HYDROLOGIC DATA FOR URBAN STUDIES IN THE AUSTIN METROPOLITAN AREA, TEXAS, 1984

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

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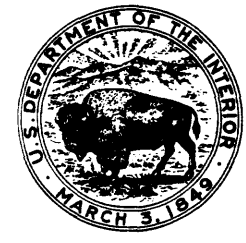

Prepared in cooperation with the
CITY OF AUSTIN

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1986

UNITED STATES DEPARTMENT OF THE INTERIOR

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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	0.3048	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 Reources, 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 with various types of urban development.
4. To quantitatively appraise the ground-water resources of the Edwards aquifer in hydraulic circulation with Barton Springs, the effect of urbanization on the quality and quantity of recharge and discharge, and the extent of contamination in the aquifer

This report presents the basic hydrologic data collected in the Austin urban area for the 1984 water year (Oct. 1, 1983 to Sept. 30, 1984). 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-84-3, 1984.

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 are presented by the 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 Burea 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, and Town Lake are shown in figures 2 and 3.

Precipitation Data

Precipitation data are based on 21 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 15.24 inches at gage 1-BAR in the Barton Creek basin to 23.42 inches at gage 2-WLN in the Walnut Creek basin. The mean water-year total of all rain gages is 18.46 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.

Runoff Data

Runoff data are based on discharge measurements and stage records at 13 continuous-record streamflow stations and 8 flood-hydrograph partial-record streamflow gaging stations. Streamflow data for continuous-record gaging stations, and for flood-hydrograph partial-record stations for the 1984 water year are presented generally in downstream order in the section "Compilation of data."

Rainfall and runoff for the 1984 water year for the continous-record gaging stations in the Austin urban study area are summarized in table 5. Runoff varied from 0.12 inch for the Barton Creek at Loop 360 gage, to 3.43 inches for the Shoal Creek at Northwest Park 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."

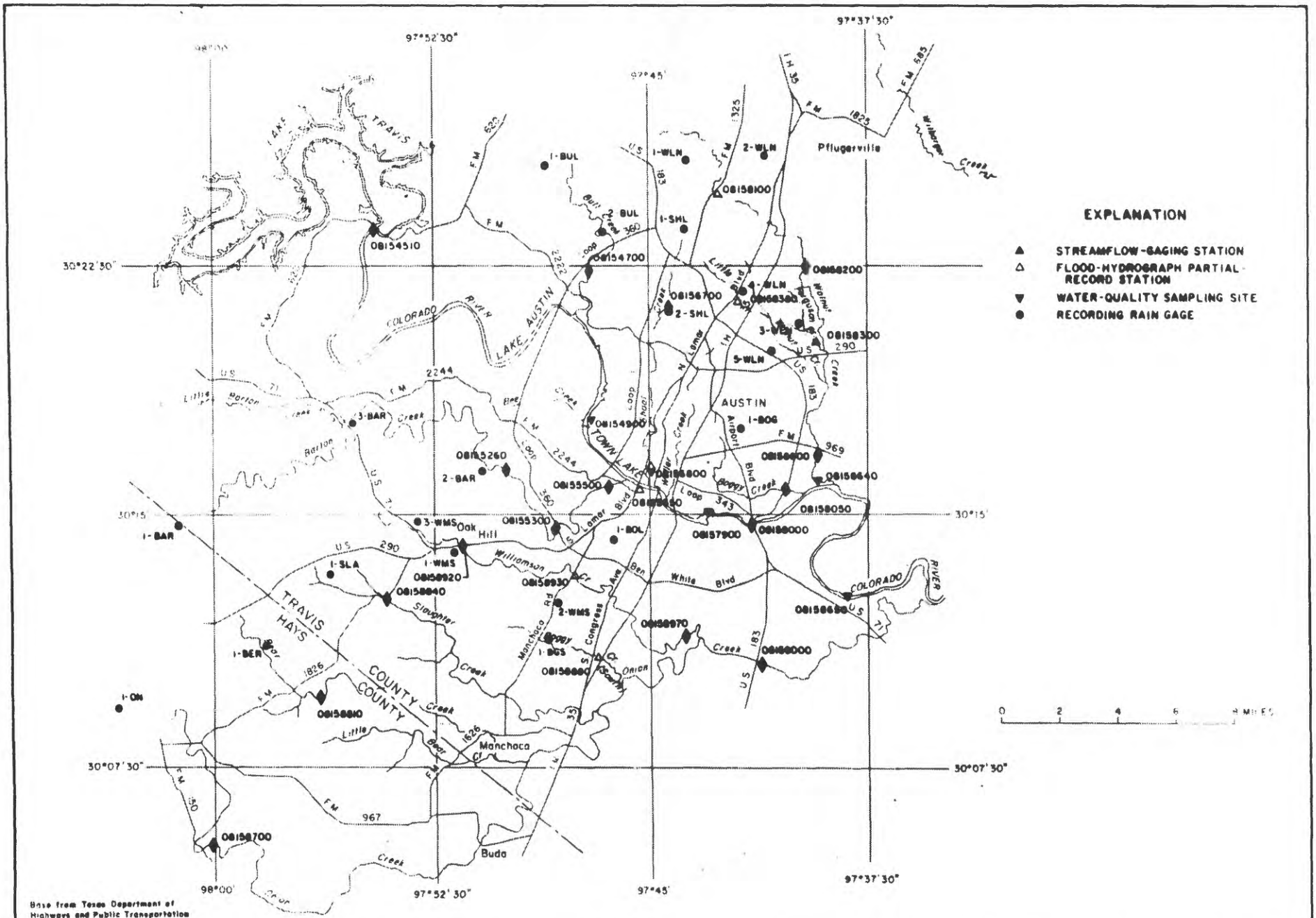

Figure 1.- Location of surface-water hydrologic-instrument installations and surface-water-quality sampling sites.

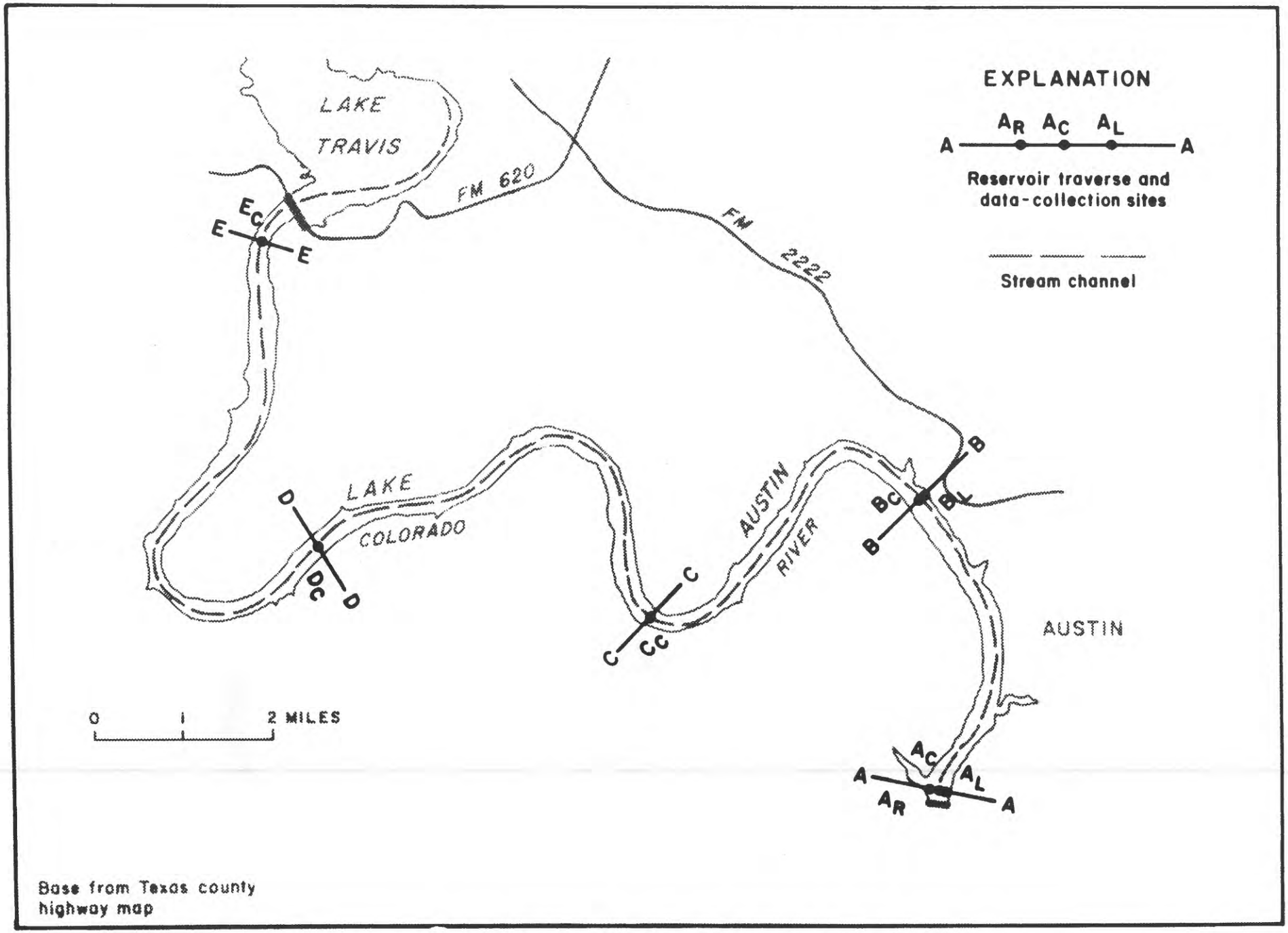

Figure 2.–Location of the water-quality data-collection sites on Lake Austin

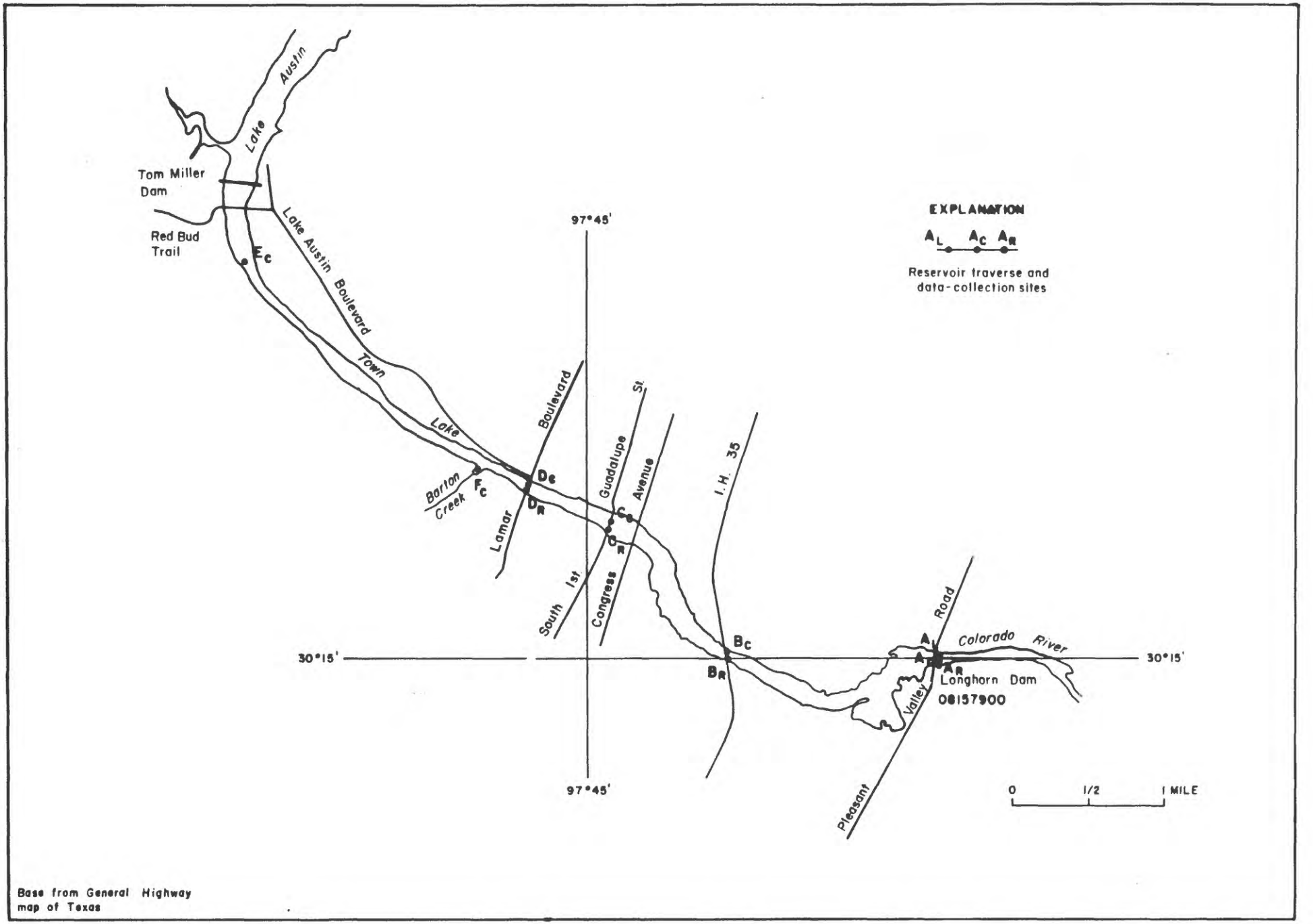

Figure 3.–Location of the water-quality data-collection sites on Town Lake

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

Rain gage	Location
1-BUL	Lat 30°25'37", long 97°48'53", at David Hutton residence (relocated), 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°17'48", long 97°55'31", on H.T. Hamrick property (relocated) on Barton Creek at Hwy. 71, 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).
2-SHL	Lat 30°20'49", long 97°44'39" on Shoal Creek at Northwest Park (relocated), on left bank of drainage ditch, 60 ft east of Shoal Creek Blvd. between 6903 and 6905 Shoal Creek Blvd.
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 Textruss, Inc. (relocated), 200 ft east of Dorsett Road, 0.5 mile north of the intersection of Duval and Dorsett Roads. Elevation, 835 ft (approximate).

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

Rain gage	Location
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 Loredo 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).
1-BER	Lat 30°11'08", long 97°58'11", at Mr. Lowden's residence (revised) 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).
1-SLA	Lat 30°13'10", long 97°56'09", at the entrance of Mr. 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).
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).

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

Rain gage	Location
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 of the streamflow stations

Streamflow Station Number	Streamflow Station Name (abbreviated)	Rain gage 1/	Weighted-mean precipitation factor 2/
08154700	Bull Creek at Loop 360	1-BUL	0.57
		2-BUL	.43
08155260	Barton Creek near Camp Craft Road	1-BAR	.63
		2-BAR	.16
		3-BAR	.21
08155300	Barton Creek at Loop 360	1-BAR	.59
		2-BAR	.15
		3-BAR	.26
08155550	West Bouldin Creek at Riverside Drive	1-BOL	1.00
08156700	Shoal Creek at Northwest Park	1-SHL	.45
		2-SHL	.55
08156800	Shoal Creek at 12th Street	1-SHL	.24
		2-SHL	.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	.51
		2-WLN	.49
08158300	Ferguson Branch at Springdale Road	3-WLN	1.00
08158380	Little Walnut Creek at Georgian Drive	1-SHL	.36
		4-WLN	.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

Streamflow Station		Rain gage 1/	Weighted-mean precipitation factor 2/
Number	Name (abbreviated)		
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
08158810	Bear Creek below Farm Road 1826	1-BER	1.00
08158840	Slaughter Creek at Farm Road 1826	1-SLA	1.00
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
08158970	Williamson Creek at Jimmy Clay Road	1-WMS	0.31
		2-WMS	.49
		3-WMS	.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-Onion Creek; BER-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

Table 5.--Rainfall and runoff data for selected continuous-record gaging stations in the Austin urban study area, 1984 water year

Station	Weighted-mean rainfall (inches)	Total runoff (inches)	Ratio of runoff to rainfall
Bull Creek at Loop 360, near Austin, Tex. (08154700)	18.94	1.14	0.06
Barton Creek near Camp Craft Road near Austin, Tex. (08155260)	15.86	.78	.05
Barton Creek at Loop 360, Austin, Tex. (08155300)	15.87	.12	.01
Shoal Creek at Northwest Park, Austin, TX (08156700)	18.24	3.43	.19
Boggy Creek at U.S. Hwy. 183, Austin, TX (08158050)	17.21	1.34	.08
Walnut Creek at Webberville Road, Austin, TX (08158600)	20.21	1.87	.09
Onion Creek near Driftwood, TX (08158700	18.33	.44	.02
Bear Creek at Farm Road 1826 near Driftwood, TX (08158810)	17.11	.83	.05
Slaughter Creek at Farm Road 1826 near Austin, Tex. (08158840)	15.72	1.54	.10
Williamson Creek at Oak Hill, Austin, Tex. (08158920)	18.33	1.90	.10
Williamson Creek at Jimmy Clay Road, Austin, Tex. (08158970)	19.38	1.37	.07

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

Storm Data

Only two storms producing rainfall greater than 2 inches occurred during the year. The storm of October 9 produced rainfall totals ranging from 0.06 inches at 1-WMS to 2.93 inches at 1-WLN. The storm of July 24-25 produced rainfall ranging from 0.41 inch at 1-BER to 3.48 inches at 1-WLN. The only significantly large runoff from these two storms occurred at the gaging station Walnut Creek at Webberville Road. Both storms followed long dry periods and the maximum rainfall intensities were relatively low. Because no large storms with high rainfall intensities occurred during the year, there were no large peak discharges, thus no storms were selected for analysis of incremental rainfall and runoff.

A report entitled "Techniques for estimating the magnitude and frequency of floods in the Austin, Texas, metropolitan area" is currently being prepared (1985). 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.

Surface-Water-Quality Data

Water-quality data were collected at 18 streamflow locations during the 1984 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 6.

Analyses for these sites include nutrients (ammonia, nitrogen, organic nitrogen, nitrate 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). Analyses are also done for 12 selected trace elements (arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, selenium, silver, and zinc), and 26 insecticides and herbicides.

A report is presently being 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.

Table 6.--Peak discharges associated with water-quality samples collected during storms
[ft^3/s, cubic feet per second]

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.	July 24	1345	16	July 24	1345	16
08156800	Shoal Creek at 12th Street, Austin, Tex.	Nov. 5	1555	492	Nov. 5	1615	690
		Jan. 8	(5 samples)		Jan. 8	2330	773
		Mar. 12	(3 samples)		Mar. 12	0300	392
		June 12	(6 samples)		June 12	2115	443
		July 24	(6 samples)		July 24	1000	593
		Aug. 12	(6 samples)		Aug. 12	1615	528
08158050	Boggy Creek at U.S. Hwy. 183, Austin, Tex.	Jan. 8	(6 samples)		Jan. 8	2145	392
		Mar. 12	(3 samples)		Mar. 12	0230	903
08158200	Walnut Creek at Dessau Road Austin, Tex.	Nov. 5	1635	376	Nov. 5	1615	660
		June 6	0840	99	June 6	0815	285
		July 24	1030	553	July 24	0830	1,580
08158600	Walnut Creek at Webberville Road, Austin, Tex.	Oct. 20	1747	91	Oct. 20	1800	93
		Mar. 23	1145	127	Mar. 23	1145	154
		June 5	1010	28	June 5	0715	86
		July 24	1215	644	July 24	1130	916
08158840	Slaughter Creek at F.M. 1826 near Austin, Tex.	Nov. 5	1535	12	Nov. 5	1415	56

See footnotes at end of table.

Table 6.--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)
08158920	Williamson Creek at Oak Hill, Tex.	Oct. 20 Nov. 5	(4 samples) (6 samples)		Oct. 20 Nov. 5	1545 1430	254 195
08158970	Williamson Creek at Jimmy Clay Road, Austin, Tex.	Nov. 5 Mar. 23 June 5	1520 1040 0800	38 2.9 28	Nov. 5 Mar. 23 June 5	1715 1330 0730	485 34 64
08159000	Onion Creek at U.S. Highway 183 near Austin, Tex.	June 5	0900	82	June 5	1030	141

a/ Unknown.

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 2 and 3 respectively, and the analyses of these samples are given in the "Compilation of data" section in this report.

