

HYDROLOGIC DATA FOR URBAN STUDIES IN THE AUSTIN, TEXAS, METROPOLITAN AREA, 1983

By J.D. Gordon, D.L. Pate, and M.E. Dorsey

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METRIC CONVERSIONS

The inch-pound units of measurements used in this report may be converted to metric units by using the following conversion factors:

Multiply	By	To obtain
inch	25.4	millimeter
foot	.3048	meter
mile	1.609	kilometer
square mile (mi ²)	2.590	square kilometer
cubic foot per second (ft ³ /s)	.02832	cubic meter per second
foot per mile (ft/mi)	.189	meter per kilometer
acre-foot	1233	cubic meter
	.001233	cubic hectometer

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INTRODUCTION

Hydrologic investigations of urban watersheds in Texas were begun by the U.S. Geological Survey in 1954. Studies are now in progress in Austin, and Houston. Studies have been completed in the Dallas, Fort Worth, and San Antonio areas.

The Geological Survey, in cooperation with the Texas Department of Water Resources, began hydrologic studies in the Austin urban area in 1954. In cooperation with the city of Austin, the program was expanded in 1975 to include additional streamflow and rainfall gaging stations, and the collection of surface water-quality data. In 1978, the program was expanded to include a ground-water resources study of the South Austin metropolitan area in the Balcones Fault Zone.

The objectives of the Austin urban hydrology study are as follows:

1. To determine, on the basis of historical data and hydrologic analyses, the magnitude and frequency of flood peaks and flood volume.
2. To determine the effect of urban development on flood peaks and volume.
3. To determine the variations in water quality during different seasons and flow conditions in representative watersheds under various types of urban development.
4. To quantitatively appraise the ground-water resources along the Balcones Fault Zone, the effect of urbanization on the quality and quantity of recharge and discharge, and the extent of contamination in the Edwards aquifer that is in hydrologic circulation with Barton Springs.

This report presents the basic hydrologic data collected in the Austin urban area for the 1983 water year (Oct. 1, 1982 to Sept. 30, 1983).

Additional explanations of terms related to streamflow, water quality, and other hydrologic data used in this report are defined in the U.S. Geological Survey annual report Water Resources Data for Texas, TX-83-3, 1983.

LOCATION AND DESCRIPTION OF THE AREA

The Austin study area is about 80 miles northeast of San Antonio and about 160 miles northwest of Houston. The study area extends in an eastward direction from the Hill Country at the eastern edge of the Edwards Plateau across the Balcones Fault Escarpment to the Blackland Prairie of Texas. The land surface decreases in altitude from about 1,100 feet above mean sea level in the northwest to about 420 feet above mean sea level in the southeast.

Slopes generally range from 2 to 15 percent; slopes greater than 5 percent are present along the eastern edge of the Edwards Plateau, average about 5 percent within the Balcones Escarpment, and are less than 5 percent east of the escarpment and along the flood plain and alluvial terraces of the Colorado River and its tributaries.

Soils overlying the hard limestone in the western half of the study area are in general poorly developed thin calcareous clays, clay loams, and stony clays. Bedrock is locally exposed. Soils on the soft limestones and shales of the Balcones Fault Zone are generally dark brown calcareous clays, clay loams, or silty clay loams 6 inches or more thick. Soils on the shaly formation in the eastern part of the area are dark gray to olive calcareous clays and clay loams, 12 inches or more thick. Soils on the flood plain and terraces of the Colorado River and its tributaries are dark gray to red-brown, calcareous to noncalcareous, sandy loams, silty clay loams, clay loams, and gravelly sands 12 inches or more thick.

Detailed descriptions of the soils in the Austin urban study area can be found in Soil Survey of Travis County, U.S. Dept. of Agriculture, 1974. Additional geologic information of the Austin urban study area can be found in publications by the University of Texas Bureau of Economic Geology. A list of some of these geologic reports is given in the section "Selected references".

The major streams in the study area are Onion Creek, Barton Creek, Walnut Creek, Bull Creek, Boggy Creek, Shoal Creek, Williamson Creek, Slaughter Creek, Bear Creek, and Waller Creek. All streams in the area are within the Colorado River basin. Throughout the year, low flow for some of the smaller streams in the predominantly urban areas is partly sustained by return flow from industrial and residential users; during the summer months the low flow is partly sustained by drainage from municipal and private swimming pools.

The climate of the Austin urban area is characterized by short mild winters, long moderately hot summers, moderately high humidity, and prevailing southerly winds. Records of the National Weather Service show that the mean annual temperature (based on the period 1941-70) is 70.6°F; the mean maximum temperature for July is 95°F; and the mean minimum temperature for January is 41°F. The average growing season is about 270 days.

The average rainfall (based on the period 1951-80) is 31.50 inches and is generally well distributed throughout the year; however, individual storms may cause flooding in any season. The major storms usually occur during the months of April-May and September-October.

DATA COLLECTION ACTIVITIES

The drainage basins and locations of hydrologic-instrument installations and surface-water-quality sampling sites in the Austin urban study area are shown on figure 1. The locations of data-collection sites for Lake Austin, Town Lake, and the ground-water are shown on figures 2-6.

Precipitation Data

Precipitation data are based on 25 recording rain gages. The gages are distributed throughout the drainage basins to measure total precipitation and to define rainfall intensities. The locations of these rain gages are given in table 1 and shown on figure 1.

Precipitation at individual gages and weighted precipitation in each basin is given in the section "Compilation of data." Weighted-mean precipitation factors are shown in table 2. Weighted mean precipitation for a study area is determined by the Thiessen method described by Linsley, Kohler, and Paulhus (1949). For example, the weighted-mean precipitation for the drainage basin upstream from the Bull Creek at Loop 360 streamflow-gaging station could be computed as follows: Multiply the recorded precipitation at rain-gage 1-BUL by 0.57 and to that value, add the recorded precipitation at rain-gage 2-BUL multiplied by 0.43.

Rainfall for the current year was unevenly distributed over the area. Individual station totals ranged from 36.87 inches at gage 2-SHL in the Shoal Creek basin to 46.81 inches at gage 2-WMS in the Williamson Creek basin. The mean water-year total of all rain gages is 41.65 inches as compared with the 30-year average (1951-80) of 31.50 inches at the Austin Municipal Airport rain gage which is operated by the National Weather Service. Daily and monthly precipitation data at individual gages in the study area are given in tables 3 and 4 at the end of this report.

Storm Data

Few storms of wide distribution produced rainfall totals of over 2 inches during the year. The most significant storm of the year occurred on May 19-21. This two-day storm produced rainfall totals ranging from 0.37 inch to 3.31 inches. Wide spread showers also fell on the entire study area on August 8. This storm produced rainfall totals ranging from 0.11 inch to 3.35 inches.

Storms of May 10, 19 and 21, June 4-5, and August 8 were used for analysis. Storms were selected for analyses based on rainfall distribution, discharge magnitude, and quality of recorded data. A summary of storm rainfall-runoff data is shown in table 5 at the end of this report. The areal distribution of rainfall totals for the May 10 storm for the entire Austin area is shown in figure 2.

A report entitled "Techniques for estimating the magnitude and frequency of floods in the Austin, Texas, metropolitan area" is currently (1984) being written. This report presents an analysis of all storm data gathered in the Austin area along with equations for estimating the magnitude and frequency of floods in this area.

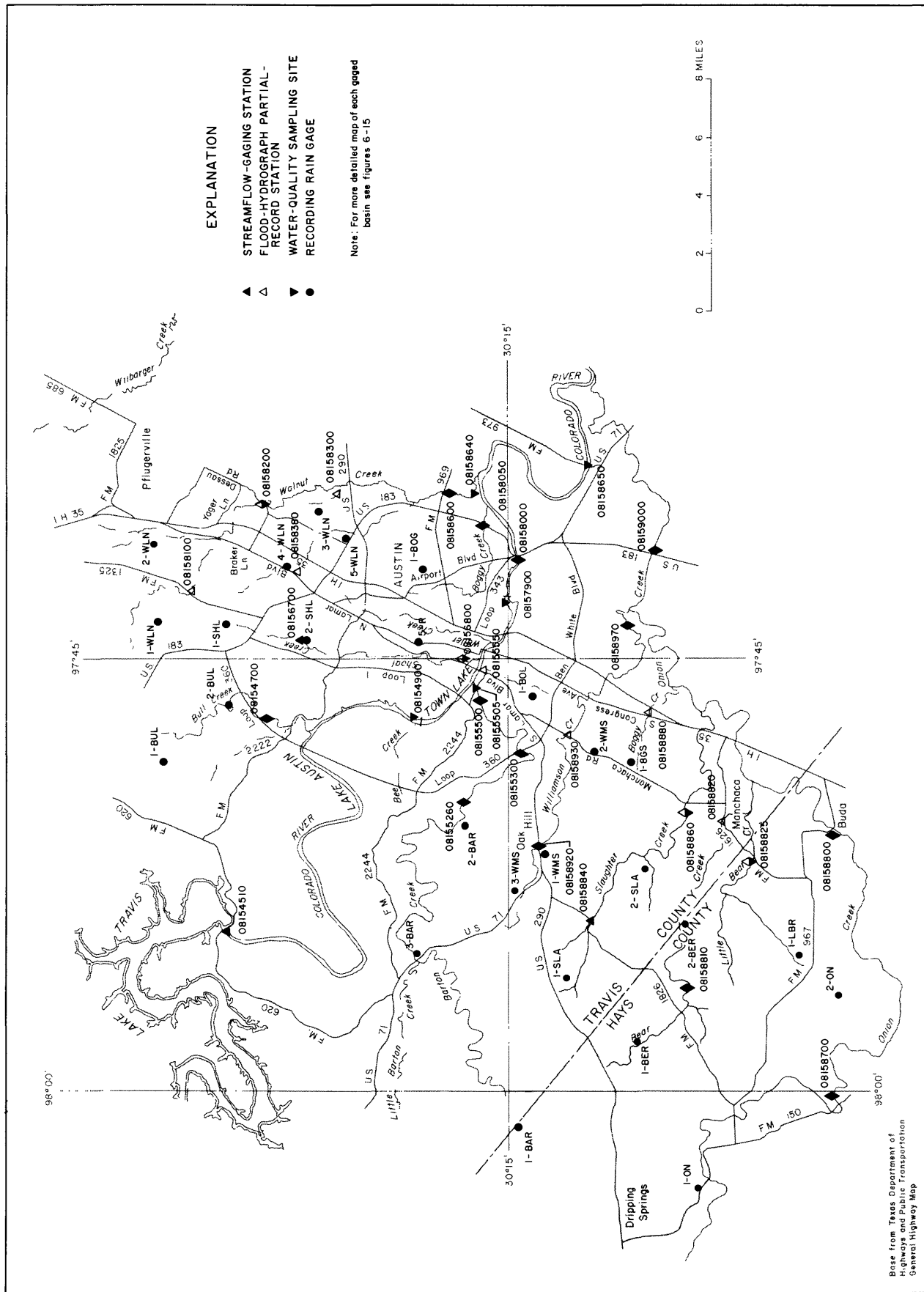


Figure 1.— Locations of surface-water hydrologic-instrument installations and surface-water quality sampling sites in the Austin urban study area

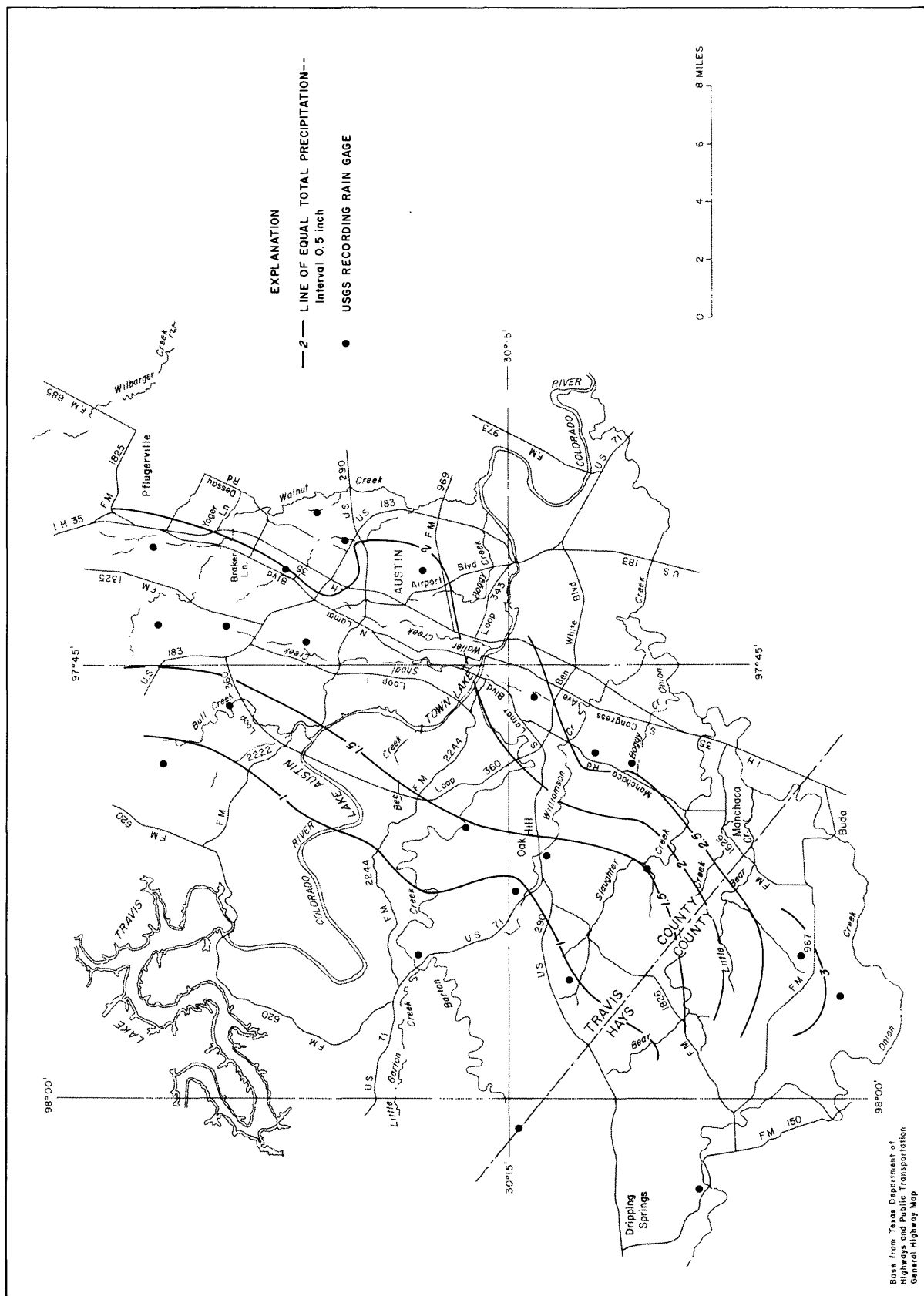


Figure 2.—Rainfall for the storm of May 10, 1983 in the Austin area

Table 1.--Locations of rain gages in the Austin area

Rain gage	Location
1-BUL	Lat 30°25'23", long 97°48'41", at Jack Rainer residence, 1.1 miles west of the intersection of Spicewood Springs Road and gravel dirt road, which starts 800 ft north of Oak Grove Church on Spicewood Springs Road. Elevation, 775 ft (approximate).
2-BUL	Lat 30°23'51", long 97°46'42", on Dr. Lloyd A. Doggett property, 200 ft north of the centerline of Spicewood Springs Road at a point 600 ft northwest of the intersection of Spicewood Springs and Whitecliff Roads (the northernmost intersection where two roads cross twice). Elevation, 650 ft (approximate).
1-BAR	Lat 30°14'37", long 98°01'17", 25 ft north of centerline of Fitzhugh Road at Mr. Ben Crumley's residence, 4.9 miles west of the intersection of U.S. Hwy. 290 and Fitzhugh Road. Elevation, 1,058 ft (approximate).
2-BAR	Lat 30°16'24", long 97°50'55", at Lost Creek Country Club, 150 ft northwest of maintenance building, 1.7 miles southwest of intersection of Lost Creek Blvd. and Loop 360. Elevation, 638 ft (approximate).
3-BAR	Lat 30°17'46", long 97°55'31", at Barton Creek at Hwy. 71 stream-flow gaging station, 5.8 miles northwest of Oak Hill. Elevation, 781 ft (approximate).
1-BOL	Lat 30°14'32", long 97°46'20", at rear of Mr. Morris Kieke's property at 2509 Thorton Road, 0.4 mi southwest of the intersection of Oltorf Street and Thorton Road. Elevation, 570 ft (approximate).
1-SHL	Lat 30°23'09", long 97°43'55", at Balcones Research Center about 150 ft west and 350 ft south of Civil Engineering Structures Research building, 5,000 ft northwest of intersection at U.S. Hwy. 183 and Farm Road 1352. Elevation, 763 ft (approximate).

Table 1.--Locations of rain gages in the Austin area--Continued

Rain gage	Location
2-SHL	Lat 30°20'50", long 97°44'41", at Shoal Creek at Northwest Park streamflow gaging station, 400 ft upstream from Shoal Creek Blvd. bridge, 0.5 mile west of the intersection of Burnet Road and Justin Lane. Elevation, 671 ft (approximate).
1-BOG	Lat 30°17'31", long 97°41'54", 50 ft behind National Weather Service building at 3724 Manor Road. Elevation, 630 ft (approximate).
1-WLN	Lat 30°25'18", long 97°43'42", at Billie Harrel's residence, 200 ft east of Dorsett Road, 0.5 mile north of the intersection of Duval and Dorsett Roads. Elevation, 835 ft (approximate).
2-WLN	Lat 30°25'48", long 97°40'49", at Turbine West Supply Company at the intersection of Hydro and Turbine Streets, 0.7 mile northwest of the Intersection of Interstate Highway 35 and Howard Lane. Elevation, 790 ft (approximate).
3-WLN	Lat 30°20'34", long 97°39'52", at Ferguson Lane at Loreda Manufacturing Company, 0.9 mile northwest at the intersection of Ferguson Lane and Springdale Road. Elevation, 595 ft (approximate).
4-WLN	Lat 30°21'39", long 97°41'49", at Mollie Barrington School on Cooper Drive, 0.1 mile east of the intersection of Lamar Blvd. and Cooper Drive. Elevation, 690 ft (approximate).
5-WLN	Lat 30°20'09", long 97°41'03", at entrance road to the Showtown Drive-In Theater, 0.25 mile north of the intersection of Cameron Road and U.S. Hwy. 183. Elevation, 664 ft (approximate).
1-ON	Lat 30°08'57", long 98°03'23", at Bullard Ranch, 2.7 miles northwest of Driftwood on FM 150, on the north side of road in fenceline. Elevation, 1,060 ft (approximate).
2-ON	Lat 30°03'56", long 97°56'38", at Mrs. Hoskins' Ranch, 5.3 miles southeast of Driftwood and 3.0 miles northeast of junction of FM 150 and FM 3237 and 2.5 miles south of Farm Road 967. Elevation, 885 ft (approximate).

Table 1.--Locations of rain gages in the Austin area--Continued

Rain gage	Location
1-BER	Lat 30°11'08", long 97°58'11", at Ms. Guyn's residence on Nutty Brown Road, 1.6 mile south of U.S. Hwy. 290. Gage located left of driveway to house. Elevation, 1,067 ft (approximate).
2-BER	Lat 30°09'17", long 97°54'20", at Spiller Ranch, 4.6 miles northwest of the Marbridge School and FM 1626. Gage location on right of ranch road just before where ranch barns are located. Elevation, 855 ft (approximate).
1-LBR	Lat 30°06'01", long 97°55'22", approximately 300 ft northwest of main ranch house at the Rutherford Ranch on FM 967, 4.8 miles west of Buda. Elevation, 875 ft (approximate).
1-SLA	Lat 30°13'10", long 97°56'09", at the entrance of Mrs. O. D. Miller's property on Derecho Road, 0.8 mile south of the intersection Derecho Road and U.S. Hwy. 290. Elevation, 1,055 ft (approximate).
2-SLA	Lat 37°10'34", long 97°52'06", at the entrance of the Circle C Ranch on Wyldwood Road, 0.8 mile from the intersection of Wyldwood Road and Brodie Lane, and 5.2 miles southwest of the intersection of Brodie Lane and U.S. Hwy. 290. Elevation, 773 ft (approximate).
1-BGS	Lat 30°11'18", long 97°48'26", at the Brown School about 50 ft south and 200 ft west of the administration building and 20 ft of the fence line, about 3,000 ft northwest of the intersection of Manchaca Road and Dittmar Lane. Elevation, 725 ft (approximate).
1-WMS	Lat 30°13'42", long 97°52'00", at the entrance of Mr. Welty E. McCullough's property at 7101 Convict Hill Road, Oak Hill, 0.4 mile south of the intersection of Convict Hill Road and U.S. Hwy. 290. Elevation, 835 ft (approximate).
2-WMS	Lat 30°12'25" long 97°48'01", at the rear of Mr. Wilson's property at 1809 Stanley Avenue, 0.3 mile east of the intersection of Berkeley Avenue and Manchaca Road. Elevation, 700 ft (approximate).
3-WMS	Lat 30°14'48", long 97°53'14", at entrance to Country Aire mobile home park on Hwy. 71, approximately 1.0 mile northwest of the intersection of U.S. Hwy. 290 and State Hwy. 71 near Oak Hill. Elevation, 890 ft (approximate).

Table 2.--Weighted-mean precipitation factors for drainage basins
above stations in the Austin metropolitan area

Station number	Station name (abbreviated)	Rain gage <u>1</u> /	Weighted-mean precipitation factor <u>2</u> /
08154700	Bull Creek at Loop 360	1-BUL 2-BUL	0.57 .43
08155260	Barton Creek near Camp Crest Road	1-BAR 2-BAR 3-BAR	.63 .16 .21
08155300	Barton Creek at Loop 360	1-BAR 2-BAR 3-BAR	.59 .15 .26
08155550	West Bouldin Creek at Riverside Drive	1-BOL	1.00
08156700	Shoal Creek at Northwest Park	1-SHL 2-SHL	.45 .55
08156800	Shoal Creek at 12th Street	1-SHL 2-SHL	.24 .76
08158050	Boggy Creek at U.S. Highway 183	1-BOG	1.00
08158100	Walnut Creek at Farm Road 1325	1-WLN	1.00
08158200	Walnut Creek at Dessau Road	1-WLN 2-WLN	.51 .49
08158300	Ferguson Branch at Springdale Road	3-WLN	1.00
08158380	Little Walnut Creek at Georgian Drive	1-SHL 4-WLN	.36 .64

See foot notes at end of table.

Table 2.--Weighted-mean precipitation factors for drainage basins
above stations in the Austin metropolitan area--Continued

Station number	Station name (abbreviated)	Rain gage <u>1</u> /	Weighted-mean precipitation factor <u>2</u> /
08158600	Walnut Creek at Webberville Road	1-WLN	0.25
		2-WLN	.21
		3-WLN	.28
		4-WLN	.15
		5-WLN	.11
08158700	Onion Creek near Driftwood	1-ON	1.00
0815800	Onion Creek at Buda	1-ON	.73
		2-ON	.27
08158810	Bear Creek below Farm Road 1826	1-BER	1.00
08158820	Bear Creek at Farm Road 1626	1-BER	.66
		2-BER	.34
08158825	Little Bear Creek at Farm Road 1626	1-LBR	1.00
08158840	Slaughter Creek at Farm Road 1826	1-SLA	1.00
08158860	Slaughter Creek at Farm Road 2304	1-SLA	.48
		2-SLA	.52
08158880	Boggy Creek (South) at Circle S Road	1-BGS	1.00
08158920	Williamson Creek at Oak Hill	1-WMS	.16
		3-WMS	.84
08158930	Williamson Creek at Manchaca Road	1-WMS	.46
		2-WMS	.25
		3-WMS	.29

See footnotes at end of table.

Table 2.--Weighted-mean precipitation factors for drainage basins
above stations in the Austin metropolitan area--Continued

Station number	Station name (abbreviated)	Rain gage <u>1/</u>	Weighted-mean precipitation factor <u>2/</u>
08158970	Williamson Creek at Jimmy Clay Road	1-WMS 2-WMS 3-WMS	0.31 .49 .20

1/ Rain gage designations are: BUL-Bull Creek; BAR-Barton Creek; BOL-Bouldin Creek; SHL-Shoal Creek; BOG-Boggy Creek; WLN-Walnut Creek; ON-Union Creek; BER-Bear Creek; LBR-Little Bear Creek; SLA-Slaughter Creek; BGS-Boggy Creek (South); and WMS-Williamson Creek. See locations of rain gages on figure 1.

2/ See section on "Precipitation Data" for explanation of use of weighted-mean precipitation factors

Runoff Data

Runoff data are based on discharge measurements and stage records at 13 continuous-record streamflow stations and 11 flood-hydrograph partial-record streamflow gaging stations. Streamflow data for continuous-record gaging stations, and for flood-hydrograph partial-record stations for the 1983 water year are presented in downstream order in the section "Compilation of data."

Rainfall and runoff for the 1983 water year for the continuous-record gaging stations in the Austin urban study area are summarized in table 6 at the end of this report. Runoff varied from 0.70 inch for the Onion Creek at Buda gage, to 7.25 inches for the Boggy Creek at Highway 183 gage, which was 2 percent and 19 percent of the basins annual weighted-mean rainfall, respectively. Detailed storm rainfall and runoff records for each gaging station are shown in the section "Compilation of data."

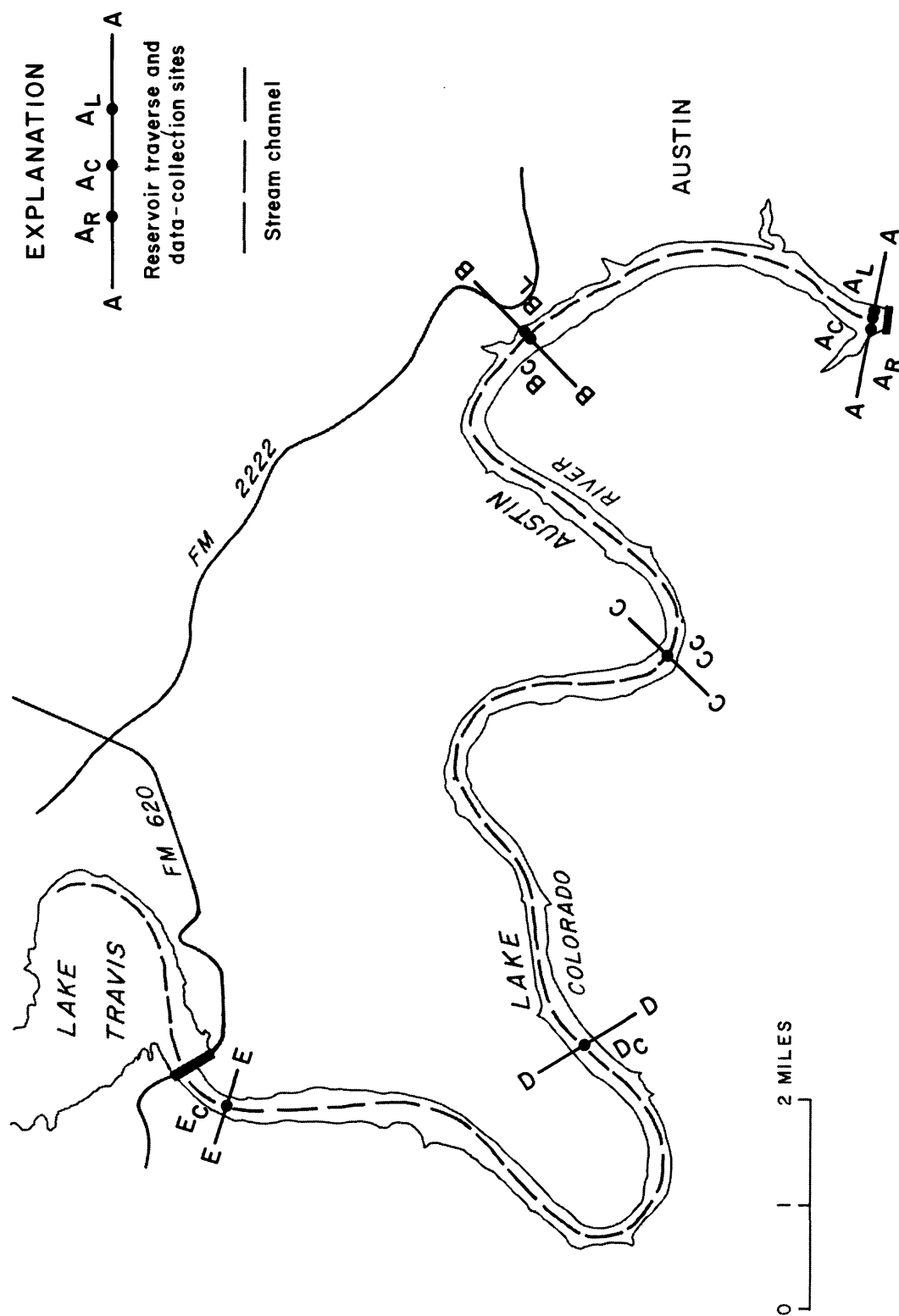
Surface-Water-Quality Data

Water-quality data were collected at 20 streamflow locations during the 1983 water year. The locations of the streamflow water-quality data-collection sites are shown on figure 1. Water-quality samples are collected and analyzed during various flow and seasonal conditions so that the variations in the water quality may be documented for future analysis. Five of these water-quality data-collection sites are equipped with automated samplers that collect discrete samples during storms. These five automated samplers are located at the gaging stations; Barton Creek at Loop 360, Shoal Creek at 12th Street, Boggy Creek at Highway 183, Bull Creek at Loop 360, and Williamson Creek at Oak Hill. The peak discharges associated with the water-quality samples collected during storms at all the gaging stations are shown in table 7.

Analyses for these sites include nutrients (ammonia, nitrogen, organic nitrogen, nitrite nitrogen, and phosphorus), physical organics and inorganics (specific conductance, pH, temperature, color, turbidity, dissolved oxygen, suspended and dissolved solids, biochemical oxygen demand, and total organic carbon), indicator bacteria (total coliform, fecal coliform, and fecal streptococci), and inorganic-chemical constituents (calcium, magnesium, sodium, potassium, alkalinity, sulfate, chloride, fluoride, and silica). Some years, analyses are also done for 12 selected trace elements (arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, selenium, silver, and zinc), 26 insecticides and herbicides, and radiochemical analyses.

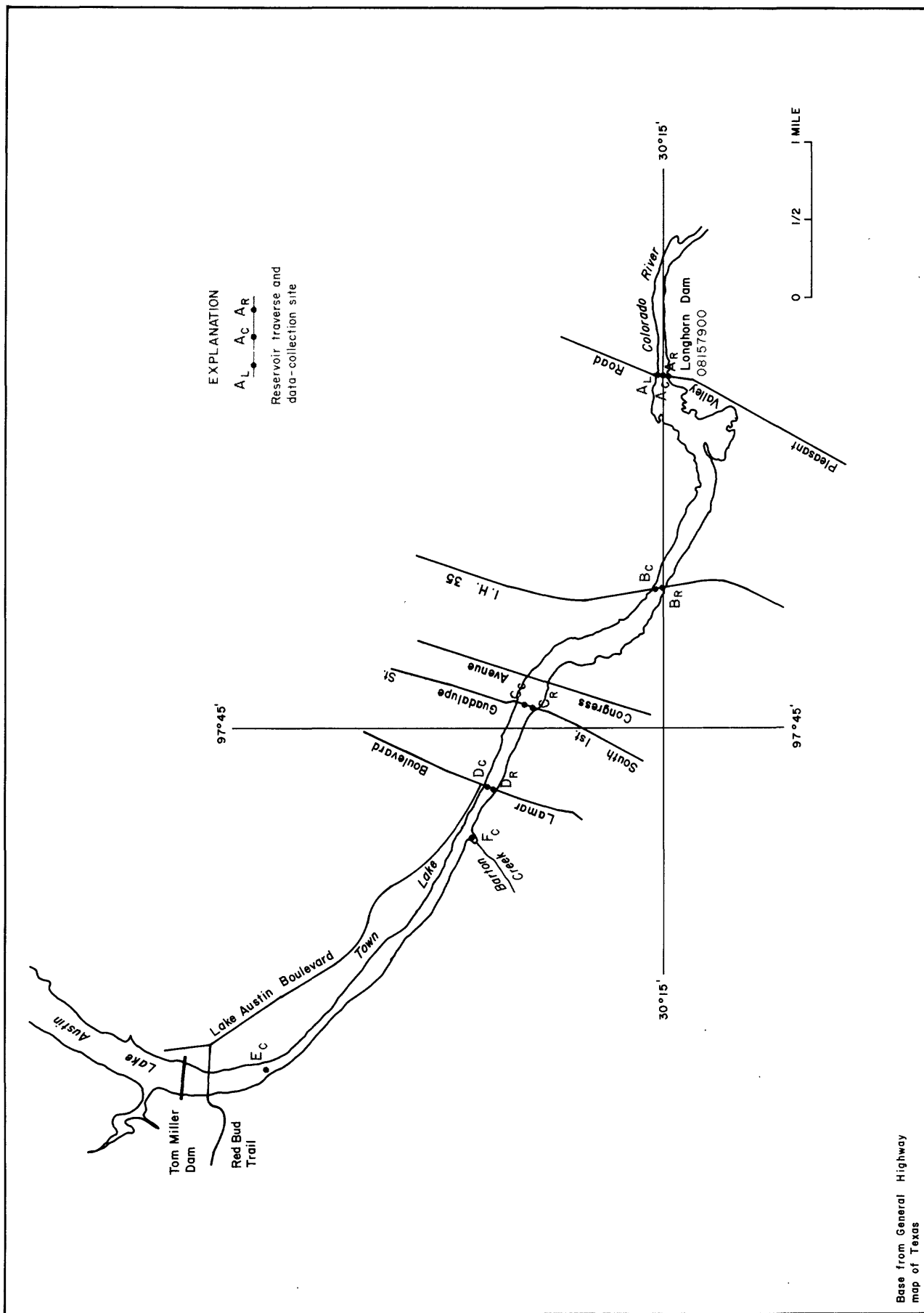
Beginning in 1984, a report will be prepared that will include water-quality data for the five sites equipped with automatic samplers. The water-quality characteristics for those five watersheds will be determined and interpretations relating water-quality characteristics with land use will be made.

Water-quality data were also collected at eight sites on Lake Austin and at 11 sites on Town Lake. The locations of these sites are shown on figures 3 and 4 respectively, and the analyses of these samples are given in the "Compilation of data" section in this report.



Base from Texas county highway map

Figure 3.-Locations of the water-quality data-collection sites on Lake Austin



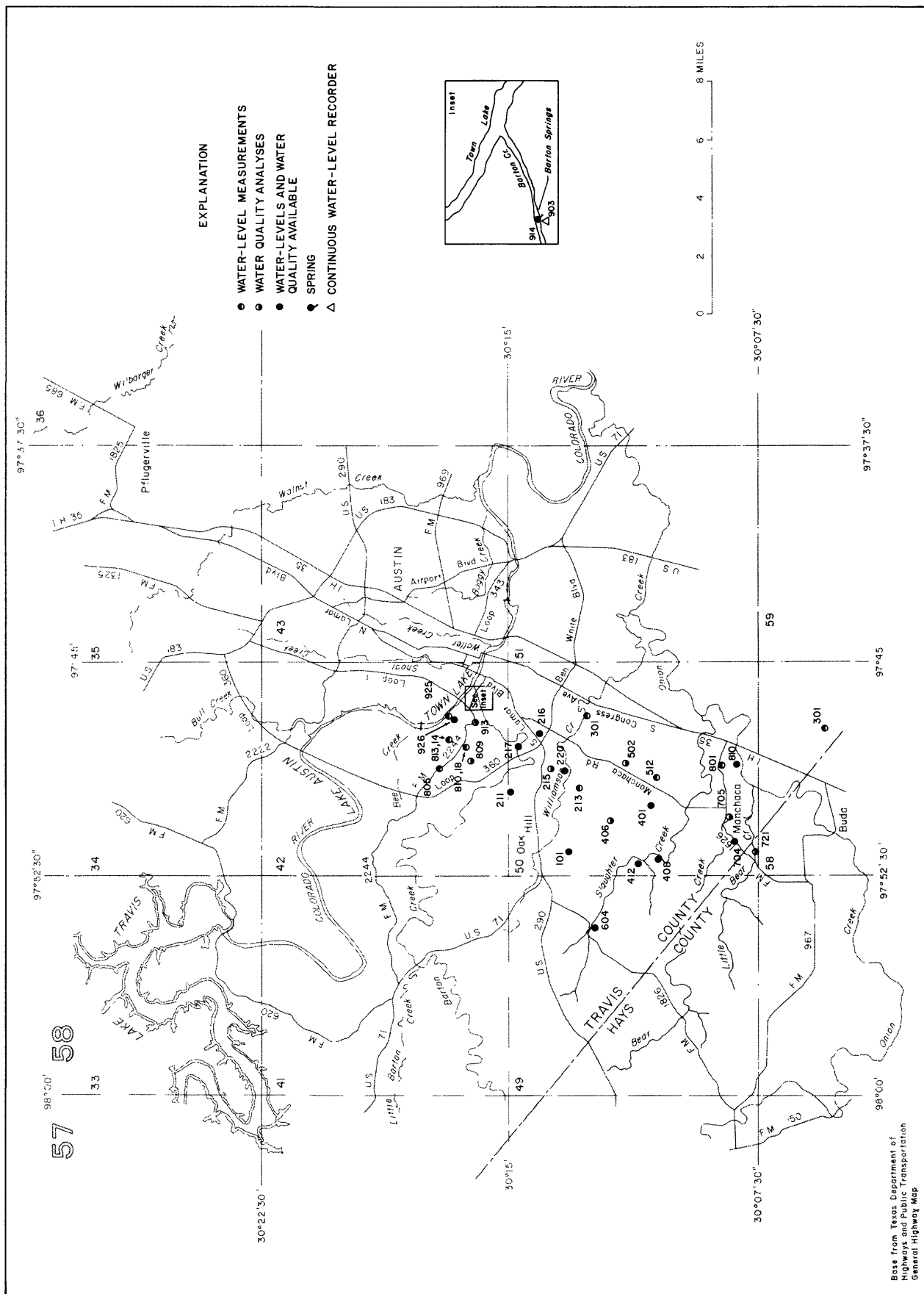
Ground-Water Data

Ground-water data for the Austin urban study area consist of well and spring inventories, water-quality sampling, and water-level measurements. These data were collected from 1978 to 1983, when all ground-water collection activities were discontinued. The locations of all these ground-water sites in Travis and Hays Counties are shown in figures 5 and 6 respectively. The descriptions and characteristics of the wells and springs inventoried by the U.S. Geological Survey and water-level measurements are presented in table 8 at the end of this report. Water-quality data collected from 19 wells in Travis County and 11 wells in Hays County are presented in table 9 at the end of this report. Analyses for the ground-water samples include all the constituents analyzed for the surface-water samples except color, turbidity, dissolved oxygen, biochemical oxygen demand, suspended solids and total organic carbon. Monthly water-level measurements made at 24 observation wells during the 1983 water year are presented in table 10 at the the end of this report. Other ground-water data for Travis and Hays Counties are in reports by Brune (1983) and DeCook (1960).

The data are listed according to a well-numbering system which is used throughout the State, and which was developed by the Texas Department of Water Resources. The well-numbering system consists of a two-letter county-designation prefix plus a seven-digit well number. The two-letter prefix for Travis County is YD, and the prefix for Hays County is LR. Each one-degree quadrangle in the State is given a number consisting of two digits from 01 through 89. These are the first two digits of the well number. Each 1-degree quadrangle is divided into 7-1/2-minute quadrangles which are given two-digit numbers from 01 through 64. These are the third and fourth digits of the well number. Each 7-1/2-minute quadrangle is divided into 2-1/2-minute quadrangles which are given a single-digit number from 1 through 9. This is the fifth digit of the well number. Each well or spring located within a 2-1/2-minute quadrangle is given a two-digit number beginning with 01, according to the order in which it was inventoried. These are the last two digits of the numbering system.

Only the last three digits of the well-numbering system are shown at each of the ground-water data-collection sites on figures 5 and 6; the second two digits are shown in or near the northwest corner of each 7-1/2-minute quadrangle; and the first two digits are shown by the large block numbers 57, 58, 67, or 68.

The ground-water portion of this urban-hydrology project is composed of a study of that part of the Edwards aquifer between the Colorado River and the city of Kyle. Cold and Deep Eddy Springs discharge a small portion of the aquifer, and Barton Springs discharges the remainder of the aquifer. The Edwards aquifer in this area is composed of the Edwards Limestone and Georgetown Limestone. In order to appraise the quantity and quality of the water in this portion of the Edwards aquifer, the inflow (recharge) to the aquifer and outflow (springflow and pumpage) from the aquifer must be defined.



