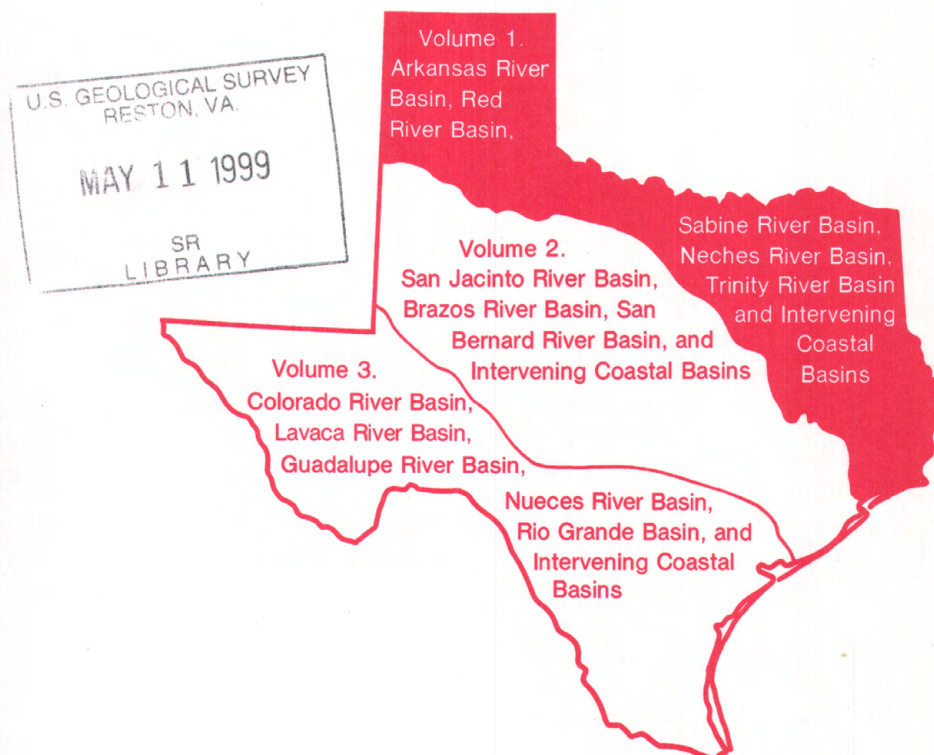


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Water Resources Data Texas Water Year 1997

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-97-1
Prepared in cooperation with the State of Texas
and with other agencies



CALENDAR FOR WATER YEAR 1997

1996

OCTOBER

S	M	T	W	T	F	S
		1	2	3	4	5
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13	14	15	16	17	18	19
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27	28	29	30	31		

NOVEMBER

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1997

JANUARY

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JUNE

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JULY

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AUGUST

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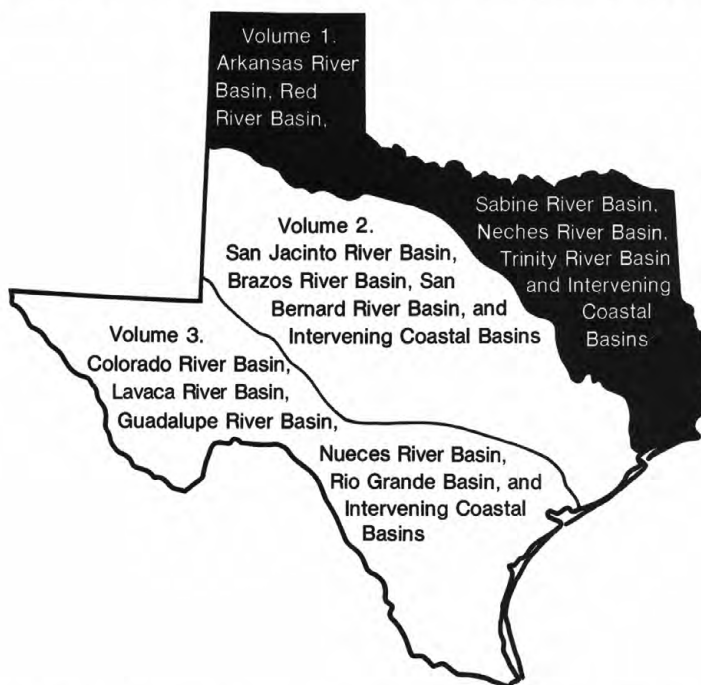
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21	22	23	24	25	26	27
28	29	30				



Water Resources Data Texas Water Year 1997

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

by S.C. Gandara, W.J. Gibbons, F.L. Andrews, R.E. Jones, and D.L. Barbie



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TX-97-1
Prepared in cooperation with the State of Texas
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

GEOLOGICAL SURVEY

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PREFACE

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

- Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, Trinity River Basin, and Intervening Coastal Basins
- Volume 2. San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins
- Volume 3. Colorado River Basin, Lavaca River Basin, Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins
- Volume 4. Ground-Water Data

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

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

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE February 1998	3. REPORT TYPE AND DATES COVERED Annual--Oct. 1, 1996 to Sept. 30, 1997	
4. TITLE AND SUBTITLE Water Resources Data--Texas, Water Year 1997, Volume 1 Arkansas River, Red River, Sabine River, Neches River, Trinity River Basins and Intervening Coastal Basins			5. FUNDING NUMBERS	
6. AUTHOR(S) S.C. Gandara, W.J. Gibbons, F.L. Andrews, R.E. Jones, and D.L. Barbie				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Geological Survey, Water Resources Division Texas District 8011 Cameron Road, Bldg. 1 Austin, TX 78754-3898			8. PERFORMING ORGANIZATION REPORT NUMBER USGS-WDR-TX-97-1	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Geological Survey, Water Resources Division Texas District 8011 Cameron Road, Bldg. 1 Austin, TX 78754-3898			10. SPONSORING / MONITORING AGENCY REPORT NUMBER USGS-WDR-TX-97-1	
11. SUPPLEMENTARY NOTES Prepared in cooperation with Federal, State, and local agencies.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT No restriction on distribution. This report may be purchased from National Technical Information Service Springfield, VA 22161			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Water-resources data for the 1997 water year for Texas are presented in four volumes, and consist of records of stage, discharge, and water quality of streams and canals; stage, contents, and water-quality of lakes and reservoirs; and water levels and water quality of ground-water wells. Volume 1 contains records for water discharge at 111 gaging stations; stage only at 3 gaging stations; stage and contents at 35 lakes and reservoirs; water quality at 72 gaging stations; and data for 14 partial-record stations comprised of 9 flood-hydrograph, 2 low-flow, and 3 crest-stage stations. Also included are lists of discontinued surface-water discharge or stage-only stations and discontinued surface-water-quality stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in Texas. Records for a few pertinent stations in the bordering States also are included.				
14. SUBJECT TERMS *Texas, *hydrologic data, *surface water, *water quality, flow rate, gaging stations, lakes, reservoirs, chemical analyses, sediments, water temperature, sampling sites.			15. NUMBER OF PAGES 550	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT	

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

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

	Station number	Page
LOWER MISSISSIPPI RIVER BASIN		
ARKANSAS RIVER BASIN		
Arkansas River:		
Canadian River at Logan, NM (d) (c) (t) -----	07227000	25
Revuelto Creek near Logan, NM (d) (c) (t) -----	07227100	27
Canadian River above New Mexico-Texas State line (c) (t) -----	07227140	29
Canadian River near Amarillo (d) (c) (t) -----	07227500	30
Canadian River near Canadian (d) -----	07228000	37
North Canadian River:		
Wolf Creek at Lipscomb (d) -----	07235000	38
RED RIVER BASIN		
Prairie Dog Town Fork Red River near Wayside (d) -----	07297910	39
Prairie Dog Town Fork Red River near Childress (d) (c) (t) -----	07299540	40
Groesbeck Creek at State Highway 6 near Quanah (d) -----	07299670	47
Salt Fork Red River:		
Greenbelt Lake near Clarendon (e) -----	07299840	48
Salt Fork Red River near Wellington (d) (c) (b) (t) -----	07300000	49
Salt Fork Red River at Mangum, OK (d) -----	07300500	51
North Fork Red River:		
McClellan Creek near McLean (d) -----	07301200	52
North Fork Red River near Shamrock (d) -----	07301300	53
Sweetwater Creek near Kelton (d) -----	07301410	54
Middle Pease River near Paducah (s) (t) -----	07307750	55
Pease River near Childress (d) (c) (t) -----	07307800	56
Pease River near Vernon (d) -----	07308200	64
Red River near Burkburnett (d) (c) (t) -----	07308500	65
North Wichita River near Paducah (d) (c) (t) -----	07311600	73
Middle Wichita River near Guthrie (d) (c) (t) -----	07311630	80
North Wichita River near Truscott (d) (c) (t) -----	07311700	87
South Wichita River at low-flow dam near Guthrie (d) (c) (t) -----	07311782	94
South Wichita River below low-flow dam near Guthrie (d) (c) (t) -----	07311783	101
South Wichita River at Ross Ranch near Benjamin (c) (t) -----	07311790	105
South Wichita River near Benjamin (d) (c) (t) -----	07311800	107
Wichita River near Seymour (d) (c) (t) -----	07311900	115
Lake Kemp near Mabelle (e) -----	07312000	122
Wichita River near Mabelle (d) (c) (t) -----	07312100	123
South Side Canal near Dundee (d) -----	07312110	130
Wichita River at State Highway 25 near Kamay (d) (c) (t) -----	07312130	131
Beaver Creek near Electra (d) (c) (t) -----	07312200	136
Wichita River at Wichita Falls (d) (c) (t) -----	07312500	141
Wichita River near Charlie (d) (c) (t) -----	07312700	147
North Fork Little Wichita River:		
Lake Kickapoo near Archer City (e) -----	07314000	152
Little Wichita River near Archer City (d) -----	07314500	153
Lake Arrowhead near Henrietta (e) -----	07314800	154
Little Wichita River above Henrietta (d) -----	07314900	155
East Fork Little Wichita River near Henrietta (d) -----	07315200	157
Red River near Terral, OK (d) (c) (t) (b) -----	07315500	158
Moss Lake near Gainesville (e) -----	07315950	163
Red River near Gainesville (d) (c) (t) -----	07316000	164
Red River at Denison Dam near Denison (d) (c) (t) -----	07331600	173
Red River at Arthur City (d) -----	07335500	181
Red River near De Kalb (d) (c) (t) (s) -----	07336820	182
Red River at Index, AR (d) -----	07337000	185
Sulphur River:		
South Sulphur River at Commerce (d) -----	07342465	186

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

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	Station number	Page
LOWER MISSISSIPPI RIVER BASIN--Continued		
RED RIVER BASIN--Continued		
Red River:		
Sulphur River:--Continued		
South Sulphur River near Commerce (c) (t) (b) -----	07342470	187
Middle Sulphur River at Commerce (d) (c) (t) (b) -----	07342480	189
Cooper Lake near Cooper (e) (c) (b) (t) -----	07342495	191
South Sulphur River near Cooper (d) (c) (t) -----	07342500	201
North Sulphur River near Cooper (d) -----	07343000	204
Sulphur River:		
White Oak Creek near Talco (d) (c) (t) -----	07343500	206
White Oak Creek near Omaha (c) (t) -----	07343850	210
Wright Patman Lake near Texarkana (e) (c) (b) (t) -----	07344200	212
Sulphur River near Texarkana (c) (t) -----	07344210	223
Big Cypress Creek:		
Brushy Creek at Scroggins (d) -----	07344486	224
Lake Bob Sandlin near Mount Pleasant (e) -----	07344489	225
Big Cypress Creek near Pittsburg (d) -----	07344500	226
Lake O' the Pines near Jefferson (e) -----	07345900	227
Big Cypress Creek near Jefferson (d) -----	07346000	228
Black Cypress Bayou at Jefferson (d) -----	07346045	229
Little Cypress Creek near Ore City (d) -----	07346050	230
Little Cypress Creek near Jefferson (d) (c) (t) -----	07346070	231
WESTERN GULF OF MEXICO BASINS		
SABINE RIVER BASIN		
Sabine River:		
Cowleech Fork Sabine River at Greenville (d) -----	08017200	233
South Fork Sabine River near Quinlan (d) -----	08017300	235
Lake Tawakoni near Wills Point (e) -----	08017400	236
Sabine River near Wills Point (d) -----	08017410	237
Sabine River near Mineola (d) (c) (t) -----	08018500	238
Lake Fork Creek:		
Lake Fork Reservoir near Quitman (e) -----	08018800	241
Lake Fork Creek near Quitman (d) -----	08019000	242
Big Sandy Creek near Big Sandy (d) -----	08019500	244
Sabine River near Gladewater (d) -----	08020000	245
Sabine River above Longview (d) -----	08020450	246
Sabine River below Longview (d) -----	08020900	247
Sabine River near Beckville (d) (c) (t) -----	08022040	249
Martin Lake near Tatum (e) -----	08022060	254
Sabine River at Logansport, LA (e) -----	08022500	255
Toledo Bend Reservoir near Burkeville (e) -----	08025350	256
Sabine River at Toledo Bend Reservoir near Burkeville (d) -----	08025360	257
Sabine River near Burkeville (d) -----	08026000	258
Sabine River near Bon Wier (d) (c) (t) -----	08028500	259
Big Cow Creek near Newton (d) -----	08029500	262
Sabine River near Ruliff (d) (c) (t) -----	08030500	263
NECHES RIVER BASIN		
Neches River:		
Neches River near Neches (d) (c) (t) -----	08032000	270
Neches River near Diboll (d) -----	08033000	272
Neches River near Rockland (d) (c) (t) -----	08033500	273
Angelina River:		
Angelina River near Alto (d) -----	08036500	277
Bayou Loco:		
Lake Nacogdoches near Nacogdoches (e) -----	08036700	278
Angelina River near Lufkin (c) (t) -----	08037000	279
Attoyac Bayou near Chireno (d) (c) (t) -----	08038000	281
Ayish Bayou near San Augustine (d) -----	08039100	284
Sam Rayburn Reservoir near Jasper (e) (c) (b) (t) -----	08039300	285
Angelina River at State Highway 63 near Horger (c) (t) -----	08039500	302
B.A. Steinhagen Lake at Town Bluff (e) -----	08040000	303

GAGING STATIONS, IN DOWNSTREAM ORDER,
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	Station number	Page
WESTERN GULF OF MEXICO BASINS--Continued		
NECHES RIVER BASIN--Continued		
Neches River near Town Bluff (d) -----	08040600	304
Neches River at Evadale (d) (t)-----	08041000	305
Village Creek near Kountze (d) -----	08041500	309
Pine Island Bayou near Sour Lake (d) -----	08041700	310
TAYLOR BAYOU BASIN		
Taylor Bayou near LaBelle (e) -----	08042000	311
Hillebrandt Bayou near Lovell Lake (e) -----	08042500	312
TRINITY RIVER BASIN		
West Fork Trinity River (head of Trinity River) near Jacksboro (d) -----	08042800	313
Bridgeport Reservoir above Bridgeport (e) -----	08043000	314
Big Sandy Creek near Chico (d) -----	08043950	315
West Fork Trinity River near Boyd (d) -----	08044500	317
Walnut Creek at Reno (d) -----	08044800	318
Eagle Mountain Reservoir above Fort Worth (e) -----	08045000	319
Lake Worth above Fort Worth (e) -----	08045400	320
Clear Fork Trinity River near Weatherford (d) -----	08045850	321
Benbrook Lake near Benbrook (e) -----	08046500	322
Clear Fork Trinity River near Benbrook (d) -----	08047000	323
Clear Fork Trinity River at Fort Worth (d) -----	08047500	324
West Fork Trinity River at Fort Worth (d) -----	08048000	325
West Fork Trinity River at Beach Street, Fort Worth (d) (c) (t) -----	08048543	326
Village Creek:		
Village Creek at Everman (d) (c) (t) -----	08048970	334
Lake Arlington at Arlington (e) (c) (t) -----	08049200	337
West Fork Trinity River at Grand Prairie (d) (c) (t) -----	08049500	343
Mountain Creek near Venus (d) -----	08049580	352
Walnut Creek near Mansfield (d) -----	08049700	353
Joe Pool Lake near Duncanville (e) -----	08049800	354
Mountain Creek Lake near Grand Prairie (e) -----	08050050	355
Mountain Creek at Grand Prairie (d) -----	08050100	356
Elm Fork Trinity River at Gainesville (d) -----	08050400	357
Elm Fork Trinity River near Gainesville (c) (t) -----	08050410	358
Isle du Bois Creek:		
Jordan Creek:		
Timber Creek near Collinsville (d) -----	08050800	360
Jordan Creek Tributary near Collinsville (c) (t) -----	08050815	361
Range Creek near Collinsville (d) -----	08050840	363
Ray Roberts Lake near Pilot Point (e) (c) (b) (t) -----	08051100	364
Clear Creek near Sanger (d) (c)-----	08051500	377
Little Elm Creek near Aubrey (d) (c) (t) -----	08052700	380
Lewisville Lake near Lewisville (e) (c) (b) (t) -----	08052800	383
Elm Fork Trinity River near Lewisville (d) (c) (t) -----	08053000	396
Denton Creek near Justin (d) -----	08053500	399
Grapevine Lake near Grapevine (e) -----	08054500	400
Elm Fork Trinity River near Carrollton (d)-----	08055500	401
Trinity River at Dallas (d)-----	08057000	403
Trinity River at Cedar Crest Blvd., Dallas (c) (t) -----	08057055	404
White Rock Creek at Greenville Avenue, Dallas (d) (c) (t) -----	08057200	411
Trinity River below Dallas (d) (c) (t) -----	08057410	414
Prairie Creek at U.S. Highway 175, Dallas (d) -----	08057445	425
East Fork Trinity River at McKinney (d) -----	08058900	426
Pilot Grove Creek:		
Pilot Grove Creek near Blue Ridge (c) (t) -----	08059300	427
Sister Grove Creek near Blue Ridge (d) (c) (t) -----	08059400	429
Lavon Lake near Lavon (e) (c) (b) (t) -----	08060500	432
Rowlett Creek near Sachse (d)-----	08061540	443
Lake Ray Hubbard near Forney (e) -----	08061550	444

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

ix

	Station number	Page
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TRINITY RIVER BASIN--Continued		
Trinity River:		
East Fork Trinity River near Forney (d) -----	08061750	445
East Fork Trinity River near Crandall (d) (c) (t)-----	08062000	446
Trinity River near Rosser (d) (c) (t)-----	08062500	455
Trinity River at Trinidad (d) (c) (t)-----	08062700	464
Cedar Creek Reservoir near Trinidad (e) -----	08063010	472
Navarro Mills Lake near Dawson (e) -----	08063050	473
Richland Creek near Dawson (d) -----	08063100	474
Chambers Creek:		
Waxahachie Creek:		
Bardwell Lake near Ennis (e)-----	08063700	475
Waxahachie Creek near Bardwell (d)-----	08063800	476
Chambers Creek near Rice (d) (c) (t) -----	08064100	477
Richland-Chambers Reservoir near Kerens (e) -----	08064550	483
Tehuacana Creek near Streetman (d) (c) (t) -----	08064700	484
Trinity River near Oakwood (d)-----	08065000	488
Upper Keechi Creek near Oakwood (d) -----	08065200	489
Trinity River near Crockett (d) (c) (t) -----	08065350	490
Bedias Creek near Madisonville (d)-----	08065800	499
Kickapoo Creek near Onalaska (d) -----	08066170	500
Livingston Reservoir near Goodrich (e) (c) (t)-----	08066190	501
Long King Creek at Livingston (d)-----	08066200	508
Trinity River near Goodrich (d) -----	08066250	509
Menard Creek near Rye (d) -----	08066300	510
Trinity River at Romayor (d) -----	08066500	511
Trinity River at Liberty (d) -----	08067000	512
CWA Canal near Dayton (d) -----	08067070	513
Lake Charlotte near Anahuac (e) (t) -----	08067118	514
Trinity River at Wallisville (e) (t) -----	08067252	519
CEDAR BAYOU BASIN		
Cedar Bayou near Crosby (d) -----	08067500	525

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Texas have been discontinued. Daily stream-flow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as partial-record stations. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the title page of this report.

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

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Punta De Agua Creek near Channing (d)	07227448	3,568	1968-73
East Chyenne Creek Tributary near Channing (e)	07227460	0.86	1965-74
Canadian River at Tascosa (d)	07227470	18,536	1969-77
Tecovas Creek Tributary near Bushland (e)	07227480	2.5	1966-74
Lake Meredith near Sanford (e)	07227900	20,220	1965-87
Dixon Creek near Borger (d)	07227920	134	1974-89
Palo Duro Creek near Canyon (e)	07229700	982	1942-54
Palo Duro Creek near Spearman (d)	07233500	960	1945-79
White Woman Creek Tributary near Darrouzett (e)	07234150	4.03	1966-74
Tierra Blanca Creek above Buffalo Lake near Umbarger (d)	07295500	1,968	1939-54, 1967-73
Buffalo Lake near Umbarger (e)	07296000	2,075	1938-54
Tierra Blanca Creek below Buffalo Lake near Umbarger (d)	07296100	2,075	1967-73
Prairie Dog Town Fork Red River near Canyon (d)	07297500	3,369	1924-26, 1938-49
Middle Tule Draw near Tulia (e)	07297920	313	1967-74
North Tule Draw at Reservoir near Tulia (d)	07298000	189	1939-40, 1941-73
MacKenzie Reservoir near Silverton (d)	07298100	188	1975-86
Rock Creek Tributary near Silverton (d)	07298150	13.7	1966-74
Tule Creek near Silverton (d)	07298200	1,150	1964-86
Prairie Dog Town Fork Red River near Brice (d)	07298500	6,082	1939-44, 1949-51, 1960-63
Mulberry Creek near Brice (d)	07299000	534	1949-51
Prairie Dog Town Fork Red River near Lakeview (d)	07299200	6,792	1963-80
Little Red River near Turkey (d)	07299300	139	1968-81
Prairie Dog Town Fork Red River near Estelline (d)	07299500	7,293	1924-25, 1938-47
Prairie Dog Town Fork Red River below Mountain Creek near Estelline (e)	07299505	7,341	1974-77
Prairie Dog Town Fork Red River above Jonah Creek near Estelline (e)	07299510	7,533	1974-77
Jonah Creek at Weir near Estelline (d)	07299512	65.50	1974-82
Jonah Creek below Weir near Estelline (d)	07299514	66.60	1974-76
Jonah Creek at mouth near Estelline (d)	07299525	76	1974-76
Salt Creek near Estelline (d)	07299530	142	1974-79
Red River near Quanah (d)	07299570	8,321	1960-82
North Groesbeck Creek Tributary near Kirkland (d)	07299575	0.16	1966-74
Salt Fork Red River near Clarendon (d)	07299850	457	1960-64
Lelia Lake Creek near Hedley (e)	07299900	86	1951-70
Salt Fork Red River near Hedley (e)	07299930	744	1951, 1956-62
Oklahoma Draw Tributary near Hedley (e)	07299940	1.1	1965-74
McClellan Creek near McLean (d)	07301200*	759	1968-80
North Fork Red River near Shamrock (d)	07301300*	1,082.0	1964-92
Sweetwater Creek near Wheeler (e)	07301400	164	1951-64
Doodlebug Creek near Wheeler (e)	07301405	0.19	1967-73
Quitaque Creek near Quitaque (d)	07307500	293	1945-59
North Pease River near Childress (d)	07307600	1,434	1973-79
North Pease River near Kirkland (e)	07307660	N/A	1973-79
Cottonwood Creek Tributary near Afton (e)	07307720	0.68	1967-74
Middle Pease River near Paducah (d)	07307750	1,086	1973-79
Middle Pease River near Paducah (d)	07307760	1,123	1980-82
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79
Canal Creek near Crowell (e)	07307950	49.0	1968-70,

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Pease River near Crowell (d)	07308000	3,037	1978-79
Plum Creek near Vernon (e)	07308220	4.99	1924-47
China Creek near Electra (e)	07308400	37	1967-74
Truscott Brine Lake near Truscott (e)	07311669	26.2	1967-76
North Fork Wichita River near Crowell (d)	07311622	591	1985-93
Middle Fork Wichita River near Truscott (d)	07311648	161	1971-76
South Fork Wichita River near Guthrie (d)	07311780	239	1952-54, 1956-57 1971-76
South Wichita River at Ross Ranch near Benjamin (d)	07311790	499	1971-79
Beaver Creek Tributary near Crowell (e)	07312140	3.43	1966-74
Wolf Creek near Iowa Park (e)	07312300	8.5	1966-74
North Fork Little Wichita River near Archer City (e)	07314200	0.10	1966-74
Little Wichita River near Henrietta (d)	07315000	1,037	1966-74
Little Wichita River near Ringgold (d)	07315400	1,350	1953-79
Farmers Creek near Saint Jo (e)	07315550	0.82	1959-65
Mineral Creek near Sadler (d)	07316200	26	1966-74
Sandy Creek near Sadler (e)	07316230	24	1968-77
Red River at Denison Dam near Denison (d)	07331600	39,720	1968-74
Bois D'Arc Creek near Randolph (d)	07332600	72	1924-89
Cooper Creek near Bonham (e)	07332602	6.21	1963-85
Pay Mayse Lake near Chicota (d)	07335390	175	1966-74
Sanders Creek near Chicota (d)	07335400	175	1968-96
Little Pine Creek near Kanawha (d)	07336750	75.40	1968-86
Pecan Bayou near Clarksville (d)	07336800	100	1969-80
McKinney Bayou near Leary (e)	07336940	3.33	1962-77
Nelson Branch near Leonard (e)	07342450	0.22	1966-73
South Sulphur River near Commerce (d)	07342470	189	1966-74
Cuthand Creek near Bogata (d)	07343300	69	1980-91
Dial Branch near Bagwell (e)	07343350	1.00	1964-74
White Oak Creek below Talco (d)	07343800	579	1966-74
Buck Creek near Cookville (e)	07343900	0.78	1924-56
Sulphur River near Darden (d)	07344000	2,774	1980-85
Sulphur River near Texarkana (d)	07344210	3,443	1974-92
Big Cypress Creek near Winnsboro (d)	07344482	27.2	1974-91
Lake Cypress Springs near Mt. Vernon (d)	07344484	75.0	1967-74
Dragoo Creek near Mt. Pleasant (e)	07344490	4.27	1943-90
Big Cypress Creek near Pittsburg (d)	07344500*	366.0	1967-74
Williamson Creek near Pittsburg (e)	07344600	7.11	1943-77
Boggy Creek near Daingerfield (d)	07345000	72	1943-62, 1974-89
Ellison Creek Reservoir near Lone Star (e)	07345500	37	1966-74
Big Cypress Creek Tributary near Jefferson (e)	07346010	0.51	1966-74
Taylor Branch near Smithland (e)	07346072	0.73	1966-74
Big Cypress Creek near Karnack (e)	07346085	2,174	1980-85
Frazier Creek near Linden (d)	07346140	48.0	1965-91
Sabine River near Emory (d)	08017500	888	1952-73
Burnett Branch near Canton (e)	08017700	0.33	1966-74
Grand Saline Creek near Grand Saline (d)	08018200	91.4	1968-73
Burke Creek near Yantis (d)	08018730	33.10	1979-89
Dry Creek near Quitman (e)	08018950	63.6	1968-75
Sabine River at Hawkins (e)	08019200	2,259	1976-82
Lake Winnsboro near Winnsboro (d)	08019300	27.1	1962-86
Big Sandy Creek near Hawkins (e)	08019430	196	1980-82
Prairie Creek near Gladewater (d)	08020200	48.90	1968-77
Sabine River near Longview (d)	08020500	2,947	1904-07, 1924-33
Rabbit Creek at Kilgore (d)	08020700	75.80	1964-77
Grace Creek Tributary at Longview (e)	08020800	5.05	1967-74

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Mill Creek near Henderson (d)	08020960	20.30	1979-81
Mill Creek near Longview (d)	08020980	47.90	1979-81
Tiawichi Creek near Longview (d)	08020990	62.70	1978-81
Cherokee Bayou near Elderville	08021000	120	1940-49
Lake Cherokee near Longview (e)	08021500	158	1951-83
Sabine River near Tatum (d)	08022000	3,493	1939-78,
(e)			1979-82
Redmon Branch near Hallesville (e)	08022010	0.46	1966-74
Eight Mile Creek near Tatum (e)	08022050	106	1962-71
Martin Creek near Tatum (d)	08022070	148	1974-96
Martin Creek near Beckville (e)	08022080	192	1962-71
Murvaul Lake near Gary (d)	08022200	115	1958-78
Murvaul Bayou near Gary (d)	08022300	134	1958-83
Socagee Creek near Carthage (d)	08022400	82.60	1962-73
Sabine River at Logansport, LA (d)	08022500*	4,842	1903-68
Tenaha Creek near Shelbyville (d)	08023200	97.80	1952-81
Dorsey Branch near Milam (e)	08024290	0.70	1967-74
Sabine River near Milam (d)	08024400	6,508	1924-25,
			1939-68
Palo Gaucho Bayou near Hemphill (d)	08024500	123	1952-65
Mill Creek near Burkeville (d)	08025307	17.6	1974-79
Little Cow Creek below McGraw Creek near Burkeville (e)	08026500	112	1952-58
Moore Branch near Newton (e)	08028505	3.77	1967-74
Nichols Creek near Buna (e)	08029750	54.4	1959-64
Cypress Creek near Buna (d)	08030000	69.20	1952-83
Adams Bayou Tributary near Deweyville (e)	08030700	12.4	1966-74
Cow Bayou near Mauriceville (d)	08031000	83.30	1952-86
Neches River Basin:			
Bethlehem Branch near Van (e)	08031100	1.09	1966-74
Kickapoo Creek near Brownsboro (d)	08031200	232	1962-89
Lake Athens near Athens (e)	08031290	21.6	1966-87
Lake Palestine near Frankston (e)	08031400	839	1962-94
Neches River near Reese (d)	08031500	851	1924-27
Hurricane Creek Tributary near Palestine (e)	08032100	0.39	1966-74
One Arm Creek near Maydelle (e)	08032250	6.01	1967-74
Squirrel Creek near Elkhart (e)	08032300	1.57	1967-74
Neches River near Alto (d)	08032500	1,945	1944-79
Neches River near Diboll (d)	08033000*	2,724.0	1924-85
Piney Creek Tributary near Pennington (e)	08033250	1.17	1967-74
Piney Creek near Groveton (d)	08033300	79	1962-89
Shawnee Creek Tributary near Huntington (e)	08033450	0.52	1966-74
Greenwood Creek Tributary near Colmesneil (e)	08033480	0.15	1966-74
Bowles Creek near Selman City (e)	08033600	14.5	1968-85
Striker Creek near Summerfield (d)	08033700	146	1941-49
Striker Creek Reservoir near New Salem (e)	08033800	148	1941-49
East Fork Angelina River near Cushing (d)	08033900	158	1964-89
Lake Tyler near Whitehouse (e)	08034000	107	1949-86
Mud Creek near Jacksonville (d)	08034500	376	1939-79
Mud Creek at Ponta (d)	08035000	475	1924-27
Angelina River near Lufkin (d)	08037000	1,600	1924-34,
			1939-79
Bayou Lanana at Nacogdoches (d)	08037050	31.3	1965-86,
			1988-93
Gingham Branch near Mt. Enterprise (e)	08037300	0.90	1967-74
Arenoso Creek near San Augustine (d)	08037500	75.30	1938-40
Attoyac Bayou near Chireno (d)	08038000*	503.0	1924-85
Angelina River near Zavalla (d)	08038500	2,892	1952-65
Ayish Bayou at San Augustine (d)	08039000	15.80	1924-25
Ayish Bayou near San Augustine (d)	08039100*	89.0	1959-85
Angelina River at Horger (d)	08039500	3,486	1928-51,
			1967-73

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Little Sandy Creek Tributary near Jasper (e)	08039900	0.46	1967-74
Neches River at Town Bluff (d)	08040500	7,573	1951-89
Drakes Branch near Spurger (e)	08041400	5.03	1967-74
Taylor Bayou Basin:			
Hillebrandt Bayou near Lovell Lake (d)	08042500	128	1954-84
Double Bayou Basin:			
West Fork Double Bayou near Anahuac (e)	08042550	4.43	1967-74
Trinity River Basin:			
North Creek SWS No. 28-A near Jermyn (e)	08042650	6.82	1972-80
North Creek near Jacksboro (d)	08042700	21.60	1956-80
Beans Creek at Wizard Wells (e)	08042900	29.60	1993-95
Big Creek near Chico (e)	08042950	50.30	1993-95
West Fork Trinity River at Bridgeport (d)	08043100	1,113	1984-89
West Fork Trinity River at Bridgeport (d)	08043500	1,147	1908-30
Big Sandy Creek near Bridgeport (d)	08044000	333	1937-95
Garrett Creek near Paradise (e)	08044135	52.5	1992-95
Salt Creek near Paradise (e)	08044140	52.7	1992-95
Walker Creek near Boyd (e)	08044200	2.95	1965-74
West Fork Trinity River at Lake Worth, Fort Worth (d)	08045500	2,069	1924-34
Lake Weatherford near Weatherford (e)	08045800	109	1976-80
Clear Fork Trinity River near Weatherford (d)	08045850*	121.0	1980-87
Clear Fork Trinity River near Aledo (d)	08046000	251	1947-75
Marine Creek at Fort Worth (d)	08048500	16.80	1950-58
Sycamore Creek at I.H. 35W, Fort Worth (d)	08048520	17.70	1970-76
Sycamore Creek Trib. above Seminary South, Fort Worth (d)	08048530	0.97	1970-76
Sycamore Creek Trib. at I.H. 35W, Fort Worth (d)	08048540	1.35	1970-76
Dry Branch at Fain Street at Fort Worth (d)	08048600	2.15	1969-76
Big Fossil Creek at Haltom City (d)	08048800*	52.8	1959-73
Little Fossil Creek at I.H. 820, Fort Worth (e)	08048820	5.64	1969-73
Little Fossil Creek at Mesquite Street, Fort Worth (d)	08048850	12.30	1969-76
Deer Creek Tributary near Crowley (e)	08048900	5.86	1967-74
Village Creek at Kennedale (d)	08048980	100	1986-89
Village Creek near Handley (d)	08049000	126	1925-30
Big Bear Creek near Grapevine (d)	08049550	29.6	1967-79
Trigg Branch at DFW Airport near Euless (d)	08049565	1.73	1983-87
Mountain Creek near Venus (d)	08049580*	26.0	1989-91
Mountain Creek near Cedar Hill (d)	08049600	119	1961-84
Mountain Creek above Duncanville (e)	08049850	224	1986-87
Mountain Creek near Duncanville (e)	08049900	225	1971-90
Mountain Creek near Grand Prairie (d)	08050000	273	1925-33
Elm Fork Trinity River SWS 6-O near Muenster (e)	08050200	0.77	1957-73
Elm Fork Trinity River near Muenster (d)	08050300	46	1957-73
Elm Fork Trinity River near Sanger (d)	08050500	381	1949-85
Isle Du Bois Creek near Pilot Point (d)	08051000	266	1949-85
Elm Fork Trinity River near Pilot Point (d)	08051130	692	1985-92
Elm Fork Trinity River above Aubrey (e)	08051190	684	1981-89
Elm Fork Trinity River near Denton (d)	08052000	1,084	1924-27
Lake Dallas near Lake Dallas (e)	08052500	1,165	1929-57
Little Elm Creek SWS #10 near Gunter (e)	08052630	2.10	1966-72
Little Elm Creek near Celina (d)	08052650	46.70	1966-76
Hickory Creek at Denton (d)	08052780	129	1985-87
Indian Creek at Hebron Parkway at Carrollton (d)	08053010	15.0	1987-90
Furneaux Creek at Josey Lane at Carrollton (d)	08053030	4.10	1987-90
Hutton Branch at Broadway at Carrollton	08053090	9.10	1987-90
Jones Valley Creek Tributary near Forestburg (e)	08053100	1.70	1966-74
Denton Creek near Roanoke (d)	08054000	621	1924-28, 1939-55
Gamble Branch near Argyle (e)	08054200	0.50	1965-74
Denton Creek near Grapevine (d)	08055000	705	1948-91
Joe's Creek at Royal Lane, Dallas (e)	08055580	1.94	1973-78

Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Joes Creek near Dallas (e)	08055600	7.4	1964-79
Bachman Branch at Dallas (d)	08055700	10	1964-79
Turtle Creek at Dallas (d)	08056500	7.98	1952-80, 1984-91
Coombs Creek at Sylvan Avenue, Dallas (e)	08057020	4.75	1965-78
Cedar Creek at Bonnie View Road, Dallas (e)	08057050	9.42	1965-78
White Rock Creek at Keller Springs Road, Dallas (d)	08057100	29.40	1961-79
Spanky Branch at McCalluin Lane at Dallas (e)	08057120	6.77	1962-78
Rush Branch at Arapaho Road, Dallas (e)	08057130	1.22	1973-78
Cottonwood Creek at Forest Lane, Dallas (e)	08057140	8.50	1962-78
Floyd Branch at Forrest Lane, Dallas (e)	08057160	4.17	1962-78
White Rock Creek at White Rock Lake, Dallas (d)	08057300	100	1963-79
Ash Creek at Highland Road, Dallas (e)	08057320	6.92	1963-78
Forney Creek at Lawnview, Dallas (e)	08057340	1.84	1963-72
White Rock Creek at Scyene Road, Dallas (d)	08057400	122	1963-79
Elm Creek at Seco Boulevard, Dallas (e)	08057415	1.25	1973-78
Fivemile Creek at Kiest Boulevard, Dallas (e)	08057418	7.65	1974-78
Fivemile Creek at US Highway 77 West, Dallas (e)	08057420	14.30	1965-78
Woody Branch at US Highway 77 West, Dallas (e)	08057425	10.30	1965-78
Fivemile Creek at Lancaster Road, Dallas (e)	08057430	37.90	1965-78
Newton Creek at Interstate Highway 635, Dallas (e)	08057135	5.91	1974-78
White Branch at Interstate Highway 635, Dallas (e)	08057440	2.53	1974-78
Tenmile Creek at State Highway 342 at Lancaster (d)	08057450	52.80	1970-79
Honey Creek SWS #11 near McKinney	08057500	2.14	1952-73
Honey Creek SWS #12 near McKinney	08058000	1.26	1952-77
Honey Creek near McKinney (d)	08058500	39	1951-73
East Fork Trinity River near McKinney (d)	08059000	190	1949-75
Arls Branch near Westminster (e)	08059200	0.52	1965-74
Sister Grove Creek near Princeton (d)	08059500	113	1949-75
East Fork Trinity River above Pilot Grove near Lavon (d)	08060000	324	1949-53
East Fork Trinity River near Lavon (d)	08061000	773	1954-89
East Fork Trinity River near Rockwall (d)	08061500	840	1924-54
Lake Ray Hubbard near Forney (e)	08061550	1,071	1968-94
Duck Creek at Buckingham Road, Garland (e)	08061620	8.05	1969-76
Duck Creek near Garland (d)	08061700	31.6	1958-93
South Mesquite Creek at State Highway 352, Mesquite (e)	08061920	13.40	1969-76
South Mesquite Creek at Mercury Road near Mesquite (d)	08061950	23	1969-79
Cedar Creek Reservoir Spillway Outflow near Trinidad (d)	08062650	1,007	1966-82
Cedar Creek near Kemp (d)	08062800	189	1963-87
Bachelor Creek near Terrell (e)	08062850	13.0	1967-74
Kings Creek near Kaufman (d)	08062900	233	1963-87
Lacey Fork near Mabank (d)	08062980	118	1983-84
Cedar Creek near Mabank (d)	08063000	733	1939-66
South Twin Creek near Eustace (d)	08063003	27.40	1983-84
Red Oak Branch near Eustace (e)	08063005	0.90	1966-74
Cedar Creek at Trinidad (d)	08063020	1,011	1965-71
Briar Creek Tributary near Corsicana (e)	08063180	0.72	1966-74
Pin Oak Creek near Hubbard (d)	08063200	17.60	1956-72
Richland Creek near Richland (d)	08063500	734	1939-88
Richland Creek near Richland (Overflow) (d)	08063501	734.0	1981-87
Alvarado Branch near Alvarado (e)	08063550	0.84	1966-74
Kings Branch near Reagor Springs (e)	08063620	0.62	1966-74
Waxahachie Creek near Waxahachie (e)	08063685	111	1981-82, 1986-87
Chambers Creek near Corsicana (d)	08064500	963	1939-84
Richland Creek near Fairfield (d)	08064600	1,957	1972-83
Saline Branch Tributary near Bethel (e)	08064630	0.22	1967-74
Catfish Creek near Tennessee Colony (d)	08064800	207	1962-89
Panther Branch near Spring (d)	08064850	34.5	1972-74
Mayes Branch near Latexo (e)	08065320	4.26	1967-74

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

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Station name	Station number	Drainage area (mi ²)	Period of record (water years)
Trinity River near Midway (d)	08065500	14,450	1939-71
Caney Creek near Madisonville (d)	08065700	112	1963-77
Nelson Creek near Riverside (e)	08065950	86.4	1949, 1965, 1970-74
Harmon Creek near Huntsville (e)	08065975	89.2	1973-81
Trinity River at Riverside (d)	08066000	15,589	1951-72
West Carolina Creek near Oakhurst (e)	08066050	15.2	1949, 1966-73
White Rock Creek near Trinity (e)	08066100	222	1974-85
White Rock Creek near Trinity (e)	08066130	228	1966-74
Tantaboque Creek near Trinity (e)	08066140	61.3	1966-73
Caney Creek near Groveton (e)	08066145	41.4	1966-73
Brushy Creek near Onalaska (d)	08066150	29.1	1966-70
Livingston Reservoir outflow weir near Goodrich (d)	08066191	16,583	1969-94
Long King Creek near Goodrich (d)	08066210	220	1972-81
Bluff Creek Tributary near Livingston (e)	08066280	0.62	1965-74
Big Creek near Shepherd	08066400	38.80	1966-89
Gaylor Creek near Moss Hill (e)	08066800	32.3	1966-73
Devers Canal near Liberty (d)	08067080	N/A	1972-82
Cedar Bayou Basin:			
Cedar Bayou at Crosby (d)	08067500*	65.0	1972-91

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1996 water year. Daily records of specific conductance, temperature, sediment, color, pH, dissolved oxygen, or chloride were collected and published for the record shown for each station.

[SC, specific conductance; T, temperature; S, sediment; C, color; pH, pH; DO, dissolved oxygen; Cl, chloride.]

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Canadian River at Tascosa	07227470	19,200	SC, T, Cl	1948-53,
		18,536	SC, T, pH, Cl	1969-77
Canadian River near Canadian	07228000	22,866	SC, T	1974-81
Prairie Dog Town Fork Red River near Wayside	07297910	4,221	SC, T	1969-81
Tule Creek near Silverton	07298200	1,150	SC, T, pH, Cl	1968-69
Prairie Dog Town Fork Red River near Brice	07298500	6,082	SC, pH, Cl, S	1949-51,
			T	1950-51
Mulberry Creek near Brice	07299000	534	SC, pH, Cl, S	1949-51
Prairie Dog Town Fork Red River near Lakeview	07299200	6,792	SC, T	1968-80,
			S	1979-80
Little Red River near Turkey	07299300	139	SC, T	1968-81,
			S	1979-81
Jonah Creek at Weir near Estelline	07299512	65.50	SC	1974-82
Jonah Creek below Weir near Estelline	07299514	66.60	SC	1974-76
Salt Creek near Estelline	07299530	142	SC	1974-79
Prairie Dog Town Fork Red River near Childress	07299540	7,725	SC, T	1968-82,
				1994-97
Salt Fork Red River near Hedley	07299930	868	SC, T, pH, Cl	1956-61
Salt Fork Red River near Wellington	07300000	1,222	SC, T, pH, Cl	1952-54,
			SC, T	1968-91
North Pease River near Childress	07307600	1,434	SC, T	1973-79
Middle Pease River near Paducah	07307750	1,086	SC	1973-79,
			T	1973-79,
			S	1994-97
Middle Pease River near Paducah	07307760	1,128	SC	1980-82,
			T	1980
Pease River near Childress	07307800	2,754	SC, T	1968-82,
				1994-97
Pease River near Crowell	07308000	3,037	SC	1942-43
Red River near Burkburnett	07308500	20,570	SC, T	1968-81
North Fork Wichita River near Paducah	07311600	540	SC, T	1968-76
North Fork Wichita River near Crowell	07311622	591	SC	1971-76
Middle Fork Wichita River near Truscott	07311648	161	SC	1970-76
Truscott Brine Lake near Truscott	07311669	26.2	SC, T	1985-90
North Fork Wichita River near Truscott	07311700	937	SC, T	1969-92
South Fork Wichita River near Guthrie	07311780	239	SC	1970-76
South Wichita River below Low-Flow Dam near Guthrie	07311783	223	SC, T	1987-89
South Fork Wichita River at Ross Ranch near Guthrie	07311790	499	SC	1971-79,
			Cl	1988-97,
			S	1978-79
Wichita River near Seymour	07311900	1,874	SC, T	1968-79
Beaver Creek near Electra	07312200	652	SC, T	1968-70
Wichita River at	07312500	3,140	SC, T	1982-89
Wichita River near Charlie	07312700	3,439	SC, T	1968-81
Little Wichita River near Archer City	07314500	481	SC	1953-55,
			T	1953-54
Little Wichita River near Henrietta	07315000	1,037	SC, T, pH, Cl	1953-56,
			S, T	1959-66,
			T	1954
East Fork Little Wichita River near Henrietta	07315200	178		
Little Wichita River near Ringgold	07315400	1,350	SC, pH, Cl	1959-62
Red River near Gainesville	07316000	30,872	SC, Cl	1944-46,
			SC, T, pH, Cl	1953-63,

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Red River at Denison Dam near Denison	07331600	39,720	SC, T SC T	1967-89, 1944-89, 1945-89
Little Pine Creek near Kanawha	07336750	75.40	T	1980
Red River near De Kalb	07336820	47,348	SC, T	1968-91
South Sulphur River near Cooper	07342500	527	SC, T, pH, Cl	1959-66, 1968-72, 1973-89
Sulphur River near Talco	07343200	1,365	SC, T, pH, Cl SC, T	1966-72, 1973-91
White Oak Creek near Talco	07343500	494	SC, T, pH, Cl SC, T	1966-72, 1973-91
Sulphur River near Darden	07344000	2,774	SC, T, pH, Cl	1947-50
Big Cypress Creek near Pittsburg	07344500	366	SC, T, pH, Cl SC, T	1968-72, 1973-89
Little Cypress Creek near Jefferson	07346070	675	SC, T, pH, Cl SC, T	1968-72, 1973-91
Sabine River near Emory	08017500	888	SC, T, pH, Cl	1952-54
Grand Saline Creek near Grand Saline	08018200	91.40	SC, T, pH, Cl	1968-73
Sabine River near Mineola	08018500	1,357	SC, T, pH, Cl SC, T	1968-72, 1973-92
Lake Fork Creek near Quitman	08019000	585	SC, T, pH, Cl SC, T	1968-72, 1973-89
Big Sandy Creek near Big Sandy	08019500	231	SC, T, S	1985-86
Sabine River at Logansport	08022500	4,842	SC, T	1939-45
Sabine River below Toledo Bend near Burkeville	08026000	7,482	SC, T C	1969-86, 1969-75
Sabine River near Bon Wier	08028500	8,229	SC, T, C	1969-84
Sabine River near Ruliff	08030500	9,329	pH, DO C Cl	1968-75, 1970-76, 1968
Cow Bayou near Mauriceville	08031000	83.30	SC, T, pH, Cl SC, T	1952-54, 1954-56
Neches River near Neches	08032000	1,145	SC, T	1974-91
Neches River near Alto	08032500	1,945	SC, T	1950-69
Neches River near Diboll	08033000	2,724	SC, T	1970-81
Neches River near Rockland	08033500	3,636	SC	1941-42, 1946-47
Angelina River near Lufkin	08037000	1,600	SC, T, pH, Cl SC, T	1955-68, 1969-79
Angelina River below Sam Rayburn Dam near Jasper	08039400	3,449	SC, T	1964-79
Village Creek near Kountze	08041500	860	SC, T	1968-70
Pine Island Bayou near Sour Lake	08041700	336	SC, T, pH, Cl SC, T	1968-72, 1973-89
Big Sandy Creek near Bridgeport	08044000	333	SC, T, S	1968-77,
Clear Fork Trinity River at Fort Worth	08047500	518	SC, pH, Cl T	1949-52, 1948-62
Village Creek at Everman	08048970	84.5	SC, pH, T, DO	1990
Elm Fork Trinity River SWS # 6-0 near Muenster	08050200	0.77	S	1957-66
Elm Fork Trinity River near Muenster	08050300	46	SC T	1967-68, 1957-58, 1966-68, 1957-68
Clear Creek near Sanger	08051500	295	S SC, T, S	1968-77
Little Elm Creek near Celina	08052650	46.70	SC T, S	1967-75, 1966-75

DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record (water years)
Little Elm Creek near Aubrey	08052700	75.50	SC	1967-75,
			T, S	1966-75
Elm Fork Trinity River near Lewisville	08053000	1,673	SC	1982-86,
			T	1976-86
Duck Creek near Garland	08061700	31.6	SC, pH, T, DO	1988-89
East Fork Trinity River above Seagoville	08061970	1,183	SC, T, pH, DO	1987-93
East Fork Trinity River at Seagoville	08061980	1,224	SC, pH, T, DO	1987-96
Cedar Creek near Mabank	08063000	733	SC, T, pH, Cl	1956-57
Pin Oak Creek near Hubbard	08063200	17.60	SC	1967-72,
			T	1957-60,
				1965-72,
			S	1957-60,
				1962-72
Richland Creek near Richland	08063500	734	SC, T, pH, Cl	1968-69,
			SC, T	1983-89
Chambers Creek near Corsicana	08064500	963	SC, T, pH, Cl	1961-70
Richland Creek near Fairfield	08064600	1,957	SC, T, pH, Cl	1956-66,
				1972,
			SC, T	1973-83
Trinity River near Oakwood	08065000	12,833	SC, T, pH, Cl	1948-54,
			SC, T, S	1977-81
Bedias Creek near Madisonville	08065800	321	SC, T	1985-87,
			S	1986
Long King Creek at Livingston	08066200	141	SC, T, pH, Cl	1963-72
Trinity River near Goodrich	08066250	16,844	SC, T	1970-73
Trinity River near Moss Bluff	08067100	17,738	SC, pH, Cl	1950-65
Old River near Cove	08067200	19.0	SC, pH, Cl	1950-65,
			T	1965
Trinity River at Anahuac	08067300	17,912	SC, pH, Cl	1950-65

WATER RESOURCES DATA—TEXAS, 1997

VOLUME 1

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

INTRODUCTION

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

This report series includes records of stage, discharge, and water quality of streams and canals; stage, contents, and water quality of lakes and reservoirs, and water levels and water quality of ground water wells. Volume 1 contains records for water discharge at 112 gaging stations; stage only at 4 gaging stations; stage and contents at 34 lakes and reservoirs; and water quality at 76 gaging stations. Also included are data for 15 partial-record stations comprised of 9 flood-hydrograph, 3 low-flow, and 3 crest-stage stations. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating Federal, State, and City agencies in Texas.

This series of annual reports for Texas began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report was changed to its present format, with data on quantities and quality of surface water contained in each of three volumes. Groundwater levels and water quality have been published in a separate volume beginning with the 1991 water year.

Prior to introduction of this series and for several water years concurrent with it, water resources data for Texas were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published

annually under the title "Surface Water Supply of the United States, Parts 7 and 8." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425 Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official U.S. Geological Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water Data Report TX-97-1." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including the current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (512) 873-3000.

COOPERATION

Federal agencies that assisted the U.S. Geological Survey in the collection of data in this report in the form of funds or services in water year 1997 are:

- ☐ Corps of Engineers, U.S. Army.
- ☐ International Boundary and Water Commission
United States and Mexico, U.S. Section.
- ☐ U.S. Bureau of Reclamation.

Organizations that assisted in the collection of data in this report through joint funding agreements through the Texas Water Development Board or through direct joint funding agreements with the U.S. Geological Survey are:

Texas Water Development Board, G.E. Kretzschmar, Executive Administrator; the cities of Abilene, Arlington, Austin, Corpus Christi, Fort Worth, Gainesville, Garland, Georgetown, Graham, Houston, Lubbock, Nacogdoches, San Angelo, and Wichita Falls; Bexar, Medina, and Atascosa Counties Water Improvement District No. 1; Barton Springs/Edwards Aquifer Conservation District; Brazos River Authority; Canadian Municipal Water Authority; Coastal Water Authority; Colorado River Municipal Water District; Dallas Public Works Department; Dallas Water Utilities; Edwards Underground Water District; Fort Bend Subsidence District; Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris-Galveston Coastal Subsidence District; Harris County Flood Control District; Houston-Galveston Area Council; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; North Central Texas Council of Governments; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; Pecos River Commission; Red Bluff Water Power Control District; Red River Authority; Sabine River Authority of Texas; Sabine River Compact Administration; San Antonio City Public Service Board; San Antonio River Authority; San Antonio Water System; San Jacinto River Authority; Somervell County Water District; Tarrant Regional Water District; Texas Soil & Water Conservation Board; Texas State Department of Highways & Public Transportation; Texas Natural Resources Conservation Commission; Texas Water Development Board; Titus County Fresh Water Supply District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; West Central Texas Municipal Water District; and Wichita County Water Improvement District No. 2.

HYDROLOGIC CONDITIONS

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

Streamflow across the State during water year 1997 generally was above normal (discharges within the upper 25 percentile of record).

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,558,000 acre-feet, increased from 72 percent at the end of September 1996 to 82 percent at the end of September 1997. Records from these reservoirs indicate that storage increased in 46, decreased in 24, and remained the same in 7.

The area for which water resources data are presented in volume 1 includes the Texas Panhandle and extends across northern and eastern Texas to southeastern Texas. Normal annual precipitation ranges from about 17 inches in the western part of the Texas Panhandle to more than 50 inches in the extreme southeastern part of the State. Average annual runoff ranges from less than 1 inch in parts of the Panhandle to as much as 15 inches in southeastern Texas. The area described in volume 1 and the location of selected streamflow and water-quality stations in the area are shown in figure 1.

Streamflow

Streamflow was above normal during water year 1997 in the area covered in volume 1. Streamflow for water year 1997 and for the period of record at six selected stations (fig. 1) for which data are included in volume 1 is presented in table 1.

At the four long-term hydrologic index stations in the State, monthly mean streamflow during water year 1997 ranged from normal to above normal. Monthly mean discharges for water year 1997 and the median of the long-term monthly means for water years 1961–90 for the four long-term hydrologic index stations in the State are shown in figure 2. Streamflow at the hydrologic index station Neches River near Rockland was normal during October, November, December, January, May, June, July, and September, and above normal for the remaining 4 months of water year 1997. The station North Bosque River near Clifton had normal streamflow during May and September, and above normal streamflow for the remaining 10 months. The station North Concho River near Carlsbad had normal streamflow during October, May, July, August, and September, and above normal streamflow for the remaining 7 months. Streamflow for the station Guadalupe River near Spring Branch was normal from October through January, and above normal from February through July (no data available for August and September).

Conservation storage in 36 selected reservoirs in this area of the State, with a total combined conservation capacity of 21,547,000 acre-feet, increased from 79 percent of capacity at the end of September 1996 to 92 percent of capacity at the end of September 1997. Records from these reservoirs indicate that storage increased in 26, decreased in 8, and remained the same in 2 during the water year.

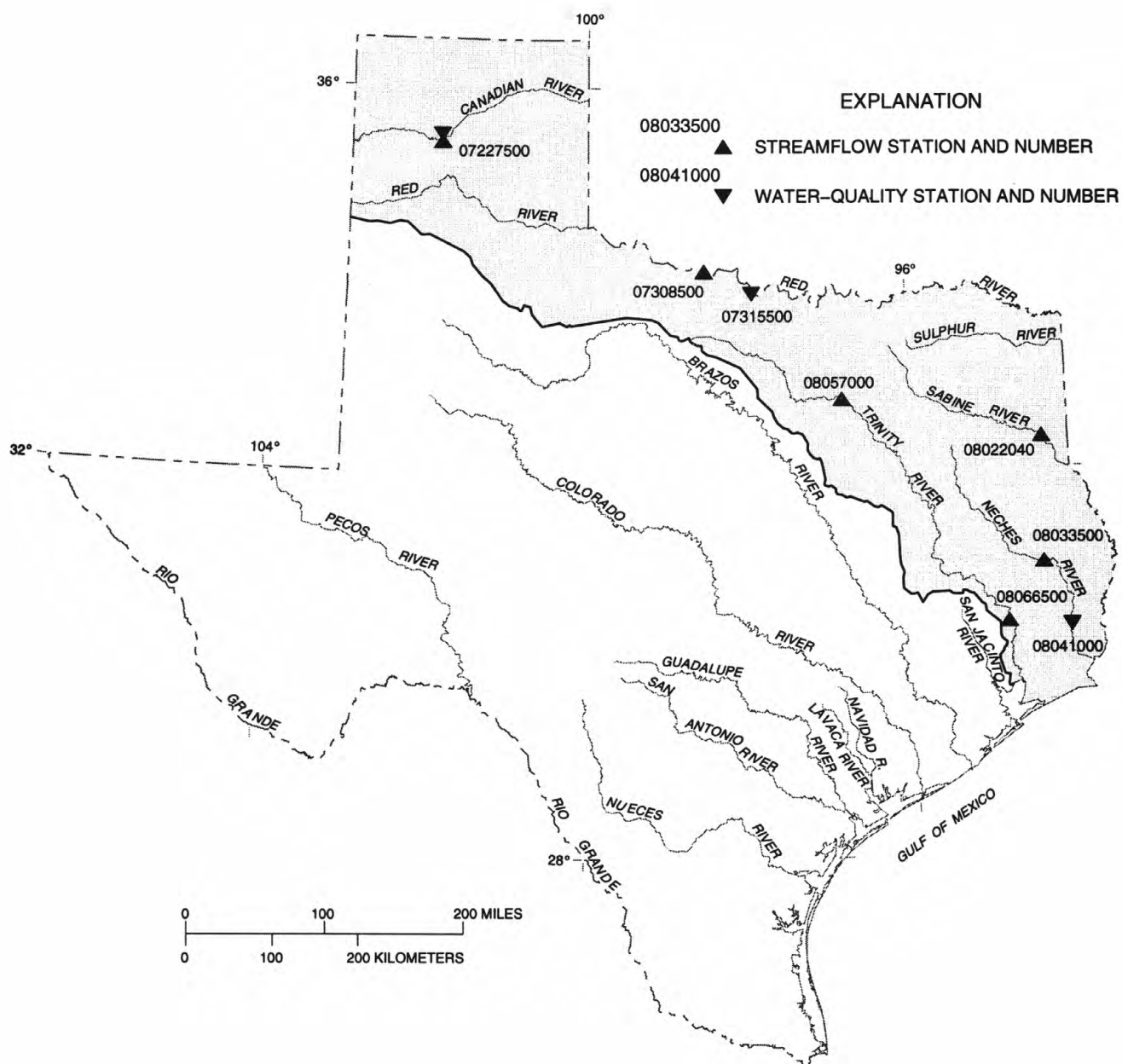


Figure 1. Area of Texas covered by volume 1 (shaded) and location of selected streamflow and water-quality stations in volume 1.

WATER RESOURCES DATA—TEXAS, 1997

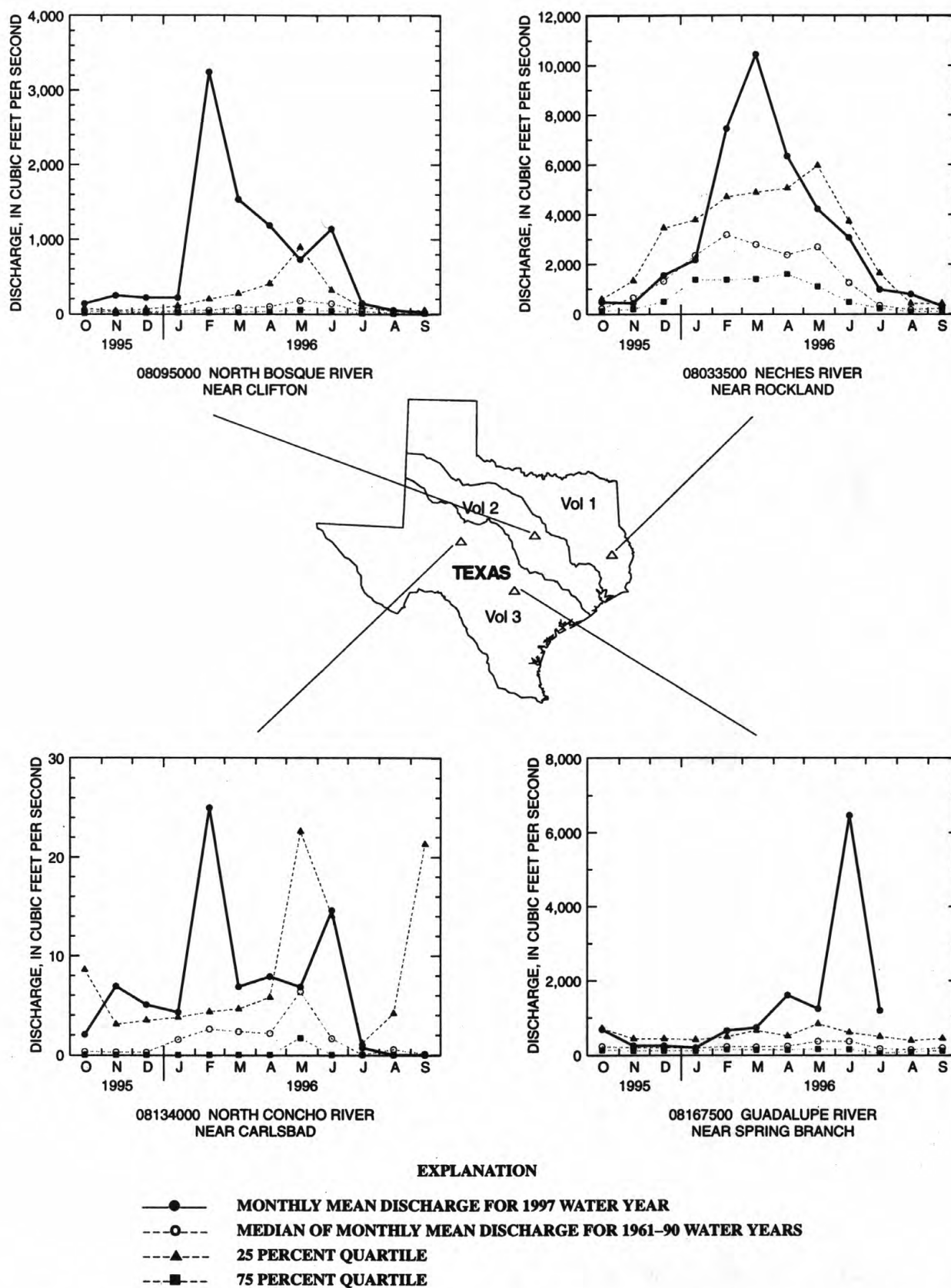


Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 1997 water year and median of the monthly mean discharges for 1961-90 water years.

Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow discharges. During years when precipitation and runoff are less than normal, streamflow commonly is more mineralized than during years when precipitation and runoff are normal or greater than normal. However, for streams in which discharge is controlled by reservoirs, the dissolved-solids concentrations may remain relatively con-

stant despite substantial fluctuations in precipitation and runoff.

Records of discharge-weighted-average concentrations of dissolved solids for water year 1997 are compared with those for water years 1993–97 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the Arkansas, Red, and Neches River Basins. Results are shown in table 2.

Table 1. Streamflow at six selected stations

Station no. and name	Discharge during 1997 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Maximum instantaneous	Minimum daily mean	Mean	Maximum instantaneous	Minimum daily mean	Mean
<u>Arkansas River Basin</u>						
07227500 Canadian River near Amarillo, Tex.	7,570	8.8	157	135,000	0	284 (1939-97)
<u>Red River Basin</u>						
07308500 Red River near Burkburnett, Tex.	72,100	196	3,470	174,000	0	1,262 (1960-97)
<u>Sabine River Basin</u>						
08022040 Sabine River near Beckville, Tex.	17,900	108	3,988	49,400	2.4	2,534 (1961-97)
<u>Neches River Basin</u>						
08033500 Neches River near Rockland, Tex. ^{1/}	14,500	141	3,211	42,300	18	2,336 (1962-97)
<u>Trinity River Basin</u>						
08057000 Trinity River at Dallas, Tex.	27,600	355	4,323	111,000	10	1,828 (1931-97)
08066500 Trinity River at Romayor, Tex.	52,700	684	11,750	122,000	104	7,756 (1924-97)
^{1/} Hydrologic index station.						

Table 2. Comparison of records of discharge-weighted-average concentrations
of dissolved solids for the 1997 and 1993-97 water years

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1997	1993-97	1997	1993-97
<u>Arkansas River Basin</u>				
07227500 Canadian River near Amarillo, Tex.	157	190	1,060	897
<u>Red River Basin</u>				
07315500 Red River near Terral, Okla.	4,091	3,830	1,690	1,310
<u>Neches River Basin</u>				
08041000 Neches River at Evadale, Tex.	7,415	7,400	99	85

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities.

