153 ft³/s (4.333 m³/s), 110,800 acre-ft/yr (137 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,500 ft³/s (722 m³/s) July 3, 1961, gage height, 22.50 ft (6.858 m), from rating curve extended above 14,000 ft³/s (396 m³/s); no flow at times. Maximum discharge since completion of Navarro Mills Dam in 1963, 3,850 ft³/s (109 m³/s) Nov. 24, 1974, gage height, 19.85 ft (6.050 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1895, about 28 ft (8.5 m) June 19, 1929, from information by local residents. Floods in 1946 and 1957 reached a stage of about 23 ft (7.0 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 891 ft³/s (25.2 m³/s) Mar. 7, gage height, 11.91 ft (3.630 m); minimum daily, 0.07 ft³/s (0.002 m³/s) Apr. 3-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	11	9.3	2.5	2.8	.28	.08	1.4	.22	3.5	9.0	9.1
2	10	11	9.1	2.5	2.5	.35	.08	1.3	.95	3.4	9.0	9.1
3	11	11	9.1	2.4	2.4	.56	.07	2.1	1.7	3.4	8.9	9.3
4	11	11	9.1	2.4	2.4	.62	.07	1.8	.86	3.4	8.9	9.1
5	11	10	9.0	2.3	2.3	.49	.07	1.5	.59	3.5	11	9.1
6	11	10	9.1	2.4	2.7	20	.10	1.3	.49	3.5	9.0	9.1
7	11	10	8.7	2.2	2.4	425	.12	1.3	.62	3.5	8.7	9.1
8	11	11	8.8	2.8	2.3	14	.10	1.1	.64	3.6	8.9	9.1
9	11	10	9.3	4.0	2.3	2.2	.14	.94	.57	3.6	8.9	8.6
10	11	10	9.4	3.9	2.3	.88	.74	.86	.56	4.2	9.1	8.5
11	11	10	9.4	4.6	2.4	.47	.26	3.3	.79	5.3	9.3	8.6
12	11	9.7	9.4	3.7	17	.29	.20	8.5	.75	5.2	9.3	8.3
13	11	9.9	11	3.5	11	.94	.24	.85	.88	5.3	9.1	6.3
14	11	9.9	8.0	3.5	2.5	.47	.29	.38	.91	20	9.1	1.3
15	11	10	8.0	3.5	1.7	.17	.33	.28	1.0	30	9.1	1.9
16	11	11	8.0	3.6	1.6	.14	.37	.27	1.3	8.3	9.1	1.2
17	11	11	8.0	3.4	1.6	.13	.39	.28	1.0	8.0	9.1	.55
18	11	11	8.0	3.4	1.6	267	.43	.31	.87	8.0	9.1	.28
19	11	11	8.0	3.3	1.6	.49	.45	.31	.89	8.4	9.1	.21
20	11	10	6.6	3.5	1.6	.16	1.0	.32	.83	8.6	9.1	.20
21	10	10	2.5	3.2	1.6	.11	1.0	4.7	.83	8.8	9.4	.22
22	11	10	2.5	3.5	1.6	.09	.89	2.1	1.3	9.0	9.6	.37
23	11	10	2.5	3.0	1.5	.09	1.2	.78	4.7	9.4	9.6	.29
24	11	10	2.4	2.5	.90	.17	1.2	.40	5.0	9.4	9.4	.22
25	10	10	2.5	2.5	.85	.12	1.2	.32	4.9	9.1	9.4	.17
26	10	9.9	2.6	2.6	.85	.09	1.1	.28	23	9.1	9.4	.15
27	10	9.9	2.6	2.6	.85	.49	1.2	.29	32	8.9	9.4	.17
28	10	9.9	2.6	2.5	.51	.16	1.3	.29	8.6	9.1	9.3	.19
29	10	10	3.0	2.3	---	.08	1.4	.27	8.6	8.8	9.2	.17
30	10	9.9	3.7	2.3	---	.08	1.4	.22	6.6	8.6	9.4	.13
31	11	---	2.4	3.0	---	.08	---	.20	---	8.6	9.4	---
TOTAL	331.7	308.1	204.6	93.4	75.66	736.20	17.42	38.25	111.95	241.5	286.3	121.02
MEAN	10.7	10.3	6.60	3.01	2.70	23.7	.58	1.23	3.73	7.79	9.24	4.03
MAX	11	11	11	4.6	17	425	1.4	8.5	32	30	11	9.3
MIN	9.7	9.7	2.4	2.2	.51	.08	.07	.20	.22	3.4	8.7	.13
AC-FT	658	611	406	185	150	1460	35	76	222	479	568	240
CAL YR 1977	TOTAL	53594.95	MEAN	147	MAX	2110	MIN	.06	AC-FT	106300		
WTR YR 1978	TOTAL	2566.10	MEAN	7.03	MAX	425	MIN	.07	AC-FT	5090		

TRINITY RIVER BASIN

08063500 RICHLAND CREEK NEAR RICHLAND, TX

LOCATION.--Lat 31°57'02", long 96°25'16", Navarro County, Hydrologic Unit 12030108, at left end of downstream bridge on U.S. Highway 75 (Interstate Highway 45), 800 ft (240 m) downstream from Texas and New Orleans Railroad Co. bridge, 1.0 mi (1.6 km) north of Richland, 3.5 mi (5.6 km) downstream from Pin Oak Creek, and 36.7 mi (59.1 km) upstream from mouth.

DRAINAGE AREA.--734 mi² (1,901 km²).

PERIOD OF RECORD.--December 1924 to February 1925 (discharge measurements and gage heights only), March 1939 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 299.12 ft (91.172 m) National Geodetic Vertical Datum of 1929. Dec. 11, 1924, to Feb. 11, 1925, nonrecording gage at site 800 ft (240 m) upstream. Mar. 17, 1939, to Feb. 14, 1958, water-stage recorder at site 50 ft (15 m) upstream. Feb. 15, 1958, to Jan. 28, 1959, nonrecording gage at present site. June 8, 1955, to Feb. 14, 1958, and since Feb. 6, 1959, supplementary water-stage recorder in overflow channel 3,900 ft (1,190 m) to right of main channel gage. All gages at present datum.

REMARKS.--Records fair. Since October 1962, flow is partly regulated by Navarro Mills Lake (station 08063050) located 25 mi (40 km) upstream. Flow is also affected at times by discharge from the flood-detention pools of 72 floodwater-retarding structures with combined detention capacity of 41,380 acre-ft (51.0 hm³). These structures control runoff from 141 mi² (365 km²) in the Richland Creek drainage basin. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--23 years (water years 1940-62) prior to regulation by Navarro Mills Lake, 404 ft³/s (11.44 m³/s), 292,700 acre-ft/yr (361 hm³/yr); 16 years (water years 1963-78) regulated, 350 ft³/s (9.912 m³/s), 253,600 acre-ft/yr (313 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,900 ft³/s (1,670 m³/s) May 12, 1948, gage height, 24.16 ft (7.364 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 25.5 ft (7.77 m) in December 1913 (discharge not determined), from information by Texas and New Orleans Railroad Co.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,380 ft³/s (209 m³/s) Mar. 7, gage height, 12.78 ft (3.895 m); maximum gage height, 14.41 ft (4.392 m) Mar. 7; no flow Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	38	16	2.7	6.1	4.4	3.8	2.6	2.7	8.8	5.8	8.2
2	.03	25	15	3.2	5.0	4.2	3.5	2.9	2.4	8.2	5.7	8.2
3	.02	15	14	3.5	3.8	3.2	2.9	3.7	2.1	5.7	5.8	8.2
4	.00	14	12	3.1	3.8	2.9	2.5	5.2	1.8	3.6	6.1	8.6
5	2.0	14	12	2.9	3.5	2.5	2.4	15	1.5	2.3	26	8.3
6	7.4	14	12	2.7	3.2	110	2.4	9.7	1.2	1.6	31	8.2
7	8.4	14	11	2.8	4.0	4470	2.2	7.1	1.1	1.4	16	8.2
8	8.3	27	11	2.7	13	5310	2.1	4.9	1.0	1.2	9.4	8.0
9	8.1	35	11	2.7	27	1590	2.4	3.6	.85	1.1	7.7	8.0
10	9.2	25	11	2.6	28	1040	3.5	3.0	.75	1.0	7.4	8.0
11	9.7	19	9.9	3.1	29	801	3.2	3.2	.71	.97	7.8	8.2
12	9.6	16	11	3.5	149	586	4.5	3.9	.61	.89	7.3	17
13	9.5	15	11	3.5	494	433	6.7	66	.61	.88	7.4	11
14	9.5	13	11	3.5	327	320	6.5	38	.55	.82	7.6	8.5
15	9.6	13	13	3.7	135	227	5.1	20	.49	.98	7.2	7.6
16	9.7	13	11	4.5	69	131	4.2	13	.44	14	7.2	5.5
17	9.7	13	10	3.8	90	83	3.5	9.6	.40	15	6.9	3.5
18	9.7	13	9.4	3.4	326	58	2.9	7.0	.33	7.8	7.2	2.2
19	10	13	9.6	3.5	134	230	2.5	5.9	.28	6.1	6.9	1.5
20	10	12	9.7	3.3	54	36	2.6	5.0	.25	5.8	7.2	1.1
21	10	12	9.7	3.3	35	22	3.1	5.0	.24	5.9	7.2	.87
22	10	12	9.6	3.2	24	16	2.6	73	.20	5.8	7.0	.69
23	10	13	7.3	3.2	18	14	2.3	65	.17	7.0	7.3	.52
24	12	13	4.8	3.3	14	12	2.0	38	.15	7.2	7.4	.40
25	12	13	3.2	3.5	12	10	1.9	23	.13	6.7	7.7	.33
26	12	13	2.6	3.5	9.4	10	1.8	15	.10	7.4	7.7	.28
27	13	12	2.5	3.2	7.2	8.5	1.6	11	.09	6.8	7.4	.24
28	13	17	2.4	3.2	5.8	6.7	1.7	8.9	5.0	6.3	7.4	.21
29	13	16	2.6	3.2	---	5.3	1.8	6.3	15	6.4	7.5	.17
30	13	16	2.6	3.2	---	4.5	1.9	4.5	9.7	6.3	7.4	.15
31	13	---	2.5	3.2	---	5.1	---	3.7	---	6.0	7.4	---
TOTAL	271.50	498	280.4	100.7	2029.8	15556.3	90.1	482.7	50.85	159.94	275.0	151.86
MEAN	8.76	16.6	9.05	3.25	72.5	502	3.00	15.6	1.70	5.16	8.87	5.06
MAX	13	38	16	4.5	494	5310	6.7	73	15	15	31	17
MIN	.00	12	2.4	2.6	3.2	2.5	1.6	2.6	.09	.82	5.7	.15
AC-FT	539	988	556	200	4030	30860	179	957	101	317	545	301
CAL YR 1977	TOTAL	117386.89	MEAN	322	MAX	7200	MIN	.00	AC-FT	232800		
WTR YR 1978	TOTAL	19947.15	MEAN	54.6	MAX	5310	MIN	.00	AC-FT	39570		

08063700 BARDWELL LAKE NEAR ENNIS, TX

LOCATION.--Lat 32°15'00", long 96°38'49", Ellis County, Hydrologic Unit 12030109, in intake structure of Bardwell Dam on Waxahachie Creek, 5 mi (8 km) south of Ennis, and 5.6 mi (9.0 km) upstream from mouth.

DRAINAGE AREA.--178 mi² (461 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1965 to current year. Prior to October 1970, published as Bardwell Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 25, 1966, nonrecording gage on intake structure at same datum. Corps of Engineers gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 15,400 ft (4,690 m) long, including a 350 ft (107 m) uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov. 20, 1965, and the dam was completed Mar. 27, 1966. The controlled low-flow outlet works consists of a 10.0-foot-diameter (3.0 m) concrete conduit with two 5.0 by 10.0 ft (1.5 by 3.0 m) sluice gates. The lake was built for flood control and water conservation. The capacity table beginning October 1976 is based on a survey completed in 1972. Flow from 81.4 mi² (210.8 km²) above this lake is modified by Lake Waxahachie, with a capacity of 13,500 acre-ft (16.6 hm³), at spillway elevation. During the current year, the city of Waxahachie diverted 2,080 acre-ft (2.56 hm³) from Lake Waxahachie and returned 2,510 acre-ft (3.09 hm³) to Waxahachie Creek. Inflow is affected at times by discharge from the flood-detention pools of 23 floodwater-retarding structures with combined detention capacity of 15,370 acre-ft (19.0 hm³). These structures control runoff from 52.4 mi² (135.7 km²) in the Chambers Creek water-shed. 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.....	460.0	-
Design flood.....	455.9	-
Crest of spillway (top of flood-control pool).....	439.0	137,600
Top of conservation pool.....	421.0	52,300
Lowest gated outlet (invert).....	391.0	690

COOPERATION.--Records furnished by the Corps of Engineers and reviewed by the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 103,300 acre-ft (127 hm³) May 19, 1969, elevation, 432.35 ft (131.780 m); minimum since initial filling, 41,510 acre-ft (51.2 hm³) Sept. 19, 1978, elevation, 417.79 ft (127.342 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 48,810 acre-ft (60.2 hm³) May 28, elevation, 420.01 ft (128.019 m); minimum, 41,510 acre-ft (51.2 hm³) Sept. 19, elevation, 417.79 ft (127.342 m).

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

417.0	39,080	420.0	48,780
418.0	42,170	421.0	52,290
419.0	45,390		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45230	43570	43190	42300	42490	44050	46060	45660	48330	46160	43760	42550
2	45360	43600	43150	42260	42490	44020	46020	45990	48330	46090	43670	42520
3	45260	43570	43150	42170	42420	44090	46060	46020	48330	45990	43600	42490
4	44800	43540	43190	42170	42390	44120	46020	45990	48290	45890	43600	42450
5	44800	43470	43190	42170	42420	43860	46020	45860	48290	45760	44480	42390
6	44740	43440	42990	42170	42420	44510	46020	45790	48190	45690	44480	42230
7	44700	43440	42960	42170	42680	45330	45990	45990	48190	45590	44380	42230
8	44570	43670	42960	42170	42680	45260	45990	45660	48120	45520	44310	42170
9	44510	43640	42930	42040	42800	45200	46060	45860	48020	45390	44280	42170
10	44640	43570	42840	41980	42680	44900	46360	45820	47920	45290	44250	42110
11	44480	43570	42800	42140	42710	45160	46290	46160	47880	45230	44120	42010
12	44380	43440	42800	42170	43350	45060	46290	47000	47850	45160	44020	42110
13	44280	43510	42840	42170	43760	45290	46260	47000	47750	45030	43930	42070
14	44180	43440	42840	42140	43600	45200	46220	46960	47680	44930	43830	42040
15	44150	43440	42740	42110	43700	45100	46190	46900	47610	44900	43760	42010
16	44090	43470	42800	42260	43930	45200	46160	46860	47470	44740	43670	41950
17	43960	43380	42740	42230	43930	45130	46160	46830	47400	44640	43600	41820
18	43930	43280	42680	42420	43990	45060	46190	46830	47400	44510	43470	41760
19	43930	43280	42710	42330	43990	45030	46060	46830	47270	44440	43410	41540
20	43890	43280	42680	42200	44020	45230	45920	47030	47230	44350	43310	41730
21	43860	43280	42550	42200	43960	45760	45860	48230	47100	44220	43310	42390
22	43860	43190	42450	42200	44020	45790	45920	48500	47000	44150	43220	42330
23	43860	43150	42420	42260	44020	46220	45860	48540	46900	44570	43120	42260
24	43890	43190	42420	42260	43930	46190	45920	48540	46790	44510	43060	42230
25	43760	43190	42300	42260	43990	46120	45790	48540	46660	44410	42990	42140
26	43760	43090	42300	42230	43990	46120	45690	48500	46560	44380	42960	42110
27	43800	43060	42300	42200	43930	46090	45660	48470	46530	44310	42800	42110
28	43730	43190	42330	42200	44090	46120	45520	48500	46420	44220	42900	42010
29	43670	43250	42330	42170	---	46060	45520	48430	46360	44120	42740	41950
30	43640	43220	42260	42230	---	46120	45620	48400	46260	44050	42640	41950
31	43570	---	42230	42420	---	46090	---	48360	---	43930	42580	---
MAX	45360	43670	43190	42420	44090	46220	46360	48540	48330	46160	44480	42550
MIN	43570	43060	42230	41980	42390	43860	45520	45660	46260	43930	42580	41540
(†)	418.44	418.33	418.02	418.08	418.60	419.21	419.07	419.88	419.26	418.55	418.13	417.93
(+)	-1660	-350	-990	+190	-1670	+2000	-470	+2740	-2100	-2337	-1350	-630
(††)	173	124	130	165	148	116	125	139	182	243	194	199

CAL YR 1977 MAX 74340 MIN 42230 † -10960 †† 1920

WTR YR 1978 MAX 48540 MIN 41540 † -3280 †† 1940

† Elevation, in feet, at end of month.

† Change in contents, in acre-feet.

†† Diversions, in acre-feet, for municipal use by the city of Ennis.

TRINITY RIVER BASIN

08063700 BARDWELL LAKE NEAR ENNIS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO_3)	HARDNESS, NONCARBONATE (MG/L AS CaCO_3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)
NOV 10...	1515	286	7.8	14.5	100	13	37	2.7	16
DATE		SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO_3)	SULFATE DIS-SOLVED (MG/L AS SO_4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO_2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
NOV 10...		.7	3.6	110	28	16	.4	3.1	161

TRINITY RIVER BASIN

569

08063800 WAXAHACHIE CREEK NEAR BARDWELL, TX

LOCATION.--Lat 32°14'36", Long 96°38'24", Ellis County, Hydrologic Unit 12030109, on right bank 0.8 mi (1.3 km) downstream from Bardwell Dam, 3.6 mi (5.8 km) southeast of Bardwell, 3.8 mi (6.1 km) downstream from bridge on State Highway 34, and 4.1 mi (6.6 km) upstream from mouth.

DRAINAGE AREA.--178 mi² (461 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 370.18 ft (112.831 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good except those for period of no gage-height record, which are poor. Flow is regulated by Bardwell Lake (station 08063700) 0.8 mi (1.3 km) upstream. Several observations of water temperature were made during the year. Corps of Engineers gage-height telemeter at station.

AVERAGE DISCHARGE.--15 years, 78.6 ft³/s (2.226 m³/s), 56,950 acre-ft/yr (70.2 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,960 ft³/s (83.8 m³/s) Feb. 9, 1965, gage height, 17.55 ft (5.349 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1944, about 23 ft (7.0 m) in 1944 and 1945, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.8 ft³/s (0.28 m³/s) Mar. 13, gage height, 2.59 ft (0.789 m); minimum daily, 0.15 ft³/s (0.004 m³/s) July 8-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	2.0	1.4	1.6	.41	.44	.47	.30	.45	.20	.60	.40
2	3.1	2.0	1.4	1.6	.30	.42	.44	.30	.45	.20	.55	.40
3	3.1	2.0	1.5	1.7	.27	.34	.39	2.0	.40	.20	.50	.40
4	3.1	2.0	1.6	1.7	.22	.36	.47	1.5	.40	.20	.50	.40
5	3.2	2.2	1.6	1.8	.20	.42	.31	1.0	.40	.20	2.0	.40
6	3.1	2.1	1.5	1.7	.16	.65	.47	.80	.35	.20	1.5	.40
7	3.2	2.1	1.5	1.8	.23	.99	.49	.65	.35	.20	1.4	.40
8	3.2	2.4	1.5	1.4	.26	.95	.42	.55	.35	.15	1.2	.35
9	3.1	1.9	1.5	1.3	.27	.88	.55	.50	.30	.15	1.1	.35
10	3.4	1.6	1.6	1.1	.29	.75	.50	.80	.30	.15	1.0	.35
11	3.4	1.4	1.6	1.0	.29	1.1	.45	1.5	.30	.15	.95	.35
12	3.1	1.4	1.6	1.0	.82	.68	.45	2.0	.30	.15	.90	2.0
13	3.1	1.5	1.6	1.0	.84	2.1	.40	1.0	.30	.15	.85	1.6
14	2.8	1.4	1.6	1.0	.50	.78	.40	.80	.30	.15	.80	1.3
15	2.8	1.6	1.5	1.0	.49	.78	.40	.70	.25	.15	.75	1.1
16	2.5	1.6	1.5	1.0	.56	.71	.35	.65	.25	.15	.70	1.0
17	2.4	1.3	1.6	.92	.68	.49	.35	.60	.25	.15	.65	.90
18	2.6	1.2	1.7	.81	.61	.49	.35	.55	.25	.15	.65	.80
19	2.5	1.3	2.1	.81	.47	.49	.35	.50	.25	.15	.60	.75
20	2.5	1.2	1.7	.78	.42	.49	.30	.50	.25	.15	.60	.70
21	2.5	1.2	1.6	.68	.33	.52	.30	2.0	.25	.15	.55	.65
22	2.6	1.3	1.8	.62	.30	.55	.30	1.1	.20	.15	.55	3.0
23	2.3	1.2	1.9	.58	.29	.55	.30	.95	.20	2.0	.50	2.5
24	2.5	1.2	2.0	.61	.41	.40	.30	.80	.20	1.5	.50	2.2
25	2.6	1.2	1.6	.54	.46	.31	.30	.75	.20	1.3	.50	2.0
26	2.5	1.3	1.7	.42	.45	.39	.30	.70	.20	1.1	.50	1.9
27	2.5	1.4	1.6	.39	.34	.44	.30	.65	.20	.90	.45	1.7
28	2.4	1.4	1.6	.35	.36	.39	.30	.60	.20	.80	.45	1.6
29	2.4	1.6	1.7	.34	---	.39	.30	.55	.20	.75	.45	1.5
30	2.2	1.4	1.7	.31	---	.36	.30	.50	.20	.70	.45	1.5
31	2.1	---	1.8	.35	---	.39	---	.50	---	.65	.45	---
TOTAL	85.9	47.4	50.6	30.21	11.23	19.00	11.31	26.30	8.50	13.35	23.15	32.90
MEAN	2.77	1.58	1.63	.97	.40	.61	.38	.85	.28	.43	.75	1.10
MAX	3.4	2.4	2.1	1.8	.84	2.1	.55	2.0	.45	2.0	2.0	3.0
MIN	2.1	1.2	1.4	.31	.16	.31	.30	.30	.20	.15	.45	.35
AC-FT	170	94	100	60	22	38	22	52	17	26	46	65

CAL YR 1977 TOTAL 38059.04 MEAN 104 MAX 1490 MIN .05 AC-FT 75490
WTR YR 1978 TOTAL 359.85 MEAN .99 MAX 3.4 MIN .15 AC-FT 714

NOTE.--No gage-height record Oct. 1-4 and Apr. 11 to Sept. 30.

TRINITY RIVER BASIN

08064500 CHAMBERS CREEK NEAR CORSICANA, TX

LOCATION.--Lat 32°06'29", long 96°22'14", Navarro County, Hydrologic Unit 12030109, near center of channel at downstream side of downstream bridge on State Highway 31, 430 ft (131 m) upstream from St. Louis Southwestern Railway Lines bridge, 6,000 ft (1,829 m) upstream from city of Corsicana diversion dam, 5.3 mi (8.5 km) east of Corsicana, and 23.0 mi (37.0 km) upstream from mouth.

DRAINAGE AREA.--963 mi² (2,494 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 294.28 ft (89.696 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. Since November 1965, flow from 178 mi² (461 km²) has been affected by Bardwell Lake (station 08063700). In addition, flow from 291 mi² (754 km²) is affected by discharge from the flood-detention pools of 99 floodwater-retarding structures with a combined detention capacity of 83,950 acre-ft (104 hm³). During year, records furnished by the city of Corsicana show that 55 acre-ft (67,800 m³) was diverted for municipal supply from pool in which gage is located and 430 acre-ft (530,000 m³) was diverted for municipal supply from Lake Halbert located on a tributary which enters the creek below the gage. Daily discharge given in the following table does not include water diverted by the city. During the current year, records furnished by the city of Corsicana show that 3,000 acre-ft (3.70 hm³) of sewage effluent was returned to a tributary which enters below the creek below the gage.

AVERAGE DISCHARGE.--39 years (water years 1940-78), 450 ft³/s (12.7 m³/s), 326,000 acre-ft/yr (402 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s (1,360 m³/s), May 3, 1944; maximum gage height, 28.10 ft (8.565 m) May 3, 1958; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, 30 ft (9.1 m) Aug. 27, 1887, from information by local residents. Flood in December 1913 reached a stage of 27.5 ft (8.38 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,310 ft³/s (65.4 m³/s) Mar. 8, gage height, 20.19 ft (6.154 m), no peak above base of 13,000 ft³/s (368 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.7	8.4	3.9	6.7	12	16	5.5	14	.20	.00	.00
2	2.0	3.0	7.2	3.9	8.4	10	13	131	12	.20	.00	.00
3	1.7	2.8	5.7	3.7	11	11	13	332	12	.18	.00	.00
4	1.9	2.6	4.2	3.6	8.1	9.1	11	224	12	.16	.00	.00
5	2.0	3.5	2.9	3.6	6.6	8.3	10	120	11	.12	.01	.00
6	2.1	3.3	2.3	3.3	6.2	49	9.6	46	14	.08	.89	.00
7	2.1	3.0	2.3	3.3	7.0	1930	9.0	26	12	.04	.37	.00
8	2.4	5.0	2.2	3.9	7.3	1550	8.7	17	9.5	.00	.13	.00
9	2.4	6.2	1.4	2.8	8.6	344	9.8	12	8.6	.00	7.2	.00
10	3.1	13	1.1	2.7	11	177	16	8.2	9.9	.00	4.6	.00
11	4.2	7.0	1.3	3.5	11	114	15	31	10	.00	2.9	.00
12	4.3	4.3	1.4	4.8	105	81	27	668	8.7	.00	2.2	2.1
13	4.4	2.7	1.5	4.4	1350	63	27	665	7.1	.00	1.5	3.7
14	3.8	2.0	1.5	7.9	516	55	17	226	3.3	.00	.81	.78
15	3.5	1.8	1.5	6.3	167	42	12	113	2.8	.00	.53	.97
16	2.7	1.4	1.7	6.6	88	33	11	71	2.5	.00	.44	1.8
17	2.4	1.3	1.5	6.1	80	27	9.9	46	1.9	.00	.24	1.4
18	2.6	1.8	1.4	8.0	251	22	9.6	29	1.2	.00	.14	.70
19	2.6	1.5	1.4	7.6	168	18	9.9	20	1.1	.00	.09	.38
20	2.7	1.4	1.3	5.6	78	17	9.0	19	.81	.00	.05	.22
21	2.3	1.2	1.3	4.6	49	132	7.5	47	.74	.00	.01	.13
22	2.4	1.0	3.3	4.1	34	110	6.1	410	.73	.00	.00	218
23	3.2	.89	4.6	3.9	36	48	6.1	225	.54	.00	.00	34
24	4.4	.79	3.6	3.8	22	356	6.8	102	.43	.00	.00	9.8
25	4.1	.88	2.9	3.9	17	220	6.4	63	.34	.00	.00	4.1
26	4.0	.94	2.9	4.1	14	93	5.8	41	.25	.00	.00	1.9
27	5.0	.98	3.0	4.7	13	54	5.2	28	.21	.00	.00	1.0
28	5.5	.88	3.0	6.3	12	42	5.2	21	.17	.00	.00	.74
29	4.7	1.7	3.4	5.4	---	30	5.2	17	.17	.00	.00	.75
30	2.4	3.2	3.2	5.0	---	23	5.3	17	.17	.00	.00	.79
31	2.3	---	3.5	5.5	---	19	---	15	---	.00	.00	---
TOTAL	95.2	82.76	86.9	146.8	3091.9	5699.4	323.1	3795.7	158.16	.98	159.72	283.26
MEAN	3.07	2.76	2.80	4.74	110	184	10.8	122	5.27	.032	5.15	9.44
MAX	5.5	13	8.4	8.0	1350	1930	27	668	14	.20	.89	218
MIN	1.7	.79	1.1	2.7	6.2	8.3	5.2	5.5	.17	.00	.00	.00
AC-FT	189	164	172	291	6130	11300	641	7530	314	1.9	317	562
CAL YR 1977	TOTAL	179117.26	MEAN	491	MAX	10600	MIN	.79	AC-FT	355300		
WTR YR 1978	TOTAL	13923.88	MEAN	38.1	MAX	1930	MIN	.00	AC-FT	27620		

TRINITY RIVER BASIN

08064500 CHAMBERS CREEK NEAR CORSICANA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1961 to current year. Water temperatures: September 1961 to September 1970.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 04...	1040	1.8	797	7.4	23.0	240	76	86	6.1	70
NOV 09...	1630	5.6	556	7.4	15.5	170	20	60	4.3	46
JAN 28...	0950	6.2	877	7.6	4.5	240	96	87	6.4	89
MAR 01...	1440	11	609	7.7	10.0	210	68	74	5.4	45
APR 14...	1018	17	820	--	20.5	210	34	73	5.9	69
MAY 25...	0925	66	438	--	26.0	160	28	59	2.9	24
JUN 29...	1530	.18	614	--	30.5	200	34	72	4.5	48

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
OCT 04...	2.0	4.5	200	0	110	78	.6	7.6	461
NOV 09...	1.5	5.0	180	0	61	48	.5	6.7	320
JAN 28...	2.5	6.2	180	0	120	100	.5	2.7	500
MAR 01...	1.4	4.2	170	0	100	36	.4	6.6	355
APR 14...	2.1	5.7	210	0	100	59	.5	5.1	422
MAY 25...	.8	3.5	160	0	59	17	.6	9.3	254
JUN 29...	1.5	4.4	200	0	81	41	.6	8.1	358

08064600 RICHLAND CREEK NEAR FAIRFIELD, TX

LOCATION.--Lat 31°57'05", long 96°05'52", Freestone County, Hydrologic Unit 12030108, near center of channel on downstream side of bridge on Farm Road 488, 5.4 mi (8.7 km) upstream from mouth, 9.0 mi (14.5 km) downstream from Chambers Creek, and 16 mi (26 km) north of Fairfield.

DRAINAGE AREA.--1,957 mi² (5,069 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1972 to current year.