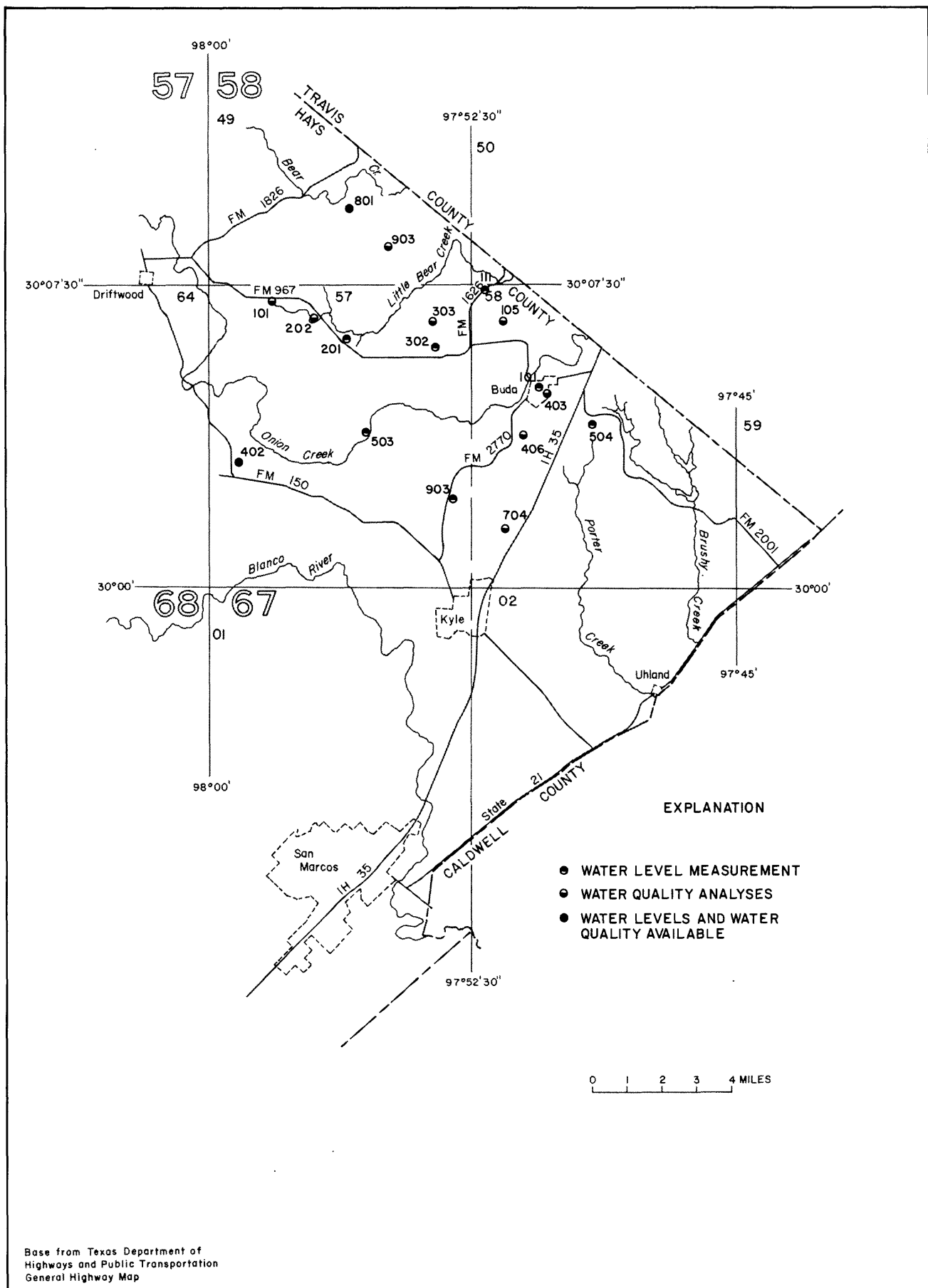


Figure 6.—Ground-water data-collection sites in Hays County

feet of pumpage is composed of domestic usage (860 acre-feet) and livestock usage (140 acre-feet). The estimated total discharge as springflow from the aquifer was 49,700 acre-feet, of which about 46,800 acre-feet was from Barton Springs and the remaining 2,900 acre-feet was from Cold and Deep Eddy Springs.

The majority of the recharge to the aquifer occurs through faults associated with the Balcones Fault Zone. These faults cross several creeks southwest of Austin, and some of the flow in these creeks enters the Edwards aquifer through these faults. The six major creeks that provide the majority of the recharge are Barton, Williamson, Slaughter, Bear, Little Bear, and Onion Creeks.

Except for Little Bear Creek, studies were conducted on these creeks to determine the quantity and location of flow losses. From this study, the two points on each creek that make up the upstream and downstream border of the flow-loss zones were determined, and thus the "recharge zone" was identified. The locations, descriptions, and data for the flow-loss study are given in the report by Slade and others (1982).

In 1978, the Geological Survey and Texas Department of Water Resources began a cooperative study of the Edwards aquifer between the cities of Kyle and Belton. Belton is about 60 miles north of Austin. A report presenting the hydrologic and geologic framework of the Edwards aquifer within that study area is in preparation (Baker, E. T., and others, U.S. Geological Survey, written commun., 1984). That report presents geologic sections as well as structure and thickness maps of the aquifer. Also represented in the report are basic hydrologic findings such as the extent of water use, up to date position of water altitudes in the subsurface, and changes in those levels, the quality of water from the Edwards throughout the aquifer, and interrelationships of streamflow with the aquifer. A report concerning the hydraulic properties of that part of the Edwards aquifer north of the Colorado River was begun in 1983 (Slade, R. M. Jr., and Boettner, W. L., U.S. Geological Survey, written commun., 1984). A computer model that simulates the flow of the aquifer will be presented in the report. The report should be completed near the end of 1984.

Three reports from the ground water part of the Austin urban-hydrology program are currently being prepared or have been completed. The first report presents the results of an intensified water-quality sampling program conducted on Barton Springs and associated Edwards aquifer by the Geological Survey from August 1981 through September 1982. Data collected were used to describe the effects of storm runoff on ground-water quality of the Edwards aquifer (Andrews and others, 1984).

The second report from the ground-water program presents the hydrogeologic frame work of the Edwards aquifer (Slade, R. M. and others, U.S. Geological Survey, written commun., 1984). Information concerning recharge, discharge, water levels, storage, and water movement is presented in the report. Also presented are water-quality data and information for recharge, ground water, and Barton Springs.

The third report concerns the hydraulic properties of the aquifer (Slade, R. M. Jr., and others, U.S. Geological Survey, written commun. 1984). Synthesis and analysis of the hydraulic properties of the aquifer were performed using a computer simulation model of the system. Simulations of present and future water levels in the aquifer are presented in the report, which will conclude the Geological Survey study of Barton Springs and associated Edwards aquifer.

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C O M P I L A T I O N O F D A T A

COLORADO RIVER BASIN

08154510 COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX

LOCATION.--Lat 30°23'30", long 97°54'28", Travis County, Hydrologic Unit 12090205, at the downstream side of Mansfield Dam, 12.9 mi northwest of the State Capitol at Austin, and at mile 318.0.

DRAINAGE AREA.--38,755 mi², approximately, of which 11,403 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--None. Daily discharge record is based on daily releases from Lake Travis.

REMARKS.--Water-discharge records fair.

COOPERATION.--All records of releases were furnished by the Lower Colorado River Authority.

AVERAGE DISCHARGE.--9 years 1,585 ft³/s (1,148,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 25,300 ft³/s Apr. 17-19, 1977; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,440 ft³/s Sept. 2; no flow at times.

**DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES**

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	912	.00	983	.00	.00	.00	323	1470	1250	1920	1100	1750
2	765	.00	852	.00	.00	.00	329	1420	1390	1760	726	2440
3	381	.00	.00	.00	.00	.00	321	1300	1480	1640	868	1840
4	554	.00	75	.00	.00	100	328	1160	1630	1710	1080	1920
5	136	.00	.00	.00	.00	.00	298	1120	1040	1780	1790	1760
6	.00	.00	.00	.00	.00	.00	380	965	1460	1690	1620	1820
7	.00	.00	320	.00	.00	340	315	925	1680	1720	724	2290
8	.00	.00	.00	.00	.00	237	1880	1080	1660	2170	.00	1990
9	.00	137	.00	.00	.00	279	1010	967	1540	1860	851	2110
10	.00	.00	.00	.00	574	528	321	864	1810	1850	735	1610
11	.00	.00	.00	.00	.00	374	615	1030	1600	1840	572	1570
12	190	80	.00	.00	.00	569	618	1290	1720	2080	.00	1790
13	.00	134	.00	.00	.00	384	277	1030	1980	1790	.00	1700
14	.00	.00	.00	381	.00	395	437	930	1530	1770	.00	1180
15	569	127	269	.00	.00	387	719	961	717	1650	62	1180
16	.00	.00	.00	.00	.00	140	613	1040	1460	.00	618	1420
17	.00	83	.00	.00	.00	881	561	981	1470	1580	486	1430
18	.00	.00	.00	.00	.00	409	607	781	1600	1180	499	1220
19	.00	.00	.00	.00	.00	412	475	870	1440	987	198	1660
20	.00	191	198	.00	.00	430	557	433	1500	966	198	1120
21	.00	.00	.00	.00	.00	426	430	.00	1530	1100	561	676
22	.00	.00	763	.00	.00	431	403	195	1680	1130	469	671
23	.00	406	.00	.00	.00	158	801	966	1790	947	1130	665
24	.00	481	.00	.00	.00	.00	782	1060	1800	922	1640	794
25	134	.00	.00	.00	.00	.00	1040	1040	1460	1490	1520	888
26	411	.00	.00	381	.00	.00	1050	1050	1590	790	1560	790
27	.00	.00	.00	.00	.00	.00	1100	1070	1970	756	1480	1060
28	.00	.00	.00	.00	.00	.00	1090	1170	1640	747	1890	1470
29	.00	163	.00	.00	---	.00	1130	1170	1550	932	1660	1350
30	.00	236	.00	.00	---	.00	1170	1120	1690	864	1640	1310
31	.00	---	.00	.00	---	.00	---	1210	---	752	1770	---
TOTAL	4052.00	2038.00	3460.00	762.00	574.00	6880.00	19980	30668.00	46657	42373.00	27447.00	43474
MEAN	131	67.9	112	24.6	20.5	222	666	989	1555	1367	885	1449
MAX	912	481	983	381	574	881	1880	1470	1980	2170	1890	2440
MIN	.00	.00	.00	.00	.00	.00	277	.00	717	.00	.00	665
AC-FT	8040	4040	6860	1510	1140	13650	39630	60830	92540	84050	54440	86230
CAL YR 1982	TOTAL	476980.00	MEAN	1307	MAX	3620	MIN	.00	AC-FT	946100		
WTR YR 1983	TOTAL	228365.00	MEAN	626	MAX	2440	MIN	.00	AC-FT	453000		

COLORADO RIVER BASIN

08154510 COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD 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)
JUN 28...	0935	577	7.8	15.5	6.4	65	.0	210
AUG 23...	1525	580	7.7	17.5	4.4	47	.1	200

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)	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
JUN 28...	66	46	22	37	1.2	3.8	140	46	69
AUG 23...	58	43	22	36	1.1	4.1	140	47	69

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, 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,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
JUN 28...	.20	7.3	315	<.020	.20	<.060	.60	.020
AUG 23...	.30	7.4	313	<.020	.20	<.010	.60	.010

COLORADO RIVER BASIN

08154900 LAKE AUSTIN AT AUSTIN, TX

LOCATION.--Lat 30°18'53", long 97°47'10", Travis County, Hydrologic Unit 12090205, at city of Austin Waterplant No. 2 and 1.5 mi upstream from Tom Miller Dam on the Colorado River at Austin.

DRAINAGE AREA.--38,240 mi², of which 12,880 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1978 to current year.

301739097471601 LAKE AUSTIN SITE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
05...	1210	1.00	527	8.0	10.5	9.9	89
05...	1212	10.0	527	8.0	10.0	9.8	87
05...	1214	20.0	527	8.0	10.0	9.6	85
05...	1216	34.0	527	8.0	10.0	9.5	84
AUG							
29...	1040	1.00	575	7.9	28.0	7.8	101
29...	1042	10.0	580	7.8	22.5	4.6	54
29...	1044	20.0	580	7.8	22.0	3.8	44

301739097471201 LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
JAN													
05...	1130	1.00	527	8.0	10.0	1.90	<1	2.2	9.9	88	.8	K5	
05...	1132	10.0	527	8.0	10.0	--	--	--	9.8	87	--	--	
05...	1134	20.0	527	8.0	10.0	--	--	--	9.7	86	--	--	
05...	1136	30.0	527	8.0	10.0	--	--	--	9.7	86	--	--	
05...	1138	40.0	527	8.0	10.0	--	--	--	9.7	86	--	--	
05...	1140	50.0	527	8.0	10.0	--	--	--	9.7	86	--	--	
05...	1142	60.0	527	8.0	10.0	--	<1	4.2	9.7	86	.5	--	
AUG													
29...	1020	1.00	584	7.9	28.0	1.50	5	3.5	7.5	97	.8	30	
29...	1022	10.0	584	7.7	22.0	--	--	--	5.6	65	--	--	
29...	1024	20.0	584	7.7	21.5	--	--	--	4.9	56	--	--	
29...	1026	30.0	584	7.7	21.5	--	--	--	4.3	49	--	--	
29...	1028	40.0	584	7.7	21.0	--	--	--	4.3	49	--	--	
29...	1030	45.0	582	7.7	21.5	--	<1	8.5	3.8	44	.6	--	
DATE	TIME	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)	ALKA- LITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN													
05...	23	200	50	47	20	30	1.0	3.5	150	37	54	.20	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	200	50	47	20	30	1.0	3.5	150	37	54	.20	--
AUG													
29...	28	210	58	47	22	35	1.1	4.2	150	40	64	.20	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	210	58	47	22	36	1.1	4.4	150	48	66	.20	--

COLORADO RIVER BASIN
LAKE AUSTIN AT AUSTIN, TX--Continued

301739097471201 LAKE AUSTIN SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, 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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)
JAN												
05...	9.4	291	<1	<1	--	<.020	<.10	<.060	--	.50	--	<.010
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	<.020	<.10	.090	.51	.60	--	<.010
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	9.3	291	11	<1	--	<.020	<.10	<.060	--	.80	--	<.010
AUG												
29...	8.2	311	8	7	--	<.020	<.10	.020	.28	.30	--	.010
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	<.020	.10	.020	.38	.40	.50	.010
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	7.9	322	23	14	.08	.020	.10	.110	.19	.30	.40	.020
DATE	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)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN												
05...	1	71	<1	<10	1	7	<1	1	<.1	<1	<1	<3
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	10	--	10	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	1	67	<1	<10	1	5	1	12	<.1	<1	<1	<3
AUG												
29...	1	76	<1	<10	2	4	<1	1	<.1	1	<1	4
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	20	--	10	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	1	79	<1	<10	2	8	<1	39	<.1	<1	<1	9

301739097470901 LAKE AUSTIN SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
05...	1220	1.00	527	8.0	10.0	9.8	87
05...	1222	10.0	527	8.0	10.0	9.7	86
05...	1224	20.0	527	8.0	10.0	9.6	85
AUG							
29...	1005	1.00	580	7.9	28.0	7.4	96
29...	1007	12.0	580	7.7	25.5	4.1	51

302043097472401 LAKE AUSTIN SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
05...	1235	1.00	523	8.1	10.0	1.70	9.8	87
05...	1237	10.0	523	8.1	10.0	--	9.8	87
05...	1239	20.0	523	8.1	10.0	--	9.7	86
05...	1241	28.0	563	8.0	9.5	--	9.0	79
AUG								
29...	1100	1.00	568	7.9	28.0	1.30	7.5	97
29...	1102	10.0	584	8.0	21.5	--	6.5	74
29...	1104	20.0	584	7.9	21.0	--	5.9	67
29...	1106	29.0	584	8.0	21.0	--	5.3	60

COLORADO RIVER BASIN

LAKE AUSTIN AT AUSTIN, TX--Continued

302043097472401 LAKE AUSTIN SITE BC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN								
05...	<.020	<.10	<.060	--	.50	<.010	10	<10
05...	--	--	--	--	--	--	--	--
05...	<.020	<.10	<.060	--	.50	<.010	10	<10
05...	<.020	<.10	<.060	--	.60	<.010	10	10
AUG								
29...	<.020	<.10	<.010	--	.30	.010	30	10
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	<.020	<.10	.090	.31	.40	.010	20	20

302044097472301 LAKE AUSTIN SITE BL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
05...	1250	1.00	524	8.1	10.0	9.7	86
05...	1252	11.0	524	8.1	10.0	9.7	86
AUG							
29...	1120	1.00	570	7.9	28.0	7.6	98
29...	1122	10.0	584	8.1	22.0	5.4	62

301926097502201 LAKE AUSTIN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
DATE	TIME												
JAN													
05...	1310	1.00	524	8.2	11.0	4.0	<1	.80	10.0	91	.3	K1	
05...	1312	10.0	524	8.3	10.5	--	--	--	9.8	88	--	--	
05...	1314	20.0	524	8.3	10.5	--	--	--	9.8	88	--	--	
05...	1316	25.0	524	8.2	10.5	--	<1	.80	9.6	86	.4	--	
AUG													
29...	1130	1.00	572	7.9	26.5	1.50	<1	1.4	8.5	107	.4	21	
29...	1132	10.0	584	7.9	20.5	--	--	--	6.4	72	--	--	
29...	1134	20.0	584	7.9	20.5	--	--	--	6.3	71	--	--	
29...	1136	28.0	584	8.1	20.5	--	<1	4.7	5.7	64	.2	--	
		STREP- TOCOC- CI 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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
DATE													
JAN													
05...	<1	180	45	41	20	31	1.0	3.6	140	39	58	.20	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	190	54	43	21	33	1.1	3.5	140	39	58	.20	--
AUG													
29...	79	200	53	45	22	36	1.1	3.7	150	41	64	.20	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	210	56	46	22	36	1.1	3.8	150	42	67	.20	--

COLORADO RIVER BASIN
LAKE AUSTIN AT AUSTIN, TX--Continued

301926097502201 LAKE AUSTIN SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	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, 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)	ARSENIC DIS- SOLVED (UG/L AS AS)
JAN											
05...	6.9	284	<1	<1	<.020	<.10	.060	.54	.60	<.010	1
05...	--	--	--	--	<.020	<.10	<.060	--	.20	<.010	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	7.3	289	3	<1	<.020	<.10	.060	.44	.54	<.010	1
AUG											
29...	7.7	310	8	6	<.020	.10	.020	.28	.30	.020	1
29...	--	--	--	--	<.020	.10	.120	.18	.30	.010	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	7.4	314	10	2	<.020	.10	.070	.53	.60	.030	1
DATE	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)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN											
05...	69	<1	<10	1	<3	2	4	<.1	<1	1	<3
05...	--	--	--	--	20	--	<10	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
05...	72	<1	<10	1	4	<1	2	<.1	<1	<1	<3
AUG											
29...	79	<1	<10	2	<3	1	2	<.1	<1	<1	4
29...	--	--	--	--	20	--	20	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	80	<1	<10	2	6	1	12	<.1	<1	<1	6

302021097540001 LAKE AUSTIN SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SPE- CIFIC		PH	TEMPER-	TRANS- PAR- ENCY	OXYGEN,	OXYGEN, DIS- SOLVED	NITRO- GEN, NITRITE TOTAL
DATE	TIME	SAM- PLING DEPTH (FEET)	CON- DUCT- ANCE (UMHOS)	(STAND- ARD UNITS)	ATURE (DEG C)	(SECCHI DISK) (M)	(MG/L)	(PER- CENT SATUR- ATION)	(MG/L AS N)
JAN									
05...	1345	1.00	538	8.4	10.5	3.7	10.9	98	<.020
05...	1347	10.0	538	8.4	10.0	--	10.6	94	--
05...	1349	18.0	538	8.3	10.0	--	10.1	89	<.020
AUG									
29...	1200	1.00	584	8.1	19.5	3.5	5.9	65	<.020
29...	1202	10.0	583	8.1	19.5	--	5.6	62	--
29...	1204	16.0	583	8.2	19.5	--	5.1	56	<.020
		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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
05...	<.10	<.060	--	.50	--	<.010	20	10	
05...	--	--	--	--	--	--	--	--	
05...	<.10	.070	.43	.50	--	.020	20	10	
AUG									
29...	.10	.080	.22	.30	.40	.010	20	10	
29...	--	--	--	--	--	--	--	--	
29...	<.10	.120	.18	.30	--	.010	40	20	

COLORADO RIVER BASIN
LAKE AUSTIN AT AUSTIN, TX--Continued

302314097544901 LAKE AUSTIN SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
JAN												
05...	1415	1.00	555	8.2	12.5	2.10	<1	1.6	10.8	102	.6	K3
05...	1417	9.00	552	8.4	11.0	--	<1	4.3	10.9	99	.7	--
AUG												
29...	1230	1.00	584	7.8	18.0	2.40	<1	1.0	3.8	41	.3	K1
29...	1232	8.00	584	7.9	18.0	--	<1	1.0	3.3	35	--	--

DATE	STREP- TOCOCCHI 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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN 05...	<1	190	54	43	21	34	1.1	3.9	140	42	64	.30
05...	--	200	61	44	22	35	1.1	3.7	140	44	66	.30
AUG 29...	K5	210	62	47	23	37	1.1	4.4	150	41	67	.20
29...	--	210	56	46	22	36	1.1	3.9	150	38	66	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	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, 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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)
JAN												
05...	6.3	299	3	<1	<.020	<.10	<.060	--	.60	--	<.010	1
05...	6.5	306	6	<1	<.020	<.10	<.060	--	1.90	--	.050	1
AUG												
29...	7.5	317	7	<1	<.020	.10	.090	.21	.30	.40	.020	1
29...	7.5	310	9	<1	<.020	.10	.030	.17	.20	.30	.010	

DATE	TIME	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)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN												
05...	77	<1	<10	1	<3	<1	1	<.1	<1	<1	<1	<3
05...	79	<1	<10	1	3	<1	5	<.1	<1	<1	1	5
AUG												
29...	79	<1	<10	1	26	<1	9	<.1	<1	<1	<1	15
29...	80	<1	<10	2	14	3	6	<.1	<1	<1	<1	21

301739097471201 LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)
DATE	TIME							
JAN								
05...	1130	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
05...	1142	60.0	<.10	<.10	<.10	<.10	<.10	<2.0
AUG								
29...	1020	1.00	<.10	<.10	<.10	<.10	<.10	<2.0
29...	1030	45.0	<.10	<.10	<.10	<.10	<.10	<2.0
		PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
DATE								
JAN								
05...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
05...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
AUG								
29...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
29...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

COLORADO RIVER BASIN

LAKE AUSTIN AT AUSTIN, TX--Continued

301926097502201 LAKE AUSTIN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	
DATE	TIME								
JAN									
05...	1310	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
05...	1316	25.0	<.10	<.10	<.10	<.10	<.10	<2.0	
AUG									
29...	1130	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
29...	1136	28.0	<.10	<.10	<.10	<.10	<.10	<2.0	
		PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
DATE									
JAN									
05...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
05...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
AUG									
29...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
29...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1

302314097544901 LAKE AUSTIN SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	
DATE	TIME								
JAN									
05...	1415	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
05...	1417	9.00	<.10	<.10	<.10	<.10	<.10	<2.0	
AUG									
29...	1230	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
29...	1232	8.00	<.10	<.10	<.10	<.10	<.10	<2.0	
		PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
DATE									
JAN									
05...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
05...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
AUG									
29...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
29...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1

COLORADO RIVER BASIN

08157900 TOWN LAKE AT AUSTIN, TX

LOCATION.--Lat 30°14'56", long 97°43'03", Travis County, Hydrologic Unit 12090205, at Longhorn Dam on the Colorado River at Austin, 1.5 mi downstream from Interstate Highway 35, and 2.3 mi southeast of the State Capitol in Austin.

DRAINAGE AREA.--38,390 mi², approximately, of which 12,880 mi² probably is noncontributing.

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February 1975 to current year.

301559097424801 TOWN LAKE SITE AR.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1105	1.00	548	7.9	12.5	9.3	88
06...	1107	10.0	548	7.9	12.5	9.3	88
06...	1109	20.0	534	7.8	11.5	8.2	75
06...	1111	25.0	534	7.8	11.5	7.9	72
AUG							
30...	1020	1.00	575	7.5	27.5	5.7	73
30...	1022	10.0	575	7.4	26.5	4.6	58
30...	1024	20.0	575	7.4	26.0	4.9	61
30...	1026	27.0	575	7.4	25.5	4.5	56

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
JAN													
06...	1015	1.00	543	7.8	13.0	2.00	<1	1.8	8.7	83	.6	K14	
06...	1017	10.0	543	7.8	13.0	--	--	--	9.0	86	--	--	
06...	1019	20.0	539	7.7	11.0	--	--	--	8.5	77	--	--	
06...	1021	26.0	539	7.7	11.0	--	<1	2.1	8.3	75	.5	--	
AUG													
30...	1000	1.00	575	7.5	27.5	2.10	<1	2.0	6.0	77	.6	210	
30...	1002	10.0	575	7.5	27.0	--	--	--	6.3	80	--	--	
30...	1004	20.0	575	7.4	26.0	--	--	--	5.4	67	--	--	
30...	1006	27.0	579	7.4	26.0	--	<1	4.0	4.9	61	.6	--	
DATE	TIME	STREP- TOCOC- CI 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)	ALKA- LINITY FIELD (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN													
06...	20	220	38	54	20	27	.8	2.9	180	33	45	.30	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	210	43	54	19	27	.8	2.8	170	32	43	.30	
AUG													
30...	30	210	53	49	22	34	1.0	4.1	160	43	62	.20	
30...	--	--	--	--	--	--	--	--	--	--	--	--	
30...	--	--	--	--	--	--	--	--	--	--	--	--	
30...	--	210	53	49	22	35	1.1	3.6	160	44	63	.20	

COLORADO RIVER BASIN
TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 TOWN LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, 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)	NITRO- GEN, TOTAL (MG/L S N)	PHOS- PHORUS, TOTAL (MG/L AS P)
JAN												
06...	9.4	300	3	<1	--	<.020	.50	.090	.61	.70	1.2	.020
06...	--	--	--	--	.38	.020	.40	.080	.52	.60	1.0	.020
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	9.1	289	2	<1	--	<.020	.50	.090	.51	.60	1.1	.020
AUG												
30...	8.6	319	7	<1	--	<.020	.10	.080	.22	.30	.40	.010
30...	--	--	--	--	--	<.020	<.10	.060	.44	.50	--	.010
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	8.7	322	8	<1	--	<.020	.10	.100	.30	.40	.50	.010

DATE	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)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN												
06...	1	69	<1	<10	7	30	<1	5	<.1	<1	1	17
06...	--	--	--	--	--	20	--	<10	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	1	65	<1	<10	4	5	<1	9	<.1	<1	<1	6
AUG												
30...	1	78	<1	<10	5	<3	2	2	<.1	<1	<1	9
30...	--	--	--	--	--	10	--	10	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	1	79	<1	<10	3	45	2	24	<.1	<1	<1	20

301503097424701 TOWN LAKE SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1050	1.00	538	7.8	13.5	8.9	86
06...	1052	12.0	542	7.8	12.5	8.1	76
AUG							
30...	0939	1.00	575	7.3	28.0	5.4	70
30...	0941	10.0	578	7.3	27.5	5.4	69
30...	0943	18.0	578	7.4	26.0	5.2	65

301500097440801 TOWN LAKE SITE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1130	1.00	549	7.9	13.0	9.3	89
06...	1132	10.0	558	7.9	12.0	9.3	86
06...	1134	14.0	544	7.8	11.0	8.4	76
AUG							
30...	1050	1.00	578	7.6	27.0	6.5	83
30...	1052	10.0	580	7.6	26.0	6.2	77
30...	1054	20.0	580	7.6	25.5	5.8	72
30...	1056	25.0	580	7.6	25.5	5.6	69

COLORADO RIVER BASIN

TOWN LAKE AT AUSTIN, TX--Continued

301504097440901 TOWN LAKE SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1120	1.00	550	7.9	13.0	9.2	88
06...	1122	10.0	550	7.9	12.5	9.2	87
06...	1124	20.0	550	7.8	11.5	9.1	83
06...	1126	27.0	541	7.8	11.0	8.2	75
AUG							
30...	1040	1.00	575	7.7	27.0	6.7	85
30...	1042	10.0	579	7.6	26.0	6.2	77
30...	1044	21.0	579	7.6	25.5	5.4	67

301544097445201 TOWN LAKE SITE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1148	1.00	558	7.8	12.0	9.6	89
06...	1150	9.00	565	7.8	12.0	9.5	88
AUG							
30...	1020	1.00	591	7.5	24.5	6.1	74
30...	1022	10.0	591	7.5	24.0	5.9	71

301546097445101 TOWN LAKE SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1140	1.00	558	7.8	12.0	9.6	89
06...	1142	14.0	558	7.6	11.0	8.2	75
AUG							
30...	1110	1.00	589	7.6	24.5	5.9	72
30...	1112	10.0	589	7.6	24.5	5.7	69
30...	1114	18.0	589	7.6	24.5	5.4	66

301556097452301 TOWN LAKE SITE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
06...	1216	1.00	575	7.8	12.5	10.4	98
06...	1218	10.0	565	7.8	11.5	9.9	91
06...	1220	15.0	565	7.7	11.5	9.2	84

COLORADO RIVER BASIN
TOWN LAKE AT AUSTIN, TX--Continued

301558097452201 TOWN LAKE SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN										
06	1200	1.00	583	7.7	12.5	2.70	<1	1.2	10.1	95
06...	1202	10.0	565	7.8	11.5	--	--	--	9.8	90
06...	1204	20.0	565	7.7	11.0	--	<1	1.0	9.0	82
AUG										
30...	1130	1.00	582	7.7	24.5	1.70	<1	3.2	5.9	72
30...	1132	10.0	582	7.7	24.0	--	--	--	5.9	71
30...	1134	18.0	582	7.7	24.0	--	<1	3.0	5.7	69

DATE	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (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
JAN									
06...	.7	110	37	240	39	61	21	26	.8
06...	--	--	--	--	--	--	--	--	--
06...	.5	--	--	230	39	57	21	27	.8
AUG									
30...	.4	240	70	200	54	47	21	36	1.1
30...	--	--	--	--	--	--	--	--	--
30...	.5	--	--	210	63	49	22	36	1.1

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)
JAN									
06...	2.5	200	34	43	.30	9.0	317	2	<1
06...	--	--	--	--	--	--	--	--	--
06...	2.7	190	34	45	.30	9.6	311	<1	<1
AUG									
30...	3.7	150	42	64	.20	8.1	312	10	<1
30...	--	--	--	--	--	--	--	--	--
30...	3.7	150	44	65	.20	8.4	318	12	<1

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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
06...	<.020	.70	<.060	--	.50	1.2	.020	3	8
06...	<.020	.50	.060	.64	.70	1.2	<.010	20	10
06...	<.020	.60	.070	.73	.80	1.4	.020	<3	14
AUG									
30...	<.020	<.10	.080	.22	.30	--	.010	7	8
30...	<.020	<.10	.090	.31	.40	--	.010	20	20
30...	<.020	.10	.070	.13	.20	.30	.010	46	9

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
JAN											
06...	1330	1.00	556	7.6	13.5	--	<1	.80	9.6	92	K12
06...	1332	10.0	543	7.8	13.5	--	--	--	9.7	93	--
06...	1334	14.0	538	7.9	12.0	--	<1	1.0	10.3	95	.5
AUG											
30...	1200	1.00	582	7.9	22.5	1.40	<1	3.5	6.3	74	.4
30...	1202	10.0	582	7.9	22.5	--	--	--	6.3	74	--
30...	1204	18.0	582	7.9	23.0	--	<1	3.0	5.9	70	.3

COLORADO RIVER BASIN
TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	STREP- TOCOCCE 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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN												
06...	K13	220	39	53	21	27	.8	2.9	180	35	47	.30
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	210	52	50	21	30	.9	3.2	160	36	51	.30
AUG												
30...	240	210	58	47	22	36	1.1	3.7	150	36	66	.20
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	210	58	47	22	36	1.1	4.4	150	44	66	.20
DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	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, 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)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC DIS- SOLVED (UG/L AS AS)
JAN												
06...	9.0	303	4	<1	<.020	.40	<.060	--	.60	1.0	<.010	1
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	8.9	296	<1	<1	<.020	.20	.060	.54	.60	.80	.010	1
AUG												
30...	7.9	309	15	8	<.020	<.10	.050	.35	.40	--	.010	<1
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	7.8	317	14	<1	<.020	<.10	.030	.37	.40	--	.010	1
DATE	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)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	
JAN												
06...	70	<1	<10	2	8	<1	3	<.1	<1	<1	7	
06...	--	--	--	--	--	--	--	--	--	--	--	
06...	73	<1	<10	1	4	<1	3	<.1	<1	1	4	
AUG												
30...	80	<1	<10	2	14	2	3	<.1	<1	<1	6	
30...	--	--	--	--	--	--	--	--	--	--	--	
30...	82	<1	10	2	12	3	7	<.1	<1	<1	13	

301601097454001 TOWN LAKE SITE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
AUG							
30...	1145	1.00	630	7.2	23.5	8.2	98
30...	1147	8.00	633	7.2	23.0	6.4	76

COLORADO RIVER BASIN
TOWN LAKE AT AUSTIN, TX--Continued

301500097424801 TOWN LAKE SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

		SAM- PLING DEPTH (FEET)	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	
DATE	TIME								
JAN									
06...	1015	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
06...	1021	26.0	<.10	<.10	<.10	<.10	<.10	<2.0	
AUG									
30...	1000	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
30...	1006	27.0	<.10	<.10	<.10	<.10	<.10	<2.0	
		PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
DATE									
JAN									
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
AUG									
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1

301712097470701 TOWN LAKE SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SAM- PLING DEPTH (FEET)	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	
JAN									
06...	1330	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
06...	1334	14.0	<.10	<.10	<.10	<.10	<.10	<2.0	
AUG									
30...	1200	1.00	<.10	<.10	<.10	<.10	<.10	<2.0	
30...	1204	18.0	<.10	<.10	<.10	<.10	<.10	<2.0	
DATE		PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
JAN									
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
06...	.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
AUG									
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1
30...	<.1	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1	<.1

COLORADO RIVER BASIN

08158000 COLORADO RIVER AT AUSTIN, TX
(National stream-quality accounting network)

LOCATION.--Lat 30°14'40", long 97°41'39", Travis County, Hydrologic Unit 12090205, on right bank 1,000 ft upstream from upstream bridge on U.S. Highway 183 in Austin, 1.4 mi downstream from Longhorn Dam, and at mile 290.3.

DRAINAGE AREA.--39,009 mi², approximately, of which 11,403 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1898 to current year. Records of daily discharge for Dec. 13-26, 1914, and Feb. 9-17, 1915, published in WSP 408, have been found unreliable and should not be used.

REVISED RECORDS.--WSP 508: 1915(m). WSP 528: 1900(M), 1918(m). WSP 548: 1901-16. WSP 1342: Drainage area. WSP 1562: 1908, 1929(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 402.27 ft National Geodetic Vertical Datum of 1929. Prior to June 19, 1939, all records collected at or near Congress Avenue Bridge 3.9 mi upstream at datum 19.6 ft higher; prior to June 18, 1915, nonrecording gages, recording gages thereafter; June 20, 1939, to Oct. 16, 1963, at site 1,000 ft downstream from present site at datum 5.0 ft higher.

REMARKS.--Water-discharge records fair. Since 1937, at least 10 percent of drainage area regulated by reservoirs. Flow largely regulated by Lake Travis (station 08154500). The city of Austin diverts water for municipal use upstream from station and returns sewage effluent downstream. Many other diversions above Lake Buchanan for irrigation, municipal supplies, and oilfield operations. Gage-height telemeter at station.

AVERAGE DISCHARGE.--38 years (water years 1899-1936) unregulated, 2,711 ft³/s (1,964,000 acre-ft/yr); 47 years (water years 1937-83) regulated, 1,985 ft³/s (1,438,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 481,000 ft³/s June 15, 1935 (gage height, 50 ft, present site and datum, from floodmark); minimum daily, 10 ft³/s Dec. 17, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 51 ft July 7, 1869, present site and datum (adjusted to present site on basis of record for flood of June 15, 1935), determined from information concerning stage at former site furnished by Dean T. U. Taylor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,440 ft³/s Aug. 8 at 1630 hours (gage height, 9.98 ft); minimum daily, 6.3 ft³/s Oct. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	993	47	833	245	97	91	74	1520	1610	1860	1060	2410
2	848	180	1220	80	97	92	390	1540	1600	2020	1050	2260
3	369	232	636	69	98	107	426	1450	1670	1920	938	2430
4	707	59	77	76	119	289	400	1340	1730	1950	964	2340
5	59	64	71	73	291	110	423	1290	2550	2010	2240	2370
6	73	53	71	74	111	119	437	1180	1830	2250	2260	2380
7	136	61	124	82	101	105	399	1200	1790	2090	1130	2590
8	73	51	67	85	105	813	1840	1200	2180	2100	2280	2470
9	67	63	54	75	343	238	1210	1240	2070	2210	1080	2420
10	89	57	120	70	131	544	474	1400	2070	2200	925	2280
11	46	56	126	70	111	573	438	2130	1900	2190	896	2110
12	98	73	71	72	117	555	641	1220	1930	2320	147	2010
13	82	51	57	71	113	531	474	1310	1990	2200	431	1950
14	67	63	69	73	115	543	411	1180	2000	2470	120	1500
15	53	47	67	66	293	737	580	1210	1280	2260	46	1530
16	49	65	63	83	136	388	674	1140	2160	458	629	1560
17	49	57	63	80	134	1230	626	1250	1920	2040	662	1640
18	49	65	63	179	135	543	651	1440	1830	1700	649	2030
19	51	83	60	156	133	582	488	1060	1810	1270	510	2250
20	41	60	61	121	148	613	588	1510	1830	1170	406	1760
21	6.3	64	79	148	136	521	498	944	1780	1470	780	941
22	6.5	65	509	102	137	748	552	593	1960	1460	645	878
23	65	89	103	103	124	902	915	1210	1890	1360	1320	867
24	49	976	73	108	127	199	996	1260	2020	1350	2100	966
25	36	65	58	99	103	127	1070	1420	2110	1250	2050	1020
26	59	674	70	104	117	605	1130	1210	1930	1160	1990	977
27	41	213	145	97	112	178	1160	1140	2020	1040	1910	986
28	125	82	66	108	102	381	1120	1310	1910	1060	2160	1680
29	184	70	70	107	---	109	1200	1540	2040	1120	2090	1430
30	49	68	65	96	---	196	1310	1430	1920	1090	2090	1430
31	44	---	81	114	---	94	---	1480	---	1080	2300	---
TOTAL	4663.8	3853	5292	3086	3886	12863	21595	40347	57330	52128	37858	53465
MEAN	150	128	171	99.5	139	415	720	1302	1911	1682	1221	1782
MAX	993	976	1220	245	343	1230	1840	2130	2550	2470	2300	2590
MIN	6.3	47	54	66	97	91	74	593	1280	458	46	867
AC-FT	9250	7640	10500	6120	7710	25510	42830	80030	113700	103400	75090	106000
CAL YR 1982	TOTAL	540922.8	MEAN	1482	MAX	7250	MIN	6.3	AC-FT	1073000		
WTR YR 1983	TOTAL	296366.8	MEAN	812	MAX	2590	MIN	6.3	AC-FT	587800		

COLORADO RIVER BASIN

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1947 to October 1973. Chemical and biochemical analyses: October 1973 to current year. Sediment records: October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to current year.

WATER TEMPERATURES: October 1947 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 737 micromhos Jan. 12, 1964; minimum daily, 243 micromhos Dec. 2, 1953.

WATER TEMPERATURES: Maximum daily, 33.0°C July 25, 1979; minimum daily, 6.0°C Jan. 28, 1948, Feb. 4, 1949.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 721 micromhos Nov. 17; minimum daily, 387 micromhos Dec. 4.