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(p. 19 follows)

COMPILATION OF DATA

08154510 COLORADO RIVER BELOW MANSFIELD DAM, AUSTIN, TX

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

DRAINAGE AREA.--38,755 mi^2, approximately, of which 11,403 mi^2 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.--10 years 1,534 ft^3/s (1,111,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 25,300 ft^3/s Apr. 17-19, 1977; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,930 ft^3/s Feb. 20; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1340	378	134	.00	38	449	1130	1980	2500	2780	825	2210
2	1200	.00	228	.00	.00	.00	1100	1810	2710	2600	1920	2160
3	1150	.00	.00	.00	.00	.00	928	1740	2710	2340	674	1840
4	1320	.00	.00	.00	81	.00	1140	1800	2710	2300	2020	2360
5	1540	.00	.00	.00	166	111	1140	1800	2570	2290	1420	1870
6	1650	.00	128	321	.00	79	1230	1830	2260	2380	1510	2050
7	1460	.00	143	898	.00	.00	1200	1760	2540	2330	1380	1620
8	1460	.00	172	134	43	.00	1160	1720	2440	2130	1360	1720
9	1310	.00	.00	.00	184	294	1190	1840	2340	2200	1480	1510
10	1540	236	528	.00	.00	.00	1340	2650	2200	2130	1530	1690
11	1150	849	105	.00	.00	.00	1380	2240	2370	1980	1660	1640
12	699	.00	105	.00	.00	169	1230	2670	2290	2210	1540	1810
13	745	.00	38	.00	.00	.00	1380	2100	2270	1810	1830	1750
14	425	.00	325	.00	.00	.00	1780	2050	2610	1590	1760	1760
15	554	.00	163	.00	184	.00	1780	2220	2400	1550	1330	1820
16	505	84	374	.00	.00	.00	1900	2440	2610	1600	1500	1830
17	493	.00	122	.00	.00	.00	1820	2430	2400	1530	1400	1850
18	423	.00	125	.00	.00	.00	1700	2190	2470	1480	1290	1710
19	535	.00	387	.00	.00	242	1650	2060	2560	1640	1330	1640
20	505	.00	.00	.00	2930	.00	1870	2230	2480	1560	1400	1380
21	449	.00	262	.00	1650	438	1880	2270	2350	1680	1370	1260
22	.00	344	1400	.00	2660	250	1930	1630	2450	1490	1500	1500
23	.00	301	105	.00	701	224	1900	1720	2450	1870	1880	1340
24	.00	236	294	.00	15	633	2460	1690	2610	978	1500	1450
25	.00	173	1450	.00	.00	671	1410	1740	2270	1400	2270	1540
26	.00	134	807	.00	.00	734	2350	2460	2570	1690	1890	1050
27	.00	131	.00	604	122	692	1730	2460	2660	1510	1860	1040
28	231	114	163	.00	51	642	1730	2310	2610	2330	1930	921
29	.00	134	245	.00	.00	845	1770	2230	2340	1520	1670	737
30	.00	123	482	.00	---	1420	1930	2500	2510	1380	2740	736
31	176	---	.00	81	---	1150	---	2720	---	1260	2130	---
TOTAL	20860.00	3237.00	8285.00	2038.00	8825.00	9043.00	47138	65290	74260	57538	49899	47794
MEAN	673	108	267	65.7	304	292	1571	2106	2475	1856	1610	1593
MAX	1650	849	1450	898	2930	1420	2460	2720	2710	2780	2740	2360
MIN	.00	.00	.00	.00	.00	.00	928	1630	2200	978	674	736
CFSM	.03	.004	.01	.002	.01	.01	.06	.08	.09	.07	.06	.06
IN.	.03	.00	.01	.00	.01	.01	.06	.09	.10	.08	.07	.07
AC-FT	41380	6420	16430	4040	17500	17940	93500	129500	147300	114100	98970	94800

CAL YR 1983 TOTAL 251197.00 MEAN 688 MAX 2440 MIN .00 CFSM .03 IN .34 AC-FT 498200
WTR YR 1984 TOTAL 394207.00 MEAN 1077 MAX 2930 MIN .00 CFSM .04 IN .54 AC-FT 781900

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 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
OCT									
28...	0830	560	7.7	19.0	4.5	49	.0	200	46
DEC									
14...	0805	538	7.9	16.0	7.3	75	.5	180	52
FEB									
21...	1530	534	8.0	14.0	9.1	89	1.0	190	52
APR									
16...	1240	536	8.1	13.5	4.8	46	.9	200	58
JUN									
27...	1240	539	7.6	21.0	5.8	66	.4	200	62
AUG									
16...	0840	525	7.4	23.5	4.2	50	1.1	200	58

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
OCT									
28...	42	22	35	1	3.6	150	40	63	.20
DEC									
14...	40	20	31	1	3.3	130	39	61	.30
FEB									
21...	42	21	31	1	3.8	140	39	56	.30
APR									
16...	43	22	32	1	3.8	140	38	59	.30
JUN									
27...	46	21	30	.9	3.2	140	37	57	.30
AUG									
16...	43	22	33	1	3.8	140	38	59	.30

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
OCT								
28...	7.4	300	<.020	<.10	.040	.46	.50	.090
DEC								
14...	6.4	280	<.010	<.10	.020	--	<.20	.010
FEB								
21...	7.6	280	<.010	.20	.030	.37	.40	.030
APR								
16...	6.2	290	<.010	<.10	.010	.39	.40	<.010
JUN								
27...	5.2	280	<.010	<.10	.020	.58	.60	<.010
AUG								
16...	4.6	290	<.010	<.10	.060	.24	.30	<.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.--38,846 mi², of which 11,403 mi² probably is noncontributing.

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

301739097471601 LAKE AUSTIN SITE AB

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
06...	1030	1.00	565	8.2	12.5	10.1	95
06...	1032	10.0	565	8.2	12.5	10.1	95
06...	1034	23.0	565	8.1	12.5	10.0	94
AUG							
17...	0950	1.00	538	8.0	27.5	6.8	87
17...	0952	10.0	538	8.0	27.0	6.7	85
17...	0954	18.0	538	7.8	26.0	4.7	59

301739097471201 LAKE AUSTIN SITE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAR												
06...	1000	1.00	565	8.2	12.5	1.10	<1	2.5	10.1	95	.6	K18
06...	1002	10.0	565	8.2	12.5	--	--	--	10.0	94	--	--
06...	1004	20.0	565	8.2	12.5	--	--	--	10.0	94	--	--
06...	1006	30.0	565	8.2	12.5	--	--	--	10.1	95	--	--
06...	1008	40.0	565	8.2	12.5	--	--	--	9.9	94	--	--
06...	1010	52.0	565	8.1	12.5	--	<1	2.3	9.8	93	1.7	--
AUG												
17...	0915	1.00	538	8.0	27.0	2.10	4	.60	6.8	86	.6	46
17...	0917	10.0	538	8.0	27.0	--	--	--	6.8	86	--	--
17...	0919	20.0	538	7.8	26.0	--	--	--	5.0	62	--	--
17...	0921	30.0	538	7.7	25.5	--	--	--	4.7	58	--	--
17...	0923	40.0	538	7.7	25.5	--	--	--	4.3	53	--	--
17...	0925	46.0	538	7.7	25.5	--	30	27	4.1	51	1.6	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR												
06...	45	210	55	48	23	32	1	3.8	160	42	59	.30
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	210	55	48	23	32	1	3.8	160	42	59	.30
AUG												
17...	K4	200	51	44	22	32	1	3.8	150	32	59	.30
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	200	48	43	22	31	1	3.9	150	36	60	.20

301739097471201 LAKE AUSTIN SITE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)	ARSENIC DIS-SOLVED (UG/L AS AS)
MAR												
06...	6.8	310	9	<2	<.010	<.10	.020	.18	.20	.010	2.6	<1
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	<.010	<.10	.030	.17	.20	.020	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	6.8	310	7	<2	<.010	<.10	.020	.18	.20	.010	2.8	<1
AUG												
17...	5.5	290	3	2	<.010	<.10	.020	.28	.30	<.010	2.8	1
17...	--	--	--	--	<.010	<.10	.030	.37	.40	<.010	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	<.010	<.10	.030	.37	.40	<.010	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	5.6	290	52	15	<.010	<.10	.040	.36	.40	<.010	3.1	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)
MAR											
06...	80	<1	30	<1	49	<1	8	<.1	<1	<1	<3
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	90	--	10	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	81	<1	20	4	59	<1	11	<.1	<1	<1	8
AUG											
17...	74	<1	<10	2	4	4	1	<.1	<1	<1	<3
17...	--	--	--	--	10	--	<10	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	10	--	<10	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	74	<1	<10	1	<3	<1	21	<.1	<1	<1	<3

DATE	TIME	SAM-PLING DEPTH (FEET)	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)
MAR							
06...	1000	1.00	<.10	<.10	<.10	<2.0	<.1
06...	1010	52.0	<.10	<.10	<.10	<2.0	<.1
AUG							
17...	0915	1.00	<.10	<.10	<.10	<2.0	<.1
17...	0925	46.0	<.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-TRYNE TOTAL (UG/L)
MAR						
06...	<.1	<.10	<2.0	<2.0	<.10	<.1
06...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
17...	<.1	<.10	<2.0	<2.0	<.10	<.1
17...	<.1	<.10	<2.0	<2.0	<.10	<.1

301739097470901 LAKE AUSTIN SITE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
MAR							
06...	1040	1.00	565	8.2	12.5	10.1	95
06...	1042	10.0	565	8.2	12.5	10.1	95
06...	1044	19.0	565	8.2	12.5	10.2	96
AUG							
17...	0945	1.00	538	8.0	27.5	6.6	84
17...	0947	10.0	538	8.0	27.0	6.4	81
17...	0948	16.0	538	7.9	26.5	5.4	68

302043097472401 LAKE AUSTIN SITE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	SILICA, DISSOLVED (MG/L AS SIO2)
MAR									
06...	1100	1.00	561	8.2	13.5	1.10	10.1	98	--
06...	1102	10.0	561	8.2	13.5	--	10.0	97	--
06...	1104	20.0	561	8.2	13.5	--	10.0	97	--
06...	1106	29.0	561	8.2	13.0	--	10.0	96	--
AUG									
17...	1005	1.00	536	8.1	28.0	2.60	7.2	93	5.4
17...	1007	10.0	536	8.0	27.5	--	6.7	86	--
17...	1009	20.0	541	7.8	26.0	--	4.9	61	--
17...	1011	27.0	541	7.7	26.0	--	4.4	55	--

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR								
06...	<.010	<.10	.020	.28	.30	.010	40	<10
06...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
06...	<.010	<.10	<.010	--	<.20	.010	40	<10
AUG								
17...	<.010	<.10	.030	.37	.40	<.010	5	<1
17...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
17...	<.010	<.10	<.010	--	.40	.010	<10	<10

301926097502201 LAKE AUSTIN SITE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAR												
06...	1130	1.00	535	8.1	13.0	2.70	<1	1.4	9.7	93	.4	K10
06...	1132	10.0	535	8.1	13.0	--	--	--	9.7	93	--	--
06...	1134	20.0	535	8.1	13.0	--	--	--	9.7	93	--	--
06...	1136	28.0	535	8.1	13.0	--	<1	1.4	9.6	92	.3	--
AUG												
17...	1030	1.00	540	8.0	26.5	2.60	5	.50	6.2	78	.7	60
17...	1032	10.0	539	7.9	26.0	--	--	--	5.7	71	--	--
17...	1034	20.0	539	7.8	25.5	--	--	--	4.8	59	--	--
17...	1036	30.0	539	7.8	25.5	--	6	12	4.5	56	.6	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR												
06...	23	200	48	43	22	32	1	3.7	150	37	58	.30
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	--	200	51	44	22	31	1	3.7	150	37	59	.30
AUG												
17...	K9	200	55	44	23	32	1	3.7	150	36	59	.30
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	200	48	43	22	32	1	3.7	150	38	59	.30

301926097502201 LAKE AUSTIN SITE CC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)	ARSENIC DIS-SOLVED (UG/L AS AS)
MAR												
06...	6.9	290	4	<2	<.010	<.10	.020	.18	.20	.010	2.5	<1
06...	--	--	--	--	<.010	<.10	.040	.16	.20	.010	--	--
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	6.9	290	4	<2	<.010	<.10	.020	.18	.20	.010	2.4	<1
AUG												
17...	5.2	290	6	3	<.010	<.10	.030	.17	.20	<.010	2.7	<1
17...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	<.010	<.10	.030	.27	.30	<.010	--	--
17...	5.3	290	40	14	<.010	<.10	.030	.27	.30	<.010	2.9	<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)
MAR											
06...	73	<1	50	<1	<3	<1	2	<.1	<1	<1	8
06...	--	--	--	--	20	--	<10	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	74	<1	<10	<1	<3	<1	2	<.1	<1	<1	4
AUG											
17...	75	<1	<10	2	7	8	5	<.1	<1	<1	<3
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	<10	--	<10	--	--	--	--
17...	75	<1	<10	1	<3	<1	7	<.1	<1	<1	12

DATE	TIME	SAM-PLING DEPTH (FEET)	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)
MAR							
06...	1130	1.00	<.10	<.10	<.10	<2.0	<.1
06...	1136	28.0	<.10	<.10	<.10	<2.0	<.1
AUG							
17...	1030	1.00	<.10	<.10	<.10	<2.0	<.1
17...	1036	30.0	<.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-TRYNE TOTAL (UG/L)
MAR						
06...	<.1	<.10	<2.0	<2.0	<.10	<.1
06...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
17...	<.1	<.10	<2.0	<2.0	<.10	<.1
17...	<.1	<.10	<2.0	<2.0	<.10	<.1

302021097540001 LAKE AUSTIN SITE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR								
06...	1210	1.00	530	8.1	13.5	3.1	9.5	92
06...	1212	10.0	530	8.1	13.0	--	9.5	91
06...	1214	14.0	530	8.1	13.0	--	9.3	89
AUG								
17...	1100	1.00	540	7.9	25.5	3.7	4.8	59
17...	1102	10.0	540	7.8	25.5	--	4.5	56
17...	1104	17.0	540	7.8	25.5	--	4.2	52

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR								
06...	<.010	<.10	.010	--	<.20	.010	30	20
06...	--	--	--	--	--	--	--	--
06...	<.010	<.10	.030	.17	.20	.010	30	10
AUG								
17...	<.010	<.10	.030	.27	.30	<.010	10	<10
17...	--	--	--	--	--	--	--	--
17...	<.010	<.10	.050	.25	.30	<.010	20	40

302314097544901 LAKE AUSTIN SITE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAR												
06...	1230	1.00	528	8.3	11.0	2.40	<1	1.4	11.0	101	.8	K6
06...	1232	8.00	526	8.3	11.0	--	<1	3.6	10.5	96	1.7	--
AUG												
17...	1130	1.00	540	7.6	25.0	2.10	4	.90	2.8	34	1.3	51
17...	1134	7.00	540	7.6	24.5	--	4	.90	2.4	29	.9	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR												
06...	34	190	52	42	21	31	1	3.7	140	36	59	.30
06...	--	200	56	42	22	32	1	3.6	140	36	58	.30
AUG												
17...	<1	200	51	44	22	33	1	3.9	150	35	60	.20
17...	--	200	48	43	22	32	1	3.9	150	35	60	.20

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)
MAR												
06...	6.6	280	<2	<2	.010	<.10	.020	.18	.20	.010	2.2	<1
06...	6.8	280	11	<2	.010	<.10	.030	.27	.30	.020	2.8	<1
AUG												
17...	4.5	290	<1	<1	<.010	<.10	.060	.24	.30	<.010	2.5	<1
17...	4.6	290	<1	<1	<.010	<.10	.060	.34	.40	<.010	2.7	<1

302314097544901 LAKE AUSTIN SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
MAR											
06...	71	<1	30	<1	8	<1	3	<.1	<1	<1	9
06...	73	<1	30	<1	<3	<1	2	<.1	<1	<1	6
AUG											
17...	75	<1	<10	1	6	1	23	<.1	<1	<1	7
17...	74	<1	<10	1	14	4	24	<.1	<1	<1	<3

DATE	TIME	SAM-PLING DEPTH (FEET)	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)
MAR							
06...	1230	1.00	<.10	<.10	<.10	<2.0	<.1
06...	1232	8.00	<.10	<.10	<.10	<2.0	<.1
AUG							
17...	1130	1.00	<.10	<.10	<.10	<2.0	<.1
17...	1134	7.00	<.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-TRYNE TOTAL (UG/L)
MAR						
06...	<.1	<.10	<2.0	<2.0	<.10	<.1
06...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
17...	<.1	<.10	<2.0	<2.0	<.10	<.1
17...	<.1	<.10	<2.0	<2.0	<.10	<.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.--39,003 mi², approximately, of which 11,403 mi² probably is noncontributing.

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

301559097424801 TOWN LAKE AR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1020	1.00	610	8.2	16.5	9.0	92
07...	1022	10.0	610	8.2	16.5	9.1	93
07...	1024	20.0	610	8.1	16.5	9.1	93
07...	1026	30.0	610	7.9	15.0	6.2	62
AUG							
20...	0945	1.00	540	8.1	28.5	7.2	94
20...	0947	10.0	540	8.1	28.0	7.9	103
20...	0949	20.0	540	7.8	27.5	5.9	76
20...	0951	25.0	540	7.7	27.0	4.2	54

301500097424801 TOWN LAKE AC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
07...	0940	1.00	610	8.1	17.0	1.80	<1	1.4	9.0	93
07...	0942	10.0	610	8.1	17.0	--	--	--	9.2	95
07...	0944	20.0	610	8.1	16.0	--	--	--	8.5	86
07...	0946	30.0	610	7.9	15.5	--	<1	35	7.8	78
AUG										
20...	0900	1.00	539	8.0	29.0	2.70	3	1.3	6.9	91
20...	0902	10.0	540	7.9	28.0	--	--	--	6.5	85
20...	0904	20.0	540	7.8	27.5	--	--	--	6.0	77
20...	0906	25.0	540	7.7	27.5	--	4	11	5.0	64

DATE	OXYGEN DEMAND, BIOCHEMICAL, 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)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
MAR										
07...	1.0	45	23	250	41	64	22	29	.8	2.7
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.4	--	--	250	36	62	22	29	.8	2.7
AUG										
20...	1.4	K62	K5	200	51	44	22	32	1	3.6
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	1.2	--	--	200	51	44	22	32	1	3.8

DATE	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	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)
MAR										
07...	210	41	50	.30	6.8	340	6	<2	.39	.010
07...	--	--	--	--	--	--	--	--	.39	.010
07...	--	--	--	--	--	--	--	--	--	--
07...	210	39	49	.30	6.9	340	86	27	.38	.020
AUG										
20...	150	41	58	.30	5.7	300	4	1	--	<.010
20...	--	--	--	--	--	--	--	--	--	<.010
20...	--	--	--	--	--	--	--	--	--	--
20...	150	38	58	.30	6.1	290	16	1	--	<.010

301500097424801 TOWN LAKE AC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	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)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)
MAR										
07...	.40	.020	.18	.20	.60	.010	1.8	1	69	<1
07...	.40	.100	.20	.30	.70	.020	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	.40	.100	.20	.30	.70	.050	1.8	1	69	<1
AUG										
20...	<.10	.020	.18	.20	--	<.010	2.8	1	74	<1
20...	<.10	<.010	--	.20	--	<.010	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	<.10	.060	.14	.20	--	<.010	2.6	1	75	<1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
MAR									
07...	30	4	7	<1	2	<.1	<1	<1	6
07...	--	--	50	--	<10	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	30	2	6	<1	7	<.1	<1	<1	8
AUG									
20...	<10	3	<3	9	<1	<.1	<1	<1	8
20...	--	--	20	--	<10	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	<10	1	5	1	10	<.1	<1	<1	7

DATE	TIME	SAMPLING DEPTH (FEET)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)	PROMETONE TOTAL (UG/L)
MAR							
07...	0940	1.00	<.10	<.10	<.10	<2.0	<.1
07...	0946	30.0	<.10	<.10	<.10	<2.0	<.1
AUG							
20...	0900	1.00	<.10	<.10	<.10	<2.0	<.1
20...	0906	25.0	<.10	<.10	<.10	<2.0	<.1

DATE	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
MAR						
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
20...	<.1	<.10	<2.0	<2.0	<.10	<.1
20...	<.1	<.10	<2.0	<2.0	<.10	<.1

301503097424701 TOWN LAKE AL

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1006	1.00	610	8.1	17.0	9.0	93
07...	1008	10.0	610	8.1	17.0	9.1	94
07...	1010	20.0	610	8.1	16.5	8.4	86
AUG							
20...	0935	1.00	540	7.9	28.5	6.9	91
20...	0937	10.0	540	7.9	28.0	6.5	85
20...	0939	18.0	540	7.9	28.0	6.2	81

TOWN LAKE AT AUSTIN, TX--Continued

301500097440801 TOWN LAKE BR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1045	1.00	605	8.1	16.0	9.0	91
07...	1047	10.0	605	8.1	16.0	8.8	89
07...	1049	14.0	602	8.0	15.5	7.8	78
AUG							
20...	1015	1.00	544	7.9	28.0	6.5	85
20...	1017	13.0	544	7.9	27.5	6.2	80

301504097440901 TOWN LAKE BC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1035	1.00	606	8.1	16.5	9.1	93
07...	1037	10.0	604	8.1	16.0	8.9	90
07...	1039	20.0	602	8.1	16.0	8.8	89
07...	1041	30.0	616	7.7	15.0	4.1	41
AUG							
20...	1010	1.00	544	8.0	28.0	6.6	86
20...	1011	10.0	544	8.0	28.0	6.6	86
20...	1012	20.0	544	7.9	27.5	6.2	80
20...	1013	27.0	544	7.9	27.5	6.0	77

301544097445201 TOWN LAKE CR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1106	1.00	605	7.8	15.5	8.2	82
07...	1108	10.0	605	7.8	15.5	8.1	81
AUG							
20...	1038	1.00	550	7.8	27.5	5.9	76
20...	1040	8.00	550	7.8	27.5	5.7	73

301546097445101 TOWN LAKE CC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1100	1.00	610	7.8	16.0	8.7	88
07...	1102	10.0	610	7.8	16.0	8.8	89
07...	1104	14.0	610	7.8	16.0	8.7	88
AUG							
20...	1030	1.00	546	7.9	29.0	6.5	86
20...	1032	10.0	546	7.8	27.5	5.9	76
20...	1034	17.0	546	7.8	27.5	5.7	73

TOWN LAKE AT AUSTIN, TX--Continued

30155609745230l TOWN LAKE DR

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1135	1.00	622	7.7	16.0	9.3	95
07...	1137	10.0	622	7.7	15.5	9.2	93
AUG							
20...	1100	1.00	540	7.9	27.5	5.8	75
20...	1102	10.0	540	7.9	27.5	5.8	75
20...	1104	15.0	540	7.9	27.5	5.8	75

30155809745220l TOWN LAKE DC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STAND-ARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR										
07...	1115	1.00	625	7.6	16.5	2.10	<1	1.1	8.9	91
07...	1117	10.0	622	7.8	15.5	--	--	--	9.8	99
07...	1119	20.0	613	7.8	15.5	--	<1	.90	8.8	88
AUG										
20...	1045	1.00	540	7.9	27.5	2.60	5	1.6	6.0	77
20...	1047	10.0	540	7.9	27.5	--	--	--	5.9	76
20...	1049	21.0	548	7.8	27.5	--	4	1.6	5.8	75