GAGE.--Nonrecording gage. Datum of gage is 230.83 ft (70.357 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair above 50 ft³/s (1.42 m³/s) and good below. Flow is partly regulated by Navarro Mills Lake (station 08063050) on Richland Creek and Bardwell Lake (station 08063700) on Waxahachie Creek. Flow is affected at times by discharge from flood-detention pools of 174 floodwater-retarding structures with combined detention capacity of 126,900 acre-ft (156 hm³). These structures control runoff from 436 mi² (1,129 km²) in the Richland and Chambers Creeks drainage basins.

AVERAGE DISCHARGE.--6 years (water years 1973-78), 1,068 ft³/s (30.25 m³/s), 773,800 acre-ft/yr (954 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 29,500 ft³/s (835 m³/s) Apr. 26, 1973, gage height, 28.76 ft (8.766 m); minimum daily, 0.02 ft³/s (0.01 m³/s) July 26, Aug. 26 to Sept. 2, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1971 reached a stage of 31.5 ft (9.60 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge observed, 7,920 ft³/s (224 m³/s) Mar. 8, gage height, 26.63 ft (8.117 m); minimum daily, 1.5 ft³/s (0.042 m³/s) July 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	20	66	14	20	31	43	11	69	5.4	7.7	11
2	6.2	46	57	13	69	31	39	11	133	10	6.9	12
3	5.6	42	36	13	49	33	35	174	43	12	6.9	11
4	5.8	36	25	13	23	25	32	297	30	9.4	6.9	11
5	5.4	21	21	12	18	24	29	221	25	8.2	31	10
6	5.6	15	17	11	15	23	28	123	23	7.2	260	9.1
7	5.4	12	15	12	13	2940	27	82	27	7.2	262	9.1
8	4.4	18	15	11	16	7140	27	54	28	6.7	127	9.4
9	4.8	30	16	11	32	7730	26	37	23	6.0	56	9.4
10	10	89	15	10	71	2220	25	30	20	5.6	30	9.4
11	14	43	15	10	108	1400	29	32	20	5.2	20	12
12	16	34	17	12	125	1050	39	28	17	5.0	16	26
13	16	23	17	34	1610	677	34	480	15	4.4	12	333
14	15	17	16	32	2360	446	42	521	13	3.4	11	368
15	13	14	17	21	979	356	42	223	13	2.6	11	83
16	12	11	21	16	401	281	34	150	13	1.9	11	37
17	11	10	21	17	215	227	27	107	12	1.5	11	24
18	11	10	22	27	231	179	25	75	10	16	9.7	19
19	11	10	20	27	490	138	20	51	9.1	14	9.7	16
20	11	11	21	44	307	159	21	39	8.5	12	10	13
21	10	12	18	44	180	182	22	39	7.9	9.4	10	12
22	10	19	17	24	127	189	25	85	7.7	6.9	9.7	12
23	10	14	20	21	92	164	24	303	7.4	5.2	9.4	125
24	11	12	20	24	74	114	19	296	7.4	4.2	9.7	80
25	12	11	20	17	60	202	13	180	7.2	9.4	10	28
26	13	12	20	10	47	250	13	119	6.4	11	10	16
27	12	11	18	13	41	126	13	80	7.9	8.8	9.7	12
28	11	11	17	11	34	93	13	56	6.7	11	9.4	10
29	11	12	16	13	---	76	12	43	5.6	10	8.8	9.7
30	11	29	14	14	---	62	12	38	5.6	8.2	8.5	8.8
31	11	---	14	17	---	50	---	39	---	7.9	8.8	---
TOTAL	311.6	655	664	568	7807	26618	790	4024	621.4	235.7	1019.8	1345.9
MEAN	10.1	21.8	21.4	18.3	279	859	26.3	130	20.7	7.60	32.9	44.9
MAX	16	89	66	44	2360	7730	43	521	133	16	262	368
MIN	4.4	10	14	10	13	23	12	11	5.6	1.5	6.9	8.8
AC-FT	618	1300	1320	1130	15490	52800	1570	7980	1230	468	2020	2670
CAL YR 1977	TOTAL	334037.5	MEAN 915	MAX 12000	MIN 4.4	AC-FT 662600						
WTR YR 1978	TOTAL	44660.4	MEAN 122	MAX 7730	MIN 1.5	AC-FT 88580						

TRINITY RIVER BASIN

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08064600 RICHLAND CREEK NEAR FAIRFIELD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1956 to September 1966, March 1972 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1956 to September 1966, March 1972 to current year.

WATER TEMPERATURES: April 1956 to September 1966, March 1972 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 22,000 micromhos Aug. 22, 1956; minimum daily, 154 micromhos June 17, 1977.

WATER TEMPERATURES: Maximum daily, 37.0°C Aug. 14, 1961; minimum daily, 0.0°C Jan. 3, 4, 1959.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,470 micromhos July 17; minimum daily, 164 micromhos Mar. 8.

WATER TEMPERATURES: Maximum daily, 34.0°C July 16; minimum daily, 4.0°C Jan. 21, 22.

WATER QUALITY DATA: WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
OCT 05...	0930	5.1	1420	7.6	22.0	300	90	100	11	190
NOV 10...	1040	105	682	7.5	14.0	220	89	74	8.5	51
DEC 21...	1430	17	919	8.4	8.0	250	68	85	8.4	110
JAN 27...	1000	15	1040	8.2	3.5	220	83	75	8.5	130
FEB 28...	1800	34	612	--	16.0	180	61	64	5.9	50
APR 13...	1030	34	862	7.4	19.5	240	54	84	8.1	81
JUN 29...	0955	4.6	1320	--	29.5	280	65	97	8.8	160
AUG 31...	1800	9.1	884	--	28.0	280	120	95	11	82
SEP 30...	2300	8.8	517	--	25.0	160	21	55	4.4	42
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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)
OCT 05...		4.8	7.8	250	0	130	260	.8	9.4	832
NOV 10...		1.5	6.4	160	0	130	55	.7	8.7	413
DEC 21...		3.0	6.9	210	4	99	140	.6	7.6	565
JAN 27...		3.8	5.8	170	0	100	190	.5	7.8	601
FEB 28...		1.6	5.1	150	0	99	53	.4	9.0	360
APR 13...		2.3	6.8	230	0	100	86	.5	5.6	485
JUN 29...		4.2	6.3	260	0	120	220	.6	9.6	750
AUG 31...		2.1	8.7	190	6	170	84	.7	5.1	556
SEP 30...		1.5	5.2	160	2	58	45	.4	7.5	298

TRINITY RIVER BASIN

08064600 RICHLAND CREEK NEAR FAIRFIELD, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	311.6	1150	680	569	190	157	120	99	290
NOV. 1977.....	655	684	400	716	72	127	89	158	200
DEC. 1977.....	664	834	490	883	110	190	100	182	230
JAN. 1978.....	568	1030	610	934	160	238	110	174	270
FEB. 1978.....	7807	376	220	4700	22	465	42	879	130
MAR. 1978.....	26618	213	130	9120	11	820	18	1310	85
APR. 1978.....	790	865	510	1090	110	241	100	224	230
MAY 1978.....	4024	550	330	3530	48	519	68	742	170
JUNE 1978.....	621.4	789	470	782	97	163	96	162	220
JULY 1978.....	235.7	1450	860	545	270	171	130	80	350
AUG. 1978.....	1019.8	544	320	878	49	134	67	184	170
SEPT 1978.....	1345.9	412	250	891	31	114	46	168	140
TOTAL	44660.39	**	**	24600	**	3340	**	4360	**
WTD.AVG.	122.36	345	210	**	28	**	36	**	130

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1290	831	732	1180	887	643	603	1040	622	1330	896	879
2	1340	807	763	1240	906	682	651	1070	641	1340	886	890
3	1380	654	694	1270	870	702	685	646	656	1410	862	900
4	1410	664	670	1330	991	733	724	519	667	1510	865	911
5	1420	582	690	1380	921	751	753	378	621	1560	795	918
6	1430	637	626	1410	828	500	771	407	637	1590	445	911
7	1430	654	614	1400	781	169	793	530	745	1640	347	893
8	1440	686	652	1380	734	164	825	709	1000	1690	639	904
9	1440	654	669	1270	781	179	894	824	800	1800	598	926
10	1460	678	694	1230	773	204	883	893	812	1910	648	942
11	1410	713	722	1210	626	228	869	856	792	2000	628	934
12	1520	555	742	1200	548	253	886	862	806	2080	600	837
13	1210	574	752	1180	368	257	863	635	824	2130	565	281
14	1150	556	821	955	335	272	926	558	835	2190	580	300
15	1250	539	895	1010	317	283	900	569	905	2310	594	369
16	1260	524	943	1070	340	296	807	551	983	2380	614	396
17	1240	569	931	1020	354	310	897	511	1020	2470	653	443
18	1090	647	962	940	345	370	950	525	1010	1710	679	474
19	1050	697	951	838	340	489	970	545	1020	1550	703	503
20	1010	749	913	847	326	478	983	591	1050	1350	734	538
21	1040	722	931	885	324	601	1040	587	1070	1260	748	571
22	1010	697	991	835	354	564	1030	550	1080	1350	787	595
23	962	713	1010	862	394	500	983	500	1090	1350	815	558
24	959	697	991	971	435	341	1000	487	1130	1360	842	334
25	967	720	913	1060	487	414	1020	444	1170	1220	855	362
26	991	767	924	1170	545	417	1020	501	1190	1130	865	388
27	947	749	875	1030	569	431	1080	521	1270	1090	872	425
28	888	840	1000	947	612	449	1060	537	1310	1060	878	459
29	856	884	1060	892	---	485	1100	577	1320	991	882	489
30	816	789	1120	862	---	520	1060	587	1320	953	889	523
31	788	---	1140	844	---	560	---	625	---	933	896	---
MEAN	1180	685	851	1090	575	427	901	617	947	1570	731	628

TRINITY RIVER BASIN

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08064600 RICHLAND CREEK NEAR FAIRFIELD, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30.0	22.0	12.5	8.0	7.0	14.0	20.0	27.5	28.0	30.5	28.0	27.0
2	25.0	17.0	13.5	5.5	6.5	13.5	20.5	21.5	27.5	30.5	28.5	---
3	24.5	17.0	12.5	7.0	5.5	9.0	22.0	18.5	27.5	30.0	29.5	31.0
4	23.5	18.0	16.0	9.0	8.5	10.0	25.0	15.5	28.0	33.0	28.0	30.5
5	21.5	19.0	14.0	13.0	7.0	10.0	22.0	20.0	30.0	32.5	25.0	32.0
6	25.0	20.0	11.0	15.0	7.5	12.0	23.0	21.0	28.0	31.0	25.0	31.0
7	25.0	21.0	11.0	16.5	6.0	13.0	23.5	24.0	26.5	32.0	26.0	30.0
8	---	17.0	16.0	10.5	5.0	10.0	24.0	26.0	30.0	33.5	29.0	28.0
9	24.0	14.0	9.0	7.5	4.5	11.0	23.0	27.0	30.0	---	30.0	29.0
10	21.0	15.0	8.5	5.5	5.0	12.0	20.5	27.0	28.0	32.0	28.5	27.5
11	20.0	15.5	10.0	5.5	5.0	14.0	21.0	23.0	31.0	32.5	31.0	28.0
12	20.0	15.0	14.0	6.0	8.0	14.0	21.0	27.5	32.0	30.0	30.0	27.5
13	19.0	14.5	15.0	7.5	10.0	15.5	22.5	22.0	32.0	31.0	31.0	25.0
14	20.5	16.5	13.0	6.0	9.5	16.0	24.0	24.5	30.5	33.5	32.0	29.0
15	21.5	18.0	12.0	7.0	9.0	15.5	---	26.0	32.0	31.0	32.0	29.5
16	17.0	19.5	16.0	6.0	9.5	15.5	24.0	25.5	31.0	34.0	32.0	29.0
17	19.5	18.0	14.5	5.5	7.5	16.5	22.5	26.0	31.0	30.0	32.5	29.0
18	22.0	18.0	13.5	---	---	18.0	24.5	28.0	31.0	31.0	32.0	30.0
19	23.0	18.5	14.0	4.5	6.0	18.5	20.5	29.0	32.5	31.0	31.0	31.0
20	24.0	20.5	10.5	4.5	6.0	18.0	23.0	27.0	32.0	32.0	30.5	31.0
21	23.0	17.0	9.0	4.0	6.5	20.0	22.5	26.5	31.5	32.0	31.5	26.5
22	22.0	16.0	9.5	4.0	10.0	19.0	20.5	28.0	32.0	30.5	32.0	26.5
23	22.0	19.0	10.5	5.5	10.0	19.5	24.0	26.0	32.0	---	32.0	26.0
24	21.5	17.5	13.0	6.0	12.5	16.0	23.5	27.5	30.5	30.0	33.0	25.0
25	22.0	17.0	8.5	8.5	12.0	16.0	21.0	28.5	31.0	32.0	33.0	25.0
26	23.5	19.5	9.0	9.0	13.5	15.5	22.5	29.5	31.0	32.0	31.0	24.5
27	23.0	16.0	9.0	7.5	13.0	16.5	23.5	29.5	32.0	30.0	30.5	24.0
28	23.0	15.0	9.0	5.5	16.0	18.5	23.0	26.5	33.0	32.0	30.0	25.0
29	20.5	12.0	10.0	7.5	---	19.0	22.0	27.0	33.0	31.0	29.5	25.5
30	22.0	12.0	10.0	6.0	---	20.5	25.0	29.0	32.5	30.0	26.5	25.0
31	24.0	---	11.0	6.0	---	21.0	---	30.0	---	29.0	28.0	---
MEAN	22.5	17.0	12.0	7.5	8.5	15.5	22.5	25.5	30.5	31.5	30.0	28.0

TRINITY RIVER BASIN

08064700 TEHUACANA CREEK NEAR STREETMAN, TX

LOCATION.--Lat 31°50'54", Long 96°17'23", Freestone County, Hydrologic Unit 12030201, on downstream side of bridge on U.S. Highway 75, 2.8 mi (4.5 km) southeast of Streetman, 3.1 mi (5.0 km) downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 3.8 mi (6.1 km) upstream from Caney Creek, and 25 mi (40 km) upstream from mouth.

DRAINAGE AREA.--142 mi² (368 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 287.58 ft (87.654 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good.

AVERAGE DISCHARGE.--10 years, 75.5 ft³/s (2.138 m³/s), 7.22 in/yr (183 mm/yr), 54,700 acre-ft/yr (67.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s (654 m³/s) May 10, 1968, gage height, 25.00 ft (7.620 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1932, that of May 10, 1968. Flood in September 1932 reached a stage of about 24 ft (7.3 m), from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,130 ft³/s (145 m³/s) Mar. 7, gage height, 23.05 ft (7.026 m), no other peaks above base of 2,500 ft³/s (70.8 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.36	1.3	.03	.64	.70	.66	1.1	.61	.00	.00	.03
2	.09	.24	2.1	.04	1.3	.83	.56	1.3	.59	.00	.00	.02
3	.07	.27	.68	.04	2.3	1.1	.50	10	.59	.00	.00	.02
4	.06	.31	.31	.04	1.4	.83	.51	19	.59	.00	.00	.02
5	.05	.42	.15	.04	.92	.87	.48	5.0	.59	.00	27	.01
6	.04	.44	.08	.04	.64	5.1	.51	2.8	.59	.00	53	.00
7	.03	.63	.04	.04	.59	4080	.46	1.9	.76	.00	4.9	.00
8	.03	.36	.01	.04	27	669	.45	1.4	1.9	.00	1.6	.00
9	.02	.18	.02	.04	12	60	.48	1.2	1.0	.00	.95	.00
10	.02	.07	.01	.05	16	19	.62	1.0	.65	.00	.51	.00
11	.01	.06	.00	.06	7.8	9.5	.72	1.4	.55	.00	.45	.00
12	.00	.05	.01	.07	131	5.8	.69	27	.48	.00	.42	200
13	.00	.03	.01	.07	567	4.0	.67	15	.42	.00	.39	193
14	.00	.03	.01	.09	37	3.0	.58	5.9	.36	.00	.36	9.9
15	.00	.03	.02	.09	12	2.3	.58	3.3	.29	.00	.31	2.2
16	.00	.03	.02	.09	6.9	1.7	.55	2.0	.24	.00	.29	.93
17	.00	.02	.02	6.7	14	1.4	.55	1.5	.20	.00	.26	.55
18	.00	.02	.02	3.5	120	1.2	.54	1.2	.17	.00	.24	.51
19	.00	.02	.02	2.1	24	1.0	.47	1.0	.13	.00	.20	.51
20	.00	.02	.02	3.0	9.1	.97	.39	.84	.12	.00	.18	.51
21	.00	.03	.02	2.3	5.1	.94	.42	.83	.09	.00	.17	4.3
22	.00	.03	.02	1.3	3.1	.96	.60	.98	.07	.00	.13	2.3
23	.00	.03	.02	.90	2.2	.90	.95	2.1	.05	.00	.12	.77
24	.02	.03	.02	.77	1.5	1.4	.87	1.9	.04	.00	.11	.48
25	.03	.03	.02	.70	1.2	3.4	.83	1.6	.03	.00	.09	.42
26	.05	.04	.02	.66	1.1	3.2	.79	1.3	.02	.00	.07	.36
27	.05	.03	.02	.70	.88	2.0	.76	.93	.02	.00	.06	.31
28	.04	.03	.02	.66	.75	1.3	.93	.74	.01	.00	.06	.26
29	.04	.13	.02	.58	---	1.1	1.0	.89	.00	.00	.04	.22
30	.03	.36	.03	.50	---	.94	1.1	.86	.00	.00	.04	.18
31	.02	---	.02	.50	---	.76	---	.72	---	.00	.03	---
TOTAL	.81	4.33	5.08	25.74	1007.42	4885.20	19.22	116.69	11.16	.00	91.98	417.81
MEAN	.026	.14	.16	.83	36.0	158	.64	3.76	.37	.000	2.97	13.9
MAX	.11	.63	2.1	6.7	567	4080	1.1	27	1.9	.00	.53	200
MIN	.00	.02	.00	.03	.59	.70	.39	.72	.00	.00	.00	.00
CFSM	.000	.001	.001	.006	.25	1.11	.005	.03	.003	.000	.02	.10
IN.	.00	.00	.00	.01	.26	1.28	.01	.03	.00	.00	.02	.11
AC-FT	1.6	8.6	10	51	2000	9690	38	231	22	.00	182	.829
CAL YR 1977	TOTAL	24350.81	MEAN 66.7	MAX 3870	MIN .00	CFSM .47	IN 6.38	AC-FT 48300				
WTR YR 1978	TOTAL	6585.44	MEAN 18.0	MAX 4080	MIN .00	CFSM .13	IN 1.73	AC-FT 13060				

TRINITY RIVER BASIN

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08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 08...	1200	.73	1850	7.5	22.0	440	230	100	46	230
DEC 21...	1300	.02	2390	8.2	7.0	500	330	110	55	330
JAN 27...	1215	.71	1200	7.1	5.0	250	160	62	24	150
MAR 02...	1150	.72	806	7.2	12.0	200	90	49	18	91
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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 CONSTITUENTS, DIS- SOLVED (MG/L)
NOV 08...		4.8	5.8	260	0	210	380	.5	6.7	1110
DEC 21...		6.4	5.3	210	0	270	570	.4	4.2	1450
JAN 27...		4.1	4.8	120	0	120	260	.3	5.1	685
MAR 02...		2.8	4.1	130	0	--	--	--	--	--

08064800 CATFISH CREEK NEAR TENNESSEE COLONY, TX

LOCATION.--Lat 31°52'51", long 95°52'07", Anderson County, Hydrologic Unit 12030201, on left bank 35 ft (11 m) downstream from bridge on U.S. Highway 287, 2 mi (3 km) upstream from Beaver Creek, 3.5 mi (5.6 km) northwest of Tennessee Colony, 12 mi (19 km) downstream from Coon Creek Lake, and 12 mi (19 km) upstream from mouth.

DRAINAGE AREA.--207 mi² (536 km²).

PERIOD OF RECORD.--April 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 234.93 ft (71.607 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period of no gage-height record, which are fair. Some regulation upstream by Coon Creek Lake. No known diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years, 103 ft³/s (2.917 m³/s), 74,620 acre-ft/yr (92.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,550 ft³/s (214 m³/s) May 11, 1968, gage height, 15.90 ft (4.846 m); minimum daily, 0.8 ft³/s (0.023 m³/s) Aug. 19-21, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1927, 22 ft (6.7 m) in June 1944 as a result of dam failure at Coon Creek Lake, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 601 ft³/s (17.0 m³/s) Mar. 9, gage height, 10.27 ft (3.130 m), no peak above base of 1,400 ft³/s (39.6 m³/s); minimum daily, 4.4 ft³/s (0.12 m³/s) Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	36	86	53	101	98	87	110	18	5.9	5.9	43
2	22	52	98	55	106	97	86	150	22	5.8	5.9	77
3	21	49	111	59	117	96	83	130	24	5.8	5.9	83
4	23	53	116	61	124	95	76	110	24	5.8	5.9	75
5	23	50	109	62	119	95	74	100	23	5.7	6.7	45
6	22	41	96	62	108	97	72	92	42	5.7	8.6	24
7	20	37	88	61	102	159	69	86	39	5.7	11	17
8	20	50	82	58	101	209	66	82	56	5.5	11	14
9	20	75	75	57	102	534	65	77	67	5.5	9.2	13
10	21	72	69	58	107	479	80	74	60	5.4	8.1	12
11	31	84	67	60	114	332	90	100	41	5.4	7.1	12
12	35	88	66	69	132	239	78	150	25	5.4	6.1	19
13	36	83	69	73	174	187	70	200	18	5.4	5.6	45
14	34	75	71	78	191	154	63	180	15	5.4	5.2	62
15	30	70	69	84	268	133	59	130	14	5.4	5.2	62
16	24	66	71	95	249	124	55	96	12	5.4	5.4	48
17	23	62	72	104	200	116	60	84	11	5.5	5.1	36
18	22	60	73	107	178	106	57	68	10	5.7	4.9	28
19	22	61	72	120	163	93	54	58	9.4	5.8	4.7	23
20	21	60	69	122	170	85	52	48	8.9	5.9	4.5	19
21	20	57	66	124	160	86	49	42	8.2	5.7	4.5	20
22	21	53	66	125	142	89	48	38	7.9	5.7	4.4	39
23	20	49	65	118	130	99	47	36	7.5	5.6	4.5	25
24	20	50	62	114	117	114	60	35	7.4	5.9	4.5	21
25	20	50	56	112	107	119	56	32	6.9	6.2	4.5	19
26	22	48	49	109	103	147	52	29	6.7	6.6	4.6	17
27	28	48	47	107	103	161	50	26	6.6	6.7	4.5	16
28	29	49	46	103	101	145	48	24	6.4	6.5	4.5	16
29	29	49	45	96	---	121	46	22	6.1	6.3	4.5	15
30	28	71	51	92	---	104	65	20	6.0	6.2	4.5	15
31	27	---	50	90	---	93	---	19	---	6.0	4.5	---
TOTAL	760	1748	2232	2688	3889	4806	1917	2448	609.0	179.5	181.5	960
MEAN	24.5	58.3	72.0	86.7	139	155	63.9	79.0	20.3	5.79	5.85	32.0
MAX	36	88	116	125	268	534	90	200	67	6.7	11	83
MIN	20	36	45	53	101	85	46	19	6.0	5.4	4.4	12
AC-FT	1510	3470	4430	5330	7710	9530	3800	4860	1210	356	360	1900

CAL YR 1977 TOTAL 40499.2 MEAN 111 MAX 1060 MIN 7.3 AC-FT 80330
WTR YR 1978 TOTAL 22418.0 MEAN 61.4 MAX 534 MIN 4.4 AC-FT 44470

NOTE.--No gage-height record Apr. 4 to May 16.

TRINITY RIVER BASIN

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08065000 TRINITY RIVER NEAR OAKWOOD, TX

LOCATION.--Lat 31°38'54", long 95°47'21", Anderson County, Hydrologic Unit 12030201, on left bank at downstream side of bridge on U.S. Highways 79 and 84, 1.5 mi (2.4 km) upstream from Missouri Pacific Railroad Co. bridge, 6 mi (10 km) northeast of Oakwood, and at mile 313.4 (504.3 km).

DRAINAGE AREA.--12,833 mi² (33,237 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to September 1924 (monthly discharge only), October 1924 to current year. Records of January 1905 to September 1923, published in WSP 850 and 878, have been found unreliable and should not be used. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1442: 1934. See also PERIOD OF RECORD. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 175.06 ft (53.358 m) National Geodetic Vertical Datum of 1929. Prior to July 15, 1932, nonrecording gage at site 1.5 mi (2.4 km) downstream at datum 1.06 ft (0.323 m) lower. July 15, 1932, to Oct. 7, 1934, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Twenty-one major reservoirs with a capacity of 4,200,000 acre-ft (5.18 km³), of which 1,362,000 acre-ft (1.68 km³) is flood control, partly regulate the flow. Records furnished by Industrial Generating Co., Fairfield, show that during the current year 19,920 acre-ft (24.6 hm³) was diverted into Fairfield Lake from the Trinity River about 34 mi (55 km) upstream. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--30 years (water years 1924-53) unregulated, 5,045 ft³/s (142.9 m³/s), 3,655,000 acre-ft/yr (4.51 km³/yr); 25 years (water years 1954-78) regulated, 4,477 ft³/s (126.8 m³/s), 3,244,000 acre-ft/yr (4.00 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153,000 ft³/s (4,330 m³/s), Apr. 29, 1942, gage height, 51.64 ft (15.740 m); minimum observed, 28 ft³/s (0.79 m³/s) Aug. 24, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1890 reached a stage of 53 ft (16.2 m), discharge about 180,000 ft³/s (5,100 m³/s) and was the highest since that date, from information in local newspapers. Flood of June 4, 1908, reached a stage of 52.2 ft (15.91 m), present site and datum, from information by the National Weather Service, discharge about 164,000 ft³/s (4,640 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,500 ft³/s (439 m³/s) Mar. 12, gage height, 34.00 ft (10.363 m); minimum daily, 390 ft³/s (11.0 m³/s) July 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	644	632	733	541	918	939	1150	787	4250	439	588	710
2	627	701	816	613	941	894	1080	718	4250	444	516	902
3	571	646	1010	651	1030	874	1010	801	2560	444	443	1090
4	542	693	1100	626	1190	854	953	1050	1420	443	419	960
5	510	1070	1020	585	1270	822	910	2010	1050	434	466	794
6	457	1060	890	556	1200	805	875	3440	969	429	583	771
7	504	818	781	563	1080	1360	854	3660	969	401	843	732
8	526	712	707	580	1050	6970	854	2460	889	390	1460	651
9	512	710	659	583	1060	11700	934	1580	897	392	2010	666
10	528	687	648	588	1190	13800	1010	1190	1150	405	1580	667
11	552	879	631	589	1390	14900	1000	983	1550	411	1010	667
12	588	1560	626	604	1740	15200	906	1060	1520	408	732	684
13	593	1540	773	620	2760	12700	1400	1060	1110	395	556	763
14	769	1130	881	659	5400	7770	2510	2460	803	396	520	2040
15	913	850	761	770	7700	3880	2140	3160	656	415	516	2230
16	721	735	735	1350	7990	2170	1380	2060	620	423	480	1280
17	593	685	731	1290	6300	1770	1040	1330	618	422	462	959
18	553	699	699	1110	3800	1490	915	1010	630	423	457	775
19	525	692	663	1150	3090	1300	818	852	599	417	441	651
20	489	672	646	1180	2940	1180	761	787	571	414	461	581
21	487	645	594	1140	2400	1210	740	759	546	405	457	531
22	490	641	561	1080	2050	1170	736	733	506	410	461	545
23	494	650	549	1030	1900	1210	902	1060	482	412	457	959
24	491	649	551	944	1760	1410	1230	4160	501	428	457	949
25	495	640	546	935	1560	1940	1050	5150	500	449	480	800
26	722	641	538	945	1320	3440	957	3470	491	460	570	752
27	890	624	535	953	1130	3950	1380	2000	474	465	580	646
28	736	591	523	986	1010	3770	1430	1620	473	536	540	538
29	651	573	517	1010	---	2540	1100	1230	457	526	524	507
30	582	657	502	973	---	1640	893	902	438	489	496	502
31	548	---	510	904	---	1290	---	1840	---	499	560	---
TOTAL	18303	23482	21436	26108	67169	124948	32918	55382	31949	13424	20125	25302
MEAN	590	783	691	842	2399	4031	1097	1787	1065	433	649	843
MAX	913	1560	1100	1350	7990	15200	2510	5150	4250	536	2010	2230
MIN	457	573	502	541	918	805	736	718	438	390	419	502
AC-FT	36300	46580	42520	51790	133200	247800	65290	109900	63370	26630	39920	50190
CAL YR 1977 TOTAL	1780446			4878					3532000			
WTR YR 1978 TOTAL	460546			1262					913500			

TRINITY RIVER BASIN

08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Sediment analyses: December 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1976 to current year.

WATER TEMPERATURES: December 1976 to current year.

SUSPENDED-SEDIMENT DISCHARGE: December 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 991 micromhos Sept. 14, 1977; minimum daily, 204 micromhos June 20, 1977.

WATER TEMPERATURES: Maximum daily, 32.0°C June 11, 1977; minimum daily, 2.0°C Jan. 9, 1977.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,570 mg/L June 16, 1977; minimum daily mean, 20 mg/L Aug. 6, 1977, Oct. 14, 1977, Jan. 4, 1978.

SEDIMENT LOADS: Maximum daily, 36,600 tons Mar. 5, 1977; minimum daily, 34 tons Jan. 4, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 952 micromhos July 11; minimum daily, 208 micromhos Mar. 10.

WATER TEMPERATURES: Maximum daily, 31.5°C Oct. 1; minimum daily, 2.5°C Jan. 29.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,430 mg/L Feb. 18; minimum daily mean, 20 mg/L Oct. 14, Jan. 4.