WATER TEMPERATURES: Maximum daily, 26.5°C Aug. 16; minimum daily, 11.0°C on several days during November and January.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L) AS CAC03)
NOV 09...	0815	65	540	7.4	19.0	1.0	5.8	63	.5	K83	580	200
FEB 15...	0940	353	520	7.6	15.0	3.9	9.4	96	1.3	K320	1200	220
JUN 28...	1400	3420	573	8.0	25.0	2.1	5.2	64	.0	K360	150	220
JUL 20...	1115	1290	562	--	22.0	--	--	--	--	--	--	210
AUG 23...	0845	25	583	7.4	29.0	1.0	3.4	45	.6	270	180	210
SEP 27...	1140	1110	574	--	22.0	--	--	--	--	--	--	210
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)	ALKA- LINITY FIELD (MG/L AS CAC03)	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 09...		44	50	19	28	.9	3.2	160	33	47	.30	7.5
FEB 15...		38	57	18	23	.7	2.3	180	35	37	.30	6.9
JUN 28...		56	50	22	34	1.0	3.6	160	43	62	.20	7.5
JUL 20...		54	51	21	31	1.0	3.2	160	43	57	.20	6.9
AUG 23...		37	51	21	31	1.0	3.3	178	40	55	.30	9.9
SEP 27...		56	46	22	34	1.1	3.5	150	43	63	.30	7.9
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	SEDI- MENT, SUS- PENDEED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 09...		299	285	.15	.070	1.00	.030	<.010	<.010	19	3.3	100
FEB 15...		299	289	.49	.080	.60	.040	.030	.020	9	8.6	84
JUN 28...		320	319	.14	.070	.50	.020	.040	.020	12	111	88
JUL 20...		--	309	--	--	--	--	--	--	--	--	--
AUG 23...		358	319	.23	.130	.50	.010	.010	<.010	9	.61	74
SEP 27...		--	310	--	--	--	--	--	--	--	--	--

COLORADO RIVER BASIN

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 09...	0815	1	77	<1	<1	<3	3	<3
FEB 15...	0940	1	62	<1	<1	<3	5	4
JUN 28...	1400	1	78	<1	<1	<3	1	<3
AUG 23...	0845	1	85	<1	<1	<3	9	5

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 09...	<1	12	<.1	<1	<1	<1	7
FEB 15...	1	6	<.1	1	1	<1	12
JUN 28...	1	4	<.1	<1	1	<1	16
AUG 23...	2	82	<.1	34	<1	<1	4

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1982 TO SEPTEMBER 1983

MONTH	YEAR	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.	1982	4663.8	542	295	3710	48	606	34	432	210
NOV.	1982	3853	572	311	3240	52	540	37	380	220
DEC.	1982	5292	552	300	4290	49	706	35	501	220
JAN.	1983	3086	573	311	2590	52	433	37	305	220
FEB.	1983	3886	554	301	3160	50	520	35	369	220
MAR.	1983	12863	537	292	10100	47	1650	34	1180	210
APR.	1983	21595	573	311	18200	52	3030	37	2130	220
MAY	1983	40347	562	305	33300	51	5500	36	3890	220
JUNE	1983	57330	568	309	47800	51	7950	36	5610	220
JULY	1983	52128	575	312	43900	52	7340	37	5160	220
AUG.	1983	37858	574	312	31900	52	5320	37	3740	220
SEPT	1983	53465	579	315	45400	53	7610	37	5340	230
TOTAL		296366.8	**	**	248000	**	41200	**	29000	**
WTD. AVG.		812	569	309	**	51	**	36	**	220

COLORADO RIVER BASIN
08158000 COLORADO RIVER AT AUSTIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983												
DAY	EQUIVALENT MEAN											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	525	564	529	475	527	561	548	573	569	575	578	579
2	520	570	545	508	496	701	571	575	576	577	580	582
3	522	526	530	547	565	570	565	578	584	579	581	583
4	523	575	387	532	511	563	559	575	578	578	585	595
5	527	569	563	537	550	559	558	577	538	579	574	585
6	537	591	557	527	565	553	564	578	583	580	579	587
7	542	585	563	582	539	540	562	578	572	578	574	588
8	558	586	576	592	563	565	570	577	578	579	578	577
9	532	593	561	593	574	558	572	579	565	580	543	586
10	572	582	573	559	552	542	575	565	572	579	562	585
11	557	570	589	610	555	538	572	507	566	574	567	546
12	570	583	557	603	486	552	578	543	574	569	569	570
13	581	600	515	597	559	552	587	560	576	576	567	580
14	572	607	581	595	522	534	598	573	583	577	558	581
15	567	615	589	596	620	450	578	550	577	575	571	584
16	578	624	585	602	568	500	565	573	540	562	567	590
17	582	721	574	600	552	528	570	575	517	563	568	589
18	579	622	550	587	566	535	573	573	563	560	569	575
19	589	623	530	569	562	542	571	573	556	554	572	559
20	582	593	599	591	504	524	560	572	541	569	566	577
21	595	592	607	571	557	546	571	535	570	576	572	575
22	600	591	596	573	573	553	572	458	564	571	571	572
23	609	587	533	572	563	541	574	518	574	572	572	571
24	611	557	555	596	501	499	576	566	575	572	574	571
25	608	564	586	648	562	533	577	570	570	576	576	574
26	609	582	576	624	557	551	579	562	572	574	567	577
27	611	518	591	593	558	522	578	568	601	576	573	579
28	597	541	582	526	557	518	577	562	580	575	582	581
29	581	609	589	597	---	541	575	563	577	577	571	577
30	587	534	533	596	---	535	576	560	575	580	578	584
31	591	---	549	597	---	546	---	565	---	587	581	---
MEAN	571	586	560	577	549	544	572	561	569	574	572	579

	TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983											
	ONCE-DAILY											
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.5	20.5	15.0	12.0	15.5	15.5	16.0	19.0	21.0	21.0	24.5	24.0
2	23.5	20.5	15.5	11.0	14.5	16.0	14.5	19.0	21.0	21.0	25.5	24.0
3	24.5	21.0	15.5	11.0	13.5	18.0	15.0	19.5	20.5	21.5	23.5	24.0
4	24.5	18.5	15.5	11.0	13.5	19.5	15.0	18.0	20.5	21.5	25.0	23.0
5	25.0	18.5	15.0	11.0	13.5	19.0	16.0	19.0	20.5	22.0	24.5	23.0
6	25.5	18.5	15.5	11.0	13.5	18.0	16.5	19.0	20.5	23.0	24.0	21.5
7	24.5	18.5	15.5	11.0	13.5	18.0	15.5	20.0	20.5	24.0	24.5	21.5
8	25.0	18.5	15.5	11.0	13.0	18.0	16.5	20.0	20.5	23.0	24.0	22.0
9	25.0	19.0	14.5	12.0	14.0	18.0	17.0	19.5	21.0	23.0	24.0	22.0
10	25.0	19.0	14.5	12.0	15.0	16.5	17.0	19.5	20.0	22.0	24.0	22.0
11	24.0	19.0	14.5	12.0	15.0	15.0	18.0	19.5	20.5	21.5	24.0	23.0
12	23.0	19.0	14.0	12.0	15.0	15.5	20.5	19.5	20.0	22.0	24.0	22.0
13	21.0	18.0	14.0	12.0	15.5	16.0	20.5	19.5	20.0	21.0	24.0	23.0
14	25.0	11.0	13.5	12.0	15.5	16.5	20.5	19.5	20.0	21.0	24.0	23.0
15	22.0	16.5	13.5	12.0	13.5	16.0	18.0	18.0	20.0	20.5	24.0	23.5
16	22.0	17.0	13.5	13.0	13.0	16.0	17.0	17.0	21.0	20.0	26.5	21.5
17	21.0	16.0	13.0	12.0	15.5	16.5	18.0	20.0	21.0	20.0	26.0	21.5
18	21.0	16.5	13.5	12.0	15.5	16.0	18.0	19.0	21.0	20.0	25.5	22.0
19	21.0	17.0	14.0	12.0	15.5	16.5	21.0	18.0	25.5	21.5	25.0	23.0
20	21.0	16.5	14.0	11.0	16.5	16.5	21.0	17.0	20.5	21.0	25.5	22.0
21	21.0	17.0	14.0	13.5	15.5	16.5	18.5	17.0	21.0	21.0	25.5	20.5
22	20.0	18.0	14.0	13.0	15.0	14.0	18.5	17.0	21.0	21.5	25.0	21.5
23	21.0	19.0	14.0	13.0	14.0	14.0	18.5	17.0	21.5	23.0	25.5	21.0
24	20.0	15.5	14.0	13.0	15.5	14.5	18.5	20.0	21.0	23.0	25.5	21.0
25	19.0	16.0	14.0	13.0	15.5	14.0	18.5	20.5	22.0	23.0	25.0	21.0
26	18.0	15.0	---	13.5	15.5	14.5	18.0	20.0	21.5	22.0	25.5	21.0
27	18.5	14.5	14.0	13.5	15.5	14.0	18.0	20.0	21.5	23.0	25.0	21.0
28	19.0	14.0	13.5	13.0	15.5	14.0	19.0	20.0	20.5	23.0	25.0	21.5
29	21.0	14.5	13.0	14.5	---	14.5	19.5	20.5	21.0	23.0	25.5	21.0
30	19.0	15.0	12.0	14.0	---	15.0	19.0	21.5	21.5	---	24.5	21.5
31	19.5	---	12.0	16.0	---	16.0	---	21.0	---	---	24.0	---
MEAN	22.0	17.5	14.0	12.5	14.5	16.0	18.0	19.0	21.0	22.0	25.0	22.0

COLORADO RIVER BASIN

08158650 COLORADO RIVER BELOW AUSTIN, TX
(Low-flow partial-record station)

LOCATION.--Lat 30°12'28", long 97°38'15", Travis County, Hydrologic Unit 12090205, at bridge on Farm Road 973, 0.3 mi northeast of intersection of State Highway 71 and Farm Road 973, 8.8 mi downstream from Govalle Sewage Treatment Plant outfall, and 9.6 mi downstream from gaging station at Austin.

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1968 to current year. Pesticide analyses: October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CaCO3)
NOV 09...	0955	660	7.3	20.0	25	3.0	4.8	53	16	K240	1200	180
DEC 21...	1312	686	7.4	16.5	5	2.1	8.6	90	4.0	K36	500	200
FEB 15...	1125	620	7.4	15.0	<1	15	5.8	59	7.3	K260	1200	200
APR 20...	0930	595	7.5	21.5	<1	1.4	5.2	60	.9	K16	100	210
JUN 29...	0745	582	7.8	24.0	5	7.4	7.0	84	1.6	96	310	210
AUG 23...	1000	575	7.5	30.5	5	12	4.0	54	.6	110	270	210

DATE	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
NOV 09...	17	41	18	53	1.8	7.2	160	52	68	1.2	11
DEC 21...	43	50	19	54	1.7	6.8	160	55	68	.90	8.0
FEB 15...	33	53	17	41	1.3	4.8	170	53	56	.60	7.4
APR 20...	54	51	21	36	1.1	3.8	160	47	56	.50	5.5
JUN 29...	63	49	22	37	1.1	3.8	150	46	65	.30	7.2
AUG 23...	52	50	21	34	1.0	4.0	160	45	58	.40	9.4

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (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)	CARBON, ORGANIC TOTAL (MG/L AS C)
NOV 09...	348	8	4	2.6	.470	3.1	4.30	6.7	11.0	2.80	11
DEC 21...	358	19	6	3.0	.360	3.4	3.60	3.3	6.90	3.10	7.5
FEB 15...	335	21	16	2.0	.190	2.2	3.20	1.2	4.40	2.30	6.6
APR 20...	317	2	<1	.58	.020	.60	1.50	1.1	2.60	.660	4.8
JUN 29...	320	19	13	.45	.050	.50	.150	.65	.80	.230	2.8
AUG 23...	318	2	<1	.62	.180	.80	.510	.79	1.30	.500	3.4

DATE	TIME	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 09...	0955	2	48	<1	<10	2	11
FEB 15...	1125	2	50	<1	<10	2	11
JUN 29...	0745	1	77	<1	<10	<1	4
AUG 23...	1000	1	71	<1	<10	6	14

COLORADO RIVER BASIN

08158650 COLORADO RIVER BELOW AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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 09...	<1	120	<.1	<1	<1	12
FEB 15...	1	44	<.1	<1	<1	9
JUN 29...	<1	7	<.1	1	<1	11
AUG 23...	<1	13	<.1	<1	<1	3

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 15...	1125	<.10	<.10	<.10	<.10	<.10	<2.0	.2
AUG 23...	1000	<.10	<.10	<.10	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 15...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
AUG 23...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

COLORADO RIVER BASIN

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX

LOCATION.--Lat 30°22'19", long 97°47'04", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of bridge at Loop 360, 1.0 mi upstream from West Fork Bull Creek and Farm Road 2222, and 7.1 mi northwest of the State Capitol Building in Austin.

DRAINAGE AREA.--22.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to July 1978 (operated as a flood-hydrograph partial-record station only), July 1978 to current year.

GAGE.--Water-stage recorder, concrete control, and crest-stage gage. Datum of gage is 534.08 ft National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.--Water-discharge records good. No known regulation or diversion above station. There are two recording rain gages in the watershed. This station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban-rural areas.

AVERAGE DISCHARGE.--5 years, 9.58 ft³/s (5.83 in/yr), 6,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s May 13, 1982 (gage height, 11.96 ft); minimum daily, 0.02 ft³/s July 30, 1978.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 20	1515	409	4.61
May 21	1030	244	4.10
Aug. 8	1415	*724	5.25

Minimum daily discharge, 0.29 ft³/s Oct. 2-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.81	4.9	10	5.4	7.2	17	3.7	6.0	4.6	1.0	1.0
2	.29	9.8	4.8	7.2	5.2	7.1	15	3.5	6.0	4.1	.87	.98
3	.29	9.5	5.0	6.4	5.0	6.8	15	3.1	5.0	3.4	.81	.79
4	.29	3.2	4.5	6.0	5.2	15	14	2.7	5.4	3.2	2.3	.65
5	.29	1.9	4.1	5.6	14	14	13	2.5	29	3.0	4.1	.55
6	.82	1.7	3.8	5.2	11	11	12	2.4	34	6.5	2.3	.54
7	.47	1.6	3.7	5.0	8.4	9.7	11	2.6	24	4.4	1.5	.70
8	.38	1.6	3.7	5.0	7.7	9.0	11	2.4	16	3.6	66	1.5
9	.54	1.6	3.5	4.9	24	12	10	2.0	13	3.1	12	2.9
10	.46	1.6	3.7	4.7	16	9.1	10	6.0	12	2.7	6.2	3.9
11	.42	1.6	4.7	4.6	12	8.3	9.3	11	10	2.7	5.0	2.2
12	.66	1.6	4.6	4.4	11	7.7	8.8	4.6	8.9	2.4	4.4	1.3
13	.77	1.5	4.4	4.4	10	7.7	8.2	3.7	8.3	2.4	3.9	1.0
14	.62	1.5	4.3	4.4	9.6	7.7	7.7	3.4	19	2.7	3.3	.84
15	.62	1.5	4.0	4.4	19	9.4	7.2	4.1	13	3.0	2.7	.95
16	.62	1.5	3.4	4.1	16	20	6.8	3.9	26	19	2.6	.78
17	.62	1.5	3.4	4.1	13	16	6.8	3.0	20	9.5	2.4	.60
18	.62	1.5	3.4	5.1	12	13	6.6	3.9	15	6.3	2.1	2.0
19	.62	2.2	3.3	6.8	11	13	6.0	3.9	14	5.7	14	24
20	.62	2.0	3.0	6.9	12	27	5.2	62	12	4.9	5.9	5.2
21	.54	1.9	3.0	7.0	11	16	5.0	79	10	4.3	4.8	2.9
22	.49	1.7	3.0	7.0	10	15	5.0	23	9.2	4.0	3.8	1.9
23	.48	1.8	3.0	6.8	9.6	29	4.6	16	7.7	3.0	3.0	1.8
24	.49	2.0	3.0	6.4	8.9	21	4.3	12	7.2	2.6	2.7	1.6
25	.49	1.9	3.0	5.9	8.4	19	4.0	10	7.8	2.2	2.4	1.3
26	.49	13	3.0	5.7	8.1	47	3.7	8.9	7.0	2.2	2.0	1.0
27	.49	12	4.9	5.7	7.7	28	3.7	7.4	5.7	2.1	2.0	1.0
28	.50	7.4	4.3	5.6	7.2	22	3.7	6.7	5.7	2.0	2.0	1.0
29	2.1	5.8	3.7	5.4	---	20	3.7	6.3	5.3	1.8	1.8	1.0
30	1.1	5.1	3.7	5.4	---	21	3.7	5.4	4.9	1.4	1.5	1.0
31	.86	---	4.0	5.4	---	18	---	5.7	---	1.3	1.3	---
TOTAL	18.39	102.31	118.8	175.5	298.4	486.7	242.0	314.8	367.1	124.1	170.68	66.88
MEAN	.59	3.41	3.83	5.66	10.7	15.7	8.07	10.2	12.2	4.00	5.51	2.23
MAX	2.1	13	5.0	10	24	47	17	79	34	19	66	24
MIN	.29	.81	3.0	4.1	5.0	6.8	3.7	2.0	4.9	1.3	.81	.54
CFSM	.03	.15	.17	.25	.48	.70	.36	.46	.55	.18	.25	.10
IN.	.03	.17	.20	.29	.50	.81	.40	.53	.61	.21	.28	.11
AC-FT	36	203	236	348	592	965	480	624	728	246	339	133
CAL YR 1982	TOTAL	2560.30	MEAN	7.01	MAX	1170	MIN	.09	CFSM	.31	IN	4.27
WTR YR 1983	TOTAL	2485.66	MEAN	6.81	MAX	79	MIN	.29	CFSM	.31	IN	4.15
									AC-FT	5080		
									AC-FT	4930		

COLORADO RIVER BASIN

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: April 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB												
09...	1245	25	390	7.9	12.5	10	350	10.2	99	2.9	2300	48000
28...	0850	5.7	615	8.2	10.0	<1	2.1	10.5	95	.4	K7	K55
MAY												
11...	0020	128	444	--	--	10	700	--	--	7.0	--	--
11...	0042	160	302	--	--	20	1800	--	--	17	--	--
11...	0506	22	705	8.0	--	10	35	--	--	2.6	10000	31000
SEP												
19...	1215	111	431	--	--	5	--	--	--	5.1	26000	52000
19...	1230	350	294	--	--	30	1200	--	--	6.2	14000	66000
19...	1245	253	271	8.0	--	15	1100	--	--	5.0	27000	86000
19...	1415	52	219	--	--	35	1200	--	--	5.0	38000	80000

DATE	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB												
09...	160	43	47	11	17	.6	1.9	120	44	24	.20	4.6
28...	270	68	71	22	28	.8	1.6	200	63	45	.20	5.6
MAY												
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	240	58	67	17	53	1.6	3.3	180	86	70	.20	7.5
SEP												
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
19...	110	19	33	7.1	11	.5	2.5	93	27	14	.10	5.9
19...	--	--	--	--	--	--	--	--	--	--	--	--

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)
FEB											
09...	222	370	49	.48	.020	.50	.060	1.6	1.70	.470	10
28...	356	3	<1	--	<.020	.30	.110	.29	.40	.020	1.8
MAY											
11...	--	1740	472	.17	.030	.20	.100	3.3	3.40	.400	36
11...	--	2630	508	.38	.120	.50	.160	2.8	3.00	.450	62
11...	412	81	36	.38	.020	.40	.090	.81	.90	.080	6.4
SEP											
19...	--	1090	40	.16	.040	.20	.050	5.0	5.00	.300	28
19...	--	2150	276	.25	.050	.30	.030	1.2	1.20	.310	--
19...	156	2150	89	.25	.050	.30	.040	6.0	6.00	.370	49
19...	--	1930	85	.24	.060	.30	.050	6.0	6.00	.370	43

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							
09...	1245	1	28	<1	<10	6	32
28...	0850	<1	50	<1	<10	4	<3
MAY							
11...	0020	1	<100	<1	<10	9	280
11...	0506	1	57	<1	<10	6	29
SEP							
19...	1215	1	37	<1	<10	4	21

COLORADO RIVER BASIN

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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 09...	<1	2	<.1	<1	<1	5
28...	<1	2	<.1	<1	<1	<3
MAY 11...	1	20	<.1	1	<1	10
11...	<1	2	<.1	<1	<1	5
SEP 19...	1	2	<.1	<1	<1	<3

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 09...	1245	<.10	<.10	<.10	<.10	<.10	<2.0	<.1
MAY 11...	0020	<.10	<.10	.50	<.10	<.10	<2.0	.7
SEP 19...	1215	<.10	<.10	<.10	<.10	<.10	<2.0	.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 09...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
MAY 11...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
SEP 19...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

STORM RAINFALL AND RUNOFF RECORD									
1983 WATER YEAR									
STATION NO. 05154700									
SULLY CREEK AT LOOP 360, AUSTIN, TEXAS									
STORM OF MAY 19-20, 1983									
DATE & TIME	15UL	GAGE	NUMBER	PRECIP. IN.	WEIGHTED PRECIP. IN.	DISCHARGE IN	ACCUM. IN.	ACCUM. RUNOFF IN.	
MAY 19									
0000	0.0			0.0		4.4	0.0	0.0013	
0040	0.01			0.01		4.1	0.01	0.0037	
0100	0.06			0.06		3.4	0.06	0.0047	
0150	0.29			0.29		3.4	0.29	0.0055	
0230	0.29			0.29		3.0	0.29	0.0062	
0340	0.29			0.29		10.0	0.29	0.0064	
0400	0.51			0.51		14.0	0.51	0.0066	
MAY 20									
0000	0.51			0.51		14.0	0.51	0.0066	
0115	0.69			0.69		7.7	0.69	0.0073	
0230	0.69			0.69		11.0	0.69	0.0093	
0315	0.69			0.69		6.8	0.69	0.0119	
0315	0.85			0.85		6.8	0.85	0.0135	
0320	0.55			0.55		25.0	0.55	0.0142	
0340	1.02			1.02		54.0	1.02	0.0153	
0355	1.16			1.16		59.0	1.16	0.0157	
0400	1.26			1.26		53.0	1.26	0.0160	
0405	1.30			1.30		43.0	1.30	0.0163	
0410	1.30			1.30		91.0	1.30	0.0168	
0415	1.31			1.31		177.0	1.31	0.0170	
0420	1.34			1.34		177.0	1.34	0.0186	
0425	1.50			1.50		218.0	1.50	0.0198	
0430	1.56			1.56		258.0	1.56	0.0213	
0435	1.83			1.83		299.0	1.83	0.0231	
0440	1.95			1.95		273.0	1.95	0.0247	
0445	2.03			2.03		248.0	2.03	0.0261	
0450	2.03			2.03		222.0	2.03	0.0293	
0455	2.03			2.03		309.0	2.03	0.0338	
0500	2.03			2.03		359.0	2.03	0.0359	
0505	2.03			2.03		409.0	2.03	0.0406	
0510	2.03			2.03		402.0	2.03	0.0487	
0515	2.03			2.03		348.0	2.03	0.0608	
0520	2.03			2.03		177.0	2.03	0.0680	
0525	2.11			2.11		140.0	2.11	0.0729	
0530	2.11			2.11		104.0	2.11	0.0755	
0535	2.11			2.11		100.0	2.11	0.0817	
0540	2.11			2.11		102.0	2.11	0.0838	
0545	2.11			2.11		90.0	2.11	0.1044	
0550	2.11			2.11		43.0	2.11	0.1111	

COLORADO RIVER BASIN

08155260 BARTON CREEK NEAR CAMP CRAFT ROAD, AUSTIN, TX

LOCATION.--Lat 30°16'12", long 97°49'43", Travis County, Hydrologic Unit 12090205, on left bank about 0.5 mi south of Camp Craft Road, 1.0 mi downstream from bridge on Lost Creek Blvd., and 5 mi west of the State Capitol Building in Austin.

DRAINAGE AREA.--109 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1982 to September 1983.

GAGE.--Water-stage recorder. Altitude of gage is 570 ft, from topographic map.

REMARKS.--Water-discharge records good from 10 to 300 ft³/s, poor below 10³/s, and fair above 300 ft³/s. There are three recording rain gages in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 492 ft³/s June 14, 1983 (gage height, 8.57 ft); no flow Sept. 1 to Nov. 25, 1982.

EXTREMES FOR SEPTEMBER 1982.--No flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 492 ft³/s June 14 at 2330 hours (gage height, 8.57 ft); no flow Oct. 1 to Nov. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.22	3.9	12	23	128	16	22	14	9.6	1.3
2	.00	.00	.20	4.0	11	22	118	15	22	13	8.9	.81
3	.00	.00	.39	4.4	10	22	113	14	20	12	8.1	.58
4	.00	.00	.45	5.0	11	39	112	13	19	11	8.0	.40
5	.00	.00	.40	5.0	13	96	106	12	32	11	7.5	.40
6	.00	.00	.34	4.9	15	52	98	10	51	44	7.1	.35
7	.00	.00	.32	4.9	14	41	92	9.9	85	17	12	4.7
8	.00	.00	.33	4.8	13	38	87	9.1	60	15	62	5.7
9	.00	.00	.34	5.5	19	41	82	8.6	36	12	29	1.1
10	.00	.00	.48	6.7	34	37	74	8.8	31	9.9	24	1.2
11	.00	.00	.76	7.5	32	36	56	33	27	9.7	16	5.5
12	.00	.00	.85	7.5	26	35	47	57	25	9.2	12	18
13	.00	.00	.83	8.8	24	35	46	20	22	8.5	10	14
14	.00	.00	.78	14	22	36	40	13	49	11	9.2	7.8
15	.00	.00	.76	14	35	36	36	11	182	13	8.9	3.6
16	.00	.00	.77	16	72	69	34	11	92	23	8.3	.47
17	.00	.00	.81	20	48	89	33	9.7	116	91	7.0	.17
18	.00	.00	.83	22	42	83	32	10	84	87	6.1	7.2
19	.00	.00	.84	23	40	70	29	9.4	46	41	6.2	75
20	.00	.00	.84	25	41	71	28	36	41	33	6.3	169
21	.00	.00	.84	25	39	55	28	235	36	28	6.0	115
22	.00	.00	.84	25	38	50	28	176	31	25	5.6	61
23	.00	.00	.83	25	36	106	25	103	28	23	5.2	38
24	.00	.00	.81	25	34	119	22	69	27	21	4.6	32
25	.00	.00	.78	23	26	113	20	44	25	19	4.1	27
26	.00	.12	.72	20	25	183	19	39	28	17	3.8	25
27	.00	.40	.92	16	24	175	18	34	24	16	2.6	23
28	.00	.34	1.1	11	23	149	17	31	19	14	3.4	21
29	.00	.27	1.1	10	---	142	17	28	17	13	4.4	19
30	.00	.23	1.1	9.0	---	140	17	25	15	12	3.1	18
31	.00	---	2.5	10	---	136	---	22	---	11	2.1	---
TOTAL	.00	1.36	23.08	405.9	779	2339	1602	1132.5	1312	684.3	311.1	696.28
MEAN	.000	.045	.74	13.1	27.8	75.5	53.4	36.5	43.7	22.1	10.0	23.2
MAX	.00	.40	2.5	25	72	183	128	235	182	91	62	169
MIN	.00	.00	.20	3.9	10	22	17	8.6	15	8.5	2.1	.17
CFSM	.000	.000	.007	.12	.26	.69	.49	.34	.40	.20	.09	.21
IN.	.00	.00	.01	.14	.27	.80	.55	.39	.45	.23	.11	.24
AC-FT	.00	2.7	46	805	1550	4640	3180	2250	2600	1360	617	1380
CAL YR 1982	TOTAL	-	MEAN	-	MAX	-	MIN	-	CFSM	-	IN	-
WTR YR 1983	TOTAL	9286.52	MEAN	25.4	MAX	235	MIN	.00	CFSM	.23	IN	3.17
											AC-FT	18420

COLORADO RIVER BASIN

08155260 BARTON CREEK NEAR CAMP CRAFT ROAD NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: February to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 09...	1350	48	411	7.8	13.0	5	30	9.5	93	.9	K770	K4800
MAR 01...	1055	18	438	7.9	14.0	<1	.50	9.5	95	.4	K5	56
DATE		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)	ALKA- LINITY FIELD (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
FEB 09...	200	31	54	16	8.0	.3	1.0	170	32	14	.20	
MAR 01...	230	37	61	18	7.8	.2	1.0	190	28	15	.20	
DATE		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLTA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 09...	5.7	233	28	<1	<.020	.20	<.060	--	.50	.040	2.1	
MAR 01...	6.7	252	<1	<1	<.020	.10	.100	.30	.40	.010	1.5	
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 09...	1350	<1	21	<1	<10	7	6					
MAR 01...	1055	<1	21	<1	<10	2	<3					
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)					
FEB 09...	1	5	<.1	1	<1	<3						
MAR 01...	10	3	<.1	1	<1	<3						
DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)				
FEB 09...	1350	<.10	<.10	<.10	<.10	<.10	<2.0	<.1				
DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)				
FEB 09...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1				

COLORADO RIVER BASIN

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX

LOCATION.--Lat 30°14'40", long 97°48'07", Travis County, Hydrologic Unit 12090205, on Loop 360, 0.9 mi west of the intersection of Ben White and Lamar Boulevards, and 4.3 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--116 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1975 to January 1977 (periodic gage heights and discharge measurements only), February 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 510.32 ft National Geodetic Vertical Datum of 1929 (State Department of Highways and Public Transportation bench mark).

REMARKS.--Water-discharge records fair except those below 5 ft³/s, which are poor. No known regulation or diversions. There are three recording rain gages located in the watershed.

AVERAGE DISCHARGE.--6 years, 34.1 ft³/s (3.99 in/yr), 24,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,100 ft³/s May 25, 1981 (gage height, 15.03 ft); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of May 28, 1929, was probably the highest since that date (discharge 39,400 ft³/s), based on a slope-area measurement of peak flow at a site about 2 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 339 ft³/s May 21 at 2115 hours (gage height, 5.07 ft), no peak above base of 1,000 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	.00	.00	.00	.00	.00	54	.00	.00	.05	.00	.00		
2	.00	.00	.00	.00	.00	.00	46	.00	.00	.00	.00	.00		
3	.00	.00	.00	.00	.00	.00	43	.00	.00	.00	.00	.00		
4	.00	.00	.00	.00	.00	13	43	.00	.00	.00	.00	.00		
5	.00	.00	.00	.00	.00	39	40	.00	.41	.00	.00	.00		
6	.00	.00	.00	.00	.00	18	35	.00	10	19	.00	.00		
7	.00	.00	.00	.00	.00	7.4	32	.00	24	.41	.00	6.7		
8	.00	.00	.00	.00	.00	5.0	30	.00	14	.00	26	.62		
9	.00	.00	.00	.00	.23	6.8	28	.00	2.6	.00	3.4	.00		
10	.00	.00	.00	.00	.00	4.9	27	.89	.24	.00	.97	.00		
11	.00	.00	.00	.00	.00	3.0	24	.97	.00	.00	.02	.00		
12	.00	.00	.00	.00	.00	2.0	21	23	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	1.7	16	.93	.00	.00	.00	.00		
14	.00	.00	.00	.00	.00	1.4	13	.00	.00	.00	.00	.00		
15	.00	.00	.00	.00	1.2	1.7	7.8	.00	91	.00	.00	.00		
16	.00	.00	.00	.00	25	17	4.1	.00	57	3.2	.00	.00		
17	.00	.00	.00	.00	16	25	1.9	.00	60	32	.00	.00		
18	.00	.00	.00	.00	11	24	.62	.00	48	36	.00	.35		
19	.00	.00	.00	.00	6.0	23	.16	.00	39	9.9	.00	21		
20	.00	.00	.00	.00	6.1	24	.02	5.9	35	3.4	.00	111		
21	.00	.00	.00	.00	5.0	22	.00	159	26	1.4	.00	54		
22	.00	.00	.00	.00	3.2	20	.00	98	19	.55	.00	23		
23	.00	.00	.00	.00	1.7	47	.00	20	16	.22	.00	8.0		
24	.00	.00	.00	.00	1.2	48	.00	4.5	11	.06	.00	2.1		
25	.00	.00	.00	.00	.92	44	.00	1.6	13	.00	.00	.23		
26	.00	.41	.00	.00	.13	92	.00	.64	27	.00	.00	.00		
27	.00	.00	.00	.00	.00	96	.00	.25	14	.00	.00	.00		
28	.00	.00	.00	.00	.00	72	.00	.08	5.0	.00	.00	.00		
29	.00	.00	.00	.00	---	65	.00	.03	2.5	.00	.00	.00		
30	.00	.00	.19	.00	---	63	.00	.00	.40	.00	.00	.00		
31	.00	---	.01	.00	---	60	---	.00	---	.00	.00	---		
TOTAL	.00	.41	.20	.00	77.68	845.90	466.60	315.79	515.15	106.19	30.39	227.00		
MEAN	.000	.014	.006	.000	2.77	27.3	15.6	10.2	17.2	3.43	.98	7.57		
MAX	.00	.41	.19	.00	25	96	54	159	91	36	26	111		
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
CFSM	.000	.000	.000	.000	.02	.24	.13	.09	.15	.03	.008	.07		
IN.	.00	.00	.00	.00	.02	.27	.15	.10	.17	.03	.01	.07		
AC-FT	.00	.8	.4	.00	154	1680	926	626	1020	211	60	450		
CAL YR 1982	TOTAL	4172.45	MEAN	11.4	MAX	1780	MIN	.00	CFSM	.10	IN	1.34	AC-FT	8280
WTR YR 1983	TOTAL	2585.31	MEAN	7.08	MAX	159	MIN	.00	CFSM	.06	IN	.83	AC-FT	5130

COLORADO RIVER BASIN

08155300 BARTON CREEK AT LOOP 360, AUSTIN, TX--Continued

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1979 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)				
FEB 23...	0900	3.1	429	8.1	12.0	1	.80	9.8	93	.4	K4	80
	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 23...	220	37	57	18	7.7	.2	.9	180	27	14	.20	6.5
	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)	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)	
FEB 23...	239	1	1	.08	.020	.10	.090	.01	.10	.010	1.8	
				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									
		FEB 23...	0900	<1	21	<1	<10	4	<3			
				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)			
		DATE										
		FEB 23...		<1	2	<.1	1	<1	<3			
		AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPR- AZINE TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 23...	0900	<.10	<.10	<.10	<.10	<.10	<.1	<.1	<.10	<.10	<.10	<.1

COLORADO RIVER BASIN

08155500 BARTON SPRINGS AT AUSTIN, TX

LOCATION.--Lat 30°15'48", long 97°46'16", Travis County, Hydrologic Unit 12090205, at ground-water well (YD 58-42-903), on right bank 0.4 mi upstream from Barton Springs Road bridge over Barton Creek, 0.7 mi upstream from mouth, and 1.8 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--Not applicable. Only flow from springs is published for this station.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1894 to April 1917, and October 1918 to February 1978 (discharge measurements only), May 1917 to September 1918 (published as "Barton Creek at Austin, Texas"), and March 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage, at ground-water well (YD 58-42-903), is 462.34 ft National Geodetic Vertical Datum of 1929. May 1917 to September 1918, nonrecording gage at site 1,000 ft downstream at different datum.

REMARKS.--Water-discharge records fair. Entire flow published is springflow from the Edwards and associated limestones in the Balcones Fault Zone. This station is part of an urban hydrologic project to study the ground-water resources in the Austin urban area.

AVERAGE DISCHARGE.--6 years (water years 1918, 1979-83), 54.0 ft³/s (39,120 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD (DISCHARGE MEASUREMENTS ONLY).--Maximum measured discharge, 166 ft³/s May 10, 1941; minimum measured, 9.6 ft³/s Mar. 29, 1956.

EXTREMES FOR PERIOD OF RECORD (1917-18 AND SINCE MARCH 1978).--Maximum daily spring discharge, 108 ft³/s June 9-11, 16, 20, 21, 1979; minimum daily spring, 12 ft³/s Feb. 25, 1918.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 87 ft³/s June 15; minimum daily spring, 31 ft³/s Oct. 22-24, Nov. 20, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	32	42	44	42	47	80	71	81	82	77	66
2	33	32	36	45	42	46	80	71	81	82	76	66
3	33	32	37	45	42	46	80	71	81	81	76	65
4	34	32	38	45	42	48	80	70	82	81	76	65
5	33	32	37	45	42	50	80	70	83	80	77	65
6	34	32	36	45	42	49	80	69	84	80	77	65
7	34	32	36	45	42	49	80	69	86	79	76	64
8	35	34	36	43	42	50	79	69	85	79	77	64
9	34	39	35	42	42	51	79	68	84	79	79	63
10	33	36	36	40	43	52	79	67	83	78	78	63
11	33	32	37	38	43	54	79	66	83	78	77	62
12	33	32	38	38	43	56	79	68	83	78	76	62
13	34	32	39	38	44	57	79	70	83	78	76	62
14	34	32	42	38	45	59	79	71	84	78	75	61
15	33	32	42	38	45	61	78	71	87	78	74	60
16	32	32	41	38	45	63	78	71	86	80	74	60
17	32	32	41	38	46	65	78	70	85	82	73	59
18	33	32	42	39	46	66	78	70	85	84	72	60
19	32	32	42	41	47	68	78	72	85	83	71	63
20	32	31	42	42	47	69	77	74	85	82	70	66
21	32	31	42	42	47	69	76	77	84	82	70	69
22	31	32	42	43	47	69	75	79	84	81	70	72
23	31	32	42	43	48	72	74	82	84	81	70	71
24	31	33	42	42	48	74	74	83	84	81	69	71
25	32	33	42	42	48	75	73	84	84	80	69	70
26	32	34	41	42	48	77	73	83	84	79	69	69
27	32	38	43	42	48	79	73	83	84	79	68	68
28	33	42	43	42	47	80	72	83	83	78	68	66
29	34	45	42	42	---	80	71	83	83	78	67	66
30	32	49	42	42	---	81	71	82	82	77	67	64
31	32	---	42	42	---	81	---	82	---	77	66	---
TOTAL	1018	1024	1238	1291	1253	1943	2312	2299	2512	2475	2260	1947
MEAN	32.8	34.0	39.9	41.6	44.8	62.7	77.1	74.2	83.7	79.8	72.9	64.9
MAX	35	49	43	45	48	81	80	84	87	84	79	72
MIN	31	31	35	38	42	46	71	66	81	77	66	59
AC-FT	2020	2030	2460	2560	2490	3850	4590	4560	4980	4910	4480	3860
CAL YR 1982	TOTAL	17461	MEAN 47.8	MAX 73	MIN 31	AC-FT 34630						
WTR YR 1983	TOTAL	21569	MEAN 59.1	MAX 87	MIN 31	AC-FT 42780						

COLORADO RIVER BASIN

08155500 BARTON SPRINGS AT AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: December 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
MAR 02...	1015	51	565	7.4	19.5	<1	.60	7.0	78	.1	<1	K3
DATE	TIME	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
MAR 02...	260	23	74	19	15	.4	1.2	240	30	26	.20	
DATE	TIME	SILICA, DIS- SOLVED (MG/L AS SIO2)	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, 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)
MAR 02...	9.3	319	4	<1	<.020	.90	.060	.44	.50	.030	1.0	
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)					
MAR 02...	1015	<1	42	<1	<10	1	<3					
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)					
MAR 02...		4	<1	<.1	1	<1	4					

COLORADO RIVER BASIN

08155505 BARTON CREEK BELOW BARTON SPRINGS AT AUSTIN, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 30°15'50", long 97°46'03", Travis County, Hydrologic Unit 12090205, 800 ft (240 m) upstream from bridge on Barton Springs Road and 1.8 mi (2.9 km) southwest of State Capitol at Austin.

DRAINAGE AREA.--125.3 mi² (324.5 km²).

PERIOD OF RECORD.--Occasional discharge measurements: January 1975 to current year. Chemical, biochemical, and pesticide analyses: January 1975 to September 1983. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
MAR 02...	1000	51	571	7.4	19.5	<1	.60	7.4	82	.2	K7	130
		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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
MAR 02...	260	25	73	20	15	.4	1.2	240	29	26	.20	
		SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR 02...	9.3	318	2	<1	<.020	.90	.120	.18	.30	.030	1.2	
				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)			
MAR 02...	1000			<1	43	<1	<10	<1	<3			
		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)					
MAR 02...		<1	<1	<.1	1	<1	4					

08155550 WEST BOULDIN CREEK AT RIVERSIDE DRIVE, AUSTIN, TEX.
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°15'49", long 97°45'17", Travis County, on upstream side of eastbound bridge on Riverside Drive, 0.1 mi east of the intersection of South Lamar Boulevard and Riverside Drive and 1.2 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--3.12 mi².

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

REVISED RECORDS.--Open-file report 82-506: 1977 maximum.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 434.42 ft NGVD. Prior to March 31, 1977, at site 30 ft downstream at same datum.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 216 ft³/s May 11 (gage height, 282 ft).

COLORADO RIVER BASIN

08156700 SHOAL CREEK AT NORTHWEST PARK, AUSTIN, TX

LOCATION.--Lat 30°20'50", long 97°44'41", Travis County, Hydrologic Unit 12090205, at Northwest Park in Austin, 400 ft upstream from Shoal Creek Boulevard bridge, 0.5 mi west of intersection of Burnet Road and Justin Lane, and 5.0 mi north of State Capitol Building in Austin.