DATE	OXYGEN DEMAND, BIOCHEMICAL, 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)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
MAR										
07...	1.0	260	74	280	52	75	23	24	.6	2.1
07...	--	--	--	--	--	--	--	--	--	--
07...	1.0	--	--	270	47	69	23	25	.7	2.2
AUG										
20...	1.5	80	K19	200	48	43	22	33	1	3.8
20...	--	--	--	--	--	--	--	--	--	--
20...	1.4	--	--	200	55	44	23	34	1	3.7

DATE	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	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)
MAR										
07...	230	35	42	.30	7.3	350	<2	<2	.78	.020
07...	--	--	--	--	--	--	--	--	.69	.010
07...	220	36	44	.30	7.8	340	5	<2	.49	.010
AUG										
20...	150	37	57	.30	5.8	290	6	3	--	<.010
20...	--	--	--	--	--	--	--	--	--	<.010
20...	150	41	59	.30	5.9	300	5	4	--	<.010

DATE	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)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
07...	.80	.050	--	<.20	--	.010	1.0	17	6
07...	.70	<.010	--	.20	.90	.010	--	80	10
07...	.50	.040	.26	.30	.80	.010	1.4	5	13
AUG									
20...	<.10	<.010	--	.20	--	<.010	2.7	4	5
20...	<.10	.020	.38	.40	--	<.010	--	10	<10
20...	<.10	.020	.18	.20	--	.010	2.4	7	7

TOWN LAKE AT AUSTIN, TX--Continued

301712097470701 TOWN LAKE EC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
MAR												
07...	1200	1.00	584	7.6	15.5	4.0	<1	.90	9.6	97	.1	K6
07...	1202	13.0	575	7.8	15.0	--	<1	1.1	10.1	100	.2	--
AUG												
20...	1130	1.00	539	7.9	27.0	2.30	4	2.0	5.8	74	1.5	39
20...	1132	10.0	539	7.8	27.0	--	--	--	5.9	75	--	--
20...	1134	16.0	539	7.8	27.0	--	20	1.8	5.8	74	1.5	--

DATE	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR												
07...	62	240	47	57	23	26	.8	2.8	190	37	47	.20
07...	--	230	42	55	23	28	.8	3.1	190	39	51	.30
AUG												
20...	80	200	46	42	22	32	1	3.8	150	38	59	.30
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	200	51	44	22	32	1	3.6	150	37	57	.30

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L)	SOLIDS, VOLATILE, SUSPENDED (MG/L)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
MAR												
07...	7.6	310	<2	<2	<.010	.40	.050	.15	.20	.60	.010	1.6
07...	7.0	320	3	<2	<.010	.30	.040	.16	.20	.50	.010	2.0
AUG												
20...	5.5	290	5	2	<.010	<.10	.010	.19	.20	--	<.010	2.8
20...	--	--	--	--	<.010	<.10	.020	.18	.20	--	<.010	--
20...	5.6	290	3	1	<.010	<.10	.030	.67	.70	--	<.010	2.8

DATE	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)
MAR												
07...	<1	73	<1	40	<1	4	<1	6	<.1	<1	<1	9
07...	<1	73	<1	30	<1	10	<1	6	<.1	<1	<1	8
AUG												
20...	1	74	<1	<10	<1	3	5	2	<.1	<1	<1	5
20...	--	--	--	--	--	<10	--	<10	--	--	--	--
20...	1	74	<1	<10	<1	<3	2	1	<.1	<1	<1	6

301712097470701 TOWN LAKE SITE EC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CYANAZINE TOTAL (UG/L)	METHOMYL TOTAL (UG/L)	PROMETONE TOTAL (UG/L)
MAR							
07...	1200	1.00	<.10	<.10	<.10	<2.0	<.1
07...	1202	13.0	<.10	<.10	<.10	<2.0	<.1
AUG							
20...	1130	1.00	<.10	<.10	<.10	<2.0	<.1
20...	1134	16.0	<.10	<.10	<.10	<2.0	<.1

DATE	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)
MAR						
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
07...	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG						
20...	<.1	<.10	<2.0	<2.0	<.10	<.1
20...	<.1	<.10	<2.0	<2.0	<.10	<.1

301601097454001 TOWN LAKE FC

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
07...	1145	1.00	644	7.6	19.0	15.0	162
AUG							
20...	1115	1.00	739	7.3	25.5	6.5	81

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 mi^2, approximately, of which 11,403 mi^2 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 ft^3/s (1,964,000 acre-ft/yr); 48 years (water years 1937-84) regulated, 1,965 ft^3/s (1,424,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 481,000 ft^3/s June 15, 1935 (gage height, 50 ft, present site and datum, from floodmark); minimum daily, 2.4 ft^3/s Feb. 28, 1984.

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, 4,700 ft^3/s Oct. 11 at 2300 hours (gage height, 7.62 ft); maximum gage height, 8.50 ft July 20 at 2330 hours; minimum daily discharge, 2.4 ft^3/s Feb. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	139	191	107	73.0	75	1500	1910	2540	2150	286	2060
2	1220	127	44	125	85.0	82	1450	1840	2720	2130	1390	2030
3	1240	137	232	96	81.0	76	1200	1770	2700	1980	398	2080
4	1280	152	79	104	78.0	123	1350	1780	2740	1790	1550	2030
5	1530	331	78	100	73.0	119	1410	1670	2980	1850	1200	1730
6	1570	774	90	95	74.0	79	1920	1810	2690	1850	1140	1700
7	1630	247	159	448	75.0	85	1470	1860	2580	1780	1130	1570
8	1460	155	20	234	80.0	86	1460	1770	2470	1640	1130	1450
9	1990	141	192	403	87.0	85	1220	1560	2300	1730	1140	1610
10	1530	94	230	110	74.0	95	1610	2320	2360	1680	1180	1360
11	1510	52	180	87	80.0	83	1660	2000	2300	1620	1510	1460
12	903	80	194	89	92.0	303	1320	1900	2510	1620	1450	1590
13	735	104	206	83	78.0	95	1480	2130	2470	1540	1390	1610
14	592	101	204	79	75.0	99	1950	2050	2430	1150	1510	1600
15	602	104	205	76	90.0	96	2020	2050	2480	1110	1190	1700
16	606	91	310	2300	74.0	89	1740	2510	2640	1210	1260	1690
17	1090	92	221	3670	75.0	89	2140	2510	2480	1140	1240	1700
18	614	105	210	1700	94.0	98	1960	2410	2520	981	1120	1610
19	604	102	207	71	76.0	118	1790	2280	2550	1020	1080	1600
20	718	85	220	73	104.0	85	2050	2150	2360	1060	1080	1430
21	600	801	228	68	83.0	315	2160	2090	2360	1340	1080	1310
22	141	133	1680	82	83.0	323	2060	1750	2330	1080	1410	1340
23	133	269	221	87	596.0	430	2150	1680	2300	1150	1520	1380
24	129	194	961	75	57.0	844	1950	1650	2270	1250	1520	1370
25	137	249	1450	75	5.4	856	1690	1650	2360	912	1700	1330
26	130	253	849	74	6.6	862	2380	2090	2550	1250	1700	1120
27	130	289	142	80	2.8	869	1990	2510	2380	1150	1690	1140
28	127	208	122	73	2.4	819	2040	2390	2630	1010	1790	863
29	134	178	96	76	31.0	987	2000	2320	2450	997	1940	739
30	131	184	306	81	---	1570	1890	2610	2000	989	1980	699
31	127	---	108	80	---	1490	---	2540	---	897	1950	---
TOTAL	24603	5971	9635	10901	2485.2	11425	53010	63560	74450	43056	41654	44901
MEAN	794	199	311	352	85.7	369	1767	2050	2482	1389	1344	1497
MAX	1990	801	1680	3670	596	1570	2380	2610	2980	2150	1980	2080
MIN	127	52	20	68	2.4	75	1200	1560	2000	897	286	699
AC-FT	48800	11840	19110	21620	4930	22660	105100	126100	147700	85400	82620	89060

CAL YR 1983 TOTAL 322767.0 MEAN 884 MAX 2590 MIN 20 AC-FT 640200
WTR YR 1984 TOTAL 385651.2 MEAN 1054 MAX 3670 MIN 2.4 AC-FT 764900

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, 795 micromhos Mar. 10, 1984; minimum daily, 243 micromhos Dec. 2, 1953.
WATER TEMPERATURES: Maximum daily, 33.0°C July 25, 1979; minimum daily, 5.0°C Jan. 3, 1984.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 795 micromhos Mar. 10; minimum daily, 477 micromhos Nov. 4.
WATER TEMPERATURES: Maximum daily, 27.0°C Aug. 25; minimum daily, 5.0°C Jan. 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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 CACO3)
OCT												
25...	1210	130	551	8.5	22.0	1.3	13.2	153	.2	200	82	210
JAN												
30...	1615	80	606	--	13.0	--	--	--	--	--	--	250
FEB												
21...	1000	85	606	7.9	16.5	.60	8.0	83	1.4	160	230	240
JUN												
26...	1115	2830	544	7.9	23.5	1.2	6.2	74	.4	60	56	200
AUG												
16...	1425	1360	502	7.7	29.5	1.9	3.8	50	1.2	290	20	190

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-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)
OCT											
25...	52	50	21	30	.9	3.1	160	38	55	.30	7.5
JAN											
30...	36	62	22	27	.8	2.5	210	36	47	.30	6.5
FEB											
21...	49	59	22	30	.9	2.9	190	40	52	.30	5.8
JUN											
26...	50	45	21	31	1	3.4	150	35	57	.30	5.4
AUG											
16...	45	43	21	32	1	3.8	150	35	58	.30	5.7

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-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
25...	307	300	<.10	.040	.70	.010	.040	.020	14	4.9	72
JAN											
30...	--	330	--	--	--	--	--	--	--	--	--
FEB											
21...	332	330	.31	.060	.40	.030	.010	.050	3	.69	60
JUN											
26...	290	290	<.10	<.010	.70	.010	<.010	.020	6	46	68
AUG											
16...	283	290	<.10	.020	.40	.010	<.010	.050	2	7.3	67

08158000 COLORADO RIVER AT AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)
OCT 25...	1210	1	66	<.5	<1	<1	<3	2	<3	1
FEB 21...	1000	8	74	.5	<1	<1	<3	4	13	2
JUN 26...	1115	<1	79	<2.0	<1	<1	<3	3	<3	1
AUG 16...	1425	<1	81	<1.0	<1	<1	<3	2	3	<1

DATE	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 25...	18	2	<.1	<10	8	<1	1	520	<6	<3
FEB 21...	17	11	<.1	<10	<1	<1	<1	810	<6	17
JUN 26...	20	5	<.1	<10	<1	<1	<1	460	<6	6
AUG 16...	14	2	<.1	<10	4	<1	<1	480	<6	8

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1983 TO SEPTEMBER 1984

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.	1983	24603	577	314	20800	53	3500	38	2510	220
NOV.	1983	5971	584	318	5120	54	865	38	618	220
DEC.	1983	9635	580	315	8200	53	1380	38	989	220
JAN.	1984	10901	583	317	9330	54	1580	38	1130	220
FEB.	1984	2485.2	622	336	2260	58	391	41	276	240
MAR.	1984	11425	580	315	9720	53	1640	38	1170	220
APR.	1984	53010	538	294	42000	48	6880	35	4990	210
MAY	1984	63560	536	292	50200	48	8190	35	5950	210
JUNE	1984	74450	535	292	58700	48	9570	35	6960	210
JULY	1984	43056	545	297	34600	49	5680	35	4110	210
AUG.	1984	41654	551	301	33800	50	5580	36	4030	210
SEPT	1984	44901	570	310	37600	52	6290	37	4510	220
TOTAL		385651.2	**	**	312000	**	51500	**	37300	**
WTD.AVG.		1054	550	300	**	49	**	36	**	210

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
EQUIVALENT MEAN

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	576	582	575	620	654	577	553	537	529	536	564	550
2	596	581	611	610	612	618	551	535	535	548	553	551
3	589	494	559	616	628	632	562	534	537	537	548	549
4	596	477	589	553	638	545	552	535	533	529	550	556
5	595	563	590	600	641	537	545	535	527	550	552	578
6	586	573	580	614	612	614	537	532	534	545	542	556
7	585	555	609	525	622	590	568	535	536	537	563	557
8	587	596	596	550	561	615	508	533	528	508	543	558
9	563	609	585	516	622	618	543	542	534	535	546	559
10	584	619	593	576	630	795	539	537	532	550	541	568
11	576	586	590	574	639	765	533	540	535	553	551	571
12	533	590	595	567	640	629	514	536	520	537	556	577
13	574	580	663	594	617	617	536	538	536	548	547	569
14	576	591	623	600	555	594	538	530	538	539	543	568
15	574	607	591	611	617	582	535	521	541	552	539	570
16	576	591	588	582	622	599	531	540	525	528	525	574
17	555	593	595	602	634	638	538	544	542	561	551	575
18	567	598	600	562	606	626	539	539	535	553	556	574
19	548	600	607	576	638	627	536	530	540	538	554	580
20	565	598	602	564	641	678	535	540	534	551	557	578
21	570	599	618	575	636	623	544	535	535	552	559	577
22	560	601	565	600	638	596	537	534	535	570	550	579
23	571	607	585	614	616	607	536	536	537	557	554	581
24	582	593	580	604	627	589	540	530	538	559	549	583
25	551	584	550	618	626	575	535	532	544	560	554	584
26	573	594	560	638	620	565	534	535	537	555	570	567
27	592	593	575	607	626	563	536	532	539	554	553	602
28	590	594	594	610	637	577	538	533	534	550	556	586
29	575	599	598	608	631	565	536	541	535	553	555	596
30	584	610	605	606	---	554	533	536	536	549	551	593
31	596	---	610	623	---	556	---	539	---	557	556	---
MEAN	576	585	593	591	624	609	539	535	535	547	551	572

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	21.0	13.5	---	13.5	13.5	18.5	20.0	21.0	23.0	22.0	25.0
2	22.0	22.0	15.0	---	11.5	15.5	18.0	20.0	20.5	23.0	23.0	24.5
3	22.0	22.0	15.0	5.0	12.0	15.0	19.0	18.5	25.5	---	24.0	24.5
4	21.5	22.0	15.0	11.0	15.0	15.0	16.5	20.0	26.0	23.0	23.0	23.5
5	21.5	20.5	15.0	15.0	15.5	15.5	15.0	21.5	20.5	22.0	24.0	25.0
6	23.0	21.0	---	14.0	11.0	15.0	16.5	21.5	20.5	23.5	24.5	24.0
7	22.0	21.0	14.5	---	13.0	15.0	16.5	24.0	21.5	23.5	24.0	23.5
8	22.0	21.0	15.0	---	13.0	15.5	16.5	20.5	22.0	23.5	24.0	25.0
9	23.0	20.5	15.0	13.5	20.0	15.0	16.5	18.0	22.0	24.0	24.0	24.0
10	23.0	17.0	15.0	11.0	15.5	17.0	18.0	21.5	22.0	24.0	23.5	24.0
11	21.5	19.0	15.0	10.5	15.5	16.5	18.0	22.0	22.0	24.0	24.0	26.0
12	20.5	19.0	15.0	11.5	15.5	17.0	18.0	22.0	21.5	24.5	25.0	25.0
13	19.5	19.0	17.0	11.0	13.5	18.0	18.0	22.0	21.5	23.0	25.0	25.5
14	20.0	19.0	15.0	---	16.5	19.5	19.5	22.0	22.0	24.5	24.5	25.5
15	20.5	19.0	14.5	---	17.0	18.0	15.0	21.0	21.5	24.0	24.0	26.0
16	20.0	17.0	13.5	9.5	15.5	19.0	18.5	20.5	22.0	24.5	---	26.0
17	20.5	19.0	---	8.0	15.5	18.0	18.5	21.0	23.5	24.0	24.0	24.5
18	23.0	15.0	---	6.5	15.5	18.0	18.5	20.0	23.0	25.5	---	23.5
19	23.0	15.5	10.5	7.0	15.5	18.0	18.5	21.0	23.0	24.0	24.0	24.0
20	23.0	15.5	10.0	6.5	15.5	18.0	20.0	20.5	22.0	---	24.5	23.5
21	21.0	---	10.0	---	15.5	18.0	18.5	20.5	23.0	26.0	24.5	22.0
22	20.5	21.0	16.5	---	15.0	18.0	19.0	20.0	25.0	24.0	24.0	20.5
23	---	19.5	17.0	10.0	14.5	18.0	18.5	21.0	21.5	23.0	25.0	24.0
24	20.5	15.5	---	8.0	14.5	18.0	19.0	21.0	21.5	24.5	25.5	23.5
25	20.0	15.5	---	11.5	14.5	17.0	19.5	21.0	23.5	23.0	27.0	23.5
26	---	15.5	---	11.0	14.5	18.0	---	21.0	23.5	23.0	25.0	23.0
27	20.5	15.5	6.0	10.5	14.5	19.0	19.5	22.0	23.0	25.5	25.0	22.0
28	20.5	20.0	8.0	---	13.0	19.0	21.0	22.0	23.5	25.5	24.5	23.0
29	20.5	14.5	7.0	---	13.0	---	22.0	---	23.5	24.0	25.5	20.5
30	---	14.5	6.5	14.0	---	18.5	18.0	21.0	23.5	23.5	25.5	19.0
31	20.5	---	---	12.0	---	18.5	---	20.5	---	23.0	25.0	---
MEAN	21.5	18.5	13.0	10.5	14.5	17.0	18.0	21.0	22.5	24.0	24.5	24.0

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 1983 TO SEPTEMBER 1984

DATE	TIME	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIOCHEMICAL, 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)
OCT												
25...	1110	639	7.4	21.5	5	1.7	6.0	69	1.0	K16	50	200
DEC												
14...	1305	640	7.9	17.0	<1	1.0	10.2	107	1.3	45	120	220
FEB												
21...	1145	660	8.3	14.5	<1	1.9	14.4	142	2.6	K2	K12	210
APR												
16...	1145	552	8.4	18.5	5	1.6	5.2	56	.8	22	K7	200
JUN												
27...	1020	555	7.4	26.5	5	1.2	7.8	98	.4	K17	22	200
AUG												
16...	1200	553	7.3	26.0	6	3.0	6.4	80	1.3	K5300	70	190

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT											
25...	55	49	20	44	1	4.9	150	48	66	.80	8.3
DEC											
14...	54	60	18	40	1	4.0	170	50	57	.70	5.5
FEB											
21...	51	53	19	49	2	5.7	160	60	65	1.1	4.0
APR											
16...	23	45	22	34	1	3.9	180	39	59	.30	5.7
JUN											
27...	59	45	21	33	1	3.9	140	37	58	.40	5.2
AUG											
16...	47	40	21	35	1	4.1	140	40	61	.40	5.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (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)
OCT											
25...	330	9	1	2.4	.910	3.3	.440	.66	1.1	1.80	4.5
DEC											
14...	340	2	<1	2.9	.110	3.0	.110	.59	.70	1.50	3.8
FEB											
21...	350	9	7	3.9	.310	4.2	.410	1.7	2.1	2.10	5.7
APR											
16...	320	5	<2	.17	.030	.20	.160	.44	.60	.240	2.6
JUN											
27...	290	5	3	.36	.040	.40	.070	.43	.50	.220	3.1
AUG											
16...	290	12	11	.47	.130	.60	.190	.41	.60	.340	3.5

DATE	TIME	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
OCT							
25...	1110	2	59	<1	<10	2	<3
FEB							
21...	1145	2	45	<1	<10	10	12
JUN							
27...	1020	<1	79	<1	<10	3	<4
AUG							
16...	1200	<1	80	<1	<10	2	4

08158650 COLORADO RIVER BELOW AUSTIN, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 25...	2	6	<.1	<1	<1	6
FEB 21...	<1	4	<.1	<1	<1	17
JUN 27...	<1	8	<.1	<1	<1	6
AUG 16...	<1	3	<.1	<1	<1	12

DATE	TIME	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
FEB 21...	1145	<.10	<.10	<.10	<2.0	.4	<.1	<.10	<2.0	<2.0	<.10	<.1
JUN 27...	1020	<.10	<.10	<.10	<2.0	<.1	<.1	<.10	<2.0	<2.0	<.10	<.1
AUG 16...	1200	<.10	<.10	<.10	<2.0	<.1	<.1	<.10	<2.0	<2.0	<.10	<.1

08154700 BULL CREEK AT LOOP 360 NEAR AUSTIN, TX

LOCATION.--Lat 30°22'19", long 97°47'04", Travis County, Hydrlogic 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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1976 to July 1978 (operated as a flood-hydrograph partial 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.--6 years, 8.30 ft ^{3}/s (5.05 in/yr), 6,010 acre-ft/yr.