SEDIMENT LOADS: Maximum daily, 31,700 tons Mar. 10; minimum daily, 34 tons Jan. 4.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	
DATE	TIME							
NOV								
17...	0910	685	16.5	92	170	--	--	
DEC								
28...	1425	520	9.0	35	49	--	--	
FEB								
18...	0700	4270	6.0	1440	16600	82	82	
MAR								
09...	0700	11000	10.0	1000	29700	70	71	
21...	1120	1200	18.5	186	603	79	79	
APR								
28...	0700	1840	20.5	515	2560	70	72	
MAY								
13...	1630	840	20.0	248	562	58	61	
SEP								
15...	0700	2500	25.0	1170	7900	87	88	
16...	0400	1340	26.0	1140	4130	83	87	
		SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
DATE								
NOV								
17...	--	--	--	90	96	99	100	
DEC								
28...	--	--	--	76	87	94	100	
FEB								
18...	90	94	95	97	98	99	100	
MAR								
09...	77	85	89	92	96	99	100	
21...	84	88	94	94	99	100	--	
APR								
28...	76	85	90	98	99	100	--	
MAY								
13...	70	75	87	88	89	92	100	
SEP								
15...	95	96	97	98	99	100	--	
16...	90	93	96	99	100	--	--	

TRINITY RIVER BASIN

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08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	825	870	732	811	664	602	482	716	465	909	940	551
2	819	884	757	839	675	604	488	793	461	894	924	544
3	---	702	757	845	675	638	529	833	467	902	913	544
4	---	880	757	849	677	636	600	839	455	887	921	774
5	---	765	726	848	710	652	598	714	454	917	944	774
6	---	765	741	779	743	652	638	710	455	917	786	774
7	---	817	723	790	741	654	755	527	497	917	789	854
8	---	817	720	806	---	214	760	514	501	917	821	854
9	904	695	714	804	---	212	760	519	501	920	701	854
10	896	681	723	801	---	208	785	498	652	917	698	820
11	896	755	715	807	---	263	785	497	650	952	705	820
12	879	743	702	804	688	269	785	507	648	948	867	820
13	799	737	725	797	707	311	782	478	720	940	551	808
14	802	737	694	804	710	405	866	580	732	936	539	285
15	780	740	646	767	385	288	862	495	728	944	538	285
16	809	678	717	752	385	266	870	497	697	940	542	287
17	806	703	744	767	406	274	623	495	695	940	542	587
18	874	703	740	757	503	462	659	624	695	909	542	590
19	870	594	737	754	508	491	663	624	589	917	674	593
20	874	594	737	732	495	523	591	627	600	917	540	751
21	841	594	772	720	480	557	590	544	600	917	749	754
22	841	680	779	730	480	605	590	545	664	920	749	757
23	841	683	785	728	592	583	703	547	662	925	759	677
24	835	685	796	728	605	683	696	449	674	899	826	676
25	835	694	794	683	605	685	702	443	777	913	823	686
26	835	694	794	675	602	753	712	437	775	905	826	657
27	814	693	759	683	593	823	560	471	772	913	854	654
28	811	740	747	683	604	395	556	490	846	917	896	786
29	814	736	732	715	---	520	779	491	837	917	896	768
30	811	719	817	700	---	526	799	491	859	940	881	766
31	867	---	838	685	---	515	---	556	---	940	896	---
MEAN	839	726	746	763	593	493	686	566	638	921	762	678

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.5	23.0	16.5	8.0	3.5	8.5	17.5	22.0	26.0	20.0	30.0	28.5
2	31.0	22.0	16.0	8.0	4.0	8.5	18.0	21.0	26.5	30.0	30.0	28.0
3	---	21.0	16.0	8.0	5.0	8.0	20.0	20.0	25.0	30.0	30.0	26.0
4	---	21.0	16.5	7.5	4.5	8.0	20.0	19.5	25.0	30.0	29.5	26.0
5	---	20.0	16.0	8.0	4.0	9.0	20.5	19.0	25.5	30.0	29.5	26.5
6	---	21.0	15.5	8.0	5.0	10.0	20.5	19.5	25.5	30.0	29.0	26.0
7	---	21.0	15.0	8.0	4.5	10.0	21.0	20.0	25.5	30.0	26.0	26.0
8	---	20.5	15.5	8.0	---	10.0	21.5	20.0	25.0	30.0	25.0	26.0
9	24.5	20.5	13.0	7.5	---	10.0	21.5	20.0	26.0	30.0	25.5	26.5
10	24.0	20.0	10.0	7.5	---	10.0	21.5	21.0	26.5	30.0	25.5	27.0
11	23.5	16.0	9.5	7.0	---	10.5	21.0	21.0	27.0	30.0	28.0	27.0
12	23.0	16.0	10.0	6.0	5.5	10.5	20.0	21.0	27.0	30.0	29.0	27.0
13	22.0	15.0	10.5	5.0	5.5	10.5	20.0	21.5	27.0	30.0	29.5	27.0
14	22.0	15.0	10.0	5.0	6.0	10.5	18.5	22.0	28.0	30.0	29.5	26.5
15	22.0	15.5	10.0	5.0	6.0	12.0	19.0	22.0	28.0	30.5	29.5	26.0
16	22.5	18.5	10.0	5.0	6.5	12.0	20.5	23.0	28.5	30.5	29.5	26.0
17	22.5	19.0	10.0	5.0	6.0	11.5	20.5	23.5	28.5	30.5	29.5	26.0
18	22.0	19.0	9.5	4.5	6.0	13.0	21.0	24.0	28.5	30.5	29.5	26.0
19	22.5	18.5	9.5	4.0	3.0	13.0	21.0	25.0	28.0	30.0	30.0	26.0
20	22.5	19.0	9.0	3.0	3.0	14.0	20.5	25.0	28.5	30.0	30.0	26.5
21	22.0	20.0	9.0	3.0	3.5	14.5	20.0	25.0	29.0	30.0	30.0	27.0
22	22.0	19.0	9.0	3.0	4.0	15.0	20.5	25.5	29.0	30.5	29.5	26.5
23	22.0	18.0	9.5	3.0	4.5	15.0	20.5	25.0	29.5	30.5	29.0	26.0
24	22.5	17.5	9.5	3.0	5.0	15.0	20.5	24.0	29.5	28.0	29.0	25.5
25	22.5	17.0	9.5	3.5	5.0	15.0	20.0	24.0	29.5	28.5	29.0	25.0
26	22.0	17.0	9.0	3.5	8.0	14.0	20.0	24.5	29.5	29.0	30.0	25.0
27	22.5	17.0	9.0	4.0	8.5	15.0	20.0	25.0	29.5	29.0	30.0	25.0
28	22.5	17.0	9.0	4.0	9.0	14.5	20.5	26.5	29.0	29.0	29.5	25.5
29	23.5	17.0	8.5	2.5	---	15.0	20.5	26.5	29.5	29.5	29.5	25.0
30	23.0	16.5	8.5	3.0	---	15.5	21.0	27.0	29.5	29.5	29.5	24.0
31	23.0	---	8.5	3.0	---	16.0	---	26.5	---	29.5	29.5	---
MEAN	23.5	18.5	11.0	5.5	5.0	12.0	20.5	23.0	27.5	29.5	29.0	26.0

TRINITY RIVER BASIN

08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
OCTOBER			NOVEMBER			DECEMBER			
1	644	144	250	632	69	118	733	96	190
2	627	125	212	701	38	72	816	111	245
3	571	110	170	646	25	44	1010	70	191
4	542	118	173	693	55	103	1100	70	208
5	510	115	158	1070	140	404	1020	109	300
6	457	112	138	1060	116	332	890	101	243
7	504	110	150	818	115	254	781	124	261
8	526	112	159	712	66	127	707	79	151
9	512	115	159	710	45	86	659	79	141
10	528	92	131	687	75	139	648	69	121
11	552	81	121	879	91	216	631	50	85
12	588	75	119	1560	77	324	626	44	74
13	593	37	59	1540	63	262	773	50	104
14	769	20	42	1130	76	232	881	72	171
15	913	57	141	850	91	209	761	108	222
16	721	63	123	735	78	155	735	67	133
17	593	80	128	685	88	163	731	78	154
18	553	48	72	699	76	143	699	67	126
19	525	46	65	692	105	196	663	59	106
20	489	50	66	672	88	160	646	69	120
21	487	46	60	645	88	153	594	54	87
22	490	35	46	641	54	93	561	50	76
23	494	44	59	650	66	116	549	52	77
24	491	36	48	649	64	112	551	36	54
25	495	58	78	640	66	114	546	46	68
26	722	57	111	641	69	119	538	34	49
27	890	61	147	624	58	98	535	47	68
28	736	35	70	591	62	99	523	41	58
29	651	29	51	573	90	139	517	44	61
30	582	30	47	657	69	122	502	60	81
31	548	71	105	---	---	---	510	34	47
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JANUARY			FEBRUARY			MARCH			
1	541	30	44	918	45	112	939	143	363
2	613	34	56	941	43	109	894	134	323
3	651	32	56	1030	24	67	874	115	271
4	626	20	34	1190	47	151	854	132	304
5	595	33	52	1270	68	233	822	102	226
6	556	52	78	1200	64	207	805	123	267
7	563	71	108	1080	80	233	1360	157	944
8	580	48	75	1050	80	227	6970	1090	20900
9	583	26	41	1060	80	229	11700	978	30700
10	588	29	46	1190	80	257	13800	850	31700
11	585	28	45	1390	85	319	14900	575	23100
12	604	36	59	1740	90	423	15200	225	9230
13	620	24	40	2760	100	745	12700	300	10300
14	659	38	68	5400	339	5620	7770	475	9970
15	770	47	98	7700	825	17200	3880	500	5240
16	1350	70	255	7990	775	16700	2170	525	3080
17	1290	120	418	6300	896	14800	1770	475	2270
18	1110	70	210	3800	1430	14700	1490	325	1310
19	1150	90	248	3090	1410	11800	1300	275	965
20	1180	55	175	2940	1010	8020	1180	225	717
21	1140	70	215	2400	250	1620	1210	270	882
22	1080	43	125	2050	250	1380	1170	270	853
23	1030	43	120	1900	175	898	1210	265	866
24	944	36	92	1760	161	765	1410	245	933
25	935	49	124	1560	144	607	1940	460	2690
26	945	56	143	1320	176	627	3440	680	6320
27	953	59	152	1130	164	500	3950	640	6830
28	986	33	88	1010	151	412	3770	610	6210
29	1010	32	87	---	---	---	2540	470	3220
30	973	66	173	---	---	---	1640	330	1460
31	904	42	103	---	---	---	1290	230	801

TRINITY RIVER BASIN

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08065000 TRINITY RIVER NEAR OAKWOOD, TX--Continued

SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
APRIL			MAY			JUNE			
1	1150	220	683	787	160	340	4250	575	6600
2	1080	220	642	718	122	237	4250	635	7290
3	1010	170	464	801	70	151	2560	545	3770
4	953	145	373	1050	115	326	1420	270	1040
5	910	154	378	2010	220	1190	1050	245	695
6	875	153	361	3440	245	2280	969	260	680
7	854	150	346	3660	350	3460	969	180	471
8	854	132	304	2460	405	2690	889	130	312
9	934	125	315	1580	280	1190	897	180	436
10	1010	137	374	1190	222	713	1150	190	590
11	1000	98	265	983	217	576	1550	160	670
12	906	98	240	1060	193	552	1520	100	410
13	1400	145	548	1060	220	630	1110	85	255
14	2510	225	1520	2460	550	3650	803	72	156
15	2140	245	1420	3160	1000	8530	656	40	71
16	1380	232	864	2060	1030	5700	620	48	80
17	1040	125	351	1330	950	3410	618	48	80
18	915	80	198	1010	575	1570	630	41	70
19	818	87	192	852	600	1380	599	45	73
20	761	82	168	787	500	1060	571	50	77
21	740	118	276	759	150	307	546	60	88
22	736	104	207	733	150	297	506	105	143
23	902	72	175	1060	468	2070	482	95	124
24	1230	76	252	4160	1120	12200	501	95	129
25	1050	123	349	5150	1000	13900	500	114	154
26	957	240	620	3470	900	8430	491	115	152
27	1380	425	1580	2000	360	1940	474	115	147
28	1430	440	1700	1620	210	919	473	105	134
29	1100	120	356	1230	160	531	457	60	74
30	893	137	330	902	150	365	438	62	73
31	---	---	---	1840	323	2010	---	---	---
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
JULY			AUGUST			SEPTEMBER			
1	439	70	83	588	120	191	710	235	450
2	444	81	97	516	77	107	902	575	1400
3	444	82	98	443	73	87	1090	410	1210
4	443	81	97	419	68	77	960	125	324
5	434	110	129	466	82	103	794	110	236
6	429	95	110	563	150	236	771	110	229
7	401	120	130	843	187	426	732	60	119
8	390	95	100	1460	310	1220	651	64	112
9	392	90	95	2010	420	2280	666	62	111
10	405	87	95	1580	435	1860	667	80	144
11	411	75	83	1010	370	1010	667	74	133
12	408	90	99	732	160	316	684	76	140
13	395	85	91	556	62	93	763	200	412
14	396	114	122	520	56	79	2040	1270	7000
15	415	115	129	516	55	77	2230	1150	6920
16	423	90	103	480	60	78	1280	1000	3460
17	422	104	118	462	48	60	959	200	518
18	423	98	112	457	45	56	775	150	314
19	417	87	98	441	30	36	651	115	202
20	414	110	123	461	40	50	581	47	74
21	405	106	116	457	51	63	531	47	67
22	410	100	111	461	54	67	545	47	69
23	412	103	115	457	65	80	959	110	285
24	428	126	146	457	90	111	949	112	287
25	449	142	172	480	85	110	800	125	270
26	460	123	153	570	74	114	752	185	376
27	465	90	113	580	61	96	646	162	283
28	536	85	123	540	56	82	538	50	73
29	526	100	142	524	68	96	507	42	57
30	489	122	161	456	65	87	502	42	57
31	499	120	162	560	70	106	---	---	---
YEAR	460546		460139						

TRINITY RIVER BASIN

08065200 UPPER KEECHI CREEK NEAR OAKWOOD, TX

LOCATION.--Lat 31°34'11", long 95°53'17"; Leon County, Hydrologic Unit 12030201, at right bank 20 ft (6 m) downstream from bridge on U.S. Highway 79, 1.9 mi (3.1 km) upstream from Missouri Pacific Railroad Co. bridge, 2 mi (3 km) southwest of Oakwood, 11 mi (18 km) upstream from Buffalo Creek, and 21 mi (34 km) upstream from mouth.

DRAINAGE AREA.--150 mi² (388 km²).

PERIOD OF RECORD.--April 1962 to current year.

Water-quality records: Chemical analyses: June 1962 to April 1964, November 1967 to September 1975.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 240.11 ft (73.186 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. No known diversions or regulation above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--16 years (water years 1963-78), 80.3 ft³/s (2.274 m³/s), 7.27 in/yr (185 mm/yr), 58,180 acre-ft/yr (71.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,000 ft³/s (680 m³/s) May 16, 1965, gage height, 14.91 ft (4.545 m), and Apr. 25, 1966, from rating curve extended above 5,800 ft³/s (164 m³/s); maximum gage height, 15.46 ft (4.712 m) Oct. 31, 1974; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, about 21 ft (6.4 m) in 1932, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 410 ft³/s (11.6 m³/s) Feb. 14, gage height, 11.64 ft (3.548 m), no peak above base of 2,000 ft³/s (56.6 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	1.2	50	16	54	25	18	5.6	3.1	.14	.00	11
2	.12	2.0	32	15	49	25	17	5.9	1.9	.06	.00	68
3	.08	3.3	26	14	42	47	16	37	1.2	.04	.00	97
4	.06	2.0	23	13	37	45	16	127	1.5	.01	.00	20
5	.04	1.5	19	13	32	36	15	113	1.6	.01	.10	7.7
6	.03	2.3	15	15	29	33	15	41	1.4	.01	.14	5.8
7	.03	3.0	12	16	46	83	15	23	1.8	.01	.09	3.8
8	.03	16	11	13	77	89	14	16	2.0	.00	.05	2.4
9	.02	48	8.0	12	83	75	14	12	2.0	.00	.03	2.1
10	2.4	18	7.4	11	84	52	33	8.4	1.5	.00	.12	4.9
11	11	7.4	7.3	12	76	42	72	7.1	1.3	.00	.15	4.2
12	17	4.4	7.5	35	111	35	50	20	1.2	.00	.28	22
13	6.2	2.8	54	34	312	62	31	66	.99	.00	.18	80
14	2.7	2.0	77	26	368	60	22	62	.84	.01	.11	81
15	1.6	1.8	52	23	293	40	17	24	.74	.00	.05	29
16	.93	1.5	33	133	84	30	15	13	.60	.00	.02	14
17	.63	1.5	24	195	73	26	13	9.5	.46	.00	.01	10
18	.48	1.9	17	111	97	23	13	7.4	.43	.00	.00	5.8
19	.48	1.8	14	79	86	21	12	5.5	.33	.00	.00	3.6
20	.48	1.4	13	55	70	20	8.9	6.6	.29	.00	.00	2.2
21	.38	1.6	11	46	49	20	7.6	5.0	.27	.00	.00	1.8
22	.38	1.8	9.6	42	37	19	9.6	3.3	.24	.00	.00	1.9
23	.37	2.1	9.4	41	33	18	40	3.2	.25	.01	.00	1.4
24	.39	2.3	9.8	44	30	49	26	2.6	.27	.04	.00	1.3
25	.50	6.3	9.8	45	29	76	17	2.0	.24	.03	.00	1.0
26	1.2	5.7	8.8	38	25	63	13	2.0	.20	.02	.00	.92
27	1.3	8.8	8.4	32	23	36	9.5	1.5	.17	.11	.00	.94
28	1.0	16	8.1	32	26	28	7.6	1.3	.16	.04	.00	1.0
29	.57	20	13	30	---	24	6.5	1.0	.18	.00	.00	1.0
30	.56	41	21	29	---	21	5.9	.90	.18	.00	.00	1.1
31	.77	---	18	32	---	20	---	.94	---	.00	.00	---
TOTAL	51.90	229.4	629.1	1252	2355	1243	569.6	633.74	27.34	.54	1.33	486.86
MEAN	1.67	7.65	20.3	40.4	84.1	40.1	19.0	20.4	.91	.017	.043	16.2
MAX	17	48	77	195	368	89	72	127	3.1	.14	.28	97
MIN	.02	1.2	7.3	11	23	18	5.9	.90	.16	.00	.00	.92
CFSM	.01	.05	.14	.27	.56	.27	.13	.14	.006	.000	.000	.11
IN.	.01	.06	.16	.31	.58	.31	.14	.16	.01	.00	.00	.12
AC-FT	103	455	1250	2480	4670	2470	1130	1260	54	1.1	2.6	966
CAL YR 1977	TOTAL	21953.55	MEAN 60.1	MAX 2100	MIN .02	CFSM .40	IN 5.44	AC-FT 43540				
WTR YR 1978	TOTAL	7479.81	MEAN 20.5	MAX 368	MIN .00	CFSM .14	IN 1.85	AC-FT 14840				

TRINITY RIVER BASIN

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08065350 TRINITY RIVER NEAR CROCKETT, TX
(National stream-quality accounting network)

LOCATION.--Lat 31°20'08", long 95°39'27", Leon County, Hydrologic Unit 12030201, on right bank 30 ft (9 m) downstream from bridge on State Highway 7, 7.1 mi (11.4 km) downstream from Upper Keechi Creek, 11.9 mi (19.1 km) west of Crockett, and at mile 265.2 (426.7 km).

DRAINAGE AREA.--13,911 mi² (36,029 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 136.59 ft (41.633 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. For statement regarding regulation by upstream reservoirs, see station 08065000. Flow from 44 mi² (114 km²) of Elkhart Creek basin affected by storage in Houston County Lake near Crockett, capacity 19,500 acre-ft (24.0 hm³). Diversions above station for irrigation, municipal, and industrial uses.

AVERAGE DISCHARGE.--14 years (water years 1965-78), 5,863 ft³/s (166.0 m³/s), 4,248,000 acre-ft/yr (5.24 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,000 ft³/s (2,210 m³/s) May 15, 1969, gage height, 52.24 ft (15.923 m); minimum, 275 ft³/s (7.79 m³/s) Aug. 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 56.1 ft (17.10 m) Apr. 30 or May 1, 1942, from information by Texas Department of Highways and Public Transportation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,000 ft³/s (453 m³/s) Mar. 13, gage height, 28.98 ft (8.833 m); minimum daily, 427 ft³/s (12.1 m³/s) July 15, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	651	630	873	681	1280	1480	1550	1020	2220	567	543	484
2	736	692	938	707	1360	1400	1390	901	4290	554	613	620
3	732	781	1020	767	1350	1420	1310	909	3880	538	600	1140
4	668	748	1170	812	1400	1390	1240	1080	2470	522	460	1040
5	629	800	1230	802	1520	1330	1170	1400	1450	506	489	830
6	590	1150	1140	758	1560	1280	1130	2590	1090	490	522	771
7	564	1170	1010	724	1570	1430	1080	3820	1770	475	625	744
8	572	1010	901	720	1680	2930	1050	3620	1840	463	892	733
9	593	931	808	720	1710	8590	1050	2520	1180	451	1560	645
10	612	916	755	724	1900	11900	1250	1730	1010	445	2050	622
11	652	891	730	760	1980	13800	1570	1290	1210	460	1710	649
12	681	1090	721	846	2420	15200	1510	1100	1590	472	1130	665
13	703	1690	958	860	4440	15900	1370	1170	1520	460	801	704
14	730	1640	1160	866	4740	13900	1940	1270	1140	445	652	980
15	885	1240	1200	909	6660	8480	2780	2870	878	427	583	2640
16	1030	952	1130	1710	8810	4830	2350	3030	689	430	574	2350
17	861	826	1080	3120	9000	3000	1640	2140	627	454	560	1460
18	709	763	982	2460	7290	2190	1260	1460	634	466	515	1020
19	644	760	908	2380	4840	1810	1100	1110	685	475	490	808
20	610	763	846	2330	4050	1600	996	955	685	460	472	665
21	571	746	805	2200	3700	1430	919	884	668	442	469	584
22	558	722	744	1900	3140	1410	899	839	631	427	478	544
23	557	714	700	1630	2700	1370	1380	800	593	445	500	549
24	559	721	687	1470	2480	1440	1610	1520	560	522	475	904
25	560	723	687	1400	2300	1640	1560	4430	570	506	451	932
26	565	710	680	1370	2050	2530	1300	4780	564	491	487	788
27	791	710	668	1340	1810	3860	1170	3270	564	498	641	730
28	976	691	662	1320	1630	4430	1520	2070	570	497	634	637
29	851	698	680	1320	---	3950	1530	1670	564	539	583	531
30	747	758	683	1310	---	2800	1230	1280	560	562	522	487
31	664	---	678	1280	---	1930	---	957	---	531	487	---
TOTAL	21251	26636	27234	40196	89370	140650	41854	58485	36702	15020	21568	26256
MEAN	686	888	879	1297	3192	4537	1395	1887	1223	485	696	875
MAX	1030	1690	1230	3120	9000	15900	2780	4780	4290	567	2050	2640
MIN	557	630	662	681	1280	1280	899	800	560	427	451	484
AC-FT	42150	52830	54020	79730	177300	279000	83020	116000	72800	29790	42780	52080
CAL YR 1977	TOTAL	2040172	MEAN	5590	MAX	33000	MIN	557	AC-FT	4047000		
WTR YR 1978	TOTAL	545222	MEAN	1494	MAX	15900	MIN	427	AC-FT	1081000		

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1964 to current year. Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1971 to current year. Sediment records: October 1967 to September 1968.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1964 to current year.

pH: March 1975 to current year.

WATER TEMPERATURES: February 1964 to September 1971, March 1975 to current year.

DISSOLVED OXYGEN: March 1975 to current year.

INSTRUMENTATION.--Water-quality monitor since Mar. 11, 1975.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Where maximum or minimum values are not shown, mean value is estimated.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,370 micromhos Sept. 22, 1964; minimum, 148 micromhos Apr. 27, 1966.

pH: Maximum, 9.5 units Aug. 24, 1977; minimum, 5.9 units Aug. 12, 1977.

WATER TEMPERATURES: Maximum, 37.0°C July 4, 1970, Sept. 4, 1978; minimum, 1.0°C Jan. 17, 1978.

DISSOLVED OXYGEN: Maximum, 17.0 mg/l Aug. 5, 1976; minimum, 0.0 mg/l Apr. 20, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 998 micromhos Aug. 29; minimum, 188 micromhos Mar. 9.

pH: Maximum, 9.0 units Oct. 16; minimum, 7.0 units Jan. 23.

WATER TEMPERATURES: Minimum, 37.0°C Sept. 4; minimum, 1.0°C Jan. 17.

DISSOLVED OXYGEN: Maximum, 15.3 mg/l Jan. 27; minimum, 0.3 mg/l May 25, June 2, 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT (UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV 17...	1200	840	753	7.4	18.2	50	40	4.7	52	17	140	8
DEC 29...	1600	685	758	7.6	9.8	40	20	9.3	85	14	150	46
FEB 08...	1125	1600	652	7.4	4.2	90	20	10.5	83	8.0	130	27
MAR 21...	1545	1400	494	7.3	18.8	60	80	6.1	68	9.9	140	40
MAY 04...	1800	1130	787	7.4	20.5	40	50	4.3	49	8.1	160	33
26...	1000	4450	727	7.3	28.1	220	220	.4	5	13	180	24
JUN 14...	1030	1250	716	7.5	30.4	50	50	8.8	117	3.5	170	31
JUL 07...	1045	440	910	7.8	33.0	40	40	6.1	85	2.6	170	10
SEP 15...	1415	2750	812	7.4	29.0	40	90	5.2	68	4.0	140	28
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)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	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 17...	45	6.3	90	3.3	11	160	0	100	71	1.1	4.9	409
DEC 29...	49	7.4	87	3.1	9.8	130	0	98	81	.9	16	413
FEB 08...	42	7.1	67	2.5	7.7	130	0	82	71	.6	13	354
MAR 21...	46	5.6	41	1.5	6.0	120	0	68	49	.3	11	286
MAY 04...	52	6.3	95	3.3	10	150	0	120	81	.9	11	450
26...	63	5.4	84	2.7	11	190	0	100	69	1.0	11	438
JUN 14...	59	5.7	76	2.5	9.6	170	0	110	64	1.0	11	420
JUL 07...	61	5.3	110	3.6	12	200	0	130	92	1.3	7.5	518
SEP 15...	47	6.2	98	3.6	12	140	0	110	88	1.2	10	442

TRINITY RIVER BASIN

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (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)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
NOV 17...	63	12	4.5	.24	4.7	2.5	2.0	4.5	5.5	8.6	--	.30
DEC 29...	30	9	5.2	.20	--	2.4	1.5	--	3.1	8.6	3	.20
FEB 08...	81	17	2.0	.06	2.1	4.1	1.0	5.1	1.8	10	3	.20
MAR 21...	141	22	1.6	.20	1.8	.42	.68	1.1	.72	9.4	1	.10
MAY 04...	52	13	4.5	.42	4.9	1.9	1.5	3.4	2.2	10	4	.30
MAY 26...	568	100	6.2	.69	6.9	.28	2.2	2.5	2.9	16	0	.00
JUN 14...	169	35	6.0	.34	6.3	.04	2.0	2.0	1.8	8.8	1	.10
JUL 07...	93	38	6.4	.10	6.5	.05	2.5	2.5	2.8	9.2	1	.10
SEP 15...	206	102	.00	.01	.00	.05	1.5	1.5	3.7	13	1	.00

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 17...	1200	5	700	1	0	2	20
DEC 29...	1600	14	0	1	0	2	20
MAY 04...	1800	4	100	1	0	5	30
SEP 15...	1415	17	100	0	0	5	20

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 17...	0	40	.0	0	0	20
DEC 29...	0	60	.0	0	0	10
MAY 04...	3	0	.0	0	0	40
SEP 15...	0	10	.0	0	0	20

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 17...	1200	.0	--	.00	.00	--	.0	--	.00	--
DEC 29...	1600	.0	1	.00	.00	.0	.0	0	.00	.0
MAY 04...	1800	.0	0	.00	.00	.0	.0	0	.00	.0
SEP 15...	1415	.0	--	.00	.00	--	.0	--	.00	--

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 17...	.00	--	.00	--	.58	.00	--	.00	.00	--
DEC 29...	.00	.1	.00	.0	1.5	.00	.0	.00	.00	.0
MAY 04...	.00	.0	.00	.0	.28	.00	.1	.00	.00	.0
SEP 15...	.00	--	.00	--	.24	.00	--	.00	.00	--

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
NOV 17...	.00	.00	--	.00	--	.00	--	.02	.00
DEC 29...	.00	.00	.0	.00	.0	.00	.0	.00	.00
MAY 04...	.00	.00	.0	.00	.0	.02	.0	.00	.00
SEP 15...	.00	.00	--	.00	--	.00	--	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 17...	.00	--	.00	0	--	.00	--	--	--
DEC 29...	.00	.00	.00	0	0	.00	.00	.03	.00
MAY 04...	.00	.00	.00	0	0	.00	.26	.02	.04
SEP 15...	.00	.00	.00	0	--	.00	.12	.25	.02

TRINITY RIVER BASIN

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	21251	817	430	24700	84	4820	120	6670	160
NOV. 1977.....	26636	723	380	27400	74	5340	100	7320	150
DEC. 1977.....	27234	704	370	27200	72	5320	98	7220	150
JAN. 1978.....	40196	590	310	33700	61	6580	80	8720	150
FEB. 1978.....	89370	502	270	64000	52	12500	67	16100	140
MAR. 1978.....	140650	367	190	73700	38	14400	45	17200	100
APR. 1978.....	41854	648	340	38500	67	7540	90	10200	150
MAY 1978.....	58485	584	310	48500	60	9460	80	12600	140
JUNE 1978.....	36702	566	300	29500	58	5770	77	7580	140
JULY 1978.....	15020	925	490	19700	95	3860	130	5420	160
AUG. 1978.....	21568	746	390	22900	77	4470	110	6140	150
SEPT 1978.....	26256	630	330	23500	65	4590	87	6160	150
TOTAL	545222	**	**	433000	**	84600	**	111000	**
MTD.AVG.	1493.76	559	290	**	58	**	76	**	140