National Stream Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of the constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

Additional information about the NASQAN program is available through the world wide web at:

<http://water.usgs.gov/public/nasqan/>

The National Atmospheric Deposition Program/National Trends Network (NAPD/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

<http://nadp.nrel.colostate.edu/NAPD>

National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 53 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. There are currently two NAWQA Programs operating in Texas; the Trinity NAWQA and the South Central Texas NAWQA.

Additional information about the NAWQA Program is available through the world wide web at:

http://www.rvares.er.usgs.gov/nawqa/nawqa_home.html
<http://txwww.cr.usgs.gov/trin/index.html>
<http://txwww.cr.usgs.gov/sctx/index.html>

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1997 water year that began October 1, 1996, and ended September 30, 1997. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order Numbering

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 08057000, which appears just to the left

of the station name, includes the 2-digit Part number "08" plus the 6-digit downstream-order number "057000." The Part number designates the major river basin; for example, Part "08" is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

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

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

Data Collection and Computation

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

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

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

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

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

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

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

Data Presentation

Streamflow data in this report are presented in a format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consists of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly-mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station

name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years which the revisions apply to. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.-- Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

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

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

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the EXTREMES FOR CURRENT YEAR paragraph, is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph, as appropriate. No changes have been made to the data presentations of lake contents.

Data table of daily mean values

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

below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the daily mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period, expressed as "FOR WATER YEARS ____-____, BY WATER YEAR (WY)," will list the first and last water years of the range selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. However, data for partial water years, if any, will only be used in the statistical calculations, if appropriate. For example, all of the calculations for the statistical characteristics designated ANNUAL (See line headings below.), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript,

occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the column heading. When this occurs, it should be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data is omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period.

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

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

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicates the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true values; "good," within 10 percent; and "fair," within 15 percent.

Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

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

Records of Surface-Water Quality

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

Classification of Records

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

A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin. A careful distinction needs to be made between "continuing records", as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values obtained by data logger. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

Arrangement of Records

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

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measure-

ments made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Records of surface-water quality at some National Stream Quality Accounting (NAWQA) Sites include data collected by different government agencies as identified in the water-quality data tables under AGENCY COLLECTING SAMPLE (CODE NUMBER). Values for this code are given below:

- 1028 - U.S. Geological Survey
- 84823 - International Boundary & Water Commission

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

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

- 10 - Equal Width Increment (EWI)
- 20 - Equal Discharge Increment (EDI)
- 25 - Timed Sampling Interval
- 30 - Single Vertical
- 40 - Multiple Verticals
- 50 - Point Sample
- 60 - Weighted Bottle
- 70 - Grab Sample (DIP)
- 90 - Discharge Integrated, Centroid
- 120 - Velocity Integrated
- 8010 - Other

Detailed information on sampling methods may be found in the following publications: OFR-90-127 "Guidelines for Collection and Analysis of Water-Quality Samples from Streams in Texas", OFR-94-455 "Field Guide for Collecting and Processing Stream-Water Samples for the National Water-Quality Assessment Program", and OFR-94-539 "U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water". Specific questions pertaining to water-quality sample collection may be directed to the District Water-Quality Specialist in Austin, Texas, or the Regional Water-Quality Specialist in Denver, Colorado.

Additional information about the NASQAN program is available through the world wide web at:

<http://water.usgs.gov/public/nasqan/>

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

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

Water Temperature

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

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

Sediment

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

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

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

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S. Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the U.S. Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Historical and current (1996) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then

those concentrations are reported in nanograms per liter. If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter and could reflect contamination introduced during some phase of the procedure.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radio-chemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. These periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remarks Codes

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

PRINTED OUTPUT	REMARK
e or E	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (Organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blanks.

Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (mg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concen-

trations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the mg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Change in National Trends Network Procedures

NOTE: Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (303-491-5643).

WATER QUALITY-CONTROL DATA

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this district are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank - a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is put in the same type of bottle used for an environmental sample, and kept with the set of sample bottles before and after sample collection.

Equipment blank - a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to field blank but normally done in the more controlled conditions of the office).

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sample preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Sequential sample - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

<http://txwww.water.usgs.gov>

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address on the back of the title page.)

DEFINITION OF TERMS

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

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

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

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

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

Bacteria are microscopic unicellular organisms, typically spherical, rod-like, or spiral and threadlike in shape, often

clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

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

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at +44.5 °C or -0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

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

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500 °C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m³), and periphyton and benthic organisms in grams per square meter (g/m²).

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

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

Cubic foot per second (ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic-foot-per-second day [(ft³/s)/d] is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

Cubic feet per second per square mile [(ft³/s)/mi²] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

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

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

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

Dissolved refers to that material in a representative water sample which passes through a 0.45 mm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

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

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream

or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

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

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

Supplementary gage is a gage used to obtain additional data. A supplementary gage may be used in place of the principal gage if the latter is isolated or cut off from the channel, or registers only above (or below) a certain gage height. One or more supplementary gages may be used on bypass channels or overflow channels, or on streams that flow in several channels, each of which is rated independently.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

Hydrologic Benchmark Network is a network of 53 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

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

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

Micrograms per liter ($\mu\text{g/L}$, $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 284 sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are: (1) To obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for; (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs; (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics; and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

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

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

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

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

ClassificationSize (mm)Method of analysis

Clay	0.00024	-	0.004	Sedimentation
Silt	0.004	-	0.062	Sedimentation
Sand	0.062	-	2.0	Sedimentation or sieve
Gravel	2.0	-	64.0	Sieve

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

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

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

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

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

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

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

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

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

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

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes and [$\text{mg C}/(\text{m}^3/\text{time})$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [$\text{mg O}/(\text{m}^2/\text{time})$] for periphyton and macrophytes and [$\text{mg O}/(\text{m}^3/\text{time})$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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

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

Sea level was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited

from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

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

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

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

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

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

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

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

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

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

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

Solute is any substance that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

Surface area of a lake is that area outlined on the latest U.S. Geological Survey topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 mm mem-

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

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total-recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 mm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

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

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

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A

time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

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

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

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

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

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar

year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1990, is called the "water year 1990."

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

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

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

- 1-D1. *Water temperature-influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 p.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 p.

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 p.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 p.
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07227000 CANADIAN RIVER AT LOGAN, NM

LOCATION.--Lat 35°21'25", long 103°25'03", in NE1/4NE1/4 sec.15, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080006, on left bank 1,110 ft upstream from bridge on U.S. Highway 54, 0.7 mi south of Logan, 1.4 mi upstream from Chicago, Rock Island & Pacific Railroad Co. bridge, 2.0 mi downstream from Ute Dam, 4.3 mi upstream from Revuelto Creek, and at mile 672.0.

DRAINAGE AREA.--11,141 mi², of which 1,110 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 3,667.1 ft above sea level. Prior to Jan. 1, 1987 same site at datum 1.0 ft higher. See WSP 1311 or 1731 for history of changes prior to Oct. 1, 1934.

REMARKS.--Records good. Since installation of gage in water year 1939, at least 10% of contributing drainage area has been regulated by Conchas Lake, 45 mi upstream (station 07223500). Additional regulation by Ute Reservoir, 2 mi upstream (station 07226800). Diversions for irrigation of about 90,000 acres upstream from station. Several observations of water temperature were made during the year. No flow at times prior to completion of Ute Dam.

AVERAGE DISCHARGE.--15 years (water years 1909, 1912-13, 1927-38), 392 ft³/s, 284,000 acre-ft/yr, prior to completion of Conchas Dam. 24 years (water years 1939-62), 257 ft³/s, 186,200 acre-ft/yr, prior to completion of Ute Dam.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	3.6	3.7	3.3	3.6	3.6	3.8	3.7	3.0	258	248	255
2	4.0	3.5	3.5	3.3	3.5	3.6	3.9	3.6	2.9	256	249	255
3	3.8	3.6	3.5	3.3	3.5	3.6	7.8	3.8	3.0	256	251	256
4	3.6	3.6	3.7	3.3	3.5	3.5	5.4	3.8	3.5	254	251	256
5	4.7	3.5	3.6	3.4	3.5	3.5	3.9	3.8	2.8	253	252	256
6	4.0	3.5	3.6	3.4	3.5	3.5	3.7	3.8	2.8	253	253	257
7	3.7	3.5	3.6	3.4	3.6	3.5	3.9	3.7	3.1	252	206	123
8	3.8	3.4	3.6	3.4	3.5	3.5	3.9	3.7	4.8	251	9.3	7.8
9	3.9	3.3	3.6	3.4	3.5	3.5	3.8	3.7	102	251	5.6	5.4
10	4.0	3.3	3.5	3.3	3.5	3.5	4.0	3.6	224	249	4.6	4.5
11	4.0	3.4	3.5	3.4	3.6	3.5	3.9	4.3	231	248	41	4.0
12	5.0	3.4	3.6	3.6	3.6	3.5	3.8	3.5	236	249	254	3.7
13	4.5	3.4	3.6	3.5	3.7	3.5	3.8	3.4	238	248	262	3.5
14	4.3	3.4	3.6	3.5	3.6	3.6	3.8	3.0	241	247	263	3.5
15	4.1	3.4	3.6	3.5	3.5	3.6	3.8	3.1	242	247	264	125
16	4.2	3.5	3.6	3.5	3.5	3.6	3.7	3.7	245	247	267	247
17	4.2	3.4	3.6	3.6	3.5	3.6	3.7	3.5	243	246	269	247
18	4.1	3.4	3.5	3.6	3.5	3.6	3.6	3.0	186	246	280	247
19	4.1	3.7	3.6	3.6	3.8	3.6	3.7	3.5	265	246	270	247
20	4.6	3.7	3.7	3.7	3.7	3.7	3.5	2.9	266	246	272	248
21	4.3	3.6	3.6	3.6	3.5	3.7	3.5	3.4	266	246	273	248
22	4.0	3.7	3.5	3.5	3.5	3.7	3.6	3.2	266	246	273	246
23	3.9	3.5	3.5	3.5	3.5	3.7	3.6	3.0	265	246	272	246
24	3.9	3.3	3.5	3.6	3.5	3.6	6.6	3.1	265	246	269	246
25	3.9	3.3	3.5	3.5	3.7	3.7	9.1	4.1	266	246	264	246
26	3.5	3.3	3.4	3.5	3.8	3.6	5.7	3.3	263	245	264	244
27	3.7	3.3	3.4	3.5	3.6	7.2	4.7	2.9	263	245	198	244
28	3.9	3.3	3.3	3.5	3.5	5.1	4.4	2.7	261	245	255	243
29	3.8	3.4	3.3	3.5	---	4.1	4.1	2.8	260	246	257	242
30	3.6	4.3	3.4	3.5	---	3.8	3.9	2.9	260	246	258	195
31	3.6	---	3.3	3.5	---	3.8	---	2.9	---	246	256	---
TOTAL	125.3	104.5	109.5	107.7	99.8	117.1	130.6	105.4	5379.9	7706	7010.5	5451.4
MEAN	4.04	3.48	3.53	3.47	3.56	3.78	4.35	3.40	179	249	226	182
MAX	5.0	4.3	3.7	3.7	3.8	7.2	9.1	4.3	266	258	280	257
MIN	3.5	3.3	3.3	3.3	3.5	3.5	2.7	2.7	2.8	245	4.6	3.5
AC-FT	249	207	217	214	198	232	259	209	10670	15280	13910	10810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1997#, BY WATER YEAR (WY)

MEAN	30.5	25.7	6.83	7.46	9.30	3.18	16.7	34.8	61.7	89.4	100	109
MAX	325	287	84.1	62.7	174	11.4	239	767	575	608	720	838
(WY)	1966	1983	1983	1992	1980	1983	1987	1987	1969	1982	1981	1969
MIN	1.30	1.19	1.24	.86	1.13	.63	.26	.64	.62	.65	1.19	1.36
(WY)	1964	1984	1984	1963	1987	1963	1963	1963	1963	1963	1963	1983

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1963 - 1997#

	1996	1997	1963-1997
ANNUAL TOTAL	15663.1	26447.7	41.4
ANNUAL MEAN	42.8	72.5	145
HIGHEST ANNUAL MEAN			1.62
LOWEST ANNUAL MEAN			6860
HIGHEST DAILY MEAN	269	Aug 19	Jun 18
LOWEST DAILY MEAN	2.6	Jun 20	Jan 12
ANNUAL SEVEN-DAY MINIMUM	2.7	Jun 17	Apr 16
INSTANTANEOUS PEAK FLOW			Sep 22
INSTANTANEOUS PEAK STAGE			Sep 22
ANNUAL RUNOFF (AC-FT)	31070	52460	a29.30
10 PERCENT EXCEEDS	249	255	115
50 PERCENT EXCEEDS	3.6	3.7	2.6
90 PERCENT EXCEEDS	3.2	3.4	1.6

a From floodmark.

c From rating curve extended above 75,000 ft³/s.

Period of regulated streamflow.

07227000 CANADIAN RIVER AT LOGAN, NM--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1957 to September 1962, October 1992 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT 16...	1345	4.2	9110	7.9	29.0	20.5	662	9.0	119	630	140	69
DEC 09...	1045	3.5	8180	8.0	23.0	11.0	--	--	--	--	--	--
JAN 21...	1430	3.4	8570	8.1	15.0	11.0	660	10.9	118	590	130	64
MAY 13...	1500	3.3	8500	7.9	31.0	25.0	665	10.2	146	560	120	66
JUL 15...	1415	254	1170	8.2	39.0	19.0	672	8.9	110	280	51	37
SEP 05...	1450	253	1150	7.9	36.0	22.5	--	--	--	--	--	--

[illegible]

07227100 REVUELTO CREEK NEAR LOGAN, NM

LOCATION.--Lat 35°20'29", long 103°23'37", in SW1/4NW1/4 sec.24, T.13 N., R.33 E., Quay County, Hydrologic Unit 11080008, on right bank 0.3 mi upstream from bridge on State Highway 469, 1.9 mi southeast of Logan, and at mile 2.3.

DRAINAGE AREA.--786 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 3,660 ft above sea level, from topographic map. Prior to Jan. 16, 1981, at site 320 ft upstream at datum 0.56 ft higher.

REMARKS.--Records good except those for estimated discharges, which are poor. No known regulation or diversions. Low flows supplemented by surface and ground-water return from irrigation in vicinity of Tucumcari. Several observations of water temperature were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD (1941-47).--Maximum discharge determined, about 13,400 ft³/s, Sept. 18, 1946, gage height, 9.04 ft, at site 180 ft downstream at different datum, from unpublished records collected by U.S. Bureau of Reclamation. A peak of 26,100 ft³/s, date unknown, gage height, 12.9 ft at former site and datum, was measured by slope-area method in May 1957.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	e1.5	29	7.4	e4.5	8.6	4.5	90	14	273	881	64
2	2.4	e1.6	152	7.1	4.2	17	4.8	49	11	88	481	21
3	1.0	e1.8	119	5.8	4.0	5.2	e209	27	13	41	117	17
4	14	e2.1	29	5.7	2.6	1.0	e5.8	15	7.6	34	201	26
5	e325	e2.5	16	7.1	2.2	1.7	e4.4	9.5	5.6	46	341	40
6	e80	e3.0	9.8	e5.7	1.5	4.5	e3.8	7.1	14	79	111	27
7	e13	e3.6	4.3	e5.3	.91	5.2	e2.1	5.2	61	54	27	13
8	e14	e3.8	4.7	e4.6	1.0	5.5	e1.8	3.8	466	22	3.4	12
9	e10	e4.0	6.0	e4.2	.53	16	e2.0	278	558	41	2.0	20
10	e9.0	e4.3	5.4	e4.0	2.2	11	e2.3	83	450	97	3.4	18
11	e7.0	e4.5	4.4	e4.3	1.1	5.9	e2.9	166	347	187	748	15
12	e6.0	8.4	4.9	e4.1	1.1	10	e2.5	66	298	208	272	14
13	e5.0	8.7	7.0	e4.2	4.3	8.7	e4.9	27	364	22	590	15
14	e4.5	5.4	9.6	e4.2	10	6.5	3.2	15	449	40	185	16
15	e4.0	9.5	6.5	e4.0	4.7	10	1.7	13	498	58	44	22
16	e11	17	7.7	e3.9	5.6	12	1.5	11	461	17	26	16
17	e8.0	14	17	e4.2	16	11	1.4	31	665	15	5.5	21
18	e4.0	5.7	28	e3.9	5.2	11	1.1	18	418	18	270	14
19	e2.3	4.1	21	e4.0	2.7	15	.75	14	343	22	251	6.8
20	e2.1	3.6	42	e4.2	7.9	7.7	169	12	303	48	441	7.3
21	e30	2.7	30	e4.5	15	2.9	120	35	259	62	230	30
22	e30	2.0	7.0	e4.7	10	4.1	90	99	222	44	93	282
23	e20	1.9	8.5	2.3	4.9	7.8	65	39	310	136	50	228
24	e10	1.6	8.6	3.8	9.0	15	461	34	308	95	12	189
25	e6.0	1.6	8.3	e3.9	14	4.7	771	23	285	66	6.5	261
26	e3.0	2.1	11	e4.1	10	3.9	1080	19	251	77	2.9	184
27	e10	1.9	9.6	e3.9	44	2.9	699	15	244	132	1.5	149
28	e10	2.3	9.3	e4.1	40	5.2	476	13	173	198	1.3	101
29	e6.0	2.5	5.9	e4.6	---	3.5	336	14	249	584	1.6	57
30	e6.0	13	7.3	e4.3	---	3.7	189	12	285	669	17	23
31	e3.0	---	7.5	e4.7	---	5.0	---	18	---	715	53	---
TOTAL	678.3	140.7	636.3	142.8	229.14	232.2	4716.45	1261.6	8332.2	4188	5469.1	1909.1
MEAN	21.9	4.69	20.5	4.61	8.18	7.49	157	40.7	278	135	176	63.6
MAX	325	17	152	7.4	44	17	1080	278	665	715	881	282
MIN	1.0	1.5	4.3	2.3	.53	1.0	.75	3.8	5.6	15	1.3	6.8
AC-FT	1350	279	1260	283	454	461	9360	2500	16530	8310	10850	3790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1997, BY WATER YEAR (WY)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
MEAN	34.4	9.06	10.1	5.55	7.41	6.47	27.4	45.9	81.2	122	125	73.5							
MAX	320	34.1	129	27.9	42.5	52.1	346	203	492	1203	575	515							
(WY)	1961	1962	1960	1990	1983	1985	1970	1991	1960	1960	1981	1969							
MIN	.000	.056	.001	.000	.000	.003	.32	.085	.89	.42	.93	1.72							
(WY)	1965	1978	1976	1965	1965	1980	1981	1976	1990	1983	1978	1978							

SUMMARY STATISTICS

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1959 - 1997
ANNUAL TOTAL	25535.69	27935.89	45.5
ANNUAL MEAN	69.8	76.5	204
HIGHEST ANNUAL MEAN			4.72
LOWEST ANNUAL MEAN			1960
HIGHEST DAILY MEAN	3750	1080	13800
LOWEST DAILY MEAN	.01	.53	.00
ANNUAL SEVEN-DAY MINIMUM	.10	1.2	.00
INSTANTANEOUS PEAK FLOW		2940	126700
INSTANTANEOUS PEAK STAGE		5.58	14.30
INSTANTANEOUS LOW FLOW		.09	.00
ANNUAL RUNOFF (AC-FT)	50650	55410	32930
10 PERCENT EXCEEDS	104	272	62
50 PERCENT EXCEEDS	7.0	11	5.3
90 PERCENT EXCEEDS	.42	2.3	.00

e Estimated

i From slope-area measurement of peak flow.

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	
OCT 1996	16...	1500	11	1360	8.0	27.0	27.0	662	6.8	99	340	71	39
DEC	09...	1530	4.7	2170	8.3	23.0	13.0	--	--	--	--	--	--
JAN 1997	22...	1345	4.7	2300	8.6	10.0	6.0	665	10.9	101	430	79	57
MAY	13...	1245	22	1290	8.2	26.0	25.0	664	7.3	102	290	65	32
JUL	16...	1345	22	1310	8.2	36.0	30.0	670	6.6	100	350	73	42
SEP	04...	1430	34	1030	7.9	29.0	31.0	--	--	--	--	--	--

[illegible]

ARKANSAS RIVER BASIN

29

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

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

PERIOD OF RECORD.--October 1969 to September 1973, October 1975 to September 1986, October 1992 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT 1996												
16...	1015	22	5790	8.0	22.5	15.5	667	9.0	105	520	110	60
JAN 1997												
22...	1015	22	8310	8.4	10.0	3.0	670	12.0	105	1600	420	130
MAY												
14...	1015	30	4330	8.5	21.5	17.0	673	7.5	89	460	110	44
JUL												
15...	1340	253	1320	8.3	41.0	26.0	675	7.7	108	290	53	37

DATE		SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 1996												
16...	1100	21	7.7	223	440	1600	0.60	11	3460	339	<9.0	
JAN 1997												
22...	1200	13	8.4	265	570	2300	0.70	10	4800	656	<15	
MAY												
14...	788	16	5.8	239	410	1000	0.59	9.6	2560	284	16	
JUL												
15...	167	4	6.5	187	320	100	0.70	6.2	803	193	<3.0	

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX

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

DRAINAGE AREA.--19,445 mi², of which 4,069 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1924 to December 1925 (period no longer used in computation of average annual discharge), January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,989.16 ft above sea level. Jan. 16, 1924, to Dec. 31, 1925, and Apr. 3 to June 1, 1938, nonrecording gage at site of old bridge 20 ft upstream at same datum. June 2 to Dec. 5, 1938, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage, at least 10% of contributing drainage area has been regulated by Conchas and Ute Reservoirs in New Mexico, total capacity 439,000 acre-feet. Conchas and Bell Ranch Canals divert water from Conchas Reservoir upstream for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of 24 ft; a higher stage probably occurred during a flood in October 1904, but stage is unknown; information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	383	57	e50	33	31	35	8.8	317	78	249	1010	184
2	288	153	51	33	30	36	15	265	59	231	957	209
3	165	121	66	30	29	33	51	166	49	215	954	195
4	108	90	91	31	26	30	211	124	48	235	841	217
5	85	e78	71	29	26	28	294	100	42	299	464	223
6	76	65	71	28	28	26	295	83	38	695	688	214
7	65	54	69	31	27	25	187	150	37	234	723	217
8	61	52	66	35	e25	26	145	194	56	211	452	222
9	101	51	65	36	27	25	115	75	126	201	344	231
10	163	45	64	34	27	24	88	67	203	245	828	235
11	88	40	60	e31	27	21	68	56	202	273	999	163
12	72	34	54	e23	26	20	72	42	372	222	288	84
13	64	31	50	e26	28	19	64	53	294	198	312	64
14	52	30	51	e27	32	18	59	85	330	183	634	48
15	46	27	50	e29	32	17	52	120	364	186	578	40
16	43	42	46	e30	30	17	50	122	338	200	366	29
17	35	112	e44	e35	28	17	48	67	499	183	279	24
18	33	68	e29	e40	26	16	37	54	801	183	253	20
19	31	49	e30	e50	31	15	34	39	503	182	611	18
20	28	41	e35	e59	35	14	29	44	390	177	381	78
21	37	35	e38	57	38	15	26	43	305	198	334	294
22	52	31	e47	51	36	13	42	57	273	308	387	263
23	66	28	52	49	33	13	41	60	305	377	550	466
24	46	27	44	46	31	12	143	47	304	290	320	284
25	36	29	41	43	31	11	1900	70	292	271	289	306
26	38	34	e40	38	35	12	1100	82	284	260	250	318
27	63	26	e38	38	39	11	697	47	348	262	227	263
28	53	25	36	e32	38	9.8	783	48	355	321	213	257
29	72	30	34	e30	---	11	570	150	272	524	214	254
30	69	40	33	33	---	11	475	337	261	667	213	247
31	52	---	32	33	---	10	---	113	---	1350	190	---
TOTAL	2571	1545	1548	1120	852	590.8	7699.8	3277	7828	9630	15149	5667
MEAN	82.9	51.5	49.9	36.1	30.4	19.1	257	106	261	311	489	189
MAX	383	153	91	59	39	36	1900	337	801	1350	1010	466
MIN	28	25	29	23	25	9.8	8.8	39	37	177	190	18
AC-FT	5100	3060	3070	2220	1690	1170	15270	6500	15530	19100	30050	11240

ARKANSAS RIVER BASIN

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07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1997#, BY WATER YEAR (WY)

MEAN	316	78.6	51.3	56.6	45.4	41.8	182	440	518	586	537	541
MAX	5663	812	458	519	259	403	5988	6804	5288	4880	3007	8016
(WY)	1942	1942	1942	1943	1980	1961	1942	1941	1941	1941	1981	1941
MIN	.57	1.52	1.25	4.75	3.00	1.86	1.51	4.60	.95	.31	.11	.034
(WY)	1981	1978	1984	1978	1939	1940	1978	1945	1990	1983	1983	1983

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1939 - 1997#
ANNUAL TOTAL	81998.82	57477.6	
ANNUAL MEAN	224	157	284
HIGHEST ANNUAL MEAN			2351
LOWEST ANNUAL MEAN			37.7
HIGHEST DAILY MEAN	7430	1900	79600
LOWEST DAILY MEAN	.18	8.8	.00
ANNUAL SEVEN-DAY MINIMUM	.23	11	.00
INSTANTANEOUS PEAK FLOW		7570	135000
INSTANTANEOUS PEAK STAGE		5.77	15.70
INSTANTANEOUS LOW FLOW			.00
ANNUAL RUNOFF (AC-FT)	162600	114000	205700
10 PERCENT EXCEEDS	522	359	478
50 PERCENT EXCEEDS	38	57	26
90 PERCENT EXCEEDS	3.0	26	4.0

e Estimated

Period of regulated streamflow.

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1948 to October 1949, February 1950 to September 1997 (discontinued). Chemical and biochemical analyses: March 1968 to September 1997 (discontinued). Pesticide analyses: March 1968 to June 1981.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1950 to current year.

WATER TEMPERATURE: August 1949 to current year.

SUSPENDED SEDIMENT DISCHARGE: August 1949 to September 1952.

INSTRUMENTATION.--Since October 1995, a water-quality instrument has recorded specific conductance and water temperature on 30 minute intervals at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,180 microsiemens June 8, 1990; minimum daily, 346 microsiemens Oct. 29, 1964.

WATER TEMPERATURE (1949-76, 1988 to current year): Maximum daily, 39.0°C July 7, 1973; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,660 microsiemens Jan. 14; minimum, 414 microsiemens Aug. 10.

WATER TEMPERATURE; Maximum, 33.0°C July 13; minimum, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV 07...	1330	54	3550	8.4	10.0	10.3	102	470	250	110	48
DEC 10...	1400	68	3960	8.4	12.0	10.1	107	490	260	110	53
FEB 19...	0900	32	4690	8.4	6.5	10.4	95	610	420	140	64
MAY 08...	1310	157	1730	8.4	18.0	7.9	94	170	6	36	18
JUL 16...	1130	199	1600	8.5	25.0	7.8	105	270	110	51	35
SEP 09...	1030	241	1550	8.5	22.0	7.7	98	270	100	51	35
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
NOV 07...	560	11	4.7	0	270	221	450	750	0.50	11	2070
DEC 10...	657	13	5.6	0	284	233	480	870	0.79	12	2320
FEB 19...	754	13	6.1	0	238	205	550	1100	0.77	12	2770
MAY 08...	259	9	3.7	0	194	159	190	330	0.57	9.0	947
JUL 16...	209	6	6.5	4	191	163	360	180	0.70	6.0	948
SEP 09...	202	5	5.9	9	189	169	330	170	0.66	7.7	907
DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	
NOV 07...	0.250	0.010	0.260	0.030	<0.20	<0.010	<0.010	--	--	--	
DEC 10...	0.170	0.012	0.182	<0.015	<0.20	<0.010	0.012	0.04	<1	120	
FEB 19...	0.041	0.012	0.053	<0.015	<0.20	<0.010	<0.010	--	--	--	
MAY 08...	--	<0.010	0.674	<0.015	<0.20	<0.010	<0.010	--	--	--	
JUL 16...	--	<0.010	<0.050	<0.015	0.22	<0.010	0.011	0.03	2	147	
SEP 09...	--	<0.010	0.067	<0.015	0.21	<0.010	0.017	0.05	--	--	

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	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)
NOV 07...	--	--	--	--	--	--	--	--	--	--
DEC 10...	<1.0	<1.0	<1.0	<9.0	<1.0	7.2	0.1	<1	<1.0	<20
FEB 19...	--	--	--	--	--	--	--	--	--	--
MAY 08...	--	--	--	--	--	--	--	--	--	--
JUL 16...	<1.0	<1.0	1.0	<3.0	<1.0	<1.0	<0.1	<1	<1.0	<3.0
SEP 09...	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	2571	2780	1610	11190	570	3970	350	2440	350
NOV. 1996	1545	3630	2120	8830	780	3250	460	1910	470
DEC. 1996	1548	3990	2330	9760	870	3650	510	2110	520
JAN. 1997	1120	4350	2560	7730	980	2950	550	1670	570
FEB. 1997	852	4410	2590	5960	990	2280	560	1290	580
MAR. 1997	590.8	4460	2620	4180	1000	1600	570	904	590
APR. 1997	7699.8	1660	954	19830	320	6650	210	4340	200
MAY 1997	3277	2680	1550	13730	550	4870	340	2990	340
JUNE 1997	7828	1740	994	21020	330	6910	220	4600	210
JULY 1997	9630	1480	842	21900	270	7040	180	4800	170
AUG. 1997	15149	1090	619	25320	190	7950	140	5560	130
SEPT 1997	5667	1650	941	14400	310	4720	210	3150	200
TOTAL	57477.6	**	**	163900	**	55840	**	35770	**
WTD.AVG.	157	1830	1060	**	360	**	230	**	220

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	1770	1690	1710	3660	3430	3520	4090	3860	3960	4550	4390	4500
2	1850	1690	1750	3700	3490	3590	4060	3880	3960	4420	4340	4390
3	2000	1850	1910	3780	3060	3550	4030	3110	3760	4430	4310	4370
4	2220	2000	2120	3060	2530	2650	3550	2690	3230	4400	4290	4350
5	2440	2220	2320	2980	2570	2770	3700	2620	3200	4410	4300	4380
6	2760	2430	2570	3320	2980	3130	3970	3340	3640	4520	4380	4430
7	3310	2760	3030	3680	3320	3520	4150	3680	3880	4540	4430	4480
8	3630	3310	3470	3810	3680	3740	4560	4130	4250	4440	4200	4320
9	3980	3630	3760	3850	3700	3780	4740	4510	4630	4380	3670	4150
10	4510	3980	4350	3880	3720	3790	4520	3780	4080	4490	3810	4290
11	3990	2380	2850	4110	3880	3980	3870	3800	3830	4330	3330	3960
12	2630	2390	2470	4210	4110	4170	4010	3850	3910	4550	4230	4390
13	3010	2630	2830	4240	4180	4210	4090	4000	4060	5370	4550	5010
14	3170	3000	3070	4260	4200	4230	4080	4020	4050	5660	5320	5460
15	3340	3170	3260	4300	4230	4260	4160	4050	4100	5350	4660	5020
16	3490	3340	3410	4290	3350	3840	4350	4140	4250	5020	4530	4790
17	3670	3490	3580	4040	1760	2840	4440	3480	3900	5100	3500	4510
18	3780	3670	3720	3590	2390	2950	4440	2190	3940	4410	3230	3910
19	3850	3770	3800	3840	3100	3580	5070	4040	4420	4080	3610	3900
20	3860	3810	3840	4110	3830	3940	4690	4030	4290	3960	3270	3650
21	3830	3550	3690	4280	4110	4190	4280	4030	4120	3610	3390	3500
22	3700	3320	3520	4310	4240	4280	4080	3710	3930	3990	3590	3720
23	3580	3050	3460	4450	4290	4340	3990	3800	3900	4240	3970	4100
24	3430	2950	3130	4590	4440	4530	4040	3250	3850	4620	4240	4400
25	3780	3430	3610	4750	4060	4480	4240	4010	4160	4650	4490	4590
26	4060	3780	3930	4540	4120	4330	4630	3280	4150	4730	4550	4630
27	4440	3980	4180	4700	4540	4640	4500	4100	4350	4910	4690	4790
28	4620	3190	4220	4640	4400	4550	4410	4200	4320	5020	4030	4690
29	3190	2850	3010	4400	4290	4330	4450	4340	4390	5210	4860	5000
30	3090	1950	2530	4360	3790	4020	4610	4380	4510	4990	4710	4830
31	3430	3090	3250	---	---	---	4580	4510	4550	4770	4510	4690
MONTH	4620	1690	3170	4750	1760	3860	5070	2190	4050	5660	3230	4430

ARKANSAS RIVER BASIN

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4560	4270	4430	4480	4330	4400	5390	4010	4750	1540	1320	1420
2	4430	4220	4310	4550	4260	4380	5630	3030	4580	1770	1520	1640
3	4430	4280	4360	4560	4340	4430	3890	2190	3010	1970	1760	1860
4	4490	4350	4420	4460	4330	4400	3900	1850	3070	2160	1930	2010
5	4510	4310	4430	4470	4260	4340	2560	937	1430	2540	2160	2350
6	---	---	e4320	4700	4430	4540	4890	1040	3450	2870	2540	2700
7	---	---	e4480	4820	4530	4650	2930	2420	2540	3230	2760	2980
8	---	---	e4600	4890	4690	4770	2420	2130	2280	3090	1760	2180
9	---	---	e4740	4990	4760	4860	2340	2190	2260	3680	2170	3010
10	---	---	e4620	4820	4260	4500	2590	2320	2440	3910	3680	3820
11	---	---	e4540	4410	3830	4090	3010	2590	2780	4150	3880	4010
12	---	---	e4660	4140	3780	3930	3210	2770	3020	4320	4110	4200
13	---	---	e4700	4300	3870	4070	3290	3140	3210	4480	4230	4310
14	---	---	e4520	4320	4040	4160	3750	3290	3520	5290	4420	4780
15	---	---	e4360	4490	3980	4210	3740	3620	3680	5570	3440	4740
16	---	---	e4380	4290	3900	4090	3810	3410	3620	3440	2870	3000
17	---	---	e4310	4320	3720	4030	4170	3420	3870	---	---	e3120
18	---	---	e4630	4530	3690	3960	4160	4000	4090	---	---	e3480
19	4720	4450	4570	5020	4050	4690	4250	4030	4130	---	---	e3430
20	4540	4430	4490	4970	3600	4590	4200	4040	4120	---	---	e3560
21	4500	4290	4380	4890	3830	4310	4270	3100	4140	---	---	e3670
22	4490	4210	4330	4890	3410	4620	4320	3100	4010	3920	3650	3770
23	4490	4310	4370	4920	4360	4690	4040	3740	3890	3850	3600	3700
24	4440	3610	4150	4950	3990	4480	4140	1700	3450	3930	3630	3750
25	4290	3830	4010	5260	4300	5020	1840	633	1110	4570	3550	3920
26	4340	4050	4280	5240	4280	4970	1440	800	1020	3650	2390	3150
27	4380	3320	3980	5340	3130	4590	1650	1280	1390	3710	2820	3180
28	4500	4300	4410	5270	3970	4990	1330	1220	1260	3870	3430	3610
29	---	---	---	5280	3650	4880	1260	1060	1170	3780	2860	3520
30	---	---	---	5300	4600	4980	1340	1130	1250	2860	1180	1690
31	---	---	---	5400	4000	4840	---	---	---	1320	1140	1190
MONTH	4720	3320	4420	5400	3130	4500	5630	633	2950	5570	1140	3150

e Estimated

STATION NUMBER 07227500 CANADIAN RIVER NR AMARILLO, TX
SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1960	1320	1630	---	---	e1620	1500	987	1220	1740	1630	1680
2	2410	1960	2200	---	---	e1620	1100	934	984	2070	1700	1860
3	2690	2410	2570	---	---	e1500	1040	899	981	1700	1590	1620
4	2830	2690	2770	1440	1270	1350	1020	587	756	1640	1620	1630
5	2870	2770	2820	---	---	e1500	929	732	841	1630	1610	1620
6	2990	2860	2920	---	---	e1530	931	766	865	1620	1570	1590
7	3090	2990	3040	---	---	e1510	1030	795	899	1640	1590	1620
8	3020	2970	2990	---	---	e1560	1210	1030	1150	1640	1580	1610
9	3020	2430	2890	---	---	e1560	1190	1110	1140	1630	1540	1580
10	2950	2140	2560	---	---	e1630	1220	414	1120	1570	1550	1560
11	2740	2320	2490	---	---	e1630	765	414	591	1650	1550	1590
12	2320	2270	2290	---	---	e1620	1030	605	788	1820	1650	1730
13	2340	2180	2270	---	---	e1620	1070	833	984	2000	1820	1900
14	2190	747	1910	---	---	e1610	2260	740	1290	2260	2000	2130
15	---	---	e1600	---	---	e1610	2170	1320	1510	2880	2260	2500
16	---	---	e1550	---	---	e1650	1320	1120	1250	3850	2880	3400
17	---	---	e1500	1690	1640	1670	1120	1060	1090	4160	3850	4010
18	---	---	e1720	1680	1640	1660	1120	1070	1090	---	---	e4000
19	---	---	e1610	1700	1650	1670	1280	1050	1160	---	---	e4000
20	---	---	e1570	1710	1600	1680	1060	952	1010	4360	3860	4050
21	---	---	e1440	1670	1600	1650	1130	1030	1090	4360	1420	2290
22	---	---	e1420	1630	1460	1560	1290	1130	1200	1500	1410	1460
23	---	---	e1560	1540	1180	1330	1360	1240	1300	1500	1200	1340
24	---	---	e1480	1520	1200	1380	1360	1260	1310	1470	1210	1360
25	---	---	e1470	1600	1510	1560	1360	1240	1300	1550	1470	1510
26	---	---	e1370	1600	1540	1570	1430	1340	1380	1540	1510	1520
27	---	---	e1360	1590	1540	1560	1520	1430	1480	1520	992	1300
28	---	---	e1470	1600	1260	1430	1580	1500	1540	1440	982	1340
29	---	---	e1550	1590	1190	1390	1620	1560	1590	1470	1430	1440
30	---	---	e1540	1190	726	964	1630	1570	1610	1480	1450	1460
31	---	---	---	1560	1070	1380	1680	1500	1640	---	---	---
MONTH	3090	747	1990	1710	726	1530	2260	414	1170	4360	982	2020
YEAR	5660	414	3100									

e Estimated

ARKANSAS RIVER BASIN

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07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	23.5	14.0	18.5	12.0	5.0	7.5	4.5	.0	1.5	13.0	3.5	8.0
2	20.0	13.5	16.0	13.5	5.0	9.0	7.5	.0	3.0	14.0	4.5	9.0
3	21.0	12.0	15.5	12.5	8.0	10.0	7.0	.0	3.0	14.0	5.5	10.0
4	22.5	15.5	18.0	16.0	7.0	11.5	8.5	1.0	4.0	11.5	6.5	8.5
5	23.5	16.5	19.5	15.5	7.0	11.0	6.0	.0	3.5	6.5	4.0	5.0
6	25.5	16.0	20.0	13.0	7.0	9.5	8.0	3.0	5.5	4.0	.5	2.5
7	23.5	16.0	19.5	12.5	5.0	8.0	8.5	1.0	4.5	3.5	.0	1.5
8	24.5	14.5	19.0	12.0	3.5	7.5	10.0	1.0	5.0	2.0	.0	1.0
9	23.5	14.5	18.5	14.5	4.0	8.5	12.0	2.5	7.0	6.0	.0	2.0
10	22.0	14.0	17.5	14.5	5.5	9.5	12.5	6.0	9.0	1.5	.0	.5
11	23.5	14.0	18.5	15.0	5.5	10.0	13.5	5.0	8.5	.5	.0	.0
12	24.5	15.0	19.5	9.0	6.0	7.0	12.5	5.0	8.5	.0	.0	.0
13	24.0	16.0	19.5	16.5	7.0	11.0	12.5	4.0	7.5	.0	.0	.0
14	24.0	15.0	19.0	17.0	10.0	13.0	9.5	3.5	6.0	.5	.0	.0
15	22.5	15.0	18.5	17.0	12.0	14.0	6.0	.5	2.5	1.0	.0	.5
16	22.5	14.5	18.0	15.5	7.5	12.5	5.5	.0	2.0	1.0	.0	.5
17	17.5	11.5	14.5	10.0	4.0	7.0	2.0	.0	.5	1.5	.0	.5
18	16.5	7.5	11.5	13.0	4.0	8.5	1.0	.0	.0	2.5	.0	.5
19	19.0	9.0	13.5	16.5	6.5	11.0	.5	.0	.5	5.0	.0	1.5
20	16.5	12.0	14.0	17.0	7.5	11.5	1.5	.0	.5	7.0	.0	3.0
21	12.5	6.0	8.5	12.0	7.0	9.0	2.5	.5	1.0	10.5	2.5	5.5
22	13.0	3.5	8.0	14.5	6.0	9.5	7.5	.0	3.5	8.0	.5	4.5
23	15.0	5.5	10.0	14.0	4.0	9.5	7.0	1.5	3.5	12.0	3.5	7.0
24	16.0	6.5	11.0	6.0	.0	2.5	6.0	.0	2.0	11.5	2.0	6.0
25	16.5	7.5	11.5	8.0	.0	3.0	5.0	.0	2.0	10.0	.5	5.0
26	16.5	6.0	11.0	7.5	.0	3.0	2.5	.0	.5	11.0	5.0	7.5
27	12.0	7.0	8.0	7.0	.0	3.0	9.5	.0	4.0	8.0	.0	2.5
28	13.0	7.0	10.0	7.0	.5	4.0	8.5	1.5	4.5	6.0	.0	2.0
29	14.5	7.5	11.0	12.5	5.0	8.0	9.5	.0	4.5	9.0	.0	3.5
30	15.5	6.5	11.0	7.0	.5	2.5	11.0	1.5	5.5	11.5	.0	5.0
31	11.0	5.5	8.0	---	---	---	12.0	3.0	7.0	13.5	2.0	6.5
MONTH	25.5	3.5	14.5	17.0	.0	8.5	13.5	.0	4.0	14.0	.0	3.5

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	14.0	3.5	8.5	10.0	3.5	6.5	21.0	9.5	14.0	22.0	14.0	17.5
2	14.5	3.5	8.5	14.5	.0	6.5	14.0	6.5	11.5	18.5	14.0	16.5
3	14.5	6.0	9.5	17.0	3.0	9.0	10.5	8.5	9.5	21.0	11.0	15.5
4	11.5	2.5	7.0	17.5	4.0	9.5	16.5	10.0	12.5	21.0	13.0	16.5
5	---	---	---	16.5	1.5	8.0	14.5	8.0	11.0	24.0	14.5	18.5
6	---	---	---	15.5	2.0	8.5	16.0	5.5	10.5	26.0	15.5	20.0
7	---	---	---	18.0	3.5	10.0	18.5	8.0	12.5	27.0	17.0	21.0
8	---	---	---	14.5	6.0	10.0	14.0	4.5	8.5	21.0	14.5	18.0
9	---	---	---	18.0	8.5	12.0	5.5	3.5	4.5	24.5	13.0	18.0
10	---	---	---	20.0	4.0	11.0	8.0	3.5	6.0	25.0	13.5	19.0
11	---	---	---	21.5	5.0	12.0	3.5	.5	2.0	27.5	14.5	19.5
12	---	---	---	22.0	7.0	13.5	11.0	.0	4.0	24.0	12.0	17.0
13	---	---	---	20.5	7.0	13.0	12.0	3.5	7.5	28.0	13.5	20.5
14	---	---	---	14.5	2.0	7.0	18.0	4.0	10.5	26.0	16.0	20.5
15	---	---	---	17.0	1.5	8.0	22.0	8.0	14.5	27.5	16.0	21.0
16	---	---	---	19.5	3.5	10.5	20.0	10.0	14.5	28.0	17.0	22.0
17	---	---	---	19.0	8.0	13.0	22.5	10.5	15.0	---	---	---
18	---	---	---	18.5	8.5	13.0	20.0	12.0	15.5	---	---	---
19	9.5	6.5	7.5	21.0	5.0	13.0	26.0	10.5	17.5	---	---	---
20	9.5	6.5	7.5	24.0	8.0	15.5	25.0	12.5	18.5	---	---	---
21	9.5	3.5	6.0	23.5	9.0	15.5	23.5	13.0	18.0	---	---	---
22	12.0	.0	5.5	21.0	7.5	14.0	21.0	11.5	15.5	26.0	15.5	19.5
23	8.5	1.5	5.0	20.0	9.0	14.0	24.0	10.5	16.5	29.0	16.5	21.5
24	5.5	.0	1.0	17.5	9.5	13.0	15.5	7.5	11.0	31.0	17.5	23.0
25	1.5	.5	.5	17.0	5.5	10.5	7.5	5.5	6.0	28.0	18.0	22.5
26	3.0	.0	1.5	19.0	5.5	11.5	7.0	5.5	6.0	29.5	17.0	22.0
27	11.0	.0	4.0	19.0	8.5	13.0	14.5	5.5	9.5	27.5	15.5	21.0
28	10.0	4.0	6.5	23.0	8.5	14.5	19.0	10.0	14.0	23.5	16.5	20.0
29	---	---	---	20.5	9.5	13.5	20.5	13.5	16.5	25.0	16.5	20.0
30	---	---	---	21.0	6.0	12.5	21.5	14.0	17.0	22.5	18.0	20.0
31	---	---	---	18.0	7.0	12.5	---	---	---	27.5	18.0	22.0
MONTH	14.5	.0	5.5	24.0	.0	11.5	26.0	.0	11.5	31.0	11.0	20.0

ARKANSAS RIVER BASIN

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07228000 CANADIAN RIVER NEAR CANADIAN, TX

LOCATION.--Lat 35°56'06", long 100°22'13", Hemphill County, Hydrologic Unit 11090106, on left abutment at downstream side of upstream bridge on U.S. Highways 60 and 83, 600 ft downstream from Panhandle and Santa Fe Railway Co. bridge, 1.2 mi downstream from Red Deer Creek, 1.6 mi northeast of Canadian, and 433.9 mi upstream from mouth.

DRAINAGE AREA.--22,866 mi², of which 4,688 mi² probably is noncontributing.

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

Water-quality records.--Chemical and biochemical analyses: August 1966 to September 1994. Pesticide analyses: October 1970 to June 1982. Specific conductance and temperature: October 1974 to September 1981.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft above sea level. July 1, 1924, to Aug. 31, 1925, and Apr. 21 to Dec. 15, 1938, nonrecording gage; Dec. 16, 1938, to Sept. 30, 1953, water-stage recorder and nonrecording gages; all at site 300 ft upstream at same datum.

REMARKS.--Records fair. Since installation of gage in January 1938, at least 10% of contributing drainage area has been regulated by Lake Meredith 75 mi upstream. Extreme low flow is maintained by springs that enter river about 600 ft upstream from the gage. Satellite telemeter at station.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	71	e125	96	103	155	56	575	189	53	26	52
2	77	71	141	95	104	156	61	369	183	47	25	49
3	75	69	154	94	107	148	613	224	142	46	e22	48
4	74	71	168	92	108	136	2390	197	113	64	e21	48
5	74	71	171	88	108	130	1750	189	98	53	e21	47
6	72	71	164	86	112	129	686	189	84	52	e28	45
7	69	72	156	84	121	123	430	270	78	48	45	39
8	69	72	142	e84	121	118	350	929	87	44	46	39
9	69	70	132	e88	116	114	242	718	276	40	43	48
10	67	69	128	e87	111	111	230	254	212	37	37	47
11	67	69	121	e86	110	108	384	217	202	36	51	43
12	66	69	117	e85	109	104	310	190	161	34	100	41
13	65	70	116	e84	120	100	233	e175	129	32	259	42
14	65	70	110	e84	118	95	209	e169	118	29	318	40
15	63	73	102	e87	114	93	179	e155	120	28	271	38
16	63	142	e95	e92	116	89	174	e140	122	26	172	35
17	62	157	e94	e97	121	88	185	e125	187	e23	142	35
18	61	120	e92	e101	118	83	185	e110	203	e22	124	33
19	59	125	e92	e100	116	78	175	e97	224	e21	121	32
20	60	136	e94	e104	170	75	174	89	261	71	97	39
21	62	122	94	111	275	72	173	92	211	63	84	43
22	65	114	97	110	200	67	205	99	129	48	72	104
23	65	108	101	111	188	63	231	106	120	39	66	188
24	65	101	e101	105	186	62	427	1490	110	35	60	100
25	63	99	e102	103	161	61	894	726	95	30	54	60
26	61	96	e101	99	162	61	2630	275	130	26	51	48
27	59	94	e100	100	170	61	1520	174	113	24	51	44
28	61	93	99	102	167	61	890	145	80	e22	49	43
29	70	100	97	100	---	60	734	133	68	e23	48	42
30	72	e110	97	100	---	58	646	161	59	25	47	42
31	70	---	97	101	---	57	---	178	---	25	50	---
TOTAL	2070	2775	3600	2956	3832	2916	17366	8960	4304	1166	2601	1554
MEAN	66.8	92.5	116	95.4	137	94.1	579	289	143	37.6	83.9	51.8
MAX	80	157	171	111	275	156	2630	1490	276	71	318	188
MIN	59	69	92	84	103	57	56	89	59	21	21	32
AC-FT	4110	5500	7140	5860	7600	5780	34450	17770	8540	2310	5160	3080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997#, BY WATER YEAR (WY)

	MEAN	386	88.3	95.8	118	104	113	212	614	640	475	334	402
MAX	10210	1397	694	541	380	592	5979	8164	8976	6118	3524	7399	
(WY)	1942	1942	1960	1943	1960	1961	1942	1941	1941	1941	1941	1941	1941
MIN	.35	1.03	1.50	1.53	28.3	1.76	1.14	.46	.34	.019	.019	.000	
(WY)	1976	1946	1940	1957	1959	1946	1964	1962	1966	1970	1980	1983	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1938 - 1997#

ANNUAL TOTAL	29325	54100	290	1941
ANNUAL MEAN	80.1	148	2963	1964
HIGHEST ANNUAL MEAN			34.5	
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	328	Jul 14	2630	Apr 26
LOWEST DAILY MEAN	22	May 21	21	Jul 19, Aug. 4, 5
ANNUAL SEVEN-DAY MINIMUM	23	May 17	24	Jul 30
INSTANTANEOUS PEAK FLOW			4490	May 24
INSTANTANEOUS PEAK STAGE			7.52	May 24
INSTANTANEOUS LOW FLOW				
ANNUAL RUNOFF (AC-FT)	58170	107300	209900	
10 PERCENT EXCEEDS	133	220	344	
50 PERCENT EXCEEDS	65	97	38	
90 PERCENT EXCEEDS	35	41	.70	

e Estimated

Period of regulated streamflow.

ARKANSAS RIVER BASIN

07235000 WOLF CREEK AT LIPSCOMB, TX

LOCATION.--Lat 36°14'19", long 100°16'31", Lipscomb County, Hydrologic Unit 11100203, on right bank at downstream side of State Highway 305, 0.3 mi north of Lipscomb, 0.6 mi downstream from Sand Creek, 2 mi upstream from Plum Creek, and 61.2 mi upstream from mouth.

DRAINAGE AREA.--697 mi², of which 222 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1937 to September 1942, October 1961 to current year. Prior to 1941, monthly discharges only, published in WSP 1311. Water-quality records.--Chemical and biochemical analyses: May 1980.

REVISED RECORDS.--WSP 1311: 1938-39, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,371.29 ft above sea level. Prior to Feb. 25, 1938, nonrecording gage, Feb. 25, 1938, to Sept. 30, 1942, water-stage recorder at present site at datum 5.77 ft higher.

REMARKS.--Records fair. There are small diversions upstream from station for irrigation and recreation. Since installation of the gage, at least 10% of contributing drainage area has been regulated by Lake Fryer 30 miles upstream.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1938-42), 39.7 ft³/s, 28,760 acre-feet/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1938-42).--Maximum discharge, 20,000 ft³/s Oct. 21, 1941 (Gage-height, 11.57 ft, present datum), from rating curve extended above 14,000 ft³/s on basis of velocity-area studies; no flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	20	17	11	9.0	11	4.7	30	18	5.5	2.0	1.7
2	43	19	17	11	9.1	11	4.8	30	17	4.9	1.7	1.4
3	40	18	17	11	9.1	11	13	28	16	4.7	1.3	1.2
4	38	17	17	12	8.9	10	57	27	15	4.4	1.2	1.6
5	35	17	17	12	8.6	9.8	38	27	15	4.4	1.1	1.4
6	33	16	18	12	8.5	9.4	22	26	15	5.7	1.5	1.3
7	32	15	17	11	10	9.0	19	33	14	4.8	2.3	1.1
8	30	15	17	11	10	8.9	18	42	15	4.3	2.4	1.1
9	29	15	16	11	10	9.4	17	33	18	4.0	2.1	1.2
10	28	15	16	12	10	9.4	18	30	37	4.4	1.8	1.4
11	26	15	16	e10	10	9.6	30	28	57	3.9	3.6	1.2
12	25	14	16	e9.1	9.9	9.9	26	27	43	3.7	5.3	1.2
13	24	14	16	e8.9	9.8	9.9	22	26	29	3.4	5.7	1.1
14	24	14	16	e9.0	10	9.6	20	25	22	2.9	5.0	1.1
15	23	15	16	e9.2	10	9.1	19	24	20	2.6	4.2	.98
16	23	23	15	e9.4	10	8.7	18	24	19	2.1	3.6	.89
17	21	35	15	e9.6	9.6	8.5	17	23	18	1.8	3.3	.82
18	21	32	e12	10	9.8	7.9	17	22	16	1.6	3.4	.75
19	20	26	e11	11	10	7.5	17	20	14	1.4	3.8	.72
20	20	22	e12	11	13	7.7	17	20	13	1.7	3.3	1.3
21	20	20	14	11	17	7.4	17	19	11	2.0	3.1	1.7
22	20	19	14	10	17	6.9	19	21	10	2.3	2.9	3.2
23	19	18	14	10	15	6.7	20	21	10	2.1	2.8	4.5
24	19	17	13	9.9	13	6.4	23	30	9.2	1.4	2.4	4.1
25	19	16	13	9.6	13	5.8	32	28	8.1	1.1	2.2	3.6
26	19	15	13	9.6	13	5.6	40	23	8.9	.96	2.1	3.3
27	18	15	12	9.3	12	5.5	47	20	8.2	.87	1.8	3.0
28	18	15	12	8.3	12	5.3	64	19	7.4	2.4	1.6	2.5
29	20	15	12	8.8	---	5.2	42	18	7.0	5.1	1.5	2.4
30	20	16	12	8.8	---	5.0	34	18	6.3	2.9	1.4	2.1
31	21	---	11	8.8	---	4.7	---	18	---	2.4	1.8	---
TOTAL	795	543	454	315.3	307.3	251.8	752.5	780	517.1	95.73	82.2	53.86
MEAN	25.6	18.1	14.6	10.2	11.0	8.12	25.1	25.2	17.2	3.09	2.65	1.80
MAX	47	35	18	12	17	11	64	42	57	5.7	5.7	4.5
MIN	18	14	11	8.3	8.5	4.7	4.7	18	6.3	.87	1.1	.72
AC-FT	1580	1080	901	625	610	499	1490	1550	1030	190	163	107
CFSM	.05	.04	.03	.02	.02	.02	.05	.05	.04	.01	.01	.00
IN.	.06	.04	.04	.02	.02	.02	.06	.06	.04	.01	.01	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1997#, BY WATER YEAR (WY)

	MEAN	7.13	5.97	3.71	3.79	4.59	7.04	8.78	18.4	18.1	8.08	8.53	14.9
MAX	167	112	14.6	11.8	11.0	53.0	69.1	124	206	82.7	77.6	323	
(WY)	1969	1972	1969	1969	1997	1974	1980	1979	1965	1967	1965	1996	
MIN	.10	.50	.60	.55	.60	1.10	.94	.65	.33	.30	.000	.21	
(WY)	1965	1995	1995	1986	1986	1986	1986	1986	1996	1974	1964	1984	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1962 - 1997#

ANNUAL TOTAL	12710.62	4947.79	
ANNUAL MEAN	34.7	13.6	
HIGHEST ANNUAL MEAN			9.08
LOWEST ANNUAL MEAN			30.5
HIGHEST DAILY MEAN	5800	64	1.44
LOWEST DAILY MEAN	.14	.72	5800
ANNUAL SEVEN-DAY MINIMUM	.16	.91	.00
INSTANTANEOUS PEAK FLOW		84	.00
INSTANTANEOUS PEAK STAGE		4.75	10300
INSTANTANEOUS LOW FLOW			12.44
ANNUAL RUNOFF (AC-FT)	25210	9810	.00
ANNUAL RUNOFF (CFSM)	.073	.029	.019
ANNUAL RUNOFF (INCHES)	1.00	.39	.26
10 PERCENT EXCEEDS	26	27	11
50 PERCENT EXCEEDS	2.0	11	2.5
90 PERCENT EXCEEDS	.38	1.8	.50

e Estimated

Period of regulated streamflow.

RED RIVER MAIN STEM

39

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX

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

DRAINAGE AREA.--4,211 mi², of which 3,281 mi² probably is noncontributing.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,463.74 ft above sea level.

REMARKS.--Records fair, except for estimated daily discharges and those less than 20 ft³/s which are poor. No known regulation. There are several small diversions upstream from station. Wastewater effluent is released into river above station by the city of Amarillo.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 10	2100	15,700	10.05	July 10	0200	8,060	9.55
Apr. 25	1600	10,200	9.47				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	10	39	9.2	10	9.9	4.9	79	17	5.4	6.0	2.9
2	23	11	27	9.3	9.3	8.2	5.8	66	16	4.9	4.7	2.8
3	22	10	24	9.5	8.6	7.5	611	59	15	4.3	50	3.0
4	21	11	23	8.1	8.1	7.4	593	41	15	20	19	3.2
5	21	9.9	20	8.5	9.7	8.8	41	27	13	97	5.4	3.0
6	20	9.3	17	8.8	15	9.2	19	25	13	895	85	2.8
7	18	9.2	16	11	13	8.1	15	24	13	49	13	2.5
8	17	7.9	16	15	10	8.7	17	31	142	18	7.3	2.3
9	17	5.5	16	15	10	7.5	13	34	57	72	5.7	2.1
10	15	8.5	14	14	9.8	7.0	1640	17	189	1400	13	2.1
11	16	9.8	12	e13	9.4	6.7	1300	22	25	70	47	1.9
12	16	9.5	12	e11	9.4	6.4	30	20	16	34	16	1.7
13	15	9.6	12	e10	13	6.5	24	24	13	23	13	108
14	14	8.8	11	e12	9.3	6.4	19	18	180	20	187	478
15	15	8.5	11	e18	8.7	6.3	18	37	533	16	17	9.3
16	16	87	12	e22	8.6	6.4	17	37	433	12	6.2	3.4
17	15	39	12	e19	8.3	6.7	18	19	351	11	4.9	2.7
18	14	29	9.2	17	8.2	6.4	18	16	80	9.1	5.2	2.1
19	14	27	11	16	13	6.4	18	22	31	8.3	9.3	1.7
20	15	22	18	15	20	6.3	17	23	18	7.1	5.4	1.7
21	15	15	20	15	12	6.0	18	24	14	20	5.0	1.7
22	13	19	14	16	9.5	5.8	21	27	15	18	4.7	106
23	11	20	13	15	9.2	5.7	19	18	16	9.4	4.4	22
24	10	19	14	14	9.1	5.4	68	17	11	7.4	4.5	2.6
25	8.8	21	13	15	13	5.0	5430	36	9.0	5.8	4.1	2.9
26	8.6	21	11	14	12	5.4	2000	21	21	5.2	3.8	2.5
27	9.0	22	11	13	8.8	5.1	787	16	12	4.7	3.9	2.0
28	9.5	30	11	14	9.0	4.9	373	19	8.3	4.3	3.8	1.6
29	11	36	12	14	---	4.8	187	30	14	4.5	3.4	1.4
30	11	47	11	13	---	4.9	103	28	8.9	12	3.2	1.4
31	11	---	10	11	---	4.7	---	21	---	12	3.0	---
TOTAL	465.9	592.5	472.2	415.4	294.0	204.5	13444.7	898	2299.2	2879.4	563.9	781.3
MEAN	15.0	19.8	15.2	13.4	10.5	6.60	448	29.0	76.6	92.9	18.2	26.0
MAX	24	87	39	22	20	9.9	5430	79	533	1400	187	478
MIN	8.6	5.5	9.2	8.1	8.1	4.7	4.9	16	8.3	4.3	3.0	1.4
AC-FT	924	1180	937	824	583	406	26670	1780	4560	5710	1120	1550

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

	MEAN	23.9	7.85	4.95	4.64	4.01	6.52	24.7	48.8	55.7	31.0	92.4	26.2
MAX	147	51.9	20.3	24.7	17.4	26.1	448	472	304	207	1410	110	
(WY)	1986	1972	1988	1988	1990	1992	1997	1978	1984	1996	1968	1969	
MIN	.000	.066	.099	.30	.16	.34	.17	.13	1.44	.000	.39	.000	
(WY)	1976	1971	1971	1971	1976	1971	1978	1984	1970	1974	1983	1975	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1968 - 1997

ANNUAL TOTAL	22208.91	23311.0	
ANNUAL MEAN	60.7	63.9	
HIGHEST ANNUAL MEAN			27.7
LOWEST ANNUAL MEAN			1.90
HIGHEST DAILY MEAN	6280	Aug 26	22700
LOWEST DAILY MEAN	.00	May 22	.00
ANNUAL SEVEN-DAY MINIMUM	.00	May 22	.00
INSTANTANEOUS PEAK FLOW			58000
INSTANTANEOUS PEAK STAGE			13.00
ANNUAL RUNOFF (AC-FT)	44050	46240	20070
10 PERCENT EXCEEDS	32	47	24
50 PERCENT EXCEEDS	8.6	13	2.1
90 PERCENT EXCEEDS	.45	4.5	.07

e Estimated

RED RIVER MAIN STEM

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX

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

DRAINAGE AREA.--7,725 mi², of which 4,767 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,628.4 ft above sea level (from Texas State Department of Highways and Public Transportation bench mark).

REMARKS.--Records fair. Since water year 1979, at least 10% of contributing drainage area has been regulated by upstream reservoirs. Flow is also affected by flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 20,010 acre-ft. These structures control runoff from 95.2 mi² in the drainage basin above station. Many small diversions upstream from station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1966-78) 116 ft³s (84,040 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1966-78).--Maximum discharge, 86,400 ft³s May 28, 1978 (gage height, 13.47 ft); noflow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	22	101	14	29	158	27	161	202	612	10	12
2	42	23	118	12	23	117	e27	306	131	217	11	14
3	39	23	94	13	24	112	e506	140	83	107	11	17
4	43	19	83	15	22	99	e1170	75	50	56	26	20
5	45	19	68	18	23	80	e1020	51	37	142	17	18
6	44	21	47	16	51	68	e293	33	30	801	15	17
7	61	19	44	16	59	63	e144	131	30	2150	66	18
8	89	16	35	46	47	55	110	152	271	167	69	25
9	106	19	29	48	50	48	123	1510	669	60	107	74
10	50	19	21	35	50	51	605	607	932	29	44	24
11	38	18	17	39	57	50	e2040	89	626	1170	1070	21
12	32	16	17	38	55	46	e917	284	220	363	2400	22
13	26	13	15	55	55	45	e206	265	92	136	430	242
14	22	9.4	12	60	50	39	e69	84	200	80	2090	618
15	23	19	10	54	48	39	e48	68	1150	39	2730	1180
16	20	51	8.8	52	42	39	26	74	1520	21	407	299
17	14	46	7.9	53	41	37	22	72	1090	12	86	124
18	14	37	6.9	51	42	32	16	50	1300	13	24	85
19	16	44	6.3	48	70	35	11	40	343	8.8	4350	64
20	18	42	5.9	56	182	34	6.9	80	170	9.1	2080	50
21	21	43	5.8	45	141	31	5.0	124	87	10	244	53
22	18	42	5.2	47	119	26	33	154	52	189	88	918
23	20	38	6.9	54	85	28	21	141	107	50	57	615
24	17	36	7.4	39	88	26	400	216	142	17	37	523
25	14	34	8.2	40	98	25	e4110	246	108	10	26	180
26	15	32	8.8	42	197	29	8520	254	122	10	18	82
27	47	34	8.8	43	167	27	758	146	78	8.8	13	51
28	41	76	7.9	37	178	24	419	72	55	8.9	12	31
29	36	133	9.4	26	---	21	252	58	48	8.8	12	22
30	22	158	10	29	---	22	142	929	68	9.6	13	17
31	19	---	12	24	---	27	---	791	---	10	12	---
TOTAL	1065	1121.4	837.2	1165	2093	1533	22046.9	7403	10013	6525.0	16575	5436
MEAN	34.4	37.4	27.0	37.6	74.8	49.5	735	239	334	210	535	181
MAX	106	158	118	60	197	158	8520	1510	1520	2150	4350	1180
MIN	14	9.4	5.2	12	22	21	5.0	33	30	8.8	10	12
AC-FT	2110	2220	1660	2310	4150	3040	43730	14680	19860	12940	32880	10780

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1997#, BY WATER YEAR (WY)

	MEAN	144	55.6	46.4	50.3	40.6	45.4	113	146	376	123	132	122
MAX	1279	377	265	296	162	171	735	488	1297	342	535	378	
(WY)	1987	1987	1993	1993	1987	1979	1997	1987	1995	1982	1997	1986	
MIN	3.14	4.06	2.27	5.21	4.64	4.00	3.78	1.18	3.46	.84	1.56	3.39	
(WY)	1985	1983	1983	1981	1981	1980	1982	1988	1994	1980	1980	1984	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1979 - 1997#

ANNUAL TOTAL	29163.23	75813.5	116	
ANNUAL MEAN	79.7	208	286	1987
HIGHEST ANNUAL MEAN			27.6	1994
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	4000	8520	26100	Jun 4 1995
LOWEST DAILY MEAN	.47	5.0	.00	Mar 11 1983
ANNUAL SEVEN-DAY MINIMUM	.95	6.3	.00	Jun 7 1988
INSTANTANEOUS PEAK FLOW		11800	86400	May 28 1978
INSTANTANEOUS PEAK STAGE		10.05	13.94	May 21 1977
ANNUAL RUNOFF (AC-FT)	57850	150400	84110	
10 PERCENT EXCEEDS	137	423	179	
50 PERCENT EXCEEDS	22	46	12	
90 PERCENT EXCEEDS	8.0	12	1.7	

e Estimated

Period of regulated streamflow.