EXTREMES FOR PERIOF OF RECORD.--Maximum discharge, 13,700 ft^3/s May 13, 1982 (gage height, 11.96 ft); no flow for several days in 1984.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 176 ft^3/s Aug. 12 at 1400 hours (gage height, 3.68 ft) no peak above base of 200 ft^3/s; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.8	2.7	2.1	2.4	2.2	2.7	.38	.16	.02	.25	.00
2	1.2	1.8	2.7	2.0	2.4	2.2	2.7	.38	.13	.02	.25	.06
3	1.1	1.8	15	2.0	2.4	2.2	2.6	.43	.13	.01	.25	.52
4	1.2	1.8	5.5	2.0	2.4	6.5	2.4	.42	.28	.00	.24	.07
5	1.2	9.9	4.8	2.0	2.4	13	2.1	.34	.78	.00	.21	.02
6	1.2	6.5	4.2	2.0	2.2	5.4	2.0	.34	6.1	.00	.17	.01
7	1.0	5.0	4.4	2.0	2.2	5.0	2.0	.34	1.5	.00	.13	.00
8	1.0	3.8	4.1	5.1	2.2	4.4	2.0	.29	.66	.00	.10	.01
9	20	3.3	4.1	14	2.7	3.8	1.8	.25	.46	.00	.08	.04
10	8.3	2.8	4.1	5.6	2.7	3.7	1.6	.25	.43	.00	.04	.06
11	4.5	2.4	3.8	4.8	2.7	3.7	1.6	.25	.37	.00	.04	.06
12	3.7	2.4	3.5	4.6	4.2	6.0	1.5	.25	3.1	.00	2.2	.06
13	3.0	2.4	3.4	4.1	3.4	4.6	1.3	.24	1.8	.00	.25	.06
14	2.7	2.4	3.0	4.1	3.4	4.4	1.2	.21	.74	.00	.18	.04
15	2.6	2.2	3.0	3.8	3.4	4.4	1.0	.21	.43	.00	.11	.04
16	2.2	2.2	2.8	3.7	2.8	4.2	.92	.24	.40	.00	.06	.03
17	2.2	2.2	2.7	3.7	2.2	3.7	.92	.26	.37	.00	.06	.02
18	4.6	2.2	2.4	3.5	2.6	3.7	.92	.86	.25	.01	.04	.02
19	4.6	2.2	2.4	3.1	2.5	4.0	.92	.73	.16	.00	.04	.02
20	6.8	2.0	2.4	3.0	2.4	3.4	.92	.63	.15	.00	.03	.02
21	4.6	2.0	2.4	3.0	2.4	3.0	.80	.49	.12	.00	.03	.05
22	3.3	2.1	2.4	3.0	2.3	2.9	.52	.38	.09	.00	.03	.07
23	2.8	3.8	2.4	3.0	2.2	4.2	.54	.29	.09	.00	.02	.04
24	2.5	2.9	2.4	3.0	2.2	3.9	.53	.29	.09	4.6	.02	.04
25	2.4	2.3	2.4	3.0	2.2	2.8	.49	.28	.08	1.2	.04	.04
26	2.0	2.6	2.4	3.0	4.6	2.7	.49	.24	.06	.43	.00	.04
27	2.0	5.2	2.3	3.0	3.1	2.7	.52	.23	.04	.33	.00	.04
28	2.0	3.8	2.3	2.3	2.5	2.5	.43	.16	.08	.28	.00	.04
29	2.0	3.1	2.4	2.4	2.2	2.2	.45	.12	.11	.27	.00	.04
30	1.9	3.2	2.2	2.4	---	2.5	.43	.14	.03	.29	.00	.04
31	1.8	---	2.0	2.4	---	2.7	---	.16	---	.26	.00	---
TOTAL	101.7	92.1	106.6	107.7	77.3	122.6	38.30	10.08	19.19	7.72	4.87	1.60
MEAN	3.28	3.07	3.44	3.47	2.67	3.95	1.28	.33	.64	.25	.16	.053
MAX	20	9.9	15	14	4.6	13	2.7	.86	6.1	4.6	2.2	.52
MIN	1.0	1.8	2.0	2.0	2.2	2.2	.43	.12	.03	.00	.00	.00
CFSM	.15	.14	.15	.16	.12	.18	.06	.02	.03	.01	.007	.002
IN.	.17	.15	.18	.18	.13	.20	.06	.02	.03	.01	.01	.00
AC-FT	202	183	211	214	153	243	76	20	38	15	9.7	3.2

CAL YR 1983	TOTAL	2540.23	MEAN 6.96	MAX 78	MIN .62	CFSM .31	IN 4.24	AC-FT 5040
WTR YR 1984	TOTAL	689.76	MEAN 1.88	MAX 20	MIN .00	CFSM .08	IN 1.15	AC-FT 1370

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 1983 TO SEPTEMBER 1984

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-BIDITY (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												
27...	0927	2.4	753	8.2	10.0	<1	4.6	9.6	86	1.2	180	520
APR												
16...	1105	.92	642	8.1	18.0	10	2.8	8.1	88	1.6	160	240
JUL												
24...	1345	16	836	8.1	25.0	70	60	9.5	116	3.9	K40000	18000
AUG												
21...	0830	.02	1050	7.8	23.5	22	3.4	6.0	72	2.6	K180	K180

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												
27...	290	90	78	23	50	1	2.0	200	89	72	.20	5.2
APR												
16...	260	75	68	23	34	.9	2.0	190	66	52	.20	5.9
JUL												
24...	250	100	70	19	82	2	4.9	150	140	93	.30	9.9
AUG												
21...	340	150	85	31	89	2	4.3	191	190	100	.20	11

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											
27...	440	8	4	--	<.010	<.10	.050	.15	.20	<.010	2.6
APR											
16...	370	<2	<2	--	<.010	<.10	.110	.19	.30	.020	1.9
JUL											
24...	510	97	39	.58	.020	.60	.060	.74	.80	.080	9.7
AUG											
21...	630	12	9	--	<.010	<.10	.020	.48	.50	.020	4.8

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)
JUL							
24...	1345	<1	63	<1	<10	2	88
AUG							
21...	0830	2	76	<1	<10	<1	8

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)
JUL						
24...	<1	13	<.1	<1	<1	7
AUG						
21...	4	33	<.1	<1	<1	4

DATE	TIME	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
JUL												
24...	1345	<.10	<.10	<.10	<2.0	<.1	<.1	<.10	<2.0	<2.0	<.10	<.1

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 mi^2.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Water-discharge records good above 10 ft^3/s and poor below. There are three recording rain gages in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 492 ft^3/s June 14, 1983 (gage height, 8.57 ft); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 137 ft^3/s Oct. 9 at 1815 hours (gage height, 7.14 ft), no peak above base of 1,000 ft^3/s; no flow May 3 to Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	10	4.6	5.7	4.5	2.0	.02	.00	.00	.00	.00
2	16	16	11	4.8	5.9	4.4	2.2	.01	.00	.00	.00	.00
3	15	16	12	4.9	5.9	4.4	2.3	.00	.00	.00	.00	.00
4	14	15	9.9	5.0	5.8	4.4	2.2	.00	.00	.00	.00	.00
5	13	26	8.7	5.1	5.7	5.1	2.1	.00	.00	.00	.00	.00
6	12	24	7.8	4.9	5.9	4.6	1.8	.00	.00	.00	.00	.00
7	11	34	7.3	4.9	5.7	4.6	1.5	.00	.00	.00	.00	.00
8	11	26	7.1	5.1	5.8	4.6	1.5	.00	.00	.00	.00	.00
9	79	22	7.0	8.1	5.9	4.7	1.4	.00	.00	.00	.00	.00
10	103	19	6.7	6.7	6.2	4.6	1.3	.00	.00	.00	.00	.00
11	63	18	6.1	6.0	6.1	4.7	1.2	.00	.00	.00	.00	.00
12	93	17	5.9	6.1	6.3	5.7	1.0	.00	.00	.00	.00	.00
13	77	17	5.8	6.1	6.2	5.2	.98	.00	.00	.00	.00	.00
14	50	16	5.7	5.8	6.0	4.9	.88	.00	.00	.00	.00	.00
15	44	15	5.5	5.7	6.0	4.8	.79	.00	.00	.00	.00	.00
16	40	14	5.4	5.5	5.8	4.8	.72	.00	.00	.00	.00	.00
17	37	14	5.5	5.6	5.6	4.6	.61	.00	.00	.00	.00	.00
18	35	13	5.5	5.5	5.8	4.3	.53	.00	.00	.00	.00	.00
19	34	13	5.2	5.5	5.5	4.7	.42	.00	.00	.00	.00	.00
20	46	12	5.2	5.4	5.5	4.3	.33	.00	.00	.00	.00	.00
21	45	12	5.2	5.4	5.4	3.8	.28	.00	.00	.00	.00	.00
22	37	12	5.2	5.5	5.3	3.3	.21	.00	.00	.00	.00	.00
23	32	13	5.2	5.8	5.2	3.8	.16	.00	.00	.00	.00	.00
24	29	12	4.9	5.9	5.2	4.6	.14	.00	.00	.00	.00	.00
25	27	11	4.8	6.0	4.9	4.9	.11	.00	.00	.00	.00	.00
26	24	11	4.9	6.0	5.1	3.3	.10	.00	.00	.00	.00	.00
27	23	12	4.9	6.0	4.9	2.4	.08	.00	.00	.00	.00	.00
28	21	12	4.8	5.9	4.9	2.3	.06	.00	.00	.00	.00	.00
29	20	11	4.6	6.0	4.6	2.1	.05	.00	.00	.00	.00	.00
30	20	11	4.6	5.9	---	2.9	.04	.00	.00	.00	.00	.00
31	19	---	4.6	5.7	---	2.2	---	.00	---	.00	.00	---
TOTAL	1107	482	197.0	175.4	162.8	129.5	26.99	.03	.00	.00	.00	.00
MEAN	35.7	16.1	6.35	5.66	5.61	4.18	.90	.001	.000	.000	.000	.000
MAX	103	34	12	8.1	6.3	5.7	2.3	.02	.00	.00	.00	.00
MIN	11	11	4.6	4.6	4.6	2.1	.04	.00	.00	.00	.00	.00
CFSM	.33	.15	.06	.05	.05	.04	.008	.000	.000	.000	.000	.000
IN.	.38	.16	.07	.06	.06	.04	.01	.00	.00	.00	.00	.00
AC-FT	2200	956	391	348	323	257	54	.06	.00	.00	.00	.00

CAL YR 1983 TOTAL 11048.08 MEAN 30.3 MAX 235 MIN .17 CFSM .28 IN 3.77 AC-FT 21910
WTR YR 1984 TOTAL 2280.72 MEAN 6.23 MAX 103 MIN .00 CFSM .06 IN .78 AC-FT 4520

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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												
27...	1158	5.0	438	8.2	14.0	<1	2.6	9.9	97	1.1	K12	21
APR												
16...	1145	1.7	427	8.0	19.0	10	4.0	11.6	127	2.1	57	K4

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)
FEB											
27...	210	26	51	19	10	.3	.80	180	30	19	.20
APR											
16...	200	38	48	19	11	.4	1.3	160	28	18	.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)
FEB											
27...	5.6	240	12	<2	<.010	<.10	<.010	--	.20	.010	1.9
APR											
16...	7.4	230	6	<2	<.010	<.10	.080	.22	.30	.010	2.1

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.--7 years, 29.4 ft³/s (3.44 in/yr), 21,300 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, 83 ft³/s Oct. 9 at 1945 hours (gage height, 3.74 ft), no peak above base of 1,000 ft³/s; no flow most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	2.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	8.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.93	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	49	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	46	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	36	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	8.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	3.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	6.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	3.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.52	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	361.64	26.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	11.7	.87	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	49	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CFSM	.10	.008	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
IN.	.12	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	717	52	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1983 TOTAL 2972.37 MEAN 8.14 MAX 159 MIN .00 CFSM .07 IN .95 AC-FT 5900
WTR YR 1984 TOTAL 387.67 MEAN 1.06 MAX 49 MIN .00 CFSM .009 IN .12 AC-FT 769

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. Only 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.--7 years (water years 1918, 1979-84), 51.6 ft^3/s (37,380 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD (DISCHARGE MEASUREMENTS ONLY).--Maximum measured discharge, 166 ft^3/s May 10, 1941; minimum measured, 9.6 ft /s Mar. 29, 1956.

EXTREMES FOR PERIOD OF RECORD (1917-18 AND SINCE MARCH 1978).--Maximum daily spring discharge, 108 ft^3/s June 9-11 16, 20, 21, 1979; minimum daily spring discharge, 12 ft^3/s Feb. 25, 1918.

EXTREMES FOR CURRENT YEAR.--Maximum daily spring discharge, 67 ft^3/s Oct. 12, 13, 20-24; minimum daily, 24 ft^3/s Sept. 14-23, 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	61	53	44	41	34	33	30	27	27	26	25
2	63	61	53	43	41	34	33	30	27	27	26	25
3	62	62	54	43	40	34	33	30	28	27	26	25
4	62	63	55	43	40	34	32	30	28	27	25	26
5	61	61	54	43	40	34	32	30	28	27	25	26
6	62	61	54	43	39	34	33	30	29	26	25	26
7	60	61	53	43	39	34	33	30	29	26	26	25
8	59	62	53	43	39	34	33	29	28	26	26	25
9	62	63	52	47	38	34	32	29	28	26	26	25
10	64	62	52	46	38	34	32	29	28	26	25	25
11	66	61	51	46	38	34	32	29	28	26	25	25
12	67	61	51	45	37	34	32	29	28	26	25	25
13	67	61	51	45	37	34	32	29	28	26	25	25
14	66	60	50	44	36	34	32	28	28	26	25	24
15	66	60	50	44	36	34	31	27	27	26	27	24
16	66	59	50	44	36	34	31	28	27	26	26	24
17	66	59	49	44	35	34	31	28	27	26	26	24
18	66	59	49	43	35	34	31	29	27	26	26	24
19	65	59	48	43	33	34	31	29	27	26	26	24
20	67	59	48	43	34	34	31	29	27	26	26	24
21	67	58	48	43	34	34	31	29	27	26	26	24
22	67	58	47	43	33	34	31	28	27	26	25	24
23	67	57	47	43	33	34	31	27	27	26	25	24
24	67	56	47	43	33	34	31	27	27	26	25	25
25	66	55	46	43	33	34	31	27	27	26	25	25
26	65	55	46	43	34	34	31	28	27	26	25	25
27	64	55	46	42	34	34	30	28	27	26	25	25
28	63	54	45	42	34	34	30	28	27	26	25	24
29	62	54	45	42	34	34	30	28	27	26	25	24
30	62	54	44	42	---	33	30	28	27	26	25	24
31	61	---	44	41	---	33	---	28	---	26	25	---
TOTAL	1991	1771	1535	1346	1054	1052	946	888	824	811	789	740
MEAN	64.2	59.0	49.5	43.4	36.3	33.9	31.5	28.6	27.5	26.2	25.5	24.7
MAX	67	63	55	47	41	34	33	30	29	27	27	26
MIN	59	54	44	41	33	33	30	27	27	26	25	24
AC-FT	3950	3510	3040	2670	2090	2090	1880	1760	1630	1610	1560	1470

CAL YR 1983 TOTAL 23589 MEAN 64.6 MAX 87 MIN 38 AC-FT 46790
WTR YR 1984 TOTAL 13747 MEAN 37.6 MAX 67 MIN 24 AC-FT 27270

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 1983 TO SEPTEMBER 1984

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 27...	1040	34	625	7.2	21.5	<1	.60	5.1	59	.2	110	130
APR 16...	1045	33	670	6.8	20.5	3	.60	5.1	58	.9	76	K8
AUG 22...	1130	25	730	6.8	22.0	3	.60	4.0	46	1.8	37	49

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)
FEB 27...	300	42	83	23	20	.5	1.3	260	30	34	.30
APR 16...	300	52	81	24	25	.6	1.4	250	35	44	.30
AUG 22...	300	47	78	26	33	.9	1.8	255	45	54	.40

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, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 27...	11	360	<2	<2	<.010	1.4	.060	.24	.30	<.010	.2
APR 16...	11	370	<2	<2	<.010	1.5	.080	.12	.20	.050	.3
AUG 22...	11	400	6	<1	<.010	1.5	.010	.49	.50	.010	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)
AUG 22...	1130	<1	60	<1	<10	<1	<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)
AUG 22...	<1	3	.1	<1	<1	<3

08155550 WEST BOULDIN CREEK AT RIVERSIDE DRIVE, AUSTIN, TX
(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 mi^2.

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. No Storms were analyzed for this station for the 1984 water year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 152 ft^3/s Oct. 11 (gage height, 2.50 ft).

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 the State Capitol Building in Austin.

DRAINAGE AREA.--6.52 mi^2.

PERIOD OF RECORD.--March 1975 to September 1984 (discontinued).

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 the channel above gage during 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 temperture were made during the year.

AVERAGE DISCHARGE.--9 years, 3.07 ft^3/s (6.39 in/yr), 2,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft^3/s May 24, 1981 (gage height, 18.00 ft), from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement of 14,600 ft^3/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.--Maximum discharge, 497 ft^3/s July 24 at 0800 hours (gage height, 5.06 ft), no peak above base of 750 ft^3/s; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.12	.24	.20	.35	1.7	.17	.10	.12	.02	.00	4.1
2	.08	.12	.28	.17	.43	.80	.15	.07	.12	.18	.00	15
3	.10	.75	36	.17	.43	.48	.03	.05	.08	.27	.00	36
4	.10	6.5	.18	.20	.43	4.6	.05	.05	.21	.07	.00	12
5	.10	26	.12	.19	.43	1.0	.07	.04	8.5	.03	.00	.14
6	.08	.42	.10	.07	.43	.54	.07	.05	11	.00	.00	.00
7	.08	.23	.10	.05	.43	.54	.12	.05	.20	.00	.00	.30
8	.10	.20	.04	24	.49	.54	.05	.10	.16	.00	.00	.04
9	65	.23	.06	24	.86	.54	.04	.07	.13	.03	.00	.01
10	.53	.24	.05	1.1	.54	.54	.02	.08	.13	.00	.00	.10
11	.21	.24	.03	.68	.48	.57	.04	.05	.13	.16	.00	.02
12	.40	.24	.12	.54	6.9	11	.04	.06	20	.05	34	.00
13	.23	.24	.00	.54	.58	.23	.06	.07	.83	.05	10	.00
14	.23	.28	.04	.54	.48	.18	.07	.06	.06	.04	2.2	.00
15	.24	.20	.06	.61	.48	.25	.21	.05	.04	.02	.19	.00
16	.24	.20	.09	.68	.51	.20	.08	.52	.03	.02	.19	.00
17	.24	.20	.02	.61	.54	.17	.08	.18	.03	.08	.12	.00
18	14	.20	.00	.61	.88	3.6	.08	6.7	.04	.08	.16	.00
19	.59	.63	.00	.68	.45	1.7	.08	2.6	.04	.22	.08	.00
20	25	.12	.04	.68	1.4	.20	.08	.25	.08	.08	.06	.00
21	.70	.10	.18	.68	.67	.20	.08	.17	.06	.07	.23	.00
22	.24	1.8	.15	2.9	.60	.20	.08	.17	.12	.07	.07	.00
23	.24	14	.18	1.7	.54	5.7	.10	.17	.03	.11	.03	.00
24	.24	.27	.11	.61	.54	.02	.10	.16	.00	41	.05	6.6
25	.24	.20	.15	.54	.54	.01	.10	.15	.08	.47	.04	5.3
26	.24	.66	.18	.54	7.3	.00	.08	.15	.07	.00	.05	.00
27	.20	13	.22	.54	.94	.00	.07	.14	.04	.00	.11	.00
28	.19	.43	.15	.54	1.3	.03	.08	.24	.06	.00	.13	.00
29	.12	.30	.10	.54	1.6	.09	.09	.14	.08	.00	.05	.00
30	.12	.24	.12	.48	---	.12	.04	.13	.05	.00	.00	.00
31	.12	---	.16	.48	---	.15	---	.14	---	.00	21	---
TOTAL	110.28	68.36	39.27	65.87	31.55	35.90	2.41	12.96	42.52	43.12	68.76	79.61
MEAN	3.56	2.28	1.27	2.12	1.09	1.16	.080	.42	1.42	1.39	2.22	2.65
MAX	65	26	36	24	7.3	11	.21	6.7	20	41	34	36
MIN	.08	.10	.00	.05	.35	.00	.02	.04	.00	.00	.00	.00
CFSM	.55	.35	.20	.33	.17	.18	.01	.06	.22	.21	.34	.41
IN.	.63	.39	.22	.38	.18	.20	.01	.07	.24	.25	.39	.45
AC-FT	219	136	78	131	63	71	4.8	26	84	86	136	158

CAL YR 1983 TOTAL 1408.04 MEAN 3.86 MAX 104 MIN .00 CFSM .59 IN 8.03 AC-FT 2790
WTR YR 1984 TOTAL 600.61 MEAN 1.64 MAX 65 MIN .00 CFSM .25 IN 3.43 AC-FT 1190

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 mi^2.