DRAINAGE AREA.--6.52 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 661.34 ft National Geodetic Vertical Datum of 1929 (city of Austin bench mark).

REMARKS.--Records fair. The city of Austin diverts water into channel above gage during the summer months from a swimming pool at Northwest Park. There is some diversion into and out of the drainage area by storm sewers. This station is part of a hydrologic project to study the rainfall-runoff relationship for the Austin urban area. There are two recording rain gages in the watershed upstream from station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--8 years, 3.25 ft³/s (6.77 in/yr), 2,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s May 24, 1981 (gage height, 18.00 ft), from rating curve extended above 1,100 ft³/s on basis of slope-area measurement of 14,600 ft³/s; no flow for several days each year except 1981 and 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1885, occurred Apr. 22, 1915 (stage and discharge unknown). Flood on Sept. 9, 1921, was probably lower than the 1915 flood.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 10	2400	1,250	7.35	Aug. 8	1330	*1,670	8.50
June 4	2345	911	6.16	Aug. 19	0900	882	6.05
June 25	1515	879	6.04				

Minimum daily discharge, 0.01 ft³/s Nov. 15-18, 20-22, Dec. 4-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.04	.08	4.5	.14	.10	1.1	.12	.59	.17	.07	.17
2	.04	18	.05	.43	.15	.10	1.0	.13	.54	.16	.07	.13
3	.04	.92	.07	.37	.15	.10	1.1	.12	.54	.12	.07	.12
4	.03	.05	.01	.37	2.8	9.7	1.4	.12	21	.08	19	.12
5	.03	.04	.01	.37	6.7	.20	1.4	.08	47	.18	.78	.12
6	.17	.04	.01	.32	.28	.12	1.4	.08	35	.26	.12	.08
7	.60	.04	.01	.32	.17	.17	11	.08	1.9	.15	.11	.21
8	.08	.04	.01	.32	.17	.17	.68	.08	.93	.14	104	.21
9	2.1	.03	.01	.32	33	9.9	.68	.12	.86	.10	1.4	11
10	.07	.04	.44	.32	.41	.24	.61	26	.82	.10	.22	5.9
11	.12	.03	1.8	.32	.19	.17	.61	51	.82	.07	.15	.38
12	1.5	.02	.33	.32	.15	.20	.61	.60	.72	.07	.15	.08
13	.08	.02	.17	.32	.12	.20	.54	.53	.75	.08	.15	.08
14	.04	.02	.17	.32	.12	.24	.48	.43	49	6.0	.15	.22
15	.04	.01	.17	.28	21	50	.48	5.1	1.3	11	.15	.12
16	.04	.01	.17	.28	.32	30	.42	.61	13	36	.11	.10
17	.04	.01	.17	.28	.18	1.3	.42	.60	.71	.42	.10	.10
18	.04	.01	.17	2.7	.14	.79	.37	13	.38	.21	.10	20
19	.04	.08	.16	.64	.12	9.5	.42	.77	.32	.13	55	77
20	.04	.01	.12	.20	.49	2.3	.42	79	.42	.11	.36	.51
21	.04	.01	.12	.40	.15	.81	.48	59	.37	.10	.15	.12
22	.04	.01	.12	.17	.11	.69	.37	1.5	.32	.10	.12	.12
23	.04	.42	.12	.14	.10	69	.28	.96	.47	.10	.15	.12
24	.04	.17	.12	.14	.10	2.0	.28	.80	.31	.08	.15	.12
25	.04	.17	.12	.14	.10	1.4	.28	.75	47	.08	.10	.12
26	.04	12	.37	.14	.10	40	.20	.65	.79	.08	.10	.20
27	.04	.28	1.4	.14	.10	1.9	.20	.48	.29	.08	.12	.10
28	9.2	.17	.28	.14	.10	1.4	.17	.48	.42	.08	.12	.08
29	.85	.14	.17	.14	---	1.4	.12	.48	.26	.08	.15	.08
30	.04	.12	.12	.14	---	13	.12	.54	.17	.08	.20	.08
31	.04	---	.37	.14	---	1.5	---	1.8	---	.07	.20	---
TOTAL	15.60	32.95	7.44	15.13	67.66	248.60	27.64	246.01	227.00	56.48	183.82	117.79
MEAN	.50	1.10	.24	.49	2.42	8.02	.92	7.94	7.57	1.82	5.93	3.93
MAX	9.2	18	1.8	4.5	33	69	11	79	49	36	104	77
MIN	.03	.01	.01	.14	.10	.10	.12	.08	.17	.07	.07	.08
CFSM	.08	.17	.04	.08	.37	1.23	.14	1.22	1.16	.28	.91	.60
IN.	.09	.19	.04	.09	.39	1.42	.16	1.40	1.29	.32	1.05	.67
AC-FT	31	65	15	30	134	493	55	488	450	112	365	234

CAL YR 1982	TOTAL	1028.17	MEAN	2.82	MAX	392	MIN	.00	CFSM	.43	IN	5.87	AC-FT	2040
WTR YR 1983	TOTAL	1246.12	MEAN	3.41	MAX	104	MIN	.01	CFSM	.52	IN	7.11	AC-FT	2470

STATION NO. 03156706									
SHOAL CREEK AT NORTHWEST PARK, AUSTIN, TEXAS									
STORM OF MAY 10-11, 1983									
STORM RAINFALL AND RUNOFF RECORD									
1983 WATER YEAR									
DATE & TIME	13HL	25HL	GAUGE	NUMBER	PRECIP.	DISCHARGE	ACCUM.	IN	IN.
MAY 10									
0000	0.0	0.0			0.0	0.1	0.0	0.0000	0.0000
0400	0.01	0.01			0.01		0.1	0.0001	0.0001
0800	0.04	0.04			0.04		0.1	0.0003	0.0003
1200	0.05	0.05			0.04		0.3	0.0005	0.0005
1600	0.07	0.05			0.05		0.2	0.0010	0.0010
2000	0.15	0.05			0.09		0.2	0.0010	0.0010
2400	0.20	0.09			0.12		0.2	0.0010	0.0010
2800	0.29	0.07			0.17		0.2	0.0010	0.0010
3200	0.34	0.09			0.20		0.2	0.0010	0.0010
3600	0.45	0.17			0.30		0.2	0.0010	0.0010
4000	0.51	0.23			0.39		1.7	0.0010	0.0010
4400	0.53	0.34			0.43		3.3	0.0011	0.0011
4800	0.66	0.49			0.57		4.3	0.0012	0.0012
5200	0.75	0.62			0.63		43.0	0.0021	0.0021
5600	0.84	0.77			0.80		90.0	0.0039	0.0039
6000	0.94	0.89			0.91		133.0	0.0065	0.0065
6400	1.02	0.96			0.99		250.0	0.0115	0.0115
6800	1.13	1.03			1.07		366.0	0.0137	0.0137
7200	1.42	1.34			1.33		483.0	0.0263	0.0263
7600	1.67	1.56			1.56		533.0	0.0339	0.0339
8000	1.77	1.80			1.79		582.0	0.0504	0.0504
8400	1.78	1.86			1.82		632.0	0.0629	0.0629
8800	1.76	1.87			1.83		772.0	0.0763	0.0763
9200	1.78	1.87			1.83		924.0	0.0966	0.0966
9600	1.75	1.95			1.87		1070.0	0.1125	0.1125
MAY 11									
0000	1.75	1.95			1.87		1070.0	0.1125	0.1125
0400	1.79	1.99			1.90		1020.0	0.1380	0.1380
0800	1.80	2.02			1.92		979.0	0.1574	0.1574
0015	1.81	2.03			1.93		934.0	0.1759	0.1759
0030	1.81	2.03			1.93		803.0	0.1919	0.1919
0045	1.83	2.05			1.95		633.0	0.2055	0.2055
0050	1.85	2.21			2.04		558.0	0.2165	0.2165
0055	1.85	2.29			2.05		530.0	0.2270	0.2270
0100	1.85	2.29			2.08		501.0	0.2369	0.2369
0105	1.83	2.29			2.06		473.0	0.2463	0.2463
0110	1.83	2.29			2.06		443.0	0.2551	0.2551
0115	1.83	2.29			2.06		413.0	0.2632	0.2632
0120	1.83	2.29			2.06		383.0	0.2703	0.2703
0125	1.83	2.29			2.05		352.0	0.2778	0.2778

STATION NO. 08156700									
STORM RAINFALL AND RUNOFF RECORD									
1983 WATER YEAR									
SHOAL CREEK AT NORTHWEST PARK, AUSTIN, TEXAS									
STORM OF MAY 10-11, 1983									
DATE & TIME	1SHL	2SHL	GAGE	NUMBER	PRECIP.	WEIGHTED PRECIP.	DISCHARGE IN	ACCUM. IN.	ACCUM. RUNOFF
							CFS		
MAY 11									
0110	1.25	2.29				2.03	321.0	2.03	0.2873
0120	1.83	2.29				2.08	270.0	2.08	0.2980
0130	1.83	2.29				2.06	231.0	2.06	0.3095
0145	1.84	2.29				2.09	191.0	2.09	0.3189
0155	1.84	2.29				2.09	172.0	2.09	0.3257
0205	1.84	2.29				2.09	156.0	2.09	0.3366
0230	1.84	2.29				2.09	119.0	2.09	0.3495
0300	1.55	2.34				2.12	54.0	2.12	0.3645
0400	1.57	2.34				2.13	48.0	2.13	0.3768
0500	1.59	2.34				2.13	22.0	2.13	0.3840
0600	1.86	2.34				2.13	17.0	2.13	0.3890
0600	1.90	2.34				2.14	6.4	2.14	0.3917
0900	1.90	2.34				2.14	3.9	2.14	0.3935
1200	1.90	2.34				2.14	2.3	2.14	0.3949
1430	1.91	2.34				2.15	1.4	2.15	0.3959
1800	1.91	2.34				2.15	1.0	2.15	0.3970
2400	1.91	2.34				2.15	0.8	2.15	0.3975

COLORADO RIVER BASIN

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°16'35", long 97°45'00", Travis County, Hydrologic Unit 12090205, at downstream side of bridge on 12th Street and 0.6 mi west of the State Capitol Building in Austin.

DRAINAGE AREA.--12.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1975 to current year. Periodic discharge measurements only: November 1974 to current year.

GAGE.--Flood-hydrograph recorder and crest-stage gage. Datum of gage is 455.33 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the latest report, "Hydrologic Data for Urban Studies in the Austin, Texas Metropolitan Area, 1983." Two recording rain gages are located in the watershed above this site.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s May 24, 1981 (gage height, 23.22 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,980 ft³/s Aug. 8 at 1430 hours (gage height, 10.72 ft).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Water temperatures: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 28...	0935	.58	649	8.1	9.5	<1	9.9	11.9	106	.4	2000	2100
MAR 23...	1030	300	174	7.6	11.0	50	160	--	--	3.1	11000	78000
MAY 20...	1445	258	186	--	--	--	--	--	--	37	K190000	490000
MAY 20...	1500	760	165	--	--	--	--	--	--	--	--	--
AUG 08...	1303	403	62	--	--	--	--	--	--	7.8	940000	640000
SEP 07...	1640	16	219	7.8	26.0	70	200	7.6	94	14	69000	460000

DATE	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)	ALKA- LINITY FIELD (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 28...	250	118	87	7.4	32	.9	2.9	130	110	64	.30	.5
MAR 23...	72	18	26	1.6	3.2	.2	2.1	54	17	5.0	<.10	3.7
MAY 20...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 20...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 07...	86	27	31	2.1	8.3	.4	4.0	59	26	15	.10	4.9

DATE	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)	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)
FEB 28...	382	.12	<.1	--	<.020	<.10	.080	.42	.50	.050	1.9
MAR 23...	91	192	64	.35	.050	.40	.180	1.1	1.30	.290	10
MAY 20...	--	--	--	.27	.230	.50	.670	8.1	8.80	.700	29
MAY 20...	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	--	--	--	.35	.050	.40	.230	3.6	3.80	1.10	28
SEP 07...	127	385	129	.80	.100	.90	.270	1.2	1.50	.440	15

COLORADO RIVER BASIN

08156800 SHOAL CREEK AT 12TH STREET, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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...	0935	<1	60	<1	10	5	<3
MAR 23...	1030	1	17	<1	<10	3	63
MAY 20...	1445	2	26	<1	<10	3	59
SEP 07...	1640	1	23	<1	10	9	54

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...	<1	2	<.1	<1	<1	5
MAR 23...	5	<1	<.1	<1	<1	3
MAY 20...	5	2	<.1	<1	<1	11
SEP 07...	7	8	<.1	1	<1	10

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 23...	1030	<.10	<.10	.10	<.10	<.10	<2.0	.1
MAY 20...	1500	<.10	<.10	<.10	<.10	<.10	--	.4

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 23...	<.1	<.10	<2.0	<2.0	.20	<.10	<.1
MAY 20...	<.1	<.10	--	--	<.10	<.10	<.1

STORM RAINFALL AND RUNOFF RECORD									
1985 WATER YEAR									
STA. NO.	NO.	STATION	LOCATION	DATE	TIME	1 SHL	2 SHL	GAUGE NUMBER	STORM OF MAY 10-11, 1985
SHOAL CREEK AT 12TH STREET, AUSTIN, TEXAS									
DATE & TIME									
1 SHL 2 SHL									
ACCUM. WEIGHTED PRECIP. IN.									
DISCHARGE IN CFS									
IN. IN.									
ACCUM. RUNOFF									
MAY 10									
0000		0.0	0.0						0.0
0000		0.04	0.04						0.3
1445		0.05	0.04						0.0005
2220		0.07	0.05						0.2
2225		0.15	0.05						0.0006
2230		0.20	0.06						0.0006
2235		0.29	0.07						0.0006
2240		0.34	0.09						0.0007
2245		0.45	0.17						0.0008
2250		0.51	0.23						0.0016
2255		0.53	0.34						0.0026
2300		0.69	0.49						0.0039
2305		0.75	0.62						0.0046
2310		0.84	0.77						0.0055
2315		0.94	0.84						0.0064
2320		1.02	0.95						0.0081
2325		1.13	1.03						0.0106
2330		1.42	1.34						0.0140
2335		1.67	1.60						0.0181
2340		1.77	1.80						0.0229
2345		1.73	1.80						0.0284
2350		1.73	1.87						0.0348
2355		1.73	1.87						0.0421
2400		1.76	1.95						0.0483
MAY 11									
0000		1.76	1.95						0.0483
0005		1.79	1.99						0.0547
0010		1.80	2.02						0.0700
0015		1.81	2.03						0.0814
0020		1.81	2.03						0.0929
0025		1.83	2.05						0.1047
0030		1.83	2.21						0.1167
0035		1.83	2.29						0.1303
0040		1.83	2.29						0.1457
0045		1.83	2.29						0.1526
0050		1.83	2.29						0.1799
0055		1.83	2.29						0.1967
0100		1.83	2.29						0.2133
0105		1.83	2.29						0.2269
0110		1.83	2.29						0.2432

STORM RAINFALL AND RUNOFF RECORD									
STA. NO. 0315000		1983 WATER YEAR							
SHOAL CREEK AT 12TH STREET, AUSTIN, TEXAS		STORM OF MAY 10-11, 1983							
DATE & TIME	15HL	25HL	G A G E	N U M B E R	ACCUM. WEIGHTED PRECIP. IN.	DISCHARGE IN	ACCUM. RUNOFF		
MAY 11									
0115	1.35	2.29			2.18	1250.0	0.2553		
0120	1.33	2.29			2.18	1130.0	0.2637		
0125	1.33	2.29			2.18	1120.0	0.2604		
0130	1.33	2.29			2.18	1050.0	0.2915		
0135	1.35	2.29			2.13	1010.0	0.3074		
0145	1.34	2.29			2.13	917.0	0.3200		
0155	1.34	2.29			2.18	860.0	0.3402		
0200	1.34	2.29			2.18	852.0	0.3576		
0215	1.34	2.29			2.13	736.0	0.3741		
0225	1.34	2.29			2.13	693.0	0.3814		
0235	1.34	2.29			2.18	601.0	0.3377		
0250	1.34	2.29			2.13	503.0	0.3957		
0300	1.35	2.34			2.13	435.0	0.4043		
0330	1.36	2.34			2.22	369.0	0.4125		
0400	1.37	2.34			2.22	312.0	0.4257		
0430	1.36	2.34			2.22	207.0	0.4337		
0450	1.36	2.34			2.23	149.0	0.4479		
0500	1.36	2.34			2.23	100.0	0.4548		
0600	1.33	2.34			2.23	55.0	0.4623		
0700	1.33	2.34			2.23	50.0	0.4691		
0800	1.33	2.34			2.23	23.0	0.4735		
1200	1.30	2.34			2.23	10.0	0.4791		
1300	1.31	2.34			2.24	2.2	0.4802		
2000	1.31	2.34			2.24	0.7	0.4805		
2400	1.31	2.34			2.24	0.7	0.4807		

COLORADO RIVER BASIN

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX

LOCATION.--Lat 30°15'47", long 97°40'20", Travis County, Hydrologic Unit 12090205, on U.S. Highway 183, 1.6 mi south of the intersection of Webberville Road and U.S. Highway 183, 4.1 mi east of the State Capitol Building in Austin, and 0.7 mi upstream from mouth.

DRAINAGE AREA.--13.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to July 1975 (periodic discharge measurements only), August 1975 to June 1977 (operated as a flood-hydrograph partial-record station only), June 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 411.29 ft National Geodetic Vertical Datum of 1929 (levels from city of Austin bench mark).

REMARKS.-- Water-discharge records fair. No known regulation or diversions. The station is part of a hydrologic research project to study the rainfall-runoff relationship for the Austin urban area. Station is equipped with an automatic water-quality sampler. There is a recording rain gage in the watershed.

AVERAGE DISCHARGE.--6 years (water years 1978-83), 6.72 ft³/s (6.97 in/yr) 4,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft³/s May 23, 1975 (gage height, 17.03 ft, from floodmark), from rating curve extended above 500 ft³/s on basis of slope-area measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 1,500 ft³/s and Maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 9	1100	1,610	a/ 10.5	May 21	0900	1,610	a/ 10.5
May 11	0100	2,130	a/ 11.3	June 5	0100	2,340	a/ 11.6
May 20	1530	*2,500	a/ 11.8	Aug. 8	1400	2,130	a/ 11.3

a/ Adjusted for draw down.

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.12	39	.28	.86	.75	.14	.70	.34	.10	.00
2	.00	29	.18	.98	.18	.86	.55	.12	.68	.30	.05	.00
3	.00	15	25	.47	.37	.86	.55	.06	.62	.25	.10	.00
4	.00	.40	.86	.40	.67	32	.55	.06	.66	.25	.74	.00
5	.00	.34	.65	.31	127	3.4	.55	.06	175	.32	.96	.00
6	.00	.34	.40	.28	1.5	2.7	.44	.06	13	.38	1.8	.00
7	5.0	.34	.34	.23	.98	2.2	.40	.08	1.5	.33	.78	1.0
8	9.6	.05	.37	.23	.75	2.0	.47	.08	.84	.28	179	1.2
9	.71	.00	.40	.18	153	18	.40	.44	.64	.27	3.0	1.6
10	13	.00	5.3	.17	3.6	2.6	.44	.35	.55	.27	1.6	1.1
11	.49	.00	6.9	.17	2.3	2.2	.40	177	.48	.21	1.1	.76
12	11	15	.31	.17	1.8	2.3	.40	5.2	.48	.20	1.1	.17
13	2.2	12	.21	.17	1.8	3.0	.34	3.8	.43	.23	.87	.02
14	.72	6.4	.18	.17	1.5	2.9	.28	3.7	3.2	14	.70	.63
15	.68	.82	.15	.17	35	83	.31	17	1.1	12	1.1	.54
16	.01	.00	.12	.17	1.9	70	.34	3.1	5.2	73	.60	.04
17	.00	3.2	.10	.14	1.3	7.2	.31	2.4	.69	2.1	.65	.00
18	.00	.06	.12	24	1.2	5.3	.23	4.7	.35	.96	.64	12
19	.00	.00	.10	11	.98	19	.23	4.1	.36	.62	17	57
20	.00	.00	.11	2.6	1.3	11	.17	216	.31	.47	1.2	2.1
21	.00	.00	.10	6.6	.98	4.4	.31	112	.28	.60	.80	.84
22	.00	.00	.10	.86	.92	2.7	.28	1.7	.31	.55	.85	.70
23	.00	24	.09	.86	.92	165	.17	1.1	.36	.45	.43	.70
24	.00	17	.09	.98	.92	6.4	.09	.87	.43	.24	.48	.70
25	.00	1.2	.10	.51	.86	5.4	.23	.65	18	.36	.43	.60
26	.00	73	.18	.37	.80	100	.17	.61	.87	.18	.89	.31
27	.00	14.	11	.28	.86	3.3	.09	.56	.40	.20	.41	.30
28	.63	.28	.31	.23	.86	2.1	.09	.64	.34	.32	.05	.25
29	22	.18	.15	.23	---	1.8	.11	.75	.42	.21	.36	.24
30	.34	.12	.21	.28	---	10	.14	.67	.38	.21	.03	.18
31	.22	---	.34	.28	---	1.1	---	.90	---	.21	.00	---
TOTAL	66.60	212.73	54.59	92.49	344.53	573.58	9.79	558.90	228.58	110.31	217.82	82.98
MEAN	2.15	7.09	1.76	2.98	12.3	18.5	.33	18.0	7.62	3.56	7.03	2.77
MAX	22	73	25	39	153	165	.75	216	175	73	179	57
MIN	.00	.00	.09	.14	.18	.86	.09	.06	.28	.18	.00	.00
CFSM	.16	.54	.13	.23	.94	1.41	.03	1.37	.58	.27	.54	.21
IN.	.19	.60	.16	.26	.98	1.63	.03	1.59	.65	.31	.62	.24
AC-FT	132	422	108	183	683	1140	19	1110	453	219	432	165

CAL YR 1982	TOTAL	1320.45	MEAN	3.62	MAX	239	MIN	.00	CFSM	.28	IN	3.75	AC-FT	2620
WTR YR 1983	TOTAL	2552.90	MEAN	6.99	MAX	216	MIN	.00	CFSM	.53	IN	7.25	AC-FT	5060

COLORADO RIVER BASIN

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

										OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)					
FEB 28...	1320	1.2	590	8.4	18.0	<1	2.4	19.7	212	.8	K63	K68	
MAR 04...	1300	106	238	8.4	18.5	25	480	7.8	86	17	62000	97000	
MAY 20...	1440	260	207	--	--	--	--	--	--	37	K290000	K1900000	
20...	1455	853	202	--	--	--	--	--	--	34	K290000	K1900000	
20...	1510	1140	170	7.7	--	--	--	--	--	38	K280000	900000	
20...	1525	1100	172	7.7	--	40	1200	--	--	20	K280000	900000	
20...	1540	1010	172	--	--	40	1200	--	--	15	--	--	
20...	1555	931	143	--	--	--	--	--	--	17	K230000	K1400000	
	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	
FEB 28...	220	63	73	9.9	33	1.0	2.6	160	83	43	.30	4.6	
MAR 04...	100	21	36	2.4	9.8	.4	2.9	79	22	13	.20	6.0	
MAY 20...	--	--	--	--	--	--	--	--	--	--	--	--	
20...	--	--	--	--	--	--	--	--	--	--	--	--	
20...	69	4	25	1.7	7.0	.4	3.6	66	14	5.4	.20	6.8	
20...	69	4	25	1.7	7.0	.4	3.6	66	14	5.4	.20	6.8	
20...	--	--	--	--	--	--	--	--	--	--	--	--	
20...	--	--	--	--	--	--	--	--	--	--	--	--	
DATE	SOLIDS, SUM OF CONSTITUENTS, 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)	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)		
FEB 28...	345	8	<1	--	<.020	<.10	.120	.48	.60	.040	2.2		
MAR 04...	140	564	31	.21	.190	.40	.500	2.4	2.90	.950	29		
MAY 20...	--	--	--	.35	.050	.40	.610	2.1	2.70	.500	53		
20...	--	--	--	.35	.050	.40	.610	2.1	2.70	.500	53		
20...	103	--	--	.35	.050	.40	.470	1.8	2.30	.770	61		
20...	103	468	396	.35	.050	.40	.470	1.8	2.30	.770	61		
20...	--	468	396	--	--	--	--	--	--	--	--		
20...	--	--	--	.35	.050	.40	.380	3.2	3.60	.930	43		

COLORADO RIVER BASIN

08158050 BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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...	1320	1	83	<1	<10	5	<3
MAR 04...	1300	2	36	<1	<10	5	76
MAY 20...	1440	7	200	<1	<10	4	70
20...	1455	7	200	<1	<10	4	70
20...	1555	7	<100	<1	<10	4	80

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...	3	3	.1	1	<1	6
MAR 04...	3	<1	<.1	<1	<1	8
MAY 20...	2	<10	<.1	1	<1	10
20...	2	<10	<.1	1	<1	10
20...	3	<10	<.1	<1	<1	10

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 04...	1300	<.10	<.10	<.10	<.10	<.10	<2.0	1.7
MAY 20...	1455	<.10	<.10	.30	<.10	<.10	--	2.4
20...	1510	<.10	<.10	.30	<.10	<.10	--	2.4

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 04...	<.1	<.10	<2.0	<2.0	.10	<.10	<.1
MAY 20...	<.1	<.10	--	--	<.10	<.10	<.1
20...	<.1	<.10	--	--	<.10	<.10	<.1

STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
STA. NO.	NO.	STATION	DATE	TIME	1800	1900	2000	2100	2200
STORM OF JUNE 4-5, 1933									
BOGGY CREEK AT U.S. HIGHWAY 183, AUSTIN, TEXAS									
DATE & TIME	1800	1900	2000	2100	2200	2300	2400	2500	2600
JUNE 5									
0300	1.95							1.85	226.0
0315	1.36							1.36	184.0
0330	1.65							1.65	203.0
0345	1.87							1.87	240.0
0355	1.89							1.89	293.0
0405	1.90							1.90	264.0
0415	1.91							1.91	274.0
0430	1.92							1.92	265.0
0445	1.93							1.93	213.0
0505	1.93							1.93	175.0
0520	1.93							1.93	129.0
0540	1.93							1.93	102.0
0600	1.93							1.93	68.0
0630	1.93							1.93	51.0
0700	1.93							1.93	31.0
0830	1.93							1.93	25.0
1200	1.94							1.94	11.0
2400	1.94							1.94	5.3
								1.94	2.0
									0.2011
									0.2056
									0.2097
									0.2144
									0.2202
									0.2258
									0.2312
									0.2377
									0.2441
									0.2502
									0.2546
									0.2551
									0.2603
									0.2653
									0.2652
									0.2681
									0.2714
									0.2767
									0.2731

08158100 WALNUT CREEK AT FARM ROAD 1325 NEAR AUSTIN, TEX.
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°24'35", long 97°42,41", Travis County, on downstream side of bridge on Farm Road 1325 and 9.5 mi north of the State Capitol Building in Austin.

DRAINAGE AREA.--12.6 mi².

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

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 670.62 ft NGVD.

REMARKS.--Records fair. No storms were analyzed for this station for the 1983 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s May 24, 1981 (gage height, 19.46 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s Aug. 8 (gage height, 8.95 ft).

COLORADO RIVER BASIN

08158200 WALNUT CREEK AT DESSAU ROAD, AUSTIN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°22'30", long 97°39'37", Travis County, Hydrologic Unit 12090205, on downstream side of bridge on Dessau Road and 8.4 mi northeast of the State Capitol Building in Austin.

DRAINAGE AREA.--26.2 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 553.44 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Austin, Texas Metropolitan Area, 1983". Two recording rain gages are located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft³/s May 25, 1981, gage height, 26.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,110 ft³/s Aug. 8 at 1500 hours (gage height, 13.25 ft).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 28...	1045	6.9	642	8.4	11.0	<1	.70	16.8	156	.6	96	K71
MAR 04...	1415	27	519	8.0	17.5	10	100	8.4	91	5.1	2600	3400

DATE	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)	ALKA- LINITY FIELD (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 28...	270	51	100	5.0	25	.7	1.9	220	51	42	.30	2.8
MAR 04...	220	40	81	4.2	20	.6	2.3	180	40	32	.30	5.9

DATE	SOLIDS, SUM OF CONSTI- TUENTS, 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)
FEB 28...	360	3	<1	1.4	.020	1.4	.110	.89	1.00	.070	2.2
MAR 04...	294	158	26	1.3	.040	1.3	.180	1.4	1.60	.410	8.0

COLORADO RIVER BASIN

08158200 WALNUT CREEK AT DESSAU ROAD, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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...	1045	1	64	<1	<10	2	<3
MAR 04...	1415	1	54	<1	<10	3	14

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...	<1	6	<.1	<1	<1	4
MAR 04...	6	2	<.1	1	<1	9

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 04...	1415	<.10	<.10	<.10	<.10	<.10	<2.0	.3

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 04...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

08158300 FERGUSON BRANCH AT SPRINGDALE ROAD, AUSTIN, TEX.
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°19'53", long 97°39'12", Travis County, on downstream side of culvert on Springdale Road and 6.5 mi northeast of the State Capitol Building in Austin.

DRAINAGE AREA.--1.63 mi².

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

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 509.64 ft NGVD.

REMARKS.--Because of insufficient data, no storms were analyzed for this station for the period of record.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 1,040 ft³/s May 21, 1979 (gage height, 8.60 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge occurred on May 20, 1983. Gage height and discharge were not determined.

08158380 LITTLE WALNUT CREEK AT GEORGIAN DRIVE, AUSTIN, TEXAS
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°21'15", long 97°41'52", Travis County, on upstream side of bridge on Georgian Drive and 6.0 miles north of the State Capital Building in Austin.

DRAINAGE AREA.--5.22 mi².

PERIOD OF RECORD.--February to September 1983.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 637.23 ft NGVD.

REMARKS.--Because of insufficient data, no storms analyzed for this station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,350 ft³/s June 4 (gage height, 9.58 ft).

COLORADO RIVER BASIN

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX

LOCATION.--Lat 30°16'59", long 97°39'17", Travis County, Hydrologic Unit 12090205, on left bank 190 ft downstream from bridge on Farm Road 969, 0.8 mi downstream from Little Walnut Creek, 2.8 mi upstream from Colorado River, 5.2 mi east of the State Capitol Building in Austin, and 2.8 mi upstream from mouth.

DRAINAGE AREA.--51.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 425.96 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. No known regulation or diversion. Station is part of hydrologic research project to study rainfall-runoff relation for urban areas. Five recording rain gages are located in the watershed above this station.

AVERAGE DISCHARGE.--17 years, 24.5 ft³/s (6.49 in/yr), 17,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s May 25, 1981 (gage height, 27.24 ft); no flow at times in 1967, 1971, and 1982-83.
Maximum stage since at least 1891, that of May 25, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1935, reached a stage of 24 ft, backwater from Colorado River. A flood in 1919 reached a stage of 22 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 11	0200	*3,100	15.31	June 5	0115	2,740	14.53
May 20	1645	2,040	12.89	Aug. 8	1730	2,570	14.20
May 21	1000	2,040	12.89				

Minimum daily discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	3.9	.00	5.1	91	8.9	11	30	7.8	14	11	2.9	4.5		
2	.32	26	4.1	20	8.6	11	28	6.7	12	9.0	2.5	3.3		
3	.04	54	42	15	8.2	11	27	6.8	12	7.9	2.4	2.2		
4	.01	3.2	7.2	13	9.8	70	26	6.1	11	7.2	15	1.7		
5	.00	.44	4.7	11	69	30	25	6.1	343	7.9	12	.97		
6	1.3	.04	3.0	9.6	17	24	25	5.8	108	8.4	14	2.2		
7	6.6	.01	2.7	9.0	12	19	24	6.1	40	7.4	6.6	1.4		
8	6.0	.00	2.5	7.9	10	18	22	6.1	25	6.6	348	3.9		
9	2.7	.00	2.0	7.6	105	45	22	7.3	21	6.1	21	26		
10	19	.00	19	7.4	26	30	21	6.5	19	5.6	10	11		
11	7.0	.00	30	7.2	18	21	21	378	17	5.0	7.9	6.2		
12	17	.51	8.7	5.9	16	16	20	18	16	4.7	8.4	3.9		
13	7.0	.00	5.4	6.0	15	20	18	15	15	4.7	7.8	2.9		
14	3.5	.00	4.4	5.8	14	18	17	13	56	47	5.6	10		
15	2.5	.00	3.8	5.8	88	120	15	29	30	24	4.6	4.4		
16	1.9	.00	3.2	5.4	28	80	15	14	29	83	3.7	2.8		
17	1.7	.02	2.5	5.5	21	25	15	12	20	17	3.2	2.5		
18	1.5	.02	2.3	39	18	21	14	54	16	11	3.2	13		
19	1.3	1.4	2.0	43	15	39	13	17	15	9.0	239	126		
20	1.1	.13	2.0	22	14	25	13	352	14	8.2	16	15		
21	1.1	.00	2.0	33	14	18	14	348	14	7.5	9.4	7.0		
22	1.7	.00	1.7	18	13	16	14	33	13	6.8	7.4	5.7		
23	1.3	4.5	2.0	15	13	180	12	22	15	6.2	6.2	5.1		
24	1.0	1.7	2.5	13	12	80	11	18	15	5.1	5.2	4.7		
25	.81	.20	2.7	12	12	41	11	16	62	4.3	5.1	4.1		
26	.81	111	8.4	10	11	199	9.6	15	16	3.7	4.7	3.5		
27	.81	49	36	9.7	11	40	9.2	14	12	3.0	3.8	3.2		
28	11	15	8.7	10	11	40	9.1	14	13	3.4	3.4	3.2		
29	77	9.7	4.4	8.5	---	37	8.7	14	13	3.2	3.1	3.2		
30	.85	7.2	3.8	9.7	---	45	8.4	13	11	3.2	2.7	3.0		
31	.00	---	6.4	9.1	---	32	---	16	---	3.1	2.5	---		
TOTAL	180.75	284.07	235.2	485.1	618.5	1382	518.0	1490.3	1017	340.2	787.3	286.57		
MEAN	5.83	9.47	7.59	15.6	22.1	44.6	17.3	48.1	33.9	11.0	25.4	9.55		
MAX	77	111	42	91	105	199	30	378	343	83	348	126		
MIN	.00	.00	1.7	5.4	6.2	11	8.4	5.8	11	3.0	2.4	.97		
CFSM	.11	.19	.15	.30	.43	.87	.34	.94	.66	.21	.50	.19		
IN.	.13	.21	.17	.35	.45	1.00	.36	1.08	.74	.25	.57	.21		
AC-FT	359	563	467	962	1230	2740	1030	2960	2020	675	1560	568		
CAL YR 1982	TOTAL	6519.52	MEAN	17.9	MAX	3200	MIN	.00	CFSM	.35	IN	4.73	AC-FT	12930
WTR YR 1983	TOTAL	7624.99	MEAN	20.9	MAX	378	MIN	.00	CFSM	.41	IN	5.53	AC-FT	15120

COLORADO RIVER BASIN

08158600 WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1975 to current year. Sediment records: October 1977 to September 1982. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 28...	1120	20	575	8.3	12.0	<1	1.0	13.2	125	.7	160	120
MAR 04...	1340	205	370	7.9	18.0	10	210	7.8	85	8.7	12000	42000

DATE	TIME	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)	ALKA- LILITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 28...	230		60	82	6.0	26	.8	1.9	170	65	44	.40	1.4
MAR 04...	150		42	55	3.4	14	.5	2.4	110	39	21	.30	3.5

DATE	TIME	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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)
FEB 28...		329	4	<1	--	<.020	.50	.080	.52	.60	.010	2.1
MAR 04...		205	261	40	.65	.050	.70	.150	.75	.90	.310	14

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...	1120	1	66	<1	<10	6	<3
MAR 04...	1340	1	47	<1	10	4	25

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)
FEB 28...		2	5	<.1	<1	<1	<3
MAR 04...		1	3	<.1	1	<1	8

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPR- AZINE TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 04...	1340	<.10	<.10	<.10	<.10	<.10	.3	<.1	<.10	<.10	<.10	<.1

STORM RAINFALL AND RUNOFF RECORD									
1953 WATER YEAR									
STATION NO. 05155800									
WALNUT CREEK AT WEBBERVILLE ROAD, AUSTIN, TEXAS									
STOP OF AUGUST 3, 1953									
DATE & TIME	G A G E				ACCUM. WEIGHTED				IN.
	2WLN	3WLN	4WLN	5WLN	PRECIP.	CFS	DISCHARGE	ACCUM.	RUNOFF
AUG. 3									
0000	0.0	0.0	0.0	0.0	0.0	3.3	0.007	0.007	0.007
0030	0.0	0.0	0.0	0.0	0.0	3.5	0.004	0.004	0.004
0100	0.0	0.0	0.0	0.0	0.0	3.5	0.004	0.004	0.004
0130	0.17	0.0	0.0	0.0	0.0	3.5	0.004	0.004	0.004
0200	0.44	0.0	0.0	0.0	0.20	3.5	0.004	0.004	0.004
0230	0.62	0.0	0.0	0.0	0.24	3.5	0.004	0.004	0.004
0300	0.77	0.0	0.0	0.0	0.36	3.5	0.004	0.004	0.004
0330	0.95	0.0	0.0	0.0	0.49	3.5	0.004	0.004	0.004
0400	1.14	0.0	0.0	0.0	0.63	3.5	0.004	0.004	0.004
0430	1.33	0.0	0.0	0.0	0.84	3.5	0.004	0.004	0.004
0500	1.40	0.0	0.0	0.0	1.02	3.5	0.004	0.004	0.004
0530	1.47	0.0	0.0	0.0	1.21	3.5	0.004	0.004	0.004
0600	1.55	0.0	0.0	0.0	1.33	4.0	0.005	0.005	0.005
0630	1.52	0.0	0.0	0.0	1.41	4.6	0.005	0.005	0.005
0700	1.54	0.0	0.0	0.0	1.45	5.1	0.005	0.005	0.005
0730	1.55	0.0	0.0	0.0	1.43	5.4	0.005	0.005	0.005
0800	1.59	0.0	0.0	0.0	1.52	5.5	0.005	0.005	0.005
0830	1.61	0.0	0.0	0.0	1.56	6.1	0.005	0.005	0.005
0900	1.60	0.0	0.0	0.0	1.59	6.1	0.005	0.005	0.005
0930	1.64	0.0	0.0	0.0	1.59	13.0	0.017	0.017	0.017
1000	1.64	0.0	0.0	0.0	1.59	41.0	0.038	0.038	0.038
1030	1.64	0.0	0.0	0.0	1.60	144.0	0.034	0.034	0.034
1100	1.65	0.0	0.0	0.0	1.61	350.0	0.041	0.041	0.041
1130	1.65	0.0	0.0	0.0	1.63	655.0	0.050	0.050	0.050
1200	1.67	0.0	0.0	0.0	1.64	824.0	0.057	0.057	0.057
1230	1.67	0.0	0.0	0.0	1.65	1110.0	0.053	0.053	0.053
1300	1.75	0.0	0.0	0.0	1.69	1360.0	0.065	0.065	0.065
1330	1.75	0.0	0.0	0.0	1.70	1450.0	0.071	0.071	0.071
1400	1.75	0.0	0.0	0.0	1.71	1550.0	0.080	0.080	0.080
1430	1.75	0.0	0.0	0.0	1.73	1600.0	0.080	0.080	0.080
1500	1.77	0.0	0.0	0.0	1.73	1620.0	0.081	0.081	0.081
1530	1.77	0.0	0.0	0.0	1.74	1590.0	0.081	0.081	0.081
1600	1.77	0.0	0.0	0.0	1.75	1530.0	0.080	0.080	0.080
1630	1.77	0.0	0.0	0.0	1.75	1520.0	0.080	0.080	0.080
1700	1.77	0.0	0.0	0.0	1.77	1520.0	0.082	0.082	0.082
1730	1.77	0.0	0.0	0.0	1.73	1500.0	0.073	0.073	0.073
1800	1.77	0.0	0.0	0.0	1.73	1530.0	0.083	0.083	0.083
1830	1.77	0.0	0.0	0.0	1.65	1300.0	0.069	0.069	0.069
1900	1.77	0.0	0.0	0.0	1.60	2000.0	0.105	0.105	0.105

COLORADO RIVER BASIN

08158640 WALNUT CREEK AT SOUTHERN PACIFIC RAILROAD BRIDGE, AUSTIN, TX
(Reconnaissance partial-record station)

LOCATION.--Lat 30°15'58", long 97°39'24", Travis County, Hydrologic Unit 12090205, at Southern Pacific Railroad bridge, 1.2 mi south of Webberville Road, and 5.0 mi east of the State Capitol in Austin.

DRAINAGE AREA.--53.5 mi².