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	793	760	771	873	832	852	706	659	679	765	747	755
2	822	796	813	831	816	824	725	707	714	782	764	772
3	843	821	831	863	820	843	731	718	726	793	781	785
4	852	844	849	887	866	879	759	---	740	795	792	794
5	848	824	827	892	880	888	---	---	750	794	780	787
6	822	800	809	876	693	771	755	---	750	778	770	773
7	819	800	807	689	658	673	753	---	740	803	772	787
8	847	820	834	825	684	770	---	---	710	806	800	804
9	874	848	860	831	820	824	---	---	700	801	792	797
10	880	871	876	826	795	815	---	---	720	810	802	806
11	876	867	870	801	676	761	---	---	730	805	803	804
12	874	840	858	687	649	659	---	---	740	755	725	745
13	839	821	826	762	695	733	---	---	710	752	726	745
14	872	825	852	713	646	682	---	---	650	804	752	780
15	864	848	855	701	622	653	---	---	600	806	757	786
16	857	794	822	749	706	734	628	566	590	753	486	608
17	798	763	782	744	737	740	594	550	569	541	435	514
18	798	767	784	754	748	751	635	598	617	424	388	402
19	794	782	788	753	714	737	690	635	668	418	191	361
20	793	775	784	712	575	651	724	691	706	370	342	349
21	812	785	795	599	556	571	738	725	734	346	326	334
22	846	809	825	627	602	618	738	734	736	328	319	325
23	853	832	844	618	591	601	742	730	734	685	310	603
24	856	830	843	680	622	664	753	743	748	686	654	675
25	886	858	870	663	648	655	767	753	761	651	631	638
26	866	813	846	662	660	661	768	759	763	671	---	640
27	811	708	767	673	654	663	767	761	764	681	---	650
28	755	644	680	704	677	694	768	756	760	---	---	640
29	794	755	775	703	685	695	770	735	742	---	---	640
30	859	760	814	684	663	671	733	719	723	---	---	630
31	877	859	870	---	---	---	747	717	733	---	---	630
MONTH	886	644	820	892	556	724	770	550	710	810	191	657

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	630	609	596	604	433	405	418	795	771	786
2	---	---	620	613	606	609	445	409	425	794	771	786
3	---	---	630	613	600	607	495	391	434	790	766	771
4	---	---	630	604	582	597	523	479	506	790	776	783
5	---	---	640	620	598	608	523	486	505	---	---	750
6	---	---	650	621	615	618	515	489	502	---	---	700
7	---	---	630	615	599	606	579	514	539	---	---	650
8	---	---	610	719	612	641	623	579	604	---	---	600
9	---	---	590	738	188	414	640	623	630	---	---	550
10	---	---	600	222	190	209	659	636	648	---	---	530
11	---	---	610	265	226	251	673	549	616	---	---	510
12	---	---	580	263	250	258	736	659	701	---	---	500
13	---	---	590	267	260	264	778	736	755	---	---	510
14	---	---	580	293	268	281	819	727	767	---	---	490
15	---	---	500	356	294	324	907	816	855	---	---	510
16	---	---	450	416	360	398	907	864	884	602	476	565
17	---	---	430	501	389	461	881	815	844	486	389	440
18	---	---	420	376	327	336	819	665	762	629	488	543
19	---	---	400	418	336	358	708	656	679	651	626	638
20	---	---	390	489	425	464	685	660	674	654	640	649
21	---	---	380	513	491	503	700	687	695	639	615	633
22	391	378	382	546	515	530	696	382	653	612	588	595
23	468	395	429	575	547	563	621	514	573	633	600	618
24	524	469	494	626	579	598	512	396	446	630	556	597
25	585	524	548	637	587	612	665	445	561	879	568	768
26	625	588	614	692	641	673	698	648	672	710	422	507
27	628	613	621	713	393	600	692	553	599	464	416	439
28	618	596	609	484	299	357	646	553	599	479	462	470
29	---	---	---	654	528	612	745	636	682	479	472	476
30	---	---	---	572	404	444	769	747	762	494	479	486
31	---	---	---	416	402	409	---	---	---	507	495	502
MONTH	628	378	545	738	188	478	907	382	633	879	389	592
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	514	507	511	857	819	835	956	886	934	969	---	950
2	809	576	688	864	798	850	961	926	942	984	---	960
3	710	457	486	880	816	860	967	919	947	987	---	800
4	475	448	460	900	---	880	916	910	914	---	---	600
5	475	462	471	930	---	900	919	905	910	588	575	580
6	463	449	459	926	906	910	925	919	923	590	536	563
7	452	326	352	924	906	910	926	920	923	945	578	746
8	322	288	304	915	905	912	989	922	946	997	---	850
9	---	---	400	921	---	915	961	787	855	830	798	820
10	---	---	450	954	---	930	906	506	684	825	815	818
11	---	---	500	949	---	940	674	481	571	837	530	758
12	---	---	570	956	---	945	819	544	665	817	529	765
13	690	657	672	958	955	956	814	649	714	797	567	624
14	747	696	729	954	920	942	693	658	679	792	518	710
15	744	704	717	941	923	932	793	525	613	830	540	792
16	749	707	727	948	---	940	551	444	477	633	232	435
17	758	738	751	971	---	960	473	408	435	239	203	218
18	732	697	713	963	---	950	557	405	443	260	235	244
19	707	686	694	976	919	960	594	443	497	433	263	346
20	702	620	660	979	966	974	591	426	534	537	436	484
21	620	605	612	977	955	968	642	558	591	596	537	551
22	617	607	613	955	927	941	698	646	679	700	601	651
23	636	610	620	925	880	916	710	---	680	737	704	727
24	653	636	646	905	891	896	853	---	677	762	725	739
25	670	642	652	922	896	907	926	---	720	761	734	745
26	721	669	689	925	910	916	996	---	883	738	698	724
27	757	722	743	930	920	925	935	---	890	697	677	683
28	780	755	768	974	928	953	---	---	900	679	497	635
29	792	782	787	967	932	947	998	---	920	480	404	423
30	824	785	805	976	968	972	996	---	900	658	445	545
31	---	---	---	973	957	966	997	---	874	---	---	---
MONTH	824	288	608	979	798	926	998	405	752	997	203	650

TRINITY RIVER BASIN

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.8	7.5	7.7	7.5	7.4	7.4	7.3	7.2	7.3	7.6	7.5	7.5
2	7.8	7.6	7.7	7.5	7.4	7.4	7.2	7.1	7.1	7.7	7.5	7.6
3	7.9	7.6	7.7	7.3	7.2	7.2	7.3	7.2	7.2	7.7	7.6	7.6
4	8.3	7.8	8.1	7.2	7.2	7.2	7.3	---	7.2	7.6	7.5	7.6
5	8.4	8.0	8.3	7.4	7.2	7.3	---	---	7.2	7.6	7.5	7.5
6	8.5	8.1	8.3	7.5	7.4	7.5	7.3	---	7.2	7.7	7.5	7.6
7	8.2	7.9	8.0	7.4	7.3	7.3	7.3	---	7.2	7.8	7.6	7.6
8	8.1	7.8	7.9	7.3	7.2	7.3	---	---	7.2	7.8	7.6	7.7
9	8.2	8.0	8.1	7.3	7.2	7.2	---	---	7.2	7.8	7.7	7.7
10	8.1	7.9	8.0	7.2	7.1	7.1	---	---	7.2	7.7	7.6	7.6
11	8.1	7.9	8.0	7.2	7.1	7.1	---	---	7.3	7.6	7.5	7.6
12	8.0	7.9	7.9	7.3	7.2	7.3	---	---	7.3	7.6	7.5	7.5
13	8.0	7.9	7.9	7.5	7.3	7.4	---	---	7.3	7.6	7.5	7.6
14	8.2	7.9	8.1	7.4	7.4	7.4	---	---	7.3	7.7	7.5	7.6
15	8.8	8.2	8.5	7.4	7.3	7.4	---	---	7.3	7.7	7.6	7.6
16	9.0	8.2	8.8	7.4	7.4	7.4	7.3	7.2	7.3	7.6	---	7.5
17	8.3	8.1	8.2	7.4	7.3	7.4	7.3	7.2	7.3	---	---	7.5
18	8.7	8.2	8.4	7.3	7.3	7.3	7.3	7.3	7.3	---	---	7.5
19	8.6	8.2	8.4	7.3	7.2	7.3	7.4	7.3	7.4	---	---	7.5
20	8.8	8.1	8.4	7.3	7.2	7.3	7.5	7.4	7.4	---	---	7.5
21	8.7	8.0	8.3	7.3	7.2	7.3	7.5	7.5	7.5	---	---	7.5
22	8.4	7.9	8.1	7.3	7.3	7.3	7.6	7.5	7.5	---	---	7.5
23	8.3	7.7	8.0	7.4	7.3	7.4	7.6	7.5	7.5	7.6	7.0	7.5
24	8.0	7.6	7.8	7.4	7.3	7.4	7.6	7.5	7.5	7.6	7.5	7.5
25	7.8	7.5	7.6	7.4	7.3	7.4	7.7	7.5	7.6	7.5	7.5	7.5
26	7.9	7.5	7.6	7.4	7.3	7.4	7.7	7.5	7.6	7.6	---	7.5
27	7.7	7.5	7.6	7.3	7.3	7.3	7.7	7.5	7.6	7.6	---	7.5
28	7.5	7.4	7.5	7.3	7.2	7.3	7.7	7.6	7.6	---	---	7.5
29	7.4	7.4	7.4	7.3	7.2	7.2	7.6	7.5	7.6	---	---	7.5
30	7.4	7.4	7.4	7.3	7.2	7.2	7.6	7.5	7.5	---	---	7.5
31	7.4	7.4	7.4	---	---	---	7.6	7.5	7.5	---	---	7.5
MONTH	9.0	7.4	8.0	7.5	7.1	7.3	7.7	7.1	7.4	7.8	7.0	7.6
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	7.5	7.5	7.4	7.5	7.2	7.2	7.2	7.3	7.2	7.3
2	---	---	7.5	7.4	7.4	7.4	7.2	7.2	7.2	7.3	7.2	7.3
3	---	---	7.5	7.5	7.4	7.4	7.3	7.2	7.2	7.3	7.2	7.2
4	---	---	7.5	7.5	7.4	7.4	7.4	7.3	7.4	7.2	7.2	7.2
5	---	---	7.5	7.5	7.4	7.5	7.4	7.4	7.4	---	---	7.2
6	---	---	7.5	7.5	7.4	7.5	7.4	7.4	7.4	---	---	7.2
7	---	---	7.5	7.5	7.4	7.4	7.5	7.4	7.5	---	---	7.2
8	---	---	7.5	7.5	7.4	7.5	7.6	7.5	7.5	---	---	7.2
9	---	---	7.5	7.8	7.4	7.6	7.5	7.5	7.5	---	---	7.2
10	---	---	7.5	7.8	7.6	7.7	7.5	7.4	7.4	---	---	7.2
11	---	---	7.5	7.7	7.6	7.6	7.4	7.3	7.3	---	---	7.3
12	---	---	7.5	7.7	7.6	7.6	7.3	7.3	7.3	---	---	7.3
13	---	---	7.5	7.6	7.5	7.5	7.3	7.3	7.3	---	---	7.3
14	---	---	7.5	7.5	7.3	7.4	7.3	7.2	7.3	---	---	7.3
15	---	---	7.5	7.4	7.3	7.4	7.2	7.2	7.2	---	---	7.3
16	---	---	7.5	7.4	7.4	7.4	7.3	7.2	7.3	7.5	7.2	7.3
17	---	---	7.5	7.4	7.3	7.3	7.3	7.2	7.2	7.7	7.5	7.6
18	---	---	7.5	7.6	7.5	7.6	7.2	7.1	7.2	7.6	7.4	7.5
19	---	---	7.5	7.6	7.4	7.5	7.1	7.1	7.1	7.5	7.4	7.4
20	---	---	7.5	7.4	7.3	7.4	7.4	7.1	7.2	7.5	7.4	7.5
21	---	---	7.5	7.4	7.3	7.3	7.4	7.3	7.3	7.6	7.5	7.5
22	7.7	7.6	7.6	7.3	7.3	7.3	7.9	7.3	7.3	7.6	7.6	7.6
23	7.6	7.5	7.5	7.3	7.3	7.3	7.4	7.3	7.3	7.7	7.6	7.6
24	7.5	7.5	7.5	7.3	7.3	7.3	7.3	7.3	7.3	7.7	7.5	7.5
25	7.5	7.5	7.5	7.3	7.2	7.3	7.3	7.2	7.2	7.5	7.3	7.4
26	7.5	7.5	7.5	7.3	7.2	7.2	7.2	7.2	7.2	7.3	7.2	7.2
27	7.5	7.5	7.5	7.3	7.2	7.2	7.2	7.1	7.2	7.2	7.1	7.2
28	7.5	7.4	7.4	7.5	7.2	7.4	7.3	7.2	7.2	7.3	7.2	7.3
29	---	---	---	7.2	7.2	7.2	7.3	7.3	7.3	7.5	7.4	7.4
30	---	---	---	7.2	7.2	7.2	7.3	7.2	7.3	7.5	7.5	7.5
31	---	---	---	7.2	7.2	7.2	---	---	---	7.5	7.5	7.5
MONTH	7.7	7.4	7.5	7.8	7.2	7.4	7.9	7.1	7.3	7.7	7.1	7.4

TRINITY RIVER BASIN
08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

PH (UNITS), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.6	7.6	7.6	7.9	7.6	7.7	7.8	7.7	7.7	8.0	7.8	7.9
2	7.6	7.2	7.4	8.0	7.6	7.8	7.8	7.7	7.7	7.8	7.4	7.6
3	7.3	7.2	7.3	8.1	7.7	7.9	7.8	7.7	7.7	8.4	---	7.7
4	7.4	7.3	7.3	8.3	7.7	7.9	8.0	7.7	7.8	7.4	---	7.4
5	7.4	7.3	7.4	8.2	7.7	7.9	7.9	7.7	7.8	7.5	---	7.3
6	7.5	7.4	7.4	8.1	7.7	7.9	7.9	7.7	7.8	7.2	7.1	7.2
7	7.5	7.3	7.4	---	7.8	7.9	7.9	7.7	7.7	7.3	7.2	7.3
8	7.3	7.3	7.3	---	---	7.9	7.7	7.6	7.7	7.4	7.3	7.4
9	---	---	7.3	7.8	---	---	7.6	7.6	7.6	7.5	7.4	7.4
10	---	---	7.4	8.1	---	7.8	7.6	7.4	7.5	7.5	7.4	7.5
11	---	---	7.5	---	---	7.8	7.5	7.4	7.5	7.5	7.5	7.5
12	---	---	7.6	---	---	7.9	7.6	7.5	7.5	7.5	7.4	7.5
13	7.8	7.7	7.7	---	8.2	7.9	7.7	7.5	7.6	7.4	7.4	7.4
14	7.7	7.5	7.6	---	---	7.9	7.9	7.6	7.7	7.4	7.4	7.4
15	7.7	7.5	7.6	---	---	7.9	7.9	7.6	7.7	7.5	7.3	7.4
16	7.8	7.6	7.7	---	---	7.9	7.6	7.4	7.5	7.5	7.3	7.4
17	7.8	7.5	7.6	---	---	7.9	7.7	7.4	7.5	7.5	7.3	7.4
18	8.1	7.7	7.9	---	---	7.8	8.0	7.4	7.6	7.3	7.3	7.3
19	7.7	7.6	7.7	---	---	7.8	8.0	7.5	7.7	7.4	7.3	7.3
20	8.2	7.6	7.8	7.8	7.7	7.8	8.0	7.5	7.7	7.4	7.3	7.3
21	8.0	7.6	7.8	7.8	7.7	7.7	7.8	7.5	7.6	7.4	7.4	7.4
22	7.7	7.5	7.6	7.8	7.7	7.7	7.8	7.5	7.6	7.5	7.4	7.5
23	8.1	7.5	7.8	7.7	7.6	7.7	7.9	7.6	7.7	7.6	7.5	7.5
24	8.0	7.6	7.8	7.7	7.6	7.6	7.9	7.6	7.8	7.6	7.5	7.5
25	8.0	7.6	7.8	7.8	7.6	7.6	7.9	7.6	7.7	7.7	7.6	7.6
26	8.1	7.6	7.7	7.8	7.7	7.7	7.8	7.6	7.7	7.6	7.5	7.6
27	8.1	7.7	7.8	7.8	7.7	7.7	7.6	7.5	7.5	7.6	7.5	7.5
28	8.0	7.7	7.8	7.9	7.7	7.8	7.7	7.5	7.6	7.6	7.4	7.5
29	7.9	7.7	7.8	7.8	7.7	7.7	7.7	7.5	7.6	7.5	7.4	7.4
30	7.9	7.7	7.8	7.8	7.7	7.7	7.8	7.5	7.6	7.6	7.4	7.5
31	---	---	---	8.0	7.7	7.8	8.1	7.6	7.9	---	---	---
MONTH	8.2	7.2	7.6	8.3	7.6	7.8	8.1	7.4	7.7	8.4	7.1	7.5

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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

TRINITY RIVER BASIN

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	5.0	14.0	12.5	13.0	20.5	18.5	19.5	25.0	23.5	24.5
2	---	---	4.0	14.0	13.0	13.0	21.0	19.5	20.0	25.0	23.0	24.5
3	---	---	5.0	13.0	11.0	12.5	21.5	20.0	21.0	23.0	21.5	22.5
4	---	---	5.5	12.0	10.0	11.0	23.0	21.0	22.0	21.5	20.5	21.0
5	---	---	5.0	12.0	10.0	11.0	22.5	21.5	22.0	---	---	20.0
6	---	---	5.5	12.0	11.0	11.5	23.0	21.5	22.0	---	---	21.0
7	---	---	4.5	13.5	12.0	12.5	23.0	22.0	22.5	---	---	22.0
8	---	---	4.0	12.5	11.5	12.0	24.0	22.5	23.0	---	---	22.5
9	---	---	5.0	12.5	11.5	12.0	23.0	23.0	23.0	---	---	22.5
10	---	---	6.0	12.0	11.0	12.0	23.0	21.5	22.0	---	---	23.0
11	---	---	6.0	11.5	11.0	11.0	21.5	20.5	21.0	---	---	23.5
12	---	---	7.0	12.0	11.0	11.5	21.0	20.0	20.5	---	---	24.0
13	---	---	7.0	13.0	12.0	12.5	21.5	20.0	20.5	---	---	24.5
14	---	---	6.0	14.0	13.0	13.5	22.0	20.5	21.0	---	---	25.0
15	---	---	5.0	15.0	14.0	14.5	22.5	21.0	21.5	---	---	25.5
16	---	---	4.5	15.0	14.0	14.5	23.5	21.5	22.5	26.5	25.5	26.0
17	---	---	5.0	15.5	14.0	14.5	22.5	22.5	22.5	26.0	25.0	25.5
18	---	---	6.0	15.5	13.5	14.5	24.0	22.0	23.0	27.0	25.0	26.0
19	---	---	6.0	16.0	14.5	18.0	23.5	22.0	23.0	28.5	26.5	27.5
20	---	---	7.0	17.5	16.0	16.5	23.5	21.5	22.5	29.0	27.5	28.0
21	---	---	7.0	19.0	17.0	18.0	23.0	21.5	22.0	29.0	27.5	28.5
22	7.5	6.0	7.0	20.0	18.0	19.0	22.5	21.5	22.0	29.5	28.0	28.5
23	8.5	6.5	7.5	19.5	19.0	19.5	23.0	21.0	22.0	30.0	28.0	29.0
24	9.0	7.0	8.0	19.5	18.0	18.5	22.5	21.5	22.0	29.5	28.5	29.0
25	10.5	9.0	10.0	18.0	17.0	17.5	24.0	22.0	23.0	29.5	28.5	29.0
26	11.5	10.5	11.0	18.0	16.5	17.0	24.0	22.5	23.0	28.0	27.0	27.5
27	11.5	11.0	11.0	17.5	16.0	17.0	23.0	22.0	22.5	28.5	27.5	28.0
28	13.5	11.5	12.5	16.5	15.0	15.5	24.0	22.0	23.0	29.0	28.0	28.5
29	---	---	---	17.5	16.5	17.0	24.0	23.0	23.5	29.5	28.0	29.0
30	---	---	---	19.0	17.5	18.0	24.5	23.0	23.5	30.0	28.5	29.0
31	---	---	---	19.5	17.5	18.5	---	---	---	30.0	28.5	29.5
MONTH	13.5	6.0	6.5	20.0	10.0	14.5	24.5	18.5	22.0	30.0	20.5	25.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	29.5	29.0	29.5	34.0	31.5	32.5	32.0	30.0	31.0	29.5	29.0	29.0
2	29.5	28.5	29.0	34.0	31.5	32.5	31.5	30.0	30.5	30.0	28.5	29.0
3	28.5	27.5	27.5	---	32.0	32.5	32.0	30.0	31.0	36.5	---	---
4	28.5	26.5	27.5	---	---	33.0	32.0	30.0	31.0	37.0	---	---
5	29.0	27.0	28.0	---	---	33.0	31.0	30.0	30.5	32.5	25.0	28.5
6	29.5	28.0	28.5	---	---	32.0	31.5	29.5	30.5	30.0	28.5	29.0
7	28.0	26.0	26.5	---	---	32.0	31.5	29.5	30.5	29.5	29.0	29.0
8	26.0	25.5	26.0	---	---	31.5	31.0	29.5	30.5	29.5	29.0	29.0
9	---	---	27.0	---	---	31.5	31.0	29.5	30.0	29.5	28.5	29.0
10	---	---	28.0	---	---	31.5	30.5	29.0	29.5	29.0	28.5	29.0
11	---	---	29.0	---	---	31.5	31.0	29.0	30.0	28.5	28.0	28.5
12	---	---	30.0	---	---	32.0	31.5	30.0	30.5	29.0	28.0	28.5
13	31.5	31.0	31.0	---	---	32.0	32.0	30.5	31.0	28.5	27.5	28.0
14	32.0	30.0	31.0	---	---	31.5	32.5	30.5	31.5	29.0	27.5	28.0
15	32.0	30.5	31.0	---	---	31.5	32.5	30.5	31.5	29.0	28.5	28.5
16	32.0	30.5	31.5	---	---	31.5	33.0	30.5	31.5	29.5	28.5	29.0
17	32.5	31.0	31.5	---	---	31.5	33.0	30.5	31.5	29.5	28.0	28.5
18	32.5	31.0	31.5	---	---	31.5	33.5	31.0	32.0	30.0	28.5	29.0
19	32.5	31.0	32.0	---	---	31.5	33.5	31.0	32.0	30.0	29.0	29.5
20	33.0	31.0	32.0	---	---	31.5	34.0	31.5	32.5	30.5	29.0	29.5
21	33.0	31.0	32.0	34.5	32.0	33.0	33.5	31.5	32.5	30.0	29.0	29.5
22	33.5	31.0	32.0	33.5	32.0	32.5	33.0	31.5	32.0	29.5	28.5	29.0
23	33.0	31.0	32.0	33.5	31.5	32.0	33.0	31.0	32.0	29.5	28.0	28.5
24	33.5	31.0	32.0	32.5	31.0	31.5	33.5	31.0	32.0	29.0	28.0	28.0
25	33.5	31.0	32.0	33.0	31.0	32.0	33.0	31.0	32.0	28.0	27.0	27.5
26	33.5	31.5	32.0	33.5	31.0	32.0	33.5	31.5	32.5	27.5	26.5	27.0
27	33.5	31.0	32.0	32.5	31.0	32.0	33.0	31.5	32.0	26.5	25.5	26.0
28	33.5	31.0	32.5	32.5	30.5	31.5	32.0	31.0	31.5	26.0	25.0	25.5
29	33.5	31.5	32.5	33.0	30.5	31.5	31.5	30.5	31.0	26.0	24.5	25.0
30	34.0	31.0	32.5	33.5	30.5	32.0	31.5	29.5	30.5	26.5	24.5	25.5
31	---	---	---	33.0	31.0	31.5	30.5	29.5	30.0	---	---	---
MONTH	34.0	25.5	30.5	34.5	30.5	32.0	34.0	29.0	31.0	37.0	24.5	28.0

TRINITY RIVER BASIN

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.0	5.2	5.9	3.7	2.6	3.1	5.6	4.2	4.9	9.1	7.8	8.4
2	6.6	5.3	5.7	2.5	2.1	2.3	4.0	3.0	3.7	9.8	8.3	9.0
3	7.3	5.3	6.2	2.3	.8	1.5	5.7	4.1	5.0	10.1	8.8	9.3
4	10.0	6.2	8.1	2.3	.8	1.3	---	---	6.0	9.7	8.9	9.2
5	9.6	7.4	8.8	3.7	.8	1.8	---	---	6.5	9.9	8.9	9.3
6	10.4	7.7	8.7	5.5	4.2	4.9	---	---	6.6	10.2	8.8	9.4
7	8.0	6.4	7.3	4.6	3.6	4.2	---	---	6.5	10.2	8.6	9.3
8	8.2	6.0	7.0	3.5	2.1	3.0	---	---	6.8	10.0	8.3	9.0
9	8.6	6.7	7.4	2.2	1.5	1.8	---	---	7.0	10.0	8.6	9.0
10	7.4	6.5	6.8	1.9	1.0	1.5	---	---	7.1	10.0	9.0	9.3
11	7.8	6.4	7.0	3.1	.9	1.7	---	---	7.0	9.1	9.0	9.1
12	8.3	6.7	7.4	4.8	3.3	4.0	---	---	6.8	9.8	9.4	9.6
13	8.8	7.3	7.9	5.1	3.3	4.4	---	---	6.9	10.7	9.6	10.0
14	9.8	7.8	8.7	4.9	4.5	4.8	---	---	7.0	11.1	9.9	10.4
15	11.9	9.1	10.6	4.7	4.2	4.5	---	---	7.1	11.2	7.7	10.4
16	---	7.2	11.8	5.2	3.9	4.4	---	6.8	7.0	13.1	---	10.0
17	9.4	4.9	7.1	4.6	4.2	4.3	7.2	6.7	6.9	---	---	11.0
18	11.8	4.9	8.9	4.0	3.1	3.7	7.1	6.5	6.8	---	---	11.5
19	13.6	10.1	11.4	3.6	2.7	3.1	7.5	6.7	7.0	---	---	11.0
20	15.2	9.5	11.9	3.9	3.1	3.4	7.7	6.8	7.2	---	---	11.4
21	14.5	9.5	11.5	3.6	3.1	3.3	8.1	7.1	7.6	---	---	10.9
22	12.9	9.3	10.9	4.6	3.3	3.9	8.9	7.7	8.2	---	---	10.5
23	13.7	8.2	10.4	6.1	4.3	5.3	9.4	8.1	8.6	11.7	---	10.0
24	10.8	7.3	9.3	5.4	4.8	5.1	9.9	8.5	9.0	11.6	11.2	11.4
25	10.6	6.0	7.8	5.9	4.8	5.3	10.1	8.4	9.1	11.2	10.9	11.0
26	11.9	6.1	8.5	5.9	4.7	5.2	10.0	8.5	9.1	14.3	10.9	11.4
27	11.1	7.0	8.8	5.8	4.5	5.0	10.7	8.8	9.6	15.3	12.1	12.9
28	9.4	6.3	8.1	6.0	3.9	4.4	10.0	---	---	---	---	11.0
29	7.1	4.7	5.8	4.1	3.5	3.8	9.5	8.6	9.1	---	---	10.7
30	5.5	3.1	4.3	5.1	3.6	4.5	9.5	8.4	8.8	---	---	10.5
31	5.0	2.7	3.6	---	---	---	9.0	8.0	8.5	---	---	10.4
MONTH	15.2	2.7	8.2	6.1	.8	3.7	10.7	3.0	7.3	15.3	7.7	10.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	10.3	6.5	6.1	6.4	3.3	2.9	3.1	4.6	3.1	3.6
2	---	---	10.7	6.1	6.0	6.1	4.0	3.3	3.7	4.4	3.3	3.7
3	---	---	10.2	7.0	6.1	6.5	4.8	3.8	4.2	4.4	3.9	4.2
4	---	---	10.2	7.4	7.0	7.2	5.8	4.8	5.4	4.2	2.4	3.9
5	---	---	10.4	7.8	7.2	7.5	6.0	5.6	5.7	---	---	4.4
6	---	---	10.2	7.8	7.5	7.6	6.2	5.7	5.9	---	---	4.3
7	---	---	10.5	8.0	7.5	7.8	6.3	5.8	6.0	---	---	4.2
8	---	---	10.7	7.8	6.7	7.4	6.8	5.9	6.3	---	---	4.2
9	---	---	10.4	6.9	4.6	5.9	6.1	5.7	5.9	---	---	4.0
10	---	---	10.1	7.7	7.0	7.2	5.6	5.2	5.3	---	---	3.9
11	---	---	10.1	7.9	7.6	7.7	5.6	5.0	5.2	---	---	3.8
12	---	---	9.8	8.1	7.9	8.0	5.3	4.7	5.0	---	---	3.8
13	---	---	9.8	7.8	7.2	7.4	5.6	4.2	4.9	---	---	3.5
14	---	---	10.1	7.2	6.6	7.0	4.9	2.1	4.2	---	---	3.1
15	---	---	10.4	6.6	6.5	6.6	1.7	.7	1.0	---	---	2.9
16	---	---	10.5	6.6	5.9	6.3	1.4	.6	1.0	2.7	.5	1.0
17	---	---	10.4	6.4	5.1	5.6	1.6	1.0	1.3	4.6	3.3	3.9
18	---	---	10.1	8.2	6.7	7.9	3.2	1.3	2.2	3.6	2.6	3.2
19	---	---	10.1	8.1	7.1	7.9	4.1	2.1	3.0	2.7	2.4	2.5
20	---	---	9.8	7.1	6.1	6.7	5.2	2.8	3.7	3.9	2.6	3.3
21	---	---	9.8	6.8	5.9	6.2	5.1	3.3	4.1	4.6	3.9	4.2
22	10.2	9.8	10.0	5.9	5.4	5.6	4.8	3.6	4.2	5.4	4.6	5.0
23	9.8	9.2	9.5	5.3	4.7	4.9	6.3	4.8	5.7	6.2	5.0	5.5
24	9.3	8.6	9.1	4.7	4.1	4.4	5.8	5.4	5.5	6.0	5.0	5.5
25	8.6	7.5	8.1	4.6	4.0	4.3	5.5	4.0	5.0	4.8	.3	1.1
26	7.5	6.9	7.2	4.0	2.2	3.2	4.7	3.4	4.0	.6	.4	.5
27	6.9	6.8	6.9	4.6	.9	2.0	4.3	2.3	3.0	.6	.4	.5
28	6.8	6.3	6.4	7.3	1.8	5.9	5.3	4.3	4.8	2.3	.6	1.3
29	---	---	---	1.2	.6	.8	5.0	4.0	4.7	3.9	2.4	3.3
30	---	---	---	3.0	1.4	2.6	4.7	3.5	3.9	4.5	4.0	4.3
31	---	---	---	3.0	2.5	2.8	---	---	---	5.1	4.5	4.9
MONTH	10.2	6.3	9.7	8.2	.6	5.9	6.8	.6	4.3	6.2	.3	3.5