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, 1984." Two recording rain gages are located in the watershed above this site.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft^3/s May 24, 1981 (gage height, 23.22 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 893 ft^3/s Oct. 9 at 0915 hours (gage height, 5.60 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 1983 TO SEPTEMBER 1984

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)
NOV												
05...	1555	492	180	7.6	--	130	900	--	--	15	400000	220000
JAN												
08...	2200	488	315	--	--	--	--	--	--	16	84000	270000
08...	2215	485	390	--	--	130	250	--	--	--	86000	160000
08...	2230	480	436	--	--	--	--	--	--	11	--	--
08...	2245	392	376	--	--	400	380	--	--	--	38000	150000
08...	2300	480	347	7.5	--	--	--	--	--	--	K14000	130000
FEB												
28...	1047	.14	660	8.4	7.5	<1	2.3	12.0	101	1.0	8000	7200
MAR												
12...	0145	390	225	--	--	--	--	--	--	23	44000	240000
12...	0215	140	278	7.9	--	--	--	--	--	34	52000	290000
12...	0245	390	224	--	--	--	--	--	--	20	K120000	160000
JUN												
12...	2030	396	278	--	--	--	--	--	--	11	310000	88000
12...	2045	604	266	--	--	200	420	--	--	--	280000	120000
12...	2100	643	271	--	--	--	--	--	--	--	--	--
12...	2115	678	248	7.5	--	--	--	--	--	13	K150000	81000
12...	2130	584	215	--	--	--	--	--	--	8.6	K200000	74000
12...	2145	468	199	--	--	200	440	--	--	--	--	--
JUL												
24...	0945	385	295	--	--	--	--	--	--	15	K1100000	80000
24...	1000	805	326	--	--	800	800	--	--	--	K680000	220000
24...	1015	763	360	--	--	--	--	--	--	--	--	--
24...	1030	702	313	7.6	--	--	--	--	--	--	--	--
24...	1045	604	261	--	--	1300	800	--	--	14	K720000	130000
24...	1100	539	222	--	--	--	--	--	--	12	--	--
AUG												
12...	1615	396	473	--	--	--	--	--	--	--	2900000	160000
12...	1630	732	324	--	--	--	--	--	--	--	--	--
12...	1645	632	276	--	--	--	--	--	--	--	--	--
12...	1700	515	272	--	--	--	--	--	--	--	--	86000
12...	1715	431	285	--	--	--	--	--	--	--	--	--
12...	1730	358	296	--	--	--	--	--	--	--	2800000	54000

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY FIELD (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
NOV												
05...	81	22	29	2.2	4.6	.2	3.0	60	26	5.4	.20	2.8
JAN												
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	150	61	52	3.8	12	.5	3.9	85	58	20	.40	3.4
FEB												
28...	270	110	96	7.3	30	.8	3.8	160	97	57	.30	3.2
MAR												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	110	31	41	2.5	8.2	.4	3.0	82	35	10	.20	3.0
12...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	140	72	50	3.5	10	.4	3.7	68	34	13	.30	6.3
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	130	60	45	3.4	11	.4	4.4	67	57	17	.40	3.4
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (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											
05...	110	922	180	.06	.140	.20	.060	5.9	6.0	.080	28
JAN											
08...	--	--	--	.64	.060	.70	.030	2.5	2.5	1.30	34
08...	--	1040	564	.56	.040	.60	.040	5.0	5.0	3.10	68
08...	--	--	--	.45	.050	.50	.030	5.0	5.0	2.80	62
08...	--	660	32	.45	.050	.50	.030	4.0	4.0	2.10	52
08...	200	--	--	.55	.050	.60	.010	3.5	3.5	1.80	46
FEB											
28...	390	2	<2	--	<.010	.10	.140	.16	.30	.010	3.8
MAR											
12...	--	--	--	.36	.140	.50	.160	4.3	4.5	.900	40
12...	150	--	--	.24	.060	.30	.050	7.0	7.0	2.90	57
12...	--	--	--	.31	.090	.40	.080	3.9	4.0	.900	37
JUN											
12...	--	--	--	.43	.070	.50	.020	3.5	3.5	1.10	32
12...	--	2140	72	.25	.050	.30	.020	6.0	6.0	1.50	42
12...	--	--	--	--	--	--	--	--	--	--	--
12...	160	--	--	.20	.200	.40	.100	5.4	5.5	1.80	39
12...	--	--	--	.34	.060	.40	.010	4.5	4.5	1.20	29
12...	--	1910	89	.26	.040	.30	<.010	--	5.0	1.00	--
JUL											
24...	--	--	--	1.1	.080	1.2	.280	5.2	5.5	1.00	48
24...	--	3130	95	.42	.080	.50	.050	13	13	2.50	66
24...	--	--	--	--	--	--	--	--	--	--	--
24...	180	--	--	.78	.120	.90	.350	9.2	9.5	4.00	44
24...	--	2880	142	.78	.020	.80	.010	--	--	3.10	--
24...	--	--	--	.76	.040	.80	.170	4.3	4.5	4.60	63
AUG											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	.19	.210	.40	.020	4.9	4.9	1.90	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	.44	.060	.50	.700	5.6	6.3	2.10	--
12...	--	--	--	--	--	--	--	--	--	--	--

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV							
05...	1555	1	19	<1	<10	3	46
MAR							
12...	0145	2	<100	<1	20	14	100
12...	0245	3	<100	<1	20	5	100
JUN							
12...	2045	2	<100	<1	<10	5	180
JUL							
24...	0945	2	<100	<1	<10	6	180

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						
05...	<1	11	<.1	1	<1	4
MAR						
12...	2	<10	<.1	<1	<1	150
12...	1	<10	<.1	<1	<1	10
JUN						
12...	10	50	<.1	<1	<1	20
JUL						
24...	12	30	<.1	<1	<1	20

DATE	TIME	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
JUN												
12...	2100	<.10	<.10	<.10	--	.9	<.1	<.10	--	--	<.10	<.1
JUL												
24...	1015	<.10	<.10	<.10	--	.2	<.1	<.10	--	--	.80	<.1
AUG												
12...	1615	--	--	--	<2.0	--	--	--	<2.0	<2.0	--	--
12...	1630	<.10	<.10	<.10	--	.3	<.1	<.10	--	--	<.10	<.1
12...	1645	--	--	--	<2.0	--	--	--	<2.0	<2.0	--	--
12...	1700	<.10	<.10	<.10	--	.2	<.1	<.10	--	--	<.10	<.1
12...	1715	--	--	--	<2.0	--	--	--	<2.0	<2.0	--	--
12...	1730	<.10	<.10	<.10	--	.2	<.1	<.10	--	--	<.10	<.1

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 mi^2.

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.--7 years (water years 1978-84), 5.94 ft^3/s (6.16 in/yr) 4,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft^3/s May 23, 1975 (gage height, 17.03 ft, from floodmark), from rating curve extended above 500 ft^3/s on basis of slope-area measurement of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 872 ft^3/s Mar. 12 at 0230 hours (gage height, 9.00 ft); no peak above base of 1,500 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.04	.48	.31	.47	.28	.09	.00	.00	.01	.00	.00
2	.00	.04	.47	.31	.47	.28	.09	.00	.00	.01	.00	.00
3	.00	.10	20	.34	.47	.28	.09	.00	.00	.02	.00	4.4
4	.00	5.2	.38	.31	.47	2.6	.09	.00	.00	.01	.00	.41
5	.00	16	.30	.31	.47	3.8	.09	.00	17	.01	.00	.02
6	.00	.64	.26	.31	.47	.23	.09	.00	2.6	.00	.00	.00
7	.00	.28	.25	.31	.47	.15	.09	.00	.13	.00	.00	.00
8	.00	.21	.25	39	.51	.14	.09	.00	.09	.00	.00	.00
9	74	.19	.25	47	.60	.12	.09	.00	.07	.00	.00	.00
10	2.4	.17	.25	1.2	.60	.11	.09	.00	.06	.00	.00	.00
11	3.4	.17	.25	.91	.55	.11	.09	.00	.03	.17	.00	.00
12	5.1	.17	.25	.86	.64	66	.09	.00	11	.15	.00	.00
13	.27	.17	.25	.85	.61	.49	.09	.00	.63	.04	.00	.00
14	.21	.27	.25	.80	.51	.39	.09	.00	.12	.04	.00	.00
15	.16	.19	.25	.80	.51	.37	.09	.00	.05	.05	.04	.00
16	.11	.17	.23	.80	.51	.34	.09	.05	.04	.03	.01	.00
17	.08	.17	.25	.80	.51	.34	.09	.10	.04	.00	.00	.00
18	.74	.17	.28	.77	.51	.31	.09	1.7	.04	.49	.00	.00
19	.31	.16	.28	.75	.58	1.7	.09	10	.06	.10	.00	.00
20	3.9	.14	.28	.75	2.0	.15	.09	.08	.18	.05	.00	.00
21	.27	.15	.28	.89	.81	.14	.08	.04	.04	.00	.00	.00
22	.07	.14	.28	1.5	.37	.14	.00	.02	.02	.00	.00	.00
23	.05	7.9	.23	2.7	.34	6.5	.00	.00	.03	.00	.00	.00
24	.05	.22	.26	.83	.34	.18	.00	.00	.05	12	.00	.00
25	.05	.18	.28	.56	.34	.11	.00	.00	.02	.18	.00	.00
26	.04	24	.28	.51	13	.11	.01	.00	.00	.10	.00	.00
27	.04	8.8	.28	.51	.44	.10	.00	.00	.05	.06	.00	.00
28	.04	.72	.28	.48	.29	.08	.00	.00	.05	.02	.00	.00
29	.04	.56	.28	.47	.28	.08	.00	.00	.00	.00	.00	.00
30	.04	.54	.31	.47	---	.09	.00	.00	.03	.00	.00	.00
31	.04	---	.31	.47	---	.09	---	.00	---	.01	.00	---
TOTAL	91.50	67.86	28.53	106.88	28.14	85.81	1.89	11.99	32.43	13.55	.05	4.83
MEAN	2.95	2.26	.92	3.45	.97	2.77	.063	.39	1.08	.44	.002	.16
MAX	74	24	20	47	13	66	.09	10	17	12	.04	4.4
MIN	.00	.04	.23	.31	.28	.08	.00	.00	.00	.00	.00	.00
CFSM	.23	.17	.07	.26	.07	.21	.005	.03	.08	.03	.000	.01
IN.	.26	.19	.08	.30	.08	.24	.01	.03	.09	.04	.00	.01
AC-FT	181	135	57	212	56	170	3.7	24	64	27	.10	9.6

CAL YR 1983	TOTAL 2159.37	MEAN 5.92	MAX 179	MIN .00	CFSM .45	IN 6.13	AC-FT 4280
WTR YR 1984	TOTAL 473.46	MEAN 1.29	MAX 74	MIN .00	CFSM .10	IN 1.34	AC-FT 939

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 1983 TO SEPTEMBER 1984

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)
JAN												
08...	2114	315	340	--	--	--	--	--	--	--	68000	290000
08...	2131	396	355	--	--	--	--	--	--	48	--	--
08...	2146	348	320	--	--	100	320	--	--	40	98000	320000
08...	2201	290	273	--	--	--	--	--	--	--	55000	270000
08...	2216	236	184	--	--	100	180	--	--	11	--	--
08...	2230	210	192	7.7	--	--	--	--	--	11	47000	270000
FEB												
28...	0840	.44	543	8.1	7.5	<1	1.5	8.2	69	.7	1200	960
MAR												
12...	0245	527	210	--	--	480	--	--	--	28	62000	130000
12...	0300	891	213	7.8	--	--	--	--	--	43	72000	290000
12...	0400	389	--	--	--	100	950	--	--	33	K32000	320000
APR												
16...	1250	.09	657	9.0	22.0	15	2.7	11.1	128	2.6	110	74
JUN												
06...	1000	12	207	7.7	22.5	75	240	7.3	86	6.1	K140000	13000

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)
JAN												
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
08...	84	13	30	2.1	6.4	.3	3.5	71	17	7.2	.30	4.4
FEB												
28...	250	46	84	8.8	25	.7	2.7	200	46	31	.30	11
MAR												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	78	3	27	2.5	10	.5	3.1	75	17	9.8	.20	9.5
12...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
16...	240	42	72	15	47	1	4.4	200	49	63	.50	6.9
JUN												
06...	84	12	29	2.8	8.2	.4	3.1	72	18	11	.20	5.6

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)
JAN											
08...	--	--	--	.43	.070	.50	.480	4.0	4.5	2.60	59
08...	--	--	--	.53	.070	.60	.290	4.2	4.5	2.40	60
08...	--	5680	366	.63	.070	.70	.100	3.4	3.5	2.30	49
08...	--	--	--	.62	.080	.70	.110	2.4	2.5	1.70	43
08...	--	2450	254	.56	.040	.60	.130	1.4	1.5	1.30	--
08...	110	--	--	--	--	--	--	--	--	--	--
FEB											
28...	330	2	<2	--	<.010	.50	.110	.09	.20	.040	2.6
MAR											
12...	--	--	--	.20	.200	.40	.370	4.6	5.0	3.10	54
12...	120	--	--	.05	.350	.40	.310	11	11	2.90	100
12...	--	4940	454	.00	.410	.40	.450	8.1	8.5	3.00	69
APR											
16...	380	5	<2	.83	.070	.90	.070	.53	.60	.270	4.6
JUN											
06...	120	443	77	.35	.050	.40	.120	1.4	1.5	.350	18

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JAN							
08...	2114	3	55	<1	<10	3	54
08...	2131	3	58	<1	<10	2	55
08...	2201	3	48	<1	<10	3	35
MAR							
12...	0245	2	<100	<1	10	6	120
JUN							
06...	1000	2	33	<1	<10	3	69

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
JAN						
08...	<1	110	<.1	<1	<1	16
08...	<1	110	<.1	<1	<1	14
08...	<1	8	<.1	<1	<1	13
MAR						
12...	2	<10	<.1	<1	<1	10
JUN						
06...	5	4	<.1	<1	<1	5

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)
JUN								
06...	1000	<.10	<.10	.30	<.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)
JUN							
06...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

08158100 WALNUT CREEK AT FARM ROAD 1325 NEAR AUSTIN, TX
(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 mi^2.

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 1984 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s May 24, 1981 (gage height, 19.46 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 281 ft^3/s, July 24 (gage height, 5.39 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 mi^2.

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, 1984." Two recording rain gages are located in the watershed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft^3/s May 25, 1981 (gage height, 26.20 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,530 ft^3/s July 24 at 0830 hours (gage height, 9.71 ft).

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
NOV 05...	1635	376	289	7.3	20.5	100	2200	7.8	88	16	66000	150000
FEB 27...	1052	4.5	649	8.3	9.5	<1	2.0	11.8	105	1.2	620	620
APR 16...	1242	.08	602	8.5	18.5	10	2.3	15.1	165	1.3	190	540
JUN 06...	0840	99	279	7.4	21.5	100	280	6.8	78	16	40000	130000
JUL 24...	1030	553	153	8.0	21.0	850	1100	9.8	110	7.4	110000	76000

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)
NOV 05...	110	14	41	2.8	14	.6	3.8	100	19	15	.30	6.0
FEB 27...	270	44	100	5.9	30	.8	2.6	230	51	40	.40	6.1
APR 16...	230	54	84	5.8	35	1	2.0	180	49	51	.50	1.8
JUN 06...	120	23	45	2.5	9.0	.4	3.6	100	22	15	.30	7.3
JUL 24...	73	16	27	1.3	3.6	.2	3.1	57	21	4.8	.30	5.3

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)
NOV 05...	160	2090	656	.35	.050	.40	.260	4.7	5.0	.660	50
FEB 27...	370	12	6	1.2	.030	1.2	<.010	--	.40	.300	2.9
APR 16...	340	5	<2	.39	.010	.40	.100	.40	.50	.020	2.2
JUN 06...	160	1260	216	.54	.060	.60	.180	1.3	1.5	.400	45
JUL 24...	100	2980	129	.97	.030	1.0	.120	5.4	5.5	2.40	48

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV 05...	1635	3	29	<1	<10	2	31
JUN 06...	0840	1	42	<1	<10	1	230
JUL 24...	1030	1	17	<1	<10	2	150

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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						
05...	<1	1	<.1	<1	<1	4
JUN						
06...	7	32	<.1	<1	<1	8
JUL						
24...	4	12	<.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)
JUN								
06...	0840	<.10	<.10	<.10	<.10	<.10	<2.0	<.1
JUL								
24...	1030	<.10	--	.20	<.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)
JUN							
06...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
JUL							
24...	<.1	<.10	<2.0	<2.0	<.10	--	<.1

08158300 FERGUSON BRANCH AT SPRINGDALE ROAD, AUSTIN, TX
(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 mi^2.

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 ft^3/s May 21, 1979 (gage height, 8.60 ft).

EXTREMES FOR CURRENT YEAR--Maximum discharge occurred during the period Oct. 1 to Mar. 13, 1984. Gage height and discharge were not determined.

08158380 LITTLE WALNUT CREEK AT GEORGIAN DRIVE, AUSTIN, TX
(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 mi^2.

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 721 ft^3/s July 24 (gage height, 6.91 ft).

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 mi^2.

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.--18 years, 23.6 ft^3/s (6.25 in/yr), 17,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft^3/s May 25, 1981 (gage height, 27.24 ft); no flow at times in 1967, 1971, and 1982-84.
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.--Maximum discharge, 916 ft^3/s July 24 at 1130 hours (gage height, 9.56 ft); no peak above base of 1,500 ft^3/s; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	4.1	5.6	5.4	11	.81	6.8	2.7	1.1	1.2	1.0	8.7
2	3.2	4.1	5.4	5.4	11	.60	6.7	3.1	1.4	1.2	.15	6.2
3	3.2	4.3	78	5.1	11	.81	6.7	3.0	1.4	.81	.24	46
4	3.2	45	13	5.1	10	1.7	6.1	2.5	2.3	.76	.32	6.6
5	3.1	83	11	5.1	8.9	24	6.1	2.3	12	.97	.32	2.5
6	2.9	19	10	5.1	8.3	3.2	6.1	2.3	22	.81	.32	2.0
7	2.8	9.8	9.1	5.1	7.8	1.1	5.8	2.2	5.1	1.1	.41	2.0
8	2.7	7.6	8.3	35	7.5	.81	7.8	1.8	2.4	1.3	.14	1.7
9	143	6.4	8.0	95	9.1	.60	5.5	1.4	2.0	.67	.35	1.1
10	14	5.0	8.2	17	7.6	.60	5.3	1.4	2.0	.04	.23	1.1
11	8.0	4.4	6.8	14	8.6	.81	4.4	1.4	2.5	4.1	.38	1.7
12	9.9	4.3	6.8	14	13	21	4.3	1.4	3.0	1.9	6.5	1.7
13	5.7	4.1	6.5	14	10	2.3	4.1	1.1	4.9	.23	3.3	.81
14	5.3	4.1	5.7	15	8.0	.81	3.9	1.1	3.1	.05	1.3	.81
15	4.9	3.7	5.7	16	8.7	2.3	3.5	1.1	2.7	.04	1.7	.81
16	5.1	3.5	7.3	17	9.0	1.7	3.2	3.5	2.7	.00	1.6	.32
17	4.7	3.4	6.4	17	11	1.7	3.2	2.3	2.6	.00	.51	.15
18	8.2	3.5	6.1	18	8.7	1.7	3.2	14	2.4	.00	.61	.15
19	9.1	6.2	5.8	22	4.4	16	3.2	16	5.4	.03	.17	.15
20	24	5.1	5.7	24	10	6.8	3.2	5.7	4.3	.02	.47	.15
21	15	5.0	5.7	23	6.6	7.6	3.2	3.8	3.4	.02	.19	2.0
22	8.0	4.4	5.6	24	6.4	6.8	3.2	3.8	2.9	.00	.07	1.1
23	6.2	22	5.6	26	8.0	30	2.9	3.5	2.7	.00	.07	.81
24	5.3	6.6	5.8	21	5.7	12	3.1	3.5	2.4	132	.07	.81
25	5.1	4.7	5.8	20	.81	8.5	3.6	3.5	2.9	6.5	.05	.81
26	5.1	11	5.7	20	21	8.0	3.9	3.0	2.7	1.9	.05	.81
27	4.5	24	5.4	19	2.7	7.8	2.9	2.3	3.1	.86	.07	.81
28	4.7	9.9	4.4	19	.81	6.7	2.7	8.7	1.8	1.2	.06	.81
29	4.4	7.8	5.0	15	.81	7.0	2.7	2.5	1.8	.30	.16	1.1
30	4.3	6.9	5.2	12	---	6.6	2.5	2.5	1.5	.15	.57	1.6
31	4.1	---	5.4	12	---	6.8	---	2.7	---	.94	14	---
TOTAL	332.7	332.9	279.0	565.3	236.43	197.15	129.8	110.1	110.5	159.10	35.38	95.31
MEAN	10.7	11.1	9.00	18.2	8.15	6.36	4.33	3.55	3.68	5.13	1.14	3.18
MAX	143	83	78	95	21	30	7.8	16	22	132	14	46
MIN	2.7	3.4	4.4	5.1	.81	.60	2.5	1.1	1.1	.00	.05	.15
CFSM	.21	.22	.18	.36	.16	.12	.08	.07	.07	.10	.02	.06
IN.	.24	.24	.20	.41	.17	.14	.09	.08	.08	.12	.03	.07
AC-FT	660	660	553	1120	469	391	257	218	219	316	70	189

CAL YR 1983 TOTAL 7869.57 MEAN 21.6 MAX 378 MIN .97 CFSM .42 IN 5.71 AC-FT 15610
WTR YR 1984 TOTAL 2583.67 MEAN 7.06 MAX 143 MIN .00 CFSM .14 IN 1.87 AC-FT 5120

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 1983 TO SEPTEMBER 1984

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)
OCT 20...	1747	91	293	7.8	24.5	20	700	7.1	87	5.4	62000	K120000
FEB 27...	1250	7.6	461	8.1	11.5	60	37	9.2	86	2.2	2800	1500
MAR 23...	1145	127	426	7.9	19.0	1100	590	8.9	98	13	24000	32000
APR 18...	0808	4.1	560	7.9	17.0	7	1.9	8.6	91	1.5	130	240
JUN 05...	1010	28	225	7.5	23.0	110	330	6.3	75	7.0	90000	94000
JUL 24...	1215	644	164	7.8	22.0	750	2000	6.3	73	7.1	110000	74000

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)
OCT 20...	120	31	45	2.9	10	.4	2.9	94	24	17	.20	4.4
FEB 27...	190	42	69	4.8	20	.7	2.6	150	41	29	.40	3.2
MAR 23...	180	44	67	3.9	17	.6	2.9	140	37	27	.30	3.7
APR 18...	220	82	78	6.6	29	.9	2.4	140	65	47	.40	3.3
JUN 05...	90	10	33	1.9	7.2	.3	2.2	80	19	13	.20	3.4
JUL 24...	72	26	26	1.7	4.6	.2	2.9	46	23	6.7	.30	5.6

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)
OCT 20...	160	850	38	.18	.020	.20	.040	1.6	1.6	1.60	17
FEB 27...	260	35	7	.27	.030	.30	.090	.41	.50	.060	5.4
MAR 23...	240	1570	184	.23	.070	.30	<.010	--	.90	.960	25
APR 18...	320	5	<2	--	.010	<.10	.090	.31	.40	.020	1.8
JUN 05...	130	484	138	.34	.060	.40	.070	.33	.40	.250	20
JUL 24...	99	6230	193	.67	.030	.70	.190	5.8	6.0	4.40	67

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 20...	1747	1	37	<1	<10	1	26
JUN 05...	1010	<1	30	<1	<10	3	41
JUL 24...	1215	<1	27	<1	<10	2	310

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 20...	2	1	<.1	<1	<1	5
JUN 05...	<1	2	<.1	<1	<1	5
JUL 24...	3	27	<.1	<1	<1	6

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
JUN 05...	1010	<.10	<.10	<.10	<.10	<.10	<2.0	.3
JUL 24...	1215	<.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)
JUN 05...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
JUL 24...	<.1	<.10	<2.0	<2.0	<.10	--	<.1

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 1983 TO SEPTEMBER 1984

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...	0937	36	790	7.3	17.5	15	4.6	6.5	68	15	84	150
MAR 12...	1030	100	496	7.1	19.0	700	270	9.0	99	14	2400	24000
APR 18...	0838	40	798	7.1	22.0	30	4.9	6.4	74	8.0	K110	63
JUN 06...	1115	112	458	7.4	24.0	300	160	7.9	96	4.8	K500	8000
JUL 24...	1140	1100	250	8.0	24.0	850	1600	8.4	101	8.2	92000	78000
AUG 21...	1040	32	834	7.3	29.5	25	3.3	5.1	68	3.4	700	180

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...	170	60	40	17	86	3	10	110	100	95	2.2	8.8
MAR 12...	140	36	40	8.7	40	2	5.8	100	53	45	1.1	6.3
APR 18...	160	55	38	17	84	3	11	110	94	100	2.7	8.3
JUN 06...	130	33	40	7.4	36	1	5.2	98	48	44	1.1	6.4
JUL 24...	85	25	30	2.5	9.7	.5	3.4	60	27	13	.40	5.1
AUG 21...	170	83	34	20	94	3	11	84	91	110	3.5	9.5

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...	420	3	<2	6.8	1.60	8.4	3.10	1.8	4.9	6.10	10
MAR 12...	260	369	54	3.0	.770	3.8	1.40	3.6	5.0	3.70	14
APR 18...	420	11	<2	8.3	.770	9.1	2.90	1.9	4.8	10.0	10
JUN 06...	250	834	123	2.0	.250	2.2	.800	1.7	2.5	1.60	16
JUL 24...	130	7200	155	.98	.120	1.1	.360	18	18	6.00	90
AUG 21...	420	12	8	7.7	2.20	9.9	1.50	1.9	3.4	8.20	9.4

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
JUN 06...	1115	<1	34	<1	<10	3	37
JUL 24...	1140	1	34	<1	<10	3	270
AUG 21...	1040	2	14	<1	<10	3	46

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
JUN 06...	2	9	<.1	<1	<1	13
JUL 24...	4	28	<.1	<1	<1	7
AUG 21...	3	33	.2	<1	<1	27

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)
JUN 06...	1115	<.10	<.10	.10	<.10	<.10	<2.0	.2
JUL 24...	1140	<.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)
JUN 06...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1
JUL 24...	<.1	<.10	<2.0	<2.0	<.10	--	<.1

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 mi^2.