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
									(PER- CENT SATUR- ATION)	(MG/L)	(COLS./ 100 ML)	(COLS. PER 100 ML)
FEB 28...	1245	45	690	7.1	18.5	5	2.6	9.9	108	1.6	53	K65
MAY 11...	1055	410	485	7.7	23.0	25	450	6.6	79	11	K370	K1700
AUG 19...	1405	1350	225	7.9	24.0	50	2100	6.4	77	9.3	45000	52000
DATE	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)

FEB 28...	190	66	53	13	62	2.1	6.7	120	72	78	.80	7.7
MAY 11...	150	42	49	7.1	39	1.4	5.8	110	59	45	1.1	8.0
AUG 19...	87	21	31	2.3	9.8	.5	3.5	66	22	10	.40	5.3

DATE		SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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)
FEB 28...	365	7	<1	7.8	.020	7.8	.120	1.5	1.60	4.70	6.7	
MAY 11...	280	768	400	2.2	.270	2.5	1.30	2.2	3.50	2.20	20	
AUG 19...	124	4610	552	.94	.060	1.0	.370	17	17.0	.670	84	

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...	1245	1	30	<1	<10	8	11
MAY 11...	1055	2	39	<1	<10	1	110
AUG 19...	1405	2	26	<1	<10	6	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)
FEB 28...	3	15	.1	<1	<1	13	
MAY 11...	<1	9	<.1	1	<1	18	
AUG 19...	<1	1	<.1	<1	<1	9	

COLORADO RIVER BASIN

08158640 WALNUT CREEK SOUTHERN PACIFIC RAILROAD BRIDGE, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
AUG 19...	1405	<.10	<.10	<.10	<.10	<.10	<2.0	.3

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
AUG 19...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

COLORADO RIVER BASIN

08158700 ONION CREEK NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°04'59", long 98°00'29", Hays County, Hydrologic Unit 12090205, on left bank at upstream side of low-water crossing on Farm Road 150, 3.2 mi southeast of Driftwood, and 10 mi west of Buda.

DRAINAGE AREA.--124 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1958, November 1961 to June 1979 (periodic discharge measurements only), July 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 878.13 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. Station is part of hydrologic research project to study rainfall-runoff relationship in the Austin urban-rural areas. There is a recording rain gage located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,010 ft³/s June 11, 1981 (gage height, 15.24 ft); minimum daily, 0.27 ft³/s Sept. 5, 1980.

Flood of Mar. 20, 1979, reached a stage of 11.48 ft (discharge, 4,980 ft³/s), on basis of peak flow over dam, 1.5 mi downstream. Flood of June 11, 1981, peaked at a depth of 5 ft over this dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 588 ft³/s Mar. 4 at 1530 hours (gage height, 5.83 ft), no other peak above base of 500 ft³/s; minimum daily, 0.55 ft³/s Oct. 4, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.60	.58	3.3	5.2	11	36	114	37	39	34	16	5.9		
2	.60	.93	3.1	5.2	10	35	101	34	38	31	16	5.5		
3	.58	3.2	3.0	5.6	9.9	34	99	32	37	27	15	4.3		
4	.55	.83	2.3	6.1	9.8	163	96	30	36	26	15	4.1		
5	.59	.58	2.1	7.3	10	136	90	28	45	29	15	3.8		
6	.83	.57	1.6	8.0	11	104	85	28	50	51	14	3.2		
7	1.7	.75	1.6	8.4	11	90	81	26	49	41	16	2.6		
8	3.9	.87	1.6	8.6	11	83	78	24	42	27	17	4.1		
9	2.0	.76	1.6	8.6	13	81	74	23	38	25	16	6.2		
10	1.6	1.3	2.9	8.6	22	76	72	23	36	23	19	5.2		
11	1.3	2.8	2.5	8.3	21	75	68	45	34	23	16	4.2		
12	1.7	1.2	2.0	8.2	20	75	67	34	33	23	14	3.1		
13	1.7	.59	1.8	7.9	19	75	65	28	31	23	14	1.8		
14	1.2	.58	2.4	7.9	19	74	60	24	71	30	13	1.6		
15	.87	.74	2.7	7.6	48	76	59	27	124	34	14	1.6		
16	.75	.75	2.7	7.5	53	89	56	24	85	42	12	1.6		
17	.75	.84	2.7	7.5	49	93	54	24	86	90	11	1.6		
18	.75	.92	3.0	8.4	47	85	53	24	62	64	11	6.8		
19	.75	1.5	2.9	8.4	45	82	51	22	56	52	11	86		
20	.71	1.3	2.2	8.3	44	81	50	94	52	45	10	41		
21	.60	1.0	2.2	8.9	43	79	49	265	49	40	11	22		
22	.73	.92	2.2	9.0	42	76	49	118	46	36	11	20		
23	.89	.98	2.4	9.0	41	114	45	79	45	33	9.6	18		
24	.76	2.0	2.7	9.2	40	116	43	66	42	28	9.5	17		
25	.68	1.4	2.7	9.4	39	110	42	59	64	25	9.8	15		
26	.60	4.7	2.2	9.7	38	223	40	54	60	24	9.4	14		
27	.60	6.8	4.7	10	37	156	40	49	49	22	8.6	13		
28	.60	5.5	3.3	10	36	129	38	47	42	20	7.9	12		
29	.70	4.3	2.7	10	---	137	38	44	38	20	8.5	11		
30	.58	3.8	2.7	10	---	206	38	41	35	18	7.3	9.8		
31	.55	---	2.9	11	---	135	---	39	---	17	6.4	---		
TOTAL	30.72	52.99	78.7	257.8	799.7	3124	1895	1492	1514	1023	384.0	346.0		
MEAN	.99	1.77	2.54	8.32	28.6	101	63.2	48.1	50.5	33.0	12.4	11.5		
MAX	3.9	6.8	4.7	11	53	223	114	265	124	90	19	86		
MIN	.55	.57	1.6	5.2	9.8	34	38	22	31	17	6.4	1.6		
CFSM	.008	.01	.02	.07	.23	.82	.51	.39	.41	.27	.10	.09		
IN.	.01	.02	.02	.08	.24	.94	.57	.45	.45	.31	.12	.10		
AC-FT	61	105	156	511	1590	6200	3760	2960	3000	2030	762	686		
CAL YR 1982	TOTAL	5636.80	MEAN	15.4	MAX	1960	MIN	.48	CFSM	.12	IN	1.69	AC-FT	11180
WTR YR 1983	TOTAL	10997.91	MEAN	30.1	MAX	265	MIN	.55	CFSM	.24	IN	3.30	AC-FT	21810

COLORADO RIVER BASIN

08158700 ONION CREEK NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1974 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
MAR 01...	0900	32	462	7.9	15.0	<1	.60	9.1	93	.6	76	43
23...	1220	126	460	7.7	13.0	5	1.3	10.2	99	.5	220	440

DATE	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
MAR 01...	230	24	69	15	7.3	.2	1.0	210	27	13	.20
23...	230	28	68	14	6.6	.2	.9	200	21	12	.20

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLA- TILE, SUS- PENDED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR 01...	7.2	266	5	<1	<.020	.20	.090	.61	.70	.010	1.3
23...	7.2	250	4	<1	<.020	.20	.090	.51	.60	.030	1.8

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)
MAR 01...	0900	<1	26	<1	<10	6	<3
23...	1220	<1	24	<1	<10	4	3

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)
MAR 01...	4	3	<.1	1	<1	8
23...	4	2	<.1	1	<1	<3

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
MAR 23...	1220	<.10	<.10	<.10	<.10	<.10	<2.0	<.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
MAR 23...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

STATION NO. 03153700									
STORM RAINFALL AND RUNOFF RECORD									
1983 WATER YEAR									
UNION CREEK NEAR DRIFTWOOD, TEXAS									
STORM OF MAY 20-21, 1983									
DATE & TIME	1-ON							ACCUM. WEIGHTED PRECIP. IN.	DISCHARGE IN CFS
MAY 20									
0000	0.0							0.0	27.0
0015	0.03							0.03	27.0
0045	0.10							0.10	27.0
0115	0.10							0.10	26.0
0145	0.21							0.21	25.0
0215	0.22							0.22	25.0
0245	0.26							0.26	67.0
0300	0.30							0.30	131.0
0315	0.43							0.43	199.0
0345	0.71							0.61	273.0
0400	0.77							0.77	324.0
0415	1.20							1.20	330.0
0430	1.50							1.50	322.0
0445	1.50							1.50	302.0
0500	1.50							1.50	257.0
0515	1.50							1.50	203.0
0530	1.50							1.50	184.0
0545	1.50							1.50	142.0
0600	1.50							1.50	128.0
0615	1.50							1.50	111.0
0630	1.50							1.50	130.0
0645	1.50							1.50	144.0
0700	1.50							1.50	129.0
0715	1.50							1.50	122.0
0730	1.50							1.50	177.0
0745	1.57							1.57	200.0
MAY 21									
0000	1.57							1.57	200.0
0030	1.57							1.57	194.0
0100	1.57							1.57	159.0
0130	1.57							1.57	142.0
0200	1.57							1.57	133.0
0230	1.57							1.57	136.0
0300	1.57							1.57	159.0
0330	1.57							1.57	185.0
0400	1.57							1.57	244.0
0430	1.57							1.57	291.0
0500	1.57							1.57	333.0
0530	1.57							1.57	340.0
0600	1.57							1.57	296.0
0630	1.57							1.57	0.0280
0700	1.57							1.57	0.0320
0730	1.57							1.57	0.0354
0800	1.57							1.57	0.0377
0830	1.57							1.57	0.0399
0900	1.57							1.57	0.0405
0930	1.57							1.57	0.0411
1000	1.57							1.57	0.0418
1030	1.57							1.57	0.0441
1100	1.57							1.57	0.0472
1130	1.57							1.57	0.0515
1200	1.57							1.57	0.0570

STORM RAINFALL AND RUNOFF RECORD										
1983 WATER YEAR										
STA. NO. 03150700										
UNION CREEK NEAR DRIFTWOOD, TEXAS										
STORM OF MAY 20-21, 1953										
DATE & TIME	1-ON							ACCUM. WEIGHTED PRECIP. IN.	DISCHARGE IN CFS	ACCUM. RUNOFF IN.
MAY 21										
1115	2.64							2.64	345.0	0.0608
1130	2.64							2.64	355.0	0.0619
1145	2.64							2.64	355.0	0.0630
1200	2.64							2.64	371.0	0.0642
1215	2.64							2.64	420.0	0.0662
1245	2.64							2.64	433.0	0.0682
1300	2.64							2.64	433.0	0.0695
1315	2.65							2.65	429.0	0.0736
1330	2.65							2.65	360.0	0.0809
1350	2.66							2.65	326.0	0.0860
1400	2.66							2.66	293.0	0.0973
2130	2.66							2.65	214.0	0.1053
2400	2.66							2.65	177.0	0.1133
MAY 22										
0000	2.66							2.66	177.0	0.1133
0930	2.66							2.66	121.0	0.1299
1500	2.66							2.66	104.0	0.1361
1700	2.66							2.66	95.0	0.1415
2400	2.66							2.66	59.0	0.1470
MAY 23										
0000	2.66							2.66	39.0	0.1470
1000	2.66							2.66	32.0	0.1590
1800	2.66							2.66	75.0	0.1656
2400	2.66							2.66	72.0	0.1633

COLORADO RIVER BASIN

08158800 ONION CREEK AT BUDA, TX

LOCATION.--Lat 30°05'09", long 97°50'52", Hays County, Hydrologic Unit 12090205, on left bank at downstream side of bridge on Farm Road 967 and 0.4 mi northwest of Buda.

DRAINAGE AREA.--166 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- November 1961 to September 1973, January 1978 to July 1979 (periodic discharge measurements only), July 1979 to September 1983 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 657.39 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records fair. The station is part of a hydrologic-research project to study rainfall-runoff relation for the Austin urban-rural areas. There are two recording rain gages located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,400 ft³/s June 13, 1981 (gage height, 17.59 ft); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 28, 1929, reached a stage of about 36.2 ft, present datum (discharge, 53,200 ft³/s), from slope-area indirect measurement of peak flow. This is probably the highest flood since that date.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 30	1130	1,240	6.11
May 20	1900	1,210	6.07
May 21	1115	*1,650	6.59

Minimum discharge, no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	99	.97	.92	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	55	.86	.88	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	41	.74	.69	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	34	.65	.56	.00	.00	.00
5	.00	.00	.00	.00	.00	83	20	.50	1.7	.00	.00	.00
6	.00	.00	.00	.00	.00	9.8	14	.32	1.1	.00	.00	.00
7	.00	.00	.00	.00	.00	3.5	12	.19	1.1	.00	.00	.00
8	.00	.00	.00	.00	.00	1.6	11	.11	.82	.00	.00	.00
9	.00	.00	.00	.00	.00	.89	9.3	.08	.61	.00	.00	.00
10	.00	.00	.00	.00	.00	.22	8.0	.13	.47	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	5.9	1.7	.33	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	4.2	.89	.15	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	2.8	.60	.02	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	2.1	.52	.02	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	1.9	.98	64	.00	.00	.00
16	.00	.00	.00	.00	.00	.21	1.8	1.1	34	.00	.00	.00
17	.00	.00	.00	.00	.00	.61	1.7	.82	72	.00	.00	.00
18	.00	.00	.00	.00	.00	.26	1.6	1.1	17	3.6	.00	.49
19	.00	.00	.00	.00	.00	.11	1.5	1.3	1.9	2.1	.00	2.8
20	.00	.00	.00	.00	.00	.23	1.4	218	.71	.08	.00	.64
21	.00	.00	.00	.00	.00	.19	1.4	876	.14	.00	.00	.00
22	.00	.00	.00	.00	.00	.08	1.4	335	.06	.00	.00	.00
23	.00	.00	.00	.00	.00	2.4	1.4	75	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	1.9	1.3	13	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	7.1	1.2	3.9	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	166	1.2	1.6	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	131	1.1	1.3	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	54	1.1	1.3	.00	.00	.00	.00
29	.00	.00	.00	.00	---	36	1.1	1.2	.00	.00	.00	.00
30	.00	.00	.00	.00	---	338	1.1	1.1	.00	.00	.00	.00
31	.00	---	.00	.00	---	207	---	1.0	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	1044.10	340.5	1541.96	199.18	5.78	.00	3.93
MEAN	.000	.000	.000	.000	.000	33.7	11.4	49.7	6.64	.19	.000	.13
MAX	.00	.00	.00	.00	.00	338	99	876	72	3.6	.00	2.8
MIN	.00	.00	.00	.00	.00	.00	1.1	.08	.00	.00	.00	.00
CFSM	.000	.000	.000	.000	.000	.20	.07	.30	.04	.001	.000	.001
IN.	.00	.00	.00	.00	.00	.23	.08	.35	.04	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	2070	675	3060	395	11	.00	7.8
CAL YR 1982	TOTAL	5135.82	MEAN	14.1	MAX	3640	MIN	.00	CFSM	.09	IN	1.15
WTR YR 1983	TOTAL	3135.45	MEAN	8.59	MAX	876	MIN	.00	CFSM	.05	IN	.70
									AC-FT	10190	AC-FT	6220

COLORADO RIVER BASIN

08158800 ONION CREEK AT BUDA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1978 to September 1983 (discontinued).
Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, O.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
MAR 23...	1130	3.4	312	7.7	11.0	50	35	11.2	104	2.2	10000	40000	
DATE		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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
MAR 23...	140	44	47	5.9	6.2	.2	2.5	98	34	11	.10	8.0	
DATE		SOLIDS, SUM OF CONSTI- TUENTS, 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)	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)	
MAR 23...	174	16	14	.16	.040	.20	.130	.97	1.10	.070	13		
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)						
MAR 23...	1130	1	27	<1	<10	3	49						
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)						
MAR 23...	4	3	<.1	<1	<1	6							
DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)					
MAR 23...	1130	<.10	<.10	<.10	<.10	<.10	<2.0	<.1					
DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)					
MAR 23...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1					

STATION NO. 06153306									
STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
UNION CREEK AT BUDA, TEXAS									
STORM OF MAY 20-21, 1933									
DATE & TIME	1-ON	2-ON	G A G E	N U M B E R	P R E C I P .	ACCUM.		DISCHARGE	
						WEIGHTED	IN.	IN	ACCUM. RUNOFF
						PRECIP.	CFS		IN.
MAY 20									
0000	0.0	0.0				0.0		1.1	0.0000
0015	0.05	0.0				0.02		1.1	0.0000
0045	0.10	0.01				0.06		1.4	0.0001
0015	0.21	0.05				0.17		1.7	0.0002
1245	0.26	0.05				0.20		1.6	0.0002
1315	0.30	0.05				0.23		1.6	0.0002
1330	0.43	0.05				0.35		1.5	0.0002
1345	0.51	0.05				0.45		1.7	0.0002
1400	0.77	0.05				0.58		1.8	0.0002
1415	1.20	0.06				0.89		1.8	0.0002
1430	1.56	0.06				1.15		2.1	0.0002
1445	1.56	0.06				1.15		7.6	0.0003
1455	1.56	0.07				1.15		15.0	0.0004
1715	1.59	0.07				1.16		72.0	0.0009
1800	1.55	0.08				1.16		70.0	0.0013
1815	1.56	0.06				1.16		54.0	0.0015
1830	1.56	0.06				1.16		73.0	0.0017
1845	1.56	0.06				1.16		705.0	0.0034
1900	1.56	0.06				1.16		1120.0	0.0060
1930	1.56	0.06				1.16		1210.0	0.0102
1955	1.56	0.06				1.16		1110.0	0.0141
2000	1.56	0.06				1.16		1090.0	0.0160
2015	1.56	0.06				1.16		1030.0	0.0191
2100	1.56	0.06				1.16		1020.0	0.0233
2115	1.56	0.06				1.16		1020.0	0.0236
2130	1.56	0.08				1.16		990.0	0.0309
2145	1.56	0.06				1.16		914.0	0.0373
2215	1.56	0.06				1.16		694.0	0.0429
2300	1.57	0.06				1.16		624.0	0.0451
2400	1.57	0.06				1.17		603.0	0.0472
MAY 21	1.57	0.06				1.17		547.0	0.0511
0000	1.57	0.06				1.17		547.0	0.0511
0000	1.57	0.06				1.17		363.0	0.0590
0000	1.57	0.06				1.17		335.0	0.0621
0000	1.57	0.06				1.17		316.0	0.0651
0000	1.57	0.06				1.17		298.0	0.0672
0000	1.56	0.10				1.18		302.0	0.0666
0000	1.56	0.11				1.18		339.0	0.0710
0000	1.56	0.14				1.55		417.0	0.0749

STATION NO. 0515300									
UNION CREEK AT BUENA, TEXAS									
STORM RAINFALL AND RUNOFF RECORD									
1985 WATER YEAR									
STORM OF MAY 20-21, 1985									
DATE & TIME	1-ON	2-ON	GAGE	NUMBER	WEIGHTED PRECIP. IN.	DISCHARGE IN CFS	ACCUM. RUNOFF IN.		
MAY 21									
0800	2.55	0.15			1.39	547.0	0.0812		
0930	2.55	0.20			1.97	779.0	0.0855		
1000	2.64	0.20			1.96	937.0	0.0920		
1015	2.64	0.20			1.98	1190.0	0.0947		
1030	2.64	0.22			1.99	1390.0	0.0960		
1045	2.64	0.22			1.99	1550.0	0.1034		
1115	2.64	0.23			1.99	1650.0	0.1130		
1200	2.64	0.24			1.99	1540.0	0.1220		
1230	2.64	0.24			1.99	1430.0	0.1237		
1300	2.64	0.25			1.99	1380.0	0.1351		
1330	2.65	0.25			2.00	1430.0	0.1415		
1400	2.65	0.27			2.00	1470.0	0.1437		
1500	2.65	0.27			2.01	1400.0	0.1532		
1600	2.65	0.23			2.01	1310.0	0.1644		
1630	2.66	0.28			2.01	1035.0	0.1719		
1700	2.66	0.29			2.02	1060.0	0.1769		
1730	2.66	0.24			2.02	1090.0	0.1820		
1745	2.65	1.54			2.25	1160.0	0.1850		
1800	2.66	2.07			2.36	1190.0	0.1893		
1815	2.66	2.25			2.50	1210.0	0.1916		
1845	2.66	2.41			2.55	1220.0	0.1959		
1900	2.66	2.41			2.59	1220.0	0.2002		
2100	2.66	2.41			2.59	1210.0	0.2129		
2400	2.66	2.41			2.59	967.0	0.2355		
MAY 22									
0000	2.60	2.41			2.59	694.0	0.2500		
0300	2.60	2.41			2.59	694.0	0.2500		
0500	2.60	2.41			2.59	542.0	0.2754		
0800	2.60	2.41			2.59	365.0	0.2951		
1400	2.60	2.41			2.59	260.0	0.3091		
2000	2.60	2.41			2.59	189.0	0.3179		
2400	2.60	2.41			2.59	147.0	0.3224		
MAY 23									
0000	2.60	2.41			2.59	147.0	0.3224		
0500	2.60	2.41			2.59	107.0	0.3290		
1100	2.60	2.41			2.59	75.0	0.3336		
1700	2.60	2.41			2.59	52.0	0.3369		
2400	2.60	2.41			2.59	32.0	0.3330		

COLORADO RIVER BASIN

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX

LOCATION.--Lat 30°10'40", long 97°41'18", Travis County, Hydrologic Unit 12090205, on right bank at downstream side of downstream bridge on U.S. Highway 183, 2.4 mi downstream from Williamson Creek, 3.2 mi southwest of Del Valle, and 7.5 mi southeast of the State Capitol Building in Austin.

DRAINAGE AREA.--321 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1924 to March 1930, March 1976 to current year. In 1924-30 station was published as "near Del Valle."

GAGE.--Water-stage recorder. Datum of gage is 442.85 ft State Department of Highways and Public Transportation datum. May 15, 1924, to Mar. 15, 1930, nonrecording gage at highway bridge 1,700 ft upstream at 6.42-foot higher datum.

REMARKS.--Water-discharge records good. Flow is slightly regulated by several small ponds on main channel and tributaries above station. There are eleven recording rain gages located in the watershed.

AVERAGE DISCHARGE.--12 years (water years 1925-29, 1977-83), 81.7 ft³/s (3.46 in/yr), 59,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,000 ft³/s May 28, 1929 (gage height, 30.5 ft), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1869 occurred about July 3, 1869, stage about 38 ft from newspaper accounts, and Sept. 9, 1921, stage 38.0 ft, from floodmark, present site and datum.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 23	0945	2,550	10.10	May 21	1300	3,990	12.27
May 20	1830	*4,030	12.33	Aug. 8	1700	2,560	10.12

Minimum daily discharge, 0.31 ft³/s Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.76	3.9	81	10	5.8	160	11	21	10	4.1	4.5
2	1.2	.80	3.7	21	9.2	5.6	104	11	21	9.7	4.1	4.0
3	1.2	6.1	6.4	10	10	5.8	82	10	21	8.6	4.0	3.7
4	1.1	3.0	6.9	7.3	10	71	75	9.6	20	8.2	3.2	3.4
5	.57	2.0	4.7	5.9	95	66	63	8.9	448	7.7	3.0	3.0
6	.57	1.2	4.1	5.4	19	67	50	7.7	120	7.7	3.0	3.5
7	.68	1.1	4.1	5.4	8.0	28	42	7.3	72	7.7	3.0	3.3
8	1.0	.99	4.1	5.1	6.8	15	36	6.6	31	7.6	423	3.0
9	1.0	.80	4.1	4.9	339	11	34	6.8	24	6.8	124	3.6
10	1.4	.76	4.3	5.3	66	7.2	32	6.6	21	6.3	80	5.7
11	1.6	.76	6.8	5.4	14	5.8	28	415	19	5.8	16	16
12	1.2	.76	9.9	5.1	7.4	5.4	24	33	18	5.8	14	7.8
13	.99	.76	5.8	4.9	6.0	5.5	21	15	17	5.5	95	5.9
14	.66	.76	5.4	5.1	5.4	5.8	17	12	16	46	27	5.4
15	.42	.90	5.2	5.0	57	7.8	15	21	17	34	17	5.4
16	.31	1.2	5.4	4.9	28	150	14	19	114	49	14	4.9
17	.52	1.2	5.4	4.9	12	76	13	12	94	21	12	4.8
18	.76	1.2	5.6	15	8.7	21	13	27	76	15	10	204
19	.76	1.3	5.9	57	7.6	13	13	47	44	12	300	713
20	.87	1.4	6.6	27	6.9	20	13	1090	23	12	150	150
21	1.1	1.6	6.8	21	6.6	15	13	2220	19	11	80	45
22	1.2	1.7	7.2	19	6.3	9.2	13	832	16	9.3	25	22
23	1.2	1.6	6.9	11	6.3	891	12	244	14	8.7	15	16
24	1.2	1.5	6.4	9.4	6.3	162	12	110	14	7.1	10	13
25	.89	1.9	6.0	8.1	6.3	57	11	60	14	6.3	8.0	12
26	.76	86	5.8	7.9	6.3	558	11	43	26	5.8	7.0	12
27	.67	68	7.8	6.7	5.8	293	11	33	16	5.4	6.0	12
28	.98	11	8.7	7.3	5.8	144	11	28	14	5.4	5.5	11
29	.82	5.5	6.8	8.3	---	104	11	24	12	5.4	5.0	9.9
30	.76	4.5	6.7	9.7	---	331	11	23	11	5.4	4.5	9.9
31	.76	---	6.3	11	---	390	---	22	---	4.4	4.0	---
TOTAL	28.25	211.05	183.7	405.0	775.7	3546.9	965	5415.5	1393	360.6	1476.4	1317.7
MEAN	.91	7.04	5.93	13.1	27.7	114	32.2	175	46.4	11.6	47.6	43.9
MAX	1.6	86	9.9	81	339	891	160	2220	448	49	423	713
MIN	.31	.76	3.7	4.9	5.4	5.4	11	6.6	11	4.4	3.0	3.0
CFSM	.003	.02	.02	.04	.09	.36	.10	.55	.15	.04	.15	.14
IN.	.00	.02	.02	.05	.09	.41	.11	.63	.16	.04	.17	.15
AC-FT	56	419	364	803	1540	7040	1910	10740	2760	715	2930	2610

CAL YR 1982	TOTAL	14013.37	MEAN 38.4	MAX 6510	MIN .01	CFSM .12	IN 1.62	AC-FT 27800
WTR YR 1983	TOTAL	16078.80	MEAN 44.1	MAX 2220	MIN .31	CFSM .14	IN 1.86	AC-FT 31890

COLORADO RIVER BASIN

08159000 ONION CREEK AT U.S. HIGHWAY 183 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1976 to current year. Sediment analyses: October 1976 to September 1982. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 09...	1435	757	465	7.0	14.0	35	620	8.8	88	5.8	K1300	K14000
MAR 02...	0900	7.7	589	8.2	17.0	<1	1.3	9.5	100	.6	29	K67

DATE	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 09...	190	37	61	8.3	22	.7	2.5	150	44	28	.30	5.2
MAR 02...	230	35	74	12	33	1.0	2.4	200	59	40	.40	3.1

DATE	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)	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)
FEB 09...	261	592	62	.66	.040	.70	.100	2.9	3.00	.770	11
MAR 02...	344	<1	<1	--	<.020	.10	.120	.68	.80	.050	3.7

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 09...	1435	2	50	<1	<10	4	12
MAR 02...	0900	1	60	<1	<10	2	<3

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)
FEB 09...		<1	18	<.1	<1	<1	<3
MAR 02...		6	3	<.1	<1	<1	5

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 09...	1435	<.10	<.10	<.10	<.10	<.10	<2.0	.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 09...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

COLORADO RIVER BASIN

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX

LOCATION.--Lat 30°09'19", long 97°56'23", Hays County, Hydrologic Unit 12090205, 0.8 mi southeast of Farm Road 1826 and 5.9 mi northeast of Driftwood.

DRAINAGE AREA.--12.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1978 to July 1979 (periodic discharge measurements only), October 1978 to June 1979 (peak discharges above base only), July 1979 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 860 ft, from topographic map.

REMARKS.--Water-discharge records good. Station is part of a hydrologic research project to study rainfall-runoff relation for the Austin urban-rural areas. There is a recording rain gage located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,330 ft³/s June 11, 1981 (gage height, 13.05 ft, from floodmarks), from slope-area measurements of peak flow; no flow Aug. 28 to Sept. 5, 1980, and Sept 13, 18, 19, Oct. 4, 5, 1982.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1939, reached a stage of 16.2 ft (discharge unknown) and was the highest since at least 1924, from information by local resident. A flood in 1915 was 2 ft higher than the 1939 flood, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 154 ft³/s Aug. 8 at 1345 hours (gage height, 4.01 ft), no peak above base of 500 ft³/s; no flow Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.12	3.2	4.4	4.5	9.0	15	3.7	6.3	3.7	3.4	1.5
2	.02	.18	3.3	3.6	4.3	8.9	14	3.5	6.0	3.5	3.0	1.5
3	.01	.56	4.4	3.5	4.1	8.7	13	3.2	5.4	3.3	2.9	1.4
4	.00	.24	3.6	3.7	4.1	18	13	2.9	5.2	3.1	2.9	1.4
5	.00	.22	3.5	3.9	5.0	14	12	2.7	7.5	3.2	2.6	1.3
6	.09	.26	3.3	4.0	4.5	12	12	2.7	7.5	3.0	2.7	1.2
7	.44	.28	3.3	4.0	4.3	12	11	2.5	6.9	2.6	2.5	1.1
8	.25	.28	3.3	4.0	4.3	11	11	2.3	6.3	2.4	15	1.0
9	.18	.28	3.1	4.1	7.1	11	10	2.3	5.4	2.2	5.5	1.4
10	.15	.32	3.9	3.9	7.4	11	10	2.6	5.2	2.1	4.2	1.1
11	.15	.36	4.2	3.7	7.2	10	9.8	4.4	4.3	2.0	3.6	.94
12	.15	.36	3.8	3.5	7.2	10	9.5	3.1	4.1	2.2	3.3	.78
13	.16	.31	3.8	3.5	6.9	10	9.3	2.7	3.3	2.7	3.2	.54
14	.15	.30	4.0	3.5	7.2	10	8.8	2.5	17	3.1	3.0	.23
15	.15	.32	4.0	3.1	13	10	8.4	3.3	11	2.8	2.8	.17
16	.14	.33	3.8	3.3	10	15	8.0	2.5	8.4	3.5	2.7	.16
17	.14	.33	3.8	3.3	10	14	7.6	2.3	8.4	22	2.5	.10
18	.14	.33	3.8	4.0	10	12	7.3	3.2	7.8	8.3	2.4	3.8
19	.14	.44	3.6	3.9	10	12	7.0	2.4	7.5	7.7	2.6	4.0
20	.13	.38	3.5	4.1	10	12	6.5	14	7.2	7.1	2.5	2.7
21	.12	.37	3.5	4.4	10	12	6.0	27	7.2	6.8	2.2	2.1
22	.11	.35	3.4	4.3	10	11	5.6	12	6.6	6.5	2.1	1.9
23	.11	.35	3.3	4.3	9.9	23	5.1	11	6.2	6.2	1.9	1.7
24	.10	.43	3.2	4.6	9.6	19	4.6	9.9	5.8	5.8	1.9	1.6
25	.11	.37	2.9	4.7	9.6	18	4.5	9.0	6.0	5.5	2.1	1.6
26	.11	3.1	3.1	4.6	9.3	31	4.3	8.7	5.4	5.1	1.8	1.6
27	.11	5.0	4.3	4.6	9.3	19	4.3	7.8	5.3	4.8	1.7	1.6
28	.11	4.6	3.1	4.7	9.0	18	4.0	7.2	4.8	4.6	1.8	1.6
29	.11	4.0	2.4	4.7	---	17	3.8	6.9	4.5	4.3	1.8	1.7
30	.11	3.5	2.5	4.5	---	17	3.8	6.6	4.0	4.0	1.6	1.6
31	.12	---	2.4	4.7	---	16	---	6.3	---	3.7	1.6	---
TOTAL	3.83	28.27	107.3	125.1	217.8	431.6	249.2	181.2	196.5	147.8	93.8	43.32
MEAN	.12	.94	3.46	4.04	7.78	13.9	8.31	5.85	6.55	4.77	3.03	1.44
MAX	.44	5.0	4.4	4.7	13	31	15	27	17	22	15	4.0
MIN	.00	.12	2.4	3.1	4.1	8.7	3.8	2.3	3.3	2.0	1.6	.10
CFSM	.01	.08	.28	.33	.64	1.14	.68	.48	.54	.39	.25	.12
IN.	.01	.09	.33	.38	.66	1.32	.76	.55	.60	.45	.29	.13
AC-FT	7.6	56	213	248	432	856	494	359	390	293	186	86
CAL YR 1982	TOTAL	955.09	MEAN	2.62	MAX	258	MIN	.00	CFSM	.22	IN	2.91
WTR YR 1983	TOTAL	1825.72	MEAN	5.00	MAX	31	MIN	.00	CFSM	.41	IN	5.57
									AC-FT	1890		
										3620		

COLORADO RIVER BASIN

08158810 BEAR CREEK BELOW FARM ROAD 1826 NEAR DRIFTWOOD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: March 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UN-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 09...	1230	14	452	7.8	13.5	10	53	9.5	95	1.0	1100	28000
MAR 01...	0935	8.7	510	7.8	15.0	<1	1.0	9.4	97	.5	K17	K57

	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 09...	230	30	69	14	7.1	.2	1.0	200	24	12	.20	7.2
MAR 01...	250	21	74	16	8.2	.2	.7	230	27	15	.20	7.6

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)
FEB 09...	254	63	40	.28	.020	.30	.090	.41	.50	.040	3.6
MAR 01...	287	<1	<1	--	<.020	.30	.090	.21	.30	.010	1.3

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 09...	1230	<1	24	<1	<10	5	6
MAR 01...	0935	<1	27	<1	10	<1	<3

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)
FEB 09...		2	3	<.1	1	<1	<3
MAR 01...		2	<1	<.1	1	<1	5

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 09...	1230	<.10	<.10	<.10	<.10	<.10	<2.0	.1

DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 09...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

STATION NO. 08155610									
STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
SEAR CREEK BELOW FARM ROAD 1326 NEAR DRIFTWOOD, TEXAS									
STORM OF MAY 20-21, 1983									
DATE & TIME									
AGE N U M B E R									
1983									
PRECIP. IN.									
DISCHARGE IN									
ACCUM. WEIGHTED PRECIP. IN.									
ACCUM. RUNOFF IN.									
MAY 20									
0000	0.0						0.0	2.3	0.0027
0445	0.01						0.01	3.1	0.0025
0900	0.05						0.06	3.1	0.0035
1130	0.12						0.12	2.9	0.0043
1145	0.34						0.34	2.9	0.0044
1200	0.35						0.63	2.9	0.0045
1215	1.05						1.05	2.9	0.0046
1230	1.22						1.22	2.9	0.0047
1245	1.45						1.45	2.9	0.0048
1300	1.50						1.50	2.9	0.0049
1315	1.51						1.51	2.9	0.0050
1345	1.51						1.51	2.9	0.0051
1400	1.51						1.51	4.9	0.0053
1415	1.51						1.51	6.3	0.0055
1430	1.51						1.51	9.3	0.0058
1445	1.51						1.51	16.0	0.0063
1500	1.51						1.51	24.0	0.0071
1515	1.51						1.51	29.5	0.0080
1530	1.51						1.51	33.0	0.0092
1545	1.51						1.51	33.0	0.0126
1600	1.51						1.51	35.0	0.0153
1615	1.51						1.51	79.0	0.0173
1630	1.51						1.51	71.0	0.0201
1645	1.51						1.51	57.0	0.0219
1700	1.51						1.51	49.0	0.0242
1730	1.51						1.51	33.0	0.0276
1815	1.51						1.51	33.0	0.0308
1900	1.51						1.51	26.0	0.0332
1945	1.51						1.51	22.0	0.0350
2015	1.51						1.51	20.0	0.0363
2045	1.51						1.51	19.0	0.0406
2400	1.52						1.52	13.0	0.0455
MAY 21									
0000	1.52						1.52	13.0	0.0455
0500	1.50						1.50	9.9	0.0509
0515	1.35						1.35	9.9	0.0512
0530	2.15						2.15	9.6	0.0515
0545	2.24						2.24	9.6	0.0513
0600	2.50						2.50	9.3	0.0523
0630	2.53						2.53	9.3	0.0527

STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
STA. NO. 03153310									
BEAR CREEK BELOW FARM ROAD 1326 NEAR DRIFTWOOD, TEXAS									
STORM OF MAY 20-21, 1933									
DATE & TIME	13R						DISCHARGE	ACCUM.	
							IN	IN	RUNOFF
MAY 21									
0645	2.36						9.3	0.0532	
0715	2.37						9.3	0.0536	
0730	2.39						12.0	0.0540	
0745	2.41						19.0	0.0546	
0800	2.41						27.0	0.0554	
0815	2.41						34.0	0.0565	
0830	2.41						48.0	0.0580	
0845	2.41						35.0	0.0607	
0900	2.41						125.0	0.0647	
0915	2.41						122.0	0.0686	
0930	2.42						106.0	0.0720	
0945	2.42						93.0	0.0749	
1000	2.42						38.0	0.0791	
1030	2.42						76.0	0.0839	
1100	2.42						69.0	0.0905	
1200	2.42						51.0	0.0962	
1245	2.43						39.0	0.0986	
1300	2.43						38.0	0.1011	
1345	2.43						30.0	0.1039	
1430	2.44						29.0	0.1080	
1615	2.44						20.0	0.1109	
1645	2.44						19.0	0.1130	
1800	2.44						17.0	0.1165	
2000	2.44						15.0	0.1206	
2215	2.44						15.0	0.1244	
2400	2.44						14.0	0.1259	

08158820 BEAR CREEK AT FARM ROAD 1626 NEAR MANCHACA, TEX.
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°08'25", long 97°50'50", Travis County, at culvert on Farm Road 1626, 1 mile west of Manchaca, Texas.

DRAINAGE AREA.--24.0 mi².

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 643.63 ft NGVD.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft³/s June 11, 1981 (gage height, 15.60 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 397 ft³/s May 21 (gage height 4.87 ft).

STATION NO. 03158520									
STOPM RAINFALL AND RUNOFF RECORD									
1953 WATER YEAR									
BEAR CREEK AT FARM ROAD 1576 NEAR MANCHACIA, TEXAS									
STORM OF MAY 20-21, 1953									
DATE & TIME	1500	2300	GAGE	NUMBER	R	PRECIP. IN.	DISCHARGE IN	ACCUM. WEIGHTED PRECIP.	ACCUM. RUNOFF
MAY 20									
0000	0.0	0.0				0.0	0.0	0.0	0.0
0445	0.01	0.0				0.01	0.0	0.0	0.0
1015	0.07	0.03				0.09	0.0	0.0	0.0
1130	0.12	0.25				0.16	0.0	0.0	0.0
1145	0.34	0.49				0.39	0.0	0.0	0.0
1200	0.85	0.59				0.75	0.0	0.0	0.0
1215	1.05	0.34				0.95	0.0	0.0	0.0
1230	1.22	1.25				1.23	0.0	0.0	0.0
1245	1.46	1.31				1.41	0.0	0.0	0.0
1300	1.51	1.53				1.45	0.0	0.0	0.0
1430	1.51	1.60				1.54	0.0	0.0	0.0
2000	1.52	1.61				1.55	0.0	0.0	0.0
2015	1.52	1.61				1.55	7.2	0.001	0.001
2030	1.52	1.61				1.55	30.0	0.006	0.006
2045	1.52	1.61				1.55	41.0	0.013	0.013
2000	1.52	1.61				1.55	46.0	0.020	0.020
2015	1.52	1.61				1.55	47.0	0.023	0.023
2030	1.52	1.61				1.55	45.0	0.035	0.035
2045	1.52	1.61				1.55	42.0	0.042	0.042
2400	1.52	1.61				1.55	39.0	0.0051	0.0051
MAY 21									
0000	1.52	1.61				1.55	39.0	0.0051	0.0051
0100	1.52	1.61				1.55	27.0	0.0075	0.0075
0200	1.52	1.61				1.55	19.0	0.0087	0.0087
0300	1.52	1.61				1.55	13.0	0.0096	0.0096
0400	1.54	1.63				1.57	5.4	0.0101	0.0101
0500	1.65	1.34				1.63	4.8	0.0133	0.0133
0515	1.83	2.14				1.94	4.2	0.0104	0.0104
0530	2.13	2.35				2.25	3.6	0.0104	0.0104
0545	2.24	2.45				2.31	3.3	0.0105	0.0105
0600	2.30	2.45				2.35	2.9	0.0105	0.0105
0615	2.31	2.45				2.36	2.4	0.0106	0.0106
0630	2.34	2.45				2.33	2.1	0.0106	0.0106
0700	2.37	2.45				2.40	2.1	0.0107	0.0107
0715	2.37	2.45				2.41	3.3	0.0107	0.0107
0730	2.37	2.45				2.41	7.6	0.0107	0.0107
0800	2.41	2.45				2.42	27.0	0.0118	0.0118
0815	2.41	2.45				2.42	44.0	0.0135	0.0135
0915	2.41	2.45				2.42	24.0	0.0151	0.0151
0945	2.42	2.45				2.43	30.0	0.0131	0.0131

STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
STATION NO. 02158221									
BEAR CREEK AT FARM ROAD 1626 NEAR MANCHACA, TEXAS									
STORM OF MAY 20-21, 1933									
DATE & TIME	G A G E		V U M B E R		ACCUM. WEIGHTED PRECIP.		DISCHARGE IN		ACCUM. RUNOFF
	1582	2582	1582	2582	IN.	CFS	IN.	CFS	
MAY 21									
1030	2.42	2.45			2.43		33.0		0.0201
1050	2.42	2.45			2.43		85.0		0.0223
1110	2.42	2.45			2.43		83.0		0.0249
1130	2.42	2.45			2.43		110.0		0.0267
1145	2.42	2.45			2.43		199.0		0.0299
1200	2.42	2.45			2.43		263.0		0.0342
1215	2.42	2.45			2.43		275.0		0.0355
1230	2.42	2.45			2.43		397.0		0.0450
1245	2.43	2.45			2.44		265.0		0.0493
1300	2.43	2.45			2.44		258.0		0.0570
1415	2.44	2.45			2.44		239.0		0.0692
1500	2.44	2.45			2.44		222.0		0.0800
1530	2.44	2.45			2.44		203.0		0.0833
1550	2.44	2.45			2.44		199.0		0.0900
1600	2.44	2.45			2.44		173.0		0.1113
1645	2.44	2.45			2.44		109.0		0.1199
1945	2.44	2.45			2.44		79.0		0.1243
2130	2.44	2.45			2.44		54.0		0.1291
2400	2.44	2.45			2.44		35.0		0.1339
	2.44	2.45			2.44		19.0		0.1355

COLORADO RIVER BASIN

08158825 LITTLE BEAR CREEK AT FARM ROAD 1626 NEAR MANCHACA, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 30°07'31", long 97°51'43", Hays County, Hydrologic Unit 12090205, at downstream side of culvert on Farm Road 1626 and 2.1 mi southwest of Manchaca.