RED RIVER MAIN STEM

41

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1994 to September 1997 (discontinued). Pesticide analyses: October 1994 to September 1997 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1994 to September 1997 (discontinued).

TEMPERATURE: October 1994 to September 1997 (discontinued).

INSTRUMENTATION.--From October 1994 to September 1997, specific conductance and temperature were continuously recorded at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 81,300 microsiemens May 25, 1995; minimum, 2,160 microsiemens July 31, 1996.

TEMPERATURE: Maximum, 39.0°C July 3, 1996; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 61,300 microsiemens Nov. 27; minimum recorded, 3,630 microsiemens May 9.

TEMPERATURE: Maximum, 38.0°C July 28, Aug. 4; minimum, 0.0°C on several days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 31...	0925	15	46000	8.3	10.5	10.3	117	3800	3700	1100	260
NOV 19...	0835	42	29500	8.2	7.5	11.2	111	3100	3000	870	230
JAN 22...	0950	69	34200	8.2	3.5	12.2	111	3200	3000	870	240
FEB 26...	0955	159	32000	7.9	4.0	12.4	115	3000	2900	830	230
MAR 26...	0835	46	50800	8.0	6.5	11.3	119	4300	4200	1200	297
APR 23...	0855	20	30000	8.1	12.5	10.0	111	2900	2800	810	218
MAY 07...	0900	129	23800	8.0	19.5	8.7	109	2600	2500	720	202
MAY 21...	0835	75	25700	8.1	18.0	8.4	103	2700	2600	720	211
JUN 11...	0900	343	11400	8.0	21.5	8.0	99	1400	1400	410	102
JUL 29...	0820	28	51700	7.8	24.5	7.2	111	4100	4000	1200	264
AUG 12...	0940	1550	11500	7.9	24.0	7.0	91	1400	1300	420	86
SEP 06...	0905	13	51700	7.9	22.0	8.0	118	4100	4000	1200	283

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT 31...	11000	77	29	120	3200	18000	0.60	11	33700	<1	0.300
NOV 19...	6200	48	27	140	2600	10000	0.60	12	20000	320	0.660
JAN 22...	7700	60	27	130	2200	12000	0.80	10	23100	26	1.53
FEB 26...	6700	53	28	150	2300	11000	0.50	8.7	21200	400	--
MAR 26...	11900	79	34	130	3100	16000	0.63	8.3	32400	14	--
APR 23...	6090	49	26	110	2500	10000	0.56	10	19900	330	--
MAY 07...	4560	39	23	120	2200	7900	0.56	12	15700	336	--
MAY 21...	5080	43	25	120	2300	8500	0.52	12	17000	157	--
JUN 11...	2110	24	18	84	1300	3300	0.58	11	7270	1450	--
JUL 29...	11700	79	31	100	3500	18000	0.79	15	34500	19	0.190
AUG 12...	2070	24	16	80	1300	3200	0.45	16	7090	6720	0.276
SEP 06...	11100	75	32	92	3600	18000	0.60	12	34600	23	--

RED RIVER MAIN STEM

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997-Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 31...	0.020	0.320	0.310	--	<0.20	0.010	<0.010	0.020	0.06	2	2
NOV 19...	0.040	0.700	0.370	0.0	0.30	0.040	<0.010	<0.010	--	2	2
JAN 22...	0.070	1.60	0.190	--	<0.20	<0.010	<0.010	<0.010	--	2	2
FEB 26...	<0.010	0.280	0.160	0.34	0.50	0.040	<0.010	<0.010	--	3	2
MAR 26...	<0.010	0.240	0.210	0.09	0.30	<0.010	<0.010	<0.010	--	1	1
APR 23...	<0.010	0.145	0.317	0.34	0.66	0.098	<0.010	<0.010	--	5	3
MAY 07...	<0.010	0.112	0.046	0.30	0.34	<0.010	<0.010	<0.010	--	4	3
21...	<0.010	0.119	0.067	0.35	0.42	<0.010	<0.010	<0.010	--	3	2
JUN 11...	<0.010	0.223	0.044	1.2	1.3	0.618	<0.010	<0.010	--	6	3
JUL 29...	0.020	0.210	0.134	0.23	0.37	<0.010	<0.010	0.011	0.03	2	3
AUG 12...	0.017	0.293	0.100	1.3	1.4	0.825	<0.010	<0.010	--	18	3
SEP 06...	--	--	--	0.37	0.37	0.019	<0.010	--	--	2	2

DATE	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 31...	<100	50	<4	<30	<2	<1.0	1	<300	210	<90	<10
NOV 19...	<100	46	<2	<16	2	<1.0	6	<160	1700	<48	<4
JAN 22...	<100	37	<2	<20	<1	<1.0	1	<200	470	<60	<10
FEB 26...	200	57	<2	<20	7	<1.0	7	<200	3500	<60	<4
MAR 26...	100	41	<10	<30	<10	<2.0	<10	<300	90	99	<10
APR 23...	<100	81	<5	<16	<10	<10	<5	<160	2500	<48	<5
MAY 07...	200	104	<5	<15	10	<5.0	8	<150	3000	<45	<5
21...	<100	79	<5	<15	<5	<5.0	7	<150	1300	<45	<5
JUN 11...	400	75	<4	<6.0	31	<4.0	44	<60	21000	<18	27
JUL 29...	<100	53	<20	<32	<20	<10	<20	<320	190	<96	<20
AUG 12...	700	91	<4	<6.0	66	<4.0	100	<60	40000	<18	99
SEP 06...	<100	61	<20	<30	<20	<10	<20	<300	140	<90	<20

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
OCT 31...	<300	150	98	<0.10	1.1	300	<300	2	3	<10	<10
NOV 19...	<160	190	73	<0.10	<0.1	200	<160	4	3	<4	<4.0
JAN 22...	<200	110	62	<0.10	<0.1	200	<200	2	3	<10	<10
FEB 26...	<200	360	180	<0.10	<0.1	200	<200	1	1	<10	<10
MAR 26...	<300	180	110	<0.10	<0.1	240	<300	2	3	<10	<10
APR 23...	<160	150	54	<0.10	0.1	170	<160	2	2	<10	<10
MAY 07...	<150	200	34	<0.10	<0.1	150	<150	2	2	<5	<5.0
JUN 21...	251	120	20	<0.10	<0.1	120	<150	2	2	<5	<5.0
JUL 11...	<60	1900	12	<0.10	<0.1	150	<60	2	1	<4	<4.0
AUG 29...	<320	150	98	<0.10	<0.1	410	<320	2	2	<20	<10
SEP 12...	<60	5700	<6.0	<0.10	<0.1	<100	<60	3	1	<4	<4.0
SEP 06...	324	140	69	<0.10	<0.1	200	<300	2	2	<20	<10

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
OCT 31...	<10	220	--	--	--	--	--	--	--	--
NOV 19...	10	<48	--	--	--	--	--	--	--	--
JAN 22...	<10	<60	--	--	--	--	--	--	--	--
FEB 26...	20	62	--	--	--	--	--	--	--	--
MAR 26...	<10	<90	--	--	--	--	--	--	--	--
APR 23...	10	<48	--	--	--	--	--	--	--	--
MAY 07...	10	<45	--	--	--	--	--	--	--	--
JUN 21...	10	207	--	--	--	--	--	--	--	--
JUL 11...	110	<18	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG 29...	<10	<96	--	--	--	--	--	--	--	--
SEP 12...	270	<18	--	--	--	--	--	--	--	--
SEP 06...	<10	<90	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	1065	34800	23540	67690	11700	33580	2600	7470	3400
NOV. 1996	1121.4	43370	29520	89390	14900	44990	3000	9160	4000
DEC. 1996	837.2	33530	22660	51210	11200	25320	2500	5740	3300
JAN. 1997	1165	37690	25520	80270	12700	39890	2800	8780	3600
FEB. 1997	2093	33780	22820	128900	11300	63700	2600	14520	3300
MAR. 1997	1533	37550	25460	105400	12700	52550	2700	11330	3600
APR. 1997	22046.9	12150	8060	479700	3800	226600	1100	65380	1400
MAY 1997	7403	17140	11410	228000	5400	108600	1500	30060	1900
JUNE 1997	10013	14960	9940	268800	4700	127800	1300	35760	1700
JULY 1997	6525	17210	11480	202300	5500	97010	1500	25990	1900
AUG. 1997	16575	12990	8630	386100	4100	183100	1200	51800	1400
SEPT 1997	5436	25920	17420	255700	8500	124800	2100	30420	2600
TOTAL	75813.5	**	**	2343500	**	1127900	**	296400	**
WTD. AVG.	208	17140	11450	**	5500	**	1400	**	1800

RED RIVER MAIN STEM

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

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	e44000	46500	44300	45300	---	---	e21000	52200	51200	51600
2	---	---	e44600	47400	45800	46700	---	---	e26500	53800	51400	52500
3	---	---	e45000	49800	45100	46200	---	---	e28900	54100	53000	53500
4	---	---	e44700	---	---	e49500	---	---	e31800	55800	52900	54200
5	---	---	e44200	---	---	e50500	30600	27100	28600	55400	54100	54700
6	---	---	e44100	50500	46500	47900	32600	30600	31600	56600	48800	52900
7	---	---	40000	50800	47300	48700	34800	32600	33700	56900	45900	47500
8	39600	34100	37600	51800	49800	51000	36600	34800	35700	46500	20900	28400
9	36700	13200	23900	52300	49500	51000	38000	36600	37300	---	---	e35700
10	15200	14300	14600	51800	49500	50800	39900	38000	38900	---	---	e36000
11	17100	15200	16000	52300	49300	51100	41200	39900	40500	---	---	e36200
12	20300	17100	18500	51400	49700	50600	43400	41200	42400	---	---	e36600
13	23200	20300	21900	50700	48800	49700	45500	43400	44500	---	---	e37300
14	25700	23200	24400	49400	46500	47900	47900	45500	46700	---	---	e35000
15	28000	25700	26800	48700	46500	47800	50700	47900	49300	---	---	e34600
16	29300	27800	28500	48800	32800	42500	52700	50700	51700	---	---	e35000
17	33400	29300	31300	45800	35900	41600	55500	52700	54200	---	---	e35200
18	36600	33400	35000	42600	39100	40900	58100	55500	56700	---	---	e35400
19	38200	36600	37500	41500	28500	31900	59000	44700	53000	---	---	e35300
20	40700	38200	39200	33800	30400	31900	50800	42500	46800	---	---	e35500
21	44500	40700	42100	38800	32500	36300	49000	43900	45800	---	---	e35300
22	45000	42300	43900	41800	37800	40400	46300	44600	45400	---	---	e34600
23	43800	41900	43000	39600	28900	33300	47500	43600	45400	---	---	e34300
24	44100	42900	43500	57300	34300	45000	49700	47500	48500	---	---	e36000
25	45600	43500	44300	56800	41600	48700	50200	48400	49300	---	---	e37500
26	48100	45600	46700	59400	47200	54600	50100	46600	48300	---	---	e39000
27	---	---	29800	61300	53400	58400	49000	46700	47800	---	---	e40800
28	---	---	e33000	60200	45900	55400	49600	47600	48400	---	---	e41300
29	---	---	e37000	49400	17600	41200	50800	49300	49900	---	---	e41500
30	---	---	e41500	49300	13000	35600	51200	49600	50400	---	---	e41600
31	---	---	46100	---	---	---	51600	51000	51300	---	---	e41800
MONTH	48100	13200	35900	61300	13000	45700	59000	27100	42900	56900	20900	40200

e Estimated

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	e42000	26500	25000	26100	---	---	e58200	16300	13400	14800
2	---	---	e42500	28000	26400	27100	---	---	e57000	17200	13000	16300
3	---	---	e44000	29100	24800	27900	---	---	34800	18600	16400	17300
4	---	---	e46000	31400	20600	26400	---	---	e11000	22500	18600	20900
5	---	---	e48000	33300	31400	32300	---	---	e14500	23200	21600	22400
6	50500	37800	40000	34000	29300	33200	---	---	e13600	25100	22900	23800
7	52400	19300	36000	---	---	e35000	---	---	e16500	26900	23600	25600
8	52300	41600	47300	---	---	e35300	---	---	20000	25300	17900	20800
9	42000	39800	40900	---	---	e36500	24300	21200	22900	19800	3630	11500
10	44100	39200	41700	---	---	e39000	25700	24200	24900	11700	7000	10400
11	45000	35500	40400	---	---	e38000	---	---	e18000	13700	11700	12500
12	---	---	e42000	---	---	e37300	---	---	e9500	---	---	e18000
13	---	---	e42800	---	---	40300	---	---	e11300	---	---	e20000
14	---	---	e43000	43800	40500	42500	---	---	e14400	---	---	e18000
15	---	---	e43500	---	---	41300	---	---	e16600	---	---	e21100
16	---	---	e44000	---	---	42500	20600	17500	18900	---	---	e23000
17	---	---	e44600	43200	41200	43000	23000	20600	21800	---	---	e25100
18	---	---	e45000	---	---	e44000	24900	23000	24100	---	---	e27500
19	---	---	e42500	---	---	e47000	26600	24900	25800	---	---	e28600
20	---	---	e20500	---	---	e46300	29000	26600	28000	---	---	e28300
21	---	---	e27000	---	---	e46600	31500	28400	30200	---	---	e26000
22	---	---	e29000	---	---	e49300	35200	28500	31300	---	---	e29600
23	---	---	e33000	---	---	e50000	34300	25900	29100	---	---	e25500
24	---	---	e36500	---	---	e50100	25900	18500	22500	---	---	e25200
25	---	---	e31000	---	---	e52900	19100	5830	11600	---	---	e23200
26	---	---	e28000	---	---	e53000	10300	6460	8040	---	---	e23300
27	---	---	e28100	---	---	e54500	---	---	e8470	---	---	e21000
28	---	---	27100	---	---	e57000	---	---	9350	---	---	e26500
29	---	---	---	---	---	e57500	11500	9600	10500	---	---	e31500
30	---	---	---	---	---	e61000	13900	11200	12600	---	---	e15000
31	---	---	---	---	---	e57600	---	---	---	---	---	e14500
MONTH	52400	19300	38400	43800	20600	42900	35200	5830	21200	26900	3630	21500

e Estimated

RED RIVER MAIN STEM

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

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	e15400	---	---	21000	---	---	e54200	---	---	e49000
2	---	---	e18000	26900	22300	24700	---	---	e53800	---	---	e51000
3	---	---	e23500	---	---	e29000	---	---	e54200	---	---	e50000
4	---	---	e29400	---	---	e37000	---	---	e50500	---	---	e49000
5	32500	29000	30300	---	---	e43700	---	---	e27300	---	---	e51000
6	30600	29500	30200	---	---	e25000	---	---	e56300	---	---	e50400
7	35800	30600	31800	---	---	e10000	---	---	e38300	---	---	e51800
8	35200	20200	28800	---	---	e12200	58200	29800	54800	---	---	e52900
9	25000	16900	20400	---	---	e17000	31500	26100	27900	---	---	e48000
10	17900	11200	14600	---	---	24600	41600	31500	36900	---	---	e50000
11	12400	10900	11500	27500	9180	13800	40900	14200	27500	---	---	e49000
12	14500	11100	12800	12600	10100	11200	---	---	12100	---	---	e52000
13	19900	14500	17000	---	---	e15000	---	---	e24000	---	---	e50000
14	22800	12100	20200	---	---	e20000	---	---	e14700	---	---	e28200
15	16100	9660	13500	---	---	e29400	---	---	e10000	---	---	e15200
16	12100	8760	9490	---	---	e38000	---	---	e10700	---	---	e11700
17	12100	6590	10100	---	---	46200	---	---	e13700	---	---	e15100
18	11900	6900	10700	53300	40400	49100	---	---	e22600	---	---	23700
19	13500	9790	11600	57200	49300	52000	---	---	e8000	36100	29000	33000
20	17900	12300	15300	55900	50300	52600	---	---	e10300	45000	32800	39900
21	---	---	19000	57500	50600	52800	---	---	e12500	45200	37600	41400
22	---	---	e26000	57500	5240	17000	---	---	e16200	41700	19700	29600
23	---	---	e26000	53400	19300	36400	---	---	e22600	29500	18900	24900
24	---	---	e29600	43500	38200	40000	---	---	e29000	25700	20800	23100
25	---	---	e26500	50600	41500	44100	---	---	e31200	25600	23000	24300
26	---	---	e30500	---	---	44600	---	---	e34500	30000	24300	26600
27	---	---	e32000	---	---	e47600	---	---	e37500	35500	29800	32800
28	---	---	e36100	---	---	e49400	---	---	e40400	43300	32000	37500
29	---	---	e40100	---	---	e52500	---	---	e42000	45700	39700	43600
30	---	---	e41000	---	---	e53600	---	---	e46400	45800	40600	44100
31	---	---	---	---	---	e55000	---	---	e49400	---	---	---
MONTH	35800	6590	22700	57500	5240	34300	58200	14200	31300	45800	18900	38300
YEAR	61300	3630	34600									
e Estimated												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	24.5	18.0	21.0	13.0	6.0	8.5	10.0	2.0	5.5	13.5	9.5	11.0
2	23.5	19.0	20.5	17.0	4.5	10.0	10.5	5.5	8.0	13.5	7.0	10.0
3	23.0	17.0	19.5	14.0	8.0	11.0	10.0	6.5	8.5	14.0	8.0	10.5
4	23.0	20.5	21.5	18.5	8.5	13.0	12.0	6.0	8.5	12.5	8.5	10.5
5	25.0	20.0	22.5	19.5	9.0	14.5	10.5	2.0	6.0	8.5	5.0	6.0
6	27.0	21.5	23.5	16.5	10.5	13.5	13.5	6.5	9.0	5.0	2.0	3.0
7	29.0	21.5	25.0	16.0	7.0	11.0	11.5	4.0	7.5	6.5	1.5	3.5
8	26.5	19.0	23.5	15.0	5.5	9.5	12.0	3.5	7.5	4.0	.0	2.5
9	23.5	15.5	19.0	17.5	5.5	11.0	14.5	6.5	10.0	7.5	.0	3.0
10	22.5	14.5	18.0	16.0	7.5	11.5	14.5	8.5	11.0	4.0	.5	2.0
11	21.5	14.5	18.0	17.0	7.0	11.5	15.0	8.0	11.0	.5	.0	.0
12	25.0	16.5	19.5	11.5	8.0	10.0	14.5	7.5	11.0	.0	.0	.0
13	24.5	16.5	19.5	15.5	9.0	11.5	14.0	7.0	10.5	.0	.0	.0
14	23.5	16.0	19.0	17.5	12.0	14.0	13.5	7.5	10.0	.0	.0	.0
15	22.5	16.0	18.5	21.0	14.0	17.0	7.5	3.5	5.5	2.0	.0	.5
16	24.0	17.0	19.5	19.0	10.0	16.5	8.0	1.5	4.5	3.0	.0	.5
17	18.5	12.5	15.0	14.0	5.0	9.0	4.5	.5	2.0	4.5	.0	1.0
18	18.0	9.5	13.0	17.5	5.0	10.5	3.0	.0	1.0	7.5	.0	2.5
19	17.0	10.0	13.0	19.5	7.5	13.5	3.5	.0	1.0	10.0	.5	4.5
20	21.5	13.5	16.5	20.0	10.5	14.5	7.0	1.0	3.0	12.0	1.5	6.0
21	16.5	9.0	12.5	14.5	9.0	11.5	7.0	.5	3.5	9.5	5.5	7.5
22	12.5	7.5	9.0	10.5	7.5	9.0	10.0	3.0	6.5	9.0	3.5	6.5
23	16.5	6.5	10.5	19.0	7.5	13.0	7.5	3.0	5.5	9.5	5.5	7.5
24	17.0	8.5	12.0	7.5	1.5	3.0	5.5	.5	2.5	9.0	4.5	7.0
25	17.5	11.0	14.0	10.0	3.5	5.5	5.5	.5	3.0	7.0	4.0	5.5
26	18.5	11.0	14.0	11.0	2.5	5.5	4.0	.5	2.0	7.0	5.0	6.0
27	14.0	11.0	12.0	10.5	1.0	5.0	7.5	.0	3.0	6.5	1.0	3.0
28	13.0	11.0	12.0	10.0	4.5	7.0	10.0	3.5	6.0	4.5	1.0	2.0
29	14.0	11.0	12.5	15.5	6.0	9.5	9.5	3.0	6.0	4.5	1.0	2.5
30	17.5	9.0	12.5	10.5	4.0	8.0	9.5	3.0	6.0	6.5	1.5	4.0
31	12.0	7.0	10.0	---	---	---	11.0	5.0	7.5	8.0	3.5	5.5
MONTH	29.0	6.5	16.5	21.0	1.0	10.5	15.0	.0	6.0	14.0	.0	4.5

07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX

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

DRAINAGE AREA.--303 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,425.69 ft above sea level.

REMARKS.--No estimated daily discharges. Records good except those for estimated daily discharges, which are poor. No known regulation. There are several diversions upstream from station for farm and ranch use and for a gypsum plant.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s.

	Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)				
	Apr. 12	0500	1,050	14.04	Apr. 26	0200	3,810	17.82				
	DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES											
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	30	99	22	22	46	29	77	69	37	27	25
2	30	27	73	22	22	43	30	72	52	36	25	25
3	29	25	41	23	23	41	36	63	48	35	25	25
4	29	25	34	23	22	41	96	57	45	36	26	27
5	29	24	30	22	22	39	351	54	44	36	29	28
6	29	23	28	22	24	37	111	53	43	37	30	27
7	30	22	25	22	25	37	52	61	46	39	30	27
8	30	22	28	e22	25	37	42	60	46	40	29	26
9	29	22	28	22	27	37	38	219	53	39	32	26
10	31	22	29	e22	28	38	37	311	52	34	35	26
11	28	22	28	e22	27	37	254	157	49	43	40	26
12	27	22	28	e22	26	37	702	79	47	93	48	26
13	26	22	28	e22	26	37	169	69	46	43	45	26
14	25	22	27	e22	26	34	70	65	44	39	41	26
15	25	23	24	e22	26	34	56	63	44	35	45	26
16	24	27	24	e22	25	33	49	61	81	33	43	26
17	23	21	23	e22	26	34	46	56	64	33	40	25
18	23	22	23	e23	26	34	43	54	57	32	36	23
19	23	22	22	e23	28	33	42	53	55	33	35	26
20	24	26	22	e23	119	32	41	54	45	34	32	24
21	24	25	22	23	473	32	40	55	42	31	30	23
22	26	24	23	22	321	32	41	56	41	32	31	37
23	26	24	23	22	88	31	46	56	41	36	28	474
24	25	22	22	22	61	32	50	55	41	47	28	99
25	25	24	22	21	51	30	1190	54	40	35	29	53
26	25	23	22	21	50	30	3060	52	39	32	30	30
27	108	22	22	21	49	30	784	50	38	30	28	25
28	83	21	22	21	48	29	375	46	39	30	27	24
29	162	31	22	21	---	30	161	44	41	30	26	24
30	46	79	22	21	---	29	96	48	40	30	27	23
31	34	---	22	22	---	29	---	66	---	29	26	---
TOTAL	1129	766	908	682	1736	1075	8137	2320	1432	1149	1003	1328
MEAN	36.4	25.5	29.3	22.0	62.0	34.7	271	74.8	47.7	37.1	32.4	44.3
MAX	162	79	99	23	473	46	3060	311	81	93	48	474
MIN	23	21	22	21	22	29	29	44	38	29	25	23
AC-FT	2240	1520	1800	1350	3440	2130	16140	4600	2840	2280	1990	2630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1997, BY WATER YEAR (WY)

	MEAN	34.1	10.2	9.63	8.22	9.61	10.4	21.1	28.4	56.3	20.9	26.7	49.6
MAX	393	31.3	43.0	24.3	62.0	37.1	271	163	502	228	545	286	
(WY)	1984	1995	1992	1992	1997	1990	1997	1987	1995	1996	1995	1974	
MIN	.68	1.33	1.48	1.33	1.35	1.18	1.12	1.74	1.54	.10	.000	.39	
(WY)	1969	1969	1969	1971	1971	1971	1969	1967	1967	1964	1964	1968	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1962 - 1997

ANNUAL TOTAL	21228.0	21665	
ANNUAL MEAN	58.0	59.4	23.3
HIGHEST ANNUAL MEAN			112
LOWEST ANNUAL MEAN			2.97
HIGHEST DAILY MEAN	2840	3060	9570
LOWEST DAILY MEAN	8.2	21	.00
ANNUAL SEVEN-DAY MINIMUM	8.4	21	.00
INSTANTANEOUS PEAK FLOW		3810	18000
INSTANTANEOUS PEAK STAGE		17.82	24.78
ANNUAL RUNOFF (AC-FT)	42110	42970	16890
10 PERCENT EXCEEDS	42	65	24
50 PERCENT EXCEEDS	24	30	6.7
90 PERCENT EXCEEDS	17	22	1.5

e Estimated

07299840 GREENBELT LAKE NEAR CLARENDON, TX

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

DRAINAGE AREA.--457 mi², of which 191 mi² probably is noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is sea level.

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

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

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

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

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,900 acre-ft June 17 at 1230 hours (elevation, 2,646.41 ft); minimum daily, 22,000 acre-ft Nov. 13 (elevation, 2,638.63 ft).

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

2,607.0	2,840	2,640.0	23,410	2,648.0	32,990
2,610.0	3,770	2,642.0	25,580	2,652.0	38,730
2,620.0	8,000	2,644.0	27,900	2,654.0	41,850
2,630.0	14,340	2,646.0	30,370	2,656.0	45,130

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22410	22090	22280	22170	22310	22780	22650	30070	30760	30650	29610	29000
2	22340	22090	22280	22180	22310	22780	23370	30100	30760	30620	29560	28960
3	22330	22090	22290	22200	22320	22790	24820	30120	30740	30550	29530	28900
4	22330	22090	22290	22190	22320	22790	25210	30130	30720	30620	29480	28860
5	22330	22090	22200	22180	22300	22790	25290	30160	30650	30620	29460	28840
6	22320	22080	22210	22180	22360	22790	25360	30170	30640	30640	29450	28800
7	22420	22060	22200	22160	22360	22790	25390	30270	30630	30640	29410	28780
8	22430	22060	22210	22190	22370	22810	25430	30310	30720	30620	29390	28730
9	22410	22040	22230	22200	22380	22810	25480	30330	30740	30580	29370	28710
10	22390	22040	22160	22200	22380	22810	25670	30330	30730	30540	29330	28660
11	22390	22040	22150	22200	22390	22820	26150	30370	30740	30540	29360	28620
12	22380	22040	22160	22200	22390	22820	26310	30370	30740	30510	29330	28570
13	22370	22040	22170	22200	22400	22790	26380	30400	30720	30470	29330	28570
14	22350	22050	22260	22220	22420	22790	26420	30370	30780	30400	29460	28550
15	22350	22060	22260	22220	22410	22800	26470	30410	30800	30340	29470	28530
16	22340	22120	22260	22230	22430	22800	26480	30400	30830	30290	29450	28510
17	22290	22140	22220	22230	22430	22810	26510	30420	30890	30240	29410	28460
18	22270	22150	22210	22250	22430	22790	26510	30410	30870	30200	29460	28420
19	22260	22160	22210	22270	22510	22800	26530	30380	30860	30130	29450	28390
20	22240	22160	22220	22270	22600	22800	26530	30410	30850	30100	29430	28300
21	22220	22150	22220	22270	22660	22790	26500	30410	30800	30060	29430	28310
22	22200	22150	22220	22280	22690	22780	26580	30450	30780	30030	29390	28560
23	22170	22110	22210	22300	22700	22780	26580	30470	30800	30020	29360	28550
24	22160	22110	22210	22290	22700	22740	26830	30550	30770	29970	29330	28550
25	22140	22110	22210	22290	22720	22730	28400	30580	30760	29910	29280	28550
26	22130	22110	22200	22310	22730	22730	29470	30560	30730	29870	29250	28530
27	22090	22110	22230	22260	22750	22720	29750	30540	30710	29820	29210	28510
28	22100	22130	22160	22270	22770	22710	29890	30540	30680	29770	29170	28450
29	22130	22170	22160	22280	---	22680	29980	30580	30710	29730	29120	28440
30	22110	22250	22160	22290	---	22670	30020	30730	30710	29680	29080	28410
31	22100	---	22160	22310	---	22650	---	30740	---	29660	29050	---
MAX	22430	22250	22290	22310	22770	22820	30020	30740	30890	30650	29610	29000
MIN	22090	22040	22150	22160	22300	22650	22650	30070	30630	29660	29050	28300
(+)	2638.73	2638.88	2638.79	2638.94	2639.38	2639.27	2645.72	2646.29	2646.26	2645.43	2644.94	2644.42
(@)	-270	+150	-90	+150	+460	-120	+7370	+720	-30	-1050	-610	-640
(++)	349	303	323	311	264	321	274	304	357	486	426	402
CAL YR 1996	MAX	22590	MIN	20510	(@)	-410	(++)	4527				
WTR YR 1997	MAX	30890	MIN	22040	(@)	+6040	(++)	4120				

(+) Elevations, in feet, at end of month.

(@) Change in contents, in acre-feet.

(++) Diversions, in acre-feet, for municipal and industrial use by the Greenbelt Municipal Water Authority.

RED RIVER BASIN

49

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX

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

DRAINAGE AREA.--1,222 mi², of which 209 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,941.41 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. There are several small diversions upstream from gage for irrigation. There is some regulation for municipal use by Greenbelt Lake (station 07299840) 42 mi upstream. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--14 years (water years 1953-66) prior to completion of Greenbelt Lake, 72.6 ft³/s (52,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1953-66).--Maximum discharge, 146,000 ft³/s May 16, 1957 (gage height, 19.00 ft), from rating curve extended above 11,000 ft³/s on basis of slope-area measurement of 63,400 ft³/s; minimum, 0.1 ft--/s June 19, 1952.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	24	244	47	63	67	24	82	110	41	16	6.2
2	26	23	122	42	59	52	26	164	72	33	15	6.0
3	24	22	68	40	58	49	e17500	100	56	23	17	9.4
4	23	25	52	37	51	46	e3520	80	77	22	19	9.8
5	24	28	45	32	47	44	e1000	105	89	55	21	9.7
6	23	27	44	29	62	44	e800	102	104	77	21	9.9
7	24	26	45	30	209	40	e500	101	114	88	25	9.4
8	76	23	50	33	169	42	372	418	235	40	29	9.2
9	31	24	52	45	106	47	246	255	399	20	25	10
10	25	23	50	62	80	42	240	142	414	14	26	11
11	23	23	42	51	63	38	1140	90	551	13	35	10
12	20	23	36	58	54	37	371	110	e3040	16	26	10
13	19	24	33	40	51	37	267	96	e453	26	27	14
14	18	26	35	36	59	32	196	74	40	16	129	28
15	18	29	37	50	54	31	122	77	388	10	108	15
16	18	57	38	58	49	36	107	63	246	9.9	53	15
17	17	86	43	61	45	41	85	53	266	11	31	14
18	15	56	94	65	42	39	60	41	150	11	30	14
19	16	47	49	96	40	38	54	37	70	10	41	14
20	18	40	40	129	349	39	54	61	126	9.3	31	14
21	18	34	47	91	431	34	57	59	54	79	23	16
22	21	31	67	69	264	27	186	88	32	38	18	64
23	20	33	81	59	161	26	177	101	81	20	14	275
24	20	31	52	55	96	29	350	489	100	23	13	117
25	22	27	42	51	82	27	4060	303	54	19	12	52
26	20	30	36	51	92	27	2720	89	64	17	10	38
27	21	30	36	52	68	28	1160	58	74	16	8.8	31
28	22	34	46	39	65	28	554	37	75	15	8.3	25
29	26	84	44	51	---	27	405	55	52	14	7.6	21
30	27	198	45	60	---	23	192	290	45	16	7.1	21
31	25	---	46	60	---	23	---	200	---	17	6.4	---
TOTAL	727	1188	1761	1679	2969	1140	36545	4020	7631	819.2	853.2	898.6
MEAN	23.5	39.6	56.8	54.2	106	36.8	1218	130	254	26.4	27.5	30.0
MAX	76	198	244	129	431	67	17500	489	3040	88	129	275
MIN	15	22	33	29	40	23	24	37	32	9.3	6.4	6.0
AC-FT	1440	2360	3490	3330	5890	2260	72490	7970	15140	1620	1690	1780

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1997#, BY WATER YEAR (WY)

	MEAN	30.9	27.6	26.8	30.3	36.1	39.5	95.0	113	158	32.0	30.0	33.3
MAX	279	213	92.4	86.0	106	127	1218	468	1006	155	301	113	
(WY)	1987	1987	1992	1993	1997	1979	1997	1977	1995	1993	1968	1981	
MIN	4.28	8.03	3.59	10.5	10.9	8.15	6.10	2.61	8.17	2.65	1.68	2.22	
(WY)	1981	1981	1984	1971	1967	1972	1971	1971	1970	1970	1970	1984	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1967 - 1997#
ANNUAL TOTAL	17146.27	60231.0	
ANNUAL MEAN	46.8	165	54.2
HIGHEST ANNUAL MEAN			165
LOWEST ANNUAL MEAN			10.5
HIGHEST DAILY MEAN	1060	17500	17500
LOWEST DAILY MEAN	.88	6.0	.40
ANNUAL SEVEN-DAY MINIMUM	1.2	7.2	.73
INSTANTANEOUS PEAK FLOW		81100	i81100
INSTANTANEOUS PEAK STAGE		17.10	17.10
ANNUAL RUNOFF (AC-FT)	34010	119500	39300
10 PERCENT EXCEEDS	80	219	69
50 PERCENT EXCEEDS	25	42	17
90 PERCENT EXCEEDS	8.7	15	4.4

e Estimated

Period of regulated streamflow.

i From field determination, based on 3-section slope-area measurement of peak flow.

RED RIVER BASIN

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1951 to October 1954, October 1967 to September 1997 (discontued). Chemical and biochemical analyses: October 1974 to September 1997 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1952 to September 1954, October 1967 to September 1991.

WATER TEMPERATURE: June 1952 to September 1954, October 1967 to September 1991.

INSTRUMENTATION.--From September 1968 to September 1974, specific conductance was continuously recorded at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,510 microsiemens Dec. 20, 1990; minimum daily, 330 microsiemens July 30, 1982.

WATER TEMPERATURE: Maximum daily, 40.0°C July 20, 1981; minimum daily, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
DEC 19...	1042	42	3730	7.9	0.5	13.4	99	--	--	1700
FEB 12...	0910	54	2850	8.3	2.5	12.5	98	210	120	1100
MAR 18...	1100	42	2960	8.1	13.5	9.7	99	--	--	1200
MAY 06...	1700	106	2440	7.9	26.5	7.9	105	--	--	970
JUN 26...	1205	37	2880	8.0	28.0	8.4	116	--	--	1200
AUG 29...	1315	9.3	3130	7.8	31.5	6.8	100	87	25	1600

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
DEC 19...	1500	530	95	250	3	4.2	210	1500	340	0.70
FEB 12...	970	330	78	210	3	3.9	180	1000	300	0.70
MAR 18...	1100	360	79	217	3	4.0	150	1100	300	0.67
MAY 06...	780	260	81	185	3	6.6	190	870	240	0.73
JUN 26...	1100	340	92	199	2	5.0	160	1100	270	0.65
AUG 29...	1500	500	85	176	2	4.3	140	1500	250	0.57

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
DEC 19...	24	2880	1.88	0.020	1.90	0.050	--	<0.20	<0.010	<0.010
FEB 12...	21	2050	0.950	0.010	0.960	<0.015	--	<0.20	<0.010	<0.010
MAR 18...	17	2170	--	<0.010	0.980	0.090	--	<0.20	<0.010	<0.010
MAY 06...	21	1770	--	<0.010	0.334	<0.015	--	0.20	0.019	<0.010
JUN 26...	24	2180	0.680	0.010	0.690	<0.015	--	<0.20	<0.010	<0.010
AUG 29...	21	2610	1.95	0.033	1.98	0.064	0.19	0.25	<0.010	<0.010

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LOCATION.--Lat 34°51'30", long 99°30'30", in SW 1/4 SE 1/4 sec.34. T.5 N, R.22 W., Greer County, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mi south of Mangum, 13.0 mi downstream from Fish Creek, and at mile 35.5.

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

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft above sea level (levels by U.S. Bureau of Reclamation). Apr. 11, 1905, to June 30, 1906, nonrecording gage at site 0.2 mi upstream at different datum. Oct. 1, 1937, to Nov. 8, 1938, nonrecording gage at present site and datum.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s:

e Estimated

RED RIVER BASIN

07301200 McCLELLAN CREEK NEAR McLEAN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 35°19'45", Long 100°36'32", Gray County, Hydrologic Unit 11120301, on left bank at downstream side of bridge on State Highway 273, 5.0 mi upstream from mouth.

DRAINAGE AREA.--759.0 mi², of which 299 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1967 to September 1980 (continuous record). October 1981 to September 1992 (annual maximum), October 1992 to current year (peaks above base discharge and annual maximum).

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

GAGE.--Water-stage recorder. Datum of gage is 2,545.99 ft above sea level.

REMARKS.--Records fair. Since installation of gage in October 1967, at least 10% of contributing drainage area has been regulated by Lake McClellan (capacity 5,000 acre-ft), 18 mi upstream. Flow is affected at times by discharge from flood-detention pool of a floodwater-retarding structure with detention capacity of 2,930 acre-ft. These structures control flow from 17.0 mi².

AVERAGE DISCHARGE.--13 years (water years 1967-80), 20.1 ft³/s, 14,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s May 29, 1975 (gage height, 14.55 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 21 ft in May 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 3	0530	1,000	8.77				

RED RIVER BASIN

53

07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 35°15'51", Long 100°14'29", Wheeler County, Hydrologic Unit 11120302, on left bank at downstream side of bridge on U.S. Highway 83, 2.5 mi north of Shamrock.

DRAINAGE AREA.--1,082 mi², of which 379 mi² probably is noncontributing.

PERIOD OF RECORD.--October 1951 to September 1963 (miscellaneous measurements). October 1964 to September 1992 (annual maximum), October 1992 to current year (peaks above base discharge and annual maximum).

GAGE.--Water-stage recorder. Datum of gage is 2,165.55 ft above sea level.

REMARKS.--Records poor. Since installation of gage, at least 10% of contributing drainage area has been regulated by Lake McClellan (capacity 5,000 acre-feet) 41 miles upstream. Flow is affected at times by discharge from flood-detention pools of eleven floodwater retarding structures with combined detention capacity of 18,290 acre-feet. These structures control runoff 165 mi².

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft³/s June 3, 1995 (gage height, 8.49 ft).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s or maximum:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr . 3	1945	4,290	4.36	May 8	1500	2,590	3.77
Apr. 26	0700	1,860	3.41				

RED RIVER BASIN

07301410 SWEETWATER CREEK NEAR KELTON, TX

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

DRAINAGE AREA.--287 mi², of which 20 mi² probably is noncontributing.

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

Water-quality records.--Chemical analyses: October 1969 to June 1985.

GAGE.--Water-stage recorder. Elevation of gage is 2,230 ft above sea level from topographic map.

REMARKS.--Records good, except those for estimated daily discharges, which are poor. No known regulation. There are many small diversions upstream from station for ranch use. Satellite telemeter at station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr 26	2030	541	13.10	May 24	2000	1,440	15.30
Jun 13	1745	565	13.22				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	13	32	16	15	27	20	62	45	23	8.6	5.1
2	13	13	31	16	14	25	20	82	42	21	8.4	4.7
3	14	14	28	16	14	25	41	64	39	20	8.1	4.5
4	13	16	26	16	14	23	164	53	38	26	8.3	5.3
5	14	16	23	15	14	22	291	49	37	26	8.2	5.9
6	13	16	21	15	17	22	84	47	36	26	8.6	5.7
7	13	14	19	15	22	21	55	61	35	24	11	4.8
8	14	13	18	16	21	21	45	313	36	21	11	4.3
9	13	13	18	17	20	22	42	278	43	19	10	3.9
10	12	13	18	18	20	21	46	90	65	18	9.4	4.7
11	12	14	17	e16	19	20	199	68	65	20	9.3	4.7
12	12	14	17	e14	18	20	192	60	72	18	9.1	4.3
13	11	13	17	e13	18	20	82	55	395	16	9.3	3.8
14	11	14	17	e14	18	19	63	49	183	15	11	3.7
15	11	14	16	e16	e17	19	53	46	84	15	10	3.7
16	11	17	16	e15	e16	19	48	44	67	14	8.8	3.4
17	11	25	17	e15	e16	20	45	43	59	13	8.2	3.1
18	10	19	e14	e17	e15	19	44	40	52	12	8.3	2.8
19	11	17	e13	19	e15	19	40	50	45	11	8.9	2.8
20	11	16	e17	19	35	19	39	49	41	11	8.6	2.6
21	11	15	20	19	58	19	38	43	38	12	8.1	3.3
22	12	15	22	17	42	18	44	50	36	14	7.8	18
23	12	15	20	17	32	18	43	48	37	15	7.5	58
24	12	15	18	16	29	19	51	388	38	11	7.3	21
25	12	15	18	15	30	20	215	570	34	10	6.9	14
26	11	15	18	16	31	19	415	195	32	9.8	6.6	11
27	11	15	17	e15	30	19	298	101	31	9.4	6.0	10
28	11	15	17	e14	30	19	131	71	30	9.1	5.7	9.6
29	14	19	16	16	---	19	91	59	28	8.9	5.3	9.1
30	13	25	16	15	---	20	72	54	26	8.9	5.1	9.0
31	14	---	16	15	---	21	---	50	---	8.8	5.0	---
TOTAL	378	468	593	493	640	634	3011	3232	1809	485.9	254.4	246.8
MEAN	12.2	15.6	19.1	15.9	22.9	20.5	100	104	60.3	15.7	8.21	8.23
MAX	15	25	32	19	58	27	415	570	395	26	11	58
MIN	10	13	13	13	14	18	20	40	26	8.8	5.0	2.6
AC-FT	750	928	1180	978	1270	1260	5970	6410	3590	964	505	490

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1997, BY WATER YEAR (WY)

	MEAN	8.20	10.2	11.8	12.9	15.9	17.8	22.4	26.6	23.6	6.22	5.69	7.95
MAX	42.1	34.5	19.3	24.3	29.6	35.3	100	196	86.3	32.3	42.7	40.9	
(WY)	1987	1975	1992	1987	1987	1988	1997	1977	1965	1967	1963	1988	
MIN	.30	1.05	3.11	5.78	6.82	9.09	8.72	3.38	2.80	.44	.000	.027	
(WY)	1985	1985	1984	1995	1995	1977	1971	1971	1966	1974	1964	1984	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1962 - 1997	
ANNUAL TOTAL	6055.3		12245.1		13.9	
ANNUAL MEAN	16.5		33.5		33.5	
HIGHEST ANNUAL MEAN					4.89	
LOWEST ANNUAL MEAN					1997	
HIGHEST DAILY MEAN	286	May 26	570	May 25	1820	May 21 1977
LOWEST DAILY MEAN	3.4	May 24	2.6	Sep 20	.00	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	4.3	May 18	3.1	Sep 15	.00	Jul 29 1964
INSTANTANEOUS PEAK FLOW			1440	May 24	2890	May 20 1977
INSTANTANEOUS PEAK STAGE			15.30	May 24	15.73	May 20 1977
INSTANTANEOUS LOW FLOW					.00	Jul 29 1964
ANNUAL RUNOFF (AC-FT)	12010		24290		10080	
10 PERCENT EXCEEDS	21		58		22	
50 PERCENT EXCEEDS	13		17		10	
90 PERCENT EXCEEDS	8.1		8.3		.90	

e Estimated

RED RIVER BASIN

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07307750 MIDDLE PEASE RIVER NEAR PADUCAH, TX.

LOCATION.--Lat 34°12'31", long 100°18'03", Cottle County, Hydrologic Unit 11120104, on left bank at downstream side of bridge on U.S. Highway 62 and 83, 11.8 mi north of Paducah, and 13.4 mi upstream from mouth.

DRAINAGE AREA.--1,086 mi², of which 65 mi² probably is noncontributing.

PERIOD OF RECORD.--

SEDIMENT RECORDS: January 1992 to September 1992. October 1994 to September 1997 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1973 to Septmber 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,910 microsiemens Feb. 12, 1975; minimum daily, 802 microsiemens June 10, 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
FEB 25...	1721	37	4400	2.5	103	10
APR 09...	0907	25	4600	6.0	38	2.6
JUN 05...	0908	26	4000	20.5	59	4.1
JUL 23...	1149	0.63	3680	32.0	227	0.39

RED RIVER BASIN

07307800 PEASE RIVER NEAR CHILDRESS, TX

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

DRAINAGE AREA.--2,754 mi², of which 559 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1959 to September 1962 (average discharge for 1961-62 water years excluded from average annual discharge computations), and October 1967 to current year.

Water-quality records.--Chemical analyses: July 1968 to September 1982

GAGE.--Water-stage recorder. Datum of gage is 1,492.98 ft above sea level. Prior to Dec. 21, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. There are three small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six flood- water-retarding structures with a combined detention capacity of 1,360 acre-ft. These structures control runoff from 6.27 mi² in the Kent Creek drainage basin.

AVERAGE DISCHARGE.--2 years (water years 1961-62), 89.6 ft³/s (0.55 in/yr), 64,900 acre-ft/yr.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft³/s.

	Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)				
	Apr. 25	2000	8,340	11.80	May 9	0730	3,130	10.07				
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	48	84	17	16	97	14	570	191	32	3.1	14
2	6.3	46	40	15	15	87	17	533	141	24	2.6	11
3	6.3	43	27	15	16	83	34	391	103	27	2.4	10
4	6.3	40	28	15	15	74	593	344	91	17	3.3	12
5	6.5	42	28	13	16	60	452	e283	76	e64	5.5	10
6	6.9	43	e26	13	26	58	222	256	69	e160	11	9.1
7	71	39	e24	13	33	48	145	519	61	e135	176	7.9
8	106	32	e23	19	28	47	110	465	90	100	61	6.1
9	21	31	e21	26	26	51	89	1740	626	75	46	5.7
10	28	29	e19	22	29	43	85	1020	366	50	51	5.6
11	15	30	e18	19	24	48	792	774	280	49	211	4.6
12	11	30	e18	9.5	23	43	919	529	196	49	757	7.6
13	8.3	28	e17	13	23	41	594	520	141	32	230	7.2
14	7.6	27	e16	19	23	25	419	374	107	25	178	24
15	7.4	26	e16	27	19	25	309	296	99	22	175	23
16	7.4	24	e16	30	19	23	242	263	160	14	109	23
17	7.4	21	e15	22	20	21	195	227	154	9.2	44	15
18	7.4	20	e15	21	16	20	168	196	145	7.2	23	6.2
19	7.4	21	e14	21	19	21	146	185	136	6.9	316	4.4
20	8.6	22	14	23	162	24	134	273	109	6.2	875	3.0
21	12	21	16	25	436	21	118	256	82	7.3	262	3.2
22	18	20	17	21	265	16	158	256	67	13	150	101
23	11	21	15	20	166	18	133	246	108	21	115	213
24	8.2	22	14	18	123	20	141	845	75	9.1	97	124
25	9.1	22	15	17	103	15	4010	546	66	6.2	84	87
26	8.8	22	16	17	105	14	5700	263	65	5.8	71	62
27	448	23	16	15	102	13	3460	166	60	5.4	e57	36
28	221	23	14	14	105	11	1480	130	57	2.9	e42	24
29	99	175	13	15	---	12	913	124	46	3.2	30	20
30	67	135	15	15	---	10	704	133	41	3.4	22	19
31	52	---	16	15	---	11	---	411	---	3.1	18	---
TOTAL	1306.2	1126	646	564.5	1973	1100	22496	13134	4008	984.9	4227.9	898.6
MEAN	42.1	37.5	20.8	18.2	70.5	35.5	750	424	134	31.8	136	30.0
MAX	448	175	84	30	436	97	5700	1740	626	160	875	213
MIN	6.3	20	13	9.5	15	10	14	124	41	2.9	2.4	3.0
AC-FT	2590	2230	1280	1120	3910	2180	44620	26050	7950	1950	8390	1780
CFSM	.02	.02	.01	.01	.03	.02	.34	.19	.06	.01	.06	.01
IN.	.02	.02	.01	.01	.03	.02	.38	.22	.07	.02	.07	.02

RED RIVER BASIN

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07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

MEAN	90.1	23.7	17.8	20.3	24.4	30.0	65.4	99.6	207	40.9	71.4	99.7
MAX	895	154	132	158	170	181	750	424	858	172	723	683
(WY)	1984	1987	1992	1992	1992	1973	1997	1997	1995	1979	1995	1995
MIN	1.68	3.04	3.74	2.70	2.83	2.78	3.32	5.99	4.08	.28	.13	1.23
(WY)	1981	1978	1979	1971	1971	1971	1974	1975	1970	1980	1980	1980

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1968 - 1997	
ANNUAL TOTAL	13319.6		52465.1			
ANNUAL MEAN	36.4		144		65.8	
HIGHEST ANNUAL MEAN					204	
LOWEST ANNUAL MEAN					15.8	
HIGHEST DAILY MEAN	1080	Sep 15	5700	Apr 26	14800	Oct 20 1983
LOWEST DAILY MEAN	2.2	May 24	2.4	Aug 3	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	2.9	May 19	3.0	Jul 28	.00	Aug 10 1969
INSTANTANEOUS PEAK FLOW			8340	Apr 25	28500	Jun 5 1995
INSTANTANEOUS PEAK STAGE			11.80	Apr 25	17.12	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	26420		104100		47690	
ANNUAL RUNOFF (CFSM)	.017		.065		.030	
ANNUAL RUNOFF (INCHES)	.23		.89		.41	
10 PERCENT EXCEEDS	76		288		95	
50 PERCENT EXCEEDS	18		27		9.2	
90 PERCENT EXCEEDS	5.3		7.5		1.8	

e Estimated

RED RIVER BASIN

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1994 to September 1997 (discontinued). Pesticide analyses: October 1996 to September 1997 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1994 to September 1997 (discontinued).

TEMPERATURE: October 1994 to September 1997 (discontinued).

INSTRUMENTATION.--Since October 1994 to current year, specific conductance and temperature were continuously recorded at this station.

REMARKS.--Interruptions in the record are due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 36,800 microsiemens Feb. 9, 1995; minimum, 957 microsiemens May 29, 30, 1995.

TEMPERATURE: Maximum, 39.0°C July 14, 1997; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 32,000 microsiemens Dec. 20; minimum, 1,380 microsiemens Aug. 20.

TEMPERATURE: Maximum, 39.0°C July 14; minimum, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 31...	1312	51	22700	8.1	12.0	9.8	104	2700	2600	800	170
NOV 19...	1510	22	26500	8.2	20.0	9.6	123	3300	3100	960	210
JAN 22...	1625	21	25500	8.1	15.0	10.4	119	3000	2900	870	210
FEB 26...	1435	107	15300	8.3	7.5	12.0	112	2200	2000	600	170
MAR 25...	1505	13	27400	7.9	21.0	9.2	118	3400	3200	970	228
APR 22...	1455	231	12400	7.9	23.0	8.0	102	1700	1600	470	117
MAY 07...	1225	485	7940	8.0	22.5	8.0	101	1600	1500	450	115
21...	1510	265	10300	8.2	19.0	8.7	102	1800	1700	480	145
JUN 11...	1605	274	4800	8.2	30.0	6.9	98	960	820	250	80
JUL 29...	1510	1.3	23000	8.0	37.0	6.2	104	3000	2900	890	188
AUG 12...	1510	411	3350	7.9	26.0	6.8	89	530	440	160	33
SEP 06...	1510	9.3	24100	8.0	33.0	7.4	117	3000	2900	870	194
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT 31...	4500	38	15	130	2500	7500	0.40	10	15600	<1	0.080
NOV 19...	5300	40	16	140	2800	8900	0.50	9.1	18300	14	0.030
JAN 22...	5100	40	16	130	2400	7500	0.50	6.9	16200	<1	0.070
FEB 26...	2700	25	12	170	1900	4500	0.70	11	10000	39	--
MAR 25...	5460	41	16	130	2700	7900	0.46	8.4	17400	14	--
APR 22...	2220	24	11	100	1500	3700	0.50	7.9	8060	1340	--
MAY 07...	1180	13	8.8	130	1400	1900	0.49	9.0	5210	720	--
21...	1650	17	11	150	1600	2700	0.63	13	6680	132	--
JUN 11...	701	10	9.3	150	800	1100	0.88	12	3070	378	--
JUL 29...	4640	37	17	110	2700	7500	0.38	29	16100	8	--
AUG 12...	474	9	6.7	89	480	760	0.70	11	1970	2670	0.213
SEP 06...	4800	38	17	100	2700	7800	0.53	11	16400	4	--

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 31...	0.020	0.100	0.440	0.0	0.30	<0.010	<0.010	<0.010	--	3	2
NOV 19...	0.020	0.050	0.330	--	<0.20	<0.010	<0.010	<0.010	--	1	2
JAN 22...	0.020	0.090	0.180	--	<0.20	<0.010	<0.010	<0.010	--	1	1
FEB 26...	<0.010	0.175	0.075	0.38	0.46	0.026	<0.010	<0.010	--	2	2
MAR 25...	<0.010	<0.050	0.200	--	<0.20	0.020	<0.010	<0.010	--	1	1
APR 22...	<0.010	0.175	0.185	1.1	1.3	0.520	<0.010	<0.010	--	13	2
MAY 07...	<0.010	0.236	<0.015	0.30	0.30	0.014	<0.010	<0.010	--	6	2
21...	<0.010	<0.050	0.035	0.24	0.28	0.012	<0.010	<0.010	--	3	2
JUN 11...	<0.010	0.181	<0.015	0.96	0.96	0.231	<0.010	<0.010	--	4	4
JUL 29...	<0.010	<0.050	0.104	--	<0.20	<0.010	<0.010	<0.010	--	2	2
AUG 12...	0.011	0.224	0.027	3.8	3.9	1.26	0.013	0.014	0.04	13	3
SEP 06...	--	--	--	--	<0.20	0.025	<0.010	--	--	2	2

DATE	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 31...	100	96	<2	26	<1	<1.0	1	<120	320	<36	<4
NOV 19...	100	46	<2	<15	<1	<1.0	<1	<150	130	<45	<4
JAN 22...	<100	30	<2	25	<1	<1.0	2	<150	100	76	<4
FEB 26...	100	47	<1	<8.0	<1	<1.0	1	<80	680	<24	<2
MAR 25...	200	47	<5	<15	<5	1.2	6	<150	100	<45	<5
APR 22...	100	79	<4	<8.0	43	<4.0	57	<80	26000	<24	<4
MAY 07...	200	114	<2	<4.0	19	<2.0	17	<40	12000	<12	11
21...	100	79	<2	9.2	4	<2.0	5	<60	1800	<18	<2
JUN 11...	200	89	<1	<3.0	11	<1.0	10	<30	7000	13	8
JUL 29...	<100	55	<5	<12	<5	<5.0	<5	<120	70	<36	<5
AUG 12...	500	64	<1	<3.0	29	<1.0	37	<30	26000	<9.0	44
SEP 06...	<100	69	<5	26	<5	<5.0	<5	<120	60	<36	<5

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
OCT 31...	<120	100	100	<0.10	<0.1	100	<120	1	1	<2	<4.0
NOV 19...	<150	80	60	<0.10	<0.1	200	<150	2	2	<4	<4.0
JAN 22...	350	60	39	<0.10	<0.1	100	<150	2	2	<4	<4.0
FEB 26...	120	70	30	<0.10	<0.1	<100	<80	2	2	<4	<4.0
MAR 25...	<150	87	51	<0.10	<0.1	<100	<150	2	2	<5	<5.0
APR 22...	<80	900	14	<0.10	<0.1	140	<80	1	1	<4	<4.0
MAY 07...	<40	380	10	<0.10	<0.1	<100	<40	4	3	<2	<2.0
21...	92	83	7.9	<0.10	<0.1	<100	<60	2	2	<2	<2.0
JUN 11...	<30	340	8.6	<0.10	<0.1	<100	<30	1	2	<1	<1.0
JUL 29...	120	94	92	<0.10	<0.1	160	<120	2	1	<5	<5.0
AUG 12...	<30	1700	<3.0	<0.10	<0.1	<100	<30	2	1	<1	<1.0
SEP 06...	230	82	52	<0.10	<0.1	<100	<120	1	1	<5	<5.0

RED RIVER BASIN

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
OCT 31...	<10	71	--	--	--	--	--	--	--	--
NOV 19...	<10	<45	--	--	--	--	--	--	--	--
JAN 22...	<10	<45	--	--	--	--	--	--	--	--
FEB 26...	<10	65	--	--	--	--	--	--	--	--
MAR 25...	<10	<45	--	--	--	--	--	--	--	--
APR 22...	100	<24	--	--	--	--	--	--	--	--
MAY 07...	50	<12	--	--	--	--	--	--	--	--
21...	10	<18	--	--	--	--	--	--	--	--
JUN 11...	30	<9.0	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUL 29...	<10	<36	--	--	--	--	--	--	--	--
AUG 12...	100	<9.0	--	--	--	--	--	--	--	--
SEP 06...	<10	60	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	1306.2	10890	7730	27260	3200	11350	1400	4780	1700
NOV. 1996	1126	21420	14580	44320	6600	20010	2300	6880	2800
DEC. 1996	646	24910	16720	29170	7700	13510	2500	4330	3100
JAN. 1997	564.5	27890	18600	28350	8700	13300	2700	4110	3400
FEB. 1997	1973	14340	9960	53050	4300	23070	1600	8740	2100
MAR. 1997	1100	21310	14560	43240	6500	19380	2300	6800	2900
APR. 1997	22496	4180	3040	184500	1200	73560	560	34260	720
MAY 1997	13134	7060	5100	181000	2100	72700	940	33300	1200
JUNE 1997	4008	8650	6190	67020	2500	27440	1100	12030	1400
JULY 1997	984.9	14210	9940	26440	4300	11330	1700	4450	2100
AUG. 1997	4227.9	6760	4830	55190	2000	22640	870	9880	1100
SEPT 1997	898.6	14860	10330	25070	4500	10870	1700	4150	2200
TOTAL	52465.1	**	**	764600	**	319200	**	133700	**
WTD.AVG.	144	7610	5400	**	2300	**	940	**	1200

RED RIVER BASIN

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07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11200	8110	10000	---	---	e22900	---	---	e12500	29200	28500	28800
2	8890	1650	5000	---	---	e23000	---	---	e16800	29300	28600	29000
3	2010	1660	1880	---	---	e23200	---	---	e20100	29100	28300	28800
4	7290	1970	2880	---	---	e23200	---	---	e24000	28900	28400	28600
5	11600	7290	9240	---	---	e23300	---	---	e24600	29000	28200	28600
6	11800	10800	11300	---	---	e23300	---	---	e25800	29200	28400	28700
7	11500	5760	9830	---	---	e23400	---	---	e26100	29200	28700	29000
8	12100	6690	9310	---	---	e23500	---	---	e26400	29100	27300	28000
9	18800	12100	15800	---	---	e23600	---	---	e26700	29000	27600	28500
10	21300	16600	18600	---	---	e23800	---	---	e27000	29100	28600	28900
11	19900	17900	18800	---	---	e24000	---	---	e27200	28900	27200	28200
12	20700	19500	20200	---	---	e24500	---	---	e27400	27900	26100	27100
13	21100	14200	16200	---	---	e25100	---	---	27400	28900	26800	27800
14	14700	12600	14000	---	---	e25600	28500	27700	28200	29500	24700	28300
15	14300	13300	13700	---	---	e26000	29100	27000	28800	28700	24200	27400
16	14900	13700	14300	---	---	e26100	29300	25300	28600	27300	24100	25900
17	15500	5700	11200	---	---	e26400	30200	25300	29400	27500	26200	26800
18	11000	5780	7970	---	---	e26500	30800	24200	28200	27400	25700	26600
19	12100	7550	9790	---	---	e26500	31000	27500	29400	27100	25700	26400
20	21000	8030	13600	---	---	e26600	32000	26800	29500	26900	25900	26300
21	18800	12600	16300	---	---	e26400	30800	28800	30000	26800	25900	26400
22	22100	16900	19000	---	---	e26300	30600	29800	30200	26200	25400	25900
23	22200	17000	20700	---	---	e26700	30300	29300	29900	26600	25700	26100
24	18000	14800	16000	---	---	e26600	30200	29300	29800	28900	28200	28500
25	16800	15200	15900	---	---	e26600	30300	29500	29900	29200	28600	28900
26	18200	9970	15500	---	---	e26400	30900	29900	30400	29300	28500	29000
27	23300	3330	8440	---	---	e26500	30800	29500	30100	29900	28800	29300
28	---	---	e8500	---	---	e26200	29900	29300	29600	31100	29200	29900
29	---	---	e10100	---	---	e16200	29900	29000	29500	30200	28700	29500
30	---	---	e16700	---	---	e8500	29700	28900	29400	30000	29000	29600
31	---	---	e22700	---	---	---	29500	28700	29200	30100	29100	29700
MONTH	23300	1650	13000	---	---	24200	32000	24200	27200	31100	24100	28100

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	29800	28900	29500	16200	15000	15500	30000	29200	29600	---	---	e5350
2	29600	28900	29300	17100	16200	16800	30000	29000	29500	---	---	e7500
3	29500	28600	29200	17900	17100	17600	29800	17900	27100	---	---	e8500
4	29800	29200	29500	18600	17900	18300	21600	5420	8630	---	---	e9100
5	30200	28900	29700	19600	18500	19100	8940	7160	7840	---	---	e9500
6	28900	28000	28400	20700	19600	20000	---	---	8650	---	---	9880
7	29300	28500	28900	21300	20600	20900	---	---	e10100	9790	6420	7960
8	29800	27600	28900	21600	20700	21100	---	---	e12500	7440	6210	6710
9	27700	26400	26800	22300	21000	21600	16000	15000	15500	6870	2280	4100
10	26600	25000	25800	22300	22000	22200	18400	15600	16600	4060	3280	3750
11	25500	25100	25300	22400	21700	22100	16600	3280	6920	---	---	e5100
12	26200	25100	25900	22500	22100	22300	---	---	4310	---	---	e5680
13	26200	25600	26000	22900	22300	22500	---	---	e6800	---	---	e6280
14	26400	25500	25900	23700	22900	23500	---	---	e8900	---	---	6810
15	26900	26100	26400	24300	23500	23900	---	---	e10100	8820	6910	7520
16	26800	25700	26200	24100	23500	23900	---	---	e10700	---	---	9190
17	26000	24900	25400	24700	23700	24300	---	---	10900	---	---	e9450
18	25700	24900	25400	25100	24600	24800	11400	9920	11600	---	---	e9700
19	26000	23100	24700	25600	24800	25200	---	---	10300	---	---	e9900
20	23500	11600	18500	25700	24100	25100	---	---	e10800	---	---	e10100
21	11600	8020	9390	26500	24800	25500	---	---	e11700	---	---	e10300
22	---	---	e6500	27000	26100	26600	---	---	e12400	---	---	e10400
23	---	---	e7570	27400	26500	27000	---	---	e10500	---	---	e10600
24	---	---	e10000	28100	26600	27300	---	---	e1800	---	---	e7000
25	---	---	e13500	28800	27800	28200	---	---	e2000	---	---	e8250
26	---	---	e15300	28800	27600	28300	---	---	e2200	---	---	e9600
27	---	---	e14000	29500	28000	28700	---	---	e2600	---	---	e10100
28	---	---	14800	29800	28600	29300	---	---	e3180	---	---	e10200
29	---	---	---	30200	28300	29200	---	---	e3800	---	---	e10300
30	---	---	---	30200	29000	29800	---	---	e4840	---	---	e10300
31	---	---	---	30100	29400	29800	---	---	---	---	---	e7800
MONTH	30200	8020	22400	30200	15000	23900	30000	3280	10400	9790	2280	8290

e Estimated

RED RIVER BASIN

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	e9800	---	---	19300	24400	23000	23800	23100	22400	22800
2	---	---	e10800	---	---	e21400	24200	22900	23600	23500	23000	23300
3	---	---	e11900	---	---	e23900	23800	22700	23300	23800	23200	23600
4	---	---	e12600	---	---	e24100	23700	22500	23100	24300	23200	23700
5	---	---	13600	---	---	e15400	24400	21900	23500	25500	24200	24900
6	---	---	14300	---	---	e9200	24700	13900	21500	25600	24800	25200
7	---	---	14100	---	---	e7200	18000	6830	9480	25800	24900	25200
8	---	---	12800	---	---	9630	21500	10400	15700	25500	24900	25200
9	---	---	e6400	13800	10800	12000	21100	14700	16300	25300	23700	24900
10	---	---	e5200	16100	13800	15000	17800	1680	13500	25900	25200	25500
11	---	---	e4800	17300	14300	16400	21700	4700	12400	26700	24900	25900
12	6920	5510	6120	18700	16300	17600	7490	2530	3320	26700	22000	24800
13	8490	6920	7660	18600	17000	17700	5110	3670	4330	26600	23600	25200
14	10300	2520	7440	19400	17100	18100	6840	4580	5610	25700	19500	23800
15	11400	8230	10600	20000	18200	19000	6990	5220	6080	26500	25400	25900
16	---	---	5450	20800	18800	19700	7930	5250	6240	26500	19800	22600
17	---	---	2070	22100	20800	21300	12000	7930	9510	21100	19600	20000
18	7870	3430	7180	23100	21600	22300	15700	12000	13400	24300	21100	22900
19	9380	7690	8380	23500	22500	22900	18000	1570	12900	25400	24200	24800
20	12300	9380	10500	23400	22300	22900	2530	1380	1920	25800	24800	25400
21	14600	12300	13200	23200	22300	22800	3780	2400	2900	25700	25000	25300
22	15400	14000	15100	23600	13200	20600	7100	3770	5080	26300	3090	19300
23	---	---	9560	21500	17700	20200	8930	3470	7480	12900	3980	7750
24	---	---	e10100	22600	21100	21700	11300	4570	9670	13400	10500	11400
25	---	---	10800	22700	21600	22200	13500	10900	11900	14700	7240	12100
26	14800	11900	13000	22500	21700	22200	15800	13500	14100	19000	5050	14000
27	16600	14800	15600	23500	21500	22400	---	---	e17000	19000	6380	8000
28	18100	16500	17000	23400	22600	23100	---	---	e18500	14200	6280	8720
29	18900	16900	18100	23300	22500	23000	---	---	19800	24700	10400	17700
30	19600	17900	19000	23600	22800	23100	21700	20600	21000	26500	19100	24700
31	---	---	---	24100	22800	23400	22500	21600	22000	---	---	---
MONTH	19600	2520	10800	24100	10800	19300	24700	1380	13500	26700	3090	21200
YEAR	32000	1380	18500									
e Estimated												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	26.0	14.0	19.5	13.5	7.0	9.5	11.5	2.5	7.0	18.5	11.5	14.0
2	25.0	14.5	18.5	17.5	4.0	10.0	13.0	5.0	8.5	18.5	7.5	12.5
3	24.0	13.0	17.5	16.0	7.0	11.0	12.5	4.0	8.0	19.0	10.0	14.0
4	21.5	17.5	19.0	23.0	9.0	14.5	15.0	5.5	9.5	17.5	9.5	13.5
5	25.5	17.0	20.5	23.0	5.5	15.0	12.0	3.0	7.5	9.5	6.0	7.5
6	26.5	17.0	20.5	19.0	10.0	14.5	---	---	---	6.0	3.0	4.5
7	28.0	14.5	20.0	19.5	2.0	10.0	---	---	---	8.0	2.5	4.5
8	24.5	15.5	19.0	16.0	3.5	9.0	---	---	---	5.0	1.5	3.5
9	25.5	15.0	19.5	21.5	1.0	10.0	---	---	---	9.5	.0	4.0
10	24.0	14.5	19.0	18.5	4.0	10.5	---	---	---	7.0	2.0	4.0
11	25.5	14.0	19.0	22.0	2.0	11.0	---	---	---	2.0	.0	.5
12	27.0	15.5	20.5	11.0	6.5	9.0	---	---	---	.0	.0	.0
13	26.5	16.0	20.5	19.0	8.0	11.5	---	---	---	.0	.0	.0
14	26.0	16.0	20.0	20.0	10.5	15.0	17.5	8.0	11.5	.0	.0	.0
15	26.0	15.5	20.0	22.5	15.5	19.0	9.0	3.0	6.0	9.0	.0	3.0
16	27.5	17.0	21.0	22.0	6.5	17.0	11.0	.0	4.5	6.5	.0	2.0
17	21.5	10.0	16.5	13.5	2.5	7.0	6.0	.0	2.5	8.0	.0	2.5
18	20.0	5.5	12.5	20.5	2.0	10.5	4.5	.0	1.0	10.5	.0	4.0
19	20.5	9.0	14.0	24.0	3.5	12.5	6.0	.0	1.5	13.5	2.0	7.0
20	25.5	13.0	18.0	25.0	6.5	13.5	7.5	.0	2.5	15.0	3.0	8.5
21	17.5	9.0	13.5	10.5	6.5	9.0	9.5	1.5	4.5	14.5	7.0	10.0
22	16.5	6.5	11.0	11.0	5.5	8.0	13.5	2.5	7.5	15.0	4.0	9.0
23	20.5	6.5	12.5	21.0	6.0	13.0	10.5	3.5	7.0	15.0	7.5	10.0
24	21.5	9.0	14.5	6.0	.0	1.0	9.0	.0	3.5	15.0	5.0	9.0
25	21.5	11.0	16.0	11.5	.0	3.0	8.0	.5	4.0	12.0	3.0	7.0
26	21.5	10.5	16.0	11.5	.0	3.0	7.5	.5	4.0	11.0	6.5	8.5
27	17.0	10.5	13.0	9.5	.0	3.0	12.0	.0	5.0	9.5	.0	5.0
28	13.0	10.5	11.5	9.5	3.0	6.5	14.0	4.5	9.0	9.5	.0	3.0
29	17.5	12.0	14.0	12.5	6.0	9.0	14.0	3.5	8.0	10.5	.0	4.5
30	19.0	9.0	14.0	11.5	6.0	9.0	14.5	3.5	8.5	14.5	1.0	6.5
31	14.0	8.5	11.5	---	---	---	15.0	6.0	10.0	16.0	3.0	9.0
MONTH	28.0	5.5	17.0	25.0	.0	10.0	17.5	.0	6.0	19.0	.0	6.0

07308200 PEASE RIVER NEAR VERNON, TX

LOCATION.--Lat 34°10'45", long 99°16'40", Wilbarger County, Hydrologic Unit 11130105, near left bank at downstream side of bridge on U. S. Highway 283, 1.9 mi north of Vernon, and 10 mi upstream from mouth.