WATER-DISCHARGE RECORDS

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

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.

AVERAGE DISCHARGE.--5 years 28.7 ft^3/s (3.14 in/yr) 20,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,010 ft^3/s June 11, 1981 (gage height, 15.24 ft); no flow for several days in August and September 1984.
Flood of Mar. 20, 1979, reached a stage of 11.48 ft (discharge, 4,980 ft^3/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, 35 ft^3/s Oct. 9 at 1045 hours (gage height, 1.14 ft), no other peak above base of 500 ft^3/s; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	7.9	4.3	4.4	4.8	4.3	4.8	1.5	2.6	2.3	.23	.15
2	8.7	7.6	4.6	4.6	5.1	4.3	4.8	2.7	2.2	1.5	.20	.18
3	8.6	7.5	8.4	4.3	4.9	4.3	4.3	2.9	2.8	1.5	.14	.20
4	8.2	7.5	7.9	4.3	4.8	4.3	3.2	1.8	3.8	1.5	.15	.18
5	7.8	8.0	7.6	4.9	4.6	14	3.2	1.8	7.5	1.6	.15	.13
6	7.5	7.9	6.5	4.8	4.3	9.8	3.8	2.3	5.9	1.6	.10	.10
7	7.5	7.9	6.1	4.3	4.3	8.2	4.7	3.0	7.8	1.6	.09	.10
8	7.8	7.6	5.6	4.7	4.4	7.9	4.7	1.8	11	1.8	.10	.10
9	26	7.4	5.9	7.8	5.2	6.5	3.8	1.3	10	1.6	.10	.09
10	21	6.9	6.1	4.8	4.9	6.5	4.3	1.5	9.2	1.6	.09	.05
11	14	6.5	5.9	4.3	5.0	6.1	3.8	1.5	7.9	1.3	.10	.05
12	14	7.0	5.1	5.2	4.8	6.1	3.2	1.6	8.2	1.1	.08	.05
13	13	6.7	5.5	4.9	4.1	5.6	2.7	1.6	7.4	1.2	.10	.05
14	12	6.9	5.2	4.8	3.8	5.6	2.6	1.6	6.0	.92	.11	.00
15	11	5.6	5.2	4.8	4.2	5.2	2.7	2.0	5.6	.87	.18	.00
16	11	5.2	5.2	5.2	4.2	5.2	2.2	2.6	5.0	.60	.14	.00
17	10	5.2	5.2	5.2	4.0	5.2	2.2	3.7	4.5	.41	.10	.00
18	9.8	5.2	5.2	5.2	4.5	5.2	2.8	4.1	4.6	.35	.10	.00
19	9.0	4.9	5.2	4.8	4.2	6.1	3.8	5.8	3.7	.30	.11	.00
20	13	4.3	5.2	4.8	3.8	5.2	4.0	4.1	3.1	.20	.03	.00
21	12	4.3	5.2	4.8	3.8	4.8	3.7	3.2	2.4	.14	.00	.00
22	10	4.6	5.0	5.3	3.8	5.2	2.7	3.4	2.5	.15	.03	.00
23	10	5.2	4.8	6.2	4.3	5.6	2.2	3.2	2.2	.13	.00	.00
24	10	3.8	4.5	5.6	3.8	4.8	2.6	2.3	2.3	.15	.00	.00
25	9.1	3.8	4.3	5.2	3.2	4.8	2.7	2.2	1.5	.67	.05	.00
26	9.0	4.1	4.3	5.1	6.1	4.8	1.7	2.7	1.3	.82	.05	.00
27	9.0	5.0	4.8	4.8	3.2	4.8	1.8	2.5	1.6	2.1	.05	.00
28	8.6	4.2	5.1	5.0	2.7	4.8	1.7	5.0	1.7	.77	.15	.00
29	8.6	3.8	4.2	4.8	3.2	4.3	2.0	3.7	2.1	.37	.15	.00
30	8.3	4.7	3.8	4.8	---	4.3	1.0	3.0	2.7	.35	.15	.00
31	8.2	---	4.1	4.8	---	4.8	---	2.3	---	.28	.15	---
TOTAL	331.9	177.2	166.0	154.5	124.0	178.6	93.7	82.7	139.1	29.78	3.18	1.43
MEAN	10.7	5.91	5.35	4.98	4.28	5.76	3.12	2.67	4.64	.96	.10	.048
MAX	26	8.0	8.4	7.8	6.1	14	4.8	5.8	11	2.3	.23	.20
MIN	7.5	3.8	3.8	4.3	2.7	4.3	1.0	1.3	1.3	.13	.00	.00
CFSM	.09	.05	.04	.04	.04	.05	.03	.02	.04	.008	.001	.000
IN.	.10	.05	.05	.05	.04	.05	.03	.02	.04	.01	.00	.00
AC-FT	658	351	329	306	246	354	186	164	276	59	6.3	2.8

CAL YR 1983 TOTAL 11510.60 MEAN 31.5 MAX 265 MIN 1.6 CFSM .25 IN 3.45 AC-FT 22830
WTR YR 1984 TOTAL 1482.09 MEAN 4.05 MAX 26 MIN .00 CFSM .03 IN .44 AC-FT 2940

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 1983 TO SEPTEMBER 1984

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...	0830	2.2	490	8.3	10.5	<1	1.1	10.0	91	.4	31	88
APR												
17...	0820	1.3	473	7.5	17.0	5	1.1	9.0	95	2.1	K18	33
AUG												
22...	0740	.04	486	7.2	24.5	5	.80	5.5	68	1.9	38	560

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...	260	51	73	19	8.6	.2	1.0	210	44	15	.20	7.4
APR												
17...	230	44	64	18	8.7	.3	1.1	190	41	13	.20	9.8
AUG												
22...	250	34	66	20	9.1	.3	1.9	214	27	13	.20	16

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...	290	7	<2	--	<.010	<.10	.090	--	<.20	<.010	1.4
APR											
17...	270	4	<2	.09	.010	.10	.090	--	<.20	.080	1.6
AUG											
22...	280	5	<1	--	<.100	<.10	.030	.17	.20	.020	2.0

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)
AUG							
22...	0740	<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)
AUG						
22...	1	16	<.1	<1	<1	4

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.--124 mi^2.

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 hydrologic research project to study rainfall-runoff relation for the Austin urban-rural areas. There is a recording rain gage located in the watershed.

AVERAGE DISCHARGE.--5 years 5.60 ft^3/s (6.23 in/yr) 4,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,330 ft^3/s June 11, 1981 (gage height, 13.05 ft, from floodmarks), from slope-area measurements of peak flow; no flow in 1980, and 1983-84.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 9, 1919, 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, 14 ft^3/s Mar. 4 at 2230 hours (gage height, 2.76 ft), no peak above base of 500 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.1	.91	.91	1.0	1.2	.91	.32	.00	.00	.00	.00
2	1.5	1.9	.91	.91	1.1	1.2	1.0	.33	.00	.00	.00	.00
3	1.4	2.3	1.9	.91	1.1	1.2	.88	.32	.00	.00	.00	.00
4	1.4	2.3	1.2	.91	1.0	2.9	.84	.26	.00	.00	.00	.00
5	1.4	2.5	1.2	.84	1.0	3.4	.80	.26	.02	.00	.00	.00
6	1.3	2.3	1.1	.80	1.0	1.9	.80	.25	.00	.00	.00	.00
7	1.3	2.1	1.0	.71	1.0	1.6	.83	.23	.00	.00	.00	.00
8	1.3	2.1	1.0	.90	1.0	1.4	.84	.23	.00	.00	.00	.00
9	4.2	1.9	1.0	2.0	1.2	1.3	.72	.21	.00	.00	.00	.00
10	2.5	1.7	1.0	1.1	1.2	1.3	.68	.19	.00	.00	.00	.00
11	2.5	1.7	1.0	.95	1.1	1.3	.65	.17	.00	.00	.00	.00
12	2.3	1.7	1.0	1.0	1.1	1.6	.64	.17	.00	.00	.00	.00
13	1.9	1.6	1.1	1.0	1.0	1.3	.63	.19	.00	.00	.00	.00
14	1.9	1.6	1.0	1.0	.91	1.3	.61	.25	.00	.00	.00	.00
15	1.9	1.4	.97	1.0	.94	1.3	.56	.19	.00	.00	.00	.00
16	1.7	1.4	1.0	1.0	.91	1.3	.53	.17	.00	.00	.00	.00
17	1.7	1.4	1.0	1.0	.96	1.2	.50	.15	.00	.00	.00	.00
18	1.9	1.4	1.0	1.0	1.0	1.2	.62	.15	.00	.00	.00	.00
19	1.9	1.4	.91	1.0	.91	1.3	.57	.11	.00	.00	.00	.00
20	3.5	1.4	.91	1.0	.99	1.2	.55	.08	.00	.00	.00	.00
21	2.9	1.4	.91	1.0	.97	1.2	.50	.05	.00	.00	.00	.00
22	2.5	1.4	.91	1.1	.91	1.2	.44	.05	.00	.00	.00	.00
23	2.5	1.4	.91	1.2	.89	1.3	.40	.04	.00	.00	.00	.00
24	2.3	1.2	.91	1.2	.84	1.2	.40	.04	.00	.00	.00	.00
25	2.3	1.0	.98	1.2	.91	1.0	.40	.03	.00	.00	.00	.00
26	2.3	1.0	1.0	1.1	2.1	1.0	.40	.03	.00	.00	.00	.00
27	2.3	1.3	1.0	1.1	1.2	1.0	.38	.02	.00	.00	.00	.00
28	2.3	1.0	1.0	1.1	1.2	.96	.35	.02	.00	.00	.00	.00
29	2.1	1.0	.91	1.1	1.2	.91	.35	.02	.00	.00	.00	.00
30	2.1	1.0	.91	1.0	---	.91	.29	.01	.00	.00	.00	.00
31	2.1	---	.91	1.0	---	.96	---	.00	---	.00	.00	---
TOTAL	64.8	47.9	31.46	32.04	30.64	42.04	18.07	4.54	.02	.00	.00	.00
MEAN	2.09	1.60	1.01	1.03	1.06	1.36	.60	.15	.001	.000	.000	.000
MAX	4.2	2.5	1.9	2.0	2.1	3.4	1.0	.33	.02	.00	.00	.00
MIN	1.3	1.0	.91	.71	.84	.91	.29	.00	.00	.00	.00	.00
CFSM	.17	.13	.08	.08	.09	.11	.05	.01	.000	.000	.000	.000
IN.	.20	.15	.10	.10	.09	.13	.06	.01	.00	.00	.00	.00
AC-FT	129	95	62	64	61	83	36	9.0	.04	.00	.00	.00

CAL YR 1983 TOTAL 1830.48 MEAN 5.02 MAX 31 MIN .10 CFSM .41 IN 5.58 AC-FT 3630
WTR YR 1984 TOTAL 271.51 MEAN .74 MAX 4.2 MIN .00 CFSM .06 IN .83 AC-FT 539

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 1983 TO SEPTEMBER 1984

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...	1000	1.3	489	8.3	9.5	<1	1.4	10.4	92	1.2	120	88
APR 17...	0900	.45	511	7.6	15.5	5	1.5	8.4	86	1.4	K48	K48

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)
FEB 28...	270	43	78	19	8.0	.2	.80	230	30	15	.20
APR 17...	270	46	75	19	8.3	.2	.90	220	28	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, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
FEB 28...	8.0	300	6	2	<.010	<.10	.070	.13	.20	<.200	1.9
APR 17...	9.2	280	<2	<2	<.010	<.10	.110	.19	.30	.010	1.3

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 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 mi^2.

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.--6 years (water years 1979-84), 4.99 ft^3/s (8.22 in/yr), 3,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft^3/s June 11, 1981 (gage height, 10.79 ft), no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 110 ft^3/s Oct. 20 at 1545 hours (gage height, 5.01 ft), no peak above base of 500 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.3	1.2	.91	1.1	.39	.34	.07	.00	.00	.00	.00
2	1.4	2.2	1.4	1.0	1.2	.42	.36	.07	.00	.00	.00	.00
3	1.2	2.2	12	1.0	1.2	.42	.37	.06	.00	.00	.00	.00
4	1.1	2.1	3.6	1.0	1.2	.63	.30	.06	.00	.00	.00	.00
5	1.1	9.7	3.2	.93	1.2	.59	.30	.06	.08	.00	.00	.00
6	1.0	9.3	2.2	.91	1.1	.45	.30	.06	.01	.00	.00	.00
7	1.0	7.6	2.0	.83	1.0	.42	.30	.04	.00	.00	.00	.00
8	.98	5.6	2.0	1.8	.88	.42	.30	.03	.00	.00	.00	.00
9	11	4.7	2.0	6.3	1.1	.38	.27	.03	.00	.00	.00	.00
10	3.7	3.7	2.2	1.8	1.1	.38	.26	.03	.00	.00	.00	.00
11	3.3	3.2	1.9	1.6	1.0	.38	.24	.02	.00	.00	.00	.00
12	4.0	3.1	1.8	1.6	1.0	.80	.21	.01	.00	.00	.00	.00
13	3.2	2.8	1.7	1.6	.91	.42	.18	.00	.00	.00	.00	.00
14	2.8	2.6	1.6	1.6	.91	.46	.18	.00	.00	.00	.00	.00
15	2.6	2.0	1.6	1.6	.89	.46	.18	.00	.00	.00	.00	.00
16	2.6	2.0	1.5	1.6	.82	.46	.17	.00	.00	.00	.00	.00
17	2.6	2.0	1.5	1.6	.82	.46	.13	.01	.00	.00	.00	.00
18	2.5	2.0	1.4	1.6	.88	.47	.13	.03	.00	.00	.00	.00
19	2.5	1.9	1.3	1.5	.61	.49	.13	.04	.00	.00	.00	.00
20	11	1.6	1.3	1.5	.59	.42	.13	.02	.00	.00	.00	.00
21	7.1	1.6	1.3	1.5	.59	.42	.11	.00	.00	.00	.00	.00
22	4.8	1.8	1.1	1.6	.59	.42	.10	.00	.00	.00	.00	.00
23	4.1	2.0	1.2	2.0	.57	.53	.10	.00	.00	.00	.00	.00
24	4.0	1.6	.97	1.8	.47	.46	.10	.00	.00	.00	.00	.00
25	3.3	1.6	1.0	1.7	.46	.46	.10	.00	.00	.00	.00	.00
26	3.1	1.6	1.0	1.6	.77	.46	.10	.00	.00	.00	.00	.00
27	2.6	1.9	1.0	1.5	.39	.45	.08	.00	.00	.00	.00	.00
28	2.6	1.3	1.1	1.5	.38	.34	.08	.00	.08	.00	.00	.00
29	2.4	1.3	.91	1.5	.38	.34	.07	.00	.01	.00	.00	.00
30	2.4	1.3	.91	1.2	---	.34	.07	.00	.00	.00	.00	.00
31	2.4	---	.91	1.1	---	.34	---	.00	---	.00	.00	---
TOTAL	99.88	88.6	58.80	49.28	24.11	13.88	5.69	.64	.18	.00	.00	.00
MEAN	3.22	2.95	1.90	1.59	.83	.45	.19	.021	.006	.000	.000	.000
MAX	11	9.7	12	6.3	1.2	.80	.37	.07	.08	.00	.00	.00
MIN	.98	1.3	.91	.83	.38	.34	.07	.00	.00	.00	.00	.00
CFSM	.39	.36	.23	.19	.10	.06	.02	.003	.001	.000	.000	.000
IN.	.45	.40	.27	.22	.11	.06	.03	.00	.00	.00	.00	.00
AC-FT	198	176	117	98	48	28	11	1.3	.4	.00	.00	.00

CAL YR 1983 TOTAL 1099.31 MEAN 3.01 MAX 93 MIN .18 CFSM .37 IN 4.96 AC-FT 2180
WTR YR 1984 TOTAL 341.06 MEAN .93 MAX 12 MIN .00 CFSM .11 IN 1.54 AC-FT 676

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
NOV												
05...	1535	12	578	7.7	21.0	30	25	7.5	87	2.5	30000	63000
FEB												
28...	1030	.38	699	8.2	11.5	<1	1.0	10.8	100	.5	K3	K12
APR												
17...	0940	.15	672	7.6	17.5	5	1.1	9.5	102	2.0	K19	K5

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)
NOV												
05...	280	78	78	20	18	.5	1.9	200	54	39	.20	7.8
FEB												
28...	350	100	97	26	22	.5	.50	250	55	58	.20	5.4
APR												
17...	310	85	83	26	21	.5	.50	230	46	53	.20	7.3

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)
NOV											
05...	340	19	<1	.08	.020	.10	.060	.74	.80	.030	4.4
FEB											
28...	410	5	<2	--	<.010	<.10	.070	.13	.20	<.200	1.3
APR											
17...	370	4	<2	--	.010	<.10	.120	.28	.40	.010	1.6

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
NOV							
05...	1535	<1	34	<1	<10	1	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)
NOV						
05...	<1	8	<.1	3	<1	4

08158880 BOGGY CREEK (SOUTH) AT CIRCLE S ROAD, AUSTIN, TX
(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 mi^2.

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. No storms analyzed for this station for the 1984 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,920 ft^3/s (gage height, 10.56 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 797 ft^3/s, Nov. 5 (gage height 6.05 ft).

08158920 WILLIAMSON CREEK AT OAK HILL, TX

LOCATION.--Lat 30°06'06", 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 mi^2.

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 (levels from city of Austin bench mark).

REMARKS.--Water-discharger records fair. Station is part of hydrologic-research project to study rainfall-runoff relarelation for the Austin urban-rural areas. Station is equipped with an automatic water-quality sampler. There are two recording rain gages located in the watershed above this station.