DRAINAGE AREA.--21.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1979 to current year.

GAGE.--Flood-hydrograph recorder and crest-stage gage. Datum of gage is 668.67 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Additional storm rainfall-runoff data for this site can be obtained from the report "Hydrologic Data for Urban Studies in the Austin, Texas Metropolitan Area, 1983." A recording rain gage is located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,530 ft³/s June 11, 1981 (gage height, 12.30 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 814 ft³/s May 21 at 0900 hours (gage height, 6.45 ft).

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: October 1978 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 09...	1355	.59	518	7.8	13.0	50	85	10.2	100	3.3	K34000	39000
SEP 19...	1210	381	143	7.6	23.0	80	57	7.4	88	2.4	14000	51000

DATE	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 09...	240	101	92	2.6	11	.3	3.6	140	84	31	.20	9.8
SEP 19...	66	7	24	1.5	1.5	.0	4.4	59	17	2.3	<.10	13

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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)
FEB 09...	318	101	21	.36	.040	.40	.060	1.3	1.40	.470	9.0
SEP 19...	99	51	1	.13	.070	.20	.080	1.1	1.20	.140	12

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)
FEB 09...	1355	1	30	<1	<10	9	36
SEP 19...	1210	<1	14	<1	<10	3	110

COLORADO RIVER BASIN

08158825 LITTLE BEAR CREEK AT FARM ROAD 1626 NEAR MANCHACA, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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 09...	1	21	<.1	<1	<1	12
SEP 19...	1	7	<.1	<1	<1	12

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 09...	1355	<.10	<.10	<.10	<.10	<.10	<2.0	.1

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 09...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

COLORADO RIVER BASIN

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX

LOCATION.--Lat 30°12'32", long 97°54'11", Travis County, Hydrologic Unit 12090205, 1.7 mi south of the intersection of U.S. Highway 290 and Farm Road 1826 and 11.9 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--8.24 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.14 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. No known regulation or diversion. There is a recording rain gage in the watershed.

AVERAGE DISCHARGE.--5 years (water years 1979-83), 5.80 ft³/s (9.56 in/yr), 4,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft³/s June 11, 1981 (gage height, 10.79 ft); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 933 ft³/s Aug. 8 at 1330 hours (gage height, 6.88 ft), no other peak above base of 500 ft³/s; no flow for several days in October and November.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.68	.52	3.1	12	1.9	.52	.80	.26	.53
2	.00	.03	.02	.37	.52	2.9	9.0	1.6	.52	.62	.24	.52
3	.00	.01	.48	.35	.46	2.9	8.4	1.4	.52	.52	.22	.52
4	.00	.00	.06	.38	.46	7.2	8.3	1.1	.54	.50	.21	.49
5	.00	.00	.05	.38	.74	6.2	6.6	.97	5.6	.49	.20	.43
6	.00	.00	.03	.38	.66	4.4	5.7	.82	1.7	.52	.18	.38
7	.00	.00	.03	.38	.66	3.7	5.3	.79	1.6	.45	.28	.37
8	.00	.00	.03	.38	.68	3.4	4.9	.64	1.2	.41	51	.24
9	.00	.00	.02	.38	2.7	3.1	4.4	.59	1.1	.38	1.4	.48
10	.00	.00	.04	.35	1.1	3.1	4.2	.84	1.1	.36	1.0	.27
11	.00	.00	.14	.34	1.1	2.9	4.0	3.0	.97	.32	.89	.24
12	.00	.00	.06	.34	1.1	2.9	3.7	.93	.90	.32	.82	.24
13	.00	.00	.06	.34	1.1	2.9	3.7	.73	.82	.48	.82	.20
14	.00	.00	.08	.34	1.0	3.1	3.1	.66	3.9	.74	.82	.18
15	.00	.00	.08	.27	4.0	3.4	3.1	.94	2.0	.60	.82	.18
16	.00	.00	.07	.27	4.6	11	2.9	.76	4.8	1.3	.82	.18
17	.00	.00	.07	.27	3.8	7.2	2.9	.61	2.7	1.4	.82	.18
18	.00	.00	.08	.34	3.7	5.7	2.9	1.1	2.3	.73	.82	25
19	.00	.00	.08	.34	3.7	5.7	2.9	.68	2.0	.61	.82	27
20	.00	.00	.08	.34	4.1	5.7	2.9	14	1.9	.52	.82	8.7
21	.00	.00	.08	.59	4.1	4.6	2.9	23	1.8	.52	.82	5.0
22	.00	.00	.08	.52	4.1	4.4	2.9	2.0	1.6	.46	.82	3.2
23	.00	.00	.08	.52	4.1	35	2.8	1.0	1.6	.45	.73	2.8
24	.00	.00	.08	.52	4.1	19	2.6	.86	1.5	.41	.64	2.6
25	.00	.00	.07	.46	3.7	17	2.6	.70	1.7	.38	.59	2.2
26	.00	.11	.07	.46	3.4	93	2.4	.64	1.4	.40	.59	2.2
27	.00	.02	.27	.46	3.4	27	2.4	.65	1.2	.38	.59	2.0
28	.00	.00	.21	.46	3.1	18	2.1	.58	1.0	.36	.72	1.9
29	.00	.00	.15	.46	---	16	2.0	.57	.97	.33	.72	1.6
30	.00	.00	.09	.46	---	15	2.0	.52	.79	.29	.59	1.5
31	.00	---	.14	.46	---	14	---	.46	---	.27	.63	---
TOTAL	.00	.17	2.88	12.59	66.70	353.5	125.6	65.04	50.25	16.32	70.70	91.33
MEAN	.000	.006	.093	.41	2.38	11.4	4.19	2.10	1.68	.53	2.28	3.04
MAX	.00	.11	.48	.68	4.6	93	12	23	5.6	1.4	51	27
MIN	.00	.00	.00	.27	.46	2.9	2.0	.46	.52	.27	.18	.18
CFSM	.000	.001	.01	.05	.29	1.38	.51	.26	.20	.06	.28	.37
IN.	.00	.00	.01	.06	.30	1.60	.57	.29	.23	.07	.32	.41
AC-FT	.00	.3	5.7	25	132	701	249	129	100	32	140	181

CAL YR 1982 TOTAL 771.87 MEAN 2.11 MAX 249 MIN .00 CFSM .26 IN 3.48 AC-FT 1530
WTR YR 1983 TOTAL 855.08 MEAN 2.34 MAX 93 MIN .00 CFSM .28 IN 3.86 AC-FT 1700

COLORADO RIVER BASIN

08158840 SLAUGHTER CREEK AT FARM ROAD 1826 NEAR AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOC- CI FECAL, KF AGAR (COLS. PER 100 ML)	
JUN 09...	1115	1.2	749	7.7	23.5	<1	2.0	12.6	153	2.5	220	400	
SEP 19...	1300	40	426	8.0	23.0	25	19	7.7	92	1.4	4300	14000	
DATE		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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JUN 09...	340	77	92	26	23	.6	.7	260	73	47	.20	6.8	
SEP 19...	190	44	56	13	12	.4	2.2	150	51	22	.10	8.7	
DATE		SOLIDS, SUM OF CONSTITU- ENTS, 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)	
JUN 09...	425	<1	<1	--	<.020	<.10	.090	.21	.30	.010	1.4		
SEP 19...	255	28	6	.18	.020	.20	.040	.46	.50	.020	5.4		
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)						
SEP 19...	1300	<1	31	<1	10	2	<3						
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)						
SEP 19...	1	4	<.1	<1	<1	5							

08158860 SLAUGHTER CREEK AT FARM ROAD 2304 NEAR AUSTIN, TX
(Flood-hydrograph partial-record gage)

Location.--Lat 30°09'43", long 97°49'55", Travis County, on downstream side of bridge on Farm Road 2304 and 9.4 miles southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--23.1 mi².

PERIOD OF RECORD.--March 1978 to current year.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 654.80 ft NGVD.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.-- Maximum discharge, 8,340 ft³/s June 11, 1981 (gage height, 12.40).

EXTREMES FOR CURRENT YEAR.--No flow for entire year.

08158880 BOGGY CREEK (SOUTH) AT CIRCLE S ROAD, AUSTIN, TEX.
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°10'50", long 97°46'55", Travis County, on downstream side of bridge on Circle S Road and 7.0 mi south of the State Capitol Building in Austin.

DRAINAGE AREA.--3.58 mi².

PERIOD OF RECORD.--April 1976 to current year.

REVISED RECORDS.--Open-file report 82-506: 1979 maximum.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 591.66 ft NGVD.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,920 ft³/s (gage height, 10.56 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,740 ft³/s Aug. 8 (gage height 7.83 ft).

STATION NO. 0415430									
STORM RAINFALL AND RUNOFF RECORD									
1985 WATER YEAR									
BUGGY CREEK (SOUTH) AT CIRCLE 5 ROAD, AUSTIN, TEXAS									
STORM OF MAY 10, 1985									
DATE & TIME	1985	GAUGE	NUM	SE	R	WEIGHTED PRECIP. IN.	DISCHARGE IN	CFS	ACCUM. RUNOFF IN.
MAY 10									
0000	0.0					0.0	5.1		0.0001
0005	0.01					0.01	0.1		0.0001
0010	0.02					0.02	0.2		0.0004
0015	0.10					0.10	0.3		0.0016
0020	0.10					0.10	0.3		0.0023
0025	0.37					0.37	0.5		0.0045
0030	0.57					0.57	7.5		0.0026
0035	0.57					0.57	15.0		0.0031
0040	0.53					0.53	24.0		0.0040
0045	0.97					0.97	30.0		0.0051
0050	1.09					1.09	40.0		0.0065
0055	1.52					1.52	52.0		0.0084
0100	2.01					2.01	55.0		0.0107
0105	2.45					2.45	118.0		0.0150
0110	2.54					2.54	330.0		0.0271
0115	2.55					2.55	723.0		0.0458
MAY 11									
0000	2.55					2.55	723.0		0.0468
0005	2.55					2.55	1170.0		0.0963
0010	2.55					2.55	1410.0		0.1471
0015	2.56					2.56	1450.0		0.1994
0020	2.56					2.56	1490.0		0.2532
0025	2.56					2.56	1420.0		0.3044
0030	2.57					2.57	1260.0		0.3499
0035	2.57					2.57	1070.0		0.3855
0040	2.57					2.57	993.0		0.4244
0045	2.58					2.58	932.0		0.4570
0050	2.58					2.58	819.0		0.4865
0055	2.58					2.58	745.0		0.5134
0100	2.58					2.58	662.0		0.5373
0105	2.58					2.58	603.0		0.5592
0110	2.58					2.58	565.0		0.5848
0115	2.58					2.58	525.0		0.6171
0120	2.58					2.58	457.0		0.6336
0125	2.59					2.59	420.0		0.6407
0130	2.59					2.59	360.0		0.6747
0135	2.59					2.59	243.0		0.6971
0140	2.59					2.59	158.0		0.7213
0145	2.59					2.59	73.0		0.7341
0150	2.59					2.59	52.0		0.7415

STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
STA. NO. 0315330									
BUGGY CREEK (SOUTH) AT CIRCLE S ROAD, AUSTIN, TEXAS									
STORM OF MAY 10, 1933									
G A S E N U M B E R									
1835									
DATE & TIME									
1235									
MAY 11									
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COLORADO RIVER BASIN

08158920 WILLIAMSON CREEK AT OAK HILL, TX

LOCATION.--Lat 30°14'06", long 97°51'36", Travis County, Hydrologic Unit 12090205, on downstream side of bridge on U.S. Highway 290 in Oak Hill, 0.8 mi east of the intersection of U.S. Highway 290 and State Highway 71, and 7.7 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--6.30 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1974 to February 1977 (periodic discharge measurements only), January 1978 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 798.68 ft National Geodetic Vertical Datum of 1929 (levela from city of Austin bench mark).

REMARKS.--Water-discharge records fair. Station is part of a hydrologic-research project to study rainfall-runoff relation for the Austin urban-rural areas. Station is equipped with automatic water-quality sampler. Two recording rain gages are located in the watershed.

AVERAGE DISCHARGE.--5 years, 4.71 ft³/s (10.15 in/yr), 3,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,170 ft³/s June 11, 1981 (gage height, 8.55 ft); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 756 ft³/s Aug. 8 at 1330 hours (gage height, 4.36 ft), no other peak above base of 500 ft³/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	4.0	1.2	1.5	3.4	.98	3.6	1.2	.00	.00
2	.00	.00	.41	3.0	1.2	1.5	3.0	.85	3.9	1.0	.00	.00
3	.00	.00	6.9	2.7	1.2	1.5	2.8	.63	3.9	.85	.00	.00
4	.00	.00	.00	2.7	1.1	3.5	3.0	.58	4.4	.84	.00	.00
5	.00	.00	.00	2.7	1.8	1.8	2.8	.31	18	1.4	.00	.00
6	.00	.00	.00	2.7	1.1	1.7	3.0	.21	4.6	.97	.00	.00
7	.01	.00	.00	2.4	1.0	1.6	2.9	.17	2.8	.70	1.8	13
8	.00	.00	.00	2.3	1.0	1.5	2.7	.11	2.5	.70	35	.03
9	.00	.00	.00	2.2	5.1	1.8	2.4	.16	2.5	.68	.29	11
10	.00	.00	.16	2.0	2.1	1.5	2.3	.88	2.4	.57	.20	.09
11	.00	.00	.89	2.0	1.8	1.5	2.3	7.0	2.6	.55	.14	.00
12	.00	.00	.00	2.0	1.7	1.5	2.3	.00	2.6	.93	.07	.00
13	.00	.00	.00	1.6	1.5	1.7	2.8	.00	2.4	.85	.14	.00
14	.00	.00	.00	1.7	1.5	1.7	3.1	.00	8.6	1.7	.02	.00
15	.00	.00	.00	1.7	3.9	2.8	3.0	.03	2.9	1.7	.00	.00
16	.00	.00	.00	1.7	2.9	6.2	3.0	.00	4.4	7.7	.00	.00
17	.00	.00	.00	1.5	2.7	3.1	3.1	.00	2.6	2.4	.00	.00
18	.00	.00	.00	2.0	2.3	2.9	3.2	1.9	2.3	1.2	.00	49
19	.00	.01	.00	1.9	2.3	2.7	2.8	.01	2.3	.85	.00	48
20	.00	.00	.00	1.7	2.3	2.7	2.7	35	2.0	.57	.00	32
21	.00	.00	.00	2.2	2.0	2.4	2.7	39	2.0	.57	.00	9.6
22	.00	.00	.00	2.0	2.0	2.4	2.1	3.9	1.7	.46	.00	3.9
23	.00	.02	.00	1.7	1.8	20	1.7	2.7	1.7	.46	.00	1.7
24	.00	.11	.00	1.7	1.7	5.5	1.5	2.2	1.7	.70	.00	1.2
25	.00	.00	.00	1.5	1.7	4.8	1.5	2.1	2.1	.70	.00	1.0
26	.00	9.5	.00	1.5	1.7	32	1.5	2.0	1.5	.46	.00	.70
27	.00	1.1	.83	1.5	1.7	5.9	1.7	1.9	1.5	.37	.00	.57
28	.00	.00	.17	1.5	1.6	4.8	1.7	2.0	1.4	.17	4.0	.37
29	.00	.00	.29	1.5	---	4.4	1.5	2.2	1.2	.10	.05	.29
30	.00	.00	.13	1.2	---	4.1	1.4	2.8	1.0	.01	.00	.23
31	.00	---	1.5	1.2	---	3.5	---	2.9	---	.00	.00	---
TOTAL	.01	10.74	11.28	62.0	53.9	134.5	73.9	112.52	97.1	31.36	41.71	172.68
MEAN	.000	.36	.36	2.00	1.93	4.34	2.46	3.63	3.24	1.01	1.35	5.76
MAX	.01	9.5	6.9	4.0	5.1	32	3.4	39	18	7.7	35	49
MIN	.00	.00	.00	1.2	1.0	1.5	1.4	.00	1.0	.00	.00	.00
CFSM	.000	.06	.06	.32	.31	.69	.39	.58	.51	.16	.21	.91
IN.	.00	.06	.07	.37	.32	.79	.44	.66	.57	.19	.25	1.02
AC-FT	.02	21	22	123	107	267	147	223	193	62	83	343
CAL YR 1982	TOTAL 508.31	MEAN 1.39	MAX 194	MIN .00	CFSM .22	IN 3.00	AC-FT 1010					
WTR YR 1983	TOTAL 801.70	MEAN 2.20	MAX 49	MIN .00	CFSM .35	IN 4.73	AC-FT 1590					

COLORADO RIVER BASIN

08158920 WILLIAMSON CREEK AT OAK HILL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Occasional discharge measurements: January 1974 to current year. Chemical, biochemical, and pesticide analyses: January 1974 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

								OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)				
FEB 09...	1300	14	300	7.6	13.0	15	540	9.4	93	4.4	19000	K120000
MAR 01...	1020	1.7	654	8.2	16.0	5	.80	13.8	145	.9	80	84
MAY 20...	1438	117	299	--	--	--	--	--	--	35	52000	160000
20...	1453	157	181	--	--	--	--	--	--	--	280000	500000
20...	1508	396	151	--	--	40	1700	--	--	14	200000	840000
20...	1523	352	175	7.9	--	--	--	--	--	14	--	--
20...	1538	452	214	--	--	--	--	--	--	9.9	--	--
20...	1553	348	226	--	--	--	--	--	--	7.0	K230000	340000
AUG 08...	1234	117	206	--	--	--	--	--	--	12	--	--
08...	1300	726	163	--	--	--	--	--	--	--	--	--
08...	1315	676	145	--	--	--	--	--	--	--	--	--
08...	1330	443	138	--	--	130	880	--	--	--	--	--
08...	1345	254	150	--	--	--	--	--	--	4.8	--	--
08...	1400	145	152	--	--	--	--	--	--	4.3	--	--
SEP 07...	1700	117	--	--	--	15	1500	--	--	--	--	--
07...	1715	380	179	7.8	--	--	--	--	--	--	--	--
07...	1730	145	--	--	--	70	1600	--	--	--	--	--
09...	1525	233	132	7.7	--	80	570	--	--	6.8	120000	140000
	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 09...	140	24	41	10	7.2	.3	2.2	120	22	16	.20	4.1
MAR 01...	340	54	93	27	16	.4	.8	290	43	30	.20	2.8
MAY 20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	81	7	25	4.6	4.8	.2	3.1	74	11	5.3	.10	4.7
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	79	5	25	4.1	3.8	.2	3.2	74	13	6.1	.10	5.0
07...	--	--	--	--	--	--	--	--	--	--	--	--
09...	61	12	19	3.3	3.1	.2	2.8	49	11	4.8	<.10	4.3

COLORADO RIVER BASIN

08158920 WILLIAMSON CREEK AT OAKHILL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, TOTAL, 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).
FEB 09...	175	618	53	.48	.020	.50	.090	2.0	2.10	.390	16
MAR 01...	387	3	<1	--	<.020	<.10	.080	.42	.50	.100	2.5
MAY 20...	--	--	--	.46	.140	.60	.560	9.4	10.0	.900	37
20...	--	--	--	.35	.150	.50	.560	9.4	10.0	.800	71
20...	--	2310	572	.34	.160	.50	.420	4.9	5.30	1.00	44
20...	103	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	.51	.190	.70	.450	2.7	3.10	.530	21
AUG 08...	--	--	--	.45	.050	.50	.120	5.4	5.50	.810	34
08...	--	--	--	.26	.040	.30	.090	7.9	8.00	1.30	52
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	530	96	.45	.050	.50	.060	2.1	2.20	.570	30
08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	.45	.050	.50	.060	1.9	2.00	.470	21
SEP 07...	--	3110	491	.22	.080	.30	.290	7.7	8.00	1.40	--
07...	105	--	--	.34	.060	.40	.080	--	<.20	1.30	--
07...	--	3330	395	.44	.060	.50	.050	7.0	7.00	.110	--
09...	78	952	169	.27	.130	.40	.380	1.8	2.20	.020	18

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 09...	1300	1	26	<1	<10	6	36
MAR 01...	1020	1	32	<1	<10	9	<3
MAY 20...	1438	2	<100	<1	<10	2	50
AUG 08...	1300	5	<100	<1	<10	5	120
SEP 07...	1700	2	100	<1	<10	4	30
09...	1525	1	13	<1	10	3	80

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)
FEB 09...		1	6	<.1	<1	<1	7
MAR 01...		<1	<1	<.1	<1	<1	<3
MAY 20...		3	<10	<.1	<1	<1	10
AUG 08...		3	10	<.1	<1	<1	10
SEP 07...		2	10	<.1	<1	<1	10
09...		1	2	<.1	<1	<1	4

DATE	TIME	AME- TRYNE TOTAL (UG/L)	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 09...	1300	<.10	<.10	<.10	<.10	<.10	<2.0	.1
MAY 20...	1453	<.10	<.10	<.10	<.10	<.10	--	5.3
AUG 08...	1315	<.10	<.10	<.10	<.10	<.10	--	<.1

DATE	TIME	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 09...		<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
MAY 20...		<.1	<.10	--	--	.70	<.10	<.1
AUG 08...		<.1	<.10	--	--	<.10	<.10	<.1

STORM RAINFALL AND RUNOFF RECORD									
1935 WATER YEAR									
STATION NO. 0315920									
WILLIAMSON CREEK AT CAX HILL, TEXAS									
STORM OF MAY 20, 1963									
G A G E N U M B E R									
DATE & TIME									
1AMS 5AMS									
PRECIP. IN. DISCHARGE IN. ACCUM. WEIGHTED PRECIP. IN. ACCUM. RUNOFF									
MAY 20									
0000	0.0	0.0					0.0	0.0	0.0
0010	0.0	0.03					0.03	0.0	0.0
0145	0.11	0.09					0.09	0.0	0.0
0150	0.11	0.09					0.09	0.4	0.0002
0330	0.11	0.09					0.09	1.7	0.0014
0730	0.15	0.13					0.13	1.7	0.0013
0745	0.15	0.13					0.13	1.5	0.0021
0900	0.15	0.13					0.13	1.5	0.0028
1120	0.17	0.15					0.15	1.2	0.0034
1330	0.50	0.44					0.45	1.2	0.0033
1335	0.75	0.65					0.63	3.0	0.0033
1340	0.99	1.10					1.08	4.9	0.0040
1350	1.03	1.12					1.11	5.0	0.0042
1400	1.05	1.15					1.15	3.4	0.0043
1405	1.05	1.17					1.15	34.0	0.0060
1410	1.13	1.24					1.23	154.0	0.0094
1415	1.29	1.40					1.33	245.0	0.0144
1420	1.52	1.51					1.51	305.0	0.0207
1425	1.57	1.54					1.54	366.0	0.0282
1430	1.61	1.59					1.59	426.0	0.0369
1435	1.63	1.59					1.60	453.0	0.0453
1440	1.63	1.59					1.60	390.0	0.0533
1445	1.64	1.60					1.61	372.0	0.0609
1450	1.64	1.60					1.61	400.0	0.0691
1455	1.64	1.60					1.61	423.0	0.0779
1500	1.64	1.60					1.61	456.0	0.0919
1510	1.65	1.60					1.61	435.0	0.1050
1515	1.65	1.60					1.61	459.0	0.1133
1520	1.65	1.60					1.61	373.0	0.1211
1525	1.65	1.60					1.61	346.0	0.1262
1530	1.65	1.60					1.61	315.0	0.1379
1540	1.65	1.60					1.61	258.0	0.1484
1550	1.65	1.60					1.61	210.0	0.1570
1600	1.67	1.60					1.61	169.0	0.1709
1630	1.67	1.60					1.61	95.0	0.1804
1730	1.67	1.60					1.61	39.0	0.1956
1800	1.67	1.60					1.61	25.0	0.2002
1900	1.67	1.60					1.61	10.0	0.2075
2000	1.67	1.60					1.61	3.4	0.2097

08158930 WILLIAMSON CREEK AT MANCHACA ROAD, AUSTIN, TEX.
(Flood-hydrograph partial-record gage)

LOCATION.--Lat 30°13'16", long 97°47'36", Travis County, on downstream side of bridge on Manchaca Road, 0.7 mi south of the intersection of Ben White Boulevard and Manchaca Road, and 4.9 mi southwest of the State Capitol Building in Austin.

DRAINAGE AREA.--19.0 mi².

PERIOD OF RECORD.--August 1975 to current year. Periodic measurements only, May to August 1975.

GAGE.--Digital water-stage recorder and crest-stage gage. Datum of gage is 618.39 ft NGVD.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,490 ft³/s June 11, 1981 (gage height, 16.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,670 ft³/s Aug. 8 (gage height, 7.25 ft).

STORM RAINFALL AND RUNOFF RECORD									
1985 WATER YEAR									
STATION NO. 00155730									
WILLIAMSON CREEK AT WANCHACA ROAD, AUSTIN, TEXAS									
STORM OF MAY 20, 1963									
DATE & TIME	1WMS	2WMS	3WMS	G A G S	N U M B E R	ACCUM. WEIGHTED PRECIP. IN.	DISCHARGE IN	CFS	ACCUM. RUNOFF IN.
MAY 20									
0000	0.0	0.0	0.0	0.0		0.0	0.6		0.0000
0010	0.05	0.02	0.03	0.03		0.03	0.6		0.0000
0030	0.10	0.20	0.03	0.03		0.12	3.1		0.0001
0045	0.11	0.20	0.03	0.03		0.13	3.2		0.0004
0100	0.11	0.20	0.03	0.03		0.13	3.7		0.0005
0215	0.11	0.20	0.03	0.03		0.13	3.7		0.0005
0330	0.11	0.20	0.03	0.03		0.13	4.3		0.0009
0415	0.11	0.20	0.03	0.03		0.13	4.8		0.0011
0430	0.11	0.20	0.03	0.03		0.13	5.0		0.0013
0515	0.11	0.20	0.03	0.03		0.13	5.0		0.0017
0615	0.13	0.20	0.10	0.10		0.14	3.7		0.0021
0715	0.15	0.22	0.13	0.13		0.16	2.0		0.0025
1120	0.17	0.24	0.15	0.15		0.18	1.0		0.0023
1325	0.27	0.35	0.27	0.27		0.29	1.4		0.0029
1330	0.50	0.40	0.40	0.40		0.49	1.5		0.0029
1335	0.75	0.55	0.55	0.55		0.73	7.3		0.0064
1340	0.99	0.82	1.15	1.15		0.93	13.0		0.0031
1350	1.03	0.83	1.12	1.12		1.01	33.0		0.0035
1400	1.05	0.84	1.15	1.15		1.04	31.0		0.0041
1405	1.09	0.84	1.17	1.17		1.05	156.0		0.0052
1410	1.10	1.10	1.24	1.24		1.13	250.0		0.0069
1415	1.12	1.10	1.40	1.40		1.27	345.0		0.0092
1420	1.52	1.10	1.51	1.51		1.41	377.0		0.0131
1430	1.61	1.10	1.56	1.56		1.47	408.0		0.0172
1435	1.63	1.11	1.59	1.59		1.49	507.0		0.0207
1440	1.63	1.12	1.59	1.59		1.49	573.0		0.0246
1445	1.64	1.12	1.60	1.60		1.50	640.0		0.0333
1500	1.64	1.14	1.60	1.60		1.50	730.0		0.0437
1510	1.65	1.15	1.60	1.60		1.51	635.0		0.0527
1515	1.65	1.15	1.60	1.60		1.51	633.0		0.0572
1520	1.65	1.16	1.60	1.60		1.51	615.0		0.0635
1530	1.65	1.16	1.60	1.60		1.51	521.0		0.0705
1540	1.65	1.17	1.60	1.60		1.52	490.0		0.0765
1550	1.65	1.17	1.60	1.60		1.52	363.0		0.0815
1600	1.65	1.17	1.60	1.60		1.52	309.0		0.0868
1615	1.66	1.20	1.60	1.60		1.53	263.0		0.0925
1630	1.67	1.21	1.60	1.60		1.53	296.0		0.0966
1635	1.67	1.21	1.60	1.60		1.53	357.0		0.0990
1645	1.67	1.21	1.60	1.60		1.53	413.0		0.1013

STORM RAINFALL AND RUNOFF RECORD									
1933 WATER YEAR									
WILLIAMSON CREEK AT MANCHACA ROAD, AUSTIN, TEXAS									
STORM OF MAY 20, 1933									
DATE & TIME	G A G E			N U M B E R	ACCUM.		DISCHARGE		ACCUM. RUNOFF
	1 M S	2 M S	3 M S		WEIGHTED PRECIP.	IN	CFS	IN.	
MAY 20									
1645	1.57	1.22	1.60			1.54	479.0		0.1051
1650	1.67	1.23	1.60			1.54	454.0		0.1097
1700	1.67	1.25	1.60			1.54	403.0		0.1150
1715	1.57	1.31	1.60			1.55	359.0		0.1215
1720	1.67	1.31	1.60			1.56	352.0		0.1254
1730	1.67	1.31	1.50			1.56	423.0		0.1326
1745	1.67	1.35	1.59			1.60	455.0		0.1368
1750	1.67	1.33	1.60			1.53	441.0		0.1433
1800	1.57	1.49	1.60			1.55	413.0		0.1517
1820	1.67	1.75	1.60			1.67	352.0		0.1601
1835	1.67	1.80	1.60			1.68	313.0		0.1675
1855	1.57	1.90	1.60			1.71	271.0		0.1749
1915	1.57	1.90	1.60			1.71	231.0		0.1812
1935	1.67	1.90	1.60			1.71	200.0		0.1873
2000	1.67	1.90	1.60			1.71	165.0		0.1935
2030	1.67	1.90	1.60			1.71	125.0		0.1936
2100	1.67	1.90	1.60			1.71	102.0		0.2028
2130	1.57	1.90	1.50			1.71	51.0		0.2077
2230	1.57	1.90	1.60			1.71	50.0		0.2128
2400	1.67	1.90	1.60			1.71	26.0		0.2144

COLORADO RIVER BASIN

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX

LOCATION.--Lat 30°11'21", long 97°43'56", Travis County, Hydrologic Unit 12090205, at Jimmy Clay Road, 0.5 mi south-east of the intersection of Jimmy Clay and Nuckles Crossing Roads, and 5.9 mi south of the State Capitol in Austin.

DRAINAGE AREA.--27.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1974 to September 1975 (periodic discharge measurements only), September 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 493.88 ft (revised) National Geodetic Vertical Datum of 1929 (city of Austin bench mark). Prior to Oct. 1, 1982, at datum 3.30 ft higher.

REMARKS.--Water-discharge records good. No known regulation or diversion in watershed. There are three recording rain gages located in the watershed. The station is part of a hydrologic research project to study the rainfall-runoff relationships for the Austin urban-rural areas.

AVERAGE DISCHARGE.--8 years, 9.09 ft³/s (4.47 in/yr), 6,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s June 11, 1981 (gsge height, 20.55 ft, revised), present datum; minimum daily, 0.03 ft³/s Sept. 16, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--The maximum flood since 1869 occurred on Sept. 9 or 10, 1921, stage and discharge not determined.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 20	1630	*617	8.32
May 21	1030	600	8.25

Minimum daily discharge, 0.55 ft³/s on Nov. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	.69	1.5	26	2.0	2.2	4.6	1.5	5.4	4.0	2.4	2.7
2	1.2	1.3	1.3	4.6	2.1	3.5	4.3	1.9	4.9	2.8	2.6	2.8
3	1.3	6.4	4.4	3.4	2.4	3.6	4.2	2.3	4.9	3.3	1.6	2.9
4	1.0	1.1	2.2	2.7	2.7	30	4.3	2.2	5.0	3.2	2.0	3.0
5	1.2	.85	1.8	2.1	29	6.1	4.0	1.2	76	3.5	2.4	3.1
6	1.2	.74	1.7	2.0	3.1	5.0	3.7	1.7	26	2.7	2.9	2.7
7	1.5	.74	1.7	1.8	1.7	5.0	3.3	2.0	11	2.7	2.7	3.3
8	1.3	.80	1.8	1.8	1.5	4.8	3.4	2.5	5.4	2.4	75	3.2
9	.79	.81	1.6	2.3	29	4.2	3.2	3.0	5.0	2.5	18	3.2
10	1.5	.81	2.1	2.5	4.3	2.9	2.7	3.3	4.5	2.5	6.3	3.4
11	.71	.86	5.5	2.2	2.4	2.5	2.6	83	4.9	2.7	4.0	3.4
12	.89	.85	3.5	2.0	1.9	2.0	2.3	3.8	5.3	2.8	3.6	3.2
13	.66	.94	2.3	1.9	1.9	1.5	2.3	2.5	5.0	3.3	3.1	3.2
14	.56	.93	2.1	2.0	1.9	1.5	2.1	3.1	5.2	19	2.9	3.3
15	.64	1.0	2.1	2.0	18	4.2	1.9	8.4	6.1	8.6	3.0	3.3
16	1.3	1.2	1.8	2.1	5.6	38	2.1	4.7	30	13	2.7	3.1
17	1.3	1.2	1.9	2.1	2.8	5.2	2.0	4.0	9.4	3.9	2.5	3.0
18	1.3	1.3	2.0	9.5	1.9	3.2	1.6	10	5.3	2.1	3.4	59
19	1.6	1.4	2.0	11	1.7	3.0	1.9	5.7	4.5	2.1	6.9	82
20	2.1	1.3	2.0	4.9	2.5	7.5	1.9	122	4.4	2.2	2.9	12
21	2.4	1.1	2.1	6.9	2.3	3.6	1.9	134	3.9	2.2	2.4	9.4
22	2.4	.55	1.9	3.5	1.9	2.9	1.8	17	3.9	2.5	2.1	3.8
23	2.2	.76	1.6	2.5	2.0	99	1.6	9.7	4.9	2.3	2.1	3.0
24	.87	1.4	1.5	2.3	1.8	8.2	1.6	8.0	5.0	2.1	2.1	2.8
25	.89	1.4	1.6	2.0	1.9	5.6	1.6	7.1	8.5	1.9	2.4	2.6
26	1.3	34	1.7	2.0	1.6	63	1.5	6.7	9.2	2.1	2.8	2.4
27	1.5	15	4.4	2.0	1.6	7.7	1.5	6.3	5.2	2.2	2.8	2.6
28	1.1	2.3	4.0	2.1	1.8	6.7	1.4	5.9	4.8	2.5	2.9	2.6
29	.77	1.5	3.0	2.2	---	5.3	1.5	5.3	4.5	2.7	2.9	2.6
30	.74	1.4	2.9	2.1	---	12	1.5	4.9	4.3	2.5	2.9	2.5
31	.81	---	3.3	2.1	---	5.9	---	5.0	---	2.4	2.8	---
TOTAL	38.63	84.63	73.3	118.6	133.3	355.8	74.3	478.7	282.4	114.7	179.1	240.1
MEAN	1.25	2.82	2.36	3.83	4.76	11.5	2.48	15.4	9.41	3.70	5.78	8.00
MAX	2.4	34	5.5	26	29	99	4.6	134	76	19	75	82
MIN	.56	.55	1.3	1.8	1.5	1.5	1.4	1.2	3.9	1.9	1.6	2.4
CFSM	.05	.10	.09	.14	.17	.42	.09	.56	.34	.13	.21	.29
IN.	.05	.11	.10	.16	.18	.48	.10	.65	.38	.15	.24	.32
AC-FT	77	168	145	235	264	706	147	950	560	228	355	476

CAL YR 1982	TOTAL	1378.52	MEAN	3.78	MAX	613	MIN	.22	CFSM	.14	IN	1.86	AC-FT	2730
WTR YR 1983	TOTAL	2173.56	MEAN	5.95	MAX	134	MIN	.55	CFSM	.22	IN	2.93	AC-FT	4310

COLORADO RIVER BASIN

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical, biochemical, and pesticide analyses: January 1975 to current year. Radiochemical analyses: October 1979 to September 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
FEB 09...	1255	82	347	7.1	12.0	25	90	9.5	91	3.6	12000	86000
MAR 02...	0815	2.4	658	7.6	17.0	5	1.4	5.1	54	3.6	K42000	3500
MAY 11...	1205	17	302	7.7	21.5	10	250	7.6	88	4.8	37000	210000

DATE	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)	ALKA- LINITY FIELD (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
FEB 09...	160	27	55	4.6	9.3	.3	1.9	130	30	15	.20	4.9
MAR 02...	270	41	90	11	33	.9	3.0	230	51	44	.40	5.3
MAY 11...	140	29	49	4.0	10	.4	4.0	110	28	16	.30	7.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	SOLIDS, VOLATILE, 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)
FEB 09...	199	124	44	.27	.030	.30	.070	1.2	1.30	.280	6.3
MAR 02...	376	1	<1	.50	.200	.70	.660	1.1	1.80	.240	3.5
MAY 1...	185	236	78	.43	.170	.60	1.10	1.0	2.10	.590	13

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 09...	1255	1	48	<1	<10	5	18
MAR 02...	0815	5	100	<1	10	3	<3

COLORADO RIVER BASIN

08158970 WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983

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 09...	1	27	<.1	<1	<1	<3
MAR 02...	<1	100	<.1	<1	<1	<3
MAY 11...	<3	50	<.1	1	<1	8

DATE	TIME	AME- TRYNE TOTAL	ATRA- TONE TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CYAN- AZINE TOTAL (UG/L)	CYPRA- ZINE TOTAL (UG/L)	METHO- MYL TOTAL (UG/L)	PROME- TONE TOTAL (UG/L)
FEB 09...	1255	<.10	<.10	<.10	<.10	<.10	<2.0	.2

DATE	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TONE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)
FEB 09...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