TRINITY RIVER BASIN

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

DISSOLVED OXYGEN (DO), MG/L, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	5.3	5.1	5.3	---	---	6.0	6.5	5.0	5.5	6.0	4.4	5.1
2	5.0	.3	2.5	---	---	5.9	6.2	4.9	5.4	4.8	3.2	4.2
3	.9	.3	.5	---	---	6.1	6.8	5.0	5.8	---	---	4.5
4	2.1	1.0	1.6	---	---	6.8	7.9	5.4	6.5	---	---	4.8
5	3.9	2.2	3.1	---	---	6.5	7.2	5.4	6.1	---	---	5.0
6	5.3	4.0	4.5	---	---	6.4	8.0	5.3	6.5	4.8	4.2	4.6
7	5.7	5.2	5.6	---	---	6.3	7.5	5.1	6.1	4.9	4.7	4.8
8	5.5	5.0	5.3	---	---	6.3	6.9	5.4	5.9	5.3	4.9	5.0
9	---	---	5.1	---	---	6.4	6.0	4.9	5.5	5.8	5.0	5.3
10	---	---	5.2	---	---	6.4	4.8	3.5	3.9	5.8	5.1	5.3
11	---	---	5.3	---	---	6.5	4.0	3.2	3.7	5.8	5.0	5.3
12	---	---	5.4	---	---	6.0	5.1	3.7	4.3	6.0	5.2	5.6
13	5.8	5.1	5.5	---	---	6.0	5.7	3.9	4.7	5.1	4.5	4.9
14	5.4	4.2	4.8	---	---	6.5	7.7	4.6	5.8	5.6	4.6	5.1
15	6.3	4.6	5.3	---	---	6.8	7.9	4.8	6.1	5.2	4.2	4.9
16	7.0	4.9	5.8	---	---	7.0	7.2	4.9	5.8	4.5	3.3	3.8
17	7.0	4.4	5.5	---	---	7.2	7.8	4.7	6.0	4.9	4.6	4.8
18	9.3	5.6	7.4	---	---	7.0	8.5	5.0	6.5	5.3	5.0	5.1
19	7.0	5.4	6.2	7.7	6.3	6.9	8.9	5.2	6.8	5.4	5.2	5.3
20	9.1	5.2	6.5	6.2	5.0	5.6	8.7	5.2	6.8	5.3	5.1	5.2
21	7.6	4.7	5.9	6.5	4.6	5.4	7.9	5.0	6.0	5.6	5.1	5.3
22	6.7	4.0	5.2	6.4	4.9	5.4	7.3	4.6	5.8	5.8	5.2	5.4
23	9.0	4.5	6.6	5.9	4.2	5.0	7.9	4.8	6.1	6.1	5.1	5.5
24	8.5	5.5	6.9	6.1	4.6	5.2	7.7	5.2	6.3	5.7	5.1	5.4
25	8.9	5.4	6.9	5.9	4.4	5.0	7.6	5.0	6.1	6.6	5.4	5.9
26	9.0	5.2	6.5	6.1	4.5	5.1	7.2	4.6	5.7	6.2	5.4	5.7
27	9.1	5.5	6.9	6.0	4.6	5.1	6.0	4.3	5.0	5.7	5.1	5.4
28	8.2	5.1	6.5	6.8	4.6	5.5	6.1	4.3	5.0	5.9	5.2	5.5
29	7.7	4.8	6.1	6.5	4.6	5.5	6.2	4.4	5.1	6.6	5.5	5.9
30	---	4.8	6.2	6.8	4.8	5.6	6.8	4.4	5.4	7.1	5.5	6.1
31	---	---	---	7.7	5.0	6.2	6.9	4.9	5.7	---	---	---
MONTH	9.3	.3	5.3	7.7	4.2	6.1	8.9	3.2	5.7	7.1	3.2	5.2

08065800 BEDIAS CREEK NEAR MADISONVILLE, TX

LOCATION.--Lat 30°53'03", long 95°46'39", Madison-Walker County line, Hydrologic Unit 12030202, on right bank at downstream side of bridge on U.S. Highways 75 and 190, 0.5 mi (0.8 km) upstream from Interstate Highway 45, 1.5 mi (2.4 km) downstream from Caney Creek, and 9.5 mi (15.3 km) southeast of Madisonville.

DRAINAGE AREA.--321 mi² (831 km²).

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

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 150.00 ft (45.720 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--11 years, 213 ft³/s (6.032 m³/s), 9.01 in/yr (229 mm/yr), 154,300 acre-ft/yr (190 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,800 ft³/s (957 m³/s) Sept. 14, 1974, gage height, 25.07 ft (7.641 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 34 ft (10.4 m) in May 1922 (discharge unknown), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,800 ft³/s (79.3 m³/s) Feb. 9, gage height, 17.36 ft (5.291 m), no peak above base of 3,000 ft³/s (85.0 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.00	.53	.28	110	14	5.9	.89	.36	.32	.00	.01
2	.03	.00	3.6	.29	264	13	6.6	.73	.34	.28	.00	.02
3	.04	.00	3.6	.39	205	12	6.0	2.1	1.5	.23	.00	.04
4	.04	.00	1.4	.41	76	11	5.7	34	1.5	.18	.00	.04
5	.04	.00	.75	.41	40	11	5.5	52	8.8	.13	.00	.03
6	.04	.00	.33	.33	26	12	5.1	37	17	.06	.00	.02
7	.03	.00	.18	.33	110	514	4.0	21	11	.07	.00	.00
8	.28	.10	.18	.28	1030	1100	4.5	14	8.4	.07	.00	.00
9	1.3	.05	.15	.24	2220	1340	4.5	9.0	6.0	.06	.00	.00
10	.55	.01	.08	.32	1850	540	7.6	6.0	4.0	.05	.00	.01
11	.16	1.3	.08	1.7	895	90	18	4.2	1.8	.05	.00	.08
12	.46	1.1	.07	18	372	52	39	3.1	1.1	.04	.00	11
13	.42	.46	120	48	490	43	37	2.3	.77	.02	.00	68
14	.20	.26	182	53	658	58	25	1.8	.99	.02	.00	179
15	.14	.19	131	33	639	93	18	1.4	6.2	.02	.00	72
16	.09	.15	48	219	147	68	13	1.1	3.3	.00	.00	34
17	.07	.10	18	785	76	38	10	.89	1.3	.04	.00	13
18	.04	.08	9.4	949	129	25	7.8	1.0	.82	.04	.00	4.5
19	.02	.05	4.9	1120	221	19	6.0	.88	.49	.03	.00	1.5
20	.01	.03	2.9	886	123	15	5.2	.77	.31	.03	.00	.90
21	.00	.01	1.8	756	60	13	3.9	.69	.28	.02	.00	.76
22	.00	.01	1.1	188	39	12	3.3	.61	.26	.01	.00	7.1
23	.00	.01	.70	63	30	11	2.4	.55	.21	.01	.00	4.2
24	.00	.03	.51	45	24	11	2.0	.47	.19	.02	.00	43
25	.00	.03	.35	37	21	9.7	1.9	.35	.15	.02	.00	14
26	.00	.03	.30	31	18	8.8	1.7	.36	.15	.02	.00	3.8
27	.00	.03	.21	26	16	8.1	1.2	.37	.13	.01	.00	1.2
28	.00	.03	.19	23	15	7.8	.80	1.0	.13	.01	.00	.38
29	.00	.13	.20	20	---	7.4	.53	1.1	.15	.01	.00	.10
30	.00	.23	.18	17	---	6.9	.69	.72	.20	.00	.00	.02
31	.00	---	.22	15	---	6.3	---	.42	---	.00	.01	---
TOTAL	3.98	4.42	532.91	5336.98	9904	4170.0	252.82	200.80	77.83	1.87	.01	458.71
MEAN	.13	.15	17.2	172	354	135	8.43	6.48	2.59	.060	.000	15.3
MAX	1.3	1.3	182	1120	2220	1340	39	52	17	.32	.01	179
MIN	.00	.00	.07	.24	15	6.3	.53	.35	.13	.00	.00	.00
CFSM	.000	.000	.05	.54	1.10	.42	.03	.02	.008	.000	.000	.05
IN.	.00	.00	.06	.62	1.15	.48	.03	.02	.01	.00	.00	.05
AC-FT	7.9	8.8	1060	10590	19640	8270	501	398	154	3.7	.02	910
CAL YR 1977	TOTAL	53271.92	MEAN	146	MAX	5740	MIN	.00	CFSM	.46	IN	6.17
WTR YR 1978	TOTAL	20944.33	MEAN	57.4	MAX	2220	MIN	.00	CFSM	.18	IN	2.43
									AC-FT	105700		
									AC-FT	41540		

TRINITY RIVER BASIN

597

08066100 WHITE ROCK CREEK NEAR TRINITY, TX

LOCATION.--Lat 31°03'06", long 95°22'40", Trinity County, Hydrologic Unit 12030202, on right bank 3.9 mi (6.3 km) upstream from Little White Rock Creek, 4.1 mi (6.6 km) upstream from Tatabogue Creek, 7.3 mi (11.7 km) north of Trinity, and 16.1 mi (25.9 km) upstream from mouth.

DRAINAGE AREA.--222 mi² (575 km²). Prior to June 1974, 228 mi² (591 km²).

PERIOD OF RECORD.--December 1965 to current year. Peak discharge, supplemental peak discharges, and discharge measurements only October 1971 to May 1974 (low stages affected by storage in Livingston Reservoir).

GAGE.--Water-stage recorder. Datum of gage is 124.30 ft (37.887 m) National Geodetic Vertical Datum of 1929. Prior to June 19, 1974, at site 1.9 mi (3.1 km) downstream at same datum.

REMARKS.--Records good. No known diversions. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years (water years 1967-71, 1975-78), 90.2 ft³/s (2.554 m³/s), 5.52 in/yr (140 mm/yr), 65,350 acre-ft/yr (80.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft³/s (473 m³/s) Mar. 25, 1973, gage height, 31.22 ft (9.516 m), present site; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,130 ft³/s (32.0 m³/s) Jan. 18, gage height, 15.06 ft (4.590 m), no peak above base of 1,500 ft³/s (42.5 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.05	3.8	.85	168	15	11	3.8	1.3	.37	.00	.04
2	.26	.07	4.4	2.2	318	15	13	3.8	2.2	.26	.00	.02
3	.21	.06	5.2	1.8	135	106	12	5.8	1.1	.21	.00	.01
4	.14	.05	3.5	1.4	64	120	11	7.5	1.1	.16	.00	.02
5	.11	.04	2.0	1.4	39	44	10	8.9	1.1	.12	.00	.01
6	.07	.04	1.2	1.3	30	28	10	9.3	2.0	.09	.00	.00
7	.04	.04	.85	1.1	29	439	9.7	7.4	141	.06	.00	.00
8	.03	.53	.85	.92	128	744	9.3	5.8	539	.04	.00	.00
9	.01	.92	.71	.71	202	200	8.9	4.8	250	.03	.00	.00
10	.04	.65	.49	.54	220	85	11	3.5	52	.02	.00	.02
11	1.3	4.4	.45	.85	207	56	41	3.0	26	.01	.00	.01
12	6.1	2.6	.45	34	116	42	98	2.9	16	.00	.00	.00
13	2.6	1.4	7.4	55	332	35	43	2.6	12	.00	.00	.05
14	1.5	.85	121	35	367	97	25	2.2	8.1	.00	.00	16
15	.86	.63	70	15	105	129	17	2.8	6.4	.00	.00	18
16	.65	.50	21	252	59	63	13	5.0	5.8	.00	.00	8.9
17	.49	.36	8.5	987	52	38	11	3.8	4.9	.00	.00	4.1
18	.40	.23	4.7	970	94	27	9.5	2.6	4.1	.00	.00	1.8
19	.37	.20	2.7	682	99	23	8.0	2.0	3.3	.00	.00	1.2
20	.29	.16	1.7	572	59	20	7.4	2.5	2.7	.00	.00	.78
21	.20	.16	.92	144	39	19	7.7	1.9	2.1	.00	.00	.45
22	.18	.15	.71	70	30	18	6.8	1.4	1.8	.00	.00	.30
23	.13	.14	.63	50	25	18	5.8	1.1	1.6	.00	.00	.25
24	.11	.15	.65	50	19	16	5.6	.91	1.2	.00	.00	.20
25	.09	.14	.49	82	20	14	7.0	.98	.99	.00	.00	.15
26	.06	.10	.36	88	18	14	9.8	1.2	.83	.00	.00	.12
27	.04	.11	.36	56	15	13	7.0	1.0	.74	.00	.00	.09
28	.04	.11	.40	38	16	12	4.8	.98	.55	.00	.00	.06
29	.04	.59	.53	31	---	11	4.1	.79	.45	.00	.00	.05
30	.04	2.4	.60	29	---	11	4.1	.64	.44	.00	.00	.04
31	.04	---	.60	26	---	10	---	.72	---	.00	.05	---
TOTAL	16.73	17.83	267.15	4279.07	3005	2482	441.5	101.62	1090.80	1.37	.05	52.67
MEAN	.54	.59	8.62	138	107	80.1	14.7	3.28	36.4	.044	.002	1.76
MAX	6.1	4.4	121	987	367	744	98	9.3	539	.37	.05	18
MIN	.01	.04	.36	.54	15	10	4.1	.64	.44	.00	.00	.00
CFSM	.002	.003	.04	.62	.48	.36	.07	.02	.16	.000	.000	.008
IN.	.00	.00	.04	.72	.50	.42	.07	.02	.18	.00	.00	.01
AC-FT	33	35	530	8490	5960	4920	876	202	2160	2.7	.10	104
CAL YR 1977	TOTAL	28895.14	MEAN 79.2	MAX 3110	MIN .01	CFSM .36	IN 4.84	AC-FT 57310				
WTR YR 1978	TOTAL	11755.79	MEAN 32.2	MAX 987	MIN .00	CFSM .15	IN 1.97	AC-FT 23320				

TRINITY RIVER BASIN

08066170 KICKAPOO CREEK NEAR ONALASKA, TX

LOCATION.--Lat 30°54'25", long 95°05'18", Polk County, Hydrologic Unit 12030202, on right bank 114 ft (35 m) downstream from old bridge site, 1.2 mi (1.9 km) downstream from Magnolia Creek, 6.2 mi (10.0 km) upstream from Rocky Creek, 7.3 mi (11.7 km) northeast of Onalaska, and 15.9 mi (25.6 km) upstream from mouth.

DRAINAGE AREA.--57.0 mi² (147.6 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 139.85 ft (42.626 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No diversion above station. Low flow is sustained by sewage effluent. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years (water years 1967-78), 39.3 ft³/s (1.113 m³/s), 9.36 in/yr (238 mm/yr), 28,470 acre-ft/yr (35.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) June 13, 1973, gage height, 26.0 ft (7.92 m); minimum, 0.01 ft³/s (0.0003 m³/s) July 19, 20, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) Dec. 13, gage height, 11.65 ft (3.551 m), no peak above base of 2,500 ft³/s (70.8 m³/s); minimum daily, 0.30 ft³/s (0.008 m³/s) for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.57	1.1	7.1	2.1	393	9.1	2.9	.88	.94	5.1	.64	22
2	.57	1.3	3.7	1.7	117	8.7	2.7	1.1	.81	1.7	.86	3.5
3	.79	1.3	2.5	1.4	56	85	2.5	5.3	.88	1.0	.60	1.7
4	.97	1.2	2.0	1.3	36	29	2.3	4.5	.88	.67	.44	1.1
5	.97	1.1	1.6	1.3	27	15	2.3	2.7	.68	.55	.36	.94
6	.88	.97	1.2	1.4	22	12	2.1	1.8	37	.50	.30	.69
7	.79	.97	1.1	6.1	95	12	2.1	1.9	245	.45	.30	.57
8	1.1	3.2	.97	34	182	12	2.1	2.0	25	.45	.30	.57
9	2.0	6.0	.97	4.1	153	9.7	2.1	1.7	7.5	.45	.30	.57
10	1.4	2.8	.97	1.9	121	8.8	2.4	1.1	4.0	.45	.30	4.9
11	1.6	1.6	.88	97	60	8.1	4.2	.97	2.8	.40	.33	11
12	2.0	1.1	.88	159	270	7.3	3.6	1.0	2.2	.40	.35	3.9
13	1.1	.88	729	28	279	8.2	3.0	1.0	5.4	.40	.35	6.8
14	.88	.79	93	11	76	10	2.2	.88	14	.35	1.3	21
15	.79	.79	16	6.3	44	10	2.1	.79	3.2	.35	1.8	6.8
16	.79	.79	7.5	544	32	8.7	2.0	.79	1.9	.35	.79	3.0
17	.70	.79	4.4	151	108	7.1	2.0	.79	1.3	.35	.56	1.6
18	.63	.79	2.8	279	129	6.2	1.8	.79	1.1	.34	.49	1.0
19	.63	.79	2.3	342	52	5.3	1.7	.79	1.2	.30	.40	.78
20	.63	.79	1.8	79	32	5.0	1.5	.79	.99	.30	.39	.67
21	2.1	.88	1.4	38	22	5.0	1.4	.70	.85	.30	.40	.61
22	6.4	1.8	1.2	35	17	4.7	1.3	.70	.79	28	.40	.55
23	2.1	1.8	1.2	71	15	4.7	1.3	.68	.76	34	.49	.48
24	2.0	4.7	1.2	409	13	4.5	1.3	.63	.70	3.2	.51	.40
25	1.8	2.1	1.2	163	12	4.4	1.2	.63	.57	1.3	.51	.40
26	1.3	1.3	1.1	80	11	4.0	1.1	.63	.55	.74	.51	.40
27	1.1	1.1	.97	42	9.6	3.6	.97	.63	.51	17	.51	.40
28	.97	.97	.88	56	9.6	3.4	.97	.63	.68	4.1	.57	.41
29	.88	1.6	2.5	36	---	3.6	.97	.62	1.5	1.1	.73	.49
30	1.7	8.3	2.7	28	---	3.3	.88	.57	5.5	.82	.79	.51
31	1.4	---	2.5	42	---	3.0	---	1.0	---	.58	20	---
TOTAL	41.54	53.60	897.52	2751.6	2393.2	321.4	58.99	38.99	369.19	106.00	36.58	97.74
MEAN	1.34	1.79	29.0	88.8	85.5	10.4	1.97	1.26	12.3	3.42	1.18	3.26
MAX	6.4	8.3	729	544	393	85	4.2	5.3	245	34	20	22
MIN	.57	.79	.88	1.3	9.6	3.0	.88	.57	.51	.30	.30	.40
CFSM	.02	.03	.51	1.56	1.50	.18	.04	.02	.22	.06	.02	.06
IN.	.03	.03	.59	1.80	1.56	.21	.04	.03	.24	.07	.02	.06
AC-FT	82	106	1780	5460	4750	637	117	77	732	210	73	194
CAL YR 1977	TOTAL	9963.32	MEAN 27.3	MAX 1220	MIN .05	CFSM .48	IN 6.50	AC-FT 19760				
WTR YR 1978	TOTAL	7166.35	MEAN 19.6	MAX 729	MIN .30	CFSM .34	IN 4.68	AC-FT 14210				

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX

LOCATION.--Lat 30°38'00", long 95°00'36", Polk-San Jacinto County line, Hydrologic Unit 12030202, on upstream wingwall at left end of gated spillway at Livingston Dam on Trinity River, 4.4 mi (7.1 km) northwest of Goodrich, 7 mi (11 km) southwest of Livingston, 11.7 mi (18.8 km) upstream from Long King Creek, and at mile 129.2 (207.19 km).

DRAINAGE AREA.--16,583 mi² (42,950 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Trinity River Authority). Prior to Feb. 26, 1969, temporary nonrecording gages at site about 200 ft (61 m) upstream and at same datum.

REMARKS.--The reservoir is formed by an earthfill dam 14,400 ft (4,390 m) long. The dam was completed Sept. 29, 1968, and deliberate impoundment began June 26, 1969. The reservoir is operated for industrial water supply in the Houston metropolitan area. The spillway has twelve 40 by 35 ft (12 by 11 m) tainter gates located near the left end of dam. Low-flow releases may be made through multi-gated inlet tower. There are five gated openings at various elevations located in the tower, and all discharge into a 10-foot-diameter (3 m) concrete conduit through the dam. For statement regarding regulation by upstream reservoirs, see gage (station 08065000). 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.....	145.0	-
Design flood.....	135.0	2,136,000
Top of tainter gates.....	134.0	2,046,000
Top of conservation pool.....	131.0	1,788,000
Crest of spillway (sill of tainter gates).....	99.0	157,900
Lowest gated outlet (invert).....	58.0	335

COOPERATION.--The capacity table, furnished by the Trinity River Authority, is based on Geological Survey topographic maps.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,923,000 acre-ft (2.37 km³) Mar. 25, 1973, elevation, 132.60 ft (40.416 m); minimum since conservation pool capacity was reached on Nov. 2, 1971, 1,456,000 acre-ft (1.80 km³) Sept. 12, 1978, elevation, 126.75 ft (38.633 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,842,000 acre-ft (2.27 km³) Mar. 15, elevation, 131.65 ft (40.127 m); minimum 1,456,000 acre-ft (1.80 km³) Sept. 12, elevation, 126.75 ft (38.633 m).

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

126.0	1,401,000	130.0	1,707,000
128.0	1,550,000	132.0	1,872,000

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1708000	1691000	1717000	1788000	1812000	1797000	1787000	1761000	1747000	1676000	1550000	1480000
2	1714000	1690000	1717000	1784000	1804000	1798000	1787000	1762000	1748000	1671000	1547000	1479000
3	1711000	1690000	1718000	1781000	1801000	1797000	1788000	1763000	1752000	1665000	1546000	1472000
4	1705000	1692000	1722000	1780000	1798000	1793000	1786000	1758000	1753000	1659000	1546000	1471000
5	1705000	1690000	1729000	1786000	1794000	1787000	1785000	1752000	1750000	1655000	1544000	1470000
6	1704000	1688000	1718000	1786000	1788000	1790000	1784000	1760000	1761000	1647000	1538000	1466000
7	1698000	1689000	1712000	1793000	1805000	1803000	1783000	1761000	1777000	1643000	1536000	1463000
8	1707000	1696000	1723000	1790000	1809000	1807000	1782000	1765000	1777000	1638000	1534000	1460000
9	1699000	1699000	1720000	1784000	1812000	1810000	1777000	1767000	1776000	1631000	1532000	1457000
10	1697000	1696000	1715000	1781000	1810000	1818000	1784000	1765000	1767000	1624000	1528000	1462000
11	1699000	1695000	1715000	1798000	1801000	1828000	1781000	1761000	1761000	1618000	1529000	1460000
12	1695000	1696000	1717000	1798000	1809000	1830000	1781000	1766000	1764000	1612000	1529000	1459000
13	1693000	1693000	1772000	1795000	1817000	1836000	1781000	1764000	1765000	1607000	1524000	1466000
14	1689000	1696000	1776000	1793000	1813000	1840000	1778000	1759000	1761000	1601000	1522000	1466000
15	1697000	1698000	1777000	1785000	1812000	1842000	1779000	1758000	1753000	1596000	1519000	1467000
16	1692000	1702000	1783000	1818000	1810000	1821000	1779000	1758000	1748000	1592000	1517000	1469000
17	1687000	1700000	1782000	1813000	1822000	1807000	1782000	1757000	1743000	1586000	1514000	1470000
18	1691000	1699000	1782000	1826000	1818000	1798000	1783000	1757000	1739000	1581000	1513000	1470000
19	1690000	1700000	1790000	1822000	1811000	1791000	1782000	1758000	1734000	1582000	1509000	1472000
20	1688000	1703000	1785000	1807000	1803000	1790000	1778000	1758000	1730000	1577000	1506000	1472000
21	1689000	1709000	1782000	1803000	1797000	1789000	1770000	1753000	1727000	1572000	1504000	1477000
22	1690000	1707000	1776000	1798000	1796000	1785000	1772000	1749000	1719000	1572000	1499000	1474000
23	1690000	1707000	1779000	1796000	1799000	1784000	1774000	1747000	1712000	1571000	1495000	1472000
24	1693000	1711000	1784000	1795000	1797000	1792000	1775000	1743000	1708000	1567000	1493000	1472000
25	1692000	1714000	1783000	1793000	1802000	1788000	1774000	1741000	1700000	1561000	1486000	1471000
26	1690000	1704000	1780000	1791000	1799000	1788000	1772000	1745000	1696000	1561000	1483000	1471000
27	1689000	1712000	1778000	1793000	1797000	1787000	1765000	1747000	1692000	1561000	1478000	1471000
28	1690000	1712000	1778000	1792000	1800000	1789000	1757000	1748000	1690000	1559000	1486000	1469000
29	1690000	1718000	1778000	1792000	---	1793000	1758000	1749000	1689000	1553000	1477000	1469000
30	1686000	1716000	1783000	1795000	---	1796000	1761000	1747000	1684000	1554000	1472000	1469000
31	1686000	---	1783000	1799000	---	1791000	---	1743000	---	1548000	1474000	---
MAX	1714000	1718000	1790000	1826000	1822000	1842000	1788000	1767000	1777000	1676000	1550000	1480000
MIN	1686000	1688000	1712000	1780000	1788000	1784000	1757000	1741000	1684000	1548000	1472000	1457000
(†)	129.74	130.11	130.94	131.13	131.14	131.03	130.67	130.45	129.71	127.97	127.00	126.93
(‡)	-19000	+30000	+67000	+16000	+1000	-9000	-30000	-18000	-59000	-136000	-74000	-5000
CAL YR 1977	MAX	1908000	MIN	1676000	‡	-5000						
WTR YR 1978	MAX	1842000	MIN	1457000	‡	-236000						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

TRINITY RIVER BASIN
LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY RECORDS

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

303807095011101 - LAKE LIVINGSTON AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SAMP- LING DEPTH (FT)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
DATE	TIME								
MAR									
02...	1305	1.0	412	8.1	8.5	1.50	11.2	99	130
02...	1307	10	412	8.1	8.5	--	11.2	99	--
02...	1310	20	412	8.1	8.0	--	11.0	96	--
02...	1312	30	412	8.0	8.0	--	10.9	95	--
02...	1315	40	412	8.0	8.0	--	10.8	94	--
02...	1317	50	412	8.0	8.0	--	10.7	93	--
02...	1320	60	412	8.0	8.0	--	10.6	92	--
02...	1322	70	412	8.0	8.0	--	10.5	91	--
02...	1325	78	412	8.0	8.0	--	10.4	90	130
	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
DATE									
MAR									
02...	17	45	4.6	31	1.2	4.8	140	0	40
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	16	45	4.6	31	1.2	4.8	140	0	40
	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
DATE									
MAR									
02...	35	.4	6.5	236	.11	.01	.13	0	0
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	.07	.01	.13	10	0
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	35	.4	6.7	237	.14	.03	.13	10	10

303821095005001 - LAKE LIVINGSTON AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
02...	1340	1.0	412	8.1	8.5	11.4	101
02...	1342	10	412	8.1	8.5	11.3	100
02...	1345	20	412	8.1	8.5	11.2	99
02...	1347	30	412	8.0	8.0	11.0	96
02...	1350	44	412	8.0	8.0	10.7	93

TRINITY RIVER BASIN
LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

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303935095055401 - LAKE LIVINGSTON BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
02...	1230	1.0	416	8.2	9.0	11.5	103
02...	1232	10	416	8.1	8.5	11.2	99
02...	1235	20	416	8.1	8.5	11.2	99
02...	1238	30	416	8.0	8.5	11.1	98
02...	1240	40	416	8.0	8.5	11.1	98
02...	1243	50	416	7.9	8.0	10.7	93
02...	1245	60	416	7.7	8.0	10.4	90
02...	1248	72	416	7.5	8.0	9.9	86

304144095073001 - LAKE LIVINGSTON CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
02...	1410	1.0	425	8.2	9.5	12.2	110
02...	1412	10	425	8.2	9.0	11.7	104
02...	1415	20	425	8.2	9.0	11.3	101
02...	1418	30	425	8.2	9.0	11.3	101
02...	1420	40	425	8.1	8.5	11.3	100
02...	1423	50	425	8.1	8.5	11.2	99
02...	1425	61	425	8.1	8.5	10.7	95

304521095075501 - LAKE LIVINGSTON DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
MAR									
02...	1435	1.0	423	8.3	10.0	.80	12.7	117	120
02...	1438	10	423	8.2	10.0	--	12.0	110	--
02...	1440	20	423	8.2	9.5	--	11.5	104	--
02...	1442	30	423	8.1	9.0	--	11.3	101	--
02...	1444	40	423	8.0	9.0	--	11.2	100	--
02...	1447	50	423	8.0	9.0	--	11.1	99	--
02...	1450	66	423	8.1	9.0	--	11.0	98	120

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR									
02...	22	41	4.5	36	1.4	5.3	120	0	45
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	22	41	4.5	36	1.4	5.3	120	0	45

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR								
02...	41	6.4	238	.52	.05	.30	20	0
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	--	--	--	.24	.06	.30	10	10
02...	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--
02...	40	6.5	237	.36	.09	.30	20	10

TRINITY RIVER BASIN
LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

304520095075101 - LAKE LIVINGSTON DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
02...	1505	1.0	423	8.4	10.5	13.3	123
02...	1507	10	423	8.1	9.5	11.9	107
02...	1510	24	423	8.0	9.5	11.5	104

304659095052001 - LAKE LIVINGSTON EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
02...	1145	1.0	412	8.5	10.0	.70	12.2
02...	1147	10	412	8.3	10.0	--	11.6
02...	1150	20	412	8.2	10.0	--	11.4
02...	1153	31	412	8.2	10.0	--	11.0

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
02...	112	.48	.04	.31	10	0
02...	106	--	--	--	--	--
02...	105	--	--	--	--	--
02...	101	.28	.05	.31	10	10