AVERAGE DISCHARGE.--6 years, 4.07 ft^3/s (8.77 in/yr), 2,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,170 ft^3/s June 11, 1981 (gage height, 8.55 ft); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 497 ft^3/s Nov. 6 at 2000 hours (gage height, 3.82 ft); no peak above base of 500 ft^3/s; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	2.2	1.5	.49	.65	.29	.37	.07	.00	.00	.00	.00
2	.14	2.2	1.5	.54	.70	.29	.39	.14	.00	.00	.00	.00
3	.10	2.5	12	.63	.75	.27	.45	.12	.00	.00	.00	.00
4	.07	3.3	1.5	.69	.85	.95	.43	.00	.00	.00	.00	.00
5	.07	16	1.4	.76	.70	.29	.58	.00	7.3	.00	.00	.00
6	.04	30	1.2	.93	.62	.21	.46	.00	.00	.00	.00	.00
7	.04	9.9	1.0	.94	.58	.20	.55	.00	.00	.00	.00	.00
8	.07	5.1	.95	4.8	.52	.22	.49	.00	.00	.00	.00	.00
9	33	4.0	.90	5.9	1.2	.22	.37	.00	.00	.00	.00	.00
10	2.0	2.9	.93	.72	1.0	.22	.37	.00	.00	.00	.00	.00
11	4.1	2.5	.93	.70	.95	.29	.29	.00	.00	.00	.00	.00
12	6.8	2.2	.90	.80	.88	1.7	.29	.00	.00	.00	.00	.00
13	2.7	2.1	.88	.79	.85	.29	.29	.00	.00	.00	.00	.00
14	2.0	2.0	.83	.85	.82	.29	.29	.00	.00	.00	.10	.00
15	1.2	1.6	.81	.74	.78	.32	.29	.00	.00	.00	.00	.00
16	1.2	1.8	.75	.80	.74	.52	.33	.02	.00	.00	.00	.00
17	1.2	2.0	.70	.77	.70	.41	.29	.00	.00	.00	.00	.00
18	1.2	1.7	.70	.70	1.0	.64	.29	.09	.00	.00	.00	.00
19	1.2	1.7	.81	.57	.88	.38	.28	.08	.00	.00	.00	.00
20	20	1.5	.86	.58	.75	.34	.23	.00	.00	.00	.00	.00
21	2.3	1.5	.85	.62	.72	.22	.21	.00	.00	.00	.00	.00
22	1.5	1.5	.58	.75	.68	.26	.16	.00	.00	.00	.00	.00
23	1.2	2.2	.57	.95	.64	.38	.09	.00	.00	.00	.00	.00
24	1.2	1.2	.55	.80	.64	.31	.06	.00	.00	.06	.00	.00
25	1.1	1.4	.48	.75	.35	.31	.06	.00	.00	.00	.00	.00
26	.97	1.5	.57	.70	.59	.37	.16	.00	.00	.00	.00	.00
27	.89	2.2	.53	.65	.22	.39	.12	.00	.00	.00	.00	.00
28	1.0	1.7	.48	.60	.22	.45	.03	.00	.00	.00	.00	.00
29	1.1	1.5	.40	.59	.29	.50	.12	.00	.00	.00	.00	.00
30	1.0	1.6	.46	.57	---	.42	.03	.00	.00	.00	.00	.00
31	1.8	---	.46	.56	---	.53	---	.00	---	.00	.00	---
TOTAL	91.36	113.5	36.98	31.24	20.27	12.48	8.37	.52	7.30	.06	.10	.00
MEAN	2.95	3.78	1.19	1.01	.70	.40	.28	.017	.24	.002	.003	.000
MAX	33	30	12	5.9	1.2	1.7	.58	.14	7.3	.06	.10	.00
MIN	.04	1.2	.40	.49	.22	.20	.03	.00	.00	.00	.00	.00
CFSM	.47	.60	.19	.16	.11	.06	.04	.003	.04	.000	.000	.000
IN.	.54	.67	.22	.18	.12	.07	.05	.00	.04	.00	.00	.00
AC-FT	181	225	73	62	40	25	17	1.0	14	.1	.2	.00

CAL YR 1983	TOTAL 980.84	MEAN 2.69	MAX 50	MIN .00	CFSM .43	IN 5.79	AC-FT 1950			
WTR YR 1984	TOTAL 322.18	MEAN .88	MAX 33	MIN .00	CFSM .14	IN 1.90	AC-FT 639			

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 1983 TO SEPTEMBER 1984

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)
OCT												
20...	1545	117	438	--	--	--	--	--	--	--	54000	68000
20...	1600	239	313	--	--	60	600	--	--	--	72000	100000
20...	1615	169	213	--	--	--	--	--	--	6.7	--	--
20...	1630	123	188	--	--	--	--	--	--	11	--	--
NOV												
05...	1352	117	385	--	--	--	--	--	--	12	K36000	120000
05...	1407	190	303	--	--	--	--	--	--	--	42000	100000
05...	1422	154	--	--	--	--	--	--	--	--	--	--
05...	1437	117	197	--	--	35	600	--	--	--	--	--
05...	1452	84	189	--	--	--	--	--	--	9.7	80000	200000
05...	1507	73	193	7.9	--	--	--	--	--	7.6	92000	150000
FEB												
28...	1100	.10	661	8.6	10.0	<1	2.2	13.8	124	1.2	84	160
APR												
17...	1013	.20	706	8.0	16.5	10	2.5	13.0	136	2.1	140	120

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)
OCT												
20...	--	--	--	--	--	--	--	180	--	--	--	--
20...	--	--	--	--	--	--	--	130	--	--	--	--
20...	--	--	--	--	--	--	--	82	--	--	--	--
20...	--	--	--	--	--	--	--	70	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
05...	82	10	24	5.4	5.0	.2	3.5	72	16	7.5	.20	4.4
FEB												
28...	350	49	95	27	17	.4	1.4	300	39	31	.30	3.1
APR												
17...	360	57	100	26	17	.4	1.0	300	36	33	.30	8.8

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)
OCT											
20...	--	--	--	.38	.020	.40	.040	.76	.80	4.00	13
20...	--	--	--	.28	.020	.30	.050	1.7	1.7	1.20	22
20...	--	--	--	.28	.020	.30	.040	3.2	3.2	1.00	27
20...	--	--	--	.38	.020	.40	.040	4.5	4.5	1.10	29
NOV											
05...	--	--	--	.33	.070	.40	.080	4.9	5.0	.600	23
05...	--	--	--	.21	.090	.30	.100	6.9	7.0	.710	24
05...	--	--	--	--	--	--	--	--	--	--	--
05...	--	1180	120	.21	.090	.30	.090	2.9	3.0	.470	24
05...	--	--	--	.23	.070	.30	.080	5.4	5.5	.600	27
05...	110	--	--	--	--	--	--	--	--	--	--
FEB											
28...	390	4	<2	--	<.010	<.10	.120	.28	.40	.130	2.8
APR											
17...	400	3	<2	--	<.010	<.10	.120	.18	.30	.110	2.0

08158920 WILLIAMSON CREEK AT OAKHILL, TX--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

DATE	TIME	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 20...	1545	1	<100	<1	<10	2	50
NOV 05...	1407	1	23	42	<10	4	69

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)
OCT 20...	2	10	<.1	<1	<1	10
NOV 05...	2	5	<.1	<1	<1	7

DATE	TIME	AME-TRYNE TOTAL	ATRA-ZINE, TOTAL (UG/L)	CYAN-AZINE TOTAL (UG/L)	METHO-MYL TOTAL (UG/L)	PROME-TONE TOTAL (UG/L)	PROME-TRYNE TOTAL (UG/L)	PRO-PAZINE TOTAL (UG/L)	PROPHAM TOTAL (UG/L)	SEVIN, TOTAL (UG/L)	SIMA-ZINE TOTAL (UG/L)	SIME-TRYNE TOTAL (UG/L)
NOV 05...	1422	<.10	<.10	<.10	<2.0	.1	<.1	<.10	<2.0	<2.0	<.10	<.1

08158930 WILLIAMSON CREEK AT MANCHACA ROAD, AUSTIN, TX
(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 mi^2.

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. No storms analyzed for this station for the 1984 water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,490 ft^3/s June 11, 1981 (gage height, 16.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,320 ft^3/s, Nov. 5 (gage height, 6.70 ft).

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 southeast 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 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 493.88 ft 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.--9 years, 8.39 ft^3/s (4.13 in/yr), 6,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft^3/s June 11, 1981 (gage height, 20.55 ft), present datum; no flow Aug. 16, 1984.

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.--Maximum discharge, 485 ft^3/s Nov. 5 at 1715 hours (gage height, 7.75 ft), no peak above base of 500 ft^3/s; no flow Aug. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.4	4.2	4.3	1.6	1.4	2.4	1.5	.18	.33	.95	2.1
2	2.5	2.0	4.0	4.5	1.7	1.3	2.9	1.6	.21	.41	.85	1.9
3	2.4	1.8	11	4.1	1.6	1.4	2.6	1.4	.27	.36	.70	5.2
4	2.4	2.4	5.3	3.5	1.6	2.8	2.8	1.3	.81	.31	.60	3.1
5	2.5	58	3.8	3.7	1.8	12	2.9	1.2	13	.32	.50	2.3
6	2.4	13	3.5	3.6	2.0	2.2	2.9	1.2	20	.32	.40	2.1
7	2.1	13	3.7	3.6	2.0	1.7	3.1	1.1	2.1	.33	.35	2.1
8	2.0	4.7	3.7	7.2	1.7	1.5	3.0	.94	1.1	.37	.25	1.9
9	77	3.9	3.8	42	1.9	1.5	2.9	.87	.92	.38	.24	2.2
10	7.0	3.8	3.9	4.2	1.9	1.5	2.6	.80	.85	.38	.31	2.2
11	2.8	3.7	3.2	3.6	2.2	1.6	2.4	.68	.79	.38	.18	2.1
12	10	3.4	3.2	3.0	1.7	12	2.8	.74	.80	.41	.18	2.2
13	3.1	3.4	3.2	2.6	1.7	3.6	2.9	.68	.87	.45	.15	2.0
14	3.0	3.1	3.3	2.0	1.7	2.6	2.1	.57	.86	.40	.49	2.0
15	2.8	3.0	3.2	2.0	1.7	2.1	1.6	.47	.89	.40	.59	2.1
16	2.7	3.0	3.4	2.2	1.8	2.1	1.7	.38	.68	.40	.08	2.1
17	2.7	3.4	3.4	1.5	1.9	2.1	1.5	.34	.71	.43	.68	2.0
18	2.6	3.3	3.2	1.6	2.1	2.0	1.5	.47	.75	.46	1.2	2.1
19	2.6	3.1	3.1	1.3	2.5	2.6	1.6	.68	.84	.48	1.1	2.1
20	10	2.9	3.2	1.3	3.6	2.1	1.6	1.2	.64	.51	.44	2.2
21	6.4	3.0	3.2	1.5	2.3	3.3	1.6	.43	.58	.55	1.4	2.0
22	2.9	3.2	3.1	1.6	1.9	2.3	1.5	.24	.55	.60	1.4	1.7
23	2.6	5.9	3.4	2.9	1.8	8.1	1.6	.21	.51	.70	1.5	1.5
24	2.3	3.5	3.9	1.6	1.7	5.1	1.7	.18	.54	.80	1.4	1.3
25	2.2	3.4	3.8	1.5	1.7	3.6	1.7	.16	.56	.86	1.4	1.2
26	2.3	19	3.6	1.6	5.2	3.5	1.8	.16	.49	.92	1.5	.85
27	2.2	17	3.7	1.7	2.7	3.5	1.9	.16	.40	1.0	1.5	.74
28	2.2	5.4	3.4	1.4	1.5	3.5	1.9	.16	.34	1.0	1.1	.75
29	2.7	4.4	3.4	1.8	1.3	3.5	1.8	.14	.34	1.0	1.4	.65
30	2.8	4.2	3.5	1.5	---	2.9	1.6	.14	.33	1.0	1.4	1.2
31	2.4	---	4.2	1.5	---	1.8	---	.16	---	1.0	1.9	---
TOTAL	176.0	206.3	118.5	120.4	58.8	101.2	64.9	20.26	51.91	17.26	26.14	57.89
MEAN	5.68	6.88	3.82	3.88	2.03	3.26	2.16	.65	1.73	.56	.84	1.93
MAX	77	58	11	42	5.2	12	3.1	1.6	20	1.0	1.9	5.2
MIN	2.0	1.8	3.1	1.3	1.3	1.3	1.5	.14	.18	.31	.08	.65
CFSM	.21	.25	.14	.14	.07	.12	.08	.02	.06	.02	.03	.07
IN.	.24	.28	.16	.16	.08	.14	.09	.03	.07	.02	.04	.08
AC-FT	349	409	235	239	117	201	129	40	103	34	52	115

CAL YR 1983 TOTAL 2477.80 MEAN 6.79 MAX 134 MIN 1.2 CFSM .25 IN 3.34 AC-FT 4910
WTR YR 1984 TOTAL 1019.56 MEAN 2.79 MAX 77 MIN .08 CFSM .10 IN 1.37 AC-FT 2020

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 1983 TO SEPTEMBER 1984

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)
NOV												
05...	1520	38	679	7.2	21.5	30	44	5.8	67	30	32000	K5100
FEB												
27...	1000	2.5	622	7.7	12.8	5	4.4	8.1	78	5.2	540	1200
MAR												
23...	1040	2.9	726	7.5	19.0	60	58	5.3	58	15	K890	5600
APR												
16...	1020	1.8	830	7.5	17.0	20	3.1	5.1	53	3.3	660	1300
JUN												
05...	0800	28	278	8.0	22.5	150	180	6.2	73	4.5	K23000	50000
AUG												
22...	0905	1.1	726	6.6	27.0	25	1.5	2.6	33	7.4	1200	500

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)
NOV												
05...	250	41	82	11	39	1	5.2	210	59	49	.50	11
FEB												
27...	280	47	91	12	28	.8	2.7	230	33	46	.40	7.0
MAR												
23...	250	23	78	14	43	1	7.5	230	44	60	.50	10
APR												
16...	320	34	100	18	47	1	5.0	290	33	70	.50	14
JUN												
05...	110	2	38	4.2	13	.6	2.7	110	16	14	.30	6.6
AUG												
22...	160	30	39	16	74	3	11	133	64	90	.80	11

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)
NOV											
05...	380	180	47	.21	.290	.50	3.30	4.7	8.0	2.10	20
FEB											
27...	360	6	<2	.68	.120	.80	.810	.69	1.5	.330	4.1
MAR											
23...	390	89	21	.79	.210	1.0	7.10	.40	7.5	1.50	5.5
APR											
16...	460	5	<2	.65	.150	.80	4.70	1.3	6.0	.850	4.3
JUN											
05...	160	289	78	.25	.050	.30	.200	1.8	2.0	.500	12
AUG											
22...	390	9	<1	3.2	1.10	4.3	3.20	2.3	5.5	7.60	8.0

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)
NOV							
05...	1520	5	66	<1	<10	2	75
JUN							
05...	0800	1	47	1	<10	2	44
AUG							
22...	0905	7	37	<1	<10	4	59

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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 05...	<1	180	<.1	<1	<1	12
JUN 05...	<1	3	<.1	<1	<1	7
AUG 22...	2	140	.1	<1	<1	76

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)
JUN 05...	0800	<.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)
JUN 05...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

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 mi^2.

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 fair. 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.--13 years (water years 1925-29, 1977-84), 76.2 ft^3/s (3.22 in/yr), 55,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,000 ft^3/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.--Maximum discharge, 1,470 ft^3/s Nov. 5 at 1800 hours (gage height, 8.79 ft), no peak above base of 2,500 ft^3/s; no flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	9.3	14	11	6.3	7.7	8.7	2.3	.99	.00	.34	5.4
2	8.3	8.9	14	11	6.3	7.2	8.7	2.3	.99	.00	.41	4.2
3	8.1	9.3	33	11	6.5	7.0	8.7	2.3	.83	.08	.41	8.2
4	7.6	10	21	11	7.1	5.9	8.2	2.0	.93	.09	.89	11
5	7.2	254	16	11	7.7	49	8.2	1.7	41	.00	1.2	5.3
6	7.2	141	15	11	7.7	12	8.2	1.2	75	.00	1.2	3.1
7	7.2	54	14	11	7.9	7.6	8.2	.99	11	.00	1.1	2.5
8	7.2	28	14	11	8.2	7.2	7.7	.99	5.9	.00	.19	2.6
9	314	16	14	205	8.4	6.8	7.7	.57	4.1	.00	.00	2.0
10	61	13	14	20	9.2	6.2	7.2	.76	3.2	.00	.00	2.0
11	23	12	14	11	9.9	5.4	7.2	.76	2.5	.00	.00	2.0
12	31	11	14	9.2	9.9	20	6.8	.61	2.3	.00	.00	2.0
13	17	11	14	7.7	9.9	10	6.8	.57	2.9	.00	.00	2.0
14	15	10	14	6.8	9.9	7.3	6.7	.56	2.0	.00	.00	2.0
15	13	9.9	14	6.8	9.9	7.2	5.4	.41	1.7	.00	.70	.72
16	13	9.9	14	6.8	9.9	6.8	5.4	.57	1.4	.00	.16	.76
17	11	8.9	14	6.6	9.9	6.8	5.4	.57	.74	.00	.00	.59
18	10	9.2	14	6.3	9.9	6.8	4.9	.87	.57	.00	.00	.57
19	10	9.1	14	6.0	9.5	6.3	4.9	1.6	.41	.00	.26	1.1
20	21	8.7	14	5.8	9.4	6.3	4.9	3.3	.50	.00	.26	2.4
21	48	8.7	14	5.8	11	5.8	4.5	3.7	.57	.00	.00	3.6
22	14	8.9	14	5.8	11	6.5	3.6	2.8	.40	.00	.35	4.5
23	12	21	13	7.5	11	14	2.6	2.0	.14	.00	.21	5.1
24	11	15	13	7.8	9.9	18	2.6	1.9	.18	.00	.21	3.7
25	10	12	12	6.8	9.4	13	1.4	1.6	.20	.00	.21	2.9
26	9.3	55	11	6.8	18	11	2.3	1.4	.05	.00	.21	3.0
27	9.3	153	11	6.8	16	11	3.0	1.4	.00	.00	.21	1.8
28	9.3	31	11	6.8	9.0	10	2.3	1.2	.00	.01	.21	1.8
29	9.3	19	11	6.3	7.7	9.3	2.3	.77	.00	.15	.16	2.5
30	9.3	16	11	6.3	---	9.2	2.3	.76	.00	.21	.32	3.2
31	9.3	---	11	6.3	---	8.7	---	.99	---	.21	.80	---
TOTAL	752.1	982.8	441	459.0	276.4	316.0	166.8	43.45	160.50	.75	10.01	92.54
MEAN	24.3	32.8	14.2	14.8	9.53	10.2	5.56	1.40	5.35	.024	.32	3.08
MAX	314	254	33	205	18	49	8.7	3.7	75	.21	1.2	11
MIN	7.2	8.7	11	5.8	6.3	5.4	1.4	.41	.00	.00	.00	.57
CFSM	.08	.10	.04	.05	.03	.03	.02	.004	.02	.000	.001	.01
IN.	.09	.11	.05	.05	.03	.04	.02	.01	.02	.00	.00	.01
AC-FT	1490	1950	875	910	548	627	331	86	318	1.5	20	184

CAL YR 1983 TOTAL 17831.70 MEAN 48.9 MAX 2220 MIN 3.0 CFSM .15 IN 2.07 AC-FT 35370
WTR YR 1984 TOTAL 3701.35 MEAN 10.1 MAX 314 MIN .00 CFSM .03 IN .43 AC-FT 7340

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 1983 TO SEPTEMBER 1984

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 27...	0910	20	576	8.2	14.0	<1	6.0	8.7	86	2.2	K340	>2000
APR 16...	1125	5.4	536	8.6	21.0	10	1.1	13.0	147	1.4	K1600	180
JUN 05...	0900	82	611	8.0	27.0	75	38	4.6	59	4.2	5500	K6000
AUG 22...	0946	.93	707	7.0	27.5	7	.50	4.6	59	2.7	2100	380

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 27...	230	43	75	11	34	1	3.2	190	41	46	.40	6.8
APR 16...	200	41	64	9.9	33	1	2.1	160	54	42	.40	9.6
JUN 05...	180	14	49	15	53	2	4.2	170	27	74	.40	16
AUG 22...	190	14	50	16	71	2	5.8	177	35	95	.60	13

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 27...	330	15	8	.46	.040	.50	.080	.52	.60	.170	5.0
APR 16...	310	13	<2	--	<.010	<.10	.060	--	<.20	.010	1.7
JUN 05...	340	181	64	--	.010	<.10	.080	2.4	2.5	.470	9.7
AUG 22...	390	11	10	--	<.100	<.10	.020	.78	.80	1.10	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)
JUN 05...	0900	3	83	<1	<10	<1	8
AUG 22...	0946	15	57	<1	<10	<1	11

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)
JUN 05...	2	26	<.1	<1	<1	3
AUG 22...	2	13	<.1	<1	<1	7

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984

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)
JUN 05...	0900	<.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)
JUN 05...	<.1	<.10	<2.0	<2.0	<.10	<.10	<.1

Table 3

DAILY RAINFALL FOR GAGES NORTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER									
	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN
OCT										
7	0.03	0.05	0.03	0.01	0.00	0.00	0.00	0.01	0.04	0.01
9	2.37	2.08	2.34	1.80	1.70	*2.93	2.34	1.60	2.06	1.54
10	0.00	0.02	0.00	0.00	0.00	*0.02	0.02	0.01	0.03	0.02
11	0.08	0.05	0.29	0.08	0.39	0.10	0.11	0.18	0.13	0.19
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
18	0.55	0.85	0.59	0.63	0.28	0.33	0.27	0.23	0.28	0.19
19	0.03	0.03	0.12	0.00	0.13	0.15	0.02	0.03	0.09	0.14
20	0.24	0.66	*0.51	0.73	0.36	0.76	0.56	0.57	0.49	0.33
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
MTOT	3.30	3.74	3.88	3.25	2.86	4.29	3.33	2.65	3.13	2.43
NOV										
2	0.01	0.00	*0.01	0.00	0.01	0.00	0.03	0.05	0.01	0.03
3	0.07	0.03	*0.04	0.06	0.11	*0.24	0.19	0.07	0.04	0.04
4	0.02	0.03	*0.69	0.66	0.50	*0.20	0.36	1.07	0.66	1.01
5	0.80	1.19	*1.12	0.73	0.51	*1.14	1.41	0.88	1.08	0.87
6	0.27	0.13	*0.01	0.03	0.01	0.00	0.05	0.02	0.01	0.02
7	0.02	0.00	0.00	0.01	0.00	0.00	0.02	0.01	0.00	0.00
8	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.01	0.01	0.01	0.05	0.02	0.00	0.00	0.00	0.01	0.01
19	0.01	0.00	0.08	0.09	0.12	0.00	0.21	0.06	0.06	0.08
22	0.48	0.34	0.40	0.53	0.42	0.50	0.41	0.28	0.43	0.36
23	0.04	0.05	0.07	0.05	0.05	0.07	0.06	0.05	0.04	0.04
26	0.04	0.38	0.06	0.09	0.77	0.57	0.13	0.65	0.28	0.62
27	0.39	0.38	0.40	0.42	0.30	0.44	0.44	0.28	0.40	0.33
28	0.00	0.01	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	0.00	0.03	0.00	0.07
MTOT	2.17	2.55	2.89	2.72	2.82	3.16	3.31	3.45	3.02	3.48