STORM RAINFALL AND RUNOFF RECORD									
1985 WATER YEAR									
STA. NO. 0615870									
WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TEXAS									
STORM OF MAY 20, 1963									
DATE & TIME	S A G E				N U M B E R				ACCUM. WEIGHTED PRECIP. IN.
	1WMS	2WMS	3WMS		1	2	3		
DISCHARGE IN CFS									
ACCUM. RUNOFF IN.									
MAY 20									
0000	0.0	0.0	0.0					4.7	0.0000
0010	0.03	0.02	0.03					4.7	0.0001
0030	0.10	0.20	0.08					6.0	0.0003
0115	0.11	0.20	0.09					5.5	0.0004
0130	0.11	0.20	0.09					11.0	0.0009
0240	0.11	0.20	0.09					23.0	0.0030
0350	0.11	0.20	0.09					24.0	0.0045
0510	0.11	0.20	0.09					23.0	0.0045
0530	0.11	0.20	0.09					24.0	0.0051
1130	0.12	0.25	0.09					25.0	0.0096
1325	0.27	0.35	0.15					25.0	0.0115
1330	0.25	0.40	0.27					3.1	0.0119
1335	0.25	0.55	0.44					3.2	0.0120
1340	0.29	0.32	0.35					3.7	0.0120
1400	1.05	0.32	1.10					9.1	0.0121
1410	1.13	0.39	1.15					10.0	0.0123
1415	1.29	1.10	1.24					11.0	0.0123
1420	1.52	1.10	1.40					11.0	0.0124
1430	1.61	1.10	1.51					17.0	0.0125
1445	1.64	1.12	1.53					23.0	0.0126
1500	1.64	1.14	1.60					25.0	0.0142
1515	1.65	1.16	1.60					25.0	0.0170
1525	1.65	1.16	1.60					25.0	0.0197
1530	1.65	1.16	1.60					33.0	0.0213
1535	1.65	1.16	1.60					33.0	0.0231
1545	1.65	1.16	1.60					44.0	0.0252
1600	1.65	1.17	1.60					47.0	0.0275
1615	1.65	1.17	1.60					52.0	0.0300
1630	1.67	1.21	1.60					52.0	0.0353
1645	1.67	1.22	1.60					53.0	0.0437
1700	1.67	1.25	1.60					61.0	0.0523
1715	1.67	1.31	1.60					61.0	0.0610
1730	1.67	1.31	1.60					67.0	0.0695
1740	1.67	1.32	1.60					61.0	0.0730
1745	1.67	1.35	1.60					53.0	0.0804
1750	1.67	1.35	1.60					54.0	0.0933
1755	1.67	1.35	1.60					50.0	0.0974
1800	1.67	1.35	1.60					57.0	0.1001
1805	1.67	1.35	1.60					56.0	0.1025

STATION NO. 0819870									
STORM RAINFALL AND RUNOFF RECORD									
WILLIAMSON CREEK AT JIMMY CLAY ROAD, AUSTIN, TEXAS									
STORM OF MAY 20, 1963									
DATE & TIME	1 WMS	2 WMS	3 WMS	4 WMS	5 WMS	6 WMS	7 WMS	8 WMS	9 WMS
MAY 20									
1755	1.67	1.40	1.60						
1800	1.67	1.40	1.60						
1810	1.67	1.55	1.60						
1820	1.67	1.70	1.60						
1830	1.67	1.78	1.60						
1845	1.67	1.90	1.60						
1900	1.67	1.90	1.60						
1915	1.67	1.90	1.60						
1945	1.67	1.90	1.60						
2010	1.67	1.90	1.60						
2030	1.67	1.90	1.60						
2050	1.67	1.90	1.60						
2100	1.67	1.90	1.60						
2130	1.67	1.90	1.60						
2200	1.67	1.90	1.60						
2230	1.67	1.90	1.60						
2400	1.67	1.90	1.60						
1963 WATER YEAR									
	ACCUM. PRECIP. IN.	DISCHARGE IN	ACCUM. RUNOFF IN.	DISCHARGE IN	ACCUM. RUNOFF IN.	DISCHARGE IN	ACCUM. RUNOFF IN.	DISCHARGE IN	ACCUM. RUNOFF IN.
	1.55	516.0	0.1049	1.57	497.0	0.1083	1.60	435.0	0.1124
	1.70	337.0	0.1160	1.71	343.0	0.1200	1.77	289.0	0.1241
	1.77	258.0	0.1277	1.77	235.0	0.1326	1.77	206.0	0.1379
	1.77	187.0	0.1419	1.77	177.0	0.1452	1.77	163.0	0.1475
	1.77	154.0	0.1505	1.77	136.0	0.1544	1.77	117.0	0.1577
	1.77	96.0	0.1631	1.77	50.0	0.1656			

=====											
:											
: TABLE 3 AUSTIN URBAN HYDROLOGY STUDY :											
: -----											
: DAILY & MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF THE COLORADO RIVER PERIOD:1983 WATER YEAR:											
: -----											
: GAGE NUMBER :											
: DATE :-----											
: : 1BUL : 2BUL : 1SHL : 2SHL : 1BOG : 1WLN : 2WLN : 3WLN : 4WLN : 5WLN :											
: =====											
: OCT :											
: 1 :	0.08	: 0.09	: 0.04	: 0.14	: 0.03	: 0.03	: 0.02	: *0.03	: 0.04	: 0.04	:
: 2 :	0.00	: 0.01	: 0.00	: 0.01	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	:
: 6 :	1.30	: 0.47	: 0.27	: 0.45	: 0.29	: 0.20	: 0.17	: *0.20	: 0.13	: 0.25	:
: 7 :	0.08	: 0.08	: 0.20	: 0.39	: 0.39	: 0.12	: 0.32	: *0.48	: 0.13	: 0.58	:
: 8 :	0.15	: 0.18	: 0.07	: 0.04	: 0.36	: 0.05	: 0.31	: *0.34	: 0.38	: 0.42	:
: 9 :	0.15	: 0.26	: 0.41	: 0.38	: 0.03	: 0.40	: 0.32	: *0.05	: 0.17	: 0.06	:
: 10 :	0.00	: 0.02	: 0.11	: 0.07	: 0.47	: 0.01	: 0.09	: *0.26	: 0.19	: 0.31	:
: 11 :	0.12	: 0.16	: 0.22	: 0.17	: 0.19	: 0.20	: 0.18	: *0.13	: 0.16	: 0.16	:
: 12 :	0.34	: 0.26	: 0.50	: 0.42	: 0.40	: 0.36	: 0.46	: *0.20	: 0.39	: 0.25	:
: 13 :	0.01	: 0.02	: 0.00	: 0.00	: 0.00	: 0.01	: 0.01	: 0.00	: 0.00	: 0.00	:
: 14 :	0.01	: 0.02	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	:
: 22 :	0.07	: 0.01	: 0.03	: 0.05	: 0.14	: 0.04	: 0.08	: 0.02	: 0.02	: 0.10	:
: 28 :	0.00	: 0.04	: 0.93	: 0.72	: 0.40	: 0.63	: 0.89	: 0.49	: 1.02	: 0.66	:
: 29 :	0.00	: 0.01	: 0.01	: 0.01	: 0.01	: 0.00	: 0.01	: 0.01	: 0.01	: 0.01	:
: 30 :	0.00	: 0.00	: 0.09	: 0.09	: 0.00	: 0.01	: 0.00	: 0.00	: 0.01	: 0.00	:
: =====											
: MTOT : 2.31 : 1.63 : 2.88 : 2.94 : 2.71 : 2.06 : 2.86 : 2.21 : 2.65 : 2.84 :											
: =====											
: NOV :											
: 1 :	0.00	: 0.01	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	:
: 2 :	1.77	: 1.90	: 1.91	: 1.42	: 0.99	: 2.20	: 1.68	: 0.77	: 1.02	: 0.87	:
: 3 :	0.07	: 0.08	: 0.00	: 0.03	: 0.03	: 0.11	: 0.05	: 0.04	: 0.05	: 0.03	:
: 4 :	0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.01	: 0.00	: 0.00	:
: 9 :	0.01	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	:
: 10 :	0.05	: 0.03	: 0.08	: 0.06	: 0.05	: 0.06	: 0.02	: 0.01	: 0.05	: 0.05	:
: 11 :	0.01	: 0.02	: 0.08	: 0.00	: 0.10	: 0.00	: 0.03	: 0.03	: 0.04	: 0.06	:
: 12 :	0.00	: 0.00	: 0.00	: 0.01	: 0.01	: 0.02	: 0.00	: 0.03	: 0.01	: 0.07	:
: 13 :	0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.01	: 0.00	: 0.00	: 0.00	: 0.00	:
: 16 :	0.01	: 0.01	: 0.03	: 0.02	: 0.03	: 0.03	: 0.03	: 0.02	: 0.04	: 0.03	:
: 18 :	0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.02	: 0.01	: 0.00	: 0.00	: 0.00	:
: 19 :	0.07	: 0.22	: 0.16	: 0.11	: 0.07	: 0.16	: 0.13	: 0.06	: 0.10	: 0.08	:
: 20 :	0.01	: *0.01	: 0.00	: 0.00	: 0.01	: 0.01	: 0.00	: 0.01	: 0.00	: 0.00	:
: 21 :	0.00	: 0.00	: 0.01	: 0.00	: 0.00	: 0.01	: 0.00	: 0.00	: 0.01	: 0.02	:
: 22 :	0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.05	: 0.00	: 0.00	: 0.00	: 0.00	:
: 23 :	0.06	: *0.05	: 0.09	: 0.08	: 0.28	: 0.21	: 0.06	: 0.22	: 0.37	: 0.17	:
: 24 :	0.26	: *0.21	: 0.09	: 0.04	: 0.15	: *0.12	: 0.14	: 0.07	: 0.07	: 0.12	:
: 25 :	0.07	: *0.06	: 0.13	: 0.07	: 0.13	: *0.17	: 0.19	: 0.21	: 0.18	: 0.19	:
: 26 :	1.99	: *1.62	: 1.56	: 1.60	: 1.27	: *1.30	: 1.49	: 1.44	: 1.48	: 1.26	:
: 27 :	0.11	: *0.09	: 0.18	: 0.16	: 0.17	: *0.17	: 0.19	: 0.18	: 0.18	: 0.18	:
: 28 :	0.01	: *0.01	: 0.00	: 0.02	: 0.01	: 0.00	: 0.00	: 0.01	: 0.01	: 0.01	:
: 29 :	0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.01	:
: =====											
: MTOT : 4.50 : 4.32 : 4.32 : 3.64 : 3.30 : 4.66 : 4.02 : 3.11 : 3.61 : 3.15 :											
: =====											

MTOT = Monthly totals

: DAILY & MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF THE COLORADO RIVER PERIOD:1983 WATER YEAR:

MTOT = Monthly totals

TABLE 3											
AUSTIN URBAN HYDROLOGY STUDY											
DAILY & MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF THE COLORADO RIVER PERIOD:1983 WATER YEAR:											
GAGE NUMBER											
DATE	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN	
MAY											
1	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3	0.01	0.02	0.03	0.04	0.06	0.04	*0.04	0.08	0.04	0.08	
9	0.00	0.00	0.00	0.00	*0.02	0.00	0.00	0.01	0.00	0.02	
10	0.76	1.31	1.78	1.95	*1.75	1.86	*1.86	2.24	1.98	2.06	
11	0.20	*0.17	0.13	0.39	*0.66	0.16	*0.16	0.79	0.77	0.78	
14	0.01	*0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	
15	0.29	*0.24	0.34	0.26	*0.47	0.32	*0.32	*0.61	0.37	0.55	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	
17	0.01	*0.01	0.05	*0.04	*0.09	0.05	*0.05	*0.12	0.04	0.11	
18	0.10	*0.08	0.34	*0.30	*0.19	0.58	*0.58	*0.26	0.73	0.23	
19	0.49	*0.41	0.10	*0.09	*0.01	0.40	*0.40	*0.01	0.04	0.01	
20	1.60	*1.33	1.50	*1.33	*1.48	1.99	*1.99	*1.95	1.20	1.74	
21	1.27	*1.06	0.89	*0.79	*0.70	1.06	*1.06	0.92	0.90	0.82	
31	0.22	0.18	0.11	0.11	0.12	0.41	0.21	0.13	0.13	0.12	
MTOT	4.96	4.83	5.27	5.33	5.55	6.87	6.67	7.12	6.22	6.52	
JUNE											
1	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
4	1.12	*1.12	*1.07	1.07	1.50	1.33	0.97	1.05	2.25	1.31	
5	0.52	*0.52	*0.48	0.48	0.43	0.56	0.58	0.55	0.48	0.55	
6	1.41	*1.41	*0.73	0.73	0.59	1.74	1.50	0.77	0.78	0.73	
7	0.00	0.00	*0.01	0.01	0.01	0.02	0.02	0.02	0.00	0.01	
14	0.29	*0.29	*1.11	1.11	0.25	0.53	1.59	0.63	0.78	0.50	
15	0.01	*0.01	*0.02	0.02	0.00	0.03	0.01	0.01	0.01	0.01	
16	1.25	*1.25	*0.44	0.44	0.40	0.34	0.71	0.39	0.37	0.37	
17	0.00	0.00	0.00	0.00	0.00	0.04	0.02	0.01	0.00	0.01	
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
23	0.00	0.00	0.00	0.12	0.04	0.00	0.00	0.32	0.15	0.10	
24	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.32	0.21	0.46	
25	0.18	0.46	1.01	1.65	0.77	0.24	0.22	0.30	1.47	0.36	
26	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	
28	0.07	0.13	0.09	0.01	0.00	0.12	0.10	0.11	0.01	0.06	
MTOT	4.86	5.20	4.96	5.66	4.02	4.97	5.72	4.48	6.53	4.47	

MTOT = Monthly totals

=====											
TABLE 3											
AUSTIN URBAN HYDROLOGY STUDY											
=====											
DAILY & MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF THE COLORADO RIVER PERIOD:1983 WATER YEAR:											
=====											
GAGE NUMBER											
DATE :	1BUL :	2BUL :	1SHL :	2SHL :	1BOG :	1WLN :	2WLN :	3WLN :	4WLN :	5WLN :	:
=====											
JULY											
1 :	0.00 :	0.00 :	0.00 :	0.00 :	0.02 :	0.00 :	0.00 :	0.00 :	0.05 :	0.00 :	:
5 :	1.74 :	0.85 :	0.13 :	0.17 :	0.09 :	0.29 :	0.14 :	0.05 :	0.02 :	0.02 :	:
6 :	0.01 :	0.03 :	0.00 :	0.00 :	0.01 :	0.00 :	0.00 :	0.01 :	0.01 :	0.01 :	:
11 :	0.09 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	:
13 :	0.01 :	0.00 :	0.00 :	0.00 :	0.03 :	0.00 :	0.00 :	0.02 :	0.01 :	0.02 :	:
14 :	0.28 :	0.42 :	0.50 :	0.44 :	0.87 :	0.66 :	1.37 :	0.74 :	1.53 :	1.05 :	:
15 :	0.44 :	0.40 :	0.45 :	0.41 :	0.70 :	0.59 :	0.18 :	0.33 :	0.53 :	0.60 :	:
16 :	1.36 :	0.97 :	1.06 :	0.00 :	1.06 :	1.33 :	1.06 :	0.59 :	1.00 :	0.83 :	:
17 :	0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	0.02 :	0.00 :	0.00 :	0.01 :	0.00 :	:
18 :	0.01 :	0.01 :	0.00 :	0.00 :	0.01 :	0.00 :	0.00 :	0.05 :	0.00 :	0.00 :	:
19 :	0.05 :	0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	:
20 :	0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	:
=====											
MTOT :	4.01 :	2.69 :	2.14 :	1.02 :	2.79 :	2.89 :	2.75 :	1.79 :	3.16 :	2.53 :	:
=====											
AUG											
3 :	0.02 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.01 :	0.00 :	0.00 :	0.00 :	:
4 :	1.46 :	1.14 :	1.13 :	0.90 :	*0.36 :	*1.13 :	1.06 :	0.01 :	0.91 :	0.36 :	:
5 :	0.02 :	0.02 :	0.01 :	0.00 :	0.00 :	*0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	:
6 :	0.00 :	0.00 :	0.00 :	0.00 :	*0.40 :	0.00 :	0.00 :	0.12 :	0.94 :	0.40 :	:
7 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.01 :	0.01 :	0.00 :	:
8 :	1.42 :	2.86 :	2.49 :	1.87 :	*1.39 :	2.49 :	1.85 :	1.98 :	1.78 :	1.39 :	:
9 :	0.12 :	0.12 :	0.01 :	0.03 :	*0.01 :	0.00 :	0.02 :	0.02 :	0.01 :	0.01 :	:
10 :	0.00 :	0.00 :	0.00 :	0.01 :	0.00 :	*0.01 :	0.00 :	0.01 :	0.00 :	0.00 :	:
11 :	0.00 :	0.00 :	0.00 :	0.01 :	*0.03 :	0.00 :	0.00 :	0.04 :	0.05 :	0.03 :	:
12 :	0.01 :	0.00 :	0.02 :	0.00 :	*0.02 :	*0.02 :	0.26 :	0.12 :	0.05 :	0.02 :	:
13 :	0.00 :	0.00 :	0.01 :	0.00 :	0.00 :	*0.01 :	0.01 :	0.00 :	0.00 :	0.00 :	:
18 :	0.01 :	*0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	0.01 :	0.00 :	0.00 :	0.00 :	:
19 :	1.17 :	*1.12 :	1.47 :	1.13 :	1.50 :	*2.15 :	2.94 :	1.42 :	1.82 :	1.49 :	:
20 :	0.00 :	*0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	0.01 :	0.01 :	0.00 :	:
25 :	0.00 :	0.00 :	0.00 :	0.00 :	0.01 :	0.00 :	0.00 :	0.00 :	0.00 :	0.00 :	:
28 :	0.00 :	0.00 :	0.00 :	0.00 :	0.04 :	0.00 :	0.01 :	0.00 :	0.06 :	0.00 :	:
=====											
MTOT :	4.23 :	5.28 :	5.14 :	3.95 :	3.76 :	5.82 :	6.17 :	3.74 :	5.64 :	3.70 :	:
=====											

MTOT = Monthly totals

TABLE 3 AUSTIN URBAN HYDROLOGY STUDY											
DAILY & MONTHLY RAINFALL SUMMARY FOR GAGES NORTH OF THE COLORADO RIVER PERIOD:1983 WATER YEAR:											
DATE	GAGE NUMBER										
	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN	
SEPT											
1	0.00	0.00	0.11	0.01	0.09	*0.21	0.10	0.06	0.17	0.12	
7	0.65	*0.68	0.40	0.00	0.18	*0.21	0.01	0.00	0.03	0.00	
8	0.35	*0.37	0.03	0.00	0.00	*0.01	0.18	0.07	0.09	0.16	
9	0.27	*0.29	0.98	0.10	0.31	*1.27	1.16	0.51	0.85	0.60	
10	0.01	*0.01	0.01	0.31	0.03	0.00	0.01	0.11	0.07	0.08	
11	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.01	0.02	
14	0.02	0.00	0.00	0.36	0.06	0.00	0.01	0.84	0.01	0.40	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	
16	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
18	0.94	1.02	0.86	1.05	1.14	*0.61	0.56	0.84	0.76	0.88	
19	0.57	0.91	2.27	1.06	1.13	*2.27	1.67	1.05	0.92	1.28	
20	0.10	0.00	0.00	0.01	0.00	0.00	0.04	0.02	0.14	0.00	
21	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
MTOT	2.91	3.29	4.66	2.92	2.96	4.58	3.75	3.53	3.06	3.54	
WTOT	40.03	37.99	40.45	36.87	37.97	44.33	44.29	39.44	43.21	39.37	

MTOT = Monthly totals
 WTOT = Water year totals
 * = Estimated

TABLE 4															
AUSTIN URBAN HYDROLOGY STUDY															
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF THE COLORADO RIVER												PERIOD: 1983 WATER YEAR			
GAGE NUMBER															
DATE	1BAR	2BAR	3BAR	1BOL	1-ON	2-ON	1BER	2BER	1LBR	1SLA	2SLA	1BGS	1WMS	2WMS	3WMS
OCT															
1	0.07	0.13	0.13	0.08	0.12	0.17	0.21	*0.22	0.17	0.17	0.09	0.08	*0.46	0.10	0.46
2	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	*0.01	0.38	0.01
6	1.34	0.34	1.19	0.14	0.28	0.03	1.39	*1.44	*0.04	0.41	0.51	0.16	*0.14	0.16	0.14
7	0.25	0.64	0.42	0.21	1.42	0.02	0.86	*0.89	*0.02	0.64	0.18	0.03	*0.40	0.25	0.40
8	0.20	0.12	0.04	0.03	0.22	0.17	0.13	*0.14	*0.20	0.12	0.29	0.04	*0.22	0.03	0.22
9	0.11	0.32	0.14	0.26	0.18	0.11	0.15	*0.16	*0.13	0.10	0.12	0.18	*0.15	0.30	0.15
10	0.03	0.09	0.08	0.38	0.13	0.60	0.36	*0.37	*0.71	0.37	0.25	0.40	*0.23	0.45	0.23
11	0.20	0.25	*0.18	0.17	0.18	0.25	0.20	*0.21	*0.30	0.21	0.26	0.17	*0.22	0.20	0.22
12	0.39	0.61	*0.36	0.37	0.52	0.45	0.52	*0.54	*0.53	0.51	0.37	0.39	*0.62	0.43	0.63
13	0.01	0.01	*0.01	0.03	0.01	0.02	0.02	*0.02	*0.02	0.02	0.02	0.01	0.00	0.04	0.01
22	0.13	0.04	0.06	0.12	0.08	0.08	0.05	*0.05	*0.09	0.29	0.09	0.23	0.06	0.11	0.13
25	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.01	0.81	0.00	0.32	0.00	0.07	0.64	0.15	0.01	0.38	0.04	0.27	1.17	0.31	0.73
29	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01
30	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.04	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MTOT	2.74	3.38	2.61	2.47	3.14	1.98	4.53	4.20	2.23	3.23	2.24	2.00	3.69	2.80	3.34
NOV															
2	1.60	1.33	1.43	*1.05	1.21	1.32	1.35	1.15	1.27	1.27	1.15	1.04	1.23	1.01	1.01
3	0.11	0.06	0.04	*0.15	0.15	0.16	0.13	0.14	0.19	0.14	0.14	0.16	0.09	0.14	0.12
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
9	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
10	0.86	0.28	0.39	0.05	1.24	0.27	0.41	0.21	0.12	0.44	0.27	0.08	0.30	0.10	0.32
11	0.01	0.01	0.00	0.13	0.00	0.01	0.01	0.00	0.01	0.14	0.10	0.09	0.09	0.08	0.02
12	0.00	0.10	0.02	0.02	0.09	0.00	0.07	0.09	0.00	0.00	0.01	0.01	0.00	0.05	0.02
16	0.00	0.00	0.02	0.03	0.02	0.05	0.00	0.02	0.04	0.04	0.02	0.03	0.02	0.02	0.02
17	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
19	0.05	0.14	0.16	0.13	0.12	0.13	0.00	0.00	0.20	0.12	0.34	0.09	0.27	0.13	0.14
20	0.00	0.01	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01
21	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.02	0.01	0.00	0.01	0.00
23	0.03	0.03	0.00	0.40	0.01	0.31	0.11	0.43	0.45	0.03	0.30	0.14	0.40	0.36	0.00
24	0.37	0.40	*0.32	0.28	0.41	0.50	0.51	0.29	0.44	0.64	0.20	0.22	0.33	0.22	0.50
25	0.09	0.03	0.04	0.05	0.23	0.09	0.05	0.04	0.08	0.08	0.05	0.05	0.08	0.09	0.07
26	2.14	2.00	1.66	1.85	1.49	1.79	1.61	1.86	1.86	1.82	1.91	1.61	1.96	1.74	1.97
27	0.13	0.15	0.10	0.21	0.00	0.20	0.11	0.14	0.14	0.13	0.16	0.17	0.14	0.17	0.16
28	0.00	0.01	0.00	0.02	0.00	0.00	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.01
29	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
MTOT	5.40	4.56	4.20	4.39	5.00	4.85	4.38	4.39	4.83	4.90	4.69	3.72	4.93	4.17	4.33

MTOT = Monthly totals

=====																
: TABLE 4 AUSTIN URBAN HYDROLOGY STUDY :																
: DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF THE COLORADO RIVER PERIOD: 1983 WATER YEAR :																
: : GAGE NUMBER :																
: DATE :	: 1BAR :	: 2BAR :	: 3BAR :	: 1BOL :	: 1-ON :	: 2-ON :	: 1BER :	: 2BER :	: 1LBR :	: 1SLA :	: 2SLA :	: 1BGS :	: 1WMS :	: 2WMS :	: 3WMS :	:
=====																
: DEC :	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
: 1 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 2 :	: 0.05 :	: 0.22 :	: 0.23 :	: 0.04 :	: 0.13 :	: 0.55 :	: 0.29 :	: 0.69 :	: 0.59 :	: 0.34 :	: 0.37 :	: 0.13 :	: 0.38 :	: 0.16 :	: *0.80 :	:
: 3 :	: 0.02 :	: 0.25 :	: 0.04 :	: 0.33 :	: 0.03 :	: 0.02 :	: 0.01 :	: 0.26 :	: 0.11 :	: 0.05 :	: 0.36 :	: 0.35 :	: 0.36 :	: 0.41 :	: *0.76 :	:
: 4 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 6 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.06 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 9 :	: 0.04 :	: 0.00 :	: 0.03 :	: 0.00 :	: 0.04 :	: 0.03 :	: 0.02 :	: 0.00 :	: 0.02 :	: 0.02 :	: 0.01 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.01 :	:
: 10 :	: 0.32 :	: 0.47 :	: 0.30 :	: 0.51 :	: 0.36 :	: 0.54 :	: 0.44 :	: 0.40 :	: 0.52 :	: 0.48 :	: 0.49 :	: 0.49 :	: 0.46 :	: 0.55 :	: 0.48 :	:
: 11 :	: 0.32 :	: 0.34 :	: 0.22 :	: 0.30 :	: 0.29 :	: 0.25 :	: 0.26 :	: 0.00 :	: 0.23 :	: 0.37 :	: 0.25 :	: 0.26 :	: 0.38 :	: 0.29 :	: 0.41 :	:
: 12 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 13 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.02 :	: 0.01 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.01 :	: 0.00 :	:
: 14 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 20 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 21 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 25 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.02 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 26 :	: 0.06 :	: 0.03 :	: 0.06 :	: 0.07 :	: 0.07 :	: 0.05 :	: 0.05 :	: 0.05 :	: *0.05 :	: 0.00 :	: 0.05 :	: 0.58 :	: 0.00 :	: 0.04 :	: 0.12 :	:
: 27 :	: 0.57 :	: 0.67 :	: 0.61 :	: 0.52 :	: 0.62 :	: 0.67 :	: 0.60 :	: 0.60 :	: *0.62 :	: 0.09 :	: 0.08 :	: 0.00 :	: 0.39 :	: 0.64 :	: 0.68 :	:
: 28 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.99 :	: 0.71 :	: 0.60 :	: 0.00 :	: 0.27 :	: 0.00 :	: 0.00 :	:
: 30 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.10 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 31 :	: 0.00 :	: 0.16 :	: 0.38 :	: 0.19 :	: 0.39 :	: 0.18 :	: 0.23 :	: 0.00 :	: 0.17 :	: 0.29 :	: 0.24 :	: 0.82 :	: 0.00 :	: 0.21 :	: 0.21 :	:
=====																
: MTOT :	: 1.39 :	: 2.14 :	: 1.89 :	: 1.98 :	: 1.95 :	: 2.30 :	: 1.91 :	: 2.02 :	: 3.31 :	: 2.37 :	: 2.52 :	: 2.77 :	: 2.25 :	: 2.31 :	: 3.47 :	:
=====																
: CTOT :	: 29.60 :	: 31.94 :	: 28.51 :	: 27.69 :	: 29.12 :	: 23.83 :	: 30.56 :	: 31.51 :	: 29.34 :	: 34.82 :	: 29.04 :	: 27.13 :	: 32.07 :	: 32.95 :	: 31.93 :	:
=====																
: JAN :	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
: 1 :	: 0.40 :	: 0.10 :	: 0.51 :	: 0.80 :	: 0.62 :	: 0.70 :	: 0.59 :	: 0.00 :	: 0.67 :	: 0.64 :	: 0.54 :	: 0.01 :	: 0.21 :	: 0.80 :	: 0.59 :	:
: 2 :	: 0.57 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.63 :	: 0.01 :	: 0.00 :	:
: 3 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.11 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.02 :	:
: 4 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	:
: 5 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.01 :	:
: 6 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.01 :	:
: 7 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 10 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 17 :	: 0.01 :	: 0.00 :	: 0.03 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 18 :	: 0.58 :	: 0.56 :	: 0.55 :	: 0.72 :	: 0.49 :	: 0.95 :	: 0.52 :	: 0.97 :	: 0.95 :	: 0.53 :	: 0.94 :	: 0.81 :	: 0.73 :	: 0.86 :	: 0.56 :	:
: 19 :	: 0.25 :	: 0.20 :	: 0.12 :	: 0.35 :	: 0.19 :	: 0.26 :	: 0.17 :	: 0.24 :	: 0.33 :	: 0.24 :	: 0.39 :	: 0.31 :	: 0.28 :	: 0.40 :	: 0.19 :	:
: 20 :	: 0.14 :	: 0.06 :	: 0.13 :	: 0.10 :	: 0.06 :	: 0.06 :	: 0.09 :	: 0.10 :	: 0.06 :	: 0.12 :	: 0.12 :	: 0.09 :	: 0.12 :	: 0.09 :	: 0.10 :	:
: 21 :	: 0.26 :	: 0.21 :	: 0.25 :	: 0.24 :	: 0.27 :	: 0.29 :	: 0.22 :	: 0.23 :	: 0.28 :	: 0.27 :	: 0.25 :	: 0.26 :	: 0.24 :	: 0.27 :	: 0.26 :	:
: 22 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.01 :	: 0.02 :	:
: 23 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.02 :	: 0.02 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.01 :	: 0.00 :	: 0.01 :	: 0.01 :	: 0.00 :	: 0.01 :	: 0.00 :	:
: 24 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.01 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	: 0.00 :	:
: 31 :	: 0.07 :	: 0.02 :	: 0.13 :	: 0.04 :	: 0.06 :	: 0.02 :	: 0.22 :	: 0.09 :	: 0.03 :	: 0.18 :	: 0.05 :	: 0.12 :	: 0.00 :	: 0.11 :	: 0.03 :	:
=====																
: MTOT :	: 3.21 :	: 1.17 :	: 1.75 :	: 2.28 :	: 1.71 :	: 2.31 :	: 1.82 :	: 1.77 :	: 2.36 :	: 1.99 :	: 2.31 :	: 1.64 :	: 2.23 :	: 2.61 :	: 1.79 :	:
=====																

MTOT = Monthly totals
CTOT = Calendar year totals
* = Estimated

TABLE 4																
AUSTIN URBAN HYDROLOGY STUDY																
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF THE COLORADO RIVER												PERIOD: 1983 WATER YEAR				
GAGE NUMBER																
DATE	1BAR	2BAR	3BAR	1BOL	1-ON	2-ON	1BER	2BER	1LBR	1SLA	2SLA	1BGS	1WMS	2WMS	3WMS	
FEB																
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.01	0.00	
4	0.28	0.29	0.31	0.31	0.36	0.18	0.29	0.17	0.17	0.32	0.22	0.23	0.21	0.26	0.29	
5	0.57	0.32	0.61	0.95	0.27	0.71	0.32	0.38	0.71	0.29	0.58	0.87	0.40	1.08	0.38	
6	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	
9	0.91	0.73	0.84	0.90	0.77	0.54	0.60	0.69	0.63	0.74	0.75	0.87	0.69	0.84	0.90	
14	0.00	0.01	0.00	0.00	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	
15	1.00	0.66	*0.97	0.85	1.04	0.83	1.02	0.86	0.86	0.89	0.79	0.86	0.83	0.94	0.77	
16	0.01	0.00	*0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.00	
17	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	
20	0.17	0.18	*0.20	0.13	0.29	0.15	0.23	0.20	0.16	0.36	0.24	0.18	0.22	0.18	*0.30	
21	0.02	0.00	*0.02	0.00	0.00	0.00	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
22	0.02	0.00	*0.02	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	*0.01	
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MTOT	2.98	2.21	2.98	3.18	2.84	2.43	2.49	2.34	2.57	2.64	2.61	3.04	2.37	3.34	2.66	
MAR																
2	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	*0.01	0.00	0.00	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.03	*0.02	0.01	0.02	0.01	0.03	0.00	0.00	
4	1.28	0.98	*1.37	1.22	2.15	1.38	1.18	1.30	*1.26	0.93	1.01	1.11	1.20	1.50	0.75	
5	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	*0.00	0.00	0.01	0.00	0.00	0.00	0.01	
8	0.00	0.05	0.00	*0.02	0.00	0.01	0.00	0.00	*0.01	0.00	0.00	0.01	0.02	0.02	0.02	
9	0.10	0.20	*0.10	*0.33	0.10	0.08	0.07	0.09	*0.07	0.12	0.10	0.13	0.15	0.17	0.14	
10	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
15	0.48	0.61	*0.48	*0.54	0.45	0.65	0.72	0.66	*0.59	0.70	0.51	0.58	0.56	0.63	0.57	
16	0.48	0.67	*0.42	*0.83	0.56	0.79	0.61	0.75	*0.72	0.71	0.72	0.80	0.82	0.95	0.75	
18	0.00	0.00	0.00	*0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	
19	0.04	0.21	*0.04	*0.11	0.01	0.13	0.09	0.09	*0.12	0.04	0.19	0.22	0.08	0.13	0.04	
20	0.06	0.06	*0.06	*0.11	0.09	0.13	0.09	0.10	*0.12	0.08	0.11	0.12	0.11	0.13	*0.11	
21	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	*0.01	0.00	0.00	0.00	0.00	0.00	0.00	
22	0.01	0.00	0.01	*0.01	0.01	0.03	0.01	0.02	*0.03	0.02	0.01	0.03	0.02	0.01	*0.02	
23	0.56	1.20	0.63	*1.11	0.90	1.29	1.12	1.37	*1.17	1.11	1.39	1.52	1.34	1.28	*1.34	
25	0.01	0.00	0.01	*0.15	0.05	0.00	0.01	0.02	0.00	0.01	0.01	0.03	0.02	0.17	*0.02	
26	0.83	0.77	0.81	*0.78	0.47	0.55	0.77	0.30	0.50	0.88	0.43	0.40	0.48	0.90	*0.48	
30	0.22	0.27	0.08	0.19	0.30	1.95	0.22	0.27	1.77	0.14	0.58	0.59	0.13	0.21	0.11	
31	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
MTOT	4.07	5.02	4.01	5.44	5.12	7.04	4.90	5.00	6.41	4.75	5.15	5.55	4.96	6.11	4.37	

MTOT = Monthly totals

=====															
: TABLE 4															
: AUSTIN URBAN HYDROLOGY STUDY															
: DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF THE COLORADO RIVER															
: PERIOD: 1983 WATER YEAR															
: GAGE NUMBER															
: DATE															
: 1BAR : 2BAR : 3BAR : 1BOL : 1-ON : 2-ON : 1BER : 2BER : 1LBR : 1SLA : 2SLA : 1BGS : 1WMS : 2WMS : 3WMS :															
:=====															
: APR															
: 4	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.02	: 0.00	: 0.03	: 0.01
: 12	: 0.01	: 0.01	: 0.00	: 0.00	: 0.05	: 0.00	: 0.02	: 0.02	: 0.02	: 0.02	: 0.02	: 0.03	: 0.02	: 0.04	: 0.02
: 13	: 0.00	: 0.01	: 0.01	: 0.04	: 0.01	: 0.00	: 0.02	: 0.00	: 0.01	: 0.01	: 0.00	: 0.08	: 0.00	: 0.06	: 0.02
: 20	: 0.00	: 0.00	: 0.00	: 0.02	: 0.00	: 0.01	: 0.01	: 0.03	: 0.02	: 0.01	: 0.01	: *0.03	: 0.03	: 0.03	: 0.02
: 21	: 0.02	: 0.04	: 0.03	: 0.08	: 0.07	: 0.09	: 0.07	: 0.07	: 0.09	: 0.08	: 0.10	: *0.11	: 0.08	: 0.11	: 0.08
: 22	: 0.00	: 0.00	: 0.02	: 0.02	: 0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.01	: 0.01	: *0.01	: 0.00	: 0.01	: 0.01
: 29	: 0.00	: 0.03	: 0.00	: 0.00	: 0.00	: 0.04	: 0.03	: 0.04	: 0.05	: 0.04	: 0.05	: 0.01	: 0.04	: 0.03	: 0.04
:=====															
: MTOT	: 0.03	: 0.09	: 0.06	: 0.16	: 0.13	: 0.14	: 0.15	: 0.17	: 0.19	: 0.18	: 0.19	: 0.29	: 0.17	: 0.31	: 0.20
:=====															
: MAY															
: 1	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00
: 2	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.01	: 0.00	: 0.01	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00
: 3	: 0.05	: 0.05	: 0.03	: 0.06	: 0.04	: 0.07	: 0.04	: 0.03	: 0.05	: 0.04	: 0.05	: 0.02	: 0.02	: 0.04	: *0.01
: 8	: 0.00	: 0.19	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00
: 9	: 0.00	: 1.48	: *0.07	: 0.19	: 0.00	: 0.00	: 0.05	: 0.01	: 0.01	: 0.07	: 0.00	: 0.01	: 0.15	: 0.25	: *0.10
: 10	: 0.73	: 0.05	: *0.50	: 2.34	: 0.76	: 3.06	: 0.90	: 1.63	: 2.81	: 0.94	: 1.45	: 2.55	: 1.27	: 2.78	: *0.83
: 11	: 0.39	: 0.00	: 0.00	: 0.05	: 0.04	: 0.03	: 0.02	: 0.03	: 0.02	: 0.24	: 0.06	: 0.05	: 0.56	: 0.09	: *0.36
: 12	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.02	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00
: 14	: 0.03	: 0.23	: *0.22	: 0.00	: 0.00	: 0.00	: 0.03	: 0.00	: 0.00	: 0.07	: 0.00	: 0.00	: 0.01	: 0.00	: 0.00
: 15	: 0.21	: 0.00	: *0.05	: 0.44	: 0.41	: 0.72	: 0.45	: 0.38	: 0.57	: 0.38	: 0.36	: 0.46	: 0.41	: 0.49	: 0.29
: 16	: 0.00	: 0.01	: 0.00	: 0.01	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00
: 17	: 0.00	: 0.65	: 0.00	: 0.00	: 0.00	: 0.00	: 0.02	: 0.01	: 0.02	: 0.04	: 0.00	: 0.01	: 0.01	: 0.02	: 0.02
: 18	: 0.02	: 0.34	: 0.00	: 0.26	: 0.12	: 0.50	: 0.13	: 0.20	: 0.47	: 0.17	: 0.18	: 0.30	: 0.63	: 0.25	: 0.67
: 19	: 0.34	: 1.67	: *0.41	: 0.20	: 0.11	: 0.01	: 0.26	: 0.34	: 0.46	: 0.15	: 0.05	: 0.06	: 0.06	: 0.04	: 0.30
: 20	: 1.74	: 0.37	: *1.73	: 1.80	: 1.57	: 0.08	: 1.52	: 1.61	: *0.07	: 1.51	: 1.96	: 1.71	: 1.67	: 1.90	: 1.60
: 21	: 0.84	: 0.00	: *0.96	: 1.21	: 1.09	: 2.41	: 0.92	: 0.84	: *2.34	: 1.08	: 0.99	: 1.22	: 1.00	: 1.41	: 0.82
: 27	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.02	: 0.00	: 0.03	: 0.00	: 0.00
: 28	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.00	: 0.01	: 0.01	: 0.00	: 0.00	: 0.00	: 0.24	: 0.00
: 31	: 0.04	: 0.06	: 0.00	: 0.05	: 0.10	: 0.05	: 0.07	: 0.10	: 0.07	: 0.04	: 0.07	: 0.05	: 0.04	: 0.05	: 0.07
:=====															
: MTOT	: 4.39	: 5.10	: 3.97	: 6.61	: 4.24	: 6.94	: 4.41	: 5.21	: 6.90	: 4.75	: 5.19	: 6.44	: 5.86	: 7.56	: 5.07
:=====															