DRAINAGE AREA.--3,488 mi², of which 559 mi² probably is noncontributing.

PERIOD OF RECORD.--December 1959 to September 1982, and March 1992 to current year. October 1982 to September 1987, annual maximums.
Water-quality records.--Chemical analyses: November 1967 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 1,166.03 ft above sea level.

REMARKS.--Records fair. There are four small diversions for irrigation above station. For statement regarding regulation by Natural Resource Conservation Service floodwater-retarding structures, see station 07307800.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 24 ft in 1891. The flood in September 1936 reached a stage of 23.5 ft, and the flood of June 2, 1957, reached a stage of 22.0 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 20	1930	3,130	11.14	May 9	2100	3,610	11.30
Apr. 26	0930	13,000	14.90	Sep. 23	1200	20,600	17.04

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	119	199	32	28	188	31	748	199	95	.92	26
2	45	98	198	31	29	178	32	594	202	66	.89	20
3	40	81	173	31	28	174	48	532	235	45	.61	14
4	34	64	139	29	24	163	98	477	215	36	.36	99
5	30	52	124	24	22	150	164	395	176	30	.22	84
6	26	46	109	24	34	141	456	328	153	32	.81	26
7	25	41	99	24	50	133	398	292	134	34	41	15
8	23	39	91	27	42	123	276	290	128	34	90	12
9	108	29	83	34	40	115	211	1680	130	40	124	7.8
10	166	27	70	32	40	110	190	2050	504	79	72	5.3
11	105	24	60	25	41	101	641	1130	593	100	104	4.3
12	61	22	57	e22	40	96	1030	929	443	98	246	e3.0
13	47	21	50	18	49	92	1020	670	341	136	669	e1.9
14	29	22	46	19	53	88	929	550	262	89	509	e1.3
15	25	25	37	29	46	84	595	548	513	46	322	e.80
16	21	27	37	40	43	76	472	420	579	30	245	.50
17	14	25	31	e45	41	77	379	343	243	31	225	.73
18	12	26	28	61	33	69	314	293	246	20	182	1.1
19	12	27	e35	69	33	68	280	265	225	14	138	.77
20	11	29	31	66	1170	70	255	479	195	17	322	.54
21	15	25	54	51	1730	60	231	654	170	15	845	.33
22	15	26	52	46	860	50	227	380	138	18	633	32
23	15	24	42	47	521	45	206	337	170	11	439	e11300
24	17	27	32	40	352	49	244	318	149	9.7	269	3420
25	18	37	33	36	286	48	2520	281	142	6.7	196	1360
26	16	38	30	35	252	41	10300	665	127	7.4	164	816
27	14	34	31	27	229	41	4390	529	118	5.6	129	619
28	344	36	31	e30	207	35	2040	356	114	4.3	119	493
29	372	77	30	35	---	31	1310	285	134	2.3	89	420
30	214	86	29	30	---	25	975	240	93	2.1	58	373
31	146	---	30	31	---	27	---	207	---	1.2	37	---
TOTAL	2081	1254	2091	1090	6323	2748	30262	17265	7071	1155.3	6270.81	19157.37
MEAN	67.1	41.8	67.5	35.2	226	88.6	1009	557	236	37.3	202	639
MAX	372	119	199	69	1730	188	10300	2050	593	136	845	11300
MIN	11	21	28	18	22	25	31	207	93	1.2	.22	.33
AC-FT	4130	2490	4150	2160	12540	5450	60020	34250	14030	2290	12440	38000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997h, BY WATER YEAR (WY)

MEAN	116	45.6	27.9	25.0	36.4	48.3	108	225	368	129	131	220
MAX	1057	206	163	116	226	269	1009	777	2196	1185	1657	895
(WY)	1961	1993	1960	1973	1997	1973	1997	1977	1995	1975	1995	1965
MIN	.000	.000	.000	.000	.000	.000	.000	6.12	18.0	.000	.000	.20
(WY)	1964	1971	1971	1971	1971	1971	1971	1961	1994	1964	1980	1980

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1960 - 1997h
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ANNUAL TOTAL	24539.94			96768.48					
ANNUAL MEAN	67.0			265			122		
HIGHEST ANNUAL MEAN							441		1995
LOWEST ANNUAL MEAN							12.6		1964
HIGHEST DAILY MEAN	910	Sep	4	11300	Sep	23	20400	Jun	5 1995
LOWEST DAILY MEAN	.78	Jul	8	.22	Aug	5	.00	Aug	7 1960
ANNUAL SEVEN-DAY MINIMUM	1.7	Jul	3	.68	Sep	15	.00	Aug	7 1960
INSTANTANEOUS PEAK FLOW				20600	Sep	23	40500	Oct	2 1983
INSTANTANEOUS PEAK STAGE				17.04	Sep	23	20.15	Oct	2 1983
ANNUAL RUNOFF (AC-FT)	48670			191900			88500		
10 PERCENT EXCEEDS	138			530			195		
50 PERCENT EXCEEDS	38			61			16		
90 PERCENT EXCEEDS	8.2			15			.00		

e Estimated

h See PERIOD OF RECORD paragraph.

RED RIVER MAIN STEM

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07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., Hydrologic Unit 11130102, on downstream guardrail of downstream bridge on U.S. Highways 277 and 281, 2.5 mi northeast of Burkburnett, and at mile 933.

DRAINAGE AREA.--20,570 mi², of which 5,936 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft above sea level. July 11, 1924, to Aug. 31, 1925, nonrecording gage at site 1,000 ft downstream at same datum. Dec. 16, 1959, to Jan. 11, 1960, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are many small diversions upstream from station for irrigation, but total amounts are unknown.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1300	30,100	a9.51	May 30	1500	9,500	7.01
Apr. 6	0100	22,000	a8.76	June 14	1230	10,300	7.13
Apr. 12	2400	17,700	8.30	June 16	2230	9,320	6.97
Apr. 27	1800	72,100	12.10	Aug. 13	unknown	35,800	a9.46
May 10	unknown	30,000	a9.36	Sept. 24	0830	53,600	10.38

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2180	1770	786	729	552	e6400	282	20100	4070	2620	339	798
2	2000	964	1370	703	643	e4200	293	e14800	4630	1760	314	726
3	1750	666	3230	678	762	e2770	312	e10700	4160	1330	290	723
4	1560	524	3600	637	664	e2210	421	e7880	3330	e810	286	686
5	1400	451	2870	626	578	2000	e7000	e7000	3080	e700	280	812
6	1250	427	2590	714	615	1650	e16000	e5200	2800	e635	272	1530
7	1180	435	2930	861	725	1360	e18000	e6460	2510	e595	396	1560
8	1100	361	2740	854	706	1270	e8390	e8060	2030	579	352	1190
9	1000	318	1510	880	667	1030	e6800	e11600	1730	633	360	631
10	965	290	1190	866	611	881	e6100	e24000	1610	1230	401	517
11	1200	279	1080	847	665	896	e7700	e12700	2010	1080	450	451
12	1300	266	1080	e760	816	886	13700	8610	2750	984	5160	401
13	1330	260	1920	e311	837	910	e17000	7190	5680	2010	e24000	376
14	1050	256	1410	196	818	1110	e13900	5780	7660	7700	e10000	374
15	918	257	1160	259	781	923	e9870	5890	6910	4280	e6100	378
16	856	303	1020	589	766	770	8160	5470	8370	2370	e5180	340
17	796	356	926	635	757	761	7100	4230	6310	1400	e4860	303
18	750	370	893	748	773	758	6130	e2820	7270	1000	4640	874
19	717	383	863	839	811	667	5190	e4560	5640	752	3810	916
20	703	618	828	717	1300	607	4330	4830	4570	618	2580	478
21	718	1910	1110	887	e22000	568	3390	3100	3870	583	2440	367
22	747	1580	1200	1030	e19400	521	3550	2830	2410	543	7160	346
23	769	1360	873	1020	e11600	468	3180	3120	1860	533	4650	e11200
24	737	1580	802	859	e7400	424	2870	3040	2520	526	5400	e47600
25	732	1370	792	834	e5200	423	3600	2810	2200	499	4460	e30000
26	707	996	770	914	e4040	419	26100	2680	1350	469	3030	e19500
27	697	937	972	619	3550	386	62800	4380	1270	468	2330	e11800
28	740	902	1100	523	e5750	356	58000	4510	2250	443	1680	e6300
29	756	932	1070	482	---	344	41100	3650	3530	393	1260	e3090
30	2660	908	966	457	---	319	30000	e6750	3130	382	1050	e1780
31	3330	---	783	498	---	303	---	5220	---	354	882	---
TOTAL	36598	22029	44434	21572	93787	36590	391268	219970	111510	38279	104412	146047
MEAN	1181	734	1433	696	3350	1180	13040	7096	3717	1235	3368	4868
MAX	3330	1910	3600	1030	22000	6400	62800	24000	8370	7700	24000	47600
MIN	697	256	770	196	552	303	282	2680	1270	354	272	303
AC-FT	72590	43690	88130	42790	186000	72580	776100	436300	221200	75930	207100	289700

RED RIVER MAIN STEM

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

MEAN	1604	695	551	470	623	726	1124	2413	3588	893	938	1461
MAX	14900	4960	4435	2040	3350	3552	13040	12470	24780	5947	10540	6381
(WY)	1987	1987	1992	1992	1997	1987	1997	1977	1995	1975	1995	1996
MIN	21.9	.96	2.98	5.53	8.37	7.97	.15	11.4	148	.058	1.29	32.2
(WY)	1971	1971	1971	1971	1971	1971	1971	1971	1970	1970	1964	1983

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1960 - 1997

ANNUAL TOTAL	575621		1266496		1262	
ANNUAL MEAN	1573		3470		4424	1987
HIGHEST ANNUAL MEAN					178	1964
LOWEST ANNUAL MEAN					144000	Jun 6 1995
HIGHEST DAILY MEAN	20800	Aug 30	62800	Apr 27	.00	Jul 19 1964
LOWEST DAILY MEAN	127	Jul 9	196	Jan 14	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	152	Jul 4	273	Nov 10	174000	Jun 6 1995
INSTANTANEOUS PEAK FLOW			72100	Apr 27	16.90	Oct 21 1983
INSTANTANEOUS PEAK STAGE			12.10	Apr 27	.00	Jul 19 1964
INSTANTANEOUS LOW FLOW					914100	
ANNUAL RUNOFF (AC-FT)	1142000		2512000		2470	
10 PERCENT EXCEEDS	3350		7500		305	
50 PERCENT EXCEEDS	734		1050		51	
90 PERCENT EXCEEDS	271		377			

e Estimated

a From floodmark

RED RIVER MAIN STEM

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1968 to current year. Biochemical analyses: October 1974 to August 1994. Pesticide analyses: October 1973 to September 1982, October 1996 to September 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to September 1981, October 1994 to current year.

WATER TEMPERATURE: July 1968 to September 1981, October 1994 to current year.

INSTRUMENTATION.--From December 1968 to September 1979, specific conductance was continuously recorded at this station. From October 1994 to current year, specific conductance and water temperature were continuously recorded at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 17,400 microsiemens July 30, 1972; minimum, 462 microsiemens Feb. 24, 1997.

WATER TEMPERATURE: Maximum, 36.0°C July 3, 1996; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 9,140 microsiemens Dec. 3; minimum recorded, 462 microsiemens Feb. 24.

WATER TEMPERATURE: Maximum recorded, 35.5°C July 29; minimum recorded, 0.0°C on several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	
OCT 29...	1521	730	6210	8.7	17.5	10.8	116	1200	1100	310	110	
DEC 05...	1040	2900	4230	8.4	6.5	11.6	99	850	710	230	67	
JAN 16...	1055	565	7930	8.1	0.0	14.6	106	1600	1400	420	130	
FEB 25...	1125	1610	2730	8.2	7.5	11.5	98	630	510	170	51	
APR 01...	1430	281	6330	8.4	15.5	12.0	127	1400	1200	350	119	
29...	1445	41000	2170	7.9	17.5	8.6	94	520	400	140	38	
MAY 13...	0930	7230	3220	8.1	18.0	8.5	94	830	680	230	64	
JUN 03...	1015	4150	5280	8.2	22.5	7.7	93	1000	880	270	84	
24...	1015	2540	4460	8.2	24.5	7.7	97	990	860	260	84	
AUG 06...	1015	668	5120	8.1	26.0	7.6	98	1100	1100	280	110	
SEP 03...	0855	724	5290	8.0	26.5	6.8	88	1100	1000	280	99	
09...	0915	679	3780	8.1	25.0	9.3	117	750	690	190	68	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT 29...	900	11	7.8	130	1100	1500		0.40	8.9	4020	70	0.500
DEC 05...	590	9	1.6	140	700	1000		0.30	9.8	2690	758	0.930
JAN 16...	1200	13	8.4	230	1300	1900		0.50	13	5110	44	1.48
FEB 25...	330	6	7.9	120	530	510		0.30	9.7	1690	24	0.730
APR 01...	858	10	7.5	130	1200	1400		0.44	4.6	4040	45	--
29...	231	4	7.6	110	440	350		0.33	11	1290	2760	0.488
MAY 13...	380	6	8.2	150	680	600		0.46	11	2060	780	--
JUN 03...	753	10	8.7	150	840	1200		0.41	11	3300	652	--
24...	623	9	7.9	130	880	960		0.50	12	2910	492	--
AUG 06...	674	9	8.8	69	1100	1000		0.40	19	3280	38	--
SEP 03...	750	10	8.5	65	1100	1200		0.38	15	3500	66	--
09...	502	8	7.6	60	730	830		0.37	6.4	2370	116	--

RED RIVER MAIN STEM

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 29...	0.020	0.520	0.070	0.73	0.80	0.060	0.040	<0.010	--	2	2
DEC 05...	0.020	0.950	0.060	0.54	0.60	0.770	0.020	0.040	0.12	4	2
JAN 16...	0.020	1.50	0.070	0.33	0.40	0.030	<0.010	0.010	0.03	2	2
FEB 25...	0.010	0.740	0.130	1.1	1.2	0.230	0.020	0.040	0.12	6	2
APR 01...	<0.010	0.300	0.110	0.99	1.1	0.100	<0.010	<0.010	--	2	2
29...	0.013	0.501	0.081	1.6	1.7	0.698	<0.010	0.016	0.05	12	2
MAY 13...	<0.010	0.516	0.028	0.36	0.38	0.050	0.027	0.037	0.11	6	3
JUN 03...	<0.010	0.715	<0.015	0.80	0.80	0.163	0.026	0.023	0.07	6	3
24...	<0.010	0.484	<0.015	0.71	0.71	0.158	<0.010	<0.010	--	5	1
AUG 06...	<0.010	<0.050	0.058	0.63	0.69	<0.010	<0.010	<0.010	--	3	3
SEP 03...	<0.010	<0.050	0.025	0.91	0.94	0.091	0.010	<0.010	--	3	2
09...	--	--	--	1.0	1.0	0.061	<0.010	--	--	3	2

DATE	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 29...	<100	98	<1	<5.0	<1	<1.0	2	<50	610	<15	<1
DEC 05...	<100	84	<1	<3.0	14	<1.0	14	<30	11000	<9.0	8
JAN 16...	100	91	<1	9.0	<1	<1.0	1	<50	460	<15	<1
FEB 25...	400	150	<2	9.0	17	<1.0	<1	<30	15000	<9.0	17
APR 01...	<100	84	<2	<4.0	<2	<2.0	<2	<40	430	<12	3
29...	<100	172	<1	<3.0	41	1.1	44	<30	27000	14	38
MAY 13...	<100	157	<1	<3.0	18	<1.0	17	<30	11000	<9.0	10
JUN 03...	200	140	<2	<3.0	10	2.2	14	<30	8300	<9.0	8
24...	200	32	<1	<3.0	7	<1.0	12	<30	5600	47	5
AUG 06...	<100	109	<1	<3.0	2	<1.0	2	<30	450	<9.0	<1
SEP 03...	<100	140	<2	<3.0	<2	2.7	3	<30	660	13	<2
09...	<100	98	<1	<3.0	2	<1.0	4	<30	1300	<9.0	<1

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
OCT 29...	<50	30	6.0	<0.10	<0.1	<100	<50	4	5	<1	<1.0
DEC 05...	30	420	<3.0	<0.10	0.2	<100	<30	3	2	<1	<1.0
JAN 16...	<50	40	15	<0.10	<0.1	<100	60	6	6	<1	<1.0
FEB 25...	<30	660	9.0	<0.10	<0.1	<100	<30	2	1	<1	<1.0
APR 01...	<40	35	4.6	<0.10	<0.1	<100	<40	5	4	<2	<2.0
29...	<30	1600	8.5	<0.10	<0.1	100	<30	2	1	<1	<1.0
MAY 13...	<30	560	3.4	<0.10	<0.1	<100	<30	3	2	<1	<1.0
JUN 03...	<30	520	<3.0	<0.10	<0.1	<100	<30	3	3	<2	<2.0
24...	33	350	91	<0.10	<0.1	<100	<30	3	<1	<1	<1.0
AUG 06...	<30	64	5.8	<0.10	<0.1	<100	<30	6	6	<2	<1.0
SEP 03...	<30	89	3.2	<0.10	<0.1	<100	<30	5	5	<2	<1.0
09...	<30	89	<3.0	<0.10	<0.1	<100	<30	3	4	<1	<1.0

RED RIVER MAIN STEM

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
OCT 29...	<10	70	--	--	--	--	--	--	--	--
DEC 05...	50	<9.0	--	--	--	--	--	--	--	--
JAN 16...	<10	<15	--	--	--	--	--	--	--	--
FEB 25...	60	16	--	--	--	--	--	--	--	--
APR 01...	<10	<12	--	--	--	--	--	--	--	--
29...	110	<9.0	--	--	--	--	--	--	--	--
MAY 13...	50	<9.0	--	--	--	--	--	--	--	--
JUN 03...	40	<9.0	--	--	--	--	--	--	--	--
24...	30	<9.0	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG 06...	<10	10	--	--	--	--	--	--	--	--
SEP 03...	<10	<9.0	--	--	--	--	--	--	--	--
09...	<10	<9.0	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	36598	6280	3920	387500	1400	143200	1000	101800	1200
NOV.	1996	22029	5570	3480	206700	1300	74660	940	56120	1100
DEC.	1996	44434	5580	3480	417900	1300	152100	930	112100	1100
JAN.	1997	21572	7100	4430	258200	1700	97860	1100	65240	1300
FEB.	1997	93787	2590	1610	408700	560	141800	460	117000	530
MAR.	1997	36590	5360	3340	330400	1200	118500	920	90570	1100
APR.	1997	391268	2400	1500	1581700	480	511900	470	491700	540
MAY	1997	219970	3090	1930	1144500	640	380100	580	345600	670
JUNE	1997	111510	3590	2240	673800	760	227700	660	199300	770
JULY	1997	38279	4160	2600	268400	900	93420	740	76570	860
AUG.	1997	104412	3410	2130	600100	720	204200	620	176100	720
SEPT	1997	146047	1960	1230	483400	400	157400	380	149300	440
TOTAL		1266496	**	**	6761300	**	2302900	**	1981400	**
WTD.AVG.		3470	3170	1980	**	670	**	580	**	670

RED RIVER MAIN STEM

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	6970	6670	6810	7060	6160	6700	6830	5770	6390	6470	6190	6250
2	7520	6800	7070	6510	6160	6320	8360	6710	7270	7010	6470	6760
3	7960	7520	7800	7100	6440	6790	9140	7320	8450	7190	7010	7110
4	8270	7800	8120	7420	4210	5110	7370	4200	5420	7300	7190	7230
5	8110	6730	7200	4880	4600	4750	4360	3530	3970	7480	7300	7410
6	6780	6610	6700	7570	4240	5580	3750	3390	3610	7510	7380	7490
7	6770	6420	6620	---	---	e5800	3400	3210	3340	7380	6480	6940
8	6460	5740	6030	---	---	e6000	4030	3180	3410	6480	6220	6290
9	5980	5730	5860	---	---	e6100	5860	3270	4540	6250	6040	6110
10	6040	5810	5920	---	---	e6300	6490	5540	6130	6250	6090	6160
11	7210	5850	6430	---	---	e6500	6810	6370	6650	6240	5750	6100
12	7160	5180	6050	---	---	e6600	6860	5740	6510	---	---	e6300
13	5370	5090	5220	---	---	e6700	7010	4930	5730	---	---	e6700
14	---	---	e5700	---	---	e6800	5360	4920	5130	---	---	e7200
15	---	---	e5900	---	---	e6600	5980	5360	5680	---	---	e7700
16	---	---	e6100	---	---	e6000	6330	5980	6210	---	---	8160
17	---	---	e6200	---	---	e4500	6600	6320	6400	8540	7440	7970
18	---	---	e6300	---	---	e3000	6790	6310	6570	8550	7890	8260
19	---	---	e6500	---	---	e6060	6840	6480	6670	7960	7230	7690
20	---	---	e6700	6900	6560	6720	6930	6470	6720	8240	7850	8120
21	---	---	e5000	6770	2890	5760	6710	6050	6430	8450	7980	8170
22	---	---	e5300	5060	2970	4800	6160	5230	5630	8030	7020	7570
23	---	---	e5500	5380	3710	4560	5980	5280	5540	7020	6690	6850
24	---	---	e5600	4950	2340	4290	6440	5980	6310	6890	6660	6710
25	---	---	e5700	5470	2530	4730	7010	6440	6670	7330	6890	7220
26	---	---	e5900	5840	5260	5640	7000	6610	6740	7250	6280	6770
27	---	---	e6000	6150	5720	5970	6840	6740	6790	7070	6280	6620
28	---	---	e6100	6120	5890	6030	6820	5620	6150	7350	6190	6980
29	---	---	e6200	5970	5010	5470	5670	5470	5590	7630	7350	7550
30	---	---	6660	5820	5050	5540	5760	5630	5670	7830	7580	7650
31	6320	3360	5010	---	---	---	6190	5740	5950	7800	7560	7690
MONTH	8270	3360	6200	7570	2340	5720	9140	3180	5880	8550	5750	7150

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7560	7250	7380	4410	4210	4290	6380	6080	6310	---	---	e2700
2	7330	6650	7040	4700	4400	4600	6080	4390	5160	2890	2650	2760
3	6650	6080	6390	4880	4700	4800	4400	3770	4200	3190	2890	3000
4	6260	5970	6050	4950	4790	4880	4190	3380	3740	3550	3190	3430
5	6610	6260	6420	5120	4940	5010	8400	1210	4550	3680	3180	3350
6	6700	6560	6630	5330	5120	5180	3990	1600	3210	3200	3180	3190
7	6560	6180	6290	5580	5330	5440	3000	1050	1410	3200	3140	3150
8	6390	6240	6320	5610	5530	5570	2190	1060	1380	3260	1150	2860
9	6600	6390	6520	5700	5530	5620	2700	1730	2360	3610	1660	2900
10	7370	6590	6920	5840	5610	5680	2790	2070	2390	3060	1340	1590
11	7790	7370	7580	6010	5830	5880	---	---	e1640	2590	1530	1950
12	8610	7790	8150	6020	5930	5980	---	---	e890	3280	1280	2580
13	8630	8450	8510	6090	6020	6060	---	---	e1410	---	---	e3200
14	8510	8180	8340	6100	5940	6030	---	---	e1760	---	---	e3500
15	8180	7860	7990	6290	5960	6090	2910	1870	2500	---	---	e3800
16	7890	7580	7770	6540	6290	6400	---	---	e2660	---	---	e4000
17	7590	7420	7500	6660	6540	6610	---	---	e2830	---	---	e4100
18	7420	7010	7280	6580	6510	6560	---	---	e3120	---	---	e4300
19	7010	6290	6680	6690	6540	6640	---	---	e2430	---	---	e3800
20	6290	3020	5140	6810	6690	6760	---	---	e2210	---	---	e2800
21	5410	759	2490	6910	6770	6850	---	---	e2880	---	---	e4000
22	800	521	680	7110	6840	7010	---	---	e3850	4500	4020	4330
23	586	463	504	7130	6940	7040	4110	3970	4060	4430	4400	4420
24	482	462	473	7190	6610	7020	4250	4110	4170	4460	4430	4440
25	---	---	e2500	6610	6020	6230	4230	3780	4110	4490	4460	4470
26	---	---	e2900	6230	6040	6130	4290	1100	3080	4540	4490	4510
27	3880	3480	3660	6150	6080	6120	2790	1510	2480	4610	4540	4580
28	4210	3880	4080	6380	6130	6290	2610	2170	2340	4790	4590	4670
29	---	---	---	6430	6150	6320	2460	1910	2290	4740	4690	4720
30	---	---	---	6150	5860	6020	3030	2180	2680	4790	1120	3460
31	---	---	---	6310	5840	6050	---	---	---	3510	2700	3200
MONTH	8630	462	5650	7190	4210	5970	8400	1050	2870	4790	1120	3540

e Estimated

RED RIVER MAIN STEM

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e4000	---	---	e3870	5740	5530	5620	---	---	4720
2	---	---	e4500	---	---	e3750	5610	5450	5520	5260	4980	5150
3	---	---	e5290	3980	3730	3810	5590	5340	5480	5230	4790	5100
4	---	---	4780	4620	3980	4340	5350	5110	5230	---	---	e5190
5	4670	4050	4470	5060	4620	4780	5130	4830	5030	5360	1840	3900
6	4270	4100	4180	6910	5060	6170	7610	4580	5050	4950	2930	4000
7	4170	4010	4110	6890	6040	6400	5080	4010	4570	3100	2830	2990
8	4170	3970	4120	6040	5750	5850	4250	4010	4150	3070	2620	2830
9	4350	3480	4080	5810	5510	5670	4440	3850	4050	---	---	3790
10	---	---	4470	---	---	5520	4640	4000	4290	---	---	4460
11	---	---	e4300	---	---	e6400	4230	2990	3640	---	---	e5000
12	---	---	e4200	7630	6550	6850	3670	1510	3070	---	---	e5500
13	---	---	e4000	6640	4890	5960	7510	1040	1320	---	---	e5900
14	---	---	e3800	4900	2620	3530	7510	2380	3190	---	---	e6300
15	---	---	e3320	2810	894	1970	---	---	e3890	---	---	e6700
16	---	---	e2450	2480	2140	2240	---	---	e3800	---	---	e7100
17	---	---	e2000	3580	2480	3050	---	---	e3750	---	---	e7500
18	---	---	e2400	4220	3580	3990	---	---	e3710	---	---	e4500
19	---	---	e2700	4650	4180	4420	---	---	e3800	---	---	e4300
20	---	---	e2900	4980	4650	4820	---	---	e3950	---	---	e4900
21	---	---	e3100	7930	4320	5060	4290	---	e4290	---	---	e5500
22	---	---	e3200	5250	4970	5180	7720	4290	6360	---	---	e6200
23	---	---	e4000	5310	5200	5260	5880	4680	4950	---	---	e4000
24	---	---	e4500	5320	5220	5270	4790	3540	4390	---	---	e1000
25	---	---	e4700	5320	5140	5240	3540	2760	2970	---	---	e1400
26	---	---	e4800	5300	5170	5260	3820	2870	3260	---	---	1430
27	---	---	e4900	5370	5240	5280	3880	3590	3740	2370	1740	2060
28	---	---	e3800	6490	5360	5880	4220	3710	3910	2970	2370	2690
29	---	---	e3500	6480	5980	6210	4470	4200	4360	3330	2970	3140
30	---	---	e3200	5980	5500	5760	4600	4460	4530	3700	3330	3520
31	---	---	---	5620	5230	5420	4970	4590	4820	---	---	---
MONTH	4670	3480	3860	7930	894	4940	7720	1040	4220	5360	1740	4360
YEAR	9140	462	5030									

é Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	23.0	18.5	20.5	11.0	9.0	10.0	8.5	5.0	6.5	15.0	11.0	13.0
2	24.5	19.0	21.0	12.5	7.5	10.0	9.0	5.0	7.0	16.5	12.0	14.0
3	21.5	18.0	19.5	12.0	9.0	10.5	8.0	6.0	7.0	18.0	13.5	15.5
4	21.5	19.0	20.0	16.0	10.0	12.5	7.5	6.0	6.5	17.0	13.0	15.0
5	23.5	18.5	20.5	18.0	12.0	15.0	8.5	5.5	7.0	13.0	8.5	10.5
6	25.0	20.0	22.0	18.5	14.5	16.5	10.0	7.0	8.0	8.5	4.0	6.0
7	25.5	20.5	22.5	15.0	12.0	13.5	10.0	7.5	8.5	4.5	2.5	4.0
8	23.0	19.0	21.0	13.5	11.5	12.5	10.0	7.0	8.5	4.0	2.5	3.5
9	23.5	18.0	20.5	13.5	11.0	12.0	12.0	7.5	9.5	6.0	1.0	3.5
10	23.0	18.0	20.5	13.5	12.0	12.5	14.0	10.0	12.0	4.5	1.5	3.0
11	21.5	17.0	19.0	13.5	11.5	12.5	14.5	11.0	12.5	1.5	.0	.0
12	22.5	17.0	19.5	13.5	12.5	12.5	13.5	10.5	12.0	.0	.0	.0
13	21.0	19.5	20.0	14.0	12.0	12.5	13.0	10.0	11.5	.0	.0	.0
14	21.0	20.0	20.5	16.0	13.5	14.5	13.5	10.5	11.5	.0	.0	.0
15	21.0	20.0	20.5	16.5	15.0	15.5	11.0	5.0	7.5	2.5	.0	.5
16	21.5	20.5	20.5	18.0	16.0	17.0	6.5	2.5	4.5	1.0	.0	.0
17	21.5	19.5	20.5	16.0	11.0	13.0	5.0	.5	2.5	3.5	.0	1.0
18	19.5	17.5	18.5	15.0	10.0	12.0	.5	.0	.0	5.5	.0	1.5
19	18.5	17.0	17.5	16.0	12.0	14.0	.0	.0	.0	7.0	.0	3.0
20	19.0	17.0	17.5	16.5	13.0	14.5	.5	.0	.0	11.0	4.0	7.0
21	19.0	14.0	18.5	14.0	10.0	12.0	5.5	.0	2.5	14.0	9.0	11.0
22	16.0	14.0	15.5	10.0	9.0	9.5	10.0	4.0	7.0	13.0	9.0	11.0
23	16.0	14.0	15.0	13.5	9.5	11.5	9.5	5.0	8.5	13.0	9.5	11.0
24	17.0	14.5	15.5	10.5	3.0	6.0	5.5	2.0	3.5	12.5	8.5	10.5
25	18.0	16.5	17.0	5.0	1.0	3.0	4.5	1.0	3.0	10.0	6.0	8.5
26	19.0	18.0	18.0	6.0	2.0	4.0	5.5	4.0	4.5	11.5	7.5	9.5
27	19.0	17.5	18.5	6.0	3.0	4.0	6.5	1.5	4.0	11.5	2.0	8.5
28	17.5	16.5	16.5	6.5	4.0	5.0	8.5	5.0	6.5	4.5	.0	1.5
29	17.5	16.0	17.0	9.0	5.5	7.0	10.0	5.5	7.5	5.5	.0	2.5
30	17.0	14.0	16.0	10.0	7.0	8.0	11.0	6.0	8.0	8.5	.5	4.5
31	15.0	11.0	13.5	---	---	---	12.0	10.0	11.0	11.5	4.5	7.5
MONTH	25.5	11.0	19.0	18.5	1.0	11.0	14.5	.0	6.5	18.0	.0	6.0

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

LOCATION.--Lat 33°57'02", long 100°03'52", Cottle County, Hydrologic Unit 11130204, right downstream end of old abandoned county bridge, 4.0 mi downstream from Cottonwood Creek, 7 mi downstream from Salt Creek, 10 mi upstream from Middle Fork, 14 mi southeast of Paducah, and 211.3 mi upstream from mouth of the Wichita River.

DRAINAGE AREA.--540 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1951-54 (occasional low-flow measurements), July 1961 to September 1982, October 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,530 ft above sea level.

REMARKS.--Records are good except those for estimated daily discharges, which are fair. No known regulation. One small diversion for irrigation above station.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 11	1530	1,380	7.33	May 9	1730	2,670	9.20
Apr. 26	0100	7,290	13.63	Sept. 23	1300	2,800	9.36

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	18	18	13	11	9.6	14	37	26	20	21	21
2	16	18	17	13	11	9.3	14	30	26	20	20	21
3	16	19	16	13	11	9.5	16	27	26	20	21	20
4	17	19	16	12	11	8.9	18	26	26	20	21	20
5	17	19	15	e12	11	8.7	15	24	25	23	26	21
6	17	20	15	12	12	9.2	14	24	22	26	28	21
7	22	20	14	12	12	9.3	14	24	21	36	32	20
8	84	20	14	13	11	9.5	14	25	26	27	23	21
9	23	21	14	13	12	9.6	14	1030	24	20	22	21
10	18	21	14	12	11	9.5	15	389	23	19	24	21
11	17	21	14	12	11	9.8	516	78	22	39	235	22
12	17	20	14	12	12	10	147	43	19	57	36	21
13	16	19	14	12	12	10	36	34	19	27	23	21
14	16	20	14	13	12	9.8	21	30	20	19	21	21
15	17	20	13	13	12	10	17	27	21	20	20	20
16	17	20	13	12	12	11	15	26	20	18	18	20
17	16	19	13	12	12	11	14	26	21	18	18	20
18	17	18	13	12	12	11	14	26	20	18	18	20
19	18	19	13	12	12	11	14	24	20	18	19	18
20	19	19	13	12	27	11	14	28	21	18	20	17
21	20	19	13	12	104	11	15	28	21	19	20	17
22	19	18	13	12	31	11	19	28	21	19	20	77
23	19	18	12	12	14	12	25	28	23	19	20	1490
24	19	21	12	12	11	12	22	28	21	18	20	104
25	20	18	13	12	10	11	2330	27	21	18	20	36
26	19	18	12	11	11	12	3880	26	21	19	20	29
27	24	17	12	11	10	13	397	26	21	19	21	25
28	39	17	13	11	10	12	176	26	21	19	21	20
29	21	23	13	11	---	13	71	26	20	19	21	19
30	18	20	13	11	---	13	45	27	20	20	21	18
31	18	---	13	11	---	14	---	27	---	20	20	---
TOTAL	653	579	426	373	448	331.7	7936	2275	658	692	890	2242
MEAN	21.1	19.3	13.7	12.0	16.0	10.7	265	73.4	21.9	22.3	28.7	74.7
MAX	84	23	18	13	104	14	3880	1030	26	57	235	1490
MIN	16	17	12	11	10	8.7	14	24	19	18	18	17
AC-FT	1300	1150	845	740	889	658	15740	4510	1310	1370	1770	4450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997h, BY WATER YEAR (WY)

	MEAN	19.3	12.1	11.4	10.7	10.8	11.8	27.8	40.7	69.1	15.4	38.3	36.2
MAX	62.4	23.9	22.7	19.9	19.7	21.5	265	186	452	80.4	239	141	
(WY)	1966	1996	1996	1996	1996	1979	1997	1982	1995	1975	1995	1974	
MIN	3.08	3.94	4.58	4.84	4.77	4.93	5.30	3.63	10.1	2.12	1.98	2.06	
(WY)	1964	1965	1965	1965	1965	1965	1964	1966	1964	1966	1964	1964	

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1961 - 1997h

	ANNUAL TOTAL	6507.4	17503.7	25.5	
ANNUAL MEAN	17.8	48.0	75.5		1995
HIGHEST ANNUAL MEAN			6.10		1964
LOWEST ANNUAL MEAN					
HIGHEST DAILY MEAN	239	Aug 28	3880	Apr 26	8930
LOWEST DAILY MEAN	7.9	Aug 7	8.7	Mar 5	.50
ANNUAL SEVEN-DAY MINIMUM	8.7	Aug 2	9.2	Mar 2	.74
INSTANTANEOUS PEAK FLOW			7290	Apr 26	18100
INSTANTANEOUS PEAK STAGE			13.63	Apr 26	19.76
ANNUAL RUNOFF (AC-FT)	12910		34720		18470
10 PERCENT EXCEEDS	21		28		21
50 PERCENT EXCEEDS	16		19		11
90 PERCENT EXCEEDS	11		11		5.0

e Estimated

h See PERIOD OF RECORD paragraph.

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analysis: October 1994 to current year. Pesticide analyses: October 1996 to September 1997.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1994 to current year.

WATER TEMPERATURE: October 1994 to current year.

INSTRUMENTATION.--From October 1994 to current year, a two-parameter water-quality monitor continuously records specific conductance and water temperature at this station.**REMARKS.**--Interruptions in the record were due to malfunctions of the instrument.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum, 28,600 microsiemens May 25, 1995; minimum, 325 microsiemens Aug. 2, 1995.

WATER TEMPERATURE: Maximum, 34.5°C July 15, 1997; minimum, 0.0°C several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 23,000 microsiemens Oct 3; minimum, 377 microsiemens July 15.

WATER TEMPERATURE: Maximum, 34.5°C July 15; minimum, 0.0°C Dec. 19, and Jan. 12-14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION (%)	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV											
05...	0955	19	18200	8.0	13.5	10.6	114	2400	2200	700	150
19...	1205	19	19700	7.5	14.0	13.2	146	2600	2500	770	170
JAN											
22...	1335	11	19000	8.0	11.5	11.6	120	2600	2500	780	170
MAR											
06...	1005	9.1	19000	8.0	10.5	12.0	119	2500	2400	750	160
26...	1250	12	20000	8.1	16.5	13.6	155	2700	2500	780	171
APR											
23...	1245	23	17500	8.3	20.5	13.6	169	2300	2100	660	145
MAY											
07...	1520	25	14000	8.0	25.0	11.8	158	2400	2200	650	179
21...	1148	28	14400	8.0	20.5	8.5	104	2300	2100	640	171
JUN											
11...	1230	22	16200	8.0	26.0	10.9	149	2400	2200	700	153
JUL											
29...	1200	20	18600	7.8	29.5	8.8	129	2500	2400	760	159
SEP											
06...	1215	21	19200	8.0	26.0	10.6	146	2500	2400	730	163

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)
NOV											
05...	3400	30	13	140	2100	5400	0.60	5.4	11900	12	1.16
19...	3800	32	15	150	2400	6200	0.60	6.1	13500	30	0.970
JAN											
22...	3700	31	13	160	2300	5700	0.60	9.5	12800	2	1.66
MAR											
06...	3800	33	12	150	2300	5700	0.60	6.2	12800	7	1.38
26...	3730	31	14	140	2400	6000	0.54	6.0	13100	17	1.08
APR											
23...	2870	26	13	120	2100	5300	0.48	5.2	11200	25	0.229
MAY											
07...	2350	21	12	180	2200	4100	0.45	9.4	9610	22	0.701
21...	2500	23	11	180	2100	4200	0.50	9.6	9670	18	0.745
JUN											
11...	3060	27	13	140	2100	5100	0.52	5.9	11200	2	0.504
JUL											
29...	3580	31	14	110	2300	5700	0.62	18	12500	3	0.528
SEP											
06...	3580	31	14	130	2400	6100	0.60	6.8	13000	2	--

RED RIVER BASIN

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07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
NOV											
05...	0.040	1.20	0.320	--	<0.20	<0.010	<0.010	<0.010	<1	1	200
19...	0.030	1.00	0.260	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
JAN											
22...	0.040	1.70	0.170	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
MAR											
06...	0.020	1.40	0.120	0.08	0.20	<0.010	<0.010	<0.010	<1	<1	<100
26...	0.020	1.10	0.170	0.03	0.20	<0.010	<0.010	<0.010	<1	<1	<100
APR											
23...	0.012	0.241	0.234	0.18	0.41	<0.010	<0.010	<0.010	2	1	<100
MAY											
07...	0.010	0.711	0.089	0.21	0.29	<0.010	<0.010	<0.010	2	2	100
21...	0.014	0.759	0.073	0.27	0.34	<0.010	<0.010	<0.010	1	1	<100
JUN											
11...	0.023	0.527	0.082	0.16	0.25	<0.010	<0.010	<0.010	<1	1	<100
JUL											
29...	0.025	0.553	0.067	0.33	0.40	<0.010	<0.010	<0.010	2	1	<100
SEP											
06...	--	--	--	0.35	0.35	0.012	0.015	<0.010	1	1	<100

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV											
05...	48	<1	<10	6	7.0	2	<100	180	<30	<4	<100
19...	34	<1	<10	<1	<1.0	<1	<100	130	<30	<4	110
JAN											
22...	25	<1	17	<1	<1.0	<1	<100	150	<30	<4	<100
MAR											
06...	35	<1	<10	<1	<1.0	1	<100	100	<30	<4	<100
26...	27	<4	<12	2	<1.0	<4	<120	80	<36	<4	<120
APR											
23...	64	<4	13	<4	<4.0	5	<90	110	<27	<4	104
MAY											
07...	74	<4	<8.0	<4	<4.0	<4	<80	150	<24	<4	<80
21...	67	<4	12	<4	<4.0	<4	<80	160	<24	<4	<80
JUN											
11...	40	<4	<9.0	<4	<5.0	<4	<90	110	<27	<4	207
JUL											
29...	44	<4	<10	<4	<4.0	<4	<100	110	<30	<4	<100
SEP											
06...	41	<4	<10	<4	<4.0	<4	<100	140	<30	<4	<100

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV										
05...	40	13	<0.10	<0.1	<100	<100	9	12	<2	<1.0
19...	40	15	0.20	<0.1	100	<100	15	11	<4	<4.0
JAN										
22...	90	91	<0.10	<0.1	<100	<100	14	15	<4	<4.0
MAR										
06...	85	91	<0.10	<0.1	<100	<100	10	12	<2	<2.0
26...	49	15	<0.10	<0.1	<100	<120	9	13	<4	<4.0
APR										
23...	39	45	<0.10	0.1	120	<90	8	8	<4	<4.0
MAY										
07...	89	86	<0.10	<0.1	<100	<80	9	9	<4	<4.0
21...	54	34	<0.10	<0.1	<100	<80	11	10	<4	<4.0
JUN										
11...	50	18	<0.10	<0.1	<100	<90	10	10	<4	<5.0
JUL										
29...	52	27	<0.10	<0.1	140	<100	12	12	<4	<4.0
SEP										
06...	60	24	<0.10	0.1	<100	<100	<1	11	<4	<4.0

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 05...	<10	<30	--	--	--	--	--	--	--	--
19...	<10	46	--	--	--	--	--	--	--	--
JAN 22...	<10	33	--	--	--	--	--	--	--	--
MAR 06...	<10	<30	--	--	--	--	--	--	--	--
26...	<10	<36	--	--	--	--	--	--	--	--
APR 23...	<10	<27	--	--	--	--	--	--	--	--
MAY 07...	<10	<24	--	--	--	--	--	--	--	--
21...	<10	<24	--	--	--	--	--	--	--	--
JUN 11...	<10	58	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUL 29...	<10	<30	--	--	--	--	--	--	--	--
SEP 06...	<10	41	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	653	18440	11730	20690	5200	9210	2000	3590	2400
NOV. 1996	579	18830	12010	18770	5300	8270	2100	3300	2500
DEC. 1996	426	19720	12530	14420	5600	6440	2200	2490	2500
JAN. 1997	373	20140	12780	12870	5800	5790	2200	2200	2500
FEB. 1997	448	16200	10390	12570	4500	5420	1900	2270	2300
MAR. 1997	331.7	19530	12430	11130	5500	4960	2200	1930	2500
APR. 1997	7936	4080	2720	58200	1000	21350	580	12500	780
MAY 1997	2275	8170	5390	33130	2100	12630	1100	6870	1500
JUNE 1997	658	17260	11080	19680	4800	8450	2000	3580	2400
JULY 1997	692	16950	10890	20350	4700	8700	2000	3720	2400
AUG. 1997	890	13830	8940	21470	3700	8960	1700	4040	2100
SEPT 1997	2242	6740	4370	26430	1800	10910	830	5040	1000
TOTAL	17503.7	**	**	269700	**	111100	**	51530	**
WTD.AVG.	48	8800	5710	**	2400	**	1100	**	1400

RED RIVER BASIN

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07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22700	21600	22200	16700	16000	16400	19500	18700	19000	---	---	19500
2	22700	21600	22100	17200	16400	16800	---	---	19000	---	---	19500
3	23000	21700	22400	17500	17000	17200	---	---	e19000	---	---	19500
4	22600	22200	22400	17800	17200	17500	---	---	19100	---	---	19800
5	22700	21900	22300	18400	17100	17800	19800	18800	19200	---	---	e20200
6	22700	21700	22200	18800	17500	18100	19500	18800	19200	---	---	20800
7	22500	9510	20900	19700	18800	19200	19500	19100	19300	21100	20400	20900
8	20900	1430	9820	19900	19300	19600	19900	19100	19500	21100	20400	20800
9	10500	3750	6880	20400	19700	20100	19700	19100	19400	21200	20200	20700
10	17500	10500	14300	20700	19900	20300	19600	19100	19300	20800	19800	20400
11	20000	17500	19000	20600	19700	20200	19600	19100	19400	20800	20100	20500
12	20700	19400	20100	20500	20100	20300	19700	19200	19400	---	---	20800
13	20800	18900	19900	20700	20100	20400	19900	19400	19600	---	---	e21200
14	21400	19600	20600	20600	20000	20400	20000	19400	19700	---	---	20500
15	21400	19600	20600	20600	17900	19400	20600	20000	20200	20800	19800	20300
16	20900	18700	20200	18800	15100	16900	20800	20200	20500	20500	18900	20000
17	21700	20600	21100	17500	15900	16700	---	---	20600	20200	19200	19800
18	22300	20800	21500	18900	17500	18200	---	---	e20600	20200	19400	19800
19	21900	19900	21000	19800	18900	19500	20800	19500	20300	---	---	19500
20	21300	20000	20900	19900	19300	19700	21200	19500	20500	---	---	e19400
21	21800	17600	21100	19900	19600	19700	20400	19600	20100	---	---	e19300
22	21400	20900	21100	20000	19600	19900	20100	19400	19700	---	---	e19200
23	21900	20800	21400	20300	18300	19700	19900	19300	19600	---	---	e19000
24	21700	20300	21000	18800	18200	18500	20500	19600	20000	---	---	19500
25	21400	20000	20600	19100	18600	18800	20400	19700	20100	---	---	19800
26	21300	20000	20500	19200	18500	18800	20400	19700	20200	19900	19600	19700
27	20700	17300	19900	---	---	18800	20800	19500	20100	20700	19900	20300
28	21700	16000	19100	---	---	18600	20200	19300	19900	---	---	20700
29	20100	15600	17300	---	---	18300	20500	19900	20100	---	---	e21000
30	20600	16500	18400	---	---	e18400	20400	19700	20000	---	---	21200
31	16500	15500	15700	---	---	---	20100	19500	19800	21200	20600	20900
MONTH	23000	1430	19600	20700	15100	18800	21200	18700	19800	21200	18900	20100

e Estimated

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	20900	20400	20600	18300	17100	17900	---	---	e20500	11300	10200	10800
2	20700	20400	20500	18600	17900	18300	---	---	e20500	12700	11300	11900
3	20700	20400	20500	18800	18500	18600	---	---	e20500	12900	12500	12700
4	20800	20500	20600	19200	18700	19000	---	---	e20500	13600	12900	13300
5	20800	20500	20600	19200	18600	18900	---	---	e20500	13800	13300	13600
6	20600	20100	20300	19200	18800	19000	---	---	e20400	14500	13800	14200
7	20600	19900	20400	19600	19100	19300	---	---	e20400	14500	13800	14100
8	20800	20000	20400	19500	18900	19200	---	---	e20400	14300	13800	14000
9	21000	20700	20800	19500	18600	19000	---	---	e20400	14100	619	6950
10	21400	20700	21000	19500	18500	19100	---	---	18900	3210	868	1910
11	21000	20300	20600	19500	18900	19100	17800	1050	7470	6390	3210	4880
12	20700	20300	20500	19800	19200	19500	4860	1390	3150	8530	6390	7590
13	20700	20000	20200	19800	19000	19300	7240	4860	6110	9950	8530	9330
14	20400	19900	20100	20000	19300	19600	9140	7240	8240	11000	9950	10500
15	20600	20000	20300	19900	19400	19600	10800	9140	10000	11700	11000	11400
16	20400	20000	20200	20100	19300	19700	12700	10800	11600	12300	11700	12000
17	20600	19900	20200	20100	18000	19900	13300	12700	13000	12900	12300	12600
18	20600	19800	20200	19600	19200	19400	14300	13300	13900	13600	12900	13300
19	20400	19800	20000	19700	19200	19500	14600	14300	14400	14000	13600	13800
20	20000	14200	18100	19700	19200	19400	16700	14600	15300	14000	13700	13800
21	18700	3040	10600	19900	19400	19600	17500	16700	17100	14500	13800	14300
22	9200	5420	7860	20000	19600	19800	17500	16300	16700	14400	13500	13900
23	11200	9200	10200	19800	19400	19600	17600	16700	17300	14300	13900	14200
24	13200	11200	12300	---	---	19600	16700	14500	15700	14300	13800	14100
25	14900	13200	14100	---	---	e19800	15100	377	7220	15700	14200	15000
26	16100	14900	15700	---	---	e20000	1560	392	677	16000	15400	15700
27	17100	15900	16800	---	---	e20100	3090	1560	2530	16000	15700	15800
28	17600	16900	17300	---	---	e20300	6060	3090	4520	16200	15900	16000
29	---	---	---	---	---	e20400	8510	6060	7300	---	---	e16500
30	---	---	---	---	---	e20500	10200	8510	9450	---	---	e16500
31	---	---	---	---	---	20600	---	---	---	---	---	e16600
MONTH	21400	3040	18200	20100	17100	19500	17800	377	13500	16200	619	12600

e Estimated

RED RIVER BASIN

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	e16700	---	---	e18900	18900	18600	18700	18900	18600	18800
2	---	---	e16700	---	---	e19000	19000	18700	18800	19000	18800	18900
3	---	---	e16800	---	---	e18600	19100	18800	18900	19200	18900	19100
4	---	---	e16900	19500	18300	18900	19300	18900	19100	19200	19000	19100
5	---	---	e16900	---	---	18600	19000	10100	18300	19300	18900	19100
6	---	---	e16800	---	---	e16900	18300	8960	15200	19300	19100	19200
7	---	---	e16700	---	---	e15200	17700	15100	16500	21000	19200	20100
8	---	---	e16600	---	---	e15500	17100	15800	16400	20500	20000	20300
9	---	---	e16400	---	---	e16900	18100	17100	17800	20300	20000	20200
10	---	---	e16300	---	---	e17800	19000	13200	18200	20400	20200	20400
11	---	---	e16200	---	---	e15700	18900	759	6890	20900	20400	20600
12	---	---	e16000	---	---	e14600	7900	2180	4990	20900	20600	20700
13	---	---	e15800	---	---	e14800	12500	7900	10500	21100	20600	20800
14	---	---	16900	---	---	e15100	13900	12500	13400	20700	20200	20500
15	---	---	e17000	---	---	e15300	15200	13900	14400	20800	20200	20500
16	---	---	e17100	---	---	e15500	15700	15200	15500	21000	20500	20800
17	---	---	e17300	---	---	15700	16000	15700	15900	21100	20700	20900
18	---	---	e17400	17100	15800	16400	16200	15700	16100	21300	20800	21200
19	---	---	e17500	17400	16200	16900	16000	15800	15900	21300	21100	21200
20	---	---	e17600	17800	17000	17400	16500	16000	16300	21800	21200	21600
21	---	---	e17800	18100	17200	17700	16800	16400	16600	21700	21500	21600
22	---	---	e17900	18100	17300	17800	17100	16700	16900	21600	9300	19600
23	---	---	e18000	18000	17400	17800	17300	17000	17100	9300	655	2180
24	---	---	e18100	18300	17800	18100	17600	17300	17500	4830	2020	3470
25	---	---	e18200	18500	17800	18200	17900	17600	17900	7210	4830	6060
26	---	---	e18300	18500	17900	18200	18400	17900	18200	8960	7210	8080
27	---	---	e18500	18600	18000	18300	18500	18100	18300	10600	8960	9800
28	---	---	e18600	18700	18100	18400	18500	18200	18400	12200	10600	11500
29	---	---	e18700	18700	18100	18400	18700	18400	18600	13000	12200	12600
30	---	---	e18800	18700	18200	18500	18800	18400	18600	13800	13000	13400
31	---	---	---	18900	18500	18700	18800	18400	18700	---	---	---
MONTH	---	---	17300	19500	15800	17200	19300	759	16300	21800	655	17100
YEAR	23000	377	17500									
e Estimated												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	24.0	18.5	21.0	13.0	10.0	11.5	10.5	7.0	8.5	---	---	---
2	24.0	19.0	21.0	15.0	9.0	11.5	---	---	---	---	10.5	---
3	23.0	18.0	20.0	14.0	11.0	12.5	---	---	---	---	11.0	---
4	21.5	19.5	20.5	16.5	11.5	14.0	---	---	---	---	---	---
5	23.5	19.5	21.0	18.0	12.5	15.0	---	---	---	---	---	---
6	23.5	19.5	21.0	16.5	14.0	16.0	12.5	8.5	10.0	---	---	---
7	25.0	19.5	22.0	15.5	12.0	13.5	12.5	8.5	10.5	5.5	4.0	4.5
8	21.5	13.5	18.0	14.5	10.5	12.0	12.0	8.0	10.0	5.0	3.5	4.0
9	21.5	15.5	18.0	15.0	9.5	12.0	13.5	9.0	11.0	6.5	2.5	4.0
10	22.5	17.5	19.5	15.0	10.5	12.5	14.5	11.0	12.5	5.5	3.5	4.5
11	23.0	17.5	20.0	16.0	11.0	13.0	15.5	11.0	13.0	3.5	1.0	2.5
12	24.5	19.0	21.0	13.5	12.0	13.0	15.0	11.0	12.5	1.0	.0	.5
13	24.5	19.5	21.5	14.5	11.5	12.5	14.0	10.0	12.0	.0	.0	.0
14	24.0	19.5	21.5	15.5	12.5	14.0	14.5	10.0	12.0	.5	.0	.0
15	23.5	19.0	21.0	17.5	14.0	16.0	10.5	5.5	8.0	4.5	.5	2.0
16	24.5	20.0	22.0	18.5	15.0	17.0	8.0	3.5	5.5	4.5	2.0	3.0
17	22.0	17.5	20.0	15.5	12.0	14.0	---	3.5	---	5.5	1.5	3.0
18	19.0	14.5	16.5	15.5	10.5	13.0	---	---	---	6.5	2.0	4.0
19	18.5	14.0	16.0	17.0	12.0	14.0	3.5	.0	1.5	---	3.5	---
20	20.5	15.5	18.0	17.0	13.5	15.0	4.5	.5	2.5	---	---	---
21	19.0	13.0	16.0	---	---	---	6.5	2.5	4.5	---	---	---
22	15.0	11.0	13.0	12.0	11.0	11.5	9.5	4.5	7.0	---	---	---
23	17.0	10.5	13.5	---	11.0	---	9.5	6.0	8.0	---	---	---
24	17.5	12.0	14.5	13.0	5.5	8.5	7.0	4.0	5.5	---	---	---
25	---	---	---	8.0	3.5	5.5	6.0	3.5	4.5	---	---	---
26	---	---	---	9.0	4.5	6.5	6.0	3.5	4.5	10.5	7.5	9.0
27	17.5	14.0	16.0	---	5.0	---	8.0	2.5	4.5	9.5	4.0	7.5
28	14.5	13.0	13.5	---	---	---	10.0	6.0	7.5	6.5	---	---
29	16.5	14.0	15.0	---	---	---	10.5	6.0	8.0	---	---	---
30	17.5	12.5	15.0	---	---	---	11.0	6.0	8.0	10.0	---	---
31	15.0	11.5	14.0	---	---	---	12.0	6.0	9.5	13.0	6.5	9.5
MONTH	25.0	10.5	18.5	18.5	3.5	12.5	15.5	.0	8.0	13.0	.0	4.0

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WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	14.5	8.0	11.0	15.5	10.5	12.5	16.5	13.5	14.5	23.0	18.0	20.5
2	14.5	9.5	11.5	14.5	10.5	12.0	20.5	14.5	17.0	23.5	19.5	21.5
3	15.5	10.0	12.5	17.0	9.5	12.5	18.5	17.0	17.5	23.0	17.0	20.0
4	13.5	9.5	11.0	18.0	12.0	14.5	19.5	16.5	17.5	23.0	18.5	21.0
5	10.0	8.0	9.0	15.5	9.5	12.5	19.5	13.0	16.0	25.0	19.5	22.0
6	8.5	7.5	8.0	15.5	9.0	12.0	17.5	13.0	15.0	25.5	21.5	23.5
7	8.5	6.5	7.5	17.5	11.0	13.5	18.5	13.0	15.5	25.0	23.0	24.0
8	7.5	6.0	6.5	15.5	13.5	14.5	16.5	10.5	14.5	25.0	22.5	23.5
9	7.0	5.5	6.0	18.0	14.5	16.0	10.5	9.0	9.5	23.0	17.0	18.5
10	10.5	4.0	7.0	19.0	12.0	15.5	13.0	9.0	10.5	22.0	17.0	19.0
11	9.5	6.5	8.0	20.0	13.5	16.5	13.0	5.0	8.0	24.0	18.0	21.0
12	8.5	5.0	7.0	18.5	16.5	17.0	10.0	4.0	6.5	23.0	19.5	21.5
13	6.0	4.5	5.0	21.5	16.0	18.0	13.0	7.0	10.0	24.5	18.5	22.0
14	11.5	5.5	8.0	16.0	10.5	13.0	16.0	10.5	13.0	23.5	21.0	22.0
15	13.0	6.5	9.5	15.5	8.5	11.5	19.5	13.5	15.5	23.0	19.5	21.0
16	14.5	8.0	11.0	13.5	10.5	12.0	19.0	16.0	17.0	26.0	20.5	23.5
17	15.5	10.0	12.5	20.0	12.5	16.0	21.0	17.0	18.5	28.0	22.5	25.0
18	16.5	11.5	13.5	18.5	15.0	16.5	20.5	18.5	19.5	28.5	23.5	25.5
19	14.5	13.0	14.0	19.0	12.0	15.0	23.0	17.0	19.5	25.5	19.0	22.5
20	13.5	12.0	13.0	21.5	12.5	16.5	25.5	19.0	21.5	23.5	18.0	20.0
21	12.5	9.0	11.0	23.0	15.0	18.5	23.0	20.0	21.5	21.5	19.0	20.5
22	12.0	7.0	9.5	20.5	14.0	17.0	22.5	19.0	21.0	21.0	18.5	19.5
23	13.5	9.5	11.0	20.5	13.5	17.0	22.5	19.5	21.0	24.0	19.5	21.5
24	11.0	8.0	10.0	20.5	15.5	17.5	22.0	14.0	18.0	27.5	21.0	23.5
25	8.0	5.5	7.0	18.5	12.0	15.5	14.0	9.5	11.5	29.0	23.5	26.0
26	8.5	6.0	7.0	19.0	11.5	15.0	10.5	10.0	10.0	28.5	24.0	26.0
27	10.5	6.5	8.0	19.5	14.0	16.5	14.0	10.5	12.0	28.0	23.5	25.0
28	12.0	8.0	10.0	20.5	13.5	17.0	19.5	12.0	15.5	28.0	22.0	24.5
29	---	---	---	21.5	14.0	17.0	22.0	16.0	19.0	27.0	22.5	24.0
30	---	---	---	19.5	12.5	15.0	23.0	18.5	20.5	24.5	22.5	23.5
31	---	---	---	17.0	12.5	14.5	---	---	---	27.5	21.0	24.0
MONTH	16.5	4.0	9.5	23.0	8.5	15.0	25.5	4.0	15.5	29.0	17.0	22.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	29.5	22.5	25.5	32.5	26.0	29.0	33.5	26.5	29.5	31.0	25.0	28.0
2	29.0	24.0	26.0	33.5	26.0	29.5	33.5	27.0	30.0	31.0	25.0	28.0
3	29.0	23.5	26.0	33.5	27.0	30.0	33.0	27.0	30.0	29.0	25.5	26.5
4	30.0	21.5	26.5	31.0	24.5	28.0	30.5	27.0	29.0	26.0	23.5	24.5
5	29.0	23.5	26.0	27.5	24.0	25.5	32.0	26.5	28.5	27.0	23.0	24.5
6	26.5	23.5	24.5	29.5	23.0	26.0	31.0	26.0	27.5	29.5	23.5	26.0
7	26.5	22.5	24.5	29.0	25.5	27.0	27.0	22.0	24.0	29.5	23.5	26.5
8	24.0	20.5	22.5	31.5	26.0	28.5	27.5	21.5	24.0	30.0	24.0	27.0
9	26.0	20.0	22.5	32.5	26.5	29.0	31.0	23.0	26.5	27.5	24.5	26.0
10	27.0	23.0	24.5	31.5	27.0	28.5	32.0	26.0	28.5	27.0	23.0	25.0
11	29.5	24.0	26.0	29.5	24.5	27.5	27.0	21.5	24.5	27.5	22.0	24.5
12	32.0	24.5	28.0	30.5	26.0	28.0	27.0	24.0	25.5	27.5	22.5	25.0
13	32.0	26.5	29.0	32.5	27.0	29.5	31.0	25.5	27.5	29.0	23.5	26.0
14	32.0	25.5	28.0	34.5	27.5	30.5	32.0	26.5	29.0	28.5	24.0	26.0
15	30.5	25.0	27.5	34.5	28.0	31.0	32.0	26.5	29.0	29.5	24.0	26.5
16	31.5	25.0	28.0	34.5	28.0	30.5	32.0	25.5	28.5	29.0	24.5	27.0
17	30.0	24.0	27.0	33.5	27.5	30.0	33.0	26.0	29.0	30.5	24.5	27.5
18	32.0	24.5	28.0	33.0	27.0	29.5	32.0	26.0	29.0	30.0	25.0	27.5
19	32.5	26.0	29.0	32.5	26.5	29.0	33.5	27.0	29.5	30.0	24.0	27.0
20	33.0	26.0	29.0	33.0	26.5	29.5	33.5	27.0	30.0	27.5	23.0	25.0
21	32.0	26.0	28.5	33.0	27.5	30.0	33.5	27.0	30.0	24.5	20.0	22.5
22	27.0	24.0	25.5	32.0	27.0	29.0	32.5	26.5	29.5	23.0	21.5	22.0
23	26.5	23.0	24.5	32.5	26.5	29.5	30.0	26.0	28.0	22.0	20.5	21.0
24	30.0	23.0	26.0	32.5	27.0	29.5	31.0	24.5	27.5	21.5	19.0	20.5
25	31.0	24.5	27.5	33.0	26.5	29.5	31.0	24.5	27.5	23.5	19.0	21.0
26	31.5	25.5	28.5	33.0	27.0	30.0	31.0	24.5	27.5	25.0	20.0	22.5
27	30.0	26.0	27.5	33.5	27.0	30.0	30.5	24.5	27.5	26.0	21.0	23.0
28	32.5	25.0	28.5	33.5	27.5	30.0	30.5	24.0	27.5	24.5	21.0	23.0
29	33.0	26.5	29.5	33.0	27.0	30.0	30.5	24.0	27.5	25.0	20.0	22.0
30	33.0	26.5	29.5	31.5	27.0	29.0	31.0	25.0	27.5	27.0	21.5	23.5
31	---	---	---	33.0	26.0	29.0	31.0	25.0	28.0	---	---	---
MONTH	33.0	20.0	26.5	34.5	23.0	29.0	33.5	21.5	28.0	31.0	19.0	25.0
YEAR	34.5	.0	19.0									

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX

LOCATION.--Lat 33°47'45", long 100°04'29", King County, Hydrologic Unit 11130204, on right bank 100 ft (32 m) downstream from inflatable dam. One mile downstream from ranch road crossing, 0.71 miles upstream from Forrer Creek, 12 miles upstream from confluence with North Wichita River and 19 miles northeast of Guthrie, Tx.