MTOT=MONTHLY TOTALS

* = ESTIMATED

Table 3

DAILY RAINFALL FOR GAGES NORTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER								
	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN
DEC										
1	0.02	0.00	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00
2	0.05	0.03	0.05	0.04	0.05	0.08	0.06	0.05	0.07	0.05
3	0.57	1.03	1.09	0.97	0.31	1.06	1.04	0.60	1.23	0.80
4	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01
6	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.01	0.00	0.00	0.05	0.00	0.00	0.01	0.01	0.00	0.01
8	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
16	0.04	0.02	0.02	0.04	0.08	0.07	0.06	0.07	0.08	0.07
17	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
21	0.00	0.00	0.01	0.00	0.02	0.02	0.01	0.01	0.02	0.00
23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
31	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	0.71	1.10	1.21	1.13	0.50	1.24	1.20	0.76	1.41	0.96
CTOT	37.42	37.81	39.53	35.62	36.01	43.94	43.05	38.94	42.21	38.06
JAN										
1	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01
2	0.01	0.02	0.00	0.00	0.04	0.03	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	0.01	0.00
4	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.01
8	1.05	1.23	1.08	1.15	1.06	1.18	1.16	0.99	0.10	1.13
9	0.18	0.24	0.28	0.33	0.43	0.28	0.32	0.42	1.53	0.41
11	0.03	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
18	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00
19	0.03	0.03	0.06	0.01	0.04	0.00	0.03	0.05	0.02	0.08
20	0.01	0.01	0.02	0.00	0.04	0.00	0.00	0.00	0.01	0.01
21	0.03	0.02	0.02	0.01	0.02	0.01	0.04	0.02	0.23	0.06
22	0.21	0.21	0.18	0.18	0.24	0.34	0.22	0.21	0.05	0.32
23	0.02	0.04	0.02	0.02	0.01	0.03	0.02	0.03	0.00	0.04
25	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
31	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	1.58	1.87	1.66	1.71	1.91	1.87	1.83	1.74	1.96	2.07

MTOT=MONTHLY TOTALS
CTOT=CALENDAR YEAR TOTALS
* = ESTIMATED

Table 3

DAILY RAINFALL FOR GAGES NORTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER									
	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN
FEB										
1	0.00	0.00	0.01	0.01	*0.01	0.01	0.01	0.00	0.01	0.01
2	0.01	0.02	0.02	0.00	*0.04	0.02	0.01	0.02	0.04	0.04
3	0.00	0.01	0.00	*0.01	0.00	0.00	0.00	0.01	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
8	0.06	0.03	0.03	*0.02	*0.06	0.02	0.02	0.02	0.03	0.06
9	0.11	0.07	0.08	*0.04	*0.04	0.04	0.06	0.05	0.03	0.04
10	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.15	0.24	0.33	*0.15	*0.05	0.65	0.46	0.05	0.15	0.05
18	0.07	0.04	0.07	*0.04	*0.06	0.05	0.06	0.06	0.06	0.06
20	0.04	0.01	0.08	*0.07	*0.17	0.05	0.05	0.16	0.12	0.17
21	0.00	0.01	0.01	*0.01	*0.01	0.01	0.01	0.02	0.01	0.01
22	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
26	0.29	0.36	0.35	*0.17	*0.41	0.46	0.35	0.33	0.58	0.41
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
MTOT	0.74	0.81	0.98	0.52	0.85	1.32	1.03	0.72	1.05	0.85
MAR										
1	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01
3	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00
4	1.17	0.78	*0.18	0.18	0.01	1.13	0.91	0.30	0.20	0.28
5	0.06	0.03	0.00	0.00	0.00	0.10	0.10	0.02	0.03	0.05
6	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.01
10	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.03	0.03	*0.01	0.01	0.04	0.02	0.02	0.00	0.01	0.02
12	0.31	0.34	*0.57	0.57	1.31	0.28	0.22	0.44	0.41	0.51
14	0.00	0.00	*0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00
15	0.08	0.06	*0.03	0.03	0.04	0.09	0.04	0.01	0.05	0.05
16	0.05	0.00	*0.02	0.02	0.01	0.04	0.02	0.02	0.01	0.01
18	0.08	0.23	*0.26	0.26	0.23	0.24	0.32	0.36	0.23	0.39
19	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
23	0.41	0.28	*0.36	0.36	0.43	0.42	0.72	0.44	0.45	0.39
24	0.01	0.01	0.00	0.00	0.04	0.01	0.03	0.01	0.01	0.01
25	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.01	0.02	0.00	0.03	0.01	0.03	0.02
31	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	2.25	1.83	1.44	1.45	2.55	2.33	2.42	1.64	1.46	1.76

MTOT=MONTHLY TOTALS
* = ESTIMATED

Table 3

DAILY RAINFALL FOR GAGES NORTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER									
	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN
APR										
2	0.06	0.05	0.09	0.04	0.03	0.06	0.04	0.02	0.04	0.03
7	0.10	0.03	0.05	0.05	0.02	0.06	0.05	0.05	0.14	0.07
8	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
26	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
MTOT	0.16	0.09	0.14	0.09	0.07	0.12	0.09	0.07	0.19	0.11
MAY										
1	0.03	0.00	0.06	0.03	0.02	0.02	0.05	0.02	0.07	0.04
2	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
16	0.04	0.04	0.13	0.18	0.21	0.05	0.02	0.05	0.07	0.14
17	0.04	0.23	0.27	0.26	0.38	0.04	0.08	0.21	0.23	0.28
18	0.50	0.42	0.34	0.49	0.14	0.71	0.31	0.31	0.33	0.40
19	0.93	0.35	0.21	0.34	0.55	0.21	0.14	0.81	0.37	0.72
22	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.01	0.00	0.04	0.01	0.00	0.00	0.01	0.26	0.53	0.11
MTOT	1.56	1.04	1.05	1.31	1.33	1.03	0.61	1.66	1.60	1.74
JUNE										
4	0.04	0.07	0.15	0.09	0.22	0.08	0.09	0.05	0.07	0.08
5	0.40	0.76	0.52	0.64	0.67	0.95	0.73	0.38	0.70	0.53
6	0.77	0.88	0.46	0.34	0.36	0.81	0.94	0.41	0.44	0.52
9	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03
12	1.12	0.80	0.28	0.96	0.27	0.18	0.28	0.12	0.08	0.22
13	0.00	0.07	0.01	0.00	0.10	0.01	0.05	0.00	0.08	0.06
14	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.01	0.00	0.00	0.03	0.12	0.00	0.37	0.11	0.23	0.12
28	0.19	0.10	0.13	0.03	0.00	0.17	0.12	0.03	0.07	0.02
29	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	2.53	2.71	1.55	2.09	1.74	2.20	2.59	1.10	1.67	1.58

MTOT=MONTHLY TOTALS

* = ESTIMATED

Table 3

DAILY RAINFALL FOR GAGES NORTH OF THE COLORADO RIVER

DAILY AND MONTHLY RAINFALL SUMMARY — PERIOD: 1984 WATER YEAR

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER									
	1BUL	2BUL	1SHL	2SHL	1BOG	1WLN	2WLN	3WLN	4WLN	5WLN
JULY										
11	0.00	0.00	0.00	0.00	0.38	0.00	0.01	0.45	0.29	0.58
14	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
18	0.35	1.33	0.29	0.00	0.37	0.49	0.43	0.01	0.09	0.03
19	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	1.44	1.22	1.53	0.89	0.60	3.48	2.21	0.76	1.77	0.72
25	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.01	0.01	0.00
26	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.24	0.47	0.03	0.00	0.03	0.02	0.00	0.40	0.00	0.07
28	0.00	0.02	0.01	0.00	0.01	0.02	0.00	0.00	0.00	0.00
MTOT	2.03	3.07	1.86	0.89	1.41	4.03	2.66	1.63	2.16	1.40
AUG										
6	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
8	0.01	0.00	0.00	0.04	0.00	0.00	0.24	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
12	0.14	0.02	0.39	1.38	0.05	0.16	0.94	0.07	0.10	0.12
13	0.00	0.02	0.02	0.00	0.00	0.02	0.02	0.01	0.01	0.00
14	0.03	0.07	0.00	0.00	0.03	0.00	0.37	0.07	0.00	0.17
15	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.02
31	*0.01	0.01	0.20	1.17	0.34	0.48	0.42	*0.30	0.67	0.41
MTOT	0.19	0.13	0.61	2.61	0.42	0.66	2.00	0.46	0.79	0.72
SEPT										
1	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.01	0.02
2	0.00	0.00	0.04	0.08	0.00	0.00	0.18	*0.16	0.36	0.04
3	*0.77	0.64	0.61	0.32	0.59	0.96	0.34	*0.65	1.47	0.79
4	*0.03	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
21	0.26	0.20	0.16	0.13	0.15	0.20	0.14	0.18	0.19	0.19
22	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03
26	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	1.07	0.87	0.82	0.59	0.75	1.17	0.66	0.99	2.04	1.07
WTOT	18.29	19.81	18.09	18.36	17.21	23.42	21.73	16.87	20.48	18.17

MTOT=MONTHLY TOTALS
WTOT=WATER YEAR TOTALS
* = ESTIMATED

Table 4

DAILY RAINFALL FOR GAGES SOUTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER										
	13AR	28AR	38AR	18OL	1-ON	1BER	1SLA	18GS	1WMS	2WMS	3WMS
OCT											
7	0.00	0.00	0.03	0.00	0.00	0.00	0.02	*0.02	0.06	0.02	0.07
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	*0.00	0.00	0.00	0.00
9	2.16	2.84	2.62	2.16	2.59	2.34	0.63	*2.88	0.06	2.40	2.28
10	0.01	0.00	0.01	0.02	0.02	0.01	0.00	*0.33	0.00	0.05	0.02
11	0.56	0.56	0.50	0.42	0.25	0.20	0.38	*0.01	0.63	0.28	0.55
12	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.01
18	0.03	0.04	0.12	0.11	0.00	0.06	0.05	0.14	0.06	0.08	0.12
19	0.02	0.00	0.01	0.02	0.00	0.03	0.03	0.00	0.00	0.00	0.01
20	0.39	1.23	0.91	0.50	0.59	0.91	0.84	0.61	1.03	0.73	0.87
21	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
MTOT	3.17	4.67	4.22	3.23	3.45	3.55	1.98	3.99	1.84	3.57	3.93
NOV											
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
3	0.00	0.11	0.01	0.05	0.04	0.15	0.04	0.20	0.05	0.10	0.01
4	0.02	0.06	0.07	0.14	0.08	0.09	0.23	0.17	0.12	0.10	0.27
5	0.38	1.42	0.25	0.98	0.37	0.26	0.50	2.24	1.42	1.67	1.01
6	0.00	0.31	0.12	0.19	0.11	0.15	0.33	0.54	0.56	0.33	1.09
7	0.00	0.00	0.01	0.02	0.00	0.01	0.01	0.01	0.02	0.04	0.03
8	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00
9	0.00	0.00	0.01	0.00	0.00	0.01	0.02	0.00	0.02	0.05	0.07
19	0.00	0.03	0.00	0.01	0.00	0.00	0.01	0.00	0.12	0.04	0.03
22	0.27	0.00	0.34	0.35	0.04	0.00	0.30	0.37	0.41	0.41	0.30
23	0.04	0.36	0.02	0.03	0.22	0.24	0.01	0.02	0.02	0.03	0.02
24	0.00	0.00	0.00	0.01	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	0.00	0.01
26	0.06	0.00	0.03	0.41	0.00	0.00	0.02	0.68	0.00	0.49	0.00
27	0.35	0.34	0.38	0.47	0.44	0.40	0.42	0.35	0.38	0.47	0.35
30	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.02	0.01	0.00	0.01
MTOT	1.12	2.63	1.24	2.70	1.30	1.31	1.90	4.61	3.13	3.73	3.21

MTOT=MONTHLY TOTALS
* = ESTIMATED

Table 4

DAILY RAINFALL FOR GAGES SOUTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER										
	13AR	28AR	33AR	18OL	1-ON	1BER	1SLA	13GS	1WMS	2WMS	3WMS
DEC											
1	0.01	0.00	0.01	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.01
2	0.05	0.07	0.05	0.06	0.07	0.07	0.06	0.07	0.09	0.07	0.07
3	0.35	0.75	0.72	0.50	0.70	0.71	0.87	0.38	0.84	0.45	0.78
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
5	0.00	0.00	0.00	0.02	0.00	0.00	0.02	0.02	0.01	0.01	0.00
7	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.02
8	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
16	0.03	0.09	0.02	0.06	0.05	0.07	0.03	0.13	0.05	0.11	0.03
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
18	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.02	0.02	0.00	0.02	0.03	0.00	0.00	0.00	0.00	0.00
21	0.02	0.00	0.00	0.02	0.01	0.00	0.04	0.04	0.04	0.02	0.03
22	0.00	0.01	0.03	0.00	0.01	0.02	0.00	0.00	0.00	0.01	0.00
23	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01
24	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.01	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
30	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	0.47	0.99	0.88	0.68	0.88	0.91	1.08	0.66	1.03	0.69	0.97
CTOT	35.58	42.25	35.84	38.62	37.47	34.92	36.44	44.77	39.12	45.52	39.90

MTOT=MONTHLY TOTALS
CTOT=CALENDAR YEAR TOTALS
* = ESTIMATED

Table 4

DAILY RAINFALL FOR GAGES SOUTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER										
	13AR	2BAR	3BAR	1BOL	1-ON	1BER	1SLA	13GS	1WMS	2WMS	3WMS
JAN											
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
2	0.24	0.26	0.19	0.12	0.13	0.11	0.12	0.06	0.09	0.07	0.16
3	0.00	0.01	0.03	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.01
4	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
5	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	0.01	0.00	0.00	0.00	0.00	0.00	0.00
8	0.46	1.00	0.69	0.99	0.48	0.70	0.80	0.91	1.06	0.96	1.04
9	0.34	0.25	0.16	0.41	0.33	0.32	0.33	0.35	0.30	0.43	0.27
10	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	0.05	0.06	0.01	0.01	0.00	0.00	0.00	0.00	0.07	0.04
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
19	0.00	0.04	0.03	0.00	0.02	0.00	0.01	0.05	0.00	0.06	0.02
20	0.00	0.03	0.02	0.03	0.01	0.04	0.02	0.04	0.00	0.02	0.02
21	0.00	0.03	0.03	0.03	0.00	0.03	0.03	0.03	0.00	0.06	0.02
22	0.25	0.26	0.21	0.28	0.27	0.29	0.29	0.33	*0.24	0.35	0.27
23	0.02	0.02	0.02	0.04	0.02	0.02	0.02	0.01	0.00	0.02	0.03
24	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.01
MTOT	1.31	1.95	1.45	1.94	1.29	1.53	1.64	1.81	1.71	2.04	1.89
FEB											
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01
2	0.01	0.02	0.00	0.02	0.02	0.04	*0.05	0.05	0.05	0.05	0.05
3	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.03	0.07	0.03	0.01	0.01	0.08	*0.13	0.06	0.10	0.05	0.07
9	0.11	0.06	0.07	0.09	0.12	0.08	*0.04	0.08	0.08	0.13	0.09
10	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.07	0.07	0.22	0.04	0.22	0.06	*0.08	0.03	0.04	0.05	0.16
13	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
18	0.05	0.05	0.05	0.03	0.05	0.07	*0.06	0.05	0.05	0.06	0.07
20	0.07	0.08	0.03	0.21	0.07	0.07	*0.07	0.25	0.13	0.25	0.09
21	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01
26	0.14	0.16	0.40	0.37	0.10	0.13	*0.13	0.28	0.62	0.31	0.15
29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
MTOT	0.48	0.51	0.83	0.81	0.61	0.54	0.56	0.82	1.08	0.90	0.69

MTOT=MONTHLY TOTALS

* = ESTIMATED

Table 4

DAILY RAINFALL FOR GAGES SOUTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER										
	13AR	2BAR	3BAR	1BOL	1-ON	1BER	1SLA	13GS	1WMS	2WMS	3WMS
MAR											
1	0.00	0.01	0.00	0.00	*0.01	0.01	0.00	0.00	0.00	0.00	0.00
4	0.48	0.40	0.15	0.54	*0.31	0.41	0.28	0.79	0.33	0.75	0.33
5	0.01	0.01	0.02	0.01	0.00	0.00	0.01	0.01	0.06	0.01	0.01
6	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01
11	0.00	0.04	0.01	0.08	*0.03	0.04	*0.10	0.07	0.08	0.12	0.05
12	0.08	0.40	0.31	0.54	*0.25	0.33	*0.29	0.25	0.60	0.47	0.49
13	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
15	0.00	0.02	0.00	0.00	*0.02	0.02	*0.02	0.03	0.03	0.03	0.02
16	0.01	0.02	0.00	0.04	*0.02	0.02	*0.01	0.04	0.04	0.10	0.05
18	0.08	0.11	0.14	0.18	*0.15	0.20	*0.18	0.17	0.16	0.12	0.14
19	0.01	0.00	0.00	0.00	0.00	0.00	*0.01	0.00	0.00	0.01	0.01
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
22	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.19	0.26	0.09	0.40	*0.24	0.31	*0.12	0.40	0.20	0.48	0.09
24	0.04	0.02	0.00	0.09	*0.02	0.03	*0.07	0.01	0.07	0.01	0.05
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
27	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
30	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02
31	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00
MTOT	0.91	1.33	0.74	1.91	1.05	1.37	1.12	1.78	1.58	2.14	1.30
APR											
2	0.01	0.05	0.05	0.08	*0.05	0.06	0.06	0.09	*0.08	0.08	0.08
5	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.06	0.03	0.05	0.00	0.05	0.03	0.03	0.02	*0.03	0.02	0.03
8	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00
MTOT	0.07	0.09	0.11	0.10	0.10	0.09	0.09	0.11	0.11	0.21	0.11

MTOT=MONTHLY TOTALS
* = ESTIMATED

Table 4

DAILY RAINFALL FOR GAGES SOUTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER										
	1BAR	2BAR	3BAR	1BOL	1-ON	1BER	1SLA	1BGS	1WMS	2WMS	3WMS
MAY											
1	0.00	0.03	0.01	0.00	0.00	0.02	0.02	0.01	0.03	0.02	0.03
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
16	0.16	0.05	0.44	0.02	0.32	0.26	0.22	0.07	0.47	0.10	0.54
17	0.54	0.08	0.15	0.03	0.59	0.74	0.50	0.32	0.22	0.23	0.18
18	0.10	0.46	0.49	0.31	0.50	0.09	0.28	0.24	0.34	0.75	0.43
19	1.73	0.29	0.91	0.80	1.07	0.47	0.43	0.58	0.33	0.72	0.33
21	0.05	0.00	0.00	0.00	0.00	0.02	0.01	0.05	0.03	0.01	0.04
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.45	0.01
25	0.00	0.08	0.00	0.08	0.00	0.00	0.01	0.00	0.00	0.01	0.00
28	0.17	0.07	0.03	0.19	1.12	0.18	0.05	0.05	0.09	0.00	0.05
30	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	2.75	1.06	2.03	1.34	3.61	1.78	1.52	1.33	1.51	2.37	1.61
JUNE											
4	0.34	0.33	0.36	0.36	0.27	0.27	0.21	0.20	0.46	0.35	0.39
5	0.84	0.61	0.60	0.98	1.84	1.44	0.93	0.68	0.75	0.69	1.22
6	1.35	0.15	0.90	0.25	1.37	0.40	0.33	0.51	0.15	0.41	0.17
10	0.08	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.29	0.13	0.00	0.01	0.79	0.21	0.53	0.02	0.42	0.00
13	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00
14	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.01
21	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
27	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.05	0.02	0.05	0.05	0.35	0.76	0.91	0.22	0.39	0.21	0.07
29	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.01
MTOT	2.66	1.42	2.10	1.68	3.91	3.66	2.63	2.17	1.77	2.11	1.87

MTOT=MONTHLY TOTALS

* = ESTIMATED

Table 4

DAILY RAINFALL FOR GAGES SOUTH OF THE COLORADO RIVER

PERIOD: 1984 WATER YEAR

DATE	GAGE NUMBER										
	1BAR	2BAR	3BAR	1BOL	1-ON	1BER	1SLA	1BGS	1WMS	2WMS	3WMS
JULY											
17	0.52	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	0.30	0.00	0.00	0.28	1.02	0.00	0.01	0.00	0.06
19	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	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
24	0.71	0.94	1.03	0.79	0.64	0.41	0.64	0.80	0.95	0.85	0.88
25	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01
26	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.00
27	0.00	0.01	0.01	0.00	0.37	0.01	0.20	0.00	0.04	0.00	0.00
28	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTOT	1.23	0.95	1.36	0.79	1.01	0.71	1.93	0.80	1.00	0.85	0.95
AUG											
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.01	0.00
6	0.00	0.01	0.00	0.00	0.00	0.21	0.00	0.02	0.04	0.00	0.00
8	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00
12	0.02	0.20	0.23	0.00	0.00	0.23	0.52	0.08	0.13	0.00	0.39
13	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
14	0.08	0.67	0.34	1.44	0.04	0.49	0.23	0.34	0.87	1.25	0.38
15	0.00	0.00	0.01	0.03	0.00	0.01	0.01	0.01	0.02	0.05	0.01
25	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
31	0.00	0.08	0.00	0.65	0.00	0.00	0.00	0.27	0.01	0.48	0.38
MTOT	0.10	0.96	0.59	2.13	0.21	0.98	0.76	0.85	1.07	1.79	1.17
SEPT											
1	0.00	0.18	0.05	0.06	0.00	0.00	0.01	0.02	0.15	*0.03	0.02
2	0.00	0.00	0.02	0.00	0.01	0.00	0.17	0.00	0.28	0.00	0.51
3	0.91	0.15	0.28	0.58	0.75	0.52	0.19	0.39	0.11	*0.69	0.24
4	0.00	0.00	0.02	0.03	0.01	0.00	0.01	0.00	0.01	0.00	0.01
20	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.06	0.22	0.08	0.27	0.13	0.16	0.12	0.33	0.17	0.32	0.17
22	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
MTOT	0.97	0.56	0.46	0.95	0.91	0.68	0.51	0.74	0.74	1.06	0.95
WTOT	15.24	17.12	16.01	18.26	18.33	17.11	15.72	19.67	16.57	21.46	18.65

MTOT=MONTHLY TOTALS
WTOT=WATER YEAR TOTALS
* = ESTIMATED