MTOT = Monthly totals

TABLE 4															
AUSTIN URBAN HYDROLOGY STUDY															
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF THE COLORADO RIVER												PERIOD: 1983 WATER YEAR			
GAGE NUMBER															
DATE	1BAR	2BAR	3BAR	1BOL	1-ON	2-ON	1BER	2BER	1LBR	1SLA	2SLA	1BGS	1WMS	2WMS	3WMS
JUNE															
1	0.01	0.01	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.74	0.82	*0.08	0.86	0.30	0.13	0.86	1.04	1.08	0.51	1.15	1.45	1.13	0.70	0.86
5	0.77	0.62	*1.20	0.64	0.35	0.72	0.22	0.39	0.39	0.56	0.42	0.33	0.64	1.17	0.70
6	1.14	0.60	*0.90	1.00	0.81	0.64	0.69	0.75	0.66	0.77	0.79	0.86	0.67	0.96	0.72
7	0.00	0.01	0.00	0.02	0.00	0.03	0.01	0.03	0.01	0.00	0.02	0.00	0.01	0.03	0.02
12	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	1.01	0.78	*3.68	0.48	2.27	0.86	1.59	0.55	0.60	1.27	0.29	0.17	0.59	0.23	1.24
15	0.00	0.02	*0.23	0.02	0.01	0.02	0.00	0.01	0.06	0.01	0.01	0.02	0.01	0.01	0.01
16	0.25	0.39	0.00	0.77	0.52	1.30	0.25	0.16	1.29	0.61	0.45	0.84	0.48	0.73	0.40
17	0.00	0.01	0.00	0.02	0.03	0.01	0.01	0.00	0.01	0.00	0.02	0.00	0.02	0.03	0.00
18	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	*0.12	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
25	0.31	0.46	0.29	0.34	0.40	0.32	0.21	0.00	0.35	0.21	0.28	0.78	0.20	*1.03	0.25
27	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	4.24	4.12	6.38	4.16	4.74	4.05	3.87	2.94	4.49	3.95	3.44	4.54	3.75	5.02	4.20
JULY															
1	0.03	0.03	0.02	0.00	0.17	0.00	0.04	0.06	0.01	0.00	0.16	0.04	0.00	0.00	0.20
5	1.50	1.30	1.36	0.11	1.35	0.14	0.05	0.10	0.14	0.65	0.07	0.00	0.46	*0.02	0.34
6	0.03	0.01	0.02	0.01	0.11	0.00	0.06	0.05	0.00	0.02	0.14	0.00	0.00	0.00	0.02
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
12	0.00	0.00	0.00	0.04	0.19	0.39	0.26	0.38	0.77	0.25	0.17	0.22	0.47	*0.31	0.20
13	0.10	*0.19	0.09	0.04	0.49	0.02	0.81	0.98	0.30	0.37	0.54	0.47	0.07	*0.15	0.14
14	0.31	*0.63	0.29	1.06	0.66	0.27	0.53	1.38	0.96	0.59	1.34	1.06	1.03	*1.26	0.63
15	0.41	*0.80	0.37	0.48	0.34	0.02	0.56	0.26	0.46	0.39	0.30	0.47	0.60	*0.51	0.52
16	0.51	*0.97	0.45	0.67	1.17	0.02	0.87	0.91	1.14	0.86	1.15	0.35	0.69	*0.39	0.57
17	0.48	*0.95	0.44	0.08	0.28	0.70	0.71	0.10	0.49	0.43	0.47	0.09	0.43	*0.12	0.19
18	0.03	*0.06	0.03	0.17	0.00	0.14	0.07	0.05	0.00	0.02	0.00	0.00	0.01	0.00	0.04
19	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.01
20	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
21	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	3.40	4.94	3.08	2.66	4.76	1.79	3.97	4.28	4.28	3.58	4.35	2.72	3.81	2.77	2.87

MTOT = Monthly totals

TABLE 4																
AUSTIN URBAN HYDROLOGY STUDY																
DAILY AND MONTHLY RAINFALL SUMMARY FOR GAGES SOUTH OF THE COLORADO RIVER												PERIOD: 1983 WATER YEAR				
		GAGE NUMBER														
DATE		1BAR	2BAR	3BAR	1BOL	1-ON	2-ON	1BER	2BER	1LBR	1SLA	2SLA	1BGS	1WMS	2WMS	3WMS
=====																
AUG																
4	:	0.02	0.37	0.09	0.84	0.06	0.02	0.03	0.47	0.05	0.08	0.49	0.79	*0.30	0.75	0.05
5	:	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	:	0.04	0.10	0.58	0.00	0.15	0.00	0.04	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.01
7	:	0.00	0.00	0.02	0.02	0.14	0.00	0.00	0.22	0.00	0.02	0.03	0.34	*0.06	0.02	0.41
8	:	0.19	3.25	1.18	1.91	0.11	2.16	2.27	1.93	2.36	1.71	1.87	3.35	*1.55	2.93	1.47
9	:	0.00	0.00	0.04	0.02	0.56	0.01	0.01	0.02	0.03	0.01	0.02	0.23	*0.02	0.13	0.05
10	:	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.01	*0.01	0.01	0.01
12	:	0.24	0.00	0.00	0.00	0.40	0.12	0.03	0.12	0.16	0.08	0.20	0.00	*0.18	0.00	0.13
13	:	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.02	0.02	0.02	0.00	*0.02	0.00	0.01
19	:	0.69	0.37	0.34	0.21	0.41	0.31	0.14	0.19	0.33	0.28	0.21	0.14	0.28	0.17	0.45
20	:	0.00	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	:	0.55	0.00	0.00	0.00	0.75	0.00	0.06	0.63	0.00	0.07	*0.03	0.00	0.05	0.00	0.05
25	:	0.01	0.23	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.03	0.00	0.21
28	:	0.51	0.32	0.22	0.32	0.03	0.02	0.02	0.00	0.00	0.44	*0.16	0.03	0.39	0.24	0.76
29	:	0.00	0.00	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02
=====																
MTOT	:	2.25	4.64	2.54	3.35	2.66	2.67	2.61	3.60	2.96	3.17	3.04	5.16	2.89	4.25	3.63
=====																
SEPT																
1	:	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	*0.37	0.00	0.32	0.00
6	:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	*0.20	0.00	0.17	0.00
7	:	1.27	1.94	0.40	0.59	0.03	0.22	0.35	0.02	0.08	1.15	*0.40	*0.39	0.89	0.33	0.95
8	:	0.37	0.04	0.42	0.11	1.37	0.25	0.51	0.22	0.37	0.17	*0.06	*0.02	0.06	0.02	0.02
9	:	0.71	0.21	0.23	0.03	0.13	0.02	0.12	1.59	0.22	0.52	*0.18	*0.41	1.00	0.35	1.17
10	:	0.33	0.00	0.01	0.97	0.48	0.12	0.02	0.03	0.16	0.03	*0.01	*0.41	0.02	0.35	0.01
11	:	0.00	0.00	0.00	0.02	0.00	0.05	0.00	0.00	0.01	0.00	0.00	*0.01	0.00	0.01	0.02
14	:	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
15	:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.01	0.02
18	:	1.71	2.85	1.98	1.58	1.31	2.79	3.16	3.18	4.10	3.30	3.16	3.22	3.61	2.85	3.08
19	:	1.92	1.17	1.20	0.52	2.14	1.13	0.74	*0.89	1.65	1.11	1.11	0.77	1.16	0.80	0.96
20	:	0.86	0.46	0.42	0.27	0.06	0.06	0.03	*0.04	0.00	0.14	0.65	0.33	0.32	0.34	0.76
21	:	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
22	:	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
=====																
MTOT	:	7.17	6.67	4.67	4.17	5.64	4.64	4.93	5.97	6.59	6.44	5.57	6.14	7.08	5.56	7.00
=====																
WTOT	:	41.27	44.04	38.14	40.85	41.93	41.14	39.97	41.89	47.12	41.95	41.30	44.01	43.99	46.81	42.93
=====																
MTOT = Monthly totals																
WTOT = Water year totals																
* = Estimated																

Table 5.--Summary of storm rainfall-runoff, 1983

Date of Storm	Duration (hours)	Total	Rainfall (inches)		Runoff (inches)	Ratio of runoff to rainfall	Maximum discharge (ft ³ /s)
			15-minute	Maximum increment 30-minute 60-minute			
08154700 Bull Creek at Loop 360, Austin, Tex.							
May 19-20, 1983	2	2.11	0.49	0.72 1.18	0.11	0.05	409
08155550 West Bouldin Creek at Riverside Drive, Austin, Tex.							
May 10, 1983	5	2.34	1.02	1.18 1.99	.19	.08	275
08156700 Shoal Creek at Northwest Park, Austin Tex.							
May 10-11, 1983	3	2.15	.77	1.04 1.71	.40	.19	1,070
08156800 Shoal Creek at 12th Street, Austin, Tex.							
May 10-11, 1983	3	2.24	.77	1.04 1.71	.48	.21	1,630
08158050 Boggy Creek at U.S. Hwy. 183, Austin, Tx							
June 4-5, 1983	4	1.94	1.09	1.38 1.52	.28	.14	1,130
08158600 Walnut Creek at Webberville Road, Austin, Tex.							
August 8, 1983	4	1.84	.98	1.51 1.55	.28	.15	2,570

Table 5.--Summary of storm rainfall-runoff, 1983

Date of Storm	Duration (hours)	Total	Rainfall (inches)			Runoff (inches)	Ratio of runoff to rainfall	Maximum discharge (ft ³ /s)
			15-minute	30-minute	Maximum increment 60-minute			
May 19-20, 1983	2	08154700	Bull Creek at Loop 360, Austin, Tex.					
		2.11	0.49	0.72	1.18	0.11	0.05	409
May 10, 1983	5	08155550	West Bouldin Creek at Riverside Drive, Austin, Tex.					
		2.34	1.02	1.18	1.99	.19	.08	275
May 10-11, 1983	3	08156700	Shoal Creek at Northwest Park, Austin Tex.					
		2.15	.77	1.04	1.71	.40	.19	1,070
May 10-11, 1983	3	08156800	Shoal Creek at 12th Street, Austin, Tex.					
		2.24	.77	1.04	1.71	.48	.21	1,630
June 4-5, 1983	4	08158050	Boggy Creek at U.S. Hwy. 183, Austin, Tex.					
		1.94	1.09	1.38	1.52	.28	.14	1,130
August 8, 1983	4	08158600	Walnut Creek at Webberville Road, Austin, Tex.					
		1.84	.98	1.51	1.55	.28	.15	2,570

Table 5.--Summary of storm rainfall-runoff, 1983--Continued

Date of Storm	Duration (hours)	Total	Rainfall (inches)		Runoff (inches)	Ratio of runoff to rainfall	Maximum discharge (ft ³ /s)
			15-minute	Maximum increment 30-minute 60-minute			
08158700 Onion Creek near Driftwood, Tex.							
May 20-21, 1983	20	2.66	0.43	0.79 1.13	0.17	0.06	433
08158800 Onion Creek at Buda. Tex.							
May 20-21, 1983	30	2.59	.60	1.13 1.78	.34	.13	1,650
08158810 Bear Creek below farm Road 1826 near Driftwood, Tex							
May 20-21, 1983	20	2.44	.49	.71 1.12	.13	.05	125
08158820 Bear Creek at Farm Road 1626 near Manchaca, Tex.							
May 20-21, 1983	19	2.44	.49	.71 1.12	.14	.06	397
08158825 Little Bear Creek at Farm Road 1626 near Manchaca, Tex.							
May 10, 1983	2	2.84	.86	1.71 2.55	.05	.02	749
08158840 Slaughter Creek at Farm Road 1826 near Austin, Tex.							
May 20, 1983	1	1.51	.77	.80 1.23	.07	.04	201

Table 5.--Summary of storm rainfall-runoff, 1983--Continued

Date of Storm	Duration (hours)	Rainfall (inches)				Runoff (inches)	Ratio of runoff to rainfall	Maximum discharge (ft ³ /s)
		Total	Maximum increment					
			15-minute	30-minute	60-minute			
08158880 Boggy Creek (South) at Circle S Road, Austin, Tex.								
May 10, 1983	1	2.61	1.34	1.74	2.44	0.75	0.29	1,490
08158920 Williamson Creek at Oak Hill, Tex.								
May 20, 1983	1	1.61	0.67	0.71	1.41	.21	.13	456
08158930 Williamson Creek at Manchaca Road, Austin, Tex.								
May 20, 1983	1	1.71	.83	.85	1.25	.21	.13	730
08158970 Williamson Creek at Jimmy Clay Road, Austin, Tex.								
May 20, 1983	6	1.77	.83	.84	1.25	.17	.09	617

Table 6.--Rainfall and runoff data for selected continuous-record gaging stations in the Austin urban study area, 1983 water year

Station	Weighted-mean rainfall (inches)	Total runoff (inches)	Ratio of runoff to rainfall
Bull Creek at Loop 360, near Austin, Tex. (08154700)	39.16	4.15	0.11
Barton Creek near Camp Craft Road near Austin, Tex. (08155260)	40.51	3.17	.08
Barton Creek at Loop 360, Austin, Tex. (08155300)	40.33	.83	.02
Shoal Creek at Northwest Park, Austin, TX (08156700)	38.48	7.11	.18
Boggy Creek at U.S. Hwy. 183, Austin, TX (08158050)	37.97	7.25	.19
Walnut Creek at Webberville Road, Austin, TX (08158600)	42.23	5.53	.13
Onion Creek near Driftwood, TX (08158700)	41.93	3.30	.08
Onion Creek at Buda, TX (08158800)	41.71	.70	.02
Bear Creek at Farm Road 1826 near Driftwood, TX (08158810)	39.97	5.57	.14
Slaughter Creek at Farm Road 1826 near Austin, Tex. (08158840)	42.01	3.86	.09
Williamson Creek at Oak Hill, Austin, Tex. (08158920)	43.10	4.73	.11
Williamson Creek at Jimmy Clay Road, Austin, Tex. (08158970)	45.15	2.93	.06

Note: See "Remarks" paragraph of station descriptions in the section "Compilation off Data" for information about regulation or diversion.

Table 7.--Peak discharges associated with water-quality samples collected during storms

Station no.	Station name	Water-quality sample			Peak flow		
		Date	Time	Instantaneous flow (ft ³ /s)	Date	Time	(ft ³ /s)
08154700	Bull Creek at Loop 360 near Austin, Tex.	Feb. 9	1245	25	Feb. 9	1030	55
		May 11	(3 samples)	--	May 11	0030	181
		Sept. 19	(4 samples)	--	Sept. 19	1230	350
08155260	Barton Creek near Camp Craft Road near Austin, Tex.	Feb. 9	1340	23	Feb. 9	1130	27
08156800	Shoal Creek at 12th Street, Austin, Tex.	Mar. 23	1030	300	Mar. 23	1015	332
		May 20	(2 samples)		May 20	1530	1,120
		Aug. 8	1303	403	Aug. 8	1430	1,980
		Sept. 7	1640	16	Sept. 7	1545	40
08158050	Boggy Creek at U.S. Hwy. 183, Austin, Tex.	Mar. 4	1300	106	Mar. 4	1400	200
		May 20	(6 samples)	--	May 20	1530	2,500
08158200	Walnut Creek at Dessau Road Austin, Tex.	Mar. 4	1415	27	Mar. 4	1445	41
08158600	Walnut Creek at Webberville Road, Austin, Tex.	Mar. 4	1340	87	Mar. 4	1350	95
08158700	Onion Creek near Driftwood, Tex.	Mar. 23	1200	126	Mar. 23	1300	139

See footnotes at end of table.

Table 7.--Peak discharges associated with water-quality samples
collected during storms--continued

Station no.	Station name	Water-quality sample			Peak flow		
		Date	Time	Instantaneous flow (ft ³ /s)	Date	Time	(ft ³ /s)
08158800	Onion Creek at Buda, Tex.	Mar. 23	1130	3.4	Mar. 23	1100	3.7
08159000	Onion Creek at U.S. Hwy. 183 near Austin, Tex.	Feb. 9	1435	757	Feb. 9	1530	1,830
08158810	Bear Creek below F.M. Road 1826 near Driftwood, Tex.	Feb. 9	1230	14	Feb. 9	1200	14
08158825	Little Bear Creek at F.M. Road 1626 near Manchaca, Tex.	Feb. 9	1355	.59	Feb. 9	1430	.66
		Sept. 19	1210	381	Sept. 19	1210	381
08158840	Slaughter Creek at F.M. Road 1826 near Austin, Tex.	Sept. 19	1300	40	Sept. 19	1530	126
08158920	Williamson Creek at Oak Hill, Tex.	Feb. 9	1300	14	Feb. 9	1015	58
		May 20	(6 samples)	--	May 20	1500	456
		Aug. 8	(6 samples)	--	Aug. 8	1330	756
		Sept. 7	(3 samples)	--	Sept. 7	1700	376
		Sept. 9	1525	233	Sept. 9	1515	209

See footnotes at end of table.

Table 7.--Peak discharges associated with water-quality samples
collected during storms--continued

Station no.	Station name	Water-quality sample			Peak flow			
		Date	Time	Instantaneous flow (ft ³ /s)	Date	Time	(ft ³ /s)	
08158970	Williamson Creek at Jimmy Clay Road, Austin, Tex.	Feb.	9	1255	82	Feb.	9 1330	149
		May	11	1205	17	May	11 0230	472

a/ Unknown.

Table 8.--Records of wells, test holes, and springs in the Austin urban study area

Water-bearing units: Kea, Edwards and associated limestones; Kgru, Upper Glen Rose; Kgrl, Lower Glen Rose; Kho, Hosston.
 Method of lift and type of power: C, cylinder; cf, centrifugal; E, electric; G, natural gas, butane, or gasoline; H, hand
 J, jet; M, none; S, submersible; T, turbine; W, windmill.
 Use of water: D, domestic; Ind, industrial; Irr, irrigation; N, none; P, public supply; S, livestock.

No.	Owner	Driller	Date completed	Depth of well (ft)	Casing		Water-bearing unit	Altitude of land surface (ft)	Below land surface datum (ft)	Water level		Method of lift	Use of water	Remarks
					Diameter (in)	Depth (ft)				Level	Date of latest measurement for annual water-level survey			
Travis County														
YD-58-36-805	Eanes School	S. W. Glass	1954	876	7	705	Kgrl	770	229.75	Aug. 24, 1983	N	N		Reported drawdown, 190 feet at 22 gal/min in Nov. 1954. <u>3/ 5/ 7/</u>
809	Carllysle Schnelle	Glass	1949	340	6	98	Kea	720	--	--	S, E	D		<u>6/</u>
810	Swenson	Boston Furr	1912	295	6	80	Kea	700	187.9	Aug. 24, 1983	N	N		<u>3/</u>
813	G & J Water Co.	C. T. Sterzing	--	300	8	--	Kea	660	211.45	May 13, 1983	S, E	P		This well supplies 15 families.
814	Dellano Hills	C. T. Sterzing	--	300	10	--	Kea	660	--	--	S, E	P		This well supplies 24 families. <u>6/</u>
903	City of Austin	--	1920's	45	5	10	Kea	460	27.06	Aug. 24, 1983	S, E	N		Open hole below casing. Water-level recorder on this well. <u>3/ 5/</u>
YD-58-42-911	Bee Caves Properties	Charles Dellana	1920's	135	6	90	Kea	517	77.15	May 13 1983	S, E	D, Irr		Originally dug to 90 feet then drilled to 135 feet. <u>4/</u>
913	Park Hills Baptist Church	Richard Bible	1969	180	7	165	Kea	540	--	--	S, E	D		<u>6/</u>
925	Jimmy Shipwash	Richard Bible	1975	180	5	180	Kea	575	139.3	Aug. 24, 1983	S, E	Irr		<u>2/ 3/</u>
926	Eugene Jacobs	Hugh Glass	1963	190	6	--	Kea	600	156.7	July 18, 1983	S, E	Irr		<u>6/</u>
YD-58-49-604	O. B. McKown, Jr.	C. T. Sterzing	1957	565	7	450	Kgrl	898	--	--	S, E	Irr		Reported yield 28 gal/min. <u>2/ 6/ 7/</u>
50-101	T. A. Beckett, Jr.	Will Beckett	1921	217	7	12	Kea	810	179.55	Aug. 24, 1983	S, E	D		<u>6/</u>
206	Kenneth Wingfield	W. H. Glass	1968	257	7	53	Kea	680	--	--	S, E	D		Reported yield, 10 gal/min. Cemented from 0-53 feet. <u>6/ 7/</u>
YD-58-50-211	Travis Country Estates	Richard Bible	1973	282	7	265	Kea	670	210.35	Aug. 24, 1983	S, E	Irr		<u>3/ 6/</u>
213	Bill Ashbaugh	--	--	300	7	--	Kea	705	217.15	Aug. 24, 1983	S, E	D		--
215	City of Sunset Valley	Tom Arnold	1976	360	6-5/8	200	Kea	675	--	--	--	P		<u>6/</u>

See footnotes at end of table.

Table 8.--Records of wells, test holes, and springs in the Austin urban study area--Continued

No.	Owner	Driller	Date completed	Casing		Depth of well (ft)	Water-bearing unit	Altitude of land surface (ft)	Below land datum (ft)	Water level	Date of latest measurement for annual water-level survey	Method of lift	Use of water	Remarks
				Diameter (in)	Depth (ft)									
Travis County--Continued														
216	U.S. Geological Survey	Texas Dept. of Water Resources	1978	4	580	582	Kea	692	233.5	Aug. 24, 1983	N	N		U.S. Geol. Survey test well #3. <u>3/ 5/ 7/</u>
217	U.S. Geological Survey	Texas Dept. of Water Resources	1978	4	144	129	Kea	567	116.0	Aug. 24, 1983	N	N		U.S. Geol. Survey test well #2A. <u>3/ 5/ 7/</u>
220	Buddy Fowler	Richard Bible	1974	6	310	310	Kea	675	--	--		S, E	D	<u>6/</u>
301	John Lovelady	Gus Sanders	1949	5	296	388	Kea	640	156.30	Aug. 24, 1983	N	N		<u>2/ 3/ 5/</u>
401	A.I.S.D.	Glass	1967	7	252	404	Kea	750	--	--		S, E	U, S	<u>6/ 7/</u>
406	George Slaughter	John Glass	1946	5	100	360	Kea	820	--	--		S, E	D	<u>6/</u>
408	Richard Austin	E. W. Glass	1971	7	125	439	Kea	772	178.2	July 19, 1983	S, E	D		Reported drawdown 0 foot when pumped at 25 gal/min for one hour on Mar. 18, 1971. <u>6/</u>
YD-58-50-412	Circle C Ranch	Glass	1972	7	194	295	Kea	809	158.75	July 26, 1983	N	N		<u>3/ 5/ 6/</u>
502	Mrs. R. W. Herndon	Glass	1937	5-5/16	168	300	Kea	740	220.4	July 20, 1983	S, E	Irr, S		<u>4/ 6/</u>
517	Ted Swanson, Jr.	Central Tex. Drilling	1973	6-3/8	290	430	Kea	695	155.15	Aug. 24, 1983	S, E	Irr		Reported yield, 300 gal/min.
704	Harbridge Foundation	Central Tex. Drilling	1968	16 14	68 40	345	Kea	727	158.6	Aug. 25, 1983	S, E	Irr		Measured drawdown, 12 feet after pumping 72 hours at 942 gal/min, 2 feet at 578 gal/min, and 1 foot at 473 gal/min. <u>3/ 6/ 7/</u>
705	Richard McKean	C. T. Sterzing	1965	7 5-1/2	164 200	200	Kea	660	--	--		S, E	D	<u>6/</u>
721	Larry Jackson	Hugh Glass	1979	4	400	400	Kea	680	--	--		S, E	D	<u>6/</u>
801	C. H. Bird	Williamson & Adair	1939	5-1/4	200	277	Kea	662	92.85	Aug. 26, 1983	S, E	N		Reported yield, 10 gal/min. <u>2/ 3/</u>
810	A. L. Wunneburger	Emmett Glass	1969	7	205	359	Kea	625	--	--		S, E	D	Reported drawdown, 20 feet after bailing 1 hour at 40 gal/min. <u>2/ 6/ 7/</u>
Y0-58-58-301	United Gas Pipeline	--	1943	6	639	703	Kea	734	143.20	Dec. 28, 1983	N	N		U.S. Geol. Survey observation well. <u>2/ 3/</u>

See footnotes at end of table.

Table 8.--Records of wells, test holes, and springs in the Austin urban study area--Continued

No.	Owner	Driller	Date completed	Casing		Depth of well (ft)	Water-bearing unit	Altitude of land surface (ft)	Below land surface datum (ft)	Water level	Date of latest measurement for annual water-level survey	Method of lift	Use of water	Remarks
				Diameter (in)	Depth (ft)					level				
Hays County														
LR-58-49-801	Clara Calhoun	Tyler	1942	6	20	100	Kea	856	36.05	Aug.	26, 1983	S, E	S	3/ 6/
903	Mrs. Bliss Spillar	--	--	4	--	200	Kea	830	--	--	--	C, E	S	6/
57-101	M. O. Rogers	Harvey Harmon	1930's	6	120	125	Kgru	992.7	56.0	July	20, 1983	S, E	D	6/
201	Mike Rutherford	--	1945	6	--	320	Kea	925	162.0	Aug.	26, 1983	C, W	S	2/ 3/
202	Farris	Scarly Glass	--	7	200	200	Kea	905	24.0	July	21, 1983	S, E	S	6/
LR-58-57-302	Jack Dahlstrom	W. H. Glass	1973	12	158	415	Kea	809	187.95	Aug.	25, 1983	S, E	S	5/ 7/
303	W. D. Turner	W. H. Glass	1973	7	315	315	Kea	870	--	--	--	S, E	D	6/ 7/
402	Tom Faurey	James B. Tucker	1976	6	55	380	Kea	880	120.8	Aug.	26, 1983	S, E.	D	3/ 6/
503	Michaelis Ranch	--	Before 1900	4	--	180	Kea	812	134.6	Aug.	25, 1983	C, W	S	--
901	Hays Consolidated School District	E. A. Glass	1968	10	235	575	Kea	821	--	--	--	S, E		6/ 7/
903	Mountain City Ranch	C. L. Tyler	1943	6	--	400	Kea	822	201.15	Aug.	26, 1983	C, W	S	2/ 3/
58-101	Franklin		1907	5	230	243	Kea	707 2	105.8	Aug.	26, 1983	N	N	2/ 3/ 5/
105	Joe Lowke	Tom Arnold	1978	4	480	477	Kea	773	--	--	--	S, E	D	5/ 6/
LR-58-58-111	Hays City	--	--	6	150	338	Kea	705	150.75	Aug.	25, 1983	S, E	P	3/
403	City of Buda	J. B. Virdell	1954	10	222	390	Kea	710	106.5	--	--	T, E	P	6/
406	Texas Cement	F. S. Tatum	1966	10	310	525	Kea	743	139.1	July	25, 1983	S, E	P	Cemented 0-310 feet. 2/ 7/
504	Roger Brown	C. T. Sterzing	1962	7	514	640	Kea	778	164.9	Aug.	26, 1983	S, E	N	3/
704	O. H. Cullen	E. R. Ownes	1972	7	368	532	Kea	746	154.6	July	21, 1983	S, E	D	2/ 6/ 7/

1/ Selected wells are included in monthly water-level surveys (see table 9).

2/ Texas Department of Water Resources observation well.

3/ Monthly water-level measurements available in table 9.

4/ Discontinued observation well.

5/ Geophysical log (radioactivity or electric log).

6/ Well or spring sampled for quality of water.

7/ Driller's log, sample log, or core data.

Table 9.--Water-quality data from wells and springs in the Austin urban study area

LOCAL IDENT- IFIER	DATE OF SAMPLE	TIME	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN)	DEPTH OF WELL, TOTAL (FEET)	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)	SPE- CIFIC DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
			(72004)	(72008)	(72019)	(00095)	(00400)	(00010)	(31625)	(31673)
TRAVIS										
YD 58-42-809	83-07-18	1045	60	240	--	494	7.8	23.0	<1	K18
YD 58-42-814	83-07-18	0845	60	300	--	546	7.1	22.5	<1	<1
YD 58-42-913	83-07-18	1300	60	180	--	616	7.4	23.0	K1	30
YD 58-42-926	83-03-21	1050	20	190	--	589	7.2	21.0	K3300	5200
	83-03-22	0940	35	190	--	583	7.4	21.5	110	14000
	83-03-23	0830	20	190	--	586	7.4	22.0	63	7000
	83-03-25	1115	20	190	--	590	7.3	21.5	K3	380
	83-07-18	1205	30	190	--	586	7.4	22.0	43	1300
YD 58-49-604	83-07-22	1400	60	565	--	632	7.6	24.0	<1	66
YD 58-50-101	83-07-19	0835	60	217	--	649	7.1	26.5	<1	22
YD 58-50-206	83-07-19	0918	20	257	--	514	7.1	22.0	K1	33
YD 58-50-211	83-07-19	0805	60	282	--	601	6.9	22.0	K16	160
YD 58-50-215	83-07-19	1000	60	360	--	582	6.9	24.0	<1	270
YD 58-50-220	83-03-21	1130	20	310	--	587	7.4	22.0	<1	<1
	83-03-23	0915	20	310	--	586	7.3	22.5	<1	<1
YD 58-50-401	83-07-22	0950	30	404	--	553	7.5	23.0	<1	<1
YD 58-50-406	83-07-19	1210	20	360	--	670	7.0	24.0	<1	120
YD 58-50-408	83-07-19	1330	20	439	--	597	7.1	24.5	K1	K110
YD 58-50-412	83-07-19	1245	15	295	--	568	7.0	23.5	K2	140
YD 58-50-502	83-07-20	1330	25	300	220.00	475	7.4	--	K18	220
YD 58-50-704	83-07-20	0930	20	345	154.00	476	7.5	--	K14	33
YD 58-50-705	83-03-21	1135	20	200	--	528	7.3	21.0	K1	K10
	83-03-22	1010	20	200	--	528	7.4	21.0	K8	600
	83-03-23	1030	20	200	--	531	7.3	21.0	26	360
	83-03-25	1345	20	200	--	524	7.2	22.0	30	220
YD 58-50-721	83-03-21	1105	20	400	--	556	7.3	22.0	<1	<1
	83-03-23	0955	20	400	--	563	7.3	22.5	<1	K2
YD 58-50-810	83-07-20	1415	25	359	--	767	7.5	--	K1	220

Table 9.--Water-quality data from wells and springs in the Austin urban study area--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF TJENSTIS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
TRAVIS										
YD 58-42-809	83-07-18	14	.20	9.0	270	<.100	<.020	.020	.23	.040
YD 58-42-814	83-07-18	15	.20	10	300	1.10	<.020	<.010	--	.100
YD 58-42-913	83-07-18	14	.20	10	350	1.60	<.020	.030	.57	.060
YD 58-42-926	83-05-21	--	--	--	--	1.60	<.050	<.060	--	.010
	83-05-22	--	--	--	--	1.60	<.020	<.060	--	.010
	83-05-23	--	--	--	--	1.70	<.020	<.060	--	.010
	83-05-25	--	--	--	--	1.60	<.020	<.060	--	.020
	83-07-18	16	.20	11	330	1.70	<.020	.020	.38	.040
YD 58-49-604	83-07-22	13	.70	10	360	.300	<.020	.040	.66	.010
YD 58-50-101	83-07-19	9.0	.70	13	360	.300	<.020	.330	.37	.040
YD 58-50-206	83-07-19	16	.20	11	280	1.70	<.020	.010	.59	.040
YD 58-50-211	83-07-19	22	.20	10	330	1.20	<.020	.020	.38	.030
YD 58-50-215	83-07-19	13	.20	15	320	2.60	<.020	.010	.49	.060
YD 58-50-220	83-05-21	14	.20	12	330	2.40	<.020	<.060	--	.010
	83-05-23	--	--	--	--	2.40	<.020	<.060	--	.010
YD 58-50-401	83-07-22	13	.20	11	320	1.60	<.020	.040	1.1	.020
YD 58-50-406	83-07-19	23	.30	13	370	4.70	<.020	.050	.75	.030
YD 58-50-408	83-07-19	16	.20	14	330	1.10	<.020	.020	.48	.050
YD 58-50-412	83-07-19	10	.10	13	310	1.50	<.020	.020	.58	.040
YD 58-50-502	83-07-20	10	.20	11	270	.600	<.020	.060	.24	.030
YD 58-50-704	83-07-20	11	.20	11	270	.500	<.020	.030	.37	.040
YD 58-50-705	83-05-21	--	--	--	--	1.30	<.020	<.060	--	.010
	83-05-22	--	--	--	--	1.30	<.020	<.060	--	.010
	83-05-23	--	--	--	--	1.30	<.020	<.060	--	.010
	83-05-25	--	--	--	--	1.10	<.020	<.060	--	.020
YD 58-50-721	83-05-21	--	--	--	--	1.20	<.020	<.060	--	.010
	83-05-23	--	--	--	--	1.20	<.020	<.060	--	.010
YD 58-50-810	83-07-20	29	2.1	11	440	<.100	<.020	.080	.22	.050

Table 3.--Water-quality data from wells and springs in the Austin urban study area--Continued

LOCAL IDENTIFIER	DATE OF SAMPLE	HARDNESS (MG/L AS CaCO3) (00900)	HARDNESS, NONCARBONATE (MG/L CaCO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS Ca) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS Na) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKALINITY FIELD (MG/L AS CaCO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
TRAVIS										
YD 58-42-809	83-07-18	250	36	67	19	3.6	.2	1.1	210	26
YD 58-42-814	83-07-18	280	43	77	22	7.9	.2	1.1	240	24
YD 58-42-913	83-07-18	340	37	100	21	6.3	.2	.90	300	16
YD 58-42-926	83-05-21	--	--	--	--	--	--	--	260	--
	83-05-22	--	--	--	--	--	--	--	260	--
	83-05-23	--	--	--	--	--	--	--	270	--
	83-05-25	--	--	--	--	--	--	--	270	--
83-07-18	300	39	85	21	9.1	.2	1.2	260	28	
YD 58-49-604	83-07-22	340	35	87	31	7.4	.2	2.5	310	22
YD 58-50-101	83-07-19	300	37	61	35	7.1	.2	2.6	260	77
YD 58-50-206	83-07-19	260	20	66	23	8.0	.2	1.4	240	13
YD 58-50-211	83-07-19	290	32	79	23	12	.3	1.2	260	23
YD 58-50-215	83-07-19	300	19	70	30	9.3	.2	1.3	280	8.8
YD-58-50-220	83-05-21	300	54	82	24	12	.3	1.1	250	36
	83-05-23	--	--	--	--	--	--	--	260	--
YD 58-50-401	83-07-22	310	27	85	23	6.7	.2	.90	280	12
YD 58-50-406	83-07-19	320	53	88	25	17	.4	1.0	270	45
YD 58-50-408	83-07-19	310	15	75	31	8.1	.2	.80	300	6.6
YD-58-50-412	83-07-19	300	22	83	23	6.2	.2	.70	280	7.6
YD 58-50-502	83-07-20	240	23	69	17	6.8	.2	1.2	220	18
YD 58-50-704	83-07-20	250	28	71	17	6.6	.2	1.2	220	16
YD-58-50-705	83-05-21	--	--	--	--	--	--	--	250	--
	83-05-22	--	--	--	--	--	--	--	250	--
	83-05-23	--	--	--	--	--	--	--	250	--
	83-05-25	--	--	--	--	--	--	--	250	--
YD-58-50-721	83-05-21	--	--	--	--	--	--	--	260	--
	83-05-23	--	--	--	--	--	--	--	260	--
YD 58-50-810	83-07-20	290	59	61	33	38	1	2.9	230	130

Table 3.--Water-quality data from wells and springs in the Austin urban study area--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	TIME	PUMP OR FLOW		ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
			PERIOD PRIOR TO SAM- PLING (MIN) (72004)								
YD-58-50-220	83-05-21	1130	20		<1	94	<1	<10	3	96	<1
	83-05-23	0915	20		<1	<100	<1	<10	4	10	1
YD-58-50-705	83-05-21	1135	20		<1	100	<1	<10	4	30	<1
	83-05-23	1030	20		<1	<100	<1	<10	8	40	<1
YD-58-50-721	83-05-21	1105	20		<1	<100	<1	<10	3	10	<1
	83-05-23	0955	20		<1	300	<1	<10	2	20	2
YD-58-50-220			83-05-21	2	<.1	5	<1	<1	<1		
			83-05-23	<10	<.1	10	1	<1			
YD-58-50-705			83-05-21	<10	<.1	130	<1	<1	<1		
			83-05-23	<10	<.1	230	<1	<1			
YD-58-50-721			83-05-21	<10	<.1	10	1	<1	<1		
			83-05-23	<10	<.1	10	1	<1			

Table 9.--Water-quality data from wells and springs in the Austin urban study area--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	TIME	PUMP OR FLOW PERIOD PRIOR TO SAM- PLING (MIN) (72004)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	SPE- CIFIC CON- DUCT- ANCE (UMHOS) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE (DEG C) (00010)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
HAYS										
LR-58-49-801	83-07-22	0817	25	100	--	671	7.2	21.5	K2	K1
LR 58-49-903	83-07-20	0830	25	200	--	600	7.3	--	<1	K2
LR 58-57-101	83-07-20	1055	30	125	44.80	654	7.2	--	K3	K23
LR-58-57-202	83-07-21	0950	20	200	19.40	667	7.2	23.5	<1	K6
LR 58-57-303	83-07-21	1115	20	315	--	590	7.4	24.5	<1	52
LR-58-57-402	83-07-21	0835	25	380	94.00	603	7.0	23.0	<1	K9
LR-58-57-901	83-07-22	1130	30	575	--	489	7.8	26.5	K3	K21
LR 58-58-105	83-07-21	1330	25	477	--	499	7.4	24.0	25	73
LR 58-58-403	83-07-22	1215	30	390	--	539	7.8	24.0	<1	39
LR-58-58-406	83-07-25	1140	20	525	--	569	7.8	23.0	<1	<1
LR-58-58-704	83-07-21	1425	20	532	140.00	1060	7.6	26.0	K7	K12

Table 9.--Water-quality data from wells and springs in the Austin urban study area--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
HAYS										
LR-58-49-801	83-07-22	13	.30	11	380	.800	<.020	.040	.76	.020
LR 58-49-903	83-07-20	8.7	.20	12	340	.700	<.020	.030	.37	.020
LR 58-57-101	83-07-20	9.8	.20	13	360	.400	<.020	.030	.47	.030
LR-58-57-202	83-07-21	14	.30	12	380	1.10	<.020	.040	.76	.010
LR 58-57-303	83-07-21	14	.20	12	330	1.20	<.020	.040	.76	.020
LR-58-57-402	83-07-21	14	.80	13	350	<.100	<.020	.070	.43	.030
LR-58-57-901	83-07-22	9.0	.40	11	270	.500	<.020	.080	.22	.010
LR 58-58-105	83-07-21	12	.40	11	270	1.60	<.020	.070	.83	.020
LR 58-58-403	83-07-22	12	.50	11	320	1.40	<.020	.060	.54	.010
LR-58-58-406	83-07-25	12	.30	11	310	1.60	<.020	.090	.41	.010
LR-58-58-704	83-07-21	93	3.8	12	620	<.100	<.020	.510	.49	.010

Table 10. --Monthly water-level measurements of observation wells in the
Austin urban study area, 1983 water year 1/

Well number	Distance below land-surface datum (feet)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
YD-58-42-805	229.50	229.50	228.90	232.30	234.20	221.80	226.90	226.80	228.00	--	229.75	--
810	198.50	192.25	190.70	189.10	187.40	187.00	187.30	187.20	187.45	187.70	187.9	--
903	29.14	29.15	28.38	28.53	31.69	26.43	26.64	26.20	30.04	--	27.06	--
925	141.50	141.75	142.10	142.30	141.55	139.95	139.15	138.90	138.55	--	139.3	--
LR58 -49-801	38.30	--	37.50	34.10	34.10	29.30	35.65	31.80	35.70	--	38.5	--
YD-58-50-101	--	--	176.20	180.10	175.00	174.85	177.35	176.00	--	--	179.55	--
211	--	205.55	--	200.20	184.80	180.55	193.60	182.70	199.10	--	210.35	--
213	--	--	219.25	218.90	218.80	216.50	217.90	214.65	--	--	217.15	--
216	252.40	253.6	252.50	251.75	247.70	232.05	228.00	230.20	225.44	--	233.5	--
217	2/	2/	2/	2/	87.15	75.05	78.40	81.10	77.70	--	116.0	--
301	181.60	189.0	185.90	185.75	183.60	175.25	167.40	162.70	157.35	--	156.30	--
412	160.30	160.70	161.50	159.0	160.85	159.65	157.30	157.65	158.30	158.75	--	--
517	192.85	195.45	190.60	187.50	175.30	153.80	150.30	145.35	143.90	--	155.15	--
704	199.90	202.50	197.95	193.40	--	165.45	157.45	152.80	150.70	153.4	158.6	--
801	132.40	129.70	124.40	121.85	115.10	--	87.75	81.50	82.80	--	92.85	--
LR-58-57-201	162.10	163.1	171.60	165.70	163.85	160.95	158.80	157.10	--	--	158.7	--
302	--	--	207.40	212.10	--	185.90	177.65	172.20	174.10	--	187.95	--

Table 10.--Monthly water-level measurements of observation wells in the
Austin urban study area, 1983 water year 1/--Continued

Well number	Distance below land-surface datum (feet)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
402	94.35	93.80	94.80	92.70	92.50	93.50	91.50	92.00	93.60	93.0	120.8	--
503	--	--	--	134.90	131.50	99.80	103.35	102.85	109.80	--	134.6	--
903	227.55	231.25	229.50	229.05	226.00	--	212.50	204.45	207.95	--	201.15	--
58-101	130.20	130.9	126.60	130.30	120.85	97.60	91.25	105.50	85.95	--	105.8	--
111	--	--	180.90	179.80	174.20	160.35	153.36	139.10	140.60	--	150.75	--
301	150.65	151.80	153.20	154.05	154.40	153.40	150.30	146.12	142.95	141.1	143.4	140.45
504	185.30	186.55	186.85	188.60	186.45	180.50	173.15	168.10	164.70	--	164.80	--

1/ All measurements were made during the last week of the month. See table 7 for a listing of water-level measurements of additional wells made for the annual water-level survey.

2/ Well dry.