304843095104001 - LAKE LIVINGSTON FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
01...	1518	1.0	402	7.5	12.5	9.7	94
01...	1520	10	402	7.4	10.5	9.0	83
01...	1523	20	402	7.3	9.5	8.4	76
01...	1525	30	402	7.3	9.5	8.1	73
01...	1528	40	402	7.2	9.5	7.9	71
01...	1530	50	402	7.2	9.5	7.7	69
01...	1533	56	402	7.0	9.5	7.4	67

TRINITY RIVER BASIN

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LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305411095144901 - LAKE LIVINGSTON GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
MAR									
01...	1545	1.0	401	7.4	12.0	.20	7.2	69	110
01...	1547	10	401	7.4	10.0	--	6.5	60	--
01...	1550	20	401	7.4	9.5	--	6.4	58	--
01...	1553	30	401	7.4	9.5	--	6.2	56	--
01...	1556	40	401	7.4	9.5	--	6.2	56	--
01...	1558	55	401	7.4	9.5	--	6.0	54	120

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR									
01...	31	38	4.5	31	1.3	5.5	100	0	51
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	35	39	4.7	29	1.2	5.3	100	0	51

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR								
01...	33	8.2	221	.37	.72	.48	750	50
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	--	--	--	.67	.91	.37	30	10
01...	--	--	--	--	--	--	--	--
01...	31	8.0	218	.86	1.2	.48	810	80

305447095161401 - LAKE LIVINGSTON HC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)
MAR							
01...	1615	1.0	350	7.5	12.5	.30	10.2
01...	1618	10	398	7.5	11.5	--	7.7
01...	1620	20	398	7.4	11.0	--	7.0
01...	1623	30	398	7.4	10.0	--	6.4
01...	1626	40	398	7.4	10.0	--	6.2

DATE	PER- CENT SATUR- ATION	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR						
01...	99	.22	.19	.22	90	70
01...	73	--	--	--	--	--
01...	65	--	--	--	--	--
01...	59	--	--	--	--	--
01...	57	.59	.87	.40	410	60

TRINITY RIVER BASIN

LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305135095193601 - LAKE LIVINGSTON IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION
MAR							
01...	1640	1.0	390	7.7	13.0	8.0	78
01...	1643	10	390	7.6	11.5	7.5	71
01...	1646	20	412	7.5	10.0	6.6	61
01...	1648	30	412	7.5	10.0	6.5	60
01...	1651	44	412	7.5	10.0	6.5	60

305135095235401 - LAKE LIVINGSTON JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	HARD- NESS (CA, MG) (MG/L)
MAR									
01...	1705	1.0	386	7.6	12.5	.20	8.0	78	120
01...	1707	10	400	7.6	11.5	--	7.7	73	--
01...	1710	20	419	7.5	9.5	--	7.1	64	--
01...	1712	30	419	7.6	9.5	--	7.0	63	--
01...	1715	40	419	7.6	9.5	--	6.8	61	--
01...	1718	45	419	7.6	9.5	--	6.8	61	130

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)
MAR									
01...	45	42	4.7	27	1.1	5.2	97	0	54
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--
01...	46	43	5.1	29	1.1	5.3	100	0	58

DATE	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SI02) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
MAR								
01...	32	8.7	222	.54	.66	.36	750	60
01...	--	--	--	--	--	--	--	--
01...	--	--	--	1.5	1.1	.34	230	30
01...	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--
01...	34	8.7	233	.34	.51	.33	150	30

TRINITY RIVER BASIN

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LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

303807095011101 - LAKE LIVINGSTON AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		SAMP- LING DEPTH (FT)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	
DATE	TIME							
MAR								
02...	1305	1.0	2	100	0	0	2	
02...	1315	40	--	--	--	--	--	
02...	1325	78	2	0	0	0	1	
		DIS- SOLVED IRON (FE) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
DATE								
MAR								
02...	0	3	0	.0	0	0	0	0
02...	10	--	0	--	--	--	--	--
02...	10	2	10	.0	0	0	0	0

TRINITY RIVER BASIN

LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

303807095011101 LAKE LIVINGSTON AC
PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO MARCH 1978

DATE	MAR 2.78
TIME	1306
TOTAL CELLS/ML	4900
DIVERSITY: DIVISION	1.5
..CLASS	1.5
...ORDER	1.6
...FAMILY	1.9
....GENUS	2.6

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....OOCYSTACEAE		
....ANKISTRODESMUS	130	3
....CHODATELLA	*	0
....DICTYOSPHAERIUM	2000#	40
....KIRCHNERIELLA	30	1
....OOCYSTIS	80	2
....TETRAEDRON	*	0
...SCENEDESMACEAE		
....SCENEDESMUS	100	2
....TETRASTRUM	280	6
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	91	2
....MELOSIRA	420	9
...PENNALES		
...FRAGILARIACEAE		
....SYNEDRA	140	3
...NITZSCHIACEAE		
....NITZSCHIA	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCACEAE		
....AGMENELLUM	240	5
....ANACYSTIS	1300#	27
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELOMONAS	40	1
PYRRHOPHYTA (FIRE ALGAE)		
..DINOPHYCEAE		
...PERIDINIALES		
...GLENODINIACEAE		
....GLENODINIUM	40	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

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LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305135095235401 LAKE LIVINGSTON JC
 PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO MARCH 1978

DATE	MAR 1, 78
TIME	1706
TOTAL CELLS/ML	2800
DIVERSITY: DIVISION	1.5
..CLASS	1.5
...ORDER	2.1
....FAMILY	2.9
.....GENUS	3.5

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....MICRACTINIAEAE		
.....MICRACTINIUM	57	2
....OOCYSTACEAE		
.....ANKISTRODESMUS	160	6
....CHODATELLA	38	1
....OOCYSTIS	440#	16
....WESTELLA	38	1
....SCENEDESMACEAE		
.....ACTINASTRUM	38	1
.....SCENEDESMUS	550#	20
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	230	8
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
....COSCINODISCACEAE		
.....CYCLOTELLA	450#	16
....MELOSIRA	120	4
..PENNALES		
...GOMPHONEMATACEAE		
....GOMPHONEMA	*	0
....NAVICULACEAE		
.....NAVICULA	29	1
....NITZSCHIACEAE		
.....NITZSCHIA	120	4
....SURIRELLACEAE		
.....SURIRELLA	38	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
....CHROCOCCACEAE		
.....ANACYSTIS	48	2
....HORMOGONALES		
.....OSCILLATORIAEAE		
.....OSCILLATORIA	270	10
....RIVULARIACEAE		
.....RAPHIIDIOPSIS	96	3
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
....EUGLENACEAE		
.....TRACHELOMONAS	29	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN
LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

303734095015901 - LAKE LIVINGSTON AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
22...	1130	1.0	449	8.6	28.5	9.4	121
22...	1132	10	449	8.4	28.5	7.6	97
22...	1134	20	449	8.1	28.0	5.6	71
22...	1137	32	449	7.7	27.5	3.5	44

303807095011101 - LAKE LIVINGSTON AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SEP									
22...	1144	1.0	449	8.7	29.0	.90	9.8	127	130
22...	1148	10	449	8.1	28.0	--	5.1	65	--
22...	1152	20	449	7.8	28.0	--	3.4	43	--
22...	1156	30	449	7.6	27.5	--	2.4	30	--
22...	1200	40	449	7.5	27.5	--	2.1	27	--
22...	1204	50	449	7.5	27.0	--	1.9	24	--
22...	1208	60	470	7.2	24.5	--	.5	6	--
22...	1212	72	510	6.7	22.0	--	.6	7	150

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
22...	11	44	4.6	40	1.5	5.1	130	7	43
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	0	51	4.8	34	1.2	5.4	220	0	43

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP									
22...	42	.5	6.9	257	.02	.01	.34	20	0
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	.31	.03	.36	70	190
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	.35	.04	.37	280	960
22...	--	--	--	--	--	--	--	--	--
22...	37	--	6.4	293	.01	7.4	2.5	190	3000

TRINITY RIVER BASIN

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LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

303935095055401 - LAKE LIVINGSTON BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
22...	1102	1.0	460	8.8	29.0	8.7	113
22...	1104	10	460	8.7	29.0	8.2	106
22...	1106	20	460	8.7	28.5	7.6	97
22...	1108	30	470	8.2	28.5	5.1	65
22...	1110	40	470	7.9	28.0	3.6	46
22...	1112	50	483	7.4	27.5	.6	8
22...	1114	59	518	6.9	25.0	.5	6

304144095073001 - LAKE LIVINGSTON CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP								
22...	0950	1.0	462	8.6	28.5	.70	6.6	85
22...	0952	10	462	8.8	28.5	--	6.5	83
22...	0954	20	462	8.5	28.0	--	6.2	78
22...	0958	30	462	8.5	28.0	--	5.8	73
22...	1001	40	490	7.7	28.0	--	1.4	18
22...	1004	54	519	7.6	27.5	--	.6	8

304521095075501 - LAKE LIVINGSTON DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)
SEP									
22...	1301	1.0	466	8.9	29.0	.70	6.8	88	130
22...	1303	10	466	8.5	29.0	--	5.6	73	--
22...	1306	20	466	8.3	29.0	--	4.7	61	--
22...	1309	30	480	8.2	28.5	--	3.9	50	--
22...	1312	40	494	8.0	28.5	--	3.2	41	--
22...	1315	54	506	7.6	28.5	--	.7	9	140

DATE	HARD- NESS (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
22...	11	44	4.7	43	1.6	5.8	130	7	47
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
22...	14	47	4.8	47	1.7	6.3	150	0	51

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
22...	44	6.5	266	.02	.02	.42	10	0
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.06	.08	.44	40	30
22...	--	--	--	--	--	--	--	--
22...	--	--	--	.19	.10	.47	20	60
22...	47	8.5	286	.27	.19	.49	10	110

TRINITY RIVER BASIN

LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

304520095075101 - LAKE LIVINGSTON DL

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP						
22...	1250	1.0	466	8.6	29.0	87
22...	1252	10	466	8.5	29.0	74
22...	1255	25	466	8.0	28.5	37

304659095052001 - LAKE LIVINGSTON EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
22...	0853	1.0	481	8.7	29.0	.70	5.7
22...	0856	10	481	8.7	29.0	--	5.5
22...	0900	20	500	8.0	28.0	--	2.4
22...	0905	33	519	7.5	27.5	--	.5

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
SEP						
22...	74	.02	.02	.46	50	10
22...	71	--	--	--	--	--
22...	30	--	--	--	--	--
22...	6	.03	.44	.95	130	920

304843095104001 - LAKE LIVINGSTON FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
22...	1338	1.0	530	8.8	29.5	7.4	96
22...	1340	10	540	8.5	29.0	4.8	62
22...	1341	20	560	8.1	29.0	2.8	36
22...	1343	30	615	7.6	28.5	.5	6
22...	1345	40	620	7.6	28.5	.5	6
22...	1347	50	620	7.6	28.5	.5	6

TRINITY RIVER BASIN

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LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305411095144901 - LAKE LIVINGSTON GC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SEP									
21...	1540	1.0	631	8.9	31.0	.60	11.4	154	140
21...	1543	10	690	8.0	29.0	--	4.5	59	--
21...	1546	20	690	7.8	28.5	--	3.3	43	--
21...	1549	30	700	7.6	28.5	--	2.0	26	--
21...	1552	40	737	7.3	28.5	--	.4	5	--
21...	1555	49	737	7.3	28.0	--	.4	5	150

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SEP									
21...	2	48	5.7	74	2.7	9.0	140	16	75
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	12	51	5.9	81	2.9	11	170	0	99

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
21...	66	7.8	371	.48	.04	.72	10	10
21...	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--
21...	--	--	--	1.8	.17	1.2	30	20
21...	--	--	--	2.2	.22	1.4	30	80
21...	77	10	419	2.0	.27	1.4	10	140

305447095161401 - LAKE LIVINGSTON HC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)
SEP							
21...	1405	1.0	660	8.8	31.5	.70	13.0
21...	1408	10	644	8.2	29.0	--	5.8
21...	1411	20	630	8.1	28.5	--	4.9
21...	1414	30	625	7.8	28.5	--	3.2
21...	1417	41	613	7.3	28.5	--	.3

DATE	OXYGEN, DIS- SOLVED (PFR- CENT SATUR- ATION)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP						
21...	176	.61	.02	.74	20	50
21...	76	--	--	--	--	--
21...	64	--	--	--	--	--
21...	42	--	--	--	--	--
21...	4	.22	.47	.67	20	620

TRINITY RIVER BASIN
LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305135095193601 - LAKE LIVINGSTON IC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
SEP							
21...	1612	1.0	787	8.2	30.5	10.0	133
21...	1614	10	787	7.3	28.5	2.5	32
21...	1617	20	787	7.2	28.5	1.0	13
21...	1619	30	787	7.2	28.5	.8	10
21...	1622	41	787	7.2	28.5	.5	6

305135095235401 - LAKE LIVINGSTON JC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)
SFP									
21...	1640	1.0	662	8.0	30.0	.50	8.8	117	130
21...	1644	10	610	7.1	28.5	--	2.1	27	--
21...	1648	20	580	7.0	28.5	--	1.3	17	--
21...	1654	30	599	7.0	28.0	--	1.1	14	--
21...	1658	42	599	7.0	28.0	--	.5	6	120

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
SFP									
21...	23	43	5.4	79	3.0	10	130	0	90
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	22	39	5.6	69	2.7	9.1	120	0	82

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA 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)
SEP								
21...	72	11	375	3.0	.01	1.8	10	0
21...	--	--	--	2.8	.07	1.7	20	0
21...	--	--	--	--	--	--	--	--
21...	--	--	--	2.3	.08	1.5	200	80
21...	66	12	342	2.3	.10	1.6	160	130

TRINITY RIVER BASIN

613

LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

303807095011101 - LAKE LIVINGSTON AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)
SEP							
22...	1144	1.0	10	0	0	0	0
22...	1156	30	--	--	--	--	--
22...	1204	50	--	--	--	--	--
22...	1212	72	4	100	0	0	0

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
SEP							
22...	20	0	0	.0	0	0	10
22...	70	--	190	--	--	--	--
22...	280	--	960	--	--	--	--
22...	190	0	3000	.1	0	0	10

08066191 LIVINGSTON RESERVOIR AT OUTFLOW WEIR NEAR GOODRICH, TX

LOCATION.--Lat 30°37'55", long 95°01'11", San Jacinto County, Hydrologic Unit 12030202, at end of conduit into stillings basin, 1,700 ft (518 m) to right of right spillway abutment, 4.8 mi (7.7 km) northwest of Goodrich, 11.7 mi (18.8 km) upstream from Long King Creek, and at mile 129.2 (207.9 km).

DRAINAGE AREA.--16,583 mi² (42,950 km²).

PERIOD OF RECORD.--August 1969 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Trinity River Authority). Oct. 1, 1974, to Jan. 30, 1976, staff gage and control only.

REMARKS.--Records good. For details concerning outlet works, see Livingston Reservoir (station 08066190). The purpose of this station is to record selective withdrawal releases at outflow weir, crest 61.90 ft (18.867 m). These releases do not constitute the total flow from Livingston Reservoir since flow through tainter gates is not included in these totals.

AVERAGE DISCHARGE.--9 years, 203 ft³/s (5.749 m³/s), 147,100 acre-ft/yr (181 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,400 ft³/s (96.3 m³/s) May 2, 1974; maximum elevation, about 93.0 ft (29.35 m) June 14, 1973 (backwater from Trinity River); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 568 ft³/s (16.1 m³/s) Oct. 19, 21; maximum elevation, 67.50 ft (20.574 m) Jan. 19 (backwater from Trinity River); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	304	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	557	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	559	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	560	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	562	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	564	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	562	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	562	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	565	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	568	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	567	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	568	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	567	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	567	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	318	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	7950.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	256	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	568	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	15770	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL	7950.00	MEAN 21.8	MAX 568	MIN .00	AC-FT 15770						
WTR YR 1978	TOTAL	7950.00	MEAN 21.8	MAX 568	MIN .00	AC-FT 15770						

TRINITY RIVER BASIN

615

08066200 LONG KING CREEK AT LIVINGSTON, TX

LOCATION.--Lat 30°42'58", Long 94°57'31", Polk County, Hydrologic Unit 12030202, on right bank 64 ft (20 m) downstream from centerline of bridge on U.S. Highway 190, 2 mi (3 km) west of Livingston, 2 mi (3 km) upstream from Choates Creek, and 14.8 mi (23.8 km) upstream from mouth.

DRAINAGE AREA.--141 mi² (365 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 100.12 ft (30.517 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for March and April, which are poor. No diversion above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--15 years, 90.0 ft³/s (2.549 m³/s), 8.67 in/yr (220 mm/yr), 65,200 acre-ft/yr (80.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,500 ft³/s (750 m³/s) Nov. 5, 1973, gage height, 27.06 ft (8.248 m); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, about 41 ft (12.5 m) in May 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,100 ft³/s (59.5 m³/s) Feb. 1; maximum gage height, 10.81 ft (3.295 m) Jan. 16, no peak above base of 2,300 ft³/s (65.1 m³/s); minimum daily, 0.29 ft³/s (0.008 m³/s) July 15.

DAY	DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978											
	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	2.8	55	9.0	1520	51	11	5.4	3.3	6.2	3.2	11
2	4.2	3.3	37	8.0	533	48	10	6.0	3.5	4.6	3.7	20
3	4.5	3.4	31	7.0	204	54	9.5	10	3.2	2.5	3.4	6.9
4	3.7	3.4	25	6.0	151	61	9.0	12	3.4	1.7	2.6	4.0
5	3.1	3.4	17	5.5	125	53	10	11	2.8	1.0	2.1	2.3
6	3.1	3.4	14	5.0	99	41	12	8.3	2.7	.88	2.4	1.4
7	3.1	3.7	11	12	173	36	11	8.0	35	.70	2.8	1.0
8	3.1	5.8	9.8	10	642	30	10	8.0	35	.61	1.9	.93
9	4.3	8.3	8.1	9.0	336	25	9.5	7.1	12	.61	1.5	.86
10	3.7	5.5	7.1	12	269	22	9.0	5.9	6.5	.49	1.3	3.7
11	3.7	5.0	6.6	16	169	20	12	5.3	4.5	.31	1.2	21
12	4.0	4.2	5.9	368	237	19	15	5.0	3.3	.31	1.2	32
13	3.4	3.7	929	144	645	22	14	4.7	2.7	.31	1.3	35
14	3.1	3.7	971	57	209	25	13	4.0	2.8	.31	1.3	42
15	2.8	3.7	152	32	133	23	12	3.4	2.1	.29	1.2	45
16	2.6	3.7	68	656	110	20	11	3.4	1.7	.36	.86	16
17	2.6	3.8	43	1190	251	18	10	3.3	1.5	.40	.73	9.2
18	2.6	4.2	26	467	544	16	9.6	3.1	1.5	.36	.61	6.2
19	2.6	4.4	18	1220	168	14	9.0	2.4	1.3	.32	.50	4.8
20	2.6	4.7	14	400	124	13	8.5	2.4	1.3	.31	.40	3.7
21	2.8	6.2	12	188	99	12	8.0	2.3	1.2	.44	.32	3.6
22	3.7	9.8	10	135	77	11	7.6	2.1	.87	2.9	.40	2.8
23	3.4	8.5	14	138	68	18	7.3	2.1	.86	13	.40	2.4
24	6.0	6.2	12	638	63	22	7.0	1.7	.86	5.5	.40	2.4
25	6.4	12	10	502	58	21	6.7	1.7	.86	6.9	.40	2.1
26	5.7	8.6	9.0	302	55	18	6.4	1.3	.86	2.8	.39	1.9
27	4.0	6.3	8.0	172	52	16	6.2	1.3	.73	8.9	.30	1.8
28	3.2	5.4	7.0	137	52	15	6.0	1.3	3.1	13	.51	1.7
29	3.0	54	7.0	130	---	14	5.8	6.6	4.5	5.1	5.4	2.1
30	2.8	76	10	125	---	13	5.6	9.7	5.4	3.7	3.0	2.4
31	2.8	---	10	142	---	12	---	5.5	---	3.2	3.2	---
TOTAL	110.6	277.1	2557.5	7242.5	7166	783	281.7	154.3	149.34	88.01	48.92	290.19
MEAN	3.57	9.24	82.5	234	256	25.3	9.39	4.98	4.98	2.84	1.58	9.67
MAX	6.4	76	971	1220	1520	61	15	12	35	13	5.4	45
MIN	2.6	2.8	5.9	5.0	52	11	5.6	1.3	.73	.29	.30	.86
CFSM	.03	.07	.59	1.66	1.82	.18	.07	.04	.04	.02	.01	.07
IN.	.03	.07	.67	1.91	1.89	.21	.07	.04	.04	.02	.01	.08
AC-FT	219	550	5070	14370	14210	1550	559	306	296	175	97	576
CAL YR 1977	TOTAL	18391.79	MEAN 50.4	MAX 1260	MIN .01	CFSM .36	IN 4.85	AC-FT 36480				
WTR YR 1978	TOTAL	19149.16	MEAN 52.5	MAX 1520	MIN .29	CFSM .37	IN 5.05	AC-FT 37980				

08066250 TRINITY RIVER NEAR GOODRICH, TX

LOCATION.--Lat 30°34'19", long 94°56'55", Polk-San Jacinto County line, Hydrologic Unit 12030202, on left bank 40 ft (12 m) downstream from downstream bridge on U.S. Highway 59, 0.2 mi (0.3 km) downstream from Long King Creek, 3.0 mi (4.8 km) southeast of Goodrich, and at mile 117.3 (188.7 km).

DRAINAGE AREA.--16,844 mi² (43,626 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 40.00 ft (12.192 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Regulated since Sept. 29, 1968, by Livingston Reservoir (station 08066190), capacity 2,046,000 acre-ft (2.52 km³), 11.9 mi (19.1 km) upstream. No diversions between Livingston Reservoir and gaging station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years (water years 1967-78), 7,074 ft³/s (200.3 m³/s), 5,125,000 acre-ft/yr (6.32 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,200 ft³/s (2,720 m³/s) June 14, 1973, gage height, 46.36 ft (14.131 m); minimum daily, 191 ft³/s (5.41 m³/s) Aug. 6, 1971 (regulation by Livingston Reservoir).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 52.0 ft (15.85 m) in May 1942, from information by Texas Department of Highways and Public Transportation and by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,000 ft³/s (481 m³/s) Jan. 19, gage height, 23.38 ft (7.126 m); minimum daily, 411 ft³/s (11.6 m³/s) Oct. 26.

DAY	DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978											
	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	462	479	714	529	4270	2530	2480	1670	2530	2580	1700	1900
2	424	481	650	527	6370	2550	2340	1670	2520	2540	1690	1880
3	453	470	607	526	5400	2490	1800	1690	2510	2540	1640	1810
4	434	456	581	524	3990	1940	1660	1680	2520	2520	1500	1780
5	427	447	562	517	3250	1870	1710	1680	2520	2520	1490	1780
6	420	445	552	517	2550	1830	1720	1680	2580	2520	1480	1770
7	446	445	560	527	2550	1450	1710	1680	2770	2520	1480	1770
8	443	445	560	579	6960	1380	1700	1670	2620	2520	1480	1780
9	425	445	548	580	8600	1920	1710	1660	2560	2510	1480	1780
10	468	443	551	548	8490	4420	1710	1670	2540	2510	1480	1810
11	599	441	552	576	7940	8770	1700	1670	2530	2510	1480	1830
12	590	439	552	2040	6760	10800	1690	1670	2530	2490	1480	1800
13	594	437	1410	2550	7100	11200	1690	1650	2530	2490	1470	1850
14	594	437	2500	1900	7290	13400	1690	1660	2560	2500	1450	2010
15	594	439	1170	1330	8000	14900	1690	1670	2540	2500	1330	1570
16	595	435	762	1700	7990	14800	1680	1660	2520	2490	1300	807
17	597	433	659	10900	8030	11500	1690	1670	2520	2310	1290	729
18	599	437	615	11400	10100	7390	1690	1680	2520	1750	1230	715
19	597	441	572	16100	10200	5280	1670	1670	2520	1700	1720	705
20	603	439	532	15100	9320	4040	1680	1670	2540	1700	1770	699
21	617	458	505	8920	6900	3140	1690	1660	2540	1710	1800	697
22	620	456	652	6940	3890	2330	1700	1660	2540	1710	1800	585
23	617	467	775	5810	2720	1820	1690	1660	2550	1720	1780	446
24	655	547	716	5540	2590	1790	1680	1650	2550	1730	1780	418
25	487	563	653	5530	2570	1770	1680	1910	2550	1710	1780	461
26	411	564	602	3760	2560	1750	1670	2450	2550	1700	1780	501
27	465	553	567	2010	2560	1740	1670	2470	2550	1720	1780	510
28	470	551	543	1750	2540	1740	1670	2490	2540	1750	1780	511
29	467	657	532	1720	---	2020	1670	2500	2540	1710	1790	509
30	470	760	523	1670	---	3080	1670	2540	2560	1700	1780	509
31	469	---	523	1690	---	3120	---	2510	---	1690	1790	---
TOTAL	16112	14510	21800	114310	161490	148760	52200	56920	76450	66570	49580	35922
MEAN	520	484	703	3687	5768	4799	1740	1836	2548	2147	1599	1197
MAX	655	760	2500	16100	10200	14900	2480	2540	2770	2580	1800	2010
MIN	411	433	505	517	2540	1380	1660	1650	2510	1690	1230	418
AC-FT	31960	28780	43240	226700	320300	295100	103500	112900	151600	132000	98340	71250
CAL YR 1977 TOTAL	2337512	MEAN		6404	MAX	50500	MIN	411	AC-FT	4636000		
WTR YR 1978 TOTAL	814624	MEAN		2232	MAX	16100	MIN	411	AC-FT	1616000		

TRINITY RIVER BASIN

617

08066300 MENARD CREEK NEAR RYE, TX

LOCATION.--Lat 30°28'52", long 94°46'46", Liberty County, Hydrologic Unit 12030202, on left bank 20 ft (6 m) downstream from bridge on State Highway 146, 2.3 mi (3.7 km) northwest of Rye, and about 6 mi (10 km) upstream from mouth.

DRAINAGE AREA.--152 mi² (394 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 62.32 ft (18.995 m) National Geodetic Vertical Datum of 1929. September 1974 to August 1976, wire-weight gage read twice daily.

REMARKS.--Water-discharge records good. No known diversions above station. Regulation by Bear Foot Lake on Mill Creek 0.5 mi (0.8 km) upstream.

AVERAGE DISCHARGE.--12 years (water years 1967-78), 99.7 ft³/s (2.824 m³/s), 72,230 acre-ft/yr (89.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,660 ft³/s (274 m³/s) May 8, 1969, gage height, 30.33 ft (9.245 m), from rating curve extended above 5,600 ft³/s (159 m³/s); minimum daily, 2.6 ft³/s (0.074 m³/s) Nov. 1, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1929 reached a stage of about 39.4 ft (12.01 m), from information by the Texas Department of Highways and Public Transportation. Flood in September 1961 reached a stage of about 34.0 ft (10.36 m), from information by local resident. Flood of May 1929 may have been equaled or exceeded by other floods during the period 1929-65.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 632 ft³/s (17.9 m³/s) Feb. 13, gage height, 15.12 ft (4.609 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily, 5.5 ft³/s (0.16 m³/s) Aug. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	17	199	32	201	102	52	25	20	12	28	34
2	23	21	156	32	278	99	49	25	23	13	26	24
3	22	25	109	30	348	99	48	34	24	19	19	41
4	21	27	81	30	471	96	48	41	24	21	8.9	25
5	21	25	56	36	305	85	47	41	25	16	8.3	19
6	21	24	39	37	180	66	46	36	61	14	8.8	15
7	21	24	32	37	162	75	44	26	100	13	8.2	14
8	13	35	36	57	370	82	44	26	100	13	7.5	12
9	13	48	39	68	423	73	43	27	58	15	8.3	11
10	12	63	37	57	466	65	43	26	38	15	8.7	13
11	13	49	35	60	477	60	43	25	28	14	8.3	31
12	16	41	33	100	396	58	46	25	23	14	11	44
13	17	33	84	151	586	72	49	24	22	13	14	67
14	15	30	185	156	406	93	48	22	25	13	19	104
15	14	28	175	112	365	84	44	21	23	13	26	97
16	14	28	241	101	296	65	42	20	20	18	25	84
17	14	42	175	262	210	60	40	20	16	18	17	55
18	13	51	96	280	207	56	39	20	15	16	5.5	31
19	13	32	74	433	211	53	39	20	15	18	6.2	24
20	13	19	56	423	240	51	37	19	14	16	6.4	21
21	13	55	50	324	197	52	35	19	14	15	15	18
22	14	110	42	291	153	52	31	19	17	14	12	17
23	15	91	30	194	126	52	24	18	19	15	7.9	15
24	22	47	29	341	109	58	23	17	14	16	7.0	15
25	16	46	27	412	101	77	22	17	22	16	6.4	14
26	19	46	27	364	95	83	22	17	20	17	6.1	13
27	20	53	25	351	97	73	20	16	14	29	5.9	12
28	19	52	32	261	106	64	20	16	34	43	26	12
29	18	58	47	182	---	59	22	17	12	38	45	11
30	16	146	49	158	---	56	24	20	12	32	43	11
31	15	---	32	148	---	54	---	19	---	30	45	---
TOTAL	520	1366	2328	5520	7582	2174	1134	718	852	569	489.4	904
MEAN	16.8	45.5	75.1	178	271	70.1	37.8	23.2	28.4	18.4	15.8	30.1
MAX	24	146	241	433	586	102	52	41	100	43	45	104
MIN	12	17	25	30	95	51	20	16	12	12	5.5	11
AC-FT	1030	2710	4620	10950	15040	4310	2250	1420	1690	1130	971	1790
CAL YR 1977	TOTAL	28971.0	MEAN 79.4	MAX 901	MIN 12	AC-FT 57460						
WTR YR 1978	TOTAL	24156.4	MEAN 66.2	MAX 586	MIN 5.5	AC-FT 47910						

TRINITY RIVER BASIN
08066300 MENARD CREEK NEAR RYE, TX--Continued
WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 03...	1405	26	175	6.3	18.0	26	14	7.5	1.8	20
DEC 16...	0935	230	89	5.8	14.5	17	11	4.9	1.2	8.3
JAN 26...	1420	353	86	5.8	8.0	17	12	4.7	1.3	8.0
MAR 10...	1515	65	93	6.5	10.5	18	8	5.0	1.4	9.4
APR 21...	0905	35	168	6.7	18.0	26	14	7.4	1.8	18
JUL 21...	1230	14	164	6.3	29.0	27	15	8.1	1.6	19
AUG 21...	1755	33	109	6.5	25.0	32	6	11	1.1	7.7

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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 CONSTITUENTS, DIS- SOLVED (MG/L)
NOV 03...	1.7	1.5	15	0	2.0	41	.0	17	98
DEC 16...	.9	1.7	8	0	6.4	18	.1	10	55
JAN 26...	.8	1.1	6	0	6.5	18	.0	9.2	52
MAR 10...	1.0	.8	12	0	6.2	17	.0	12	58
APR 21...	1.5	1.0	14	0	2.6	38	.1	13	89
JUL 21...	1.6	1.2	15	0	2.3	36	.1	13	89
AUG 21...	.6	1.3	32	0	4.0	13	.1	8.9	63

TRINITY RIVER BASIN

619

08066400 BIG CREEK NEAR SHEPHERD, TX

LOCATION.--Lat 30°30'59", long 94°59'06", San Jacinto County, Hydrologic Unit 12030202, on left bank at downstream side of downstream bridge on U.S. Highway 59, 1.5 mi (2.4 km) northeast of Shepherd, and 11.6 mi (18.7 km) upstream from mouth.