DRAINAGE AREA.-- 50.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- June 1994 to September 1996 (daily discharges above 30 ft³/s not published). October 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,583.90 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions. Low flow is maintained by springs that enter river in the vicinity of gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 16.02 ft Aug. 2, 1995; minimum daily discharge, 2.5 ft³/s Nov. 11, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 11.07 June 27 at 1600 hours; minimum daily discharge, 2.5 ft³/s Nov. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	6.0	5.7	6.0	5.8	7.6	5.5	6.8	6.6	5.9	13	e5.1
2	6.3	6.0	5.5	6.1	5.9	7.3	5.6	9.4	6.6	5.8	3.8	e5.2
3	6.0	5.9	5.6	6.2	5.9	7.6	6.4	6.8	6.6	5.8	4.4	e5.4
4	6.1	6.0	6.7	6.1	5.6	7.7	6.5	6.9	6.5	5.5	4.8	e5.5
5	6.0	5.9	5.3	5.7	5.7	7.3	5.9	6.8	6.6	6.4	e5.5	e13
6	6.0	6.0	5.3	5.7	6.6	7.2	5.7	6.9	7.8	7.5	6.0	e5.0
7	6.2	5.7	5.1	5.6	6.4	7.7	5.9	7.2	6.1	7.0	e5.6	e5.1
8	7.5	12	5.1	5.7	5.8	7.9	6.1	7.2	7.4	7.1	e13	e5.2
9	5.9	4.7	5.6	5.9	5.9	7.8	6.4	9.7	7.4	7.4	e4.0	5.5
10	5.8	4.7	5.8	5.5	6.2	7.6	6.2	7.5	8.1	7.1	e4.3	5.5
11	6.2	4.8	3.9	5.4	6.1	8.2	10	7.2	9.2	9.8	e4.5	5.6
12	6.3	4.8	3.9	5.3	6.6	8.3	6.6	7.2	6.2	10	e4.7	6.2
13	6.3	5.0	5.2	5.5	6.3	4.1	6.0	7.2	6.0	8.8	e4.9	4.9
14	6.3	5.1	5.2	5.7	6.6	5.3	5.8	7.1	6.2	7.6	e5.0	5.3
15	6.3	5.4	5.0	5.7	6.2	6.0	6.2	7.1	21	5.2	e13	5.1
16	6.4	5.7	5.3	5.5	6.3	6.1	6.2	6.9	7.2	5.3	e5.2	e5.0
17	6.1	5.4	4.9	5.2	6.2	6.9	6.2	7.1	6.6	5.0	e5.0	e5.1
18	5.9	5.5	4.8	5.3	6.5	6.7	5.6	7.0	6.8	17	5.1	5.2
19	6.0	5.9	4.8	5.6	6.8	6.4	6.0	7.0	6.6	4.1	6.0	5.3
20	6.4	14	5.1	5.7	29	6.8	6.0	8.7	3.1	4.4	5.9	5.1
21	6.5	4.6	5.4	5.2	15	5.9	6.1	5.5	5.4	4.6	e5.7	5.2
22	6.4	2.5	5.6	5.3	7.9	5.4	8.0	6.4	6.2	4.8	e14	24
23	6.1	4.3	5.4	5.3	7.1	5.3	5.8	6.5	7.0	4.8	e5.0	15
24	6.1	6.5	5.2	5.2	7.0	5.6	6.5	6.5	7.0	4.7	e5.1	5.9
25	4.1	5.6	5.4	5.3	6.8	5.0	23	6.6	7.7	13	e5.2	4.2
26	4.6	5.7	5.2	5.8	7.2	5.1	11	6.4	7.9	3.8	e5.2	5.2
27	13	5.6	5.5	5.6	7.3	5.3	e7.8	6.2	21	4.2	e5.3	5.0
28	7.0	5.9	5.6	5.8	7.6	5.3	e7.1	6.3	4.6	4.3	e5.4	5.4
29	6.2	8.8	5.5	6.6	---	5.3	6.8	6.4	6.3	4.6	e14	5.2
30	6.1	7.0	5.6	6.2	---	5.2	e12	6.5	6.0	4.8	e4.9	5.2
31	5.9	---	5.9	7.7	---	5.3	---	6.4	---	4.7	e5.0	---
TOTAL	196.5	181.0	164.1	177.4	212.3	199.2	218.9	217.4	227.7	201.0	198.5	193.6
MEAN	6.34	6.03	5.29	5.72	7.58	6.43	7.30	7.01	7.59	6.48	6.40	6.45
MAX	13	14	6.7	7.7	29	8.3	23	9.7	21	17	14	24
MIN	4.1	2.5	3.9	5.2	5.6	4.1	5.5	5.5	3.1	3.8	3.8	4.2
AC-FT	390	359	325	352	421	395	434	431	452	399	394	384

e Estimated

RED RIVER BASIN

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07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1993 to current year. Pesticide analyses: October 1996 to September 1997.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1994 to current year.

TEMPERATURE: October 1994 to current year.

INSTRUMENTATION.--Since October 1994 to current year, a two-parameter monitor continuously records specific conductance and water temperature at this station.**REMARKS.**--Interruptions in record are due to malfunctions of the instrument.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens May 26, 1996; minimum, 4,250 microsiemens May 31, 1995.

TEMPERATURE: Maximum, 35.0°C July 9, 10, 1995; minimum, 1.0°C Feb. 4, 1996.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 12,900 microsiemens Aug. 22,23; minimum, 5,870 microsiemens Apr. 26.

TEMPERATURE: Maximum, 31.5°C Aug. 19; minimum, 1.5°C Dec. 19.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV											
06...	1254	6.1	11400	8.5	17.5	12.8	145	2400	2200	730	130
20...	1205	4.8	11600	7.9	15.0	13.0	141	2400	2200	740	140
JAN											
23...	1420	5.8	11700	8.1	13.5	11.8	123	2300	2200	710	140
MAR											
06...	1315	7.5	11500	8.0	14.5	12.0	127	2400	2200	720	140
26...	1610	5.8	11700	7.9	18.5	12.5	144	2400	2200	740	139
APR											
23...	1535	5.8	11600	7.9	24.5	11.0	144	2500	2300	760	135
MAY											
15...	0945	7.0	11400	7.8	19.5	9.0	107	2500	2300	760	141
JUN											
05...	0825	6.3	11500	7.8	22.5	7.1	90	2400	2300	750	141
26...	1010	7.5	11300	7.8	25.5	8.7	115	2400	2200	730	142
JUL											
30...	1225	4.8	11100	8.0	28.0	12.8	176	2400	2200	730	132
AUG											
13...	1215	4.9	10800	8.0	26.0	12.3	163	2400	2300	770	126
SEP											
07...	1037	5.1	11400	7.9	24.0	10.6	138	2300	2200	710	135
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
NOV											
06...	1800	16	11	180	2300	2900	0.60	9.1	7990	3	0.860
20...	1900	17	11	180	2300	2900	0.50	9.4	8110	6	0.870
JAN											
23...	1900	17	11	180	2300	2900	0.60	9.7	8080	8	0.930
MAR											
06...	1800	16	11	180	2300	2800	0.60	9.2	7890	7	1.09
26...	1850	16	10	180	2400	3000	0.57	10	8190	8	0.990
APR											
23...	1790	16	11	170	2300	2800	0.51	9.6	7960	19	0.242
MAY											
15...	1810	16	11	180	2300	2800	0.57	9.9	7960	14	0.737
JUN											
05...	1800	16	12	170	2300	2900	0.55	11	8010	2	0.665
26...	1830	16	10	170	1900	2400	0.55	9.8	7120	3	0.521
JUL											
30...	1900	17	11	150	2200	2800	0.53	26	7880	3	0.492
AUG											
13...	1630	14	11	180	2100	2700	0.51	20	7530	1	0.403
SEP											
07...	1770	16	11	160	2400	2800	0.53	3.4	7890	5	--

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
NOV											
06...	0.040	0.900	0.490	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
20...	0.040	0.910	0.380	--	<0.20	<0.010	<0.010	<0.010	<1	<1	100
JAN											
23...	0.030	0.960	0.190	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
MAR											
06...	0.010	1.10	0.150	--	<0.20	<0.010	<0.010	<0.010	<1	<1	100
26...	0.010	1.00	0.360	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
APR											
23...	0.012	0.254	0.228	0.0	0.22	<0.010	<0.010	<0.010	<1	<1	<100
MAY											
15...	0.017	0.754	0.169	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
JUN											
05...	0.021	0.686	0.130	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
26...	0.025	0.546	0.125	--	<0.20	0.016	<0.010	<0.010	<1	<1	100
JUL											
30...	0.028	0.520	0.052	0.23	0.28	<0.010	<0.010	<0.010	2	1	<100
AUG											
13...	0.026	0.429	0.051	0.17	0.23	<0.010	<0.010	<0.010	1	1	<100
SEP											
07...	--	--	--	--	<0.20	<0.010	<0.010	--	<1	<1	<100

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV											
06...	18	<1	<8.0	6	5.0	<1	<80	50	<24	<4	<80
20...	16	<1	<9.0	<1	<1.0	<1	<90	40	<27	<2	<90
JAN											
23...	16	<1	7.0	<1	<1.0	<1	<60	50	<18	<2	70
MAR											
06...	15	<1	<6.0	<1	<1.0	<2	<60	40	<18	<2	<60
26...	<30	<4	32	2	<2.0	<4	<300	50	<90	<4	<300
APR											
23...	18	<2	<6.0	<2	<4.0	<2	<60	120	<18	<2	<60
MAY											
15...	19	<4	<6.0	<4	<4.0	<4	<60	90	<18	<4	<60
JUN											
05...	20	<4	<6.0	<4	<4.0	<4	<60	100	<18	<4	<60
26...	21	<1	<6.0	<1	7.3	<1	<60	90	33	<1	<60
JUL											
30...	19	<4	23	<4	4.5	<4	<100	70	<30	<4	155
AUG											
13...	33	<4	<6.0	<4	5.0	9	<60	100	32	<4	<60
SEP											
07...	19	<4	<6.0	<4	<4.0	<4	<60	110	<18	<4	<60

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV										
06...	30	12	<0.10	<0.1	<100	<80	10	12	<1	<2.0
20...	30	10	0.30	<0.1	<100	<90	17	13	<2	<2.0
JAN										
23...	20	10	<0.10	<0.1	<100	<60	13	15	<2	<2.0
MAR										
06...	30	8.1	<0.10	<0.1	<100	<60	13	12	<1	<2.0
26...	27	<30	<0.10	<0.1	<100	<300	11	12	<4	<10
APR										
23...	15	11	<0.10	0.1	<100	<60	12	13	<2	<4.0
MAY										
15...	34	15	<0.10	<0.1	<100	<60	16	12	<4	<4.0
JUN										
05...	31	15	<0.10	<0.1	<100	<60	12	15	<4	<4.0
26...	33	18	<0.10	<0.1	<100	<60	12	12	<1	<4.0
JUL										
30...	25	<10	<0.10	<0.1	<100	<100	14	12	<4	<4.0
AUG										
13...	36	29	<0.10	<0.1	<100	<60	12	14	<4	<4.0
SEP										
07...	33	12	<0.10	<0.1	<100	<60	13	16	<4	<4.0

RED RIVER BASIN

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07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 06...	<10	<24	--	--	--	--	--	--	--	--
20...	<10	<27	--	--	--	--	--	--	--	--
JAN 23...	<10	65	--	--	--	--	--	--	--	--
MAR 06...	<10	<18	--	--	--	--	--	--	--	--
26...	<10	<90	--	--	--	--	--	--	--	--
APR 23...	<10	41	--	--	--	--	--	--	--	--
MAY 15...	<10	<18	--	--	--	--	--	--	--	--
JUN 05...	<10	<18	--	--	--	--	--	--	--	--
26...	<10	<18	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUL 30...	<10	<30	--	--	--	--	--	--	--	--
AUG 13...	<10	<18	--	--	--	--	--	--	--	--
SEP 07...	<10	27	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	196.5	11550	8040	4270	2900	1530	2300	1220	2500
NOV.	1996	181	11910	8200	4010	3000	1450	2300	1120	2500
DEC.	1996	164.1	11680	8100	3590	2900	1290	2300	1020	2500
JAN.	1997	177.4	11550	8040	3850	2900	1380	2300	1100	2500
FEB.	1997	212.3	11700	8100	4640	2900	1670	2300	1310	2500
MAR.	1997	199.2	11920	8210	4420	3000	1600	2300	1240	2500
APR.	1997	218.9	11090	7790	4600	2800	1630	2300	1340	2400
MAY	1997	217.4	10460	7510	4410	2600	1520	2300	1340	2400
JUNE	1997	227.7	10740	7640	4700	2700	1630	2300	1400	2400
JULY	1997	201	11500	8020	4350	2900	1550	2300	1250	2500
AUG.	1997	198.5	11450	7990	4280	2900	1530	2300	1230	2500
SEPT	1997	193.6	11510	8020	4190	2900	1500	2300	1200	2500
TOTAL		2387.6	**	**	51310	**	18280	**	14770	**
WTD.AVG.		6.5	11400	7960	**	2800	**	2300	**	2500

RED RIVER BASIN

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12000	11800	11900	11900	11700	11800	12100	11600	11900	11900	10700	11600
2	11800	11500	11700	11900	11800	11900	12400	12100	12200	10800	10700	10800
3	11600	11200	11400	11900	11900	11900	---	---	e12000	10800	10700	10800
4	11400	11200	11300	11900	11800	11900	---	---	e11800	10900	10800	10800
5	11400	11200	11300	11900	11800	11800	11800	11300	11600	11100	10900	11000
6	11400	11200	11300	11800	11800	11800	11600	11100	11400	11100	11000	11000
7	11400	11100	11300	11900	11800	11900	11500	11100	11300	11200	11100	11200
8	11300	10700	11100	12100	11800	12000	11500	11200	11300	11300	11200	11200
9	11400	10600	10900	12100	12000	12000	11400	11100	11300	11200	11100	11200
10	11600	11400	11500	12100	12000	12000	11300	11100	11200	11300	11100	11200
11	11600	11400	11500	12000	11900	12000	11700	11100	11300	11500	11300	11400
12	11600	11300	11500	12000	11900	12000	11600	11200	11300	11500	11400	11500
13	11500	11300	11400	12000	11900	12000	11400	11300	11400	11600	11500	11600
14	11600	11400	11500	11900	11900	11900	11400	11300	11400	11600	11500	11600
15	11600	11400	11500	11900	11900	11900	11600	11100	11300	11600	11500	11600
16	11600	11400	11500	11900	11800	11800	11800	11500	11600	11600	11500	11600
17	11700	11500	11600	11900	11700	11800	11800	11600	11700	11700	11600	11700
18	11900	11700	11800	12000	11900	12000	11900	11700	11800	11700	11600	11700
19	11900	11700	11800	12100	12000	12000	12300	11800	11900	11700	11700	11700
20	11800	11500	11700	12000	11800	11900	11900	11800	11900	11700	11600	11700
21	11600	11300	11500	12000	11900	12000	11900	11700	11800	11800	11600	11600
22	11800	11400	11600	12000	11900	12000	11800	11600	11700	11700	10800	11500
23	12000	11600	11800	12000	12000	12000	11600	11500	11600	11800	10800	11700
24	12000	11700	11800	12000	11300	11700	11900	11600	11800	11800	11700	11800
25	12000	11700	11800	12000	11600	11800	12000	11800	11900	11900	11800	11800
26	12100	11800	11900	12200	12000	12100	12000	11800	11900	12000	11000	11900
27	11900	11700	11800	12400	12100	12300	12000	11900	12000	12000	11800	11900
28	11700	10900	11300	12300	12100	12200	12000	11800	11900	12300	12000	12100
29	11800	10900	11400	12100	11500	11700	11900	11800	11800	12400	12200	12300
30	12000	11800	11900	11600	11300	11500	11900	11800	11900	12300	12100	12200
31	12000	11800	11900	---	---	---	11900	11800	11800	12200	12000	12100
MONTH	12100	10600	11600	12400	11300	11900	12400	11100	11700	12400	10700	11500

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	12000	12000	12000	11900	11800	11800	12000	11900	12000	11700	11200	11500
2	12000	12000	12000	12000	11800	11900	11900	11800	11900	11500	11000	11300
3	12000	12000	12000	12100	11800	12000	11900	11800	11800	11200	10900	11000
4	12000	12000	12000	12000	11800	11900	11900	11700	11800	11100	10800	11000
5	12100	12000	12000	12000	11900	12000	11900	11600	11800	11000	10400	10900
6	12200	10900	12000	12200	11900	12000	12100	11800	12000	10700	10200	10500
7	12100	11900	12000	12100	12000	12000	12200	12100	12100	10700	10100	10400
8	12300	12000	12100	12100	11800	11900	12100	12000	12100	10800	10200	10500
9	12400	12100	12300	11900	11700	11800	12100	11900	12000	10500	8610	9210
10	12400	12200	12300	11900	11800	11900	11900	11800	11800	10700	9630	10200
11	12200	12100	12200	12000	11900	11900	11800	11600	11700	10900	10600	10800
12	12100	12000	12100	11900	11800	11900	11700	11000	11600	10700	10400	10600
13	12200	12100	12100	11900	11700	11800	12000	11400	11700	10700	10400	10600
14	12100	11900	12000	12000	11700	11900	12100	12000	12100	10700	10600	10700
15	12200	11900	12100	12100	11900	12000	12100	11900	12000	10800	10500	10700
16	12300	12000	12100	12100	11900	12000	11900	11800	11900	10700	10500	10600
17	12100	12000	12000	11900	11900	11900	11900	11600	11800	10700	10200	10500
18	12000	11900	12000	11900	11800	11900	11800	11600	11700	10400	9840	10200
19	11900	11800	11900	11900	11800	11800	11700	10800	11600	10700	9700	10200
20	12000	10200	11000	11900	11800	11900	11700	11600	11600	10200	7220	9150
21	11100	9320	9900	11900	11800	11900	11600	11600	11600	10300	9740	10000
22	11700	11100	11400	11900	11900	11900	11600	11300	11500	10600	10300	10500
23	11900	11100	11700	11900	11900	11900	11300	11200	11300	10600	10300	10500
24	12100	11800	11900	12000	11900	11900	11800	10700	11600	10500	10400	10500
25	12100	11800	11900	12000	11900	11900	11400	5880	8030	10500	10300	10500
26	11900	11700	11800	12000	11900	12000	9680	5870	8160	10500	10400	10400
27	11900	11800	11900	12000	11900	12000	---	---	e10000	10500	10200	10300
28	12000	11800	11900	12000	11900	12000	---	---	e11000	10200	10200	10200
29	---	---	---	12000	12000	12000	---	---	e11300	10500	10200	10200
30	---	---	---	12000	11900	12000	---	---	e11500	10700	10500	10600
31	---	---	---	12000	12000	12000	---	---	---	10600	10500	10500
MONTH	12400	9320	11900	12200	11700	11900	12200	5870	11400	11700	7220	10500

e Estimated

RED RIVER BASIN

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07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	10600	10500	10600	11800	11700	11800	11700	11500	11600	11300	11300	11300
2	10700	10600	10600	11800	11800	11800	11700	11500	11500	11300	11300	11300
3	10700	10500	10600	11800	11800	11800	11700	11600	11600	11300	11200	11300
4	10700	10600	10600	11800	11400	11700	11800	11700	11700	11700	11200	11500
5	10600	10300	10400	11700	11100	11300	11800	11800	11800	11700	11600	11700
6	10600	10100	10400	11300	10900	11100	11900	11800	11900	11600	11500	11500
7	10500	10400	10400	11300	11100	11100	11900	11400	11800	11500	11500	11500
8	10600	10400	10500	11800	11300	11500	11400	10900	11000	11500	11400	11500
9	10400	9570	9850	11900	11800	11800	11500	11000	11200	11600	11600	11600
10	10300	9730	10100	11900	11700	11800	11800	11200	11600	11600	11600	11600
11	10400	10200	10300	11900	11600	11700	11200	11100	11100	11700	11600	11600
12	---	---	e11000	11600	11200	11500	11200	9230	9880	11700	11600	11600
13	---	---	e11500	11400	11200	11300	10900	9820	10400	---	---	e11500
14	11400	10600	11200	11500	11400	11400	11300	10900	11100	11600	11600	11600
15	10900	6280	8680	11400	11400	11400	11500	11300	11400	---	---	e11500
16	11100	8130	9630	11400	11300	11300	11500	11300	11400	---	---	e11500
17	11300	11000	11200	11400	11300	11300	11600	11500	11500	---	---	e11400
18	11200	11000	11100	11400	11300	11400	11600	11500	11600	---	---	e11300
19	11300	10800	11100	11400	11300	11400	11600	11500	11500	11300	11000	11300
20	11400	11300	11300	11400	11200	11400	11500	11500	11500	11000	11000	11000
21	11500	11300	11400	11600	11400	11500	11500	11500	11500	11100	11100	11100
22	11400	11200	11400	11600	11600	11600	12900	11500	11900	12400	11100	11500
23	11200	10900	11100	11600	11500	11600	12900	12100	12600	12200	12200	12200
24	11200	11000	11100	11600	11500	11600	12300	11100	11600	12200	11900	12100
25	11700	11200	11500	11600	11600	11600	11600	11500	11500	11900	11100	11500
26	11800	11700	11700	11600	11400	11500	11600	11600	11600	11100	11100	11100
27	11800	11300	11700	---	---	e11400	11600	11600	11600	11100	11100	11100
28	11600	11500	11500	---	---	e11400	11600	11300	11500	---	---	e11200
29	11600	11400	11500	---	---	e11400	11300	11300	11300	11400	11300	11400
30	11800	11600	11700	11600	11500	11500	11300	11300	11300	11400	11300	11400
31	---	---	---	11500	11500	11500	11300	11300	11300	---	---	---
MONTH	11800	6280	10900	11900	10900	11500	12900	9230	11400	12400	11000	11500
YEAR	12900	5870	11500									

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	23.5	22.5	23.0	28.5	27.5	28.0	29.0	27.0	28.0	28.5	28.5	28.5
2	24.5	23.0	23.5	28.0	27.5	28.0	29.0	28.5	29.0	28.5	28.5	28.5
3	25.0	24.0	24.5	28.5	27.5	28.0	29.0	28.5	28.5	28.5	28.5	28.5
4	25.5	24.5	25.0	28.5	27.0	27.5	29.0	28.5	28.5	28.5	27.0	28.0
5	25.5	24.5	25.0	27.0	24.0	25.5	29.0	28.0	28.5	27.0	26.5	27.0
6	24.5	22.5	24.0	24.0	23.5	24.0	29.0	28.5	29.0	28.0	27.0	27.5
7	24.0	23.5	23.5	25.0	24.0	24.5	29.0	24.5	27.0	28.0	28.0	28.0
8	23.5	22.0	23.0	26.5	25.0	25.5	24.5	23.5	24.0	---	---	---
9	22.0	20.0	21.0	27.5	26.0	26.5	26.5	24.5	25.5	28.5	28.0	28.0
10	24.0	21.5	22.5	27.5	27.0	27.0	---	---	---	28.0	27.0	27.5
11	27.0	23.5	24.5	27.0	25.5	26.0	---	---	---	27.5	26.5	27.0
12	---	---	---	27.0	26.0	26.5	---	---	---	27.5	26.5	26.5
13	---	---	---	27.5	27.0	27.0	28.0	27.5	28.0	---	---	---
14	29.5	23.5	26.5	28.0	27.0	27.5	29.5	28.0	28.5	---	---	---
15	28.5	22.5	25.5	28.0	27.5	28.0	30.0	29.0	29.5	---	---	---
16	31.0	23.5	26.5	28.5	28.0	28.0	30.0	29.5	29.5	---	---	---
17	30.0	22.0	25.5	28.5	28.0	28.0	30.0	29.5	30.0	---	---	---
18	30.5	22.5	26.0	29.5	27.5	28.5	30.0	29.0	29.5	---	---	---
19	31.5	24.0	27.5	29.0	28.0	28.5	30.0	29.0	29.5	29.0	29.0	29.0
20	29.5	24.5	27.0	28.0	27.5	28.0	30.0	29.5	29.5	29.0	28.5	28.5
21	29.0	27.5	28.0	27.5	27.5	27.5	30.0	29.5	30.0	27.0	24.5	25.5
22	27.5	24.5	26.0	27.5	27.0	27.5	30.0	29.5	30.0	25.5	24.5	25.0
23	24.5	23.0	24.0	27.5	27.0	27.5	30.0	29.0	29.5	25.5	25.0	25.0
24	26.0	24.5	25.0	27.5	27.5	27.5	29.0	28.0	28.5	25.5	24.5	24.5
25	26.0	25.5	26.0	29.0	27.5	28.0	28.5	28.0	28.5	24.5	23.5	24.0
26	26.5	26.0	26.0	29.0	28.0	28.5	28.5	28.0	28.5	23.5	23.0	23.5
27	26.5	26.0	26.5	---	---	---	29.0	28.0	28.5	25.0	23.5	24.0
28	26.5	26.0	26.5	---	---	---	28.5	28.0	28.5	---	---	---
29	28.0	26.5	27.0	---	---	---	28.5	28.0	28.5	24.5	23.5	24.0
30	28.5	27.5	28.0	27.5	26.0	27.5	29.0	28.5	28.5	24.5	23.5	24.0
31	---	---	---	27.5	27.0	27.5	29.0	28.5	28.5	---	---	---
MONTH	31.5	20.0	25.0	29.5	23.5	27.0	30.0	23.5	28.5	29.0	23.0	26.5
YEAR	31.5	1.5	17.5									

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX

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

DRAINAGE AREA.--937 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,351.78 ft above sea level. Prior to Jan. 2, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. There is one small diversion for irrigation upstream from station. Satellite telemeter at station.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 26	1730	5,120	18.01	Aug. 11	1230	2,000	14.51
May 9	1200	1,450	12.88	Sept. 24	0700	2,820	16.13
May 10	0930	1,920	14.29				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	18	42	20	18	37	17	129	29	e28	4.7	8.8
2	21	16	34	20	20	33	18	111	25	e28	4.4	8.1
3	20	15	28	19	16	31	21	90	21	e28	4.8	7.7
4	21	15	26	18	17	30	29	80	19	e28	4.8	15
5	22	15	24	20	18	27	31	66	18	e30	5.6	13
6	22	15	22	24	26	25	25	60	18	31	68	15
7	22	16	22	24	38	25	21	54	19	43	139	12
8	39	15	22	25	34	25	20	55	54	39	63	8.8
9	117	15	21	28	29	26	21	979	79	29	36	7.7
10	40	16	19	27	25	25	22	1340	44	26	58	9.2
11	22	14	18	26	24	24	276	291	31	74	1600	9.1
12	16	14	18	15	25	24	545	151	27	133	407	7.0
13	14	15	18	14	29	25	163	112	20	96	114	6.8
14	12	15	15	32	28	23	95	92	17	61	59	8.7
15	11	15	17	36	25	22	70	78	155	41	43	9.7
16	10	16	20	33	23	20	56	70	97	29	34	8.3
17	10	18	19	29	20	22	48	62	53	23	26	6.7
18	9.8	17	19	28	19	23	41	55	39	18	22	5.3
19	9.1	15	17	25	20	22	38	51	28	12	30	4.1
20	8.7	15	25	23	224	20	37	67	23	12	110	3.5
21	12	15	31	21	273	21	31	68	22	10	30	3.9
22	26	18	24	19	203	16	69	62	21	8.8	37	6.8
23	19	17	22	20	97	17	50	55	40	12	31	1400
24	13	27	24	18	66	17	48	49	32	8.5	22	1670
25	11	33	24	18	54	17	1230	47	28	6.1	19	217
26	11	29	24	18	51	16	4120	42	23	5.6	16	124
27	19	23	24	19	46	17	2070	37	21	6.5	14	91
28	35	22	21	22	41	16	548	34	28	5.5	14	73
29	54	38	22	22	---	16	266	31	28	7.4	11	63
30	31	52	21	21	---	16	170	30	e28	5.6	9.4	57
31	20	---	21	19	---	16	---	32	---	5.0	8.6	---
TOTAL	719.6	584	704	703	1509	694	10196	4480	1087	890.0	3045.3	3880.2
MEAN	23.2	19.5	22.7	22.7	53.9	22.4	340	145	36.2	28.7	98.2	129
MAX	117	52	42	36	273	37	4120	1340	155	133	1600	1670
MIN	8.7	14	15	14	16	16	17	30	17	5.0	4.4	3.5
AC-FT	1430	1160	1400	1390	2990	1380	20220	8890	2160	1770	6040	7700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

	MEAN	107	31.1	27.5	24.5	28.9	31.1	53.0	115	155	48.8	85.3	108
MAX	1170	76.2	120	68.5	149	102	340	771	737	317	1266	818	
(WY)	1984	1995	1992	1992	1992	1990	1997	1987	1995	1975	1966	1965	
MIN	3.90	10.4	11.8	8.23	6.16	5.49	7.61	16.4	11.9	.72	1.17	3.51	
(WY)	1964	1968	1964	1965	1965	1965	1964	1965	1970	1964	1964	1968	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1960 - 1997

ANNUAL TOTAL	8663.6	28492.1	
ANNUAL MEAN	23.7	78.1	67.6
HIGHEST ANNUAL MEAN			193
LOWEST ANNUAL MEAN			17.2
HIGHEST DAILY MEAN	246	4120	19400
LOWEST DAILY MEAN	6.5	3.5	.02
ANNUAL SEVEN-DAY MINIMUM	10	5.0	.13
INSTANTANEOUS PEAK FLOW		5120	28900
INSTANTANEOUS PEAK STAGE		18.01	21.96
ANNUAL RUNOFF (AC-FT)	17180	56510	49000
10 PERCENT EXCEEDS	33	91	67
50 PERCENT EXCEEDS	20	23	20
90 PERCENT EXCEEDS	13	9.8	7.5

e Estimated

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1954 to March 1959, July 1968 to December 1989, September 1990 to June 1992. Sediment analyses: April 1978 to December 1989. Chemical and biochemical analyses: September 1990 to current year. Pesticide analyses: September 1996 to October 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to December 1989, September 1990 to June 1992, October 1994 to current year.

WATER TEMPERATURE: July 1968 to December 1989, September 1990 to June 1992, October 1994 to current year.

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

INSTRUMENTATION.--From August 1968 to December 1989, September 1990 to June 1992, October 1994 to current year, specific conductance was recorded continuously at this station. From June 1982 to December 1989, September 1990 to June 1992, October 1994 to current year, water temperature was recorded continuously at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 35,800 microsiemens Oct. 9, 1982; minimum, 400 microsiemens June 7, 8, 1985.

WATER TEMPERATURE: Maximum, 39.0°C Aug. 21, 23, 1969, Aug. 22, 1973; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 18,700 microsiemens Jan. 14; minimum, 700 microsiemens, Apr. 26.

WATER TEMPERATURE: Maximum, 35.0°C on several days; minimum, 0.0°C on several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	
OCT 30...	1245	28	15100	8.1	16.0	9.6	106	2200	2100	630	140	
NOV 20...	0855	15	16500	8.0	12.0	9.6	100	2500	2400	730	170	
JAN 23...	1125	20	16300	8.2	10.0	10.6	104	2400	2300	710	160	
FEB 27...	1040	46	9100	8.3	6.5	12.2	107	1600	1400	440	110	
MAR 27...	0750	16	16400	7.9	13.5	9.2	98	2700	2600	770	186	
APR 24...	0920	54	12400	8.1	16.5	8.7	98	2000	1900	580	140	
MAY 06...	1635	59	10300	7.9	26.5	8.0	108	2200	2000	580	171	
22...	1003	60	10000	8.0	18.5	8.5	97	--	--	--	--	
JUN 12...	1015	32	10800	7.9	24.5	7.4	97	2300	2200	610	179	
JUL 30...	1525	6.0	15400	8.0	31.0	7.7	113	2700	2600	790	182	
AUG 13...	1605	104	2780	7.9	29.5	6.5	89	630	540	200	34	
SEP 07...	1310	13	16300	8.0	29.0	7.8	113	2500	2400	710	172	
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT 30...	2700	25	13	86	2100	4500	0.40	0.40	10100	7	--	--
NOV 20...	3000	26	14	92	2300	4900	0.40	0.10	11200	38	--	--
JAN 23...	2900	26	13	140	2300	4600	0.50	6.4	10800	2	1.06	--
FEB 27...	1400	15	9.6	110	1400	2400	0.30	6.7	5840	15	--	--
MAR 27...	3110	26	13	89	2500	5000	0.42	0.59	11700	10	--	--
APR 24...	1980	19	11	81	1900	3300	0.37	1.2	7990	116	0.752	--
MAY 06...	1590	15	13	150	1900	2600	0.30	6.9	7000	61	--	--
22...	--	--	--	150	--	--	--	--	--	--	--	--
JUN 12...	1740	16	14	110	2000	2800	0.38	1.8	7390	16	--	--
JUL 30...	2900	24	15	72	2400	4400	0.43	14	10700	3	--	--
AUG 13...	316	5	8.8	90	510	530	0.26	9.2	1650	210	0.253	--
SEP 07...	2770	24	14	77	2400	4600	0.43	1.6	10800	3	--	--

RED RIVER BASIN

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07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 30...	0.020	<0.050	0.310	0.0	0.20	<0.010	<0.010	<0.010	--	1	<1
NOV 20...	0.010	<0.050	0.340	--	<0.20	<0.010	<0.010	<0.010	--	<1	<1
JAN 23...	0.040	1.10	0.120	--	<0.20	0.020	<0.010	<0.010	--	<1	<1
FEB 27...	<0.010	0.330	0.060	0.44	0.50	<0.010	<0.010	<0.010	--	2	2
MAR 27...	<0.010	<0.050	0.120	0.28	0.40	<0.010	<0.010	<0.010	--	1	1
APR 24...	0.017	0.769	0.289	0.28	0.57	0.038	<0.010	<0.010	--	3	2
MAY 06...	<0.010	0.070	0.029	0.24	0.27	0.014	<0.010	<0.010	--	3	3
MAY 22...	<0.010	0.056	0.036	0.28	0.31	0.028	<0.010	<0.010	--	3	2
JUN 12...	<0.010	0.133	0.041	0.20	0.24	<0.010	<0.010	<0.010	--	2	2
JUL 30...	<0.010	<0.050	0.043	0.31	0.36	0.023	<0.010	0.012	0.04	2	2
AUG 13...	0.017	0.270	0.105	0.44	0.55	0.090	<0.010	0.011	0.03	5	4
SEP 07...	--	--	--	--	<0.20	<0.010	<0.010	--	--	1	2

DATE	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 30...	100	75	<1	<10	<2	<1.0	1	<100	210	<30	<2
NOV 20...	200	36	<1	<10	<1	<1.0	<1	<100	90	<30	<2
JAN 23...	<100	24	<1	<9.0	<1	<1.0	<1	<90	110	<27	<4
FEB 27...	100	110	<1	<5.0	<1	<1.0	1	<50	410	<15	<2
MAR 27...	<100	35	<4	<9.0	2	1.2	<4	<90	80	<27	<4
APR 24...	<100	78	<2	<8.0	4	<4.0	4	<80	1300	<24	<2
MAY 06...	100	99	<2	<6.0	3	<2.0	3	<60	690	21	<2
MAY 22...	200	72	<2	<6.0	18	<2.0	2	<60	560	<18	<2
JUN 12...	100	50	<4	<6.0	<4	<4.0	<4	<60	380	<18	<4
JUL 30...	300	60	<4	<8.0	<4	<4.0	<4	<80	100	<24	<4
AUG 13...	<100	124	<1	<3.0	12	<1.0	5	<30	3500	<9.0	1
SEP 07...	<100	63	<4	16	<4	<4.0	<4	<80	140	<24	<4

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
OCT 30...	<100	20	<10	<0.10	<0.1	100	<100	7	9	<2	<2.0
NOV 20...	<100	30	<10	<0.10	<0.1	100	<100	11	8	<2	<2.0
JAN 23...	160	30	<9.0	<0.10	<0.1	<100	<90	11	12	<4	<4.0
FEB 27...	<50	40	21	<0.10	<0.1	<100	<50	6	5	<2	<2.0
MAR 27...	<90	41	11	0.13	<0.1	<100	<90	6	6	<4	<4.0
APR 24...	<80	46	13	<0.10	<0.1	<100	<80	4	4	<2	<4.0
MAY 06...	119	58	25	<0.10	<0.1	<100	<60	6	6	<2	<2.0
MAY 22...	102	43	8.1	<0.10	<0.1	<100	<60	6	6	<2	<2.0
JUN 12...	<60	53	11	<0.10	<0.1	<100	<60	6	6	<4	<4.0
JUL 30...	119	36	<8.0	<0.10	<0.1	120	<80	4	4	<4	<4.0
AUG 13...	<30	100	5.3	<0.10	<0.1	<100	<30	2	2	<1	<1.0
SEP 07...	<80	38	9.3	<0.10	<0.1	<100	<80	4	5	<4	<4.0

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
OCT 30...	<10	<30	--	--	--	--	--	--	--	--
NOV 20...	<10	<30	--	--	--	--	--	--	--	--
JAN 23...	<10	52	--	--	--	--	--	--	--	--
FEB 27...	<10	<15	--	--	--	--	--	--	--	--
MAR 27...	<10	<27	--	--	--	--	--	--	--	--
APR 24...	<10	<24	--	--	--	--	--	--	--	--
MAY 06...	<10	<18	--	--	--	--	--	--	--	--
22...	<10	<18	--	--	--	--	--	--	--	--
JUN 12...	<10	<18	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUL 30...	<10	<24	--	--	--	--	--	--	--	--
AUG 13...	20	<9.0	--	--	--	--	--	--	--	--
SEP 07...	<10	27	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	719.6	14750	9830	19110	4000	7860	2200	4360	2400
NOV.	1996	584	15130	10090	15910	4200	6550	2300	3610	2500
DEC.	1996	704	15690	10500	19960	4400	8330	2300	4410	2500
JAN.	1997	703	17210	11570	21960	4900	9340	2500	4650	2600
FEB.	1997	1509	10510	6930	28220	2700	11020	1700	7090	1900
MAR.	1997	694	15020	10020	18770	4100	7730	2300	4260	2500
APR.	1997	10196	3040	1960	53970	690	18860	580	16070	640
MAY	1997	4480	5260	3400	41130	1200	14630	990	11960	1100
JUNE	1997	1087	10680	7020	20600	2700	7920	1800	5320	2000
JULY	1997	890	12510	8280	19890	3300	7900	2000	4840	2200
AUG.	1997	3045.3	4040	2610	21480	930	7620	760	6270	830
SEPT	1997	3880.2	5120	3310	34720	1200	12430	960	10010	1000
TOTAL		28492.1	**	**	315700	**	120200	**	82840	**
WTD. AVG.		78	6260	4100	**	1600	**	1100	**	1200

RED RIVER BASIN

91

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13600	12900	13400	16400	15900	16100	12600	11700	12200	17400	17000	17300
2	13500	12300	12600	16800	16200	16600	12600	12500	12600	17500	16900	17400
3	14900	13500	14300	16900	16000	16600	12500	11500	12000	17400	17100	17300
4	15500	14900	15200	16000	15100	15400	12400	11500	11900	17500	17300	17400
5	15800	15500	15600	16000	15000	15400	13000	12400	12800	17700	17400	17600
6	16100	15800	15900	16100	15200	15800	13400	13000	13200	17700	17400	17500
7	16200	15800	16100	15700	14700	14900	13800	13400	13600	17800	17600	17700
8	16100	14000	15700	14900	14800	14800	14000	12900	13800	17700	17200	17500
9	17300	14200	16000	15100	14800	15000	14300	13900	14200	17600	17000	17400
10	16200	14200	15500	15400	15100	15200	14600	14300	14500	17500	17100	17400
11	15900	10600	13600	15800	15400	15600	14800	14600	14700	17500	17300	17400
12	10600	7800	8750	16000	15600	15700	15200	14800	15000	18100	16600	17500
13	7800	7400	7550	16300	16000	16200	15500	15200	15400	18600	17400	18000
14	7740	7500	7590	16300	16200	16300	15900	15500	15700	18700	17700	18500
15	8480	7740	8060	16400	16200	16300	16600	15700	16200	18600	17100	18100
16	9680	8480	9030	16500	16200	16400	17100	16600	17000	18300	17100	17800
17	12000	9680	10700	16400	16200	16300	17200	17000	17100	17100	15300	16700
18	14400	12000	13300	16400	16200	16300	17600	15900	17300	16700	16100	16500
19	15700	14400	15100	16500	16400	16400	18100	17400	17800	16700	16200	16400
20	16300	15700	16000	16500	16400	16400	18400	17700	18100	16600	16200	16400
21	16400	16000	16300	16400	16200	16300	18200	17700	18000	16400	16000	16200
22	16400	13200	15700	16200	16100	16200	18200	16200	17800	16600	16300	16400
23	16100	14800	15800	16100	15800	16000	18100	15300	17700	16500	16200	16400
24	16400	15300	15700	15800	14500	14700	18200	17900	18100	16800	16500	16600
25	16700	16400	16600	15100	14700	15000	18200	17300	17900	16900	16400	16600
26	16800	16600	16700	14900	14600	14700	18100	16900	17900	17100	16700	16900
27	16900	16500	16800	14900	14400	14700	18300	17300	18000	17200	16500	16800
28	17500	16500	16700	14400	13300	14100	18000	17300	17900	17400	17100	17200
29	17500	12900	15300	13600	12300	12700	18000	17800	17900	17300	17000	17200
30	15100	13000	14600	12800	12000	12500	18100	17800	17900	17300	17000	17100
31	15900	15000	15600	---	---	---	17900	17400	17600	17300	17000	17100
MONTH	17500	7400	14100	16900	12000	15500	18400	11500	15900	18700	15300	17200

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	17400	16800	17100	11000	10100	10500	18400	18100	18300	7380	6440	6910
2	17200	17100	17100	11800	11000	11400	18200	17900	18100	8020	7380	7700
3	17300	16800	17100	12800	11800	12300	18100	17200	17800	8660	8020	8380
4	17300	16600	16800	13500	12800	13100	17400	16900	17200	9280	8660	9010
5	18000	17100	17500	14200	13500	13900	17100	16900	17000	9860	9230	9500
6	17200	16600	17000	14600	14200	14400	17300	16800	17000	10400	9860	10200
7	16600	16200	16300	14900	14600	14800	17200	17000	17100	10700	10400	10500
8	16200	15900	16000	15000	14800	15000	17100	17000	17100	10800	10300	10700
9	16100	16000	16000	15300	15000	15100	17300	17000	17100	10400	1780	3960
10	16200	16000	16100	15600	15300	15400	17400	16800	17000	7490	1370	2360
11	16300	16000	16200	15600	15300	15400	16900	2970	9300	3410	1930	2670
12	16400	16200	16300	15400	15300	15400	10400	1940	3700	4310	3410	3920
13	16400	16200	16300	15500	15200	15300	3780	2160	2880	5050	4310	4650
14	16400	16000	16200	15900	15500	15800	5040	3760	4360	5960	5050	5480
15	16600	16200	16300	16200	15600	15800	6220	4880	5320	7370	5960	6740
16	16800	16200	16300	15900	15800	15800	7720	6190	6870	8000	7370	7680
17	16300	16000	16100	16000	15600	15700	8960	7710	8370	9570	8000	8540
18	16300	16000	16100	16500	16000	16300	9730	8960	9350	9930	9520	9710
19	16200	15400	16000	16500	15600	16100	10500	9730	10100	10200	9780	10000
20	15400	4080	8810	16300	15800	16000	11500	10500	11000	10100	9010	9570
21	7940	4980	6390	16100	15800	15900	12100	11500	11900	9640	9010	9440
22	13500	5040	9980	16200	15900	16100	12100	5180	9420	10300	9640	10000
23	11200	5060	6830	16500	16200	16300	12800	7710	11600	---	---	10300
24	6220	5110	5550	16400	16000	16200	12600	9310	12200	---	---	e10500
25	7720	6220	7020	16500	16000	16200	10800	1780	3930	---	---	e10700
26	8930	7720	8330	16600	16100	16400	2770	700	1290	---	---	e11000
27	9560	8930	9280	16800	16300	16500	2510	735	1480	---	---	e11300
28	10100	9560	9840	17100	16700	17000	3640	2510	3150	---	---	e11500
29	---	---	---	17500	17100	17200	5280	3640	4490	---	---	11800
30	---	---	---	17900	17400	17700	6440	5280	5860	12000	11700	11900
31	---	---	---	18300	17900	18100	---	---	---	12100	12000	12000
MONTH	18000	4080	13700	18300	10100	15400	18400	700	10300	12100	1370	8670

e Estimated

RED RIVER BASIN

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12200	12000	12100	---	---	e14500	17200	16300	16800	13900	13600	13800
2	12400	12200	12300	---	---	e14400	17400	17200	17300	14200	13900	14000
3	12600	12400	12500	---	---	e14400	17600	17200	17400	15400	14200	14800
4	12800	12600	12700	---	---	e14400	17700	17400	17500	15600	14700	15400
5	13000	12800	12900	---	---	e14300	17600	16500	17200	15800	15100	15400
6	13200	13000	13100	14600	11200	13100	17000	2730	15100	16200	15800	16000
7	13400	13200	13300	15000	14300	14800	11800	2370	8770	16400	16100	16300
8	13500	7260	11500	15200	14300	14700	9360	7150	8320	16200	15200	15600
9	12200	7680	11200	15700	15200	15400	8760	6500	7480	16100	15600	15800
10	10900	9280	10000	15700	15000	15300	6500	1150	6100	16200	16000	16100
11	11200	10900	11000	15700	11000	14900	2660	1060	2030	16300	16000	16100
12	11300	10600	10900	11000	5840	8340	5080	1770	2520	16200	16000	16100
13	12100	11300	11800	9730	7150	8440	2970	2230	2610	16200	16000	16100
14	12700	12100	12400	11900	8940	10200	3640	2930	3250	16300	16100	16200
15	13500	5300	9590	13900	11900	13000	4940	3630	4180	16300	16100	16200
16	6880	5290	6180	13900	11100	12700	5470	4940	5250	16400	16200	16300
17	6780	6500	6690	---	---	e12900	6340	5440	5780	16400	16200	16300
18	6780	6480	6620	---	---	e13200	7430	6340	6860	16300	16100	16200
19	9830	6780	8230	---	---	e13500	8800	7430	8040	16300	16100	16200
20	11600	9830	10800	---	---	e13800	9850	2830	5260	16600	16200	16400
21	12600	11600	12100	---	---	e14000	8610	4490	6810	16700	16600	16600
22	13000	12600	12800	---	---	e14300	10200	8610	9580	16700	16000	16500
23	13000	8400	12300	---	---	e14600	10300	9170	9650	16100	1940	7240
24	12900	8250	11800	---	---	e14900	11000	9580	10300	2810	1510	2010
25	13600	12100	13100	---	---	e15300	11700	11000	11300	4410	2810	3480
26	13500	12700	13100	---	---	e15600	12500	11700	12100	5780	4410	5300
27	13600	13200	13400	---	---	e15900	13200	12500	12800	6580	5780	6150
28	13700	13000	13300	---	---	e15200	13700	13200	13400	7440	6570	7020
29	14600	12900	14000	---	---	e15300	13900	13700	13800	8050	7440	7760
30	---	---	14500	---	---	e15600	13800	13000	13200	8550	8020	8290
31	---	---	---	---	---	e16300	13900	13300	13700	---	---	---
MONTH	14600	5290	11500	15700	5840	14000	17700	1060	9820	16700	1510	13200
YEAR	18700	700	13300									

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	24.5	17.0	20.5	17.0	9.0	10.5	9.0	5.0	7.5	15.5	12.0	13.5
2	25.0	18.0	21.0	13.5	7.0	10.5	10.0	5.5	8.0	15.5	11.0	13.0
3	23.5	17.0	20.0	13.5	10.0	11.5	9.0	5.0	7.0	17.0	12.0	14.5
4	22.5	20.0	21.0	16.5	10.5	13.5	10.0	6.0	7.5	16.0	12.5	14.5
5	24.0	19.0	21.5	17.5	11.0	14.5	9.0	5.0	7.5	12.5	7.0	9.5
6	24.0	19.5	21.5	17.5	14.0	16.0	11.5	7.0	9.0	7.0	4.5	6.0
7	25.0	19.0	22.0	17.5	10.5	13.0	11.0	7.0	9.0	6.0	3.5	4.5
8	24.0	19.5	21.5	15.5	9.0	11.0	10.5	5.5	8.0	5.0	3.0	4.0
9	24.0	19.0	21.5	14.0	7.5	11.0	13.0	8.0	10.0	6.0	.5	3.5
10	23.0	17.5	20.0	14.0	9.0	11.5	14.5	10.0	12.5	5.5	3.0	4.0
11	23.5	17.0	20.5	15.0	9.5	12.5	14.5	10.5	12.5	3.0	.0	1.0
12	25.0	18.5	21.5	13.5	11.5	12.5	14.0	10.0	12.0	.0	.0	.0
13	25.0	18.5	21.5	14.5	11.0	12.5	13.0	8.0	10.5	.0	.0	.0
14	24.5	18.5	21.5	15.5	12.0	14.0	14.5	9.5	11.5	.0	.0	.0
15	24.0	18.0	21.0	16.5	14.5	15.5	11.0	4.5	7.5	1.5	.0	.5
16	25.5	19.5	22.0	19.0	15.0	17.0	6.0	1.0	3.5	2.0	.0	.5
17	22.5	16.5	19.5	15.0	10.5	12.0	4.5	1.0	3.0	3.5	.0	1.0
18	19.0	12.5	15.5	14.5	9.0	11.5	1.0	.0	.0	5.0	.0	2.0
19	18.5	12.5	15.5	16.0	10.5	13.5	1.0	.0	.0	8.0	2.0	5.0
20	22.5	15.0	18.5	16.5	12.0	14.0	1.5	.0	.0	10.0	4.0	7.0
21	19.5	12.0	16.5	14.5	10.0	12.0	5.0	.0	2.5	13.0	8.5	10.5
22	15.0	9.5	12.0	11.0	9.5	10.0	9.5	3.5	6.5	12.0	7.0	10.0
23	16.0	9.0	12.5	15.5	10.5	12.5	9.0	5.0	8.0	12.0	9.0	10.5
24	18.0	11.0	14.5	12.5	4.0	7.0	5.0	1.5	3.5	12.0	7.5	9.5
25	20.0	14.0	17.0	6.0	1.5	3.5	4.5	1.0	3.0	10.0	5.5	8.0
26	19.5	14.5	17.5	6.5	2.0	4.0	5.5	2.5	4.0	11.0	7.5	9.5
27	19.5	13.5	17.0	6.0	2.5	4.5	7.0	.0	3.5	11.0	3.5	8.0
28	14.5	13.0	13.5	7.0	5.5	6.5	10.5	6.0	8.0	5.5	.0	2.5
29	17.0	14.0	15.5	10.5	6.0	8.0	10.0	5.5	7.5	5.5	.0	2.5
30	17.5	11.5	14.5	11.5	8.0	9.5	10.5	5.0	8.0	9.0	1.0	5.0
31	17.0	11.0	13.5	---	---	---	12.5	7.5	10.0	13.5	5.0	9.0
MONTH	25.5	9.0	18.5	19.0	1.5	11.0	14.5	.0	7.0	17.0	.0	6.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	14.0	7.0	10.5	15.5	9.0	12.0	15.5	13.5	14.0	22.5	17.5	19.5
2	14.0	9.0	11.5	12.5	9.0	10.5	22.0	15.0	18.0	22.5	18.5	20.5
3	15.0	9.5	12.0	16.0	7.0	11.5	19.0	17.0	18.0	22.5	16.0	19.0
4	13.5	9.0	11.0	18.0	11.0	14.0	21.0	17.0	18.5	23.0	17.0	20.0
5	10.0	6.5	8.0	15.0	8.5	12.0	20.5	12.5	17.0	25.5	17.5	21.5
6	8.0	7.0	7.5	15.0	7.5	11.5	21.0	12.5	16.5	26.5	20.0	23.0
7	7.5	6.0	6.5	17.5	10.0	13.5	19.0	12.5	16.0	26.0	21.5	23.5
8	6.0	4.0	5.0	15.5	13.5	14.5	16.5	10.5	14.5	25.5	21.5	23.5
9	5.5	4.0	4.5	18.0	14.5	16.0	10.5	8.0	8.5	23.0	16.0	18.5
10	9.5	1.5	5.5	19.5	11.0	15.0	15.5	9.0	12.0	20.0	16.0	18.0
11	8.0	4.5	6.5	20.5	13.0	17.0	15.5	7.0	9.5	23.0	18.0	20.5
12	8.0	3.0	5.5	19.0	16.0	17.5	9.0	5.5	7.5	22.0	19.0	20.5
13	4.5	3.0	4.0	22.5	16.0	18.5	13.5	7.0	9.5	24.5	17.5	21.0
14	11.0	4.0	7.0	16.5	9.5	12.0	17.5	8.0	12.5	23.0	20.0	21.5
15	12.0	4.5	8.5	15.0	7.0	11.0	20.5	11.0	15.5	23.0	19.0	21.0
16	14.0	6.5	10.0	13.0	10.5	12.0	20.5	14.0	17.0	26.5	19.5	23.0
17	15.0	9.0	12.0	21.5	12.5	16.5	24.0	15.5	19.5	28.5	21.5	25.0
18	17.0	10.5	13.5	18.5	14.5	16.5	21.0	17.0	18.5	28.5	22.0	25.0
19	15.0	13.5	14.0	19.0	10.5	14.5	25.0	15.0	19.5	25.5	18.5	21.5
20	14.0	12.5	13.5	21.5	11.5	16.5	27.0	18.0	22.0	22.5	17.5	19.5
21	13.0	9.5	11.0	23.5	14.0	18.5	25.5	19.0	22.5	21.5	18.5	20.0
22	12.0	8.0	9.5	20.5	13.0	17.0	23.5	16.0	20.0	21.5	18.0	19.5
23	13.0	8.0	10.5	21.0	12.5	16.5	24.5	16.5	20.5	24.5	19.5	22.0
24	11.0	8.0	9.5	21.5	15.0	18.5	21.0	12.5	16.5	28.5	21.0	24.5
25	8.0	5.5	6.5	19.0	12.5	16.0	12.5	10.0	10.5	30.0	23.0	26.5
26	8.0	5.0	6.5	18.0	10.0	14.0	10.0	9.5	10.0	29.0	23.0	26.0
27	9.5	4.5	7.0	20.5	13.0	16.5	13.5	10.0	11.0	29.0	23.0	25.5
28	12.0	7.0	9.5	22.0	12.5	17.0	17.0	12.0	14.0	27.5	20.0	24.0
29	---	---	---	22.5	13.5	17.5	20.5	15.5	18.0	27.0	20.0	23.0
30	---	---	---	19.5	12.0	15.5	22.0	18.0	20.0	24.5	22.5	23.5
31	---	---	---	16.5	11.0	14.5	---	---	---	28.0	20.0	23.5
MONTH	17.0	1.5	9.0	23.5	7.0	15.0	27.0	5.5	15.5	30.0	16.0	22.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	30.0	21.5	25.5	34.0	26.0	29.5	34.5	25.5	30.0	32.0	25.5	28.5
2	28.5	23.5	26.0	35.0	26.5	30.5	34.5	26.5	30.5	32.5	25.5	29.0
3	29.0	22.5	25.5	35.0	27.0	31.0	34.0	26.5	30.0	30.0	26.0	28.0
4	30.0	23.0	26.0	31.5	24.5	28.0	31.0	27.0	29.0	26.5	23.0	24.5
5	29.0	22.5	25.5	27.5	21.5	24.5	31.5	26.5	28.5	29.5	23.0	25.5
6	26.5	23.0	24.5	30.5	22.5	26.0	30.5	24.5	27.0	31.0	24.5	27.5
7	27.0	22.5	24.5	31.5	26.0	28.5	25.5	22.0	23.0	31.5	24.5	28.0
8	25.0	20.0	22.5	33.5	26.5	30.0	26.5	21.5	23.5	32.0	25.0	28.5
9	27.0	20.0	23.0	33.5	27.0	30.0	31.5	23.0	27.0	29.5	25.0	27.0
10	28.0	22.5	25.5	32.5	27.0	29.0	33.5	22.0	29.0	27.5	23.0	25.0
11	30.5	23.5	26.5	31.5	25.5	28.5	26.5	22.0	24.0	28.0	21.5	24.5
12	32.0	23.5	27.5	32.0	26.5	29.0	28.0	25.0	26.5	29.0	23.0	25.5
13	32.5	25.0	28.5	34.0	27.5	30.5	30.5	26.0	28.0	30.5	23.5	27.0
14	32.0	26.0	28.5	35.0	27.0	31.0	32.0	26.5	29.0	29.5	25.0	26.5
15	28.5	24.5	26.5	35.0	28.0	31.5	32.0	26.0	29.0	31.0	24.0	27.5
16	32.0	25.5	28.0	35.0	27.5	31.0	32.0	26.0	29.0	30.0	24.5	27.5
17	31.0	23.5	27.0	34.5	27.0	30.5	33.5	26.5	29.5	31.0	24.5	27.5
18	32.5	24.5	28.5	33.5	26.5	29.5	32.5	26.5	29.5	31.0	25.0	27.5
19	33.0	26.0	29.5	34.0	26.0	29.5	33.5	27.0	30.0	30.5	24.0	27.0
20	33.5	26.0	29.5	33.5	26.5	29.5	30.0	23.5	27.5	28.0	22.0	25.5
21	32.5	26.0	28.5	33.5	27.5	30.0	33.0	26.0	29.5	25.0	19.0	22.0
22	27.0	24.0	25.0	32.5	26.5	29.0	32.5	26.5	29.5	24.0	22.0	23.0
23	27.5	22.5	24.5	33.5	26.0	29.5	30.0	26.0	27.5	23.0	21.5	22.5
24	31.0	23.5	27.0	33.0	26.5	29.5	31.5	24.5	28.0	21.5	20.0	21.0
25	31.5	24.5	28.0	33.5	26.0	29.5	32.0	25.0	28.0	23.5	19.5	21.5
26	32.5	26.0	29.0	33.5	26.5	30.0	31.5	25.0	28.0	24.5	20.0	22.0
27	30.5	26.0	28.5	34.5	26.5	30.5	31.5	25.0	28.0	25.5	20.5	23.0
28	33.5	26.0	29.5	34.0	27.0	30.0	31.5	24.5	27.5	24.5	21.5	23.0
29	34.0	27.0	30.5	34.5	24.0	29.5	32.0	25.0	28.0	24.5	19.5	22.0
30	34.5	27.0	30.0	31.5	27.0	29.0	32.5	25.5	28.5	27.0	21.5	24.0
31	---	---	---	33.0	25.0	29.0	32.0	25.5	28.5	---	---	---
MONTH	34.5	20.0	27.0	35.0	21.5	29.5	34.5	21.5	28.0	32.5	19.0	25.5

YEAR	35.0	.0	18.0									
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RED RIVER BASIN

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX

LOCATION.--Lat 33°37'19", long 100°12'31", King County, Hydrologic Unit 11130205, on right bank 1.0 mi downstream from ranch road crossing, 2.9 mi upstream from Willow Creek, 6.6 mi east of Guthrie, and 91.5 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--223 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1985, May 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Discharge represents flow diverted by pumping from South Wichita River at Low Flow Dam near Guthrie (station 07311782) via pipeline to Truscott Brine Lake near Truscott. Flow is determined from digital recorder monitoring flowmeter in pipeline. Satellite telemeter at station.