DRAINAGE AREA.--38.8 mi² (100.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 94.90 ft (28.926 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known regulation.

AVERAGE DISCHARGE.--12 years, 25.2 ft³/s (0.714 m³/s), 8.82 in/yr (224 mm/yr), 18,260 acre-ft/yr (22.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s (623 m³/s) June 13, 1973, gage height, 25.69 ft (7.830 m); minimum daily, 1.0 ft³/s (0.028 m³/s) Aug. 7, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1949, that of June 13, 1973. Flood in 1957 reached 20.3 ft (6.19 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 400 ft³/s (11.3 m³/s) Feb. 8, gage height, 11.40 ft (3.475 m); no other peak above base of 350 ft³/s (9.91 m³/s); minimum daily, 3.1 ft³/s (0.088 m³/s) July 21-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978														
DAY	MEAN VALUES													
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	5.9	9.1	19	12	101	23	13	8.1	10	4.0	4.0	26		
2	7.6	13	15	12	52	22	14	8.2	15	4.0	4.2	16		
3	7.1	12	14	12	36	23	13	11	11	4.0	3.9	8.3		
4	6.7	9.3	13	11	31	22	13	13	14	3.8	3.7	6.5		
5	6.2	9.5	12	11	28	20	13	9.9	10	3.6	3.5	5.8		
6	6.1	9.5	11	12	27	21	12	9.0	14	3.4	3.7	5.3		
7	6.1	9.5	11	13	48	22	12	9.2	121	3.4	3.8	5.4		
8	6.1	16	11	14	302	21	12	9.2	40	3.4	3.6	5.8		
9	6.1	32	10	12	103	20	12	8.6	19	3.4	3.4	6.0		
10	5.9	13	10	11	78	19	12	7.4	13	3.4	3.3	11		
11	9.5	11	10	15	56	19	14	6.9	11	3.4	3.3	20		
12	8.0	9.9	10	49	56	18	14	7.2	9.4	3.4	3.3	14		
13	6.5	9.5	83	23	83	18	13	7.0	8.5	3.4	6.9	11		
14	6.1	9.0	93	17	48	19	12	6.4	15	3.4	9.1	34		
15	5.9	9.3	28	15	41	17	11	6.2	9.7	3.4	5.0	21		
16	5.7	9.5	21	76	41	16	11	6.1	7.4	3.4	4.5	13		
17	5.7	9.3	18	96	47	16	11	6.1	6.7	3.4	4.4	9.8		
18	5.7	9.1	16	65	70	15	11	6.3	6.2	3.4	4.3	8.4		
19	5.7	8.9	14	149	43	15	10	5.9	5.9	3.4	4.2	7.5		
20	5.6	9.3	13	53	36	15	9.7	5.8	5.5	3.3	4.2	7.0		
21	11	34	12	38	32	16	9.8	5.9	5.1	3.1	4.2	7.0		
22	8.4	19	12	39	29	15	9.7	5.8	5.0	3.1	6.2	7.2		
23	8.2	13	12	43	28	15	9.5	5.3	4.9	3.1	5.5	6.5		
24	53	12	12	96	27	18	9.3	5.2	4.7	3.5	4.7	6.3		
25	18	11	11	70	26	19	8.6	5.0	4.5	4.6	4.6	6.0		
26	12	11	11	48	25	16	8.2	4.9	4.3	11	4.5	5.8		
27	11	10	10	34	24	15	8.1	4.7	4.1	5.1	4.3	5.6		
28	10	13	11	31	24	15	8.0	4.7	4.0	4.5	4.2	5.5		
29	9.5	19	15	28	---	14	8.0	5.3	3.8	4.8	5.1	5.5		
30	9.1	31	15	27	---	14	8.1	20	3.9	4.2	5.7	6.0		
31	8.8	---	13	31	---	14	---	11	---	3.9	5.2	---		
TOTAL	287.2	400.7	566	1163	1542	552	330.0	235.3	396.6	121.2	140.5	303.2		
MEAN	9.26	13.4	18.3	37.5	55.1	17.8	11.0	7.59	13.2	3.91	4.53	10.1		
MAX	53	34	93	149	302	23	14	20	121	11	9.1	34		
MIN	5.6	8.9	10	11	24	14	8.0	4.7	3.8	3.1	3.3	5.3		
CFSM	.24	.35	.47	.97	1.42	.46	.28	.20	.34	.10	.12	.26		
IN.	.28	.38	.54	1.12	1.48	.53	.32	.23	.38	.12	.13	.29		
AC-FT	570	795	1120	2310	3060	1090	655	467	787	240	279	601		
CAL YR 1977	TOTAL	6530.6	MEAN	17.9	MAX	265	MIN	4.4	CFSM	.46	IN	6.26	AC-FT	12950
WTR YR 1978	TOTAL	6037.7	MEAN	16.5	MAX	302	MIN	3.1	CFSM	.43	IN	5.79	AC-FT	11980

TRINITY RIVER BASIN

08066400 BIG CREEK NEAR SHEPHERD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1963 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
NOV 04...	1345	9.8	75	6.2	15.5	15	4	3.6	1.5	6.9
DEC 12...	1310	10	77	6.2	11.5	15	5	3.8	1.4	7.4
JAN 26...	1620	45	78	5.9	8.0	17	9	4.0	1.6	6.4
MAR 10...	1115	19	82	6.6	10.0	16	7	4.1	1.5	7.9
APR 18...	1210	11	82	6.7	20.5	16	4	3.9	1.5	7.4
MAY 31...	0815	12	77	6.2	22.0	13	5	3.4	1.0	6.6
JUN 06...	1130	11	76	6.4	23.5	15	5	3.8	1.4	6.8
JUL 21...	1145	4.0	80	6.5	30.0	18	6	5.0	1.4	7.5
AUG 22...	0830	4.2	81	6.3	24.0	20	7	5.5	1.5	7.1

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS C03)	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 04...	.8	1.2	14	0	3.0	13	.0	19	55
DEC 12...	.8	1.0	12	0	4.1	15	.0	20	59
JAN 26...	.7	1.1	9	0	5.0	14	.0	12	49
MAR 10...	.8	.8	12	0	4.3	14	.0	15	54
APR 18...	.8	1.0	14	0	3.2	12	.1	16	52
MAY 31...	.8	1.7	9	0	4.9	11	.1	9.4	43
JUN 06...	.8	1.2	12	0	5.0	12	.1	12	48
JUL 21...	.8	1.2	15	0	3.2	13	.1	16	55
AUG 22...	.7	1.2	16	0	3.6	13	.1	16	56

TRINITY RIVER BASIN

621

08066500 TRINITY RIVER AT ROMAYOR, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°25'30", long 94°51'02", Liberty County, Hydrologic Unit 12030202, near right bank on downstream side of pier of bridge on State Highway 105, 1.9 mi (3.1 km) south of Romayor, 1.9 mi (3.1 km) downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.7 mi (6.0 km) downstream from Big Creek, and at mile 94.3 (151.7 km).

DRAINAGE AREA.--17,186 mi² (44,512 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 1392: 1932, 1935. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 35.92 ft (10.948 m) National Geodetic Vertical Datum of 1929. Prior to September 1943, nonrecording gage at datum 53.57 ft (16.328 m) higher at railroad bridge 1.9 mi (3.1 km) upstream. Sept. 15, 1975, to June 16, 1977, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records poor. Since Sept. 28, 1968, flow is regulated by Livingston Reservoir (station 08066190), capacity 1,788,000 acre-ft (2.20 km³), 35 mi (56 km) upstream. No large diversions between Livingston Reservoir and gaging station.

AVERAGE DISCHARGE.--44 years (water years 1925-68) unregulated, 7,155 ft³/s (202.6 m³/s), 5,184,000 acre-ft/yr (6.39 km³/yr); 10 years (water years 1969-78) flow regulated by Livingston Reservoir, 7,284 ft³/s (206.3 m³/s), 5,277,000 acre-ft/yr (6.51 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 111,000 ft³/s (3,140 m³/s) May 9, 1942, gage height, 35.8 ft (10.91 m), from floodmarks, present site and datum; minimum, 102 ft³/s (2.89 m³/s) Aug. 24, 25, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1908, that of May 9, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,500 ft³/s (524 m³/s) Jan. 20, gage height, 15.42 ft (4.700 m); minimum daily, 476 ft³/s (13.5 m³/s) Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	750	618	1110	724	3380	2750	3180	1870	2640	2610	1720	1930
2	667	642	1000	717	7010	2750	2830	1850	2650	2590	1730	2020
3	661	618	878	717	6700	2750	2390	1890	2610	2560	1710	1960
4	673	606	823	711	5320	2290	2060	1890	2610	2550	1530	1880
5	667	612	789	717	4140	2060	1990	1880	2600	2540	1470	1820
6	673	612	756	724	3270	2060	2030	1880	2690	2530	1480	1810
7	667	606	724	730	2880	1820	2030	1870	3320	2530	1470	1790
8	679	630	724	789	6240	1610	2030	1860	3180	2510	1470	1800
9	642	711	737	809	10200	1760	2020	1840	2980	2510	1470	1790
10	636	661	730	750	10200	3600	2030	1820	2840	2500	1470	1810
11	756	630	724	743	9630	7250	2040	1820	2750	2500	1470	1900
12	796	618	705	1500	8280	10900	2030	1820	2700	2490	1470	1930
13	796	612	906	2530	8220	11400	2030	1810	2710	2480	1470	1960
14	803	606	2570	2210	8220	13000	2010	1800	2740	2480	1480	2200
15	823	600	1950	1660	9010	15000	2010	1790	2700	2490	1380	2180
16	809	594	1350	1380	9040	15100	2010	1790	2660	2530	1300	1270
17	803	587	1150	8630	8800	13300	2000	1780	2640	2500	1290	922
18	803	587	935	12200	10300	8900	2000	1790	2650	1900	1170	817
19	796	581	776	16100	11200	6270	1980	1780	2640	1730	1510	775
20	789	568	667	17700	10600	4850	1970	1760	2630	1710	1790	749
21	796	587	648	12100	8440	3880	1940	1750	2640	1690	1830	748
22	803	756	661	8460	5280	3000	1900	1750	2630	1680	1890	712
23	803	823	843	6960	3490	2190	1900	1750	2630	1700	1830	577
24	864	789	724	6480	3010	2050	1890	1740	2600	1720	1820	476
25	756	756	705	6670	2900	2000	1880	1780	2600	1720	1810	487
26	581	724	686	5500	2850	1970	1850	2410	2610	1720	1810	547
27	600	692	692	3460	2790	1950	1860	2580	2600	1740	1800	575
28	624	763	692	2660	2790	1920	1860	2580	2610	1800	1810	575
29	618	1030	717	2380	---	1950	1870	2580	2590	1800	1890	578
30	612	1110	730	2200	---	2980	1870	2650	2590	1740	1860	576
31	606	---	724	2120	---	3550	---	2610	---	1720	1850	---
TOTAL	22352	20329	27826	131031	184190	156860	61490	60770	81040	67270	50050	39164
MEAN	721	678	898	4227	6578	5060	2050	1960	2701	2170	1615	1305
MAX	864	1110	2570	17700	11200	15100	3180	2650	3320	2610	1890	2200
MIN	581	568	648	711	2790	1610	1850	1740	2590	1680	1170	476
AC-FT	44340	40320	55190	259900	365300	311100	122000	120500	160700	133400	99270	77680
CAL YR 1977	TOTAL	2450124	MEAN	6713	MAX	52200	MIN	568	AC-FT	4860000		
WTR YR 1978	TOTAL	902372	MEAN	2472	MAX	17700	MIN	476	AC-FT	1790000		

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1945 to November 1949, February 1950 to September 1951, April 1953 to current year.
Chemical, biochemical, and pesticide analyses: February 1968 to current year. Sediment records: October 1974 to September 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1945 to November 1949, February 1950 to current year.

WATER TEMPERATURES: February 1950 to September 1951, October 1953 to current year.

SUSPENDED SEDIMENT DISCHARGE: April 1968 to September 1971.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1945-50, 1953-78): Maximum daily, 3,800 micromhos Oct. 30, 1956; minimum daily, 103 micromhos Nov. 9, 1946.

WATER TEMPERATURES (1953-58, 1961-74, 1976-78): Maximum daily, 37.0°C July 18, 27, 1953; minimum daily, 3.0°C Jan. 18, 1956, Jan. 15, 1968.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 475 micromhos Sept. 30; minimum daily, 176 micromhos Dec. 15.

WATER TEMPERATURES: Minimum daily, 4.0°C on several days during January and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 19...	1145	680	398	8.1	23.0	20	20	9.2	110	2.7	4000	14
NOV 28...	1130	650	393	7.9	18.5	20	20	9.0	99	1.7	3600	58
DEC 27...	1415	650	400	8.1	11.5	20	20	10.4	98	2.0	3500	80
JAN 24...	1230	6300	374	8.1	7.5	40	20	11.8	105	1.1	2100	160
FEB 06...	1355	3700	388	8.1	7.0	30	10	12.0	102	1.5	440	8
MAR 22...	1450	3100	411	8.7	15.5	20	20	13.6	140	4.4	880	4
APR 12...	1130	2150	422	7.8	15.5	10	30	9.3	96	4.2	680	32
MAY 15...	1200	2020	420	8.7	23.5	20	10	11.2	135	3.9	7000	8
JUN 12...	1605	2700	440	8.2	29.0	30	20	10.4	137	1.8	3400	10
JUL 26...	1305	1880	420	8.5	29.0	30	20	8.4	111	2.8	26000	46
AUG 01...	1150	1650	460	7.7	29.0	40	20	8.0	105	4.6	2100	8
SEP 12...	1425	1850	440	8.0	27.0	20	20	7.8	99	2.3	--	72

DATE	STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT 19...	46	130	13	44	4.3	25	1.0	4.3	140	0	30
NOV 28...	230	130	23	43	4.4	28	1.1	4.3	130	0	31
DEC 27...	130	130	26	46	4.3	27	1.0	4.3	130	0	34
JAN 24...	820	120	20	40	4.4	26	1.0	4.2	120	0	33
FEB 06...	12	120	21	41	4.2	28	1.1	4.1	120	0	35
MAR 22...	2	120	14	41	4.4	32	1.3	4.5	130	0	43
APR 12...	44	110	7	35	4.4	33	1.4	4.9	120	0	39
MAY 15...	18	120	16	41	4.5	34	1.3	5.2	120	3	44
JUN 12...	26	120	26	42	4.6	35	1.4	5.0	120	0	43
JUL 26...	76	120	12	41	4.7	35	1.4	5.3	120	7	41
AUG 01...	10	130	17	45	4.7	35	1.3	5.1	140	0	42
SEP 12...	110	120	13	41	4.2	37	1.5	4.6	130	0	38

TRINITY RIVER BASIN

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08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUORO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDE (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)
OCT 19...	28	.3	5.4	210	210	21	0	.01	.01	.02	.03
NOV 28...	34	.4	8.7	210	218	41	10	.20	.02	.22	.09
DEC 27...	33	.3	11	228	224	23	2	.14	.01	.15	.09
JAN 24...	30	.2	7.6	211	205	54	23	.07	.01	.08	.00
FEB 06...	30	.3	7.5	213	209	30	9	.14	.01	.15	.04
MAR 22...	37	.3	5.6	233	232	34	16	.18	.01	.19	.01
APR 12...	35	.3	5.8	246	217	30	16	.21	.01	.22	.10
MAY 15...	35	.2	1.9	232	229	32	12	.00	.01	.01	.03
JUN 12...	37	.4	5.2	242	232	29	15	.00	.01	.00	.01
JUL 26...	37	.4	6.5	242	237	37	18	.16	.05	.21	.16
AUG 01...	41	.4	7.6	248	250	34	20	.13	.05	.18	.02
SEP 12...	41	.4	6.8	252	237	42	28	.16	.06	.22	.00
DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN+AM- MONIA + ORGANIC DIS. (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)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 19...	.72	.75	.57	.26	.07	6.6	--	--	15	28	93
NOV 28...	.53	.62	.54	.12	.08	5.3	--	--	44	77	71
DEC 27...	.52	.61	.42	.07	.07	--	5.4	1.1	31	54	30
JAN 24...	.51	.51	.50	.11	.13	9.2	--	--	12	204	93
FEB 06...	.64	.68	.32	.09	.06	8.1	--	--	23	230	56
MAR 22...	.73	.74	.55	.23	.13	--	--	1.6	12	100	74
APR 12...	.81	.91	.89	.18	.12	8.4	--	--	14	81	89
MAY 15...	1.1	1.1	.36	.15	.08	7.7	--	--	13	71	64
JUN 12...	1.1	1.1	.61	.20	.14	--	5.8	2.0	19	139	88
JUL 26...	.81	.97	.58	.30	.30	6.5	--	--	10	51	83
AUG 01...	.98	1.0	.57	.30	.24	8.0	--	--	12	53	68
SEP 12...	.58	.58	.70	.33	.33	--	6.8	1.2	15	75	90

[illegible]

TRINITY RIVER BASIN
08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

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WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 28...	1130	.0	0	.00	.00	.0	.0	0	.00	.0
MAR 22...	1450	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
NOV 28...	.00	.0	.00	.0	.00	.00	.0	.00	.00	.0
MAR 22...	.00	.0	.00	.0	.03	.00	.0	.00	.00	.0

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
NOV 28...	.00	.00	.0	.00	.0	.00	.0	.00	.00
MAR 22...	.00	.00	.0	.00	.0	.00	.0	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 28...	.00	.00	.00	0	0	.00	.01	.01	.00
MAR 22...	.00	.00	.00	0	0	.00	.03	.00	.00

TRINITY RIVER BASIN

08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 28,77 1130	MAR 22,78 1450	MAY 15,78 1200	JUN 12,78 1605
TOTAL CELLS/ML	30000	39000	63000	31000
DIVERSITY: DIVISION	1.4	1.4	1.3	0.7
..CLASS	1.4	1.4	1.3	0.7
...ORDER	1.7	1.4	1.8	1.8
...FAMILY	2.2	1.9	2.7	2.3
....GENUS	3.2	3.0	3.4	2.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHARACIACEAE								
...SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
...COELASTRUM	1400	5	--	-	8700	14	--	-
...HYDRODICTYACEAE								
...PEDIASTRUM	*	0	--	-	--	-	--	-
...MICRACTINIACEAE								
...BOLENKINIA	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
...ANKISTRODESMUS	1300	4	1700	4	950	2	340	1
...CHODATELLA	--	-	1000	3	--	-	--	-
...DICTYOSPHAERIUM	1800	6	1400	3	--	-	--	-
...KIRCHNERIELLA	300	1	1900	5	7800	12	--	-
...NEPHROCYTIUM	--	-	--	-	1500	2	--	-
...OOCYSTIS	220	1	1000	3	760	1	--	-
...SELENASTRUM	--	-	*	0	*	0	--	-
...TETRAEDRON	220	1	340	1	760	1	--	-
...TREUBARIA	*	0	--	-	--	-	--	-
...SCENEDESMACEAE								
...ACTINASTRUM	--	-	--	-	--	-	590	2
...CRUCIGENIA	1500	5	--	-	6100	10	--	-
...SCENEDESMUS	1600	5	1000	3	6800	11	590	2
...TETRASTRUM	590	2	8000#	20	2500	4	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
...ELAKATOTHRIX	--	-	--	-	--	-	--	-
...PALMELLACEAE								
...SPHAEROCYSTIS	890	3	--	-	3600	6	2400	8
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	--	-	--	-	1900	3	--	-
..ZYGNEMATALES								
...DESMIDIACEAE								
...CLOSTERIUM	--	-	--	-	--	-	--	-
...COSMARIUM	*	0	--	-	--	-	240	1
...DESMIDIUM	--	-	--	-	--	-	1800	6
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISACEAE								
...CYCLOTETRA	450	1	--	-	4200	7	--	-
...MELOSIRA	1200	4	680	2	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
...COCCONEIS	220	1	--	-	--	-	--	-
...FRAGILARIACEAE								
...FRAGILARIA	--	-	--	-	--	-	*	0
...SYNEDRA	450	1	2500	7	--	-	--	-
...NAVICULACEAE								
...CALONEIS	--	-	*	0	--	-	--	-
...NAVICULA	670	2	--	-	--	-	--	-
...NITZSCHIA	220	1	*	0	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDAE								
...CRYPTOMONODACEAE								
...CRYPTOMONAS	--	-	--	-	380	1	--	-

NOTE: # - DOMINANT ORGANISM: EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

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08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	NOV 28,77 1130		MAR 22,78 1450		MAY 15,78 1200		JUN 12,78 1605	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCCOCCALES								
...CHROCCOCCAEAE								
....AGMENELLUM	7700#	26	--	-	--	-	10000#	32
....ANACYSTIS	9100#	30	10000#	26	15000#	24	780	2
....COCCOCHLORIS	--	-	8700#	22	--	-	--	-
...HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	7600#	24
....ANABAENOPSIS	--	-	--	-	--	-	--	-
....CYLINDROSPERMUM	--	-	--	-	--	-	--	-
...OSCILLATORIA								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	--	-	--	-	1300	2	6900#	22
...RIVULARIACEAE								
...RAPIDIOPSIS	--	-	--	-	--	-	--	-
...CHROCCOCCALES								
...CHROCCOCCAEAE								
...GOMPHOSPHAERIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	220	1	*	0	570	1	--	-
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
...PERIDINIAEAE								
....PERIDINIUM	*	0	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	JUL 26,78 1305	AUG 1,78 1150	SEP 12,78 1425
TOTAL CELLS/ML	720000	1100000	240000
DIVERSITY: DIVISION	0.1	0.3	0.4
..CLASS	0.1	0.3	0.4
...ORDER	0.9	1.1	1.3
....FAMILY	1.1	1.5	2.0
....GENUS	1.3	1.7	2.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....CHARACIACEAE						
....SCHROEDERIA	--	-	* 0		* 0	
....COELASTRACEAE						
....COELASTRUM	--	-	14000	1	--	-
....HYDRODICTYACEAE						
....PEDIASTRUM	--	-	--	-	--	-
....MICRACTINIACEAE						
....GOLENKINIA	--	-	* 0		--	-
....OOCYSTACEAE						
....ANKISTRODESUS	--	-	6900	1	3500	1
....CHODATELLA	* 0		--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-
....KIRCHNERIELLA	* 0		12000	1	1700	1
....NEPHROCYTIUM	--	-	--	-	--	-
....OOCYSTIS	* 0		--	-	--	-
....SELENASTRUM	--	-	--	-	* 0	
....TETRAEDRON	--	-	* 0		--	-
....TREUBARIA	* 0		* 0		--	-
....SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	2300	1
....CRUCIGENIA	--	-	--	-	--	-
....SCENEDESMUS	* 0		* 0		2900	1
....TETRASTRUM	--	-	--	-	--	-
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	--	-	* 0	
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	--	-
..ZYGNEATALES						
...DESMIDIACEAE						
....CLOSTERIUM	--	-	* 0		--	-
....COSMARIUM	--	-	* 0		--	-
....DESMIDIUM	--	-	--	-	--	-
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
....COSCINODISCACEAE						
....CYCLOTILLA	* 0		--	-	--	-
....MELOSIRA	--	-	--	-	* 0	
..PENNALES						
...ACHNANTHACEAE						
....COCONEIS	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	* 0		--	-	--	-
....SYNEDRA	--	-	--	-	--	-
...NAVICULACEAE						
....CALONEIS	--	-	--	-	--	-
....NAVICULA	--	-	--	-	--	-
...NITZSCHIA						
....NITZSCHIA	* 0		--	-	2900	1
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
....CRYPTOMONODACEAE						
....CRYPTOMONAS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

TRINITY RIVER BASIN

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08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	JUL 26,78 1305		AUG 1,78 1150		SEP 12,78 1425	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCALES						
...CHROCOCCACEAE						
....AGMENELLUM	520000#	73	770000#	67	40000#	17
....ANACYSTIS	26000	4	21000	2	--	--
....COCCOCHLORIS	--	--	--	--	--	--
...HORMOGONALES						
...NOSTOCAEAE						
....ANABAENA	--	--	--	--	--	--
....ANABAENOPSIS	--	--	32000	3	2300	1
....CYLINDROSPERMUM	--	--	--	--	6600	3
...OSCILLATORIAEAE						
....LYNGBYA	5800	1	--	--	49000#	20
....OSCILLATORIA	25000	3	180000#	16	68000#	28
...RIVULARIAEAE						
....RAPHIDIOPSIS	130000#	18	89000	8	31000	13
...CHROCOCCALES						
...CHROCOCCACEAE						
....GOMPHOSPHAERIA	--	--	--	--	30000	12
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	--	--	--	*	0
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
...PERIDINIACEAE						
....PERIDINIUM	--	--	--	--	--	--

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

MONTHLY AND ANNUAL MEANS AND LOADS FOR WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- MHOS)	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. 1977.....	22352	395	220	13100	33	1990	37	2220	120
NOV. 1977.....	20329	388	210	11600	32	1770	36	1980	120
DEC. 1977.....	27826	342	190	14100	28	2130	32	2350	100
JAN. 1978.....	131031	366	200	71300	30	10700	34	12100	110
FEB. 1978.....	184190	386	210	105000	32	16000	36	17900	120
MAR. 1978.....	156860	425	230	98100	35	15000	40	16800	130
APR. 1978.....	61490	428	230	38700	36	5910	40	6630	130
MAY 1978.....	60770	434	240	39200	36	5920	40	6600	130
JUNE 1978.....	81040	430	240	51700	36	7840	40	8740	130
JULY 1978.....	67270	445	240	44400	37	6730	42	7540	130
AUG. 1978.....	50050	453	250	33600	38	5110	42	5680	130
SEPT 1978.....	39164	444	240	25800	37	3910	41	4360	130
TOTAL	902372	**	**	547000	**	83000	**	92900	**
WTD.AVG.	2472.25	409	220	**	34	**	38	**	120

TRINITY RIVER BASIN

08066500 TRINITY RIVER AT ROMAYOR, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	389	388	325	391	358	407	424	431	436	440	452	450
2	391	396	309	392	322	405	429	427	430	439	446	434
3	391	404	324	390	364	408	428	432	435	441	450	448
4	397	401	354	393	375	411	426	430	434	442	453	449
5	399	403	377	395	368	409	428	431	435	444	452	453
6	386	402	390	394	389	413	428	432	429	446	453	456
7	389	403	396	393	392	417	427	431	392	445	454	457
8	396	395	399	393	349	410	428	428	383	447	453	456
9	395	376	400	379	362	404	425	424	413	446	454	455
10	394	396	401	391	372	426	429	430	420	448	455	456
11	396	372	404	383	379	428	425	435	426	448	454	431
12	388	377	400	341	386	429	426	435	429	448	453	447
13	390	395	390	352	377	424	426	435	431	448	444	445
14	391	402	293	363	368	425	425	437	427	447	450	437
15	394	409	176	370	385	428	424	433	425	446	453	400
16	395	407	226	374	399	438	425	434	431	448	454	405
17	396	409	250	307	408	430	426	434	433	445	455	424
18	397	407	312	374	402	428	426	434	434	448	454	415
19	396	408	354	364	401	426	427	435	434	451	453	444
20	400	410	370	374	415	424	431	436	436	448	452	449
21	404	409	384	388	412	423	428	436	437	448	456	451
22	400	355	389	386	414	423	428	435	438	449	444	450
23	404	356	396	390	408	422	429	434	440	449	456	450
24	399	370	400	380	411	422	432	435	442	445	455	458
25	380	385	402	342	409	422	432	436	443	444	456	463
26	384	390	400	347	410	421	430	435	443	447	458	467
27	395	396	397	331	410	420	431	442	440	447	457	469
28	402	386	400	329	410	422	429	439	439	440	458	468
29	403	394	398	352	---	422	428	437	441	428	443	469
30	410	315	395	366	---	425	429	435	443	444	454	475
31	405	---	395	376	---	426	---	433	---	448	456	---
MEAN	395	391	361	371	388	421	428	434	431	445	453	447

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	22.0	14.0	12.0	6.0	---	---	22.0	---	28.0	26.0	27.0
2	26.0	19.0	14.0	9.0	8.0	12.0	---	22.0	---	28.0	28.0	27.0
3	24.0	18.0	14.0	9.0	8.0	8.0	---	18.0	---	28.0	28.0	---
4	24.0	15.0	17.0	9.0	8.0	6.0	---	18.0	---	27.0	28.0	28.0
5	24.0	18.0	18.0	10.0	8.0	6.0	---	20.0	---	27.0	28.0	---
6	24.0	---	12.0	12.0	6.0	---	---	24.0	---	28.0	29.0	28.0
7	24.0	18.0	12.0	---	6.0	12.0	---	24.0	---	28.0	27.0	28.0
8	25.0	---	14.0	10.0	4.0	12.0	---	---	---	27.0	28.0	25.0
9	---	15.0	12.0	9.0	4.0	6.0	---	24.0	---	27.0	28.0	26.0
10	24.0	15.0	10.0	9.0	4.0	12.0	19.0	24.0	---	27.0	28.0	26.0
11	23.0	15.0	10.0	9.0	4.0	12.0	16.0	24.0	---	27.0	28.0	26.0
12	---	15.0	10.0	9.0	8.0	15.0	16.0	---	---	28.0	28.0	26.0
13	23.0	14.0	10.0	8.0	6.0	15.0	16.0	24.0	---	27.0	29.0	26.0
14	---	15.0	12.0	8.0	8.0	12.0	18.0	24.0	---	---	29.0	26.0
15	---	17.0	12.0	---	---	11.0	18.0	24.0	---	27.0	29.0	26.0
16	---	17.0	12.0	12.0	6.0	10.0	18.0	24.0	---	27.0	29.0	26.0
17	26.0	20.0	---	8.0	6.0	11.0	---	24.0	---	28.0	29.0	27.0
18	---	---	10.0	8.0	5.0	15.0	22.0	24.0	---	27.0	29.0	27.0
19	22.0	17.0	12.0	5.0	4.0	12.0	22.0	24.0	---	30.0	30.0	28.0
20	22.0	20.0	10.0	4.0	4.0	15.0	18.0	---	---	29.0	29.0	28.0
21	22.0	19.0	10.0	4.0	4.0	---	18.0	24.0	---	28.0	28.0	27.0
22	22.0	18.0	10.0	4.0	4.0	---	19.0	22.0	---	28.0	28.0	---
23	20.0	17.0	12.0	---	6.0	---	20.0	22.0	---	29.0	29.0	26.0
24	23.0	---	12.0	6.0	9.0	---	20.0	22.0	---	23.0	28.0	26.0
25	22.0	17.0	---	4.0	12.0	---	22.0	22.0	29.0	27.0	29.0	24.0
26	24.0	19.0	10.0	4.0	10.0	---	18.0	22.0	28.0	27.0	29.0	25.0
27	---	19.0	10.0	6.0	8.0	---	18.0	22.0	27.0	28.0	28.0	25.0
28	22.0	18.0	10.0	5.0	8.0	---	18.0	20.0	27.0	26.0	28.0	26.0
29	21.0	18.0	---	4.0	---	---	22.0	20.0	27.0	27.0	27.0	26.0
30	21.0	12.0	10.0	6.0	---	---	22.0	---	28.0	27.0	27.0	26.0
31	24.0	---	---	6.0	---	---	---	---	---	26.0	27.0	---
MEAN	23.5	17.0	12.0	7.5	6.5	11.0	19.0	22.5	27.5	27.5	28.0	26.5

TRINITY RIVER BASIN

631

08067000 TRINITY RIVER AT LIBERTY, TX

LOCATION.--Lat 30°03'27", long 94°49'05", Liberty County, Hydrologic Unit 12030203, near center of channel at upstream side of upstream bridge on U.S. Highway 90 in Liberty, 345 ft (105 m) downstream from Texas and New Orleans Railroad Co. bridge, and at mile 40.3 (64.8 km).