COOPERATION.--Flow data furnished by the U.S. Army Corps of Engineers, Tulsa District.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	14	11	8.0	6.2	.00	6.9	9.8	9.8	9.3	7.2	6.6
2	2.1	14	11	8.0	3.5	.00	6.9	11	7.0	6.5	7.2	6.6
3	6.3	9.3	9.5	8.0	2.0	.00	5.5	11	8.5	7.9	7.2	6.6
4	4.6	8.5	7.5	8.0	5.2	3.2	8.4	11	12	9.4	6.6	6.6
5	8.1	7.6	6.7	8.0	6.8	5.1	11	9.8	7.3	6.1	6.0	6.7
6	8.1	11	9.3	8.0	6.8	5.8	11	9.5	7.3	9.6	6.1	6.6
7	4.2	9.9	8.0	8.0	6.7	6.8	5.9	11	11	11	.09	6.6
8	5.9	7.7	6.3	8.0	6.8	6.8	6.9	8.6	7.7	9.9	.00	6.6
9	5.3	11	7.1	8.0	6.8	6.8	6.2	3.4	7.7	9.5	.00	2.9
10	.00	7.4	7.9	6.6	1.0	5.8	4.9	11	11	5.5	.00	.00
11	.00	3.4	11	9.4	2.2	6.4	4.4	.00	8.8	2.2	2.4	.00
12	.00	11	8.9	6.7	.00	6.4	7.0	2.1	5.7	7.0	5.4	.00
13	.00	10	8.6	6.6	.00	6.6	6.9	6.3	3.5	7.0	3.8	.00
14	.00	11	10	6.2	.00	4.8	6.9	8.2	.00	7.1	5.4	.00
15	.11	7.9	6.8	6.0	.00	6.8	6.9	12	.00	3.0	5.4	.00
16	3.8	7.0	6.8	5.2	.00	6.8	9.3	11	3.8	.00	5.4	.47
17	8.9	7.1	5.8	8.8	.00	6.8	11	12	9.1	.00	4.8	3.4
18	8.9	8.2	6.8	10	2.0	6.8	9.4	12	12	.00	4.8	6.6
19	8.9	8.9	5.6	6.7	6.8	6.8	6.7	11	8.9	.00	7.7	6.6
20	8.9	6.6	9.1	6.6	2.2	6.8	6.7	11	9.5	.00	4.0	6.6
21	5.7	6.6	11	6.5	2.9	6.8	6.7	12	7.1	3.1	4.2	6.6
22	4.1	11	11	6.4	6.8	6.7	7.1	12	7.3	3.9	7.9	4.2
23	6.9	11	8.2	7.9	6.8	6.7	6.8	12	11	4.7	11	.52
24	7.0	11	6.6	10	9.4	6.8	7.1	12	11	10	11	.00
25	14	8.1	6.3	6.3	8.2	5.4	3.0	9.1	11	12	8.2	.00
26	14	9.3	7.7	8.4	9.5	7.8	.00	7.0	11	11	6.0	.00
27	8.9	7.3	9.2	2.8	11	11	.00	6.3	11	7.2	7.1	.00
28	8.9	6.4	6.3	4.0	1.8	9.7	.78	12	6.6	7.2	7.1	.00
29	7.9	9.2	7.4	11	---	6.5	1.9	8.4	6.6	7.2	7.1	.00
30	8.9	11	7.4	7.3	---	6.9	6.8	12	11	7.2	8.3	.00
31	5.8	---	7.4	6.5	---	6.9	---	12	---	7.2	6.6	---
TOTAL	176.21	272.4	252.2	227.9	121.40	186.50	188.98	296.50	244.20	191.70	173.99	90.79
MEAN	5.68	9.08	8.14	7.35	4.34	6.02	6.30	9.56	8.14	6.18	5.61	3.03
MAX	14	14	11	11	11	11	11	12	12	12	11	6.7
MIN	.00	3.4	5.6	2.8	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	350	540	500	452	241	370	375	588	484	380	345	180

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1984 to current year. Pesticide analyses: September 1996 to October 1997.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1984 to current year. October 1986 to April 1987 published under station 07311783.

WATER TEMPERATURE: October 1984 to current year. October 1986 to April 1987 published under station 07311783.

INSTRUMENTATION.--Since October 1984, a two-parameter water-quality monitor continuously records specific conductance and water temperature at this station.**REMARKS.**--Interruptions in the record are due to malfunction of the instrument or when the pumps were not running. Where maximum and minimum specific conductance values are not shown, mean values are sometimes estimated. Temperature and specific conductance values for days of zero flow through the pipeline are published if water is present behind the low flow dam. 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 U.S. Geological Survey District Office upon request. Samples for chemical analyses are collected a half a mile upstream from the collection pool.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum, 44,600 microsiemens July 7 and Aug. 4, 1996; minimum, 200 microsiemens July 3, 1986.

WATER TEMPERATURE: Maximum, 36.0°C July 5, 11-13, 21, 1996; minimum, 0.0°C Dec. 23, 1989, Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 44,300 microsiemens Apr. 24; minimum, 7,940 microsiemens July 11.

WATER TEMPERATURE: Maximum, 32.5°C July 2 and 29; minimum 1.5°C Dec. 19.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
DATE	TIME										
NOV 05...	1530	9.2	31800	7.9	16.5	12.0	146	3500	3400	1000	240
DEC 04...	0930	6.3	31100	8.0	10.0	10.6	111	3500	3400	1000	250
JAN 30...	1600	4.6	34100	7.8	12.0	12.8	141	3800	3700	1100	260
MAR 13...	0900	6.8	31900	7.4	17.5	10.2	127	3600	3500	1100	242
APR 02...	0840	6.9	36000	7.7	16.0	9.0	110	3800	3700	1100	256
MAY 01...	1345	12	18600	8.2	21.0	11.9	152	2300	2100	630	167
14...	1335	6.4	24700	7.8	22.5	9.9	130	2500	2400	720	182
JUN 04...	0930	12	33700	7.4	24.0	7.8	110	3500	3400	990	259
25...	1003	11	31000	7.6	24.5	6.5	92	3300	3200	930	241
AUG 07...	1025	--	34900	7.3	24.0	3.6	51	3400	3300	940	251
SEP 04...	1100	6.6	37700	7.3	24.5	3.9	56	3700	3600	1000	268
08...	1020	6.6	39400	7.3	24.0	5.6	81	3700	3600	1000	269
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEB (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
NOV 05...	6600	49	28	130	2800	11000	0.50	8.0	21800	6	0.060
DEC 04...	6800	50	29	140	2800	11000	0.50	8.6	22000	10	0.070
JAN 30...	7600	54	30	130	3000	12000	0.60	8.3	24100	<1	0.060
MAR 13...	6670	48	29	120	2600	11000	0.51	4.9	21600	6	0.040
APR 02...	7610	54	31	120	2600	12000	0.51	6.1	23200	41	--
MAY 01...	3510	32	19	120	1800	5800	0.35	7.1	12100	20	--
14...	4930	43	22	120	2100	8500	0.46	4.8	16600	26	--
JUN 04...	6990	51	30	110	2200	9900	0.47	5.9	20500	2	--
25...	6310	48	28	120	1900	7900	0.46	7.2	17400	3	--
AUG 07...	7250	54	31	120	2700	12000	0.42	38	23600	1	0.060
SEP 04...	8220	59	34	110	3000	14000	0.51	8.6	26500	13	0.061
08...	8230	59	33	100	3000	14000	0.48	6.4	26500	4	--

RED RIVER BASIN

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
NOV 05...	0.050	0.110	0.350	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
DEC 04...	0.050	0.120	0.370	--	<0.20	0.090	<0.010	<0.010	1	<1	<100
JAN 30...	0.040	0.100	0.360	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100
MAR 13...	0.020	0.060	0.240	--	<0.20	<0.010	<0.010	<0.010	<1	<1	200
APR 02...	0.010	<0.050	0.250	0.0	0.20	<0.010	<0.010	<0.010	<1	<1	<100
MAY 01...	<0.010	<0.050	0.045	0.17	0.21	<0.010	<0.010	<0.010	2	1	100
MAY 14...	0.012	<0.050	0.109	0.15	0.26	<0.010	<0.010	<0.010	1	1	<100
JUN 04...	0.012	<0.050	0.136	0.12	0.26	<0.010	<0.010	<0.010	<1	<1	<100
JUN 25...	<0.010	<0.050	0.098	0.30	0.39	<0.010	<0.010	<0.010	<1	<1	100
AUG 07...	0.029	0.089	0.183	--	<0.20	<0.010	<0.010	<0.010	<1	1	300
SEP 04...	0.027	0.088	0.134	0.09	0.23	<0.010	<0.010	<0.010	<1	<1	<100
SEP 08...	--	--	--	--	<0.20	0.020	<0.010	--	1	<1	<100

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 05...	38	<2	<20	<4	<4.0	<1	<200	130	<60	<10	<200
DEC 04...	29	<4	36	<1	<1.0	<1	<200	130	<60	<4	240
JAN 30...	23	<4	<20	<1	<1.0	<1	<200	150	<60	<10	<200
MAR 13...	29	<4	<20	<1	<1.0	<1	<200	100	<60	<10	<200
APR 02...	27	<10	<20	<10	<10	<10	<200	120	<60	<10	<200
MAY 01...	54	<4	<10	4	<4.0	<4	<100	100	<30	<4	<100
MAY 14...	46	<5	<15	<5	<5.0	2	<150	120	<45	<5	<150
JUN 04...	32	<10	<20	<10	<10	<10	<200	110	<60	<10	<200
JUN 25...	36	<10	<15	<10	<10	<10	<150	90	<45	<10	<150
AUG 07...	29	<10	<20	<10	<10	<10	<200	90	<60	<10	232
SEP 04...	31	<10	24	<10	<10	<10	<200	90	<60	<10	<200
SEP 08...	32	<10	<20	<10	<10	<10	<200	80	<60	<10	<200

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV 05...	70	32	<0.10	<0.1	200	<200	1	2	<2	<1.0
DEC 04...	80	45	0.10	<0.1	200	<200	2	2	<4	<4.0
JAN 30...	100	50	<0.10	<0.1	200	<200	1	1	<4	<5.0
MAR 13...	110	92	<0.10	<0.1	200	<200	1	1	<2	<2.0
APR 02...	100	75	<0.10	<0.1	170	<200	1	1	<10	<10
MAY 01...	130	159	<0.10	0.1	<100	<100	1	1	<4	<5.0
MAY 14...	83	82	<0.10	<0.1	150	<150	1	1	<5	<5.0
JUN 04...	98	69	<0.10	<0.1	220	<200	2	2	<10	<10
JUN 25...	72	46	<0.10	<0.1	160	<150	2	2	<10	<10
AUG 07...	93	62	<0.10	<0.1	190	<200	1	2	<10	<10
SEP 04...	100	53	<0.10	0.5	160	<200	1	1	<10	<10
SEP 08...	91	40	<0.10	<0.1	160	<200	1	1	<10	<10

RED RIVER BASIN

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07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 05...	<10	<60	--	--	--	--	--	--	--	--
DEC 04...	<10	<60	--	--	--	--	--	--	--	--
JAN 30...	<10	95	--	--	--	--	--	--	--	--
MAR 13...	<10	70	--	--	--	--	--	--	--	--
APR 02...	<10	<60	--	--	--	--	--	--	--	--
MAY 01...	<10	<30	--	--	--	--	--	--	--	--
14...	<10	<45	--	--	--	--	--	--	--	--
JUN 04...	<10	<60	--	--	--	--	--	--	--	--
25...	<10	<45	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG 07...	<10	<60	--	--	--	--	--	--	--	--
SEP 04...	<10	<60	--	--	--	--	--	--	--	--
08...	<10	109	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	176.21	30550	20030	9530	9900	4710	2700	1300	3200
NOV. 1996	272.4	33680	22190	16320	11100	8160	2900	2120	3500
DEC. 1996	252.2	34520	22790	15520	11400	7790	2900	1990	3500
JAN. 1997	227.9	37180	24650	15170	12500	7690	3000	1860	3700
FEB. 1997	121.4	30620	20140	6600	10000	3290	2700	874	3200
MAR. 1997	186.5	36150	23920	12050	12100	6080	3000	1500	3600
APR. 1997	188.98	38560	25670	13100	13100	6700	3000	1540	3700
MAY 1997	296.5	27530	17970	14380	8800	7040	2500	2040	3000
JUNE 1997	244.2	25490	16580	10930	8000	5300	2400	1600	2800
JULY 1997	191.7	25380	16560	8570	8100	4190	2400	1220	2800
AUG. 1997	173.99	33750	22250	10450	11100	5230	2900	1350	3500
SEPT 1997	90.79	37170	24640	6040	12500	3060	3000	742	3700
TOTAL	2422.77	**	**	138700	**	69230	**	18140	**
WTD.AVG.	6.6	32190	21200	**	10600	**	2800	**	3300

RED RIVER BASIN

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	28800	28300	28600	32600	32200	32400	34400	33500	33800	---	---	e36300
2	28700	28400	28600	32700	32300	32500	33800	33400	33600	---	---	e36400
3	28600	28300	28400	32900	32500	32600	34000	33300	33700	---	---	e36400
4	28700	28300	28500	33100	32300	32700	34000	33600	33800	---	---	e36800
5	28600	28300	28400	33200	32500	32800	34100	33800	34000	---	---	e36900
6	28700	28200	28500	33100	32600	32900	34000	33500	33700	---	---	e37700
7	28700	28200	28500	33200	32800	33000	34200	33700	34000	---	---	e39400
8	29000	28600	28700	33700	33000	33300	34400	33800	34100	---	---	e37600
9	29200	28700	29000	33300	32800	33200	34400	33500	33900	---	---	35900
10	29400	29100	29200	33600	33100	33300	34000	33500	33700	36000	35700	35900
11	29600	29100	29300	34000	33400	33700	33600	33400	33500	36100	35800	36000
12	29600	29000	29400	33900	33500	33700	34200	33500	33700	36800	36000	36500
13	29800	29400	29600	34100	33500	33700	34300	33600	33800	37000	36700	36800
14	29900	29500	29800	34000	33500	33700	34600	33800	34100	37900	37000	37500
15	30100	29700	29900	34000	33700	33800	35400	34600	35100	37900	36000	37300
16	30200	29500	29900	35100	33700	34100	35500	34900	35200	37500	36500	36900
17	31200	29900	30300	35100	34500	34800	35800	35000	35300	36900	36700	36800
18	31200	30300	30500	34700	33900	34300	35800	35000	35200	37100	36400	36900
19	30900	30300	30500	34400	34100	34200	35800	34800	35200	36700	35900	36400
20	30800	30200	30600	34500	33900	34200	35300	34100	34700	36800	36000	36400
21	31800	30700	31200	34700	34300	34500	34300	33900	34100	37000	36400	36800
22	31900	31100	31500	34400	34100	34300	34800	34000	34400	37000	36800	36900
23	31500	30900	31300	34400	34000	34200	35500	34800	35100	37000	36800	36900
24	31800	31000	31400	34900	34200	34700	---	---	35600	38000	36800	37500
25	31700	30800	31200	35000	34100	34600	---	---	e35600	38100	37200	37600
26	31700	31000	31300	35100	33800	34300	---	---	35600	37700	37500	37600
27	32000	31300	31700	34300	33900	34100	35800	35100	35500	38200	37400	37800
28	31900	31700	31800	34100	33900	34000	35600	35300	35500	39000	38200	38500
29	32200	31700	31900	34900	34100	34200	---	---	35700	39300	38900	39000
30	32300	31900	32100	34800	34000	34300	---	---	e36000	39200	38500	39000
31	32600	32200	32400	---	---	---	---	---	e36000	39000	38100	38600
MONTH	32600	28200	30100	35100	32200	33700	35800	33300	34600	39300	35700	37200

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	38700	37800	38300	30900	30100	30500	43800	38100	41000	21000	18100	19700
2	38500	37900	38200	32000	30800	31600	43800	42200	43100	23000	21000	21800
3	---	---	38400	32900	32000	32500	42700	42300	42500	26000	23000	24300
4	---	---	e38000	33200	32500	32900	42500	41900	42200	27200	26000	26500
5	---	---	e37900	34300	33100	33700	43100	41900	42500	27900	27200	27700
6	---	---	e37400	34400	33600	34000	43000	40400	42200	29500	27800	28400
7	---	---	e36900	35100	34200	34700	42300	41100	41800	30300	29400	29800
8	---	---	e36800	34700	34100	34400	43700	41300	42300	30800	30100	30600
9	---	---	e36000	35200	34500	34800	44000	43500	43800	31500	30100	30900
10	---	---	e35400	35700	35100	35400	44000	43100	43500	---	---	22900
11	---	---	35100	35800	35000	35400	43800	41300	42400	---	---	e21000
12	---	---	35800	35600	35100	35300	43100	40000	41500	---	---	19600
13	---	---	35700	35700	35000	35400	40300	32700	35700	22800	20400	21500
14	---	---	36000	---	---	35100	32700	30400	31500	24600	22700	23400
15	---	---	35600	36700	35000	35700	31500	29000	29900	26100	24600	25100
16	---	---	35200	37800	36300	37100	33600	29800	31500	28000	26100	27400
17	---	---	35200	36800	36300	36600	38600	33600	36500	28800	28000	28400
18	---	---	35300	37000	36200	36700	39700	37500	38500	29700	28700	29300
19	35600	35100	35400	37200	35700	36500	40400	39600	39900	30800	29500	30400
20	---	---	30900	36500	35300	35900	41700	38900	40300	31800	30500	31300
21	---	---	16200	36200	35200	35700	41100	39800	40600	32000	30700	31500
22	18700	15900	17200	36900	35500	36200	42200	40400	41200	31200	29400	30600
23	20000	18700	19500	37300	35900	36600	42600	41400	42200	30400	29400	29900
24	22000	19400	20700	36800	35900	36300	44300	42600	43500	29400	27000	28700
25	27100	21300	24200	37800	36800	37300	---	---	37000	29300	27300	28600
26	28700	25500	27200	37400	37100	37300	---	---	e25000	29800	28700	29300
27	30700	28600	29400	38100	36600	37200	---	---	e18000	31300	29200	30500
28	30700	29600	30300	38500	36700	37900	---	---	12100	32900	25900	31700
29	---	---	---	38300	36700	37500	15800	12100	13800	26200	25900	26100
30	---	---	---	38000	36600	37400	18100	15800	17000	26600	26100	26300
31	---	---	---	39300	37700	38600	---	---	---	26800	26200	26500
MONTH	38700	15900	32400	39300	30100	35600	44300	12100	36100	32900	18100	27100

e Estimated

RED RIVER BASIN

99

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	26300	25600	26000	28400	27800	28100	33800	33400	33600	36400	35900	36100
2	26400	25700	25900	28900	28200	28600	34300	33400	33800	36400	36000	36200
3	26900	26400	26700	29400	28500	29000	34200	33700	34000	36800	36100	36500
4	27200	26700	27000	30100	29300	29700	34300	34000	34200	37100	36700	36900
5	27500	27000	27200	30800	29400	30000	34400	33900	34200	37500	36900	37100
6	27900	27500	27700	30500	20500	28000	34600	34300	34400	37600	37000	37200
7	27900	27700	27800	20500	13800	17300	34900	34200	34600	37500	36700	37200
8	27900	25500	27200	15500	12000	12700	35200	34500	34900	37100	36600	36800
9	26800	24000	25900	16700	12700	14500	34900	33800	34400	37100	36700	37000
10	24000	16500	19100	22800	16700	18500	34000	32900	33600	37600	37000	37300
11	20500	17800	19600	23900	7940	10500	33400	33100	33300	38400	37600	38100
12	23000	19600	21200	13200	8030	10000	33700	33300	33500	38800	38400	38600
13	23100	21300	21900	15000	13200	14200	---	---	33300	38800	38400	38700
14	22600	21600	22100	18700	15000	16700	---	---	e33600	38900	38700	38700
15	24000	22100	23100	21000	18700	19700	---	---	e33800	38800	38500	38700
16	24800	24000	24500	22500	21000	22100	---	---	e34000	38800	37700	38400
17	24600	22500	23000	23600	21800	22900	---	---	e34000	38900	37500	38000
18	24300	23100	23900	25900	23400	24600	---	---	34200	37900	37200	37500
19	24700	24000	24100	27200	25700	26400	34900	23700	27400	38400	37300	37800
20	25700	24700	25100	28500	26900	27700	31900	24300	28100	38000	37700	37800
21	26200	25700	25900	29300	28200	28800	32500	29400	31600	38200	37900	38100
22	26700	26100	26500	30200	29000	29600	33300	30300	32000	38200	36100	37800
23	27800	26700	27400	30400	29900	30200	34200	33300	33900	37500	37100	37300
24	28000	27100	27600	30700	30400	30600	34700	34100	34400	37300	37000	37200
25	27100	25400	25900	31200	30700	31000	34600	34000	34300	37300	37100	37200
26	26200	25600	25800	31500	31100	31300	34900	34300	34600	37400	37100	37300
27	26600	26100	26300	31500	30900	31300	35100	34500	34800	37600	37300	37400
28	27000	26400	26700	31900	31300	31600	35700	35000	35400	37500	37300	37400
29	27400	26900	27100	32600	31900	32300	35800	35400	35600	37400	36800	37100
30	28100	27400	27700	33100	32600	32900	36100	35500	35800	37000	36700	36800
31	---	---	---	33600	33100	33400	36400	35800	36100	---	---	---
MONTH	28100	16500	25200	33600	7940	25000	36400	23700	33700	38900	35900	37500
YEAR	44300	7940	32300									
e Estimated												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

RED RIVER BASIN

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07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX

LOCATION.--Lat 33°37'19", long 100°12'31", King County, Hydrologic Unit 11130205, on right bank 1.1 mi downstream from ranch road crossing, 2.8 mi upstream from Willow Creek, 6.6 mi east of Guthrie, and 91.4 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--223 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to September 1985, May 1987 to current year (discharge to 07311669 Truscott Brine Lake near Truscott).

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Diversions from station 07311782 via pipeline to station 07311669 began in May 1987. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1950, 20.8 ft in May 1954, at station 07311780 located about 1.1 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	.02	.01	.06	.04	4.1	.01	3.2	.01	.02	.02	.02
2	2.0	.02	.01	.13	e.03	4.1	.01	.60	.01	.02	.03	.02
3	1.5	.02	.01	.05	e.03	3.9	.01	.27	.01	.02	.03	.02
4	1.7	.02	.02	.04	e.02	2.3	.04	.16	.01	.03	.08	.02
5	1.2	.02	.02	.05	e1.1	1.1	.01	.62	.01	5.0	.45	.02
6	.87	.02	.02	.25	e1.8	.59	.01	.61	.01	10	.55	.05
7	1.4	.02	.02	e.05	e.25	.25	.01	.04	.01	15	5.6	.11
8	1.5	.02	.02	e.03	.03	.26	.01	1.6	.21	6.8	5.7	.11
9	2.2	.02	.02	.02	.03	1.7	.02	20	7.8	1.9	5.5	1.5
10	4.7	.02	.03	.02	9.6	.18	.02	28	.33	24	5.7	3.3
11	4.5	.02	.03	.02	.01	.30	14	15	.45	43	4.6	3.0
12	3.9	.02	.03	.03	.01	.56	.95	4.3	1.7	7.6	1.9	2.9
13	3.4	.02	.03	.03	.68	.34	5.1	.34	2.4	4.0	.62	3.1
14	2.8	.01	.03	.03	.02	11	.97	1.6	4.3	2.7	e.62	3.3
15	2.3	.01	.03	.03	.01	.01	.49	.02	5.8	4.8	e.62	3.0
16	.91	.01	.03	.03	.02	.01	.16	.01	3.8	5.6	e.21	2.7
17	.23	.01	.03	.04	.02	.01	.03	.01	.84	5.0	e.01	1.6
18	.04	.01	.03	.02	.02	.01	.03	.01	.01	5.1	.01	.05
19	.02	.01	.03	.02	.02	.01	.03	.02	.01	5.0	.03	.07
20	.02	.01	.03	.01	43	.01	.04	.01	.01	4.5	.53	.08
21	.29	.05	.04	.02	11	1.8	.04	.01	.01	2.9	2.0	.04
22	2.8	.03	.04	.05	3.9	.01	.04	.01	.32	1.8	.36	5.7
23	.12	.04	.04	.02	1.6	.01	.05	.01	.05	2.0	.03	27
24	.36	.02	.04	.02	.31	.01	1.7	.01	.02	.13	.03	12
25	.01	.01	.04	.02	.14	.29	82	.01	.02	.02	.03	5.4
26	.02	.01	.04	.02	.05	.14	99	.01	.02	.02	.02	4.4
27	.01	.01	.04	.02	.01	.01	64	.01	.02	.02	.02	4.2
28	.04	.01	.04	2.0	1.6	.01	22	.02	.01	.02	.03	4.2
29	.14	.01	.06	.03	---	.01	14	.02	.02	.02	.03	4.1
30	.23	.01	1.8	.05	---	.01	7.1	.02	.02	.02	.03	3.9
31	.30	---	.04	.04	---	.01	---	.01	---	.02	.02	---
MEAN	1.39	.018	.087	.10	2.69	1.07	10.4	2.47	.94	5.07	1.14	3.20
MAX	4.7	.05	1.8	2.0	.43	11	99	28	7.8	43	5.7	27
MIN	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02	.01	.02
AC-FT	86	1.1	5.4	6.4	149	66	619	152	56	312	70	190

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	4.85	1.50	2.69	2.98	3.42	1.69	2.53	7.91	4.31	14.9	3.93	15.4
MAX	30.6	8.51	9.34	9.16	17.8	5.20	10.4	53.2	13.8	154	15.7	90.1
(WY)	1987	1987	1992	1990	1992	1992	1997	1987	1991	1986	1995	1996
MIN	.030	.018	.028	.073	.038	.016	.011	.043	.11	.025	.021	.016
(WY)	1989	1997	1989	1989	1995	1991	1996	1988	1994	1993	1994	1990

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1986 - 1997

ANNUAL MEAN	8.34	2.36	5.52
HIGHEST ANNUAL MEAN			20.8
LOWEST ANNUAL MEAN			.75
HIGHEST DAILY MEAN	2010	99	3520
LOWEST DAILY MEAN	.01	.01	.00
ANNUAL SEVEN-DAY MINIMUM	.01	.01	.01
INSTANTANEOUS PEAK FLOW		585	13100
INSTANTANEOUS PEAK STAGE		7.12	19.01
ANNUAL RUNOFF (AC-FT)	6050	1710	4000
10 PERCENT EXCEEDS	3.6	4.9	7.9
50 PERCENT EXCEEDS	.02	.04	.06
90 PERCENT EXCEEDS	.01	.01	.02

e Estimated

RED RIVER BASIN

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1987 to September 1989, October 1990 to September 1991, October 1996 to September 1997. Pesticide analyses: October 1996 to September 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1987 to September 1989.

WATER TEMPERATURE: May 1987 to September 1989..

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 41,600 microsiemens Aug. 17, 1989; minimum, 350 microsiemens May 28, 1987.

WATER TEMPERATURE: Maximum, 34.5°C June 8, 1988; minimum, 0.0°C Feb. 5-8, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)
NOV 05...	1550	0.01	31800	7.8	17.5	13.2	163	3400	3300	980	240
DEC 04...	1045	0.02	33200	8.0	11.0	12.0	129	3700	3600	1100	240
FEB 18...	1310	0.02	33900	7.8	16.0	9.9	120	3400	3200	980	225
APR 02...	1005	0.01	35300	7.8	17.0	10.0	124	3900	3800	1100	261
MAY 01...	1410	1.2	18700	8.2	21.0	9.9	127	2200	2100	620	164
14...	1305	4.3	22000	8.1	22.5	8.6	112	2600	2500	720	190
JUN 04...	1005	0.02	32200	7.4	27.0	7.2	107	3800	3600	1100	262
25...	1140	0.02	29200	7.9	27.5	8.1	120	3400	3300	980	237
AUG 14...	1000	0.62	29700	7.3	26.5	6.3	92	3300	3200	950	227
SEP 04...	1220	0.01	31200	7.8	25.5	8.2	117	3600	3400	1000	245
08...	1145	0.07	35200	7.8	26.5	8.9	132	3600	3500	1000	260
DATE	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)
NOV 05...	6500	48	28	140	2800	11000	0.50	8.0	21600	11	0.060
DEC 04...	7200	51	32	160	3000	11000	0.50	11	22700	16	--
FEB 18...	6260	47	29	140	2900	12000	0.49	9.6	22900	6	0.090
APR 02...	7330	51	29	130	2800	12000	0.49	7.7	23500	40	--
MAY 01...	3440	32	19	120	1800	5800	0.35	7.1	12000	18	--
14...	4310	37	21	120	2100	7300	0.38	5.8	14700	27	--
JUN 04...	6530	46	30	140	2400	9000	0.47	11	19400	8	--
25...	6470	48	29	110	2500	9700	0.48	8.5	20000	5	--
AUG 14...	6120	46	29	130	2700	10000	0.52	25	20600	21	--
SEP 04...	6500	47	29	130	3000	11000	0.48	10	22200	7	--
08...	7300	53	31	100	3000	12000	0.49	8.3	23600	4	--

RED RIVER BASIN

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07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
NOV											
05...	0.040	0.100	0.350	--	<0.20	<0.010	<0.010	<0.010	<1	<1	200
DEC											
04...	0.010	<0.050	0.460	0.0	0.40	<0.010	<0.010	<0.010	3	1	<100
FEB											
18...	0.020	0.110	0.360	0.0	0.30	<0.010	<0.010	<0.010	2	1	<100
APR											
02...	<0.010	<0.050	0.360	0.0	0.20	<0.010	<0.010	<0.010	2	1	<100
MAY											
01...	<0.010	<0.050	0.083	0.35	0.43	0.030	<0.010	<0.010	2	1	<100
14...	<0.010	<0.050	0.087	0.30	0.39	<0.010	<0.010	<0.010	1	1	<100
JUN											
04...	<0.010	<0.050	0.116	0.36	0.48	0.026	<0.010	<0.010	2	2	<100
25...	<0.010	<0.050	0.139	0.17	0.30	<0.010	<0.010	<0.010	2	3	100
AUG											
14...	<0.010	<0.050	0.194	0.17	0.36	0.044	<0.010	<0.010	1	<1	<100
SEP											
04...	<0.010	<0.050	0.115	0.32	0.44	<0.010	<0.010	<0.010	1	1	<100
08...	--	--	--	0.33	0.33	0.015	<0.010	--	1	<1	<100

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV											
05...	39	<2	<20	<4	<4.0	1	<200	130	120	<10	560
DEC											
04...	28	<4	24	<1	<1.0	<1	<200	760	<60	<4	410
FEB											
18...	26	<4	<20	<1	<1.0	<1	<200	260	<60	<10	<200
APR											
02...	25	<10	<20	<10	<10	<10	<200	350	<60	<10	<200
MAY											
01...	54	<4	<10	4	<4.0	<4	<100	120	<30	<4	<100
14...	54	<5	<12	<5	<5.0	<5	<120	120	<36	<5	<120
JUN											
04...	30	<10	<20	<10	<10	<10	<200	170	<60	<10	<200
25...	123	<10	<15	<10	<10	<10	<150	270	130	<10	154
AUG											
14...	29	<10	<16	<10	<10	<10	<160	50	<48	<10	<160
SEP											
04...	33	<10	<16	<10	<10	<10	<160	170	<48	<10	<160
08...	30	<10	28	<10	<10	<10	<180	150	<54	<10	246

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV										
05...	70	40	<0.10	<0.1	100	<200	1	1	<2	<1.0
DEC										
04...	260	340	2.2	<0.1	200	<200	<1	<1	<4	<4.0
FEB										
18...	180	192	<0.10	<0.1	230	<200	<1	<1	<2	<8.0
APR										
02...	200	270	<0.10	2.1	<100	<200	<1	<1	<10	<10
MAY										
01...	130	159	<0.10	<0.1	<100	<100	1	1	<4	<5.0
14...	79	65	<0.10	<0.1	130	<120	1	<1	<5	<5.0
JUN										
04...	140	85	<0.10	<0.1	220	<200	<1	<1	<10	<10
25...	120	<15	<0.10	<0.1	180	<150	1	3	<10	<10
AUG										
14...	27	107	<0.10	<0.1	<100	<160	<1	1	<10	<10
SEP										
04...	140	118	<0.10	<0.1	150	<160	<1	<1	<10	<10
08...	94	48	<0.10	<0.1	130	<180	1	<1	<10	<10

RED RIVER BASIN

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV										
05...	<10	62	--	--	--	--	--	--	--	--
DEC										
04...	<10	75	--	--	--	--	--	--	--	--
FEB										
18...	<10	<60	--	--	--	--	--	--	--	--
APR										
02...	<10	<60	--	--	--	--	--	--	--	--
MAY										
01...	<10	<30	--	--	--	--	--	--	--	--
14...	<10	63	--	--	--	--	--	--	--	--
JUN										
04...	<10	<60	--	--	--	--	--	--	--	--
25...	<10	83	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG										
14...	<10	<48	--	--	--	--	--	--	--	--
SEP										
04...	<10	73	--	--	--	--	--	--	--	--
08...	<10	<54	--	--	--	--	--	--	--	--

RED RIVER BASIN

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07311790 SOUTH WICHITA RIVER AT ROSS RANCH NEAR BENJAMIN, TX

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

DRAINAGE AREA.--499 mi².

PERIOD OF RECORD.--Chemical analyses: August 1970 to September 1979, March 1988 to September 1997 (discontinued). Sediment analyses: April 1978 to September 1979. Pesticide analyses: October 1996 to September 1997 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1970 to September 1979.

REMARKS.--From October 1970 to September 1979, specific conductance was continuously recorded at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)
NOV 06...	1630	5.5	17600	8.4	16.5	11.2	128	2900	2800	790	230
DEC 12...	1410	3.4	13400	8.0	13.0	11.2	116	2800	2600	720	240
JAN 30...	1300	2.2	13400	8.2	5.5	14.0	121	3000	2800	780	250
MAR 13...	1235	7.1	14700	7.8	18.0	9.8	115	2800	2700	770	224
MAY 01...	1045	47	6880	8.0	18.0	8.4	96	2000	1900	540	165
15...	1305	E7.7	8980	7.9	22.0	8.0	99	2500	2300	650	215
JUN 04...	1425	6.9	8600	8.0	28.5	9.9	138	2600	2500	640	241
AUG 14...	1320	6.5	17700	8.7	31.0	13.4	201	2900	2900	830	205
DATE	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
NOV 06...	3100	25	19	150	2700	5200	0.40	4.5	12100	5	0.020
DEC 12...	2300	19	17	150	2500	3700	0.40	3.5	9570	4	0.010
JAN 30...	2300	18	16	150	2600	3600	0.40	2.8	9640	<1	<0.010
MAR 13...	2450	20	18	130	2400	4200	0.44	1.3	10200	5	<0.010
MAY 01...	872	8	15	140	1800	1500	0.44	6.5	4940	21	<0.010
15...	1230	11	16	160	2200	2000	0.52	6.5	6380	28	<0.010
JUN 04...	1100	9	16	120	2400	1700	0.48	5.8	6220	6	<0.010
AUG 14...	3290	27	19	56	2500	5300	0.40	7.5	12200	3	<0.010
DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS Ba)	BARIUM, DIS-SOLVED (UG/L AS Ba)
NOV 06...	<0.050	0.280	0.0	0.20	<0.010	<0.010	<0.010	1	1	<100	35
DEC 12...	<0.050	0.180	--	<0.20	<0.010	<0.010	<0.010	<1	<1	<100	33
JAN 30...	0.060	0.120	0.08	0.20	<0.010	<0.010	<0.010	<1	<1	<100	18
MAR 13...	<0.050	0.120	0.08	0.20	<0.010	<0.010	<0.010	<1	<1	<100	30
MAY 01...	<0.050	<0.015	0.24	0.24	0.011	<0.010	<0.010	2	1	100	60
15...	<0.050	0.055	--	<0.20	<0.010	<0.010	<0.010	2	1	<100	34
JUN 04...	<0.050	<0.015	0.21	0.21	<0.010	<0.010	<0.010	2	1	<100	29
AUG 14...	<0.050	0.156	0.14	0.30	<0.010	<0.010	<0.010	1	1	<100	37

RED RIVER BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
NOV 06...	<1	<10	<4	<4.0	<1	<100	140	35	<4	<100	70
DEC 12...	<1	<10	<1	<1.0	<1	<100	80	<30	<2	<100	50
JAN 30...	<1	<7.0	<1	<1.0	1	<70	90	<21	<2	<70	50
MAR 13...	<1	<8.0	<1	<1.0	<1	<80	90	<24	<2	<80	100
MAY 01...	<2	<8.0	2	4.5	<2	<80	200	<24	<2	121	65
15...	<2	6.9	3	<2.0	2	<40	540	<12	<2	<40	71
JUN 04...	<2	<5.0	35	<2.0	11	<50	180	<15	<2	<50	40
AUG 14...	<4	<9.0	<4	<4.0	<4	<90	180	<27	<4	<90	100

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 06...	55	<0.10	0.1	<100	<100	<1	<1	<2	<1.0	<10	<30
DEC 12...	36	<0.10	<0.1	<100	<100	1	<1	<1	<2.0	<10	<30
JAN 30...	31	<0.10	<0.1	<100	<70	1	1	<2	<2.0	<10	<21
MAR 13...	130	<0.10	<0.1	<100	<80	1	1	<1	<2.0	<10	<24
MAY 01...	77	<0.10	<0.1	<100	<80	2	2	<2	<2.0	<10	<24
15...	40	<0.10	<0.1	<100	<40	2	2	<2	<2.0	<10	25
JUN 04...	15	<0.10	<0.1	<100	<50	1	1	<2	<2.0	<10	<15
AUG 14...	<9.0	<0.10	<0.1	190	<90	1	<1	<4	<4.0	<10	<27

RED RIVER BASIN

107

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX

LOCATION.--Lat 33°38'39", long 99°48'02", Knox County, Hydrologic Unit 11130205, on right bank at upstream side of bridge on State Highway 6, 2 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 4 mi north of Benjamin, and 41 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--584 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,334.23 ft above sea level. Prior to Jan. 2, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are low flow diversions upstream on the South Wichita River at Low Flow Dam near Guthrie (station 07311782) to evaporation lake (station 07311669). There were other minor diversions upstream from station during the year. Rain gage at site. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903 occurred in September 1919 (stage and discharge unknown), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	0100	2,190	14.56	Aug. 6	2300	1,010	11.00
May 8	0900	2,010	14.15				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	20	17	5.9	4.1	24	5.3	110	33	2.3	.70	.24
2	46	19	17	6.8	5.1	20	5.3	89	30	2.3	.67	.17
3	43	19	14	7.7	5.2	21	6.7	67	29	2.3	.65	.14
4	40	18	14	7.6	3.2	24	7.9	57	25	2.1	.63	.15
5	38	17	11	6.5	2.8	23	7.3	54	22	e3.5	.78	.18
6	36	16	11	7.0	6.2	22	5.2	48	21	e4.5	143	.13
7	35	17	8.7	5.9	16	20	5.2	41	20	e6.0	342	.06
8	33	15	9.0	7.2	12	18	4.8	117	102	7.8	6.5	.01
9	32	14	9.0	8.1	10	18	2.9	1250	81	12	.76	.00
10	34	12	9.0	8.0	9.2	15	4.0	196	39	24	.35	.00
11	29	12	8.9	7.2	8.0	15	257	127	33	27	46	.00
12	28	11	7.6	3.6	8.0	15	e113	120	32	33	4.7	.00
13	28	11	7.7	4.7	14	15	e53	102	27	52	1.7	.00
14	28	12	8.7	11	15	12	26	87	32	34	3.6	.00
15	28	11	7.3	12	12	12	18	73	46	29	1.6	.00
16	28	11	7.2	8.9	9.9	14	18	65	37	22	1.8	.00
17	28	11	6.3	8.2	9.4	19	15	61	39	16	33	.00
18	28	10	3.8	7.7	9.2	14	13	56	30	14	35	.00
19	28	10	4.0	7.9	9.8	11	11	103	22	13	13	.00
20	28	9.4	5.8	8.2	396	12	11	324	15	11	3.6	.00
21	27	9.0	7.8	8.7	e166	11	9.7	108	12	9.0	1.4	.00
22	27	9.0	6.9	7.5	103	9.7	19	83	11	8.3	28	.06
23	27	9.9	5.8	7.2	52	9.4	13	69	76	7.7	7.6	37
24	27	23	3.6	6.4	38	10	11	62	43	6.8	1.3	5.9
25	26	29	5.1	6.1	36	8.0	e509	55	17	3.9	.93	19
26	25	16	5.2	6.5	34	7.5	e1200	49	22	2.4	.81	30
27	25	21	5.8	4.8	29	8.5	e955	44	12	1.9	.68	25
28	24	15	7.3	3.9	27	8.0	e253	40	7.1	1.6	.57	20
29	23	23	5.5	3.9	---	6.2	189	37	4.4	1.4	.47	15
30	22	21	5.7	3.8	---	5.3	137	36	2.7	1.1	.37	13
31	21	---	5.6	4.5	---	5.3	---	34	---	.72	.32	---
TOTAL	941	451.3	251.3	213.4	1050.1	432.9	3885.3	3764	922.2	362.62	682.49	166.04
MEAN	30.4	15.0	8.11	6.88	37.5	14.0	130	121	30.7	11.7	22.0	5.53
MAX	49	29	17	12	396	24	1200	1250	102	52	342	37
MIN	21	9.0	3.6	3.6	2.8	5.3	2.9	34	2.7	.72	.32	.00
AC-FT	1870	895	498	423	2080	859	7710	7470	1830	719	1350	329
IN.	.06	.03	.02	.01	.07	.03	.25	.24	.06	.02	.04	.01

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

MEAN	73.8	18.8	12.7	11.7	17.9	19.6	31.2	76.5	85.4	24.5	49.5	82.7
MAX	656	65.1	77.5	60.3	172	88.7	187	256	458	162	578	502
(WY)	1984	1987	1992	1992	1992	1970	1990	1989	1990	1986	1995	1966
MIN	.17	1.14	.73	.68	1.39	.97	.073	.92	1.49	.013	.000	.034
(WY)	1980	1988	1989	1989	1989	1989	1989	1988	1976	1965	1963	1983

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1960 - 1997
ANNUAL TOTAL	18835.58	13122.65	
ANNUAL MEAN	51.5	36.0	42.5
HIGHEST ANNUAL MEAN			107
LOWEST ANNUAL MEAN			11.2
HIGHEST DAILY MEAN	5190	1250	8260
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		2190	14900
INSTANTANEOUS PEAK STAGE		14.56	17.07
INSTANTANEOUS LOW FLOW			.00
ANNUAL RUNOFF (AC-FT)	37360	26030	30820
ANNUAL RUNOFF (INCHES)	1.20	.84	.99
10 PERCENT EXCEEDS	30	56	46
50 PERCENT EXCEEDS	6.0	12	7.1
90 PERCENT EXCEEDS	.00	.88	.33

e Estimated

RED RIVER BASIN

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07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: July 1949 to March 1959, July 1966 to current year. Pesticide analyses: October 1996 to September 1997.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURE: October 1967 to current year.

INSTRUMENTATION.--Since August 1968, specific conductance and water temperature was recorded continuously at this station.**REMARKS.**--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum, 48,900 microsiemens May 13, 1971; minimum, 384 microsiemens Sept. 18, 1996.

WATER TEMPERATURE: Maximum, 39.0°C July 31, 1989; minimum, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 20,000 microsiemens Sep. 27 and 28; minimum estimated, 2,400 microsiemens, Feb. 20.

WATER TEMPERATURE: Maximum, 39.0°C Aug. 3; minimum, 0.0°C on several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
NOV 06...	1020	16	15400	7.5	17.5	8.6	99	3000	2800	790	260
20...	1515	9.4	14800	8.0	17.5	10.5	122	3100	2900	770	280
JAN 30...	0905	2.9	13800	8.1	1.0	12.6	96	2600	2400	650	240
FEB 27...	1335	29	10100	8.1	8.0	12.2	112	2100	2000	580	170
APR 02...	1330	5.9	15000	7.9	23.0	8.7	111	3200	3000	790	287
30...	1255	134	5520	7.9	20.5	8.2	97	1700	1600	460	143
MAY 14...	1035	88	8500	8.0	21.5	7.8	95	2400	2200	610	203
JUN 05...	1110	22	9670	7.9	23.5	7.7	99	2800	2600	660	275
25...	1455	19	8400	7.8	30.0	7.0	100	2200	2100	560	191
JUL 30...	0955	1.1	13600	7.9	27.5	7.1	98	3100	2900	770	271
AUG 13...	0950	1.3	3820	7.9	27.5	6.5	87	1500	1400	440	85
SEP 04...	1520	0.17	10100	8.1	24.0	7.5	96	2700	2500	690	229
DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)
NOV 06...	2600	21	18	200	2600	3900	0.30	5.6	10300	9	--
20...	2500	20	18	190	2700	4100	0.20	4.5	10500	34	--
JAN 30...	1900	16	17	220	2500	3400	0.20	5.3	8840	<1	--
FEB 27...	1600	15	13	130	1800	2500	0.30	5.0	6750	54	--
APR 02...	2390	19	19	190	2700	4000	0.25	4.2	10400	22	--
30...	600	6	14	120	1600	1000	0.40	7.3	3900	99	--
MAY 14...	1150	10	16	150	2100	1900	0.44	6.7	6030	315	--
JUN 05...	1290	11	17	180	2500	2100	0.28	6.7	6970	35	--
25...	1190	11	18	120	1900	1900	0.34	7.5	5820	116	--
JUL 30...	2250	18	19	160	2700	3700	0.29	21	9780	36	--
AUG 13...	313	4	14	71	1200	570	0.31	13	2730	102	0.178
SEP 04...	1530	13	16	130	2500	2700	0.16	7.1	7680	3	--

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)
NOV											
06...	0.010	<0.050	0.250	--	<0.20	<0.010	<0.010	<0.010	--	3	3
20...	0.020	<0.050	0.170	--	<0.20	<0.010	<0.010	<0.010	--	2	2
JAN											
30...	<0.010	0.070	0.160	0.04	0.20	<0.010	<0.010	<0.010	--	2	2
FEB											
27...	<0.010	0.080	0.060	0.34	0.40	0.030	<0.010	<0.010	--	3	2
APR											
02...	<0.010	<0.050	0.110	0.19	0.30	<0.010	<0.010	<0.010	--	3	3
30...	<0.010	0.124	0.024	0.41	0.43	0.235	<0.010	<0.010	--	6	4
MAY											
14...	<0.010	<0.050	0.037	--	<0.20	<0.010	<0.010	<0.010	--	6	4
JUN											
05...	<0.010	<0.050	0.020	0.18	0.20	<0.010	<0.010	<0.010	--	4	4
25...	<0.010	0.053	<0.015	0.26	0.26	0.049	<0.010	<0.010	--	6	4
JUL											
30...	<0.010	<0.050	0.024	0.30	0.32	<0.010	<0.010	<0.010	--	4	3
AUG											
13...	0.010	0.188	0.023	0.20	0.22	<0.010	0.011	0.010	0.03	5	4
SEP											
04...	<0.010	<0.050	0.062	0.14	0.20	<0.010	<0.010	<0.010	--	5	5
DATE	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
NOV											
06...	<100	39	<1	<8.0	4	<4.0	10	<80	290	<24	<4
20...	<100	33	<1	<8.0	<1	<1.0	<1	<80	160	<24	<2
JAN											
30...	<100	21	<1	<7.0	<1	<1.0	1	<70	130	<21	<2
FEB											
27...	100	48	<1	<6.0	4	<1.0	2	<60	1700	<18	<2
APR											
02...	<100	33	<4	<8.0	<4	<4.0	<4	<80	160	<24	<4
30...	1000	85	<2	<3.0	18	3.9	8	<30	5700	<9.0	<2
MAY											
14...	<100	93	<2	<5.0	8	2.1	8	<50	3500	<15	<2
JUN											
05...	<100	46	<2	<5.0	<2	<2.0	2	<50	610	<15	<2
25...	200	92	<2	<5.0	4	<2.0	6	<50	2400	55	<2
JUL											
30...	300	45	<4	16	<4	<4.0	<4	<70	520	<21	<4
AUG											
13...	<100	94	<1	<3.0	3	<1.0	4	<30	2400	<9.0	<1
SEP											
04...	<100	55	<4	<6.0	<4	<4.0	<4	<60	120	<18	<4
DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
NOV											
06...	<80	60	36	<0.10	<0.1	<100	<80	1	1	<2	<1.0
20...	<80	50	40	<0.10	<0.1	100	<80	1	1	<2	<2.0
JAN											
30...	<70	60	47	<0.10	<0.1	<100	<70	1	1	<2	<2.0
FEB											
27...	<60	50	7.0	<0.10	<0.1	<100	<60	2	2	<2	<2.0
APR											
02...	<80	51	45	<0.10	<0.1	<100	<80	1	1	<4	<4.0
30...	<30	150	4.9	<0.10	<0.1	<100	<30	2	3	<2	<2.0
MAY											
14...	<50	99	<5.0	<0.10	<0.1	<100	<50	2	3	<2	<2.0
JUN											
05...	<50	56	25	<0.10	<0.1	<100	<50	1	1	<2	<2.0
25...	87	82	6.9	<0.10	<0.1	<100	<50	<1	<1	<2	<2.0
JUL											
30...	126	50	18	<0.10	<0.1	100	<70	<1	<1	<4	<4.0
AUG											
13...	<30	56	5.8	<0.10	<0.1	<100	30	<1	<1	<1	<1.0
SEP											
04...	<60	61	48	<0.10	0.1	<100	<60	<1	<1	<4	<4.0

RED RIVER BASIN

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07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
NOV 06...	<10	<24	--	--	--	--	--	--	--	--
20...	<10	<24	--	--	--	--	--	--	--	--
JAN 30...	<10	<21	--	--	--	--	--	--	--	--
FEB 27...	<10	<18	--	--	--	--	--	--	--	--
APR 02...	<10	<24	--	--	--	--	--	--	--	--
30...	20	<9.0	--	--	--	--	--	--	--	--
MAY 14...	20	<15	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUN 05...	<10	<15	--	--	--	--	--	--	--	--
25...	10	<15	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUL 30...	<10	<21	--	--	--	--	--	--	--	--
AUG 13...	10	<9.0	--	--	--	--	--	--	--	--
SEP 04...	<10	<18	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	941	14910	10260	26070	3900	9810	2800	7020	3200
NOV.	1996	451.3	14690	10110	12320	3800	4620	2700	3330	3200
DEC.	1996	251.3	13070	9030	6130	3300	2220	2600	1740	3000
JAN.	1997	213.4	14000	9650	5560	3600	2050	2700	1540	3100
FEB.	1997	1050.1	6030	4210	11930	1400	3960	1300	3800	1500
MAR.	1997	432.9	12140	8410	9820	3000	3490	2500	2870	2900
APR.	1997	3885.3	4010	2820	29600	850	8930	990	10420	1100
MAY	1997	3764	4650	3260	33150	1000	10370	1100	11260	1300
JUNE	1997	922.2	7330	5130	12770	1700	4120	1700	4190	1900
JULY	1997	362.62	13360	9220	9020	3400	3320	2600	2510	3000
AUG.	1997	682.49	5040	3550	6530	1100	2010	1200	2250	1400
SEPT	1997	166.04	12920	8880	3980	3400	1510	2400	1060	2800
TOTAL		13122.65	**	**	166900	**	56410	**	51990	**
WTD.AVG.		36	6770	4710	**	1600	**	1500	**	1700

RED RIVER BASIN

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	17000	16200	16500	15600	15300	15400	14200	13400	13800	14700	14300	14500
2	16300	14700	15600	15800	15400	15600	14400	13600	14000	14800	14500	14600
3	14700	14000	14400	15800	15600	15700	14700	14100	14400	14800	13400	14300
4	14700	14100	14400	15800	15500	15700	14800	13000	14000	14300	13800	14000
5	14900	14500	14700	15800	15300	15500	13200	10500	11800	14100	13500	13900
6	14600	14300	14500	16000	15200	15600	11000	10500	10700	14000	13500	13700
7	15100	14600	14800	16000	15500	15800	11100	10800	11000	14000	13800	13900
8	14800	14400	14600	16000	15700	15900	11400	11000	11100	13900	13400	13600
9	14900	14100	14700	15900	15500	15700	11500	11200	11300	13800	13500	13700
10	15200	14600	14900	15900	15400	15700	11800	11200	11500	14000	13700	13800
11	15100	14800	15000	15700	15400	15500	12100	11600	11800	14200	13900	14000
12	15100	14700	14900	15600	15300	15400	12300	11800	12000	15300	14000	14400
13	15400	14800	15100	15400	15000	15200	12600	12100	12300	15600	14800	15300
14	15600	15000	15300	15200	14900	15000	---	---	12600	15500	14400	14900
15	15500	15300	15400	15000	14800	14900	---	---	e12800	14500	13000	13800
16	15700	15300	15500	15100	14000	14900	---	---	e12900	14100	12500	13600
17	15600	13300	14200	15100	14600	14900	---	---	e13000	14500	14100	14200
18	13400	12700	13100	14900	14300	14600	---	---	e13100	14500	13700	14100
19	13500	12900	13200	14800	14400	14600	---	---	e13200	14000	13800	13900
20	14600	13000	13800	15000	14700	14900	---	---	e13400	13900	13600	13800
21	15100	14500	14800	15200	14900	15100	---	---	13700	13800	13500	13700
22	15300	13800	15000	15200	15000	15100	14200	13400	13800	13900	13600	13800
23	15700	13800	15200	15300	14800	15000	14500	14100	14300	13800	13600	13700
24	15800	15200	15600	15300	3910	10900	14800	14100	14500	13900	13600	13800
25	16400	15800	16000	15200	14400	14900	14700	14100	14300	14000	13700	13800
26	16700	16300	16500	14900	14100	14500	14700	14200	14400	13800	13600	13700
27	16400	5290	14400	14600	13100	13700	14800	14100	14500	14000	13600	13800
28	15200	9600	13300	14000	12700	13400	14600	14300	14400	14400	13800	14100
29	15700	15200	15400	13800	10200	11900	14700	14400	14500	14300	13800	14000
30	15700	15500	15600	14100	13100	13900	14700	14400	14500	14300	13800	13900
31	15700	15400	15500	---	---	---	14700	14300	14500	15000	13900	14200
MONTH	17000	5290	14900	16000	3910	14800	14800	10500	13200	15600	12500	14000

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	14500	14300	14400	---	---	e10600	15700	15200	15500	6440	5610	6030
2	14500	14200	14400	---	---	e10800	15800	14700	15300	6680	6230	6460
3	14400	14300	14400	---	---	e11000	14700	11700	13600	6990	6270	6580
4	15200	14400	14900	---	---	e11200	11700	6660	9700	7360	6760	7040
5	15400	14100	15000	---	---	e11300	15700	6610	10400	7770	7180	7420
6	14300	13600	13900	---	---	e11500	11500	7310	8470	7820	7380	7590
7	13800	12600	13200	---	---	e11600	7450	7170	7320	7830	7460	7630
8	13900	13600	13800	---	---	e11800	16000	7140	11300	---	---	7580
9	14100	13800	14000	---	---	e11900	15900	15300	15600	---	---	e1500
10	14200	14000	14100	---	---	e12000	15300	14800	15200	---	---	e3500
11	14200	14000	14200	---	---	e12200	---	---	e4200	---	---	e6000
12	14500	13400	14000	---	---	12400	---	---	e5400	---	---	e6900
13	13900	13300	13400	12600	12200	12400	---	---	e7100	---	---	e7800
14	14000	13700	13900	12700	12400	12600	---	---	e9450	---	---	e8500
15	14200	12500	13900	13000	12300	12700	---	---	e10100	---	---	e9400
16	14200	13900	14100	13400	13000	13200	---	---	e10300	---	---	e10000
17	14000	10500	12600	13300	12900	13100	---	---	10600	---	---	e10800
18	10700	10400	10600	13200	12500	12900	10700	10400	10500	---	---	e4500
19	10500	9760	10300	12900	12200	12700	11300	10600	11000	---	---	e3800
20	---	---	e2400	12900	12000	12500	11700	10900	11300	---	---	e2800
21	---	---	e3200	13100	12100	12600	11800	11300	11600	---	---	4920
22	---	---	e4900	13000	12700	12900	11700	4170	6790	5560	4260	5080
23	---	---	e8500	13000	12400	12800	11300	7320	10100	6370	4140	4780
24	---	---	e9600	13000	12400	12700	11600	6220	11200	7760	6370	7320
25	---	---	e9800	13300	12800	13100	---	---	e3800	8230	7540	7820
26	---	---	e10000	13200	12400	12900	---	---	e2700	8540	7830	8170
27	---	---	e10200	13300	12400	12900	---	---	e3500	8690	8060	8360
28	---	---	e10400	13300	12800	13100	---	---	e4200	8930	8330	8600
29	---	---	---	14400	12600	13300	5120	4260	4700	9140	8460	8740
30	---	---	---	15800	13900	14800	5680	5020	5370	8980	8570	8740
31	---	---	---	16000	15100	15600	---	---	---	9180	8580	8840
MONTH	15400	9760	11700	16000	12000	12500	16000	4170	9210	9180	4140	6880

e Estimated

RED RIVER BASIN

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07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	9290	8740	9020	---	---	e12500	---	---	e14300	---	---	e8600
2	9460	8890	9150	---	---	e12600	---	---	e14300	---	---	e9400
3	9730	9160	9410	---	---	12800	---	---	e14400	---	---	e9800
4	9890	9350	9610	---	---	11900	---	---	e14000	---	---	e10100
5	9780	8840	9520	---	---	e6500	---	---	e14200	---	---	e10500
6	9340	8300	9060	---	---	e7000	---	---	e7500	---	---	e11000
7	9080	4620	7900	---	---	e8850	---	---	e3900	---	---	e11500
8	7660	4280	5340	---	---	9350	---	---	e4800	---	---	e11900
9	5140	4120	4500	12200	10600	11300	---	---	e5900	---	---	---
10	7200	5040	6040	13100	5760	11300	---	---	e6800	---	---	---
11	8320	7160	7720	13300	11900	12800	---	---	e3750	---	---	---
12	8400	7680	8010	13100	5580	9920	---	---	e2590	---	---	---
13	8620	7820	8160	13400	10500	11800	---	---	e3820	---	---	---
14	8960	5120	8350	17800	13400	16200	---	---	e4200	---	---	---
15	8020	4240	6620	17400	14500	15500	---	---	e4650	---	---	---
16	8200	6400	7630	15100	14200	14600	---	---	e4980	---	---	---
17	8240	5660	7430	16100	15100	15600	---	---	e5600	---	---	---
18	8560	6200	7610	17200	16100	16600	---	---	e6530	---	---	---
19	9660	8460	8970	18100	16600	17600	---	---	e9600	---	---	---
20	11300	9660	10400	16900	15200	16100	---	---	e10500	---	---	---
21	12300	9660	11300	15700	13600	15000	---	---	e6000	---	---	---
22	11500	4600	10100	---	---	14600	---	---	e3000	---	---	---
23	9400	4200	6500	---	---	e14500	---	---	e3800	---	---	e5000
24	7200	4020	4790	---	---	e14500	---	---	e4500	7540	6370	7040
25	8840	4980	7430	---	---	e14300	---	---	e4650	10100	7240	8310
26	---	---	7380	---	---	e14000	---	---	e5000	14800	9900	13300
27	---	---	e9800	---	---	e14000	---	---	e5600	20000	14200	17600
28	---	---	e10900	---	---	e14000	---	---	e6000	20000	19000	19500
29	---	---	e11600	---	---	e13800	---	---	e6600	19700	19000	19400
30	---	---	e12000	---	---	e13600	---	---	e7200	19200	16000	17700
31	---	---	---	---	---	e14200	---	---	e7900	---	---	---
MONTH	12300	4020	8410	18100	5580	13100	---	---	6990	20000	6370	11900
YEAR	20000	3910	11500									

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	23.5	17.5	20.5	12.5	8.5	10.5	10.0	3.5	7.5	17.0	12.0	13.5
2	24.5	18.5	21.0	14.5	7.0	11.0	11.5	5.0	8.5	16.5	10.5	13.0
3	23.5	17.5	20.5	14.0	10.0	12.5	9.5	4.5	7.5	17.5	12.0	14.0
4	22.0	19.5	21.0	18.0	11.0	15.0	11.0	5.5	8.5	16.5	12.0	14.0
5	24.0	19.5	21.5	19.0	11.5	16.0	10.5	8.5	9.5	12.0	7.0	9.0
6	23.5	19.5	21.5	19.0	14.0	17.0	13.0	9.0	11.0	7.0	4.0	5.5
7	24.5	19.0	22.0	16.0	10.5	13.0	12.5	9.0	10.5	5.5	3.0	4.5
8	23.5	19.0	21.5	14.0	8.5	11.5	11.5	7.5	10.0	4.5	3.0	4.0
9	24.0	17.5	21.0	14.5	7.5	11.5	13.5	9.0	11.5	6.5	1.0	3.5
10	23.0	17.5	20.5	15.5	8.5	12.5	15.5	11.5	13.5	5.5	3.0	3.5
11	23.5	17.0	20.5	16.5	9.5	13.0	16.0	12.0	14.0	3.0	.0	1.5
12	24.5	18.5	21.5	15.0	11.5	13.0	14.5	11.5	13.0	1.0	.0	.5
13	24.5	18.5	21.5	16.5	11.5	13.5	14.0	9.5	12.0	.5	.0	.0
14	24.0	18.5	21.5	17.0	12.5	15.0	15.5	11.0	12.5	.0	.0	.0
15	24.0	18.0	21.5	17.5	15.0	16.5	11.5	6.0	8.5	3.0	.0	1.0
16	24.5	19.5	22.0	20.0	15.5	18.0	7.5	3.5	6.0	3.0	.0	1.0
17	23.0	19.5	20.5	15.5	10.0	12.5	7.5	4.0	5.0	4.0	.0	1.5
18	19.5	17.5	18.5	15.5	8.5	12.0	4.5	3.5	4.0	4.0	.0	2.5
19	18.5	15.5	17.0	18.0	11.0	14.5	4.5	3.5	4.0	7.0	2.5	4.5
20	21.0	16.5	18.5	18.5	13.0	15.5	4.0	1.0	2.5	8.5	4.0	6.0
21	21.0	13.5	17.5	15.5	10.5	13.0	7.5	1.0	3.5	9.5	7.0	8.0
22	14.5	11.0	13.0	12.0	9.5	11.0	12.0	4.5	8.0	10.0	7.0	8.5
23	16.5	10.0	13.5	17.5	11.5	14.0	10.5	5.0	8.5	9.5	8.0	8.5
24	18.0	12.0	15.0	12.5	2.0	5.0	7.0	1.5	4.0	9.5	7.0	8.5
25	19.0	15.0	17.5	6.5	.0	3.0	5.5	1.5	3.0	8.5	6.0	7.0
26	20.0	15.5	18.0	7.5	1.0	4.0	7.5	2.5	5.0	8.5	6.5	7.5
27	20.0	11.0	17.0	6.5	1.0	4.0	9.0	.5	4.5	9.0	4.5	7.5
28	15.5	12.5	14.0	7.5	6.0	7.0	12.5	6.0	8.5	4.5	2.0	3.5
29	18.5	14.5	16.0	12.0	6.0	9.0	12.0	6.0	8.5	3.5	1.0	2.5
30	18.0	11.0	15.0	12.5	9.0	10.5	12.5	5.5	8.5	6.0	1.0	3.5
31	17.0	11.0	14.0	---	---	---	13.5	8.0	10.5	14.0	5.5	9.0
MONTH	24.5	10.0	19.0	20.0	.0	12.0	16.0	.5	8.0	17.5	.0	5.5

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	15.5	7.5	11.0	---	---	---	17.0	13.5	14.5	24.0	17.5	20.5
2	15.0	9.0	11.5	---	---	---	24.0	15.5	19.0	23.5	19.5	21.0
3	16.0	9.5	12.0	---	---	---	20.0	18.0	18.5	23.0	16.5	19.5
4	14.0	8.5	11.0	---	---	---	21.5	17.5	19.0	24.0	16.5	20.0
5	9.5	6.5	8.0	14.5	8.0	12.0	20.5	13.0	17.0	27.0	18.0	22.0
6	7.5	7.0	7.5	14.5	6.5	11.0	21.0	13.0	17.0	28.5	19.5	24.0
7	8.0	6.0	6.5	18.0	9.0	13.5	19.0	13.5	16.5	26.5	21.0	23.5
8	6.0	4.0	5.0	16.5	13.0	14.5	17.5	11.5	15.5	27.5	20.5	23.5
9	5.5	4.0	5.0	17.0	14.0	15.5	11.5	9.0	10.0	20.5	16.5	18.0
10	10.5	2.0	6.0	19.0	10.0	14.5	16.0	10.0	13.0	23.5	16.5	20.0
11	8.5	5.0	7.0	20.0	12.0	16.5	16.0	10.5	13.5	24.5	18.5	21.0
12	8.5	2.5	5.5	19.0	15.5	17.5	11.5	9.0	10.0	23.0	19.0	21.0
13	5.0	2.5	3.5	21.5	16.0	18.5	14.0	9.5	11.0	24.5	18.0	21.0
14	12.0	4.0	7.5	18.5	13.0	14.5	14.0	10.0	11.5	24.0	21.0	22.5
15	12.5	5.0	8.5	13.5	11.0	12.5	---	---	---	25.0	20.5	22.5
16	14.5	6.5	10.5	13.5	12.0	12.5	---	---	---	28.0	21.0	24.0
17	14.5	8.5	11.5	18.0	12.5	15.0	---	---	---	29.5	22.0	25.5
18	14.5	10.5	12.5	18.0	15.5	16.5	22.0	17.5	19.0	29.0	22.0	25.5
19	14.5	13.5	14.0	16.0	13.0	14.5	26.0	15.0	20.5	26.5	16.5	21.5
20	14.0	12.0	13.0	17.5	13.5	15.5	27.5	17.0	22.5	21.5	15.5	18.0
21	12.5	10.5	11.0	18.5	15.5	17.0	26.5	18.5	22.5	20.5	18.5	19.5
22	11.0	9.5	10.5	18.5	16.0	17.0	22.5	17.5	19.5	22.0	18.0	19.5
23	11.0	10.0	10.5	17.5	15.0	16.5	21.0	18.5	20.0	25.0	19.5	22.0
24	11.0	10.0	10.5	18.5	16.5	17.5	20.0	15.0	17.5	30.0	20.0	24.5
25	10.0	8.5	9.0	18.5	15.5	16.5	15.0	10.0	11.5	32.0	22.5	26.5
26	8.5	8.0	8.5	16.0	13.5	14.5	11.5	10.0	11.0	30.5	21.5	26.0
27	9.5	7.5	8.5	16.5	14.5	15.5	14.0	11.0	12.0	29.5	21.0	25.0
28	---	---	---	18.0	14.5	16.0	18.0	12.0	15.0	28.5	19.5	24.0
29	---	---	---	17.0	15.0	16.0	22.5	16.5	19.0	27.0	19.5	23.0
30	---	---	---	16.0	13.0	14.0	23.0	18.5	20.5	25.0	21.0	23.0
31	---	---	---	14.0	11.5	13.0	---	---	---	28.5	18.5	23.5
MONTH	16.0	2.0	9.0	21.5	6.5	15.0	27.5	9.0	16.0	32.0	15.5	22.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	31.0	20.0	25.5	34.0	26.0	29.0	38.5	24.5	30.5	32.0	22.0	27.0
2	29.5	22.0	25.5	33.0	27.5	29.5	38.5	24.5	30.5	34.5	22.0	28.0
3	29.5	21.0	25.0	34.5	27.5	31.0	39.0	24.0	30.0	30.5	24.5	27.5
4	30.0	21.0	26.0	---	---	27.5	36.0	24.5	28.5	26.5	23.5	25.0
5	29.0	20.5	24.5	---	---	---	38.5	25.0	29.0	29.5	23.0	26.0
6	26.5	21.0	24.0	---	---	---	---	---	---	31.0	22.0	26.5
7	27.5	20.5	23.5	---	---	---	25.5	24.0	25.0	32.0	21.5	26.5
8	24.0	19.0	21.0	---	---	30.5	25.5	25.0	25.5	34.5	21.0	27.0
9	28.0	18.0	22.5	32.0	24.0	28.0	26.5	25.5	26.0	---	---	---
10	28.0	21.5	24.5	30.0	24.5	26.5	28.0	26.5	27.0	---	---	---
11	30.5	21.5	25.5	33.0	23.5	28.0	28.0	27.0	27.0	---	---	---
12	32.5	21.5	26.5	33.5	24.5	29.0	33.5	27.5	30.0	---	---	---
13	32.5	23.0	27.5	34.0	26.0	29.5	30.0	27.5	28.5	---	---	---
14	31.0	21.5	27.0	34.0	25.5	29.5	30.0	27.5	28.5	---	---	---
15	31.5	21.0	26.0	33.5	26.0	30.0	29.5	28.0	28.5	---	---	---
16	33.0	20.0	27.0	33.0	26.0	29.5	31.0	29.0	29.5	---	---	---
17	30.5	20.5	25.0	31.5	25.5	28.5	---	---	---	---	---	---
18	32.5	22.0	27.0	31.5	24.5	28.0	---	---	---	---	---	---
19	30.0	23.5	27.0	32.5	25.5	28.5	32.0	26.5	29.0	---	---	---
20	31.0	23.5	27.5	32.5	25.5	28.5	30.0	25.5	27.5	---	---	---
21	31.0	23.5	26.5	34.5	26.0	29.0	30.0	23.5	26.5	---	---	---
22	25.0	22.0	23.0	34.5	25.0	29.0	31.5	21.5	27.0	---	---	---
23	25.0	19.5	22.5	33.0	25.0	29.0	29.5	25.0	27.5	23.5	20.5	22.0
24	30.0	21.5	25.5	32.0	25.5	28.5	31.0	23.5	27.0	20.5	17.5	19.0
25	31.5	22.0	26.5	33.0	25.5	28.5	29.5	23.0	26.0	24.0	16.5	20.0
26	31.5	23.5	27.5	33.0	26.0	29.0	28.0	22.0	25.0	26.0	17.5	21.5
27	30.5	24.0	27.5	33.0	26.0	29.0	28.5	21.0	24.5	26.0	18.0	22.0
28	33.5	24.5	29.0	34.5	26.0	29.5	29.0	20.5	25.0	24.0	19.0	21.5
29	34.5	26.0	30.0	34.0	26.0	29.5	30.0	21.5	26.0	25.0	16.0	21.0
30	35.0	26.5	30.0	31.5	26.0	28.5	31.0	22.0	26.5	27.5	19.0	23.0
31	---	---	---	38.5	25.0	30.5	30.0	22.0	26.5	---	---	---
MONTH	35.0	18.0	26.0	38.5	23.5	29.0	39.0	20.5	27.5	34.5	16.0	24.0
YEAR	39.0	.0	17.5									

07311900 WICHITA RIVER NEAR SEYMOUR, TX

LOCATION.--Lat 33°42'01", long 99°23'18", Baylor County, Hydrologic Unit 11130206, on left bank at downstream side of bridge on farm road 1919, 6 mi upstream from the head of Lake Kemp (07312000), 10 mi downstream from the confluence of the North and South Forks of the Wichita River, and 10.5 mi northwest of Seymour.

DRAINAGE AREA.--1,874 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements made 4 mi downstream), November 1959 to September 1979, October 1996 to September 1997.

GAGE.--Water-stage recorder. Datum of gage is 1,152.7 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. Rain gage at site. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 20	1600	4,360	14.28	May 9	1200	9,390	16.80
Apr. 27	2400	6,340	15.69	Aug. 18	0530	7,290	15.84

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	47	81	36	27	85	31	449	86	52	22	27
2	93	44	70	35	27	81	33	356	82	47	21	26
3	83	43	63	35	27	70	34	286	78	44	20	24
4	76	43	59	33	27	64	82	232	74	41	19	477
5	72	42	55	32	26	59	73	198	72	58	26	421
6	68	42	53	34	35	57	38	173	69	104	116	101
7	65	61	50	32	78	54	35	154	68	79	858	44
8	192	43	48	33	45	54	32	414	86	59	545	32
9	95	39	48	35	37	54	30	8320	198	51	187	27
10	91	39	47	33	34	51	31	4120	179	107	113	24
11	76	39	45	32	32	50	955	2700	112	212	321	22
12	62	39	42	23	33	49	718	896	93	67	1300	21
13	55	39	42	48	37	48	475	515	84	114	429	20
14	51	40	41	47	33	43	212	394	75	110	303	18
15	49	40	39	36	32	42	138	321	443	84	151	18
16	48	45	38	40	32	41	106	266	275	61	95	17
17	46	51	38	36	32	42	85	227	359	49	252	16
18	43	40	32	35	30	41	73	198	155	41	3380	15
19	43	39	32	34	30	41	66	182	115	37	586	14
20	44	39	33	33	2200	41	61	661	91	35	227	13
21	51	38	40	33	1950	40	55	539	77	99	173	12
22	60	37	39	32	706	37	219	267	69	56	175	16
23	49	39	38	31	376	36	152	196	83	34	170	217
24	46	224	35	30	215	36	80	162	161	31	104	1410
25	44	143	34	28	148	35	1450	143	118	30	68	1230
26	43	72	e34	29	128	33	3880	130	77	28	55	314
27	43	61	e34	28	109	34	5110	115	67	26	46	178
28	96	57	e34	26	96	32	3190	104	84	25	40	128
29	86	245	e34	27	---	32	1310	95	68	24	36	97
30	55	134	e34	28	---	30	650	93	57	23	32	78
31	54	---	34	27	---	30	---	89	---	22	29	---
TOTAL	2084	1904	1346	1021	6582	1442	19404	22995	3655	1850	9899	5057
MEAN	67.2	63.5	43.4	32.9	235	46.5	647	742	122	59.7	319	169
MAX	192	245	81	48	2200	85	5110	8320	443	212	3380	1410
MIN	43	37	32	23	26	30	30	89	57	22	19	12
AC-FT	4130	3780	2670	2030	13060	2860	38490	45610	7250	3670	19630	10030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997h, BY WATER YEAR (WY)

	MEAN	233	90.4	46.9	48.4	53.4	83.3	164	257	280	148	189	363
MAX	1464	262	222	375	235	357	664	742	979	726	1353	1492	
(WY)	1961	1973	1960	1968	1997	1970	1967	1997	1967	1967	1966	1966	
MIN	2.89	9.29	13.5	11.5	12.5	8.10	7.36	32.3	18.4	1.11	1.46	4.23	
(WY)	1964	1971	1971	1964	1971	1965	1964	1962	1970	1964	1970	1968	

SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1960 - 1997h

ANNUAL TOTAL	77239												
ANNUAL MEAN	212												
HIGHEST ANNUAL MEAN													1966
LOWEST ANNUAL MEAN													1976
HIGHEST DAILY MEAN	8320	May 9							16100	Oct 19			1965
LOWEST DAILY MEAN	12	Sep 21							.00	Jul 18			1964
ANNUAL SEVEN-DAY MINIMUM	15	Sep 16							.00	Jul 18			1964
INSTANTANEOUS PEAK FLOW	9390	May 9							23100	Sep 20			1965
INSTANTANEOUS PEAK STAGE	16.80	May 9							17.75	Sep 20			1965
ANNUAL RUNOFF (AC-FT)	153200								117900				
10 PERCENT EXCEEDS	335								225				
50 PERCENT EXCEEDS	51								31				
90 PERCENT EXCEEDS	28								6.6				

e Estimated

h See PERIOD OF RECORD paragraph.

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1979, October 1996 to September 1997. Pesticide analyses: October 1996 to September 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1979, October 1996 to September 1997.

WATER TEMPERATURE: October 1967 to September 1979, October 1996 to September 1997.

INSTRUMENTATION.--From August 1968 to September 1979 and October 1996 to September 1997, specific conductance and water temperature were recorded continuously at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 30,800 microsiemens Feb. 12, 1969; minimum, 428 microsiemens Aug. 17, 1997.

WATER TEMPERATURE: Maximum, 38.0°C June 30, 1976; minimum, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 16,400 microsiemens Apr. 9; minimum, 428 microsiemens Aug. 17.

WATER TEMPERATURE: Maximum, 37.0°C July 21, 29 and Aug. 1; minimum, 0.0°C on several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)
OCT 30...	0940	52	12000	8.3	12.0	10.4	104	1900	1700	510	140
NOV 21...	0925	39	13900	8.3	12.0	10.2	103	2500	2300	680	190
JAN 15...	1620	42	14000	8.2	4.5	13.0	109	2400	2200	670	180
FEB 19...	0945	29	14400	8.0	13.5	11.6	122	2500	2300	690	180
MAR 27...	1045	34	14500	8.0	16.0	10.4	116	2600	2400	690	204
APR 24...	1240	79	7460	8.1	15.0	9.2	98	1400	1300	400	104
MAY 08...	1055	142	7920	8.0	22.0	7.9	96	1900	1700	500	151
22...	1255	267	4610	8.1	18.5	8.5	96	1200	1000	320	89
JUN 12...	1300	93	8760	8.0	28.0	7.3	101	2000	1800	540	152
JUL 31...	0935	22	12900	7.9	25.0	7.5	98	2300	2200	630	176
SEP 03...	1555	31	10600	8.0	32.0	6.9	100	2000	1900	570	146
07...	1550	51	7790	8.1	32.5	7.0	104	1400	1300	380	99

DATE	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY, WAT DIS FIX END FIELD (MG/L AS CaCO3)	SULFATE, DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)
OCT 30...	2000	20	15	120	1800	3300	0.30	5.7	7840	704	0.090
NOV 21...	2500	22	13	140	2200	4000	0.30	3.1	9670	12	0.060
JAN 15...	2300	20	12	170	2100	3900	0.40	5.2	9270	12	0.400
FEB 19...	2400	21	12	140	2200	3900	0.40	2.7	9470	5	--
MAR 27...	2420	21	14	150	2300	3900	0.36	4.2	9640	10	--
APR 24...	1100	13	9.0	100	1300	1800	0.29	5.8	4790	456	0.787
MAY 08...	1140	11	12	140	1600	1900	0.26	7.9	5390	106	--
22...	585	7	8.6	110	1000	870	0.28	8.8	2990	665	--
JUN 12...	1370	13	13	130	1700	2200	0.34	7.1	6040	213	--
JUL 31...	2240	20	13	120	2100	3600	0.35	17	8830	19	--
SEP 03...	1850	18	12	120	1900	3100	0.32	8.7	7650	27	--
07...	1260	15	9.0	110	1300	2100	0.33	9.0	5240	79	--

RED RIVER BASIN

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07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
OCT 30...	0.020	0.110	0.320	--	<0.20	<0.010	<0.010	<0.010	6	3	100
NOV 21...	0.010	0.070	0.300	--	<0.20	<0.010	<0.010	<0.010	1	2	<100
JAN 15...	0.010	0.410	0.090	--	<0.20	<0.010	<0.010	<0.010	2	<1	100
FEB 19...	<0.010	0.290	0.050	--	<0.20	<0.010	<0.010	<0.010	1	1	<100
MAR 27...	<0.010	<0.050	0.110	--	<0.20	<0.010	<0.010	<0.010	2	2	<100
APR 24...	0.017	0.804	0.223	0.38	0.60	0.172	<0.010	<0.010	7	3	<100
MAY 08...	<0.010	<0.050	<0.015	0.22	0.22	<0.010	<0.010	<0.010	4	3	100
22...	<0.010	0.139	0.020	--	<0.20	<0.010	<0.010	<0.010	7	3	<100
JUN 12...	<0.010	0.153	0.016	0.31	0.33	0.091	<0.010	<0.010	4	3	100
JUL 31...	<0.010	<0.050	0.026	0.22	0.25	<0.010	<0.010	<0.010	3	3	<100
SEP 03...	<0.010	<0.050	0.055	--	<0.20	<0.010	0.012	<0.010	4	4	<100
07...	--	--	--	0.28	0.28	0.019	<0.010	--	5	4	<100

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 30...	110	<1	<10	19	<1.0	6	<100	8800	<30	4	<100
NOV 21...	46	<1	<8.0	<1	<1.0	1	<80	270	<24	<2	<80
JAN 15...	26	<1	13	<1	<1.0	2	<100	260	<30	<2	<100
FEB 19...	31	<1	<8.0	<1	<1.0	<1	<80	200	<24	<2	<80
MAR 27...	46	<4	<8.0	2	1.2	<4	<80	20	<24	<4	<80
APR 24...	157	<2	<4.0	18	<2.0	7	<40	5800	<12	<2	<40
MAY 08...	93	<2	<4.0	4	<2.0	2	<40	1300	<12	<2	<40
22...	102	<1	<3.0	21	<1.0	12	<30	11000	<9.0	5	45
JUN 12...	74	<2	<5.0	11	<2.0	5	<50	3800	<15	<2	<50
JUL 31...	61	<4	<7.0	<4	<4.0	<4	<70	180	<21	<4	<70
SEP 03...	104	<4	<6.0	<4	<4.0	<4	<60	380	<18	<4	<60
07...	196	<2	5.4	3	<2.0	5	<40	1500	<12	<2	112

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
OCT 30...	180	<10	<0.10	<0.1	<100	<100	2	3	<1	<2.0
NOV 21...	50	36	<0.10	<0.1	100	<80	4	3	<2	<2.0
JAN 15...	50	39	<0.10	<0.1	<100	<100	5	5	<2	<2.0
FEB 19...	60	41	<0.10	<0.1	<100	<80	6	6	<2	<4.0
MAR 27...	60	57	<0.10	<0.1	<100	<80	2	3	<4	<4.0
APR 24...	170	17	<0.10	<0.1	<100	<40	2	2	<2	<2.0
MAY 08...	64	9.1	<0.10	<0.1	<100	<40	3	3	<2	<2.0
22...	360	<3.0	<0.10	<0.1	<100	<30	2	2	<1	<1.0
JUN 12...	150	11	<0.10	<0.1	<100	<50	2	3	<2	<2.0
JUL 31...	97	106	<0.10	0.3	<100	<70	1	1	<4	<4.0
SEP 03...	87	44	<0.10	<0.1	<100	<60	1	1	<4	<4.0
07...	45	17	<0.10	<0.1	<100	71	1	1	<2	<2.0

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
OCT 30...	40	170	--	--	--	--	--	--	--	--
NOV 21...	<10	<24	--	--	--	--	--	--	--	--
JAN 15...	<10	<30	--	--	--	--	--	--	--	--
FEB 19...	<10	<24	--	--	--	--	--	--	--	--
MAR 27...	<10	<24	--	--	--	--	--	--	--	--
APR 24...	30	<12	--	--	--	--	--	--	--	--
MAY 08...	<10	<12	--	--	--	--	--	--	--	--
22...	50	<9.0	--	--	--	--	--	--	--	--
JUN 12...	20	<15	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
JUL 31...	<10	<21	--	--	--	--	--	--	--	--
SEP 03...	<10	28	--	--	--	--	--	--	--	--
07...	<10	21	--	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10500	10200	10300	14100	12800	13600	7090	4720	5680	14400	14100	14200
2	10700	10400	10500	14200	13200	13800	8090	6980	7490	14200	13800	14000
3	10800	10600	10700	13700	13200	13300	9200	8090	8570	14000	13600	13800
4	10800	10700	10700	13800	13400	13600	9730	8940	9300	13800	13600	13700
5	10900	10700	10800	14100	13700	13900	10200	9690	9920	14000	13800	13900
6	10800	10700	10800	14100	13200	13900	10800	10100	10500	14000	13900	13900
7	10900	10700	10800	13200	6850	11200	11000	10500	10700	13900	13700	13800
8	10800	5360	8060	12900	11800	12200	10900	10600	10800	13800	13700	13700
9	10500	5130	8860	13300	11800	12600	11200	10900	11000	13700	13300	13500
10	13800	7360	10400	---	---	e12400	11500	11200	11300	13500	13200	13400
11	14500	13800	14300	---	---	e13100	11700	11500	11600	13600	13200	13400
12	14300	13800	14100	13400	13300	13400	12000	11700	11900	15200	13400	14400
13	13900	13000	13500	13400	13100	13300	12200	11900	12100	15800	15100	15600
14	13700	13200	13400	13200	13000	13100	12400	12100	12200	15700	15100	15400
15	13800	13100	13600	13300	13200	13200	13100	12400	12800	15300	14200	14800
16	13500	12700	13000	13400	5570	12800	13300	13000	13100	14200	13200	13600
17	12700	12500	12600	14200	5210	12000	13700	13100	13400	13200	12900	13100
18	12800	12400	12600	12000	9220	10600	14000	13700	13800	13100	12700	12900
19	12700	12400	12500	13700	12000	12900	14500	13900	14300	13000	12600	12800
20	---	---	e11800	13800	13500	13700	---	---	e14300	13000	12600	12800
21	---	---	11000	14100	13700	13900	---	---	e14400	12800	12500	12700
22	11500	9670	10700	14100	14100	14100	---	---	e14500	12900	12500	12700
23	12000	10100	10800	14200	13900	14000	---	---	e14500	12800	12600	12700
24	13400	12000	12600	14200	2820	8090	---	---	e14600	13000	12600	12800
25	13600	13100	13400	6730	2870	4130	---	---	e14600	13100	12800	12900
26	13800	13600	13700	6900	4080	5220	---	---	e14700	13000	12700	12900
27	13700	12800	13400	8830	6900	7860	---	---	e14800	13300	12800	13000
28	13800	8880	11800	10000	8830	9490	---	---	e14800	13400	13000	13300
29	10600	6110	7480	9660	3790	5530	---	---	e14800	13500	13100	13300
30	12100	8070	11300	4760	3650	4300	---	---	e14900	13500	13000	13300
31	13000	11200	12500	---	---	---	---	---	14900	13400	12900	13200
MONTH	14500	5130	11700	14200	2820	11500	14500	4720	12500	15800	12500	13500

e Estimated

RED RIVER BASIN

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07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	13300	12900	13200	8800	8590	8660	15900	15700	15800	4350	3360	3610
2	13300	13000	13200	9000	6990	8470	15800	15500	15700	4420	3690	4040
3	13300	13000	13200	9230	8380	8890	15900	15400	15800	4940	4420	4710
4	13400	13100	13300	9690	9230	9410	15400	7350	12500	5420	4940	5170
5	13600	13400	13500	10100	9690	9960	10500	6530	8310	5850	5420	5630
6	13500	12900	13300	---	---	e10800	15000	9400	12000	6320	5840	6070
7	12900	5370	9010	11100	10900	11000	16000	15000	15400	6720	6320	6510
8	9820	6110	7840	11300	11100	11200	16300	16000	16100	6910	2730	6190
9	13100	9300	11300	11500	11200	11300	16400	16000	16200	3210	689	1160
10	13400	12900	13200	11800	11500	11600	16000	15700	15800	2930	1030	1530
11	13600	13100	13300	12000	11800	11900	15900	1230	4550	3220	1460	1850
12	13100	11800	12800	12100	11900	12000	1660	1250	1360	3030	2000	2460
13	11900	10700	11300	12300	11900	12100	5780	1660	3140	4350	3030	3700
14	12200	11800	12000	13000	12300	12700	2700	2480	2550	5240	4350	4860
15	13100	12200	12600	13200	12900	13100	3190	2700	2910	5330	5170	5250
16	13400	13000	13200	13200	13100	13200	3570	3190	3390	5360	5020	5190
17	14000	13400	13700	13200	12800	13000	3810	3570	3680	5250	5050	5170
18	14100	13700	13900	13300	13000	13100	4060	3810	3930	5380	5160	5270
19	13900	13400	13700	13400	13200	13300	4360	4060	4190	7200	5360	5550
20	13400	1100	3670	13500	13200	13400	4720	4350	4500	7000	2230	3250
21	2880	1090	1660	13800	13400	13500	5140	4720	4890	3270	2390	2840
22	3650	2540	2820	14200	13800	13900	7100	5140	5750	4890	2840	3920
23	6490	3650	5080	14400	14100	14300	6340	4650	5390	6480	4890	5710
24	9110	6490	7770	14400	14100	14300	8300	6340	7730	7000	6480	6740
25	9160	8120	8870	14700	14200	14500	7660	1960	5050	7490	7000	7210
26	8120	6810	7330	14800	14300	14600	3400	2470	2990	8070	7490	7760
27	8410	7150	7690	14900	14400	14600	2920	901	1420	8470	8070	8260
28	8640	8410	8560	15200	14900	15000	3080	1090	2180	8830	8470	8630
29	---	---	---	15600	15100	15200	3580	3080	3390	9080	8830	8940
30	---	---	---	15800	15400	15600	4320	3580	3950	9110	8930	9020
31	---	---	---	15900	15700	15800	---	---	---	9290	9090	9150
MONTH	14100	1090	10400	15900	6990	12600	16400	901	7350	9290	689	5330

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	9500	9280	9360	10800	9620	10400	12600	12300	12400	11000	10500	10800
2	9700	9450	9540	10100	9610	9880	12900	12500	12700	11300	11000	11200
3	9910	9700	9760	10000	9770	9870	13100	12900	12900	11700	11300	11500
4	10100	9850	9940	10300	10000	10200	13100	12800	13000	11700	1330	6950
5	10200	9960	10100	10500	10300	10400	12900	9310	12500	5280	1010	2070
6	10300	10200	10200	10500	7950	8920	10900	1270	5310	5420	3260	4280
7	10400	10300	10400	8120	7970	8060	---	---	e3400	8120	4880	6940
8	10500	7570	9680	8180	7610	7900	---	---	e5200	9100	7720	8290
9	9380	4360	6270	7870	7660	7750	---	---	e7000	9110	7280	8080
10	8690	4870	7100	8810	5240	7640	---	---	e8000	9430	7790	8890
11	7930	6470	7110	5240	2280	2650	---	---	e6200	10100	9430	9750
12	9160	7930	8700	7560	2740	3650	2280	1800	2080	10300	10100	10200
13	9160	8770	8970	12200	7560	11300	3110	1930	2620	10500	10300	10400
14	9980	9100	9580	12100	8390	10200	2480	1750	2120	10600	10300	10500
15	10600	1780	3920	8700	7170	8070	2420	1990	2100	10500	10300	10400
16	4470	843	2770	7170	5430	6060	3030	2420	2770	10800	10500	10600
17	6080	843	4970	5820	5270	5580	3430	428	3030	11000	10800	10900
18	5580	4970	5130	6400	5800	5990	1780	472	841	11100	11000	11000
19	6090	5510	5780	7040	6400	6660	2940	1110	1900	11200	11100	11100
20	7090	6090	6470	7440	6910	7160	3450	1940	2820	11400	11200	11200
21	7680	6860	7200	---	---	7570	6120	2830	4220	11400	11300	11300
22	8920	7680	8240	---	---	8490	6420	3700	5500	11300	7360	11000
23	9220	8830	9040	11000	9610	10500	4360	2700	3490	9410	2340	6460
24	9270	8780	9010	10900	10400	10700	5640	3450	4860	10200	1400	4730
25	10100	8390	8630	11100	10900	11000	6650	5640	6070	1690	1050	1390
26	8420	2660	4810	11200	11000	11100	8320	6650	7630	2570	1580	2090
27	2800	2630	2690	11400	11200	11300	8750	8320	8590	3630	2570	2920
28	---	---	e2400	11500	11300	11400	8730	8460	8570	4200	3630	4080
29	---	---	e2000	11800	11400	11600	9410	8680	9030	5420	4180	4740
30	2190	861	1540	12200	11100	11900	10000	9410	9720	6050	5420	5730
31	---	---	---	12300	11200	12100	10500	10000	10200	---	---	---
MONTH	10600	843	7040	12300	2280	8900	13100	428	6350	11700	1010	7980
YEAR	16400	428	9600									

e Estimated

RED RIVER BASIN

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	24.5	19.5	21.5	12.0	8.0	9.5	9.0	3.5	6.5	18.0	12.5	14.5
2	26.0	19.0	22.0	15.0	6.5	10.5	10.5	4.5	7.5	18.0	11.5	14.5
3	24.0	17.5	20.5	14.0	9.5	11.5	10.0	4.0	7.0	19.0	13.0	15.5
4	22.0	20.0	21.0	18.5	10.5	14.0	11.5	5.5	8.0	17.5	12.5	15.5
5	24.5	18.5	21.5	20.0	11.5	15.5	11.0	4.5	8.0	12.5	7.5	9.5
6	25.5	20.5	22.5	18.0	12.5	16.0	13.0	6.5	9.5	7.5	4.0	6.0
7	26.5	19.5	23.0	15.5	9.5	12.5	12.5	6.5	9.0	5.5	3.0	4.0
8	23.5	19.0	21.0	14.5	8.0	11.0	12.5	5.0	8.5	4.0	2.5	3.0
9	24.0	17.5	20.5	15.5	7.5	11.5	15.0	7.0	10.5	8.5	.0	4.0
10	22.5	17.5	20.0	---	---	---	16.0	10.0	13.0	6.5	2.0	4.0
11	23.5	16.5	20.0	---	---	---	16.5	10.0	13.0	2.0	.0	.5
12	25.0	17.5	21.0	---	---	---	15.5	9.0	12.0	---	---	---
13	25.5	18.0	21.5	17.0	11.0	13.5	15.0	7.5	11.0	---	---	---
14	24.5	17.5	20.5	18.0	13.0	15.5	16.5	9.5	12.0	---	---	---
15	25.0	17.5	21.0	17.5	14.0	16.0	11.0	3.5	6.5	4.5	.0	1.5
16	25.5	18.0	21.5	19.5	14.0	17.0	8.0	.5	4.0	4.5	.0	1.5
17	21.0	15.5	19.0	14.0	9.0	11.5	4.5	.0	2.0	6.5	.0	2.5
18	19.5	12.0	15.5	16.0	8.0	11.5	2.5	.0	.5	8.5	.0	3.5
19	17.5	11.5	15.0	18.5	10.5	14.0	---	---	---	12.0	3.0	7.0
20	---	---	---	17.5	12.5	14.5	---	---	---	14.0	5.0	9.5
21	---	---	---	14.0	9.0	11.5	---	---	---	16.5	9.5	12.5
22	15.0	8.5	11.5	10.5	8.5	9.5	---	---	---	15.0	8.0	11.5
23	17.5	8.5	12.5	16.0	10.5	12.5	---	---	---	14.0	9.5	11.5
24	19.0	11.5	15.0	10.5	2.0	4.5	---	---	---	14.0	7.5	10.5
25	21.5	13.5	17.5	5.0	.0	2.5	---	---	---	12.5	5.0	8.5
26	21.0	15.0	18.5	7.0	.5	3.5	---	---	---	13.0	8.0	10.5
27	19.5	13.0	17.0	6.5	1.5	4.0	---	---	---	12.5	2.0	8.5
28	13.5	12.5	13.0	7.0	5.0	6.0	---	---	---	7.5	.0	2.5
29	17.0	13.5	15.0	9.0	5.0	7.0	---	---	---	7.5	.0	3.0
30	18.0	10.5	14.0	11.0	6.5	8.5	---	---	---	11.0	.5	5.5
31	15.0	10.0	13.0	---	---	---	---	---	---	15.0	4.0	9.0
MONTH	26.5	8.5	18.5	20.0	.0	11.0	16.5	.0	8.5	19.0	.0	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	16.5	6.5	11.0	14.5	11.0	12.5	16.5	14.0	15.0	23.0	18.0	20.5
2	16.0	8.0	12.0	11.5	7.5	9.5	23.0	15.0	18.5	23.5	20.0	21.5
3	17.5	9.5	13.0	17.5	6.5	11.5	19.5	17.5	18.5	23.0	16.5	19.5
4	14.5	8.5	11.5	19.5	11.0	15.0	20.5	17.5	18.5	23.5	17.5	20.5
5	10.0	6.0	8.0	---	---	---	21.0	13.5	17.0	26.5	18.0	22.0
6	8.0	6.5	7.0	---	---	---	22.0	12.0	16.5	28.0	20.5	24.0
7	7.0	5.0	6.0	19.5	10.0	14.5	20.0	13.0	16.5	27.0	22.0	24.0
8	5.5	3.0	4.0	17.0	14.0	15.5	17.0	9.5	14.5	26.0	20.0	23.5
9	5.0	3.0	4.0	18.5	14.5	16.5	9.5	8.0	9.0	20.0	17.0	18.5
10	12.0	1.5	6.0	21.0	11.5	16.0	17.0	9.5	13.5	20.5	17.5	19.0
11	9.5	3.5	7.0	22.0	13.5	18.0	16.5	7.5	10.0	22.5	19.5	21.0
12	9.0	3.0	6.0	21.0	16.5	18.5	10.0	5.0	7.5	22.0	19.5	20.5
13	5.5	2.5	4.0	23.5	16.5	19.0	14.0	7.5	10.5	24.0	17.5	20.5
14	13.5	4.0	8.0	16.5	8.5	12.0	18.0	9.0	13.0	23.0	20.5	21.5
15	14.5	4.5	9.0	17.0	7.0	11.5	21.0	11.5	16.0	24.5	19.5	22.0
16	16.5	6.0	11.0	13.5	11.5	12.5	22.5	14.5	18.0	27.5	20.5	23.5
17	17.0	8.0	12.5	22.0	12.5	17.0	25.0	15.5	20.0	29.0	22.5	25.5
18	18.0	9.5	13.5	18.5	13.5	16.0	21.5	17.0	19.0	28.5	22.5	25.5
19	18.0	13.5	15.5	20.0	10.5	15.0	27.0	15.5	20.0	25.5	18.5	22.0
20	16.0	14.5	15.0	23.5	12.0	17.5	28.5	17.5	22.5	20.0	16.0	18.0
21	14.5	10.5	12.0	24.5	15.0	19.5	27.0	19.0	23.0	19.0	17.5	18.0
22	12.5	8.5	10.5	21.5	14.5	17.5	22.5	16.0	19.5	21.5	17.5	19.0
23	12.5	9.0	10.5	23.0	13.0	17.5	23.5	16.5	20.0	25.0	19.5	22.0
24	10.5	8.5	10.0	23.0	15.5	19.0	20.0	13.0	16.0	29.0	20.5	24.5
25	8.5	6.0	7.0	19.0	12.0	15.5	13.0	11.0	11.5	30.5	23.0	26.5
26	9.5	6.0	7.0	20.5	10.5	15.0	11.5	10.5	11.0	30.0	23.5	26.5
27	10.5	5.0	7.5	22.0	14.0	17.0	12.0	11.0	11.5	29.5	23.0	26.0
28	13.5	8.0	10.5	23.0	13.0	17.5	16.5	12.0	14.0	28.5	21.5	24.5
29	---	---	---	24.0	14.5	18.5	20.5	16.5	18.0	28.0	21.0	24.0
30	---	---	---	20.0	12.0	15.5	21.5	18.5	20.0	26.0	22.5	24.0
31	---	---	---	18.5	11.5	15.0	---	---	---	29.0	20.0	24.5
MONTH	18.0	1.5	9.0	24.5	6.5	15.5	28.5	5.0	16.0	30.5	16.0	22.5

07312000 LAKE KEMP NEAR MABELLE, TX

LOCATION.--Lat 33°45'30", long 99°09'03", Baylor County, Hydrologic Unit 11130206, in outlet gate tower near center of dam on Wichita River, 6.2 mi north of Mabelle, 13 mi northeast of Seymour, and 126.7 mi upstream from mouth.

DRAINAGE AREA.--2,086 mi².

PERIOD OF RECORD.--October 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1972, nonrecording gage at different site and at datum 2.40 ft higher.

REMARKS.--The lake is formed by a rolled earthfill dam 8,890 ft long. The original dam was completed Aug. 25, 1923, but deliberate impoundment had begun Oct. 1, 1922. Enlargement of the dam was completed in November 1973. The 3,000-foot-wide uncontrolled spillway is located approximately 600 ft to right and slightly upstream from right end of dam. The controlled outlet works near center of dam consist of two hydraulically operated slide gates 5 ft 8-in by 13 ft with a 13-foot-diameter conduit and spillway basin. The dam and lake are owned by the city of Wichita Falls and the Wichita County Water Improvement District No. 2. Water is used for irrigation in the Wichita River Valley, oil field operation, municipal, and industrial uses. The capacity table is based on a resurvey made in 1973. Satellite telemeter at station. Figures given herein represents total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,183.0	-
Crest of spillway	1,160.0	603,000
Top of flood-control pool	1,156.0	502,900
Top of conservation pool	1,144.0	268,000
Lowest gated outlet (invert)	1,090.0	1,400

COOPERATION.--Capacity table No. 4-C was provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,900 acre-ft June 30, 1941 (elevation, 1,152.0 ft), present datum; minimum since first appreciable storage, 26,160 acre-ft June 30, 1953 (elevation, 1,108.0 ft), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 297,000 acre-ft May 11 at 1700 hours (elevation, 1,145.79 ft); minimum contents, 199,600 acre-ft Nov. 3-4 (elevation, 1,139.10 ft).

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

1108.0	26,160	1136.0	166,200	1142.0	238,200
1118.0	58,000	1138.0	186,700	1147.0	317,700
1128.0	108,000	1140.0	210,900	1152.0	407,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204700	200200	206400	206900	204900	231800	230500	e271200	269100	272800	253900	253100
2	204900	199800	206400	207100	204900	232300	229800	e270900	269100	272000	252500	252500
3	204500	200100	206600	207500	204500	232900	229800	e270500	269300	271700	251500	251600
4	204900	200100	207100	207400	204500	232300	230500	e270200	269300	270900	250800	253700
5	205100	200300	206700	207400	205000	232900	230800	269900	269300	270900	250000	254600
6	205200	201700	206600	206900	205100	232200	229700	271200	269300	270600	250200	254000
7	205500	200900	207100	207000	206100	232700	229500	271700	269100	270200	252100	253600
8	205400	200800	207000	207200	205900	233600	228400	272000	269900	269900	252500	252800
9	206000	200800	207400	207200	205900	233200	228000	280500	270100	269300	252100	252100
10	205500	200700	207600	206400	206100	233600	228400	290800	270200	270100	252200	251300
11	206600	200800	207000	206200	206000	233900	234100	295400	271400	270100	251800	250500
12	205600	200900	207600	206100	206700	234000	236000	296500	269600	269900	253400	249700
13	205900	201200	207800	206600	206700	233400	237400	295400	269400	269400	253600	249000
14	206000	201100	207200	206200	206900	232700	237900	293200	271500	269300	254000	248000
15	205600	201200	207200	206400	207200	233200	238200	290600	271700	268600	253300	247100
16	205400	202500	207000	206500	207100	233300	238300	288100	273300	268300	252800	246400
17	204500	201700	206500	206400	207400	234000	238900	285300	274200	267700	252200	245200
18	203700	202000	206000	206700	207100	233400	239100	282400	273900	267200	255500	244300
19	203800	201500	205600	206700	208400	233700	239200	281400	273900	266900	256900	243200
20	204100	202200	206200	207200	218200	234000	238600	280000	273300	266000	256400	242000
21	203600	201700	206600	206600	224300	233600	238100	278400	272500	265600	256400	241000
22	203100	201700	206400	206700	228000	234100	239100	276200	274700	265000	257100	241300
23	202200	201800	206500	206500	229400	234000	238300	274400	276200	264000	256900	241300
24	202200	203000	205900	206200	230100	234000	238100	273800	276200	262800	256600	242300
25	202200	202700	205900	205700	230400	232700	242000	273000	275700	261500	256400	244300
26	201700	203100	206400	205700	230800	232900	249900	272000	275000	260600	255700	244300
27	201200	203200	206700	204700	230900	232900	256100	270600	274700	259600	255400	243700
28	201500	204000	206700	204100	231600	231800	263300	269600	274400	258400	254800	242900
29	201300	205900	206600	204200	---	231600	268500	269000	274400	257100	254500	242400
30	200700	206700	206500	204100	---	231200	271200	269400	273400	255700	254000	241700
31	200800	---	207100	204600	---	230900	---	269300	---	255200	253600	---
MAX	206600	206700	207800	207500	231600	234100	271200	296500	276200	272800	257100	254600
MIN	200700	199800	205600	204100	204500	230900	228000	269000	269100	255200	250000	241000
(+)	1139.20	1139.67	1139.70	1139.50	1141.53	1141.48	1144.20	1144.08	1144.34	1143.16	1143.05	1142.24
(@)	-3300	+5900	+400	-2500	+27000	-700	+40300	-1900	+4100	-18200	-1600	-11900
CAL YR 1996	MAX	260900	MIN	146500	(@)	-51600						
WTR YR 1997	MAX	296500	MIN	199800	(@)	+37600						

e Estimated

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

(@) Change in contents, in acre-feet.

RED RIVER BASIN

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07312100 WICHITA RIVER NEAR MABELLE, TX

LOCATION.--Lat 33°45'36", long 99°08'33", Baylor County, Hydrologic Unit 11130206, near left bank at downstream side of bridge on U.S. Highways 183 and 283, 0.3 mi downstream from Lake Kemp Dam, 6.2 mi north of Mabelle, and 13 mi north-east of Seymour.

DRAINAGE AREA.--2,086 mi², all of which is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-58 (occasional discharge measurements), October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,062.72 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in October 1959, at least 10% of contributing drainage area has been regulated by Lake Kemp (07312000). Water is released from Lake Kemp to supply Lake Diversion, 12.5 mi downstream. Water from Lake Diversion is released for mining, recreation, and for irrigation in the vicinity of Wichita Falls.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.49	e80	.22	.33	.25	.38	126	.35	.84	153	392	136
2	.49	e.49	.22	.33	.26	.39	128	83	.71	154	392	205
3	.49	e.44	.21	.31	.23	.40	128	135	.67	100	391	128
4	.44	e.42	.22	.30	.22	.42	128	135	.64	70	390	e69
5	.42	e.42	.19	.33	.23	.42	126	135	.64	68	336	202
6	.42	e.33	.14	.34	.28	.42	128	136	.58	67	272	203
7	.42	e.22	.22	.35	.47	.42	127	135	.58	67	273	203
8	.42	e.22	.22	.36	.24	.47	129	137	.58	67	271	203
9	.42	e.16	.22	.30	.22	.49	128	57	.56	67	271	205
10	.45	.16	.20	.28	.28	.47	126	326	.56	66	272	215
11	.45	.16	.21	.33	.28	.49	58	842	24	66	241	244
12	.42	.16	.24	.37	.31	.53	.66	1360	60	65	189	264
13	.42	.16	.26	.37	.33	.53	.54	1370	60	65	189	266
14	.42	.20	.28	.37	.28	.54	.53	1550	63	65	189	267
15	46	.19	.28	.37	.28	.47	.50	1660	64	65	188	267
16	122	.20	.28	e.37	.32	.47	.51	1660	68	65	188	267
17	126	.30	.29	e.37	.33	.47	.52	1660	67	64	189	267
18	125	.33	.28	e.37	.34	.51	.50	1660	62	122	189	267
19	123	.32	.29	e.42	.36	.48	.47	1660	62	161	190	267
20	123	.28	.32	71	14	.47	20	1660	114	161	191	268
21	124	.28	.24	126	1.3	.51	130	1650	151	217	164	269
22	123	.26	.18	127	.54	.52	132	1650	162	270	97	268
23	122	.25	.20	127	.48	.47	129	1140	180	341	96	268
24	118	1.1	.23	126	.47	.66	131	512	152	390	95	268
25	118	.34	.23	127	.45	131	51	511	152	390	95	269
26	120	.24	.23	126	.43	128	2.5	510	152	391	95	268
27	119	.16	.24	127	.38	125	.76	603	152	391	95	268
28	117	.18	.28	56	.37	126	.39	506	152	391	95	270
29	114	2.1	.31	.43	---	126	.37	207	151	392	95	268
30	114	.27	.33	.37	---	128	.40	96	153	393	96	269
31	117	---	.33	.31	---	126	---	.88	---	390	96	---
TOTAL	1977.17	90.34	7.59	1020.68	23.93	966.74	1933.65	23747.23	2207.36	5734	6322	7098
MEAN	63.8	3.01	.24	32.9	.85	31.2	64.5	766	73.6	185	204	237
MAX	126	.80	.33	127	.14	131	132	1660	180	393	392	270
MIN	.42	.16	.14	.28	.22	.38	.37	.35	.56	64	95	69
AC-FT	3920	179	15	2020	47	1920	3840	47100	4380	11370	12540	14080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997#, BY WATER YEAR (WY)

MEAN	134	107	41.7	63.4	64.8	146	165	173	311	319	284	174
MAX	952	1271	247	648	769	659	659	1246	1810	923	1742	915
(WY)	1987	1987	1987	1992	1992	1968	1968	1990	1992	1967	1995	1986
MIN	.66	.39	.24	.60	.51	.50	.89	6.53	2.59	140	30.9	1.66
(WY)	1985	1974	1997	1979	1979	1989	1981	1977	1989	1975	1978	1974

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1960 - 1997#

ANNUAL TOTAL	44841.75	51128.69	
ANNUAL MEAN	123	140	166
HIGHEST ANNUAL MEAN			522
LOWEST ANNUAL MEAN			59.9
HIGHEST DAILY MEAN	393	May 24	3530
LOWEST DAILY MEAN	.14	Dec 6	.09
ANNUAL SEVEN-DAY MINIMUM	.17	Nov 9	.14
INSTANTANEOUS PEAK FLOW		1720	4290
INSTANTANEOUS PEAK STAGE		6.66	10.47
ANNUAL RUNOFF (AC-FT)	88940	101400	120000
10 PERCENT EXCEEDS	291	271	407
50 PERCENT EXCEEDS	90	62	13
90 PERCENT EXCEEDS	.28	.24	.71

e Estimated

Period of regulated streamflow.

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1965 to May 1993, October 1994 to current year. Pesticide analyses: October 1996 to September 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to May 1993, October 1994 to current year.

WATER TEMPERATURE: July 1968 to May 1993, October 1994 to current year.

INSTRUMENTATION.--From 1968 to May 1993 daily samples collected manually, October 1994 to current year specific conductance and temperature continuously recorded on an hourly basis by automatic monitors.

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, 7,110 microsiemens May 13, 14, 1980; minimum daily, 561 microsiemens May 28, 1975.

WATER TEMPERATURE: Maximum, 34.0°C Aug. 5, 1995; minimum daily, 0.0°C Dec. 20, 1973, Feb. 9, 17, 1980.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 5,300 microsiemens Nov. 8; minimum, 1,470 microsiemens Nov. 29.

WATER TEMPERATURE: Maximum, 30.5°C June 9; minimum, 1.5°C Dec. 18.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 29...	1107	115	4470	8.5	17.5	10.0	106	780	700	210	63
NOV 21...	1205	0.28	4940	7.8	13.5	7.8	78	940	730	250	76
JAN 15...	1340	0.37	4920	8.0	12.5	10.1	99	950	750	260	73
FEB 19...	1120	0.37	4950	7.8	15.0	9.4	98	950	750	260	76
APR 02...	1610	129	4830	8.3	14.5	10.4	108	920	830	260	67
30...	1600	0.37	4900	7.9	24.5	11.7	148	940	760	250	77
MAY 13...	1425	1370	4440	8.4	19.5	9.6	109	860	770	240	65
JUN 03...	1410	0.64	4670	7.9	22.5	9.6	116	890	750	240	73
24...	1700	150	4210	8.3	25.5	8.3	106	840	750	230	65
AUG 06...	1400	271	4560	8.1	28.0	7.6	102	850	760	230	69
SEP 05...	0855	201	4490	8.3	27.0	7.6	100	860	770	230	68
08...	1620	203	4500	8.2	27.0	8.0	106	870	780	230	69
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT 29...	630	10	7.9	85	780	1000	0.30	8.7	2750	13	--
NOV 21...	710	10	7.2	210	750	1100	0.40	10	3030	28	0.040
JAN 15...	660	9	7.1	200	740	1100	0.40	12	2970	22	0.070
FEB 19...	706	10	5.4	200	740	1100	0.42	9.4	3010	13	--
APR 02...	669	10	7.6	94	810	1100	0.32	7.1	2950	11	--
30...	705	10	6.1	180	740	1100	0.39	9.1	3030	19	--
MAY 13...	617	9	7.6	90	760	950	0.31	6.6	2700	10	--
JUN 03...	649	9	6.6	140	750	1100	0.36	5.8	2860	9	--
24...	618	9	7.6	94	750	930	0.31	6.7	2660	3	--
AUG 06...	635	10	7.9	85	790	1000	0.27	11	2830	<1	--
SEP 05...	620	9	7.7	88	800	1000	0.33	6.9	2800	7	--
08...	638	9	7.6	91	810	1000	0.31	6.8	2830	2	--

RED RIVER BASIN

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07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)
OCT 29...	0.020	<0.050	0.170	0.23	0.40	<0.010	<0.010	<0.010	3	3	<100
NOV 21...	0.020	0.060	0.350	0.05	0.40	<0.010	<0.010	<0.010	2	2	<100
JAN 15...	0.010	0.080	0.380	0.12	0.50	<0.010	<0.010	<0.010	4	3	100
FEB 19...	<0.010	<0.050	0.220	0.08	0.30	0.010	<0.010	<0.010	4	4	<100
APR 02...	<0.010	0.120	0.080	0.32	0.40	<0.010	<0.010	<0.010	2	2	<100
30...	<0.010	<0.050	0.207	0.06	0.26	0.010	<0.010	<0.010	5	4	<100
MAY 13...	<0.010	<0.050	<0.015	--	<0.20	<0.010	<0.010	<0.010	2	2	<100
JUN 03...	<0.010	<0.050	0.091	0.32	0.41	<0.010	<0.010	<0.010	3	2	<100
24...	<0.010	<0.050	<0.015	0.36	0.36	<0.010	<0.010	<0.010	2	2	100
AUG 06...	<0.010	<0.050	0.022	0.24	0.27	<0.010	<0.010	<0.010	2	2	<100
SEP 05...	<0.010	<0.050	0.026	0.24	0.27	<0.010	<0.010	<0.010	3	3	<100
08...	--	--	--	0.39	0.39	0.018	<0.010	--	2	3	<100

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 29...	140	<1	9.0	<1	1.3	1	<40	110	<12	<1	110
NOV 21...	25	<1	<3.0	<1	<1.0	1	<30	380	<9.0	<1	<30
JAN 15...	18	<1	<3.0	<1	<1.0	<1	<30	420	<9.0	<1	<30
FEB 19...	23	<1	<3.0	<1	<1.0	1	<30	520	<9.0	<1	<30
APR 02...	122	<1	<3.0	<1	<1.0	<1	<30	70	<9.0	<1	<30
30...	22	<1	<3.0	1	1.7	<1	<30	350	13	<1	74
MAY 13...	119	<1	<3.0	<1	<1.0	2	<30	40	<9.0	<1	<30
JUN 03...	63	<1	<3.0	<1	<1.0	1	<30	250	14	<1	<30
24...	118	<1	<3.0	<1	<1.0	1	<30	50	<9.0	<1	57
AUG 06...	117	<1	4.8	<1	<1.0	<1	<30	30	<9.0	<1	<30
SEP 05...	115	<1	<3.0	<1	<1.0	1	<30	20	<9.0	<1	<30
08...	116	<1	<3.0	<1	2.2	<1	<30	30	<9.0	<1	<30

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)
OCT 29...	20	<4.0	<0.10	<0.1	<100	50	<1	<1	<1	<1.0
NOV 21...	250	290	<0.10	<0.1	<100	<30	<1	<1	<1	<1.0
JAN 15...	270	260	<0.10	<0.1	<100	<30	<1	<1	<1	<1.0
FEB 19...	330	392	<0.10	0.1	<100	<30	<1	<1	<1	<1.0
APR 02...	15	5.4	<0.10	<0.1	<100	<30	1	<1	<1	<1.0
30...	160	226	<0.10	0.1	<100	<30	<1	<1	<1	<1.0
MAY 13...	18	<3.0	<0.10	<0.1	<100	<30	<1	<1	<1	<1.0
JUN 03...	170	166	<0.10	<0.1	<100	<30	<1	<1	<1	<1.0
24...	27	<3.0	<0.10	<0.1	<100	<30	1	<1	<1	<1.0
AUG 06...	25	<3.0	<0.10	<0.1	<100	<30	<1	1	<1	<1.0
SEP 05...	25	<3.0	<0.10	<0.1	<100	<30	1	<1	<1	<1.0
08...	28	<3.0	<0.10	<0.1	<100	<30	1	<1	<1	<1.0

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)
OCT 29...	<10	60	--	--	--	--	--	--	--	--
NOV 21...	<10	<9.0	--	--	--	--	--	--	--	--
JAN 15...	<10	<9.0	--	--	--	--	--	--	--	--
FEB 19...	<10	<9.0	--	--	--	--	--	--	--	--
APR 02...	<10	<9.0	--	--	--	--	--	--	--	--
30...	<10	<9.0	--	--	--	--	--	--	--	--
MAY 13...	<10	<9.0	--	--	--	--	--	--	--	--
JUN 03...	<10	12	--	--	--	--	--	--	--	--
24...	<10	<9.0	<0.040	<0.100	<0.020	<0.060	<0.030	<0.800	<0.030	<2.00
AUG 06...	<10	15	--	--	--	--	--	--	--	--
SEP 05...	<10	<9.0	--	--	--	--	--	--	--	--
08...	<10	<9.0	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	1977.17	4390	2670	14270	980	5220	700	3730	830
NOV. 1996	90.34	4290	2610	636	950	232	680	167	810
DEC. 1996	7.59	4960	3040	62.2	1100	23.2	770	15.8	910
JAN. 1997	1020.68	4980	3050	8390	1100	3120	770	2130	910
FEB. 1997	23.93	3480	2100	136	750	48.7	570	36.6	680
MAR. 1997	966.74	4880	2980	7780	1100	2890	760	1990	900
APR. 1997	1933.65	4850	2960	15480	1100	5740	760	3960	890
MAY 1997	23747.23	4320	2620	168200	960	61440	690	44130	820
JUNE 1997	2207.36	4330	2630	15690	960	5730	690	4110	820
JULY 1997	5734	4380	2660	41240	970	15090	700	10790	830
AUG. 1997	6322	4410	2690	45850	980	16790	700	11970	830
SEPT 1997	7098	4330	2630	50420	960	18420	690	13220	820
TOTAL	51128.69	**	**	368200	**	134700	**	96250	**
WTD.AVG.	140	4380	2670	**	980	**	700	**	830

RED RIVER BASIN

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07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	5080	5000	5050	4720	4200	4280	4800	4340	4570	5050	4970	5020
2	5120	4610	4880	5060	4670	4870	4850	4590	4740	5090	4980	5040
3	4680	4600	4640	5090	4890	4990	4900	4630	4800	5110	5030	5060
4	4660	4580	4620	5160	4860	5050	4890	4610	4800	5070	4990	5040
5	4670	4580	4610	5190	5020	5120	4890	4740	4830	5080	4970	5050
6	4660	4570	4610	5210	4300	4890	4950	4450	4860	5120	4970	5070
7	4670	4480	4610	5100	3250	4290	5000	4870	4930	5140	5100	5120
8	4720	4610	4670	5300	4990	5180	4940	4790	4880	5140	5080	5110
9	4740	4450	4670	5290	4790	5030	4940	4750	4890	5230	5140	5180
10	4790	4680	4720	4890	4800	4850	4930	4750	4870	5200	5150	5180
11	4830	4240	4750	4900	4800	4850	4950	4890	4920	5190	5130	5160
12	4850	4240	4770	4850	4780	4820	4980	4890	4940	5170	5100	5130
13	4890	4580	4790	4920	4830	4860	4960	4860	4910	5150	5040	5110
14	4910	4670	4840	4910	4850	4880	4990	4840	4920	5070	4960	5020
15	4890	4350	4680	4940	4860	4900	4960	4720	4880	5080	4920	5010
16	4470	4200	4440	4910	4620	4830	5000	4790	4870	5280	5080	5210
17	4490	4460	4470	4950	4650	4860	5100	4760	5040	5240	5120	5190
18	4550	4470	4510	4990	4870	4940	5140	5050	5100	5180	5010	5110
19	4550	4520	4540	4960	4860	4920	5160	5050	5110	5140	4980	5060
20	4520	4480	4510	4950	4880	4930	5120	5030	5080	5050	4890	4980
21	4500	4440	4470	5000	4930	4970	5110	4990	5050	4930	4900	4910
22	4450	4420	4440	5000	4950	4970	5060	4900	5020	4900	4870	4890
23	4420	4390	4410	4970	4670	4890	5090	5020	5040	4930	4890	4910
24	4400	4350	4380	4700	1650	3630	5130	5050	5090	4980	4920	4950
25	4350	4330	4340	4960	4540	4870	5110	5070	5090	5010	4980	4990
26	4330	4300	4310	5030	4850	4960	5110	5050	5080	5060	5010	5040
27	4300	4280	4290	5040	4890	4960	5120	5040	5080	5110	5060	5080
28	4280	4260	4270	4980	4580	4910	5100	5020	5070	5150	5070	5110
29	4270	4250	4260	4580	1470	2920	5080	5000	5050	---	---	e5170
30	4260	4240	4250	4540	3490	4190	5080	4970	5040	---	---	e5200
31	4240	4210	4230	---	---	---	5040	4980	5020	5020	4830	4940
MONTH	5120	4200	4550	5300	1470	4750	5160	4340	4950	5280	4830	5070

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	4910	4780	4860	---	---	e4880	4880	4870	4880	4970	4860	4920
2	4880	4830	4860	---	---	e4820	4890	4880	4880	4930	4760	4820
3	4870	4780	4840	5010	4800	4930	4890	4870	4880	4760	4710	4730
4	4890	4820	4870	4980	4780	4890	4880	4800	4870	4760	4700	4730
5	4900	4720	4860	5010	4870	4960	4890	4870	4880	4760	4730	4750
6	4810	4660	4730	5000	4900	4960	4880	4860	4870	4750	4720	4740
7	4740	3190	4030	5020	4850	4930	4860	4830	4850	4750	4720	4730
8	4850	4630	4800	4990	4890	4930	4840	4820	4830	4730	4710	4720
9	4870	4810	4840	4960	4830	4900	4840	4820	4820	4750	4060	4450
10	4900	4760	4830	4980	4830	4910	4820	4800	4810	4880	4610	4710
11	4880	4600	4800	4960	4820	4900	4820	4250	4580	4640	4410	4570
12	4850	4680	4780	4940	4820	4910	4930	4820	4890	4580	4380	4500
13	4820	4000	4670	4960	4810	4910	4950	4810	4920	4530	4370	4460
14	4830	4700	4780	5040	4910	5000	4980	4820	4920	4480	4370	4430
15	4850	4780	4820	5030	4940	5000	5000	4870	4930	4470	4390	4430
16	4890	4760	4830	5010	4460	4970	5010	4870	4920	4460	4320	4380
17	4870	4690	4840	5000	4890	4950	5030	4840	4920	4360	4220	4300
18	4870	4770	4840	5010	4910	4970	5010	4900	4970	4330	4210	4260
19	4860	4340	4780	5010	4740	4870	5040	4820	4940	4370	4190	4300
20	---	---	e2800	5030	4870	4970	5020	4840	4940	4280	4170	4240
21	3440	2300	2910	5020	4730	4980	4950	4920	4940	4280	4170	4230
22	4250	3110	3530	5030	4960	5000	4960	4920	4940	4270	4080	4190
23	4670	4250	4560	5030	4900	4970	4940	4900	4920	4240	4090	4180
24	4770	4610	4710	5230	4840	4930	4960	4930	4950	4190	4070	4140
25	4830	4760	4790	4880	4850	4870	4960	2420	4150	4190	3940	4090
26	4790	4450	4610	4870	4850	4870	4230	1850	3400	4110	3890	4010
27	4880	4430	4710	4880	4860	4870	4400	3080	3780	4070	3680	3910
28	---	---	e4900	4880	4870	4870	4670	4100	4360	4030	3640	3890
29	---	---	---	4880	4870	4880	4870	4480	4690	4170	3850	4040
30	---	---	---	4890	4850	4880	4900	4730	4840	4390	4110	4190
31	---	---	---	4890	4760	4870	---	---	---	4600	4330	4540
MONTH	4910	2300	4580	5230	4460	4920	5040	1850	4750	4970	3640	4410

e Estimated

RED RIVER BASIN

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	4680	4510	4600	4440	4400	4420	4560	3450	4270	4630	4580	4610
2	4700	4410	4610	---	---	e4410	4600	3880	4330	4580	4370	4470
3	4670	4510	4590	4450	4390	4420	4360	3650	3940	4710	4360	4470
4	4700	4410	4580	4480	4430	4460	4340	3680	4100	4890	4520	4680
5	4650	4500	4580	4500	4480	4490	4630	3710	4280	4550	4440	4510
6	4700	4560	4630	4500	4490	4500	4660	4250	4550	4520	4290	4450
7	4700	4550	4630	4510	4490	4500	4750	4640	4720	4550	4230	4440
8	4710	4570	4630	4530	4490	4510	4730	4540	4640	4540	4410	4480
9	4680	4450	4590	4530	4500	4510	4690	4400	4570	4470	4130	4310
10	4660	4530	4590	4530	4500	4510	4710	4430	4550	4180	3830	4030
11	4680	4240	4470	4530	4510	4520	4610	4320	4490	4640	3690	4130
12	4300	4250	4270	4540	4510	4530	4540	4420	4490	4620	4140	4510
13	4330	4270	4300	4550	4530	4540	4490	4440	4460	4580	3190	4220
14	5090	4140	4360	4560	4540	4550	4490	4430	4470	4550	4200	4440
15	5120	4300	5020	4570	4540	4550	4490	4420	4470	4640	3270	4190
16	4330	3650	4210	4570	4560	4560	4490	4430	4460	4600	4410	4550
17	4300	3730	4250	4610	4560	4570	4480	4410	4450	4660	3500	4250
18	4340	4280	4310	4620	4590	4600	4430	4210	4350	4680	4570	4640
19	4350	4280	4330	4620	4570	4600	4410	4170	4320	4680	3540	4260
20	4360	4280	4320	4600	4530	4560	4530	4060	4260	4680	4600	4640
21	4360	4280	4310	4550	4420	4510	4540	4430	4490	4630	4200	4510
22	4380	3530	4320	4510	4390	4460	4500	4440	4470	4680	3900	4350
23	4290	3450	4120	4580	4260	4460	4570	4470	4510	4610	4030	4410
24	4290	4270	4290	4540	4120	4360	4570	4550	4560	4530	3830	4330
25	4300	4260	4280	4630	3860	4330	4580	4560	4570	4530	3220	4160
26	4310	4210	4290	4580	4190	4390	4580	4560	4570	4610	3220	4430
27	4350	4310	4330	4480	3890	4200	4590	4570	4580	4540	2770	4040
28	4360	4350	4360	4480	3620	4200	4610	4580	4590	4420	3160	4000
29	4410	4360	4390	4650	3620	4170	4620	4590	4600	4400	2580	3730
30	4420	4400	4420	4480	4140	4310	4620	4590	4610	4430	3160	4110
31	---	---	---	4600	3830	4250	4620	4600	4610	---	---	---
MONTH	5120	3450	4430	4650	3620	4450	4750	3450	4460	4890	2580	4350
YEAR	5300	1470	4640									

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

RED RIVER BASIN

07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX

LOCATION.--Lat 33°48'50", long 98°55'57", Archer County, Hydrologic Unit 11130206, on left bank, 125 ft downstream from Lake Diversion headgates, and 5.3 mi northwest of Dundee.

DRAINAGE AREA.--2,194 mi² (for Lake Diversion on Wichita River, provided by Wichita County Water Improvement District No. 2).