DRAINAGE AREA.--17,468 mi² (45,242 km²).

PERIOD OF RECORD.--October 1938 to September 1940 (gage heights, discharge measurements, and some records of daily discharge), October 1940 to current year (high-water records only). Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.22 ft (0.677 m) below National Geodetic Vertical Datum of 1929; unadjusted for land-surface subsidence. Prior to Mar. 13, 1973, nonrecording gage at site 105 ft (32 m) downstream at same datum.

REMARKS.--Records poor. Discharge below 10,000 ft³/s (283 m³/s) not published. Published discharges are estimated using records for Trinity River near Romayor (station 08066500), intervening area computation, and discharge measurements. Flow is regulated by Livingston Reservoir (station 08066190) 88.9 mi (143.0 km) upstream. Many diversions above station for municipal supplies, industrial uses, and irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 114,000 ft³/s (3,230 m³/s) May 12, 1942, gage height, 29.38 ft (8.955 m); minimum not determined (affected by tides); minimum gage height observed, 2.32 ft (0.707 m) Nov. 24, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903, that of May 12, 1942. Flood of May 8-11, 1922, reached a stage of 28.6 ft (8.72 m), present datum, from observation by the National Weather Service at nonrecording gage on railroad bridge upstream.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 17,500 ft³/s (496 m³/s) Jan. 21; maximum gage height, 20.60 ft (6.279 m) Jan. 21; minimum discharge not determined (affected by tides); minimum gage height, 2.92 ft (0.890 m) Jan. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Jan. 19	13,000	Feb. 20	11,300
20	16,500	21	10,800
21	17,000	Mar. 13	11,000
22	13,000	14	11,500
23	10,000	15	13,100
Feb. 10	10,800	16	15,100
11	10,800	17	15,500
12	10,200	18	13,900
19	10,700		
CAL YR 1977.....	MAX 52,000		
WTR YR 1978.....	MAX 17,500		

TRINITY RIVER BASIN

08067080 DEVERS CANAL NEAR LIBERTY, TX

LOCATION.--Lat 29°57'58", long 94°43'17", Liberty County, Hydrologic Unit 12030203, in flume over Farm Road 563, 250 ft (76 m) downstream from pump plant No. 2, and 8 mi (13 km) southeast of Liberty.

PERIOD OF RECORD.--March to December 1971 (elevation and discharge measurements only), January 1972 to current year (monthly discharge only).

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

REMARKS.--Records fair. Discharge is computed from pump record and verified by elevation record and discharge measurements. Flow is diverted from Trinity River at pump plant No. 1 through a canal 4.7 mi (7.6 km) to pump plant No. 2, located 250 ft (76 m) upstream from station. Water is furnished by the Trinity River Authority for irrigation.

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

MONTH	PUMPAGE IN ACRE-FEET
OCTOBER.....	879
NOVEMBER.....	2,890
DECEMBER.....	0
CAL YR 1977.....	96,749
JANUARY.....	0
FEBRUARY.....	0
MARCH.....	9,260
APRIL.....	22,720
MAY.....	25,700
JUNE.....	20,780
JULY.....	16,450
AUGUST.....	10,320
SEPTEMBER.....	3,800
WTR YR 1978.....	112,799

08067500 CEDAR BAYOU NEAR CROSBY, TX

LOCATION.--Lat 29°58'21", long 94°59'08", Liberty County, Hydrologic Unit 12040203, on left bank at downstream side of bridge on U.S. Highway 90 and 6.6 mi (10.6 km) northeast of Crosby.

DRAINAGE AREA.--64.9 mi² (168.1 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to August 1946, March 1963 to February 1964, May to August 1971 (discharge measurements only), October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 31.31 ft (9.543 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Low flow is sustained by industrial effluent and drainage from irrigated lands. Recording rain gage at station.

AVERAGE DISCHARGE.--7 years (water years 1972-78), 74.5 ft³/s (2.110 m³/s), 53,980 acre-ft/yr (66.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,870 ft³/s (81.3 m³/s) June 13, 1973, gage height, 24.91 ft (7.593 m); minimum daily, 0.01 ft³/s (0.0003 m³/s) May 20, July 30, 1974, Apr. 11, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 13	2200	1,020 28.9	18.00 5.486	June 7	1400	*1,220 34.6	18.88 5.755

Minimum discharge, 0.07 ft³/s (0.002 m³/s) Apr. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.7	189	9.9	141	6.9	12	6.2	1.4	4.4	32	19
2	1.6	5.9	76	12	115	6.2	8.8	13	.70	3.1	34	10
3	1.2	3.9	46	13	63	5.9	6.3	24	3.9	2.7	28	9.6
4	1.1	2.3	30	10	58	6.1	7.2	14	2.5	2.6	36	7.2
5	8.2	1.8	22	8.6	34	4.9	3.2	9.4	.35	.60	45	1.0
6	6.6	1.6	20	8.0	22	4.2	.12	4.2	10	.37	31	3.1
7	4.3	1.6	15	9.7	60	15	4.9	5.0	864	.25	19	6.2
8	3.3	2.8	13	18	686	25	6.6	4.2	869	.76	12	9.0
9	2.6	5.5	13	11	396	12	7.3	2.1	400	1.5	18	9.6
10	1.8	4.0	12	7.7	210	4.0	3.9	.86	100	1.9	17	12
11	1.6	2.8	10	16	89	5.5	5.1	3.4	18	1.3	15	237
12	1.5	2.2	9.0	241	175	6.3	10	3.0	5.1	1.2	17	212
13	1.2	1.9	431	111	726	5.8	4.4	2.4	3.4	1.7	18	250
14	.95	1.8	641	46	274	5.7	1.6	.45	1.2	9.0	13	294
15	1.1	1.8	230	27	89	5.6	.10	2.4	.76	17	5.1	153
16	1.4	1.8	100	278	61	5.5	.07	3.5	.84	7.6	3.4	167
17	1.2	1.8	80	762	122	4.3	1.1	.16	1.9	13	4.9	70
18	.95	1.8	34	385	328	4.0	4.1	.08	3.2	19	9.3	36
19	.82	1.8	22	815	105	3.5	6.0	.71	.59	29	7.1	25
20	.82	1.8	18	418	45	3.4	1.9	.53	1.1	78	6.4	20
21	1.1	395	14	157	26	3.3	4.9	4.0	2.3	49	5.6	16
22	1.1	649	8.7	155	17	3.3	6.0	.21	3.4	37	5.4	13
23	.95	360	7.2	158	12	3.1	3.6	.37	3.6	52	6.6	11
24	.95	191	6.7	511	9.2	12	7.3	.28	4.7	154	9.1	9.3
25	.95	79	6.4	464	7.7	6.5	2.0	.99	6.3	93	13	7.8
26	.95	39	5.7	247	6.9	3.0	1.0	.38	4.6	44	12	6.3
27	.95	23	5.2	96	6.4	2.6	5.7	.35	1.8	34	8.7	5.5
28	.95	16	5.7	50	6.8	3.1	4.8	1.4	11	92	8.2	5.2
29	.95	125	11	31	---	3.7	.66	1.0	4.0	81	14	5.2
30	.95	370	14	25	---	3.8	6.2	7.1	2.5	41	16	4.6
31	.95	---	12	34	---	2.4	---	4.2	---	23	17	---
TOTAL	54.99	2298.6	2107.6	5134.9	3891.0	186.6	136.85	119.87	2332.14	894.98	486.8	1634.6
MEAN	1.77	76.6	68.0	166	139	6.02	4.56	3.87	77.7	28.9	15.7	54.5
MAX	8.2	649	641	815	726	25	12	24	869	154	45	294
MIN	.82	1.6	5.2	7.7	6.4	2.4	.07	.08	.35	.25	3.4	1.0
AC-FT	109	4560	4180	10190	7720	370	271	238	4630	1780	966	3240
(††)	.38	8.30	2.49	5.52	2.31	.99	.20	1.47	5.32	4.43	1.18	6.62
CAL YR 1977 TOTAL	14472.72											
WTR YR 1978 TOTAL	19278.93											
MEAN 39.7												
MAX 939												
MIN .07												
AC-FT 28710												
†† 41.99												
AC-FT 38240												
†† 39.21												

†† Rainfall, in inches.

CEDAR BAYOU BASIN

08067500 CEDAR BAYOU NEAR CROSBY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: May 1971 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG. C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
DEC 07...	0925	16	602	7.0	11.0	180	80	9.5	89	--
FEB 28...	0945	6.0	873	7.7	16.0	20	30	8.5	89	3.2
APR 26...	1115	.85	961	7.6	21.5	30	40	6.7	78	4.0
JUL 12...	1230	2.1	504	7.1	30.5	50	20	6.6	88	7.1
AUG 09...	1235	14	462	7.1	29.5	60	30	6.6	87	2.9
22...	1130	5.0	566	7.2	28.0	50	20	6.0	77	2.4
31...	1645	14	503	7.1	23.0	70	20	4.3	51	3.4
SEP 27...	1515	5.5	551	6.8	24.5	60	20	8.4	102	4.2
DATE	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	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)
DEC 07...	35000	370	450	--	--	--	--	--	--	--
FEB 28...	2100	56	82	240	58	83	7.5	78	2.2	2.1
APR 26...	31000	180	62	220	68	74	7.6	97	2.9	3.4
JUL 12...	3600	40	52	110	0	38	4.7	55	2.2	1.8
AUG 09...	4400	60	50	120	7	41	4.7	43	1.7	1.8
22...	7700	34	40	--	--	--	--	--	--	--
31...	3100	550	820	130	19	42	5.1	41	1.6	8.6
SEP 27...	3900	26	84	130	16	44	5.1	52	2.0	4.2
DATE	BICAR- BONATE (MG/L AS HC03)	CAR- BONATE (MG/L AS CO3)	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 CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLATILE, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
DEC 07...	--	--	--	--	--	--	--	108	15	.14
FEB 28...	220	0	20	140	.3	6.6	446	43	8	.40
APR 26...	180	0	31	190	.3	9.2	501	46	14	.75
JUL 12...	160	0	9.0	64	.4	7.6	260	31	21	.01
AUG 09...	140	0	7.4	64	.3	13	244	27	9	.09
22...	--	--	--	--	--	--	--	23	4	.04
31...	130	0	12	79	.2	19	271	29	5	.06
SEP 27...	140	0	17	86	.3	15	293	17	5	.17

CEDAR BAYOU BASIN

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08067500 CEDAR BAYOU NEAR CROSBY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)
DEC 07...	.02	.16	.16	1.0	1.2	.19	15	--	.10
FEB 28...	.02	.42	.04	.81	.85	.24	9.7	1	.20
APR 26...	.07	.82	.05	.81	.86	.17	8.5	--	.20
JUL 12...	.00	.01	.01	.83	.84	.19	6.9	1	.20
AUG 09...	.01	.10	.07	.63	.70	.10	8.2	1	.10
22...	.02	.06	.03	.81	.84	.25	7.6	--	.00
31...	.02	.08	.30	.80	1.1	.31	13	3	.10
SEP 27...	.01	.18	.06	.94	1.0	.26	11	--	.10

DATE	TIME	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
FEB 28...	0945	1	300	1	0	2	20
JUL 12...	1230	3	400	0	10	3	50
AUG 09...	1235	3	200	0	0	0	50
31...	1645	3	100	1	0	1	40

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
FEB 28...	0	0	.0	0	0	10
JUL 12...	0	0	.0	0	0	10
AUG 09...	0	0	.0	0	0	0
31...	0	0	.0	0	0	10

CEDAR BAYOU BASIN

08067500 CEDAR BAYOU NEAR CROSBY, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
FEB 28...	0945	.0	0	.00	.00	.3	.0	0	.00	.0
JUL 12...	1230	.0	--	.00	.00	--	.0	--	.00	--
AUG 09...	1235	.0	--	.00	.00	--	.0	--	.00	--
31...	1645	.0	--	.00	.00	--	.0	--	.00	--

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL (UG/L)	ENDRI- N, TOTAL (UG/L)	ENDRI- N, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
FEB 28...	.00	.5	.00	1.0	.01	.00	.5	.00	.00	.0
JUL 12...	.00	--	.00	--	.01	.01	--	.00	.00	--
AUG 09...	.00	--	.00	--	.00	.00	--	--	.00	--
31...	.00	--	.00	--	.00	.00	--	.00	.00	--

DATE	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)
FEB 28...	.00	.00	.0	.00	.0	.00	.0	.00	.00
JUL 12...	.00	.00	--	.00	--	.00	--	.00	.00
AUG 09...	.00	.00	--	.00	--	.00	--	.00	.00
31...	.00	.00	--	.00	--	.00	--	.00	.00

DATE	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 28...	.00	--	.00	0	0	.00	.01	.00	.00
JUL 12...	.00	.00	.00	0	--	.00	.00	.00	.00
AUG 09...	.00	.00	.00	0	--	.00	.00	.00	.00
31...	.00	.00	.00	0	--	.00	.00	.00	.00

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 stations during water year 1978

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
Arkansas River basin						
07227700	Chicken Creek near Amarillo, TX	Lat 35°28'29", long 101°45'35", Potter County, about 1.5 mi northeast of LX Ranch headquarters and about 18 mi northeast of Amarillo.	(c)	1953-78	1- 5-78	1.2
Red River basin						
07299750	Wanderers Creek at Odell, TX	Lat 34°20'50", long 99°25'15", Wilbarger County, at county road bridge and 0.25 mi northwest of Odell Post Office.	199	1949-50, 1952-78	2-22-78 7-26-78	4.3 .40
07299890	Lelia Lake Creek below Bell Creek near Hedley, TX	Lat 34°56'08", long 100°41'46", Donley County, 150 ft downstream from county road crossing, 1.0 mi downstream from mouth of Bell Creek, and about 5 mi north of Hedley.	74	1964-78	1- 3-78 9- 6-78	4.1 1.4
07303300	Elm Creek near Shamrock, TX	Lat 35°07'21", long 100°17'07", Collingsworth County, at county road bridge, 1,500 ft downstream from Fort Worth and Denver (Burlington) Railway Company bridge, and about 6 mi southwest of Shamrock.	(c)	1947-78	1- 4-78 9- 6-78	2.0 1.4
07307500	Quitauque Creek near Quitauque, TX	Lat 34°14'24", long 101°07'03", Floyd County, at W. F. Saul's ranchhouse, 0.7 mi upstream from Turkey Creek, 1.8 mi downstream from Wilson Creek, and 9.7 mi southwest of Quitauque.	d293	1945-59*, 1960-78	1-27-78 7-18-78	2.0 0
07307700	Roaring Springs near Roaring Springs, TX	Lat 33°51'12", long 100°51'53", Motley County, 3.5 mi south of Roaring Springs.	(c)	1937 1943-78	1-10-78 7-18-78	1.0 1.7
Trinity River basin						
08065975	Harmon Creek near Huntsville, TX	Lat 30°49'12", long 95°29'09", Walker County, at end of county road, 2.2 mi east of Farm Road 980, 7.6 mi northeast of Huntsville, and about 9 mi southwest of Riverside.	89.2	1973-78	10-11-77 2-21-78 5-18-78 6-19-78 8- 7-78 9-18-78	6.4 18 6.0 4.4 15 5.2
08066210	Long King Creek near Goodrich, TX	Lat 30°36'16", long 94°57'26", Polk County, at bridge on Farm Road 1988, 0.7 mi west of Goodrich, and 4.5 mi upstream from mouth.	220	1973-78	11- 4-77 12-14-77 3- 9-78 4-20-78 5-31-78 8-22-78	12 1,040 56 18 13 15

* Operated as a continuous-record station.

c Not applicable.

d Of which 258 sq mi probably is noncontributing.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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 or 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 1978

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft ³ /s)
Sabine River basin							
08018000	Sabine River near Golden, TX	Lat 32°43'13", long 95°38'06", Van Zandt County, on right bank at downstream side of bridge on Farm Road 17, 0.5 mi downstream from Simpkins Creek, 2.3 mi upstream from Cottonwood Creek, 4.3 mi southwest of Golden, and at mile 481.0.	1,123	1924-26+, 1976-78	3- 9-78	342.96	-
08018300	Sabine River at U.S. Highway 80 near Mineola, TX	Lat 32°40'22", long 95°34'18", Smith County, near right bank at downstream side of downstream bridge on U.S. Highway 80, 0.6 mi upstream from Texas and Pacific Railroad bridge, 1.3 mi upstream from Dry Creek, 2.8 mi downstream from Grand Saline Creek, 3.4 mi west of Mineola, and at mile 471.9.	1,147	1976-78	3-10-78	331.58	-
08018600	Sabine River near Lindale, TX	Lat 32°36'04", long 95°23'28", Smith County, near right bank at downstream side of bridge on Farm Road 1804, 4.2 mi upstream from Lake Fork Creek, 6.0 mi northeast of Lindale, 6.8 mi downstream from Missouri Pacific Railroad bridge, and at mile 448.8.	-	1976-78	3-12-78	310.44	-
08019200	Sabine River near Hawkins, TX	Lat 32°33'35", long 95°12'23", Wood County, on left bank at upstream side of bridge on State Highway 14, 1.9 mi south of Hawkins, 2.1 mi upstream from East Mill Creek, 3.4 mi downstream from Lynn Creek, and at mile 427.4.	-	1976-78	3-15-78	288.56	-
08020500	Sabine River near Longview, TX	Lat 32°28'05", long 94°46'50", Gregg County, on left bank at downstream side of upstream bridge on U.S. Highway 259, 0.5 mi upstream from Missouri Pacific Railroad bridge, 2.6 mi upstream from Rabbit Creek, 3.2 mi southwest of Longview, 5.2 mi downstream from Hawkins Creek, and at mile 372.8.	-	1904-06+, 1923-32+, 1976-78	3-19-78	249.91	-
08022040	Sabine River near Beckville, TX	Lat 32°19'40", long 94°21'15", Panola County, on right bank at downstream side of downstream bridge on U.S. Highway 59, 0.9 mi upstream from Eightmile Creek, 6.0 mi upstream from Farm Road 1794 bridge, 8.4 mi northeast of Beckville, and at mile 327.0.	3,589	1976-78	3-23-78	†207.1	-
Trinity River basin							
08048520	Sycamore Creek at Interstate Highway 35-W, Fort Worth, TX	Lat 32°39'55", long 97°19'16", Tarrant County, on frontage road on upstream side of Interstate Highway 35-W, 5.8 mi south of Fort Worth city hall, and 8.9 mi upstream from mouth.	17.7	1970-76+, 1977-78	4-22-78	633.75	901
08048530	Sycamore Creek tributary above Seminary South Shopping Center, Fort Worth, TX	Lat 32°41'08", long 97°19'44", Tarrant County, at culvert under Missouri, Kansas, and Texas Railroad, 0.2 mi northeast of intersection of Hemphill Street, and Seminary Drive in Fort Worth, and 1.8 mi upstream from mouth.	.97	1970-76+, 1977-78	5-28-78	652.79	349
08048600	Dry Branch at Fain Street, Fort Worth, TX	Lat 32°46'34", long 97°17'18", Tarrant County, at culvert on Fain Street, at intersection of Fain and Beach Streets in Fort Worth, and 1.1 mi upstream from mouth.	2.15	1969-76+, 1977-78	3-23-78	540.69 (3.18)	141
08048820	Little Fossil Creek at Interstate Highway 820, Fort Worth, TX	Lat 32°50'22", long 97°19'20", Tarrant County, at culvert on south access road to Interstate Highway 820, 5.7 mi north of Tarrant County courthouse, Fort Worth, and 7.6 mi upstream from mouth.	5.64	1969-78	5- 2-78	612.17	-
08048850	Little Fossil Creek at Mesquite Street, Fort Worth, TX	Lat 32°48'33", long 97°17'28", Tarrant County, at intersection of Mesquite Street and Broadway Avenue in Fort Worth and approximately 4.3 mi upstream from Big Fossil Creek.	12.3	1960-76+, 1977-78	5- 3-78	551.81 (3.19)	68

* Operated as a continuous-record station.

† Estimated; flow did not reach intakes.

Annual maximum stage and (or) discharge during water year 1978--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft ³ /s)
Trinity River basin--Continued							
08055580	Joes Creek at Royal Lane, Dallas, TX	Lat 32°53'43", long 96°41'36", Dallas County, at culvert on Royal Lane in northwest Dallas and 4.9 mi upstream from mouth.	1.94	1973-78	5-28-78	514.06	2,380
08055600	Joes Creek at Dallas, TX	Lat 32°51'41", long 96°52'27", Dallas County, at bridge on State Highway 114, Dallas, and 0.9 mi upstream from mouth.	7.51	1962-78	5-28-78	426.39	3,490
08057020	Coombs Creek at Sylvan Avenue, Dallas, TX	Lat 32°46'01", long 96°50'07", Dallas County, at bridge on Sylvan Avenue, Dallas, and 1.2 mi upstream from mouth.	4.75	1965-78	8- 5-78	419.57	1,060
08057050	Cedar Creek at Bonnie View Road, Dallas, TX	Lat 32°44'50", long 96°47'44", Dallas County, at bridge on Bonnie View Road, Dallas, and 0.9 mi upstream from mouth.	9.42	1965-78	3-23-78	397.43	1,800
08057090	White Rock Creek at Farm Road 544 near Plano, TX	Lat 33°01'40", long 96°48'45", Collin County, at bridge on Farm Road 544, 6.6 mi west of Plano.	-	1978	4-22-78	603.47	-
08057120	Spanky Branch at McCallum Lane, Dallas, TX	Lat 32°57'58", long 96°48'11", Dallas County, at bridge on McCallum Lane, Dallas, and 0.5 mi upstream from mouth.	6.77	1962-78	8- 5-78	558.29	1,170
08057130	Rush Branch at Arapaho Road, Dallas, TX	Lat 32°57'45", long 96°47'44", Dallas County, near drop-inlet structure at upstream side of Arapaho Road in north Dallas.	1.22	1973-78	5-28-78	596.35	1,060
08057140	Cottonwood Creek at Forest Lane, Dallas, TX	Lat 32°54'33", long 96°45'54", Dallas County, at bridge on Forest Lane, Dallas, and 0.2 mi upstream from Floyd Branch.	8.50	1962-78	5-28-78	507.61	2,370
08057160	Floyd Branch at Forest Lane, Dallas, TX	Lat 32°54'33", long 96°45'34", Dallas County, at bridge on Forest Lane, Dallas, and 0.3 mi upstream from mouth.	4.17	1962-78	3-23-78	503.73	1,190
08057205	Storm Sewer at Arborside Drive and Moss Farm Lane, Dallas, TX	Lat 32°53'43", long 96°44'52", Dallas County, at culvert on Arborside Drive in northeast Dallas and 0.7 mi upstream from White Rock Creek.	.22	1978	4-22-78	509.77	259
08057320	Ash Creek at Highland Road, Dallas, TX	Lat 32°48'18", long 96°43'04", Dallas County, at bridge on Highland Road, Dallas, and 0.4 mi upstream from mouth.	6.92	1963-78	5-20-78	423.06	2,790
08057415	Elm Creek at Seco Boulevard, Dallas, TX	Lat 32°44'14", long 96°41'36", Dallas County, at bridge on Seco Boulevard in southeast Dallas.	1.25	1973-78	8- 5-78	465.08	464
08057418	Fivemile Creek at Kiest Boulevard Dallas, TX	Lat 32°42'19", long 96°51'32", Dallas County, at bridge on Kiest Boulevard, Dallas, and 10.9 mi upstream from mouth.	7.65	1974-78	10-11-77	515.06	1,540
08057420	Fivemile Creek at U.S. Highway 77, Dallas, TX	Lat 32°41'15", long 96°49'22", Dallas County, at bridge on U.S. Highway 77, Dallas, 0.2 mi upstream from Woody Branch, and 8.0 mi up-stream from mouth.	13.2	1965-78	10-11-77	459.27	1,530
08057425	Woody Branch at U.S. Highway 77, Dallas, TX	Lat 32°40'58", long 96°49'22", Dallas County, at bridge on U.S. Highway 77, Dallas, and 0.4 mi upstream from mouth.	11.5	1965-78	5-11-78	464.43	1,700
08057430	Fivemile Creek at Lancaster Road, Dallas, TX	Lat 32°40'49", long 96°47'10", Dallas County, at bridge on Lancaster Road, Dallas, and 6.7 mi upstream from mouth.	37.9	1965-78	10-11-77	427.94	-
08057435	Newton Creek at Interstate Highway 635, Dallas, TX	Lat 32°39'19", long 96°44'41", Dallas County, at bridge on Interstage Highway 635 in south-east Dallas and 2.2 mi upstream from mouth.	5.91	1974-78	4-24-78	431.43	476

Annual maximum stage and (or) discharge during water year 1978--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft ³ /s)
Trinity River basin--Continued							
08057440	White Branch at Interstate Highway 635, Dallas, TX	Lat 32 39'26", long 96 44'25", Dallas County, at bridge on Interstate Highway 635 in south-east Dallas and 0.2 mi upstream from mouth.	2.53	1974-78	4-24-78	427.76	77
08057442	Prairie Creek at Jennie Lee Street, Dallas, TX	Lat 32 45'16", long 96 39'58", Dallas County, at bridge on Jennie Lee Street in east Dallas and 8.2 mi upstream from mouth.	3.16	1976-78	3-23-78	472.46	-
08057447	Hattfields Branch at at Seagoville Road, Dallas, TX	Lat 32 42'34", long 96 39'36", Dallas County, at bridge on Seagoville Road in east Dallas and 2.5 mi upstream from mouth.	2.10	1976-78	2-12-78	431.38	-
08061620	Duck Creek at Buckingham Road, Garland, TX	Lat 32 55'53", long 96 39'55", Dallas County, at dam 200 ft upstream from Buckingham Road in north Garland and 17.5 mi upstream from mouth.	8.05	1969-78	c3-27-77 5-28-78	c563.59 562.08	c3,840 1,810
08061920	South Mesquite Creek at State Highway 352, Mesquite, TX	Lat 32 46'09", long 96 37'18", Dallas County, at bridge on State Highway 352 in west Mesquite and 9.6 mi upstream from mouth.	13.4	1969-78	c3-27-77 3-23-78	c445.15 441.47	c4,600 1,420

c Not previously published.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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Measurements of streamflow at points other than gaging stations of partial-record stations are given in the following table:

Discharge measurements made at miscellaneous sites during water year 1978

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Red River basin						
Salt Creek	Prairie Dog Town Fork Red River	Lat 34°36'53", long 100°16'43", Childress County, at county road crossing, 10.5 miles northeast of Estelline.	-	-	8-18-78	0.13
Wichita River	Red River	Lat 33°54'50", long 98°42'53", Wichita County, 200 feet downstream from North Side canal crossing and 4.0 miles southwest of Iowa Park.	-	-	2-25-78	31.9
Do.....	.....do.....	Lat 33°55'51", long 98°27'34", Wichita County, at River Road crossing, 2.7 miles northeast of the city hall in Wichita Falls.	-	-	2-25-78	54.0
Plum Creek tributary	Plum Creek	Lat 33°56'58", long 98°30'58", Wichita County, at Sheppard Air Force Base and 2.75 miles north of the city hall in Wichita Falls.	-	-	2-25-78	1.41
Trinity River basin						
Elm Fork Trinity River	Trinity River	Lat 33°18'25", long 97°02'31", Denton County, at bridge on Farm Road 428, 700 feet downstream from Aubrey Branch, 1.7 miles downstream from Bray Branch, 3.2 miles west of Aubrey, and 3.6 miles upstream from Culp Branch.	-	1975	3-29-78	4,540

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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). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

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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