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

GAGE.--Water-stage recorder. Datum of gage is 1,039.70 ft above sea level (Wichita County Water Improvement District benchmark).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Records of discharge are of water released from Lake Diversion into a canal system for mining, industrial, recreation, and irrigation use. Several observations of water temperature were made during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	120	.46	.17	.18	.14	137	55	101	126	224	140
2	3.0	8.9	.40	.14	.23	.18	137	51	102	125	227	139
3	3.2	7.3	.32	.12	.32	.14	138	52	97	123	228	139
4	2.9	5.0	.25	.11	.29	.14	137	54	69	141	229	141
5	2.9	2.8	.25	.12	.23	.16	131	52	85	157	227	141
6	71	2.8	.25	.10	.22	.12	135	64	98	156	233	143
7	165	2.8	.25	.10	.20	.08	136	74	97	158	235	143
8	196	2.3	.20	.10	.18	.09	135	72	98	170	226	142
9	194	2.3	.20	.10	.20	.10	135	75	97	168	199	142
10	192	2.3	.20	.09	.20	.13	137	73	97	166	202	139
11	191	2.3	.20	.07	.20	.13	109	74	107	164	200	155
12	190	1.9	.20	.08	.20	.14	79	77	117	162	180	172
13	187	1.5	.20	.10	.20	.15	79	80	117	162	180	184
14	185	1.4	.20	.10	.16	20	79	84	119	186	184	186
15	182	1.4	.20	.07	.12	52	80	85	121	205	189	187
16	181	1.2	.20	.05	.09	73	80	85	119	201	187	186
17	178	.70	.23	.09	.09	69	79	85	121	197	187	187
18	177	.70	.13	.09	.07	57	78	85	121	194	187	188
19	177	.61	.16	.07	.08	57	77	85	122	191	189	188
20	175	.53	.20	.04	.12	62	81	86	121	190	190	192
21	175	.46	.11	.03	.06	82	e106	86	122	190	181	193
22	172	.46	.07	.08	.07	85	e127	85	123	208	155	189
23	155	.46	.07	.10	.11	85	133	84	128	209	156	164
24	114	.46	.07	.13	.12	85	125	82	130	208	155	152
25	113	.46	.07	.14	.08	87	e115	80	129	211	152	152
26	126	.46	.07	.14	.06	95	e80	79	129	214	149	154
27	162	.46	.08	.14	.04	117	e55	86	129	215	147	154
28	162	.46	.19	.11	.10	131	54	103	129	218	146	154
29	158	.46	.14	.10	---	136	55	103	129	220	144	153
30	160	.46	.10	.14	---	136	53	102	127	222	142	153
31	159	---	.16	.12	---	137	---	101	---	222	141	---
TOTAL	4311.9	173.34	5.83	3.14	4.22	1567.70	3082	2439	3401	5679	5771	4852
MEAN	139	5.78	.19	.10	.15	50.6	103	78.7	113	183	186	162
MAX	196	120	.46	.17	.32	137	138	103	130	222	235	193
MIN	2.9	.46	.07	.03	.04	.08	53	51	69	123	141	139
AC-FT	8550	344	12	6.2	8.4	3110	6110	4840	6750	11260	11450	9620

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1997#, BY WATER YEAR (WY)

	MEAN	72.1	10.9	15.4	20.6	12.6	28.6	64.2	78.6	125	203	182	117
MAX	141	41.0	76.3	66.1	52.2	127	150	218	240	344	282	219	
(WY)	1978	1978	1978	1989	1975	1996	1972	1984	1984	1974	1980	1983	
MIN	3.10	.000	.000	.000	.000	.000	2.56	17.6	20.1	124	50.8	3.39	
(WY)	1977	1985	1985	1985	1985	1985	1979	1982	1982	1992	1989	1996	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1972 - 1997#

ANNUAL TOTAL	36597.37	31290.13	
ANNUAL MEAN	100	85.7	78.0
HIGHEST ANNUAL MEAN			120
LOWEST ANNUAL MEAN			46.6
HIGHEST DAILY MEAN	232	235	374
LOWEST DAILY MEAN	.07	.03	.00
ANNUAL SEVEN-DAY MINIMUM	.08	.06	.00
INSTANTANEOUS PEAK FLOW		245	374
INSTANTANEOUS PEAK STAGE		7.14	8.31
ANNUAL RUNOFF (AC-FT)	72590	62060	56480
10 PERCENT EXCEEDS	208	189	200
50 PERCENT EXCEEDS	115	85	53
90 PERCENT EXCEEDS	.39	.10	.22

e Estimated

Period of regulated canal flow

RED RIVER BASIN

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07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX

LOCATION.--Lat 33°52'09", long 98°50'20", Wichita County, Hydrologic Unit 11130206, near center of stream at upstream side of bridge on State Highway 25, 1 mile north of intersection with State Highway 258 at Kadane Corner, and 4.1 miles upstream from the confluence with Beaver Creek.

DRAINAGE AREA.--2,182 mi², of which 2,086 mi² is above Lake Kemp.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 923.00 ft above sea level.

REMARKS.--Records good, except those for estimated daily discharges which are poor. Since installation of gage in June 1996, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 43 mi upstream. Since completion of Lake Kemp in 1923, no outflow has been permitted to pass over the spillway. Water is diverted from Lake Diversion (capacity 40,000 acre-ft) 13 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 62,060 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	7.6	e13	5.8	4.7	4.9	3.6	5.6	138	34	15	11
2	14	7.0	e12	5.8	4.2	4.4	4.6	4.9	75	31	15	9.5
3	12	6.4	e11	5.7	4.4	5.0	4.9	4.6	48	20	15	9.6
4	11	5.7	e10	5.1	4.3	8.3	7.1	4.4	35	e14	16	8.5
5	11	6.4	8.9	4.9	3.9	6.7	6.4	4.1	28	e13	17	8.0
6	11	7.1	8.8	5.2	5.8	5.2	5.9	4.0	25	e13	20	6.5
7	11	12	7.6	5.3	10	4.6	4.3	3.7	22	14	24	6.9
8	11	8.3	6.5	4.9	6.2	5.4	5.0	24	20	14	21	7.7
9	11	6.2	6.0	5.1	4.3	5.2	6.2	232	22	14	13	11
10	14	7.0	6.3	4.9	3.6	4.8	5.7	101	22	13	11	11
11	11	e6.8	6.7	4.1	4.1	4.6	76	28	18	13	13	10
12	10	e6.0	6.5	3.8	4.8	4.8	38	10	19	12	10	10
13	10	e5.8	6.4	4.4	5.4	5.3	15	10	20	11	8.7	11
14	11	5.6	6.0	4.0	4.2	5.7	7.9	141	19	11	11	10
15	11	5.5	6.0	4.3	3.3	4.9	7.2	545	40	12	8.2	9.5
16	10	6.4	6.3	4.5	2.8	5.2	7.0	1080	31	11	7.5	9.3
17	9.6	5.8	7.0	5.1	2.7	5.5	6.4	1330	33	11	7.8	9.6
18	8.9	6.5	6.7	4.4	2.7	4.8	4.7	1380	23	11	10	11
19	10	6.5	5.8	4.1	2.8	4.2	4.6	1380	e17	12	12	9.4
20	13	5.9	6.1	4.4	69	3.8	3.9	1720	e13	11	12	8.2
21	17	7.0	6.2	4.9	111	3.3	4.3	1960	e14	13	12	9.0
22	e16	6.1	6.6	3.9	30	2.8	7.0	1660	e23	15	14	10
23	11	10	6.7	3.7	11	2.5	5.0	1510	38	14	12	13
24	10	98	6.5	3.8	7.0	2.8	4.2	1370	84	16	10	11
25	9.6	51	6.6	4.3	6.0	3.7	22	1000	123	13	9.1	10
26	10	20	6.7	3.6	6.1	3.8	31	760	94	12	10	e9.0
27	11	11	6.9	3.5	8.0	4.0	32	620	64	11	11	e8.0
28	11	9.1	6.8	3.5	6.2	3.4	17	535	54	13	12	e7.0
29	11	e36	6.4	3.6	---	3.6	8.9	495	45	13	12	6.6
30	9.5	e16	6.5	3.9	---	2.9	6.4	376	39	12	12	8.3
31	8.0	---	6.6	4.0	---	3.0	---	242	---	14	11	---
TOTAL	348.6	398.7	226.1	138.5	338.5	139.1	362.2	18540.3	1246	441	392.3	279.6
MEAN	11.2	13.3	7.29	4.47	12.1	4.49	12.1	598	41.5	14.2	12.7	9.32
MAX	17	98	13	5.8	111	8.3	76	1960	138	34	24	13
MIN	8.0	5.5	5.8	3.5	2.7	2.5	3.6	3.7	13	11	7.5	6.5
AC-FT	691	791	448	275	671	276	718	36770	2470	875	778	555

e Estimated

RED RIVER BASIN

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1996 to September 1997 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1996 to current year.

WATER TEMPERATURE: June 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 9,350 microsiemens Mar. 31, 1997; minimum, 804 microsiemens Sept. 15, 1996.

WATER TEMPERATURE: Maximum, 35.5°C July 7 and 22, 1996, Aug. 17, 1997; minimum, 0.0°C Jan. 11-14, 1997.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 9,350 microsiemens Mar. 31; minimum, 821 microsiemens May 8.

WATER TEMPERATURE: Maximum, 35.5°C Aug. 17; minimum, 0.0°C Jan. 11-14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC 31...	1415	6.7	7050	7.9	12.5	14.8	145	1300	1200	340
MAR 20...	1025	3.8	8600	7.6	14.0	12.8	132	1700	1500	430
MAY 20...	1200	1680	4150	7.8	20.5	7.7	89	750	660	200
JUL 01...	0955	34	4550	7.7	28.0	6.9	93	900	780	240
SEP 02...	1410	9.5	6220	8.0	30.5	8.9	125	1200	1100	320

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
DEC 31...	120	960	11	8.4	190	930	1900	0.30	4.7	4380
MAR 20...	150	1300	14	8.4	200	960	2300	0.30	4.6	5270
MAY 20...	61	572	9	8.0	90	690	910	0.30	6.1	2500
JUL 01...	70	660	10	7.9	120	690	1000	0.27	8.5	2770
SEP 02...	102	883	11	10	150	870	1500	0.34	14	3780

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	5930	5670	5780	7020	6890	6940	---	---	e4300	7430	7200	7340
2	6080	5640	5810	7290	6980	7140	---	---	e4710	7400	7160	7300
3	6210	5880	6020	7470	7150	7350	---	---	e5900	7740	7170	7380
4	6210	6130	6160	7720	7460	7620	---	---	e6100	7940	7280	7740
5	6160	6040	6110	7700	7110	7340	---	---	6610	7950	7840	7890
6	6080	6010	6050	---	---	7090	6750	6430	6560	8030	7840	7940
7	6060	5960	6020	---	---	6030	7170	6750	6950	8010	7770	7860
8	6010	5830	5900	7190	6560	6830	7410	5380	7070	8150	7880	8040
9	6150	5970	6020	---	---	7450	7290	3480	5150	8310	8090	8210
10	---	---	5670	---	6640	6980	7760	3610	6540	8250	8010	8150
11	6130	5800	5960	6890	6650	6750	7660	7350	7510	8500	8240	8390
12	6190	6100	6160	6740	6440	6550	7470	6820	7310	8680	8260	8440
13	6210	6160	6180	7190	6620	6950	7260	4210	6180	8770	8430	8580
14	6200	6040	6100	7730	7170	7450	4260	3000	3590	8740	8480	8560
15	6180	6030	6080	7920	7710	7840	7980	2930	4970	8870	8510	8670
16	6200	6070	6130	7900	6710	7570	7720	5470	7050	8870	8230	8650
17	6350	6140	6260	7650	5260	7020	7770	2360	6210	8230	7670	7900
18	6480	6290	6410	---	---	7270	7490	6900	7110	8140	7830	7940
19	6430	6030	6240	7370	6920	7140	8000	7240	7630	8140	7990	8080
20	6040	4530	5870	7640	7220	7420	7710	7460	7510	8080	7800	7950
21	5620	3120	5060	7620	6780	7030	7590	7390	7530	7900	7500	7670
22	---	---	5420	7260	6930	7160	7410	7240	7320	7850	7660	7740
23	6230	5890	6100	---	---	6630	7600	7310	7430	8030	7800	7870
24	6230	6090	6170	4520	1620	2460	7660	7530	7600	8060	7790	7990
25	6390	6070	6190	2450	1430	1930	7680	7560	7620	7800	7640	7730
26	6510	6100	6270	3530	1690	2500	---	---	7620	8150	7750	7970
27	6670	5890	6260	5590	3530	4630	7630	7340	7500	8600	8150	8350
28	6470	6230	6390	---	---	6110	7530	7280	7340	8590	8370	8490
29	6620	6240	6380	---	---	e3500	7750	7530	7670	8450	8230	8360
30	6600	6320	6460	---	---	e4100	7750	7520	7640	8450	8090	8270
31	6900	6500	6800	---	---	---	7570	7090	7290	8140	7730	7900
MONTH	6900	3120	6080	7920	1430	6290	8000	2360	6690	8870	7160	8040

e Estimated

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7880	7430	7630	8350	7680	7940	9330	8680	9110	6530	5880	6210
2	7660	7530	7620	8670	8240	8400	8720	8200	8470	8840	6530	7270
3	7630	7420	7560	8680	7940	8330	8440	8090	8310	8810	8540	8700
4	7750	7590	7640	8010	6210	6820	8420	6380	7900	8930	8560	8770
5	7810	7700	7760	6750	6420	6600	8430	6660	7830	9040	8410	8770
6	8480	7690	8050	7740	6750	7220	8360	7420	7840	8640	7690	8250
7	8280	5620	7140	8450	7740	8150	8590	7640	8230	8050	7600	7900
8	7550	6710	7220	8470	7850	8100	8820	7940	8380	7920	821	6480
9	7940	7550	7780	8590	7880	8250	7940	7290	7490	1250	840	1010
10	8010	7860	7930	8710	8480	8600	8250	7430	7930	1380	951	1130
11	8080	7550	7840	8710	8420	8600	8230	1150	3750	1820	1030	1350
12	7680	7490	7550	8640	8440	8530	3340	2190	2730	2930	1820	2380
13	7760	7590	7670	8650	8440	8540	3560	2260	2780	3760	2930	3410
14	7660	7480	7540	8860	8090	8440	5150	3560	4300	3590	1980	3290
15	7620	7510	7570	8410	8080	8250	5470	5100	5320	3590	3190	3440
16	7790	7610	7720	8560	8410	8500	6270	5430	5920	3690	3580	3630
17	7870	7690	7800	8440	7970	8220	7110	6270	6660	3800	3680	3750
18	7900	7610	7760	8440	8040	8200	8230	7110	7630	3950	3800	3880
19	7660	7340	7580	8610	8360	8480	8240	7780	8010	4090	3940	4030
20	7340	1770	3670	8770	8210	8460	8180	7400	7920	4150	4080	4120
21	1770	850	1130	8610	8290	8480	7960	7080	7640	4100	3950	4040
22	2030	1140	1550	8780	8560	8650	7690	6290	6830	4050	3970	4020
23	3530	2030	2720	8970	8710	8820	7400	6760	7150	4180	4050	4140
24	5350	3530	4440	8970	8790	8920	7930	7400	7720	4290	4180	4200
25	6950	5350	6180	9150	8650	8860	7770	1800	5020	4240	4210	4220
26	7900	2960	7500	8770	8530	8650	4320	2420	3440	4250	4190	4210
27	7930	6440	7170	8960	8600	8770	3130	2430	2790	4240	4190	4210
28	7680	6590	7190	9030	8720	8940	3780	2980	3250	4310	3120	4210
29	---	---	---	8830	8570	8650	4840	3770	4340	4250	4190	4220
30	---	---	---	9280	8830	9140	5880	4840	5470	---	---	4220
31	---	---	---	9350	9210	9280	---	---	---	---	---	e4600
MONTH	8480	850	6680	9350	6210	8380	9330	1150	6340	9040	821	4650

e Estimated

RED RIVER BASIN

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e4800	4700	3980	4540	5400	5000	5200	6560	6040	6390
2	---	---	e5200	5150	4430	4710	5470	4990	5300	7280	6220	6700
3	---	---	e5400	---	---	5420	5610	5220	5410	7280	6470	6810
4	---	---	e5800	---	---	e6720	5390	5090	5240	6960	6540	6760
5	---	---	e6200	---	---	e6650	5630	5100	5350	7010	6660	6760
6	---	---	6540	---	---	e6600	5640	5190	5360	7200	6990	7090
7	6540	6380	6480	---	---	6580	5540	5030	5390	7180	6790	6980
8	6700	6480	6630	6730	6240	6500	5910	5300	5520	6840	6480	6650
9	6690	6090	6320	6390	5830	6160	6450	5910	6230	6580	5330	5900
10	6240	5910	6040	---	---	6000	6530	5980	6210	5820	5340	5620
11	6440	6230	6380	---	---	e6200	6460	4700	5690	6040	5740	5870
12	6330	5800	6140	---	---	e6450	6960	5940	6470	5840	5530	5660
13	6180	5760	5890	---	---	e6600	7320	6790	7140	5710	5340	5510
14	6190	5320	5950	---	---	6720	6920	3930	5760	5660	5450	5550
15	5320	2640	3630	7070	6000	6450	7300	6750	7050	6130	5490	5740
16	3840	2220	3490	7150	6490	6790	7660	7290	7480	6310	5710	5970
17	2680	2220	2440	7180	6590	6870	7830	7090	7550	6110	5700	5870
18	3020	2680	2840	6940	6270	6530	7420	6710	7000	6150	5610	5810
19	3660	2980	3330	6550	5870	6120	7050	5900	6480	6250	5860	6020
20	4260	3660	4010	6830	5820	6340	6640	5980	6230	6580	6060	6300
21	4810	4240	4560	6120	5450	5800	6970	5910	6440	6680	6060	6370
22	5390	4800	5120	5520	5060	5210	6590	5410	6010	6550	6170	6340
23	5590	3060	3780	5390	4700	5030	6550	6050	6240	6300	5600	6010
24	3510	1760	2710	5050	4500	4760	6690	6480	6600	6290	5980	6120
25	3830	1420	2190	5270	4760	4960	6740	6450	6620	6470	6210	6340
26	1750	1510	1640	5480	5050	5290	6550	5950	6230	6450	6100	6290
27	2560	1740	2080	5580	5160	5310	6320	5930	6080	6960	6400	6650
28	3210	2330	2810	5600	5150	5360	6140	5810	5980	7280	6940	7110
29	4380	2900	3570	5430	5040	5240	6290	5800	6040	7340	7050	7180
30	4630	3480	4310	5680	5430	5570	6250	5830	5990	7290	6270	6690
31	---	---	---	5460	5120	5290	6570	6150	6310	---	---	---
MONTH	6700	1420	4540	7180	3980	5900	7830	3930	6150	7340	5330	6300
YEAR	9350	821	6340									
e Estimated												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	24.5	19.0	21.5	13.5	10.5	12.0	---	---	---	16.5	10.5	13.0
2	25.5	19.5	22.0	16.0	9.5	12.0	---	---	---	17.0	11.5	13.5
3	23.5	19.0	21.0	14.5	11.0	12.5	---	---	---	18.5	13.0	15.0
4	22.0	20.0	21.0	18.5	12.0	14.5	---	---	---	17.0	12.0	14.5
5	24.0	19.0	21.5	19.0	13.0	15.5	---	---	---	12.0	8.5	10.0
6	25.5	20.5	22.5	19.5	---	17.5	13.0	8.0	10.0	8.5	5.5	7.0
7	26.0	20.5	23.0	16.5	11.5	14.0	12.5	8.0	10.0	6.5	4.5	5.5
8	23.5	20.5	22.0	15.0	10.5	12.5	12.5	7.5	9.5	5.5	3.5	4.5
9	24.5	18.0	21.0	16.0	10.0	12.5	14.5	8.5	11.0	8.5	2.0	4.5
10	23.0	18.5	20.5	16.0	11.5	13.0	16.0	11.0	13.0	7.0	2.5	4.5
11	23.0	18.0	20.5	17.0	11.0	13.5	16.5	11.5	13.5	2.5	.0	1.5
12	24.5	18.5	21.0	14.0	13.0	13.5	15.5	11.0	12.5	1.0	.0	.0
13	25.0	19.5	22.0	17.0	12.5	14.5	15.0	9.5	11.5	1.0	.0	.5
14	24.5	19.5	21.5	18.5	14.0	16.0	15.5	10.5	12.5	2.0	.0	1.0
15	25.0	19.5	22.0	18.0	15.5	16.5	11.5	6.0	8.5	7.5	.5	3.0
16	25.5	20.5	22.5	19.5	15.5	17.5	9.0	3.5	6.0	6.0	2.0	3.5
17	22.5	18.0	20.5	15.5	11.0	13.0	6.0	2.0	4.5	6.5	1.0	3.0
18	20.0	14.5	17.0	---	---	---	3.5	.0	1.0	8.5	1.0	4.0
19	18.0	14.5	16.0	18.0	12.0	14.5	4.0	.0	1.5	11.0	3.5	6.5
20	21.5	16.0	18.5	17.5	13.5	15.5	6.0	.0	2.5	13.0	5.0	8.0
21	20.0	14.0	17.5	14.5	11.0	13.0	8.5	3.5	6.0	15.0	9.0	11.5
22	---	---	13.5	11.5	11.0	11.0	13.0	6.5	9.0	14.0	8.5	11.0
23	17.5	11.0	14.0	---	---	---	11.5	6.5	9.5	13.5	9.0	11.0
24	19.5	13.5	16.0	12.0	3.0	6.0	7.5	3.5	5.5	13.5	8.0	10.0
25	22.0	16.0	18.5	4.5	1.5	3.0	7.0	3.0	4.5	12.0	6.0	8.5
26	22.0	17.5	19.5	6.5	2.5	4.5	8.0	2.0	6.0	13.0	7.5	10.0
27	21.0	---	19.0	8.0	4.0	5.5	9.5	3.0	5.5	11.5	3.0	8.5
28	---	---	16.0	---	---	---	11.5	6.5	8.5	7.5	.5	3.5
29	19.0	15.5	17.0	---	---	---	12.0	7.0	9.0	8.0	.0	3.5
30	19.0	13.5	16.0	---	---	---	12.5	6.5	9.0	10.5	1.5	5.5
31	16.5	---	15.0	---	---	---	13.0	9.0	11.0	14.0	4.5	8.5
MONTH	26.0	11.0	19.5	19.5	1.5	12.5	16.5	.0	8.0	18.5	.0	7.0

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	15.0	7.0	10.0	19.5	12.0	14.5	17.5	13.5	15.5	27.0	17.0	21.5
2	15.5	8.5	11.0	12.0	8.0	11.0	19.5	15.0	17.0	29.0	19.0	22.5
3	16.5	10.0	12.5	17.5	6.5	11.0	19.5	17.0	18.0	28.0	16.0	21.0
4	14.5	9.0	11.0	18.5	11.5	14.5	22.0	17.0	18.5	28.0	16.5	21.5
5	11.5	7.5	9.0	16.5	10.0	13.0	23.0	13.5	17.5	30.5	18.0	23.0
6	8.5	7.0	8.0	17.5	9.0	12.5	22.5	13.5	17.0	32.0	20.0	25.0
7	7.0	6.0	6.5	19.5	10.5	14.0	20.5	13.0	16.5	28.5	21.5	24.0
8	7.0	4.5	5.5	16.5	13.5	15.0	16.5	11.0	14.5	28.5	18.0	22.5
9	6.5	5.0	6.0	18.5	14.0	16.0	11.0	9.5	10.5	20.5	16.5	18.5
10	11.0	3.5	6.5	21.5	12.0	16.0	17.5	10.5	14.0	23.5	16.5	20.0
11	13.0	4.0	8.0	23.0	13.0	17.0	15.5	8.0	10.5	26.0	17.5	21.5
12	9.5	6.0	7.5	20.5	16.0	17.5	12.0	5.5	8.5	23.0	18.5	20.5
13	7.5	5.5	6.5	23.0	15.5	18.0	16.0	7.0	11.0	27.5	16.5	21.5
14	13.5	6.0	9.0	16.5	10.0	13.0	20.5	9.5	14.5	24.5	20.0	21.5
15	15.0	6.0	9.5	18.0	8.0	12.0	22.5	13.0	17.0	23.0	19.5	21.5
16	16.5	7.0	11.0	13.5	11.0	12.0	23.5	16.0	19.0	23.5	20.5	22.0
17	17.0	8.5	12.0	20.5	12.0	15.5	26.0	16.0	20.0	25.0	21.0	23.5
18	17.5	10.0	13.0	17.0	12.5	15.5	23.0	17.0	19.5	26.0	23.0	24.5
19	17.5	13.0	15.0	19.5	10.5	14.0	28.5	16.5	21.5	25.0	21.5	23.0
20	16.0	14.0	15.0	24.0	10.5	16.0	29.5	18.0	22.5	22.0	20.5	21.0
21	15.5	10.0	12.5	25.5	13.5	18.5	27.5	18.5	22.5	21.5	20.5	21.0
22	13.0	7.5	10.0	23.0	13.0	17.5	26.0	18.0	21.0	21.5	20.0	20.5
23	14.0	8.5	11.0	24.0	12.0	17.5	26.5	17.0	21.0	22.5	20.5	21.5
24	11.0	9.0	10.5	23.0	15.0	18.5	19.5	13.5	16.5	24.5	21.0	22.5
25	9.0	7.0	8.0	20.0	13.0	16.0	13.5	10.0	12.0	26.5	23.0	24.5
26	10.5	6.5	8.5	20.5	10.5	15.0	12.5	11.0	11.5	27.5	23.5	25.5
27	11.5	6.5	8.5	22.0	13.0	16.5	16.0	11.5	13.5	27.0	24.0	25.5
28	15.0	9.0	11.5	24.0	13.0	17.5	22.0	12.5	17.0	26.0	22.5	24.5
29	---	---	---	25.5	13.5	18.5	26.5	16.0	21.0	25.5	22.0	24.0
30	---	---	---	21.5	12.0	16.0	25.0	19.0	21.5	26.0	23.5	25.0
31	---	---	---	20.0	11.0	15.5	---	---	---	26.0	23.0	24.5
MONTH	17.5	3.5	10.0	25.5	6.5	15.5	29.5	5.5	16.5	32.0	16.0	22.5

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

YEAR	35.5	.0	18.5									
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RED RIVER BASIN

07312200 BEAVER CREEK NEAR ELECTRA, TX

LOCATION.--Lat 33°54'21", long 98°54'17", Wichita County, Hydrologic Unit 11130207, near right bank at downstream side of bridge on Farm Road 2326, 6.5 mi northwest of Kamay, 8 mi upstream from Wichita River, and 9 mi south of Electra.

DRAINAGE AREA.--652 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 991.3 ft above sea level (Texas Department of Transportation reference point).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in February 1960, at least 10% of contributing drainage area has been regulated by Santa Rosa Lake (capacity, 11,570 acre-ft) about 30 miles upstream. There are several diversions above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	7.3	21	.69	.60	5.1	5.2	651	21	8.3	e2.8	.89
2	3.4	6.8	8.1	.69	.59	4.3	6.2	606	19	7.5	e2.2	.68
3	2.3	6.4	3.6	.68	.64	3.9	7.4	415	18	6.8	e2.5	.64
4	1.5	6.5	1.7	.70	.55	3.7	8.6	176	18	5.5	e2.8	.65
5	1.3	7.1	.89	.69	.43	3.5	32	102	15	5.2	e3.5	.93
6	1.2	8.3	.63	.72	.49	2.8	29	68	13	5.0	4.2	2.0
7	1.1	24	.45	.58	17	2.3	13	50	13	4.7	3.2	3.3
8	1.1	14	.43	.63	16	2.0	7.2	159	12	4.3	3.1	1.7
9	4.5	11	.46	.56	7.1	2.2	5.0	1400	11	4.0	2.6	.80
10	6.0	7.5	.48	.60	3.7	1.7	4.8	793	10	3.6	2.1	.97
11	4.1	7.4	.48	e.61	1.9	1.5	398	297	9.6	4.0	5.8	1.1
12	2.3	8.0	.57	e.73	1.3	1.4	578	331	9.1	11	21	1.1
13	1.3	8.5	1.3	e.86	.91	1.3	118	447	8.5	6.6	9.5	.99
14	1.1	9.2	1.8	e.99	.83	1.2	27	519	7.0	4.1	57	.93
15	1.1	9.7	1.6	1.1	.73	1.2	13	437	282	2.9	18	.84
16	1.4	10	1.6	1.3	.59	1.2	7.4	286	113	1.5	6.0	.61
17	1.3	16	1.5	.99	.60	1.3	4.7	149	87	.53	4.0	.53
18	1.7	20	1.2	.93	.50	.81	5.1	101	43	.30	62	.54
19	1.7	14	1.0	.82	.48	.80	4.4	84	23	.19	37	.54
20	1.4	11	.88	.81	587	.94	2.4	297	16	.17	9.4	.56
21	2.3	9.7	.78	.82	1360	1.8	3.2	125	12	.19	6.0	.56
22	5.2	9.5	.77	.84	382	2.3	5.8	91	11	.36	5.5	.57
23	6.9	11	.69	.83	47	2.4	8.1	61	673	1.0	46	83
24	7.2	202	.68	.78	19	3.3	7.6	55	461	2.7	12	693
25	6.1	71	.75	.77	12	4.4	95	48	144	3.3	6.3	358
26	5.2	14	.65	.78	8.8	5.1	569	42	40	3.1	4.5	30
27	4.8	7.2	.70	.72	7.0	5.1	725	36	21	3.0	3.6	14
28	9.1	4.2	.63	.69	6.0	3.6	356	29	14	3.2	3.2	7.5
29	8.4	145	.65	.68	---	2.9	250	25	11	3.4	2.8	4.9
30	8.7	90	.64	.64	---	2.6	503	24	9.5	e3.6	2.5	3.2
31	8.2	---	.65	.59	---	3.7	---	23	---	e3.5	1.6	---
TOTAL	116.4	776.3	57.26	23.82	2483.74	80.35	3799.1	7927	2144.7	113.54	352.7	1215.03
MEAN	3.75	25.9	1.85	.77	88.7	2.59	127	256	71.5	3.66	11.4	40.5
MAX	9.1	202	21	1.3	1360	5.1	725	1400	673	11	62	693
MIN	1.1	4.2	.43	.56	.43	.80	2.4	23	7.0	.17	1.6	.53
AC-FT	231	1540	114	47	4930	159	7540	15720	4250	225	700	2410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997#, BY WATER YEAR (WY)

	MEAN	116	38.4	29.4	20.4	52.2	74.9	63.3	148	152	62.5	73.3	114
MAX	1108	319	385	185	553	592	760	921	1435	727	1324	1108	
(WY)	1987	1973	1992	1985	1993	1961	1990	1987	1995	1975	1995	1986	
MIN	.14	.82	.71	.27	.84	.65	.89	2.26	3.37	1.84	1.35	1.14	
(WY)	1964	1966	1971	1966	1963	1965	1982	1996	1966	1964	1983	1983	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1960 - 1997#

ANNUAL TOTAL	5870.96	19089.94	79.5
ANNUAL MEAN	16.0	52.3	300
HIGHEST ANNUAL MEAN			11.4
LOWEST ANNUAL MEAN			1995
HIGHEST DAILY MEAN	521	Jun 17	11000
LOWEST DAILY MEAN	.00	May 21	May 29 1987
ANNUAL SEVEN-DAY MINIMUM	.14	Apr 16	.00
INSTANTANEOUS PEAK FLOW			Jun 23 1960
INSTANTANEOUS PEAK STAGE			May 11 1962
ANNUAL RUNOFF (AC-FT)	11650	22.44	May 9
10 PERCENT EXCEEDS	21	1700	11700
50 PERCENT EXCEEDS	5.6	106	34.94
90 PERCENT EXCEEDS	.67	4.2	57630
		.64	115
			5.7
			.73

e Estimated

Period of regulated streamflow.

RED RIVER BASIN

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07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1968 to June 1970, June 1996 to September 1997 (discontinued). Sediment analyses: April 1966 to September 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to June 1970, June 1996 to current year.

WATER TEMPERATURE: October 1968 to June 1970, June 1996 to current year.

INSTRUMENTATION.--From 1968 to June 1970, daily samples collected manually. From June 1996 to current year, specific conductance and temperature were continuously monitored with a water-quality monitor.

REMARKS.--Interruptions to the record are due to malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 29,600 microsiemens April 19, 1970; minimum recorded, 336 microsiemens Apr. 12, 1997.

WATER TEMPERATURE: Maximum recorded, 37.0°C July 7, Aug. 11 1969; minimum recorded, 0.0°C on several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 16,500 microsiemens Apr. 6; minimum recorded, 336 microsiemens Apr. 12.

WATER TEMPERATURE: Maximum recorded, 36.0°C July 15-17; minimum recorded, 1.5°C Dec. 20,21, and Jan. 16.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC 31...	1315	0.65	4020	7.7	9.5	10.6	96	830	620	150
MAR 20...	0940	0.94	3270	7.8	13.0	8.3	82	700	460	130
MAY 20...	1020	407	620	7.5	18.0	7.4	81	110	42	26
JUN 30...	1135	9.4	1600	8.2	30.0	--	--	320	180	66
SEP 02...	1315	0.61	3080	7.7	30.0	6.1	84	560	410	110

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
DEC 31...	110	480	7	4.9	210	120	1100	0.30	4.9	2090
MAR 20...	91	381	6	5.2	230	100	910	0.27	4.4	1770
MAY 20...	12	60	2	5.2	72	23	110	0.15	8.6	290
JUN 30...	37	173	4	7.7	140	67	370	0.20	12	819
SEP 02...	70	395	7	4.2	150	77	830	0.38	5.8	1580

RED RIVER BASIN

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	6350	5020	5620	5070	4730	4940	---	---	e1800	4570	4390	4470
2	5020	4250	4580	5130	2660	4060	1410	1230	1280	4510	4320	4430
3	4250	3880	4070	5140	2760	4090	1420	1380	1400	4300	4090	4130
4	3880	3700	3780	5810	4270	5290	1470	1420	1450	4370	4250	4310
5	3760	3570	3670	6370	5590	5930	1560	1450	1500	4410	4230	4350
6	3700	3570	3620	6810	6240	6530	1710	1520	1600	4410	4130	4290
7	3890	3690	3810	6980	1850	3010	1710	1540	1660	4350	4180	4280
8	3920	3850	3870	3500	1990	2820	1750	1690	1720	4700	4350	4490
9	4020	3600	3850	6050	2150	4130	1990	1750	1830	4700	4250	4550
10	3600	3430	3490	6410	4200	5640	1970	1760	1850	4390	4180	4280
11	3560	3350	3420	6190	3730	5210	2010	1850	1910	4390	4330	4370
12	3680	3410	3550	6210	5810	6040	2030	1930	1960	---	---	e4200
13	4010	3600	3820	6510	5750	6080	2140	2030	2080	---	---	e4000
14	4410	3850	4180	7050	6420	6690	2250	2140	2190	---	---	e3800
15	4600	4360	4470	7160	7050	7090	2930	2250	2350	---	---	e3500
16	5020	4460	4700	7230	6930	7130	2660	2450	2550	---	---	e3200
17	5620	4940	5170	7020	4610	5730	2920	2730	2820	---	---	e3300
18	6140	5600	5810	6500	4260	5480	3910	2910	3070	---	---	e3600
19	6420	6140	6330	6400	5870	6210	3640	3210	3420	---	---	e3900
20	6420	6050	6300	6310	5990	6170	4050	3610	3880	---	---	e4200
21	6050	5120	5580	6280	5970	6100	4140	4010	4070	---	---	e4400
22	5130	4410	4850	6070	5530	5820	4210	3860	4160	4660	4610	4640
23	5360	4660	5110	6230	5690	5980	4450	4120	4270	4650	4600	4620
24	5130	4710	4910	5690	1190	3270	4540	4370	4470	4680	4580	4650
25	4970	4650	4800	3080	1370	2210	4530	4300	4450	4580	4430	4480
26	4700	4190	4360	---	---	e4000	4520	4170	4400	4500	4460	4480
27	4370	4050	4130	---	---	e3600	4300	4020	4250	4520	4440	4460
28	4880	3880	4290	---	---	e3300	4370	4190	4290	4520	4450	4490
29	4580	3780	4210	---	---	e2800	4280	4120	4190	4470	4340	4380
30	4980	4340	4700	---	---	e2300	4140	4080	4110	4500	4390	4450
31	5140	4980	5080	---	---	---	4440	3990	4190	4470	4340	4420
MONTH	6420	3350	4520	7230	1190	4920	4540	1230	2880	4700	4090	4230

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4350	4260	4320	1510	1410	1460	4190	4070	4150	942	856	877
2	4320	4260	4310	1620	1500	1550	4380	4190	4310	860	823	845
3	4330	4210	4300	1760	1620	1710	4460	4340	4400	823	758	781
4	4380	4250	4340	2080	1720	1830	4680	4280	4470	841	810	831
5	4350	4270	4320	1960	1840	1900	10300	4540	5990	873	836	857
6	4270	4130	4190	2080	1930	2030	16500	6150	11500	925	872	897
7	4660	1440	2710	2210	2080	2110	15600	8430	10400	1010	925	974
8	2530	1490	1840	2270	2160	2200	8430	7990	8090	1110	352	998
9	3530	2110	2500	2410	2270	2330	8180	8020	8070	1050	446	690
10	4600	3530	4180	2870	2370	2500	8490	8180	8290	715	457	583
11	5190	4480	4890	2680	2550	2600	8560	745	3620	897	609	820
12	5630	5190	5470	2730	2240	2620	1430	336	545	810	778	792
13	5560	5220	5400	2820	2680	2760	642	568	598	781	747	766
14	5520	5210	5290	2950	2770	2870	764	642	705	761	737	746
15	5620	5400	5510	2960	2840	2930	896	764	829	764	700	751
16	6100	5620	5800	3070	2950	3030	1030	896	962	942	720	820
17	6270	6050	6160	3170	3070	3130	1220	1030	1140	858	809	826
18	6370	6150	6290	3330	3150	3250	1300	1220	1270	993	815	935
19	6450	6250	6380	3440	3140	3380	1400	1300	1340	1780	947	1050
20	6320	644	2110	3520	3250	3460	1580	1400	1490	1330	594	804
21	1570	400	563	3570	3490	3530	1820	1580	1710	2720	855	1460
22	510	381	418	3700	3530	3590	1940	1810	1880	2480	1460	1630
23	661	478	578	3720	3570	3690	8570	1860	4380	1550	1460	1500
24	810	661	735	3700	3450	3680	6220	3340	4200	1580	1470	1530
25	976	810	889	3710	3380	3650	8160	1350	4370	1640	1510	1590
26	1130	976	1060	3710	3640	3690	3920	777	1510	1640	1550	1590
27	1290	1130	1200	3790	3550	3740	1110	786	860	1660	1560	1610
28	1410	1290	1350	3890	3780	3850	963	776	845	1760	1590	1670
29	---	---	---	4010	3720	3920	1010	963	992	1660	1560	1590
30	---	---	---	4050	3950	4030	1010	942	973	1860	1590	1770
31	---	---	---	4170	4050	4140	---	---	---	2750	1810	2280
MONTH	6450	381	3470	4170	1410	2940	16500	336	3460	2750	352	1120

RED RIVER BASIN

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07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	2120	1960	2060	1790	1620	1710	---	---	e6500	3060	2700	2950
2	2440	2090	2240	1940	1790	1860	---	---	e7100	3220	2980	3090
3	2610	2340	2440	2110	1940	2030	---	---	e8000	3440	3210	3340
4	2730	2590	2660	2280	2110	2180	---	---	e9200	3620	3430	3510
5	2970	2710	2890	2580	2280	2460	---	---	e10000	4780	3620	4270
6	3030	2880	2960	2720	2580	2640	10800	9950	10600	4440	3450	3870
7	3090	2900	3000	2910	2720	2810	9950	8660	9290	3790	3410	3600
8	3570	3090	3440	3120	2910	3010	8660	7590	8050	3860	3790	3830
9	3370	3210	3260	3250	3120	3170	7590	6850	7170	4030	3840	3920
10	3370	3230	3280	3470	3250	3350	6850	6160	6570	4270	4030	4140
11	3490	3290	3400	3750	3400	3570	6220	3270	5400	4140	4030	4070
12	3620	3470	3540	4200	3600	3930	5470	4010	4480	4050	3890	3950
13	3890	3610	3780	4570	4200	4400	4160	2690	3390	3920	3810	3860
14	3950	3370	3860	4650	4480	4570	4200	1480	3370	3910	3820	3860
15	7690	1290	3040	4580	4220	4410	4630	1570	3410	4000	3850	3910
16	2770	1090	1450	4230	3730	4000	4610	3940	4330	4050	3980	4010
17	2110	954	1430	4020	3730	3880	3940	3420	3690	4210	4050	4130
18	1610	995	1120	4070	3960	4030	3420	1830	2180	4300	4210	4260
19	1510	967	1260	4240	3730	4140	3260	2000	2660	4400	4300	4340
20	1830	1510	1660	4540	4240	4380	3220	2490	2960	4560	4400	4450
21	2020	1830	1930	4740	3520	4460	2490	2010	2220	4660	4550	4610
22	2230	2010	2140	5340	4250	4850	2110	1650	1840	4730	4650	4690
23	2490	398	1060	5680	4180	5230	2420	1330	1720	5570	2280	3500
24	869	470	567	6580	4060	5290	2450	2030	2240	2570	412	921
25	1090	681	943	6920	5890	6350	2170	2030	2080	595	451	511
26	1150	1090	1110	5900	5440	5590	2390	2170	2290	837	595	630
27	1260	1150	1210	6080	5560	5730	2450	2300	2420	958	696	830
28	1390	1260	1330	6950	6080	6460	2450	2370	2420	795	717	758
29	1480	1390	1430	7200	6500	6920	2450	2370	2410	881	795	842
30	1620	1480	1540	---	---	6100	2480	2410	2450	964	881	923
31	---	---	---	---	---	e5800	2800	2470	2660	---	---	---
MONTH	7690	398	2200	7200	1620	4170	10800	1330	4620	5570	412	3190
YEAR	16500	336	3480									
e Estimated												

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

RED RIVER BASIN

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07312500 WICHITA RIVER AT WICHITA FALLS, TX

LOCATION.--Lat 33°54'34", long 98°32'00", Wichita County, Hydrologic Unit 11130206, near center of stream at downstream side of bridge on Beverly Drive in Wichita Falls, 4 mi upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi upstream from Holliday Creek, and 55.3 mi upstream from mouth.

DRAINAGE AREA.--3,140 mi², of which 2,086 mi² is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1901 to January 1902 (monthly discharge only, published in WSP 1311, 1901 water year no longer used in computation of average discharge because of poor accuracy of record. October 1910 to December 1911 (gage heights only), March 1938 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 924.26 ft above sea level. February 1900 to February 1902 and Oct. 1, 1910, to Dec. 31, 1911, nonrecording gages at site 4 mi downstream at different datum. Mar. 30, 1938, to Dec. 1, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in March 1938, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 71 mi upstream. Since completion of Lake Kemp in 1923, no outflow has been permitted to pass over the spillway. Water is diverted from Lake Diversion (capacity 40,000 acre-ft) 41 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 62,060 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s June 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	111	245	37	19	51	54	516	347	129	106	71
2	40	110	132	36	18	43	57	667	258	126	103	57
3	40	103	93	36	18	40	64	615	202	117	104	60
4	41	88	71	36	17	38	78	419	178	101	113	71
5	40	69	62	35	17	36	86	216	160	99	112	60
6	37	66	55	37	31	36	86	160	149	95	113	63
7	33	107	50	36	56	33	107	133	141	98	128	67
8	63	95	46	37	60	32	96	253	140	92	141	68
9	153	102	43	37	72	32	84	2580	142	97	145	79
10	154	80	41	28	55	29	81	2710	136	105	132	81
11	155	70	39	25	43	27	293	1450	138	109	145	63
12	144	77	37	26	40	26	973	491	126	107	149	48
13	139	66	35	36	38	25	728	470	120	86	143	55
14	136	63	34	35	33	23	244	581	128	85	128	67
15	133	60	33	29	31	23	143	791	152	82	150	77
16	118	58	34	25	29	22	93	1020	362	76	165	74
17	118	60	38	24	26	30	72	1270	264	77	139	73
18	52	56	39	24	26	97	61	1390	223	76	317	75
19	49	55	42	25	25	73	53	1440	164	70	195	80
20	59	63	41	23	418	43	49	1550	131	67	204	85
21	100	55	42	22	1660	32	51	1880	119	63	146	80
22	104	50	41	21	1520	43	73	1910	123	85	139	91
23	102	62	41	20	499	49	66	1730	133	109	139	120
24	92	381	40	20	164	52	71	1560	777	97	158	134
25	82	609	39	18	106	42	144	1400	612	91	140	616
26	74	245	40	17	81	42	510	1030	341	91	114	455
27	67	128	40	20	64	42	1070	766	226	91	112	176
28	82	86	40	19	55	44	1010	616	179	91	102	140
29	111	274	39	20	---	41	e496	543	157	87	98	110
30	114	441	37	20	---	46	e406	854	136	119	84	85
31	116	---	37	20	---	53	---	572	---	119	70	---
TOTAL	2796	3890	1646	844	5221	1245	7399	31583	6464	2937	4234	3381
MEAN	90.2	130	53.1	27.2	186	40.2	247	1019	215	94.7	137	113
MAX	155	609	245	37	1660	97	1070	2710	777	129	317	616
MIN	33	50	33	17	17	22	49	133	119	63	70	48
AC-FT	5550	7720	3260	1670	10360	2470	14680	62640	12820	5830	8400	6710

RED RIVER BASIN

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

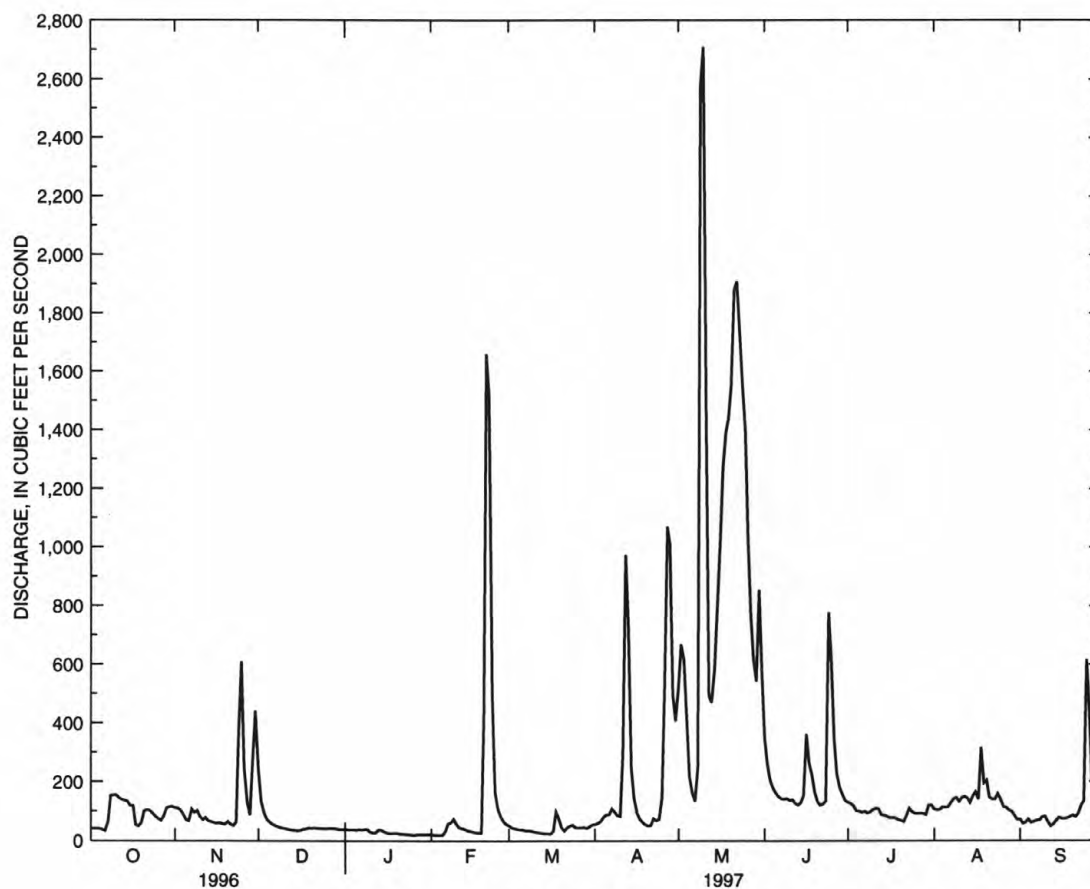
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997#, BY WATER YEAR (WY)

MEAN	418	210	120	91.5	150	188	230	578	533	243	269	329
MAX	4017	1784	1091	859	1252	1412	1450	4105	4475	1201	2791	2619
(WY)	1942	1973	1992	1992	1992	1993	1990	1941	1941	1975	1950	1950
MIN	55.1	34.9	25.3	22.5	17.8	26.9	37.3	52.0	71.0	60.6	61.9	63.8
(WY)	1983	1982	1979	1974	1995	1975	1989	1988	1944	1986	1986	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1938 - 1997#	
ANNUAL TOTAL	33498		71640			
ANNUAL MEAN	91.5		196		277	
HIGHEST ANNUAL MEAN					977	
LOWEST ANNUAL MEAN					64.3	
HIGHEST DAILY MEAN	609	Nov 25	2710	May 10	17300	Oct 3 1941
LOWEST DAILY MEAN	14	Mar 15	17	Jan 26	7.7	Apr 9 1978
ANNUAL SEVEN-DAY MINIMUM	27	Mar 12	18	Jan 30	11	Mar 6 1975
INSTANTANEOUS PEAK FLOW			2850	May 9	17800	Oct 3 1941
INSTANTANEOUS PEAK STAGE			12.61	May 9	24.00	Oct 3 1941
ANNUAL RUNOFF (AC-FT)	66440		142100		200600	
10 PERCENT EXCEEDS	154		497		580	
50 PERCENT EXCEEDS	71		82		84	
90 PERCENT EXCEEDS	39		30		36	

e Estimated

Period of regulated streamflow.

07312500 WICHITA RIVER AT WICHITA FALLS, TX
MEAN DAILY DISCHARGE (CFS)

RED RIVER BASIN

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07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1966 to July 1975. Chemical and biochemical analyses: November 1981 to August 1989 and June 1996 to September 1997 (discontinued). Sediment analyses: April 1966 to July 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1981 to September 1989, June 1996 to current year.

WATER TEMPERATURE: October 1981 to September 1989, June 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,490 microsiemens Mar. 2, 1984; minimum daily, 245 microsiemens Oct. 24, 1983.

WATER TEMPERATURE: Maximum daily, 35.0°C July 21, 1982, July 4, 1983, and June 15, 16, 1984; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,230 microsiemens Feb. 18; minimum daily, 605 microsiemens June 24.

WATER TEMPERATURE: Maximum daily, 34.0°C July 14, 15, 27 and 28; minimum daily, 0.0°C on several days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA	
DEC 30...	1500	36	6900	8.1	11.0	15.6	148	1500	1300	350	
MAR 17...	1420	23	7010	7.8	17.5	10.1	111	1300	1100	300	
MAY 20...	1340	1520	4030	7.7	21.0	7.1	83	730	640	190	
JUN 27...	1330	220	3040	7.6	29.5	7.7	105	570	470	150	
SEP 02...	1510	46	5230	8.1	31.0	7.5	106	1000	870	250	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
DEC 30...	150	1000	11	6.3	230	800	1800	0.30	3.5	4250	
MAR 17...	140	970	12	6.3	200	740	1800	0.30	2.6	4080	
MAY 20...	61	555	9	8.2	98	670	880	0.31	6.7	2430	
JUN 27...	48	405	7	7.9	100	420	660	0.29	9.2	1760	
SEP 02...	89	733	10	7.7	120	780	1200	0.34	8.7	3170	

RED RIVER BASIN

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	5220	5790	5580	5710	1600	1350	1470	7300	6870	7120
2	5450	4980	5250	5810	5580	5700	2440	1600	2040	7120	6800	6990
3	5820	5410	5690	5930	5750	5850	3010	2440	2710	7150	6790	6990
4	6070	5800	5920	6160	5830	5950	3670	3010	3280	7290	6920	7110
5	6510	6070	6300	6200	5940	6090	4300	3630	3960	7500	7090	7340
6	6410	6140	6270	6410	4870	6140	4990	4280	4560	7520	7120	7340
7	6670	6340	6490	5770	4430	5350	5400	4930	5140	7520	7030	7290
8	7010	6620	6770	6210	4700	5490	5760	5330	5520	7490	7170	7390
9	7060	5750	6080	6480	6170	6290	6050	5710	5850	7400	7040	7300
10	6110	5790	5980	6350	5490	5950	6400	6050	6200	7540	6970	7230
11	6540	6080	6260	5850	5310	5520	6500	6330	6420	---	---	7310
12	6290	6120	6230	6200	5790	5950	6710	6390	6540	---	---	e7450
13	6320	6160	6250	6370	6060	6150	6820	6520	6710	---	---	e7650
14	6450	6280	6380	6240	5960	6090	6940	6640	6800	---	---	7790
15	6550	6370	6460	6540	6220	6350	7190	6850	7010	7760	7130	7480
16	6620	6500	6570	6680	6410	6510	7270	6760	7050	7610	7160	7430
17	6940	6620	6770	6630	6360	6510	7340	6790	7090	---	---	7450
18	7290	6750	6930	6790	6050	6440	7450	6970	7240	7760	7320	7560
19	8220	7290	8010	7090	6630	6870	---	---	7270	7780	7240	7590
20	---	---	7840	7190	6840	7020	7460	7040	7250	7740	7370	7610
21	---	---	e5300	7160	6800	6950	7380	6950	7200	7710	7130	7490
22	---	---	5690	7100	6730	6910	7330	6970	7200	7590	7290	7460
23	5950	5410	5740	7060	3790	6620	7270	6850	7100	7660	7290	7490
24	5800	5560	5650	5170	1460	2970	7400	6990	7210	7700	6770	7350
25	5810	5370	5550	1800	1240	1510	7450	7120	7320	7580	7090	7360
26	5840	5560	5710	1760	1430	1550	7500	6980	7350	7640	7230	7490
27	6050	5840	5960	2090	1540	1790	7400	6990	7210	7890	7290	7560
28	6060	5520	5900	2780	2090	2420	7360	6940	7170	8060	7400	7730
29	5930	5520	5750	2830	1220	1950	7430	6950	7240	8040	7360	7690
30	6000	5750	5840	2360	1430	1820	7320	6840	7140	7890	7330	7660
31	6150	5520	5790	---	---	---	7290	6910	7150	7990	7360	7730
MONTH	8220	4980	6150	7190	1220	5210	7500	1350	6110	8060	6770	7430

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7820	7390	7680	---	---	e3650	6430	5840	6100	---	---	1380
2	7880	7360	7700	---	---	e4200	5980	5680	5850	1300	1220	1260
3	8120	7660	7880	---	---	4880	5970	5360	5640	1330	1140	1290
4	8220	7760	8080	5340	5060	5200	5470	4590	5290	1660	1170	1230
5	8230	8100	8170	5500	5230	5340	5560	5110	5330	1810	1420	1630
6	8120	6770	7480	5820	5460	5590	5550	5230	5400	1770	1570	1680
7	7710	5990	6700	6060	5710	5860	5890	5380	5560	1890	1720	1770
8	7410	6070	6780	6190	5920	6100	5720	4600	4910	3280	885	1970
9	8480	7100	7880	6760	6110	6520	5370	4070	5130	1380	724	1010
10	7210	5770	6690	6790	5870	6380	6280	4800	5260	1190	1050	1130
11	6170	5720	5850	6030	5780	5910	---	---	7040	1370	1140	1220
12	6690	6140	6440	6300	5950	6090	---	---	5900	1860	1370	1640
13	6620	5940	6250	6510	6150	6290	5020	3980	4240	1850	1640	1750
14	7030	6090	6540	6840	6390	6560	5130	4160	4600	2590	1620	2300
15	7740	6970	7340	6930	6550	6740	5740	2770	4760	3090	2420	2750
16	8190	7640	7970	7060	6860	6960	3390	2870	3080	3800	3090	3500
17	8790	8150	8440	---	---	7000	3400	2960	3160	4000	3670	3860
18	9230	8780	8980	---	---	6160	3460	3170	3300	4040	3490	3720
19	9100	8510	8870	5500	4790	4970	3830	3460	3630	5460	3510	4210
20	8940	1800	4720	5470	4910	5100	4060	3830	3920	5120	4000	4370
21	2260	1380	1740	5680	5120	5460	5500	4060	4270	4000	3060	3340
22	1660	1030	1220	5570	5320	5440	5410	4940	5190	4350	3680	4050
23	1090	1010	1030	5460	5080	5300	5840	5340	5530	4680	4350	4560
24	1490	1090	1280	6020	4980	5120	5760	5480	5620	4680	4220	4530
25	2030	1490	1750	6910	6020	6390	5650	3330	4530	4220	3400	3720
26	---	---	2140	6950	5800	6150	---	---	3450	3410	3110	3300
27	---	---	e2550	6530	6070	6230	---	---	1860	3200	3100	3130
28	---	---	e3100	7500	6060	6930	---	---	1240	3130	3060	3090
29	---	---	---	7400	6280	6910	---	---	1380	3590	3100	3180
30	---	---	---	7020	6210	6770	---	---	e1380	---	---	e3450
31	---	---	---	7030	6240	6560	---	---	---	---	---	e3800
MONTH	9230	1010	5760	7500	4790	5900	6430	2770	4420	5460	724	2700

e Estimated

RED RIVER BASIN

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07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	4780	3510	4250	4070	3910	4020	---	---	e5290	5300	5200	5260
2	3750	3590	3670	4100	4040	4080	---	---	e5310	5300	5140	5230
3	4050	3730	3880	4160	4080	4120	---	---	e5320	5430	5190	5340
4	4260	4040	4130	4390	4110	4270	---	---	e5350	5410	5340	5380
5	4340	4160	4280	4430	4340	4390	---	---	e5350	5520	5410	5470
6	4380	4250	4340	4600	4420	4480	---	---	5350	5560	5490	5520
7	4520	4370	4440	4680	4440	4560	5640	4970	5330	5560	5430	5490
8	4900	4480	4710	4570	4460	4510	5630	5080	5340	5480	5260	5370
9	5030	4870	4940	4570	4350	4480	5080	4440	4730	5330	5200	5280
10	5120	4760	5040	4690	4150	4340	4440	4250	4290	5210	5120	5160
11	5430	4820	5030	4160	4020	4080	4260	3400	3980	5350	5210	5280
12	5440	5340	5380	4090	3830	3960	3970	3480	3770	5370	5210	5290
13	5380	5120	5240	3910	3760	3820	3820	3420	3610	5240	5130	5200
14	5160	5010	5080	4070	3910	4020	4270	3760	3980	5130	4950	5010
15	5760	5110	5470	4440	3700	3950	4150	3430	3820	5030	4960	4990
16	---	---	4640	3880	3800	3850	3750	2230	2980	5230	5030	5120
17	---	---	e3900	3850	3750	3810	4710	2370	3110	5250	5140	5190
18	---	---	e4200	3780	3690	3730	4620	1760	2810	5270	5170	5220
19	---	---	e4150	3790	3650	3730	4460	2050	3210	5280	5170	5220
20	---	---	e4100	3740	3590	3670	---	---	4110	5240	5190	5220
21	---	---	e4130	3750	3600	3700	---	---	e4180	5310	5230	5280
22	---	---	4160	---	---	3750	---	---	4420	5370	5300	5350
23	4950	4090	4440	---	---	e3950	4820	4370	4630	5530	5360	5440
24	5410	605	2140	---	---	e4280	5220	4810	4980	5790	5530	5630
25	---	---	1380	4810	4470	4610	5190	4160	4410	5910	2330	4000
26	---	---	e2500	4860	4640	4770	4470	4200	4330	2330	1690	1830
27	3460	3210	3270	4760	4160	5280	4720	4470	4620	2410	1810	2080
28	3670	3460	3590	5430	4230	e5290	4890	4700	4790	3140	2410	2760
29	3830	3670	3760	---	---	e5300	5070	4830	4960	3650	3100	3370
30	3910	3830	3860	---	---	e5290	5150	5020	5090	4090	3620	3850
31	---	---	---	---	---	e5310	5280	5120	5220	---	---	---
MONTH	5760	605	4140	5430	3590	4300	5640	1760	4470	5910	1690	4830
YEAR	9230	605	5120									

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	25.0	20.0	22.5	13.0	10.5	12.0	8.5	7.0	7.5	16.0	12.0	13.5
2	26.0	20.5	23.5	13.0	9.0	11.0	9.0	6.5	7.5	16.5	12.5	14.5
3	23.5	20.0	21.5	13.0	10.5	11.5	9.0	6.5	7.5	18.5	14.5	16.0
4	22.0	19.0	21.0	15.5	11.5	13.5	8.5	6.5	7.5	18.0	14.5	16.0
5	23.0	18.0	20.5	17.0	12.5	15.0	9.5	6.0	8.0	14.5	10.0	11.5
6	24.0	19.5	21.5	19.5	15.0	17.5	11.5	8.0	9.5	10.0	6.0	8.0
7	24.5	19.5	22.0	15.5	12.5	14.0	11.5	8.0	9.5	6.5	5.0	6.0
8	23.0	17.0	21.0	13.5	10.5	12.0	11.0	6.5	9.0	5.5	4.0	5.0
9	22.0	18.5	20.5	13.5	10.0	11.5	12.5	8.0	10.5	7.0	2.5	4.5
10	21.5	19.0	20.0	14.0	10.0	12.0	15.0	10.5	13.0	6.0	3.0	4.5
11	21.0	18.5	19.5	14.5	10.5	12.5	15.5	12.0	14.0	3.0	.0	1.5
12	22.0	18.5	20.0	13.5	12.0	13.0	14.5	11.5	13.0	.0	.0	.0
13	22.5	19.5	21.0	15.5	11.5	13.5	14.0	9.5	12.0	.5	.0	.0
14	22.5	19.5	21.0	17.5	14.0	15.5	15.0	11.0	13.0	.5	.0	.0
15	23.0	19.5	21.0	17.5	15.5	16.5	13.5	7.5	9.5	5.0	.0	2.0
16	24.0	20.0	22.0	19.0	16.0	17.5	7.5	4.5	6.0	4.0	.0	2.0
17	21.5	18.5	21.0	18.0	12.0	13.5	6.0	2.0	4.0	4.5	.0	1.5
18	19.0	15.0	17.5	14.0	10.0	12.0	3.0	.0	1.5	5.5	.0	2.0
19	17.0	13.5	15.5	16.0	11.5	13.5	2.0	.0	.5	8.0	3.0	5.0
20	20.5	15.5	18.0	17.5	14.0	15.5	3.5	.0	1.0	10.5	4.5	7.0
21	20.0	14.5	17.5	15.5	11.5	13.5	6.5	2.5	4.0	13.5	9.0	10.5
22	15.0	12.5	13.5	11.5	11.0	11.0	10.0	5.0	7.5	13.0	9.0	10.5
23	15.5	11.0	13.5	15.0	11.5	13.0	10.5	6.5	9.0	13.0	9.5	11.0
24	17.5	13.0	15.0	12.0	5.5	7.5	7.0	3.5	5.0	13.0	8.5	10.5
25	20.0	15.5	17.5	5.5	4.0	4.5	5.5	2.5	4.0	11.0	6.5	8.5
26	21.5	18.0	19.5	5.0	3.5	4.0	7.5	5.0	6.0	12.0	8.5	10.0
27	21.0	17.0	19.5	5.5	3.5	4.5	7.5	3.0	5.0	12.5	4.5	10.0
28	17.0	15.5	16.0	6.5	4.5	6.0	9.5	6.5	7.5	7.0	.0	2.5
29	18.5	15.5	17.0	8.0	6.0	7.0	10.5	6.5	8.0	5.5	.0	2.5
30	17.5	14.0	16.0	9.0	7.5	8.0	11.0	6.5	9.0	8.0	.0	3.5
31	16.0	13.0	15.0	---	---	---	13.0	10.5	11.5	11.5	4.0	7.5
MONTH	26.0	11.0	19.0	19.5	3.5	11.5	15.5	.0	8.0	18.5	.0	6.5

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	27.0	23.5	25.5	32.5	28.0	30.0	33.0	28.0	30.0	31.0	26.5	28.5
2	26.0	24.5	25.5	33.0	28.0	30.5	32.5	28.5	30.5	31.5	27.0	29.0
3	25.0	23.5	24.0	33.0	28.5	30.5	32.5	28.0	30.0	30.5	27.5	29.0
4	26.5	23.0	24.5	31.0	27.0	28.5	32.0	28.5	30.0	28.5	26.5	27.0
5	27.5	23.5	25.5	27.5	25.0	26.0	32.5	29.0	30.5	28.0	25.0	26.5
6	27.0	24.5	25.5	30.0	24.0	26.5	30.5	27.0	28.5	29.0	24.0	26.5
7	27.0	24.0	25.5	30.5	25.5	28.0	27.0	22.5	24.5	29.5	24.0	26.5
8	25.5	23.5	24.5	32.0	26.5	29.0	24.0	22.0	23.0	30.0	24.5	27.0
9	27.5	22.5	24.5	31.5	27.0	29.0	28.5	22.5	25.5	28.0	25.5	26.5
10	27.0	23.5	25.0	33.0	27.0	29.0	31.0	26.5	28.5	27.5	23.5	25.5
11	29.0	24.0	26.0	31.5	28.0	29.5	29.5	27.5	28.5	27.5	22.5	25.0
12	30.5	25.0	28.0	31.5	27.0	29.0	30.5	27.5	29.0	27.5	22.5	25.0
13	31.5	26.0	28.5	32.5	27.0	29.5	31.5	28.0	29.5	29.5	24.5	26.5
14	31.5	27.0	29.0	34.0	27.5	30.5	32.0	28.0	30.0	28.5	25.5	27.5
15	30.5	26.5	28.5	34.0	28.5	31.0	31.0	27.5	29.0	29.5	25.0	27.0
16	29.5	27.5	28.5	33.5	28.0	30.5	31.5	27.5	29.0	30.0	25.0	27.5
17	29.0	26.0	27.5	33.0	28.0	30.5	32.0	28.0	29.5	30.0	25.0	27.5
18	29.5	26.0	28.0	31.5	28.0	29.5	29.0	26.0	27.5	29.5	25.5	27.0
19	31.0	27.0	28.5	31.5	27.0	29.0	29.5	27.0	28.0	30.0	25.0	27.5
20	32.0	27.5	29.5	33.0	27.5	30.0	---	---	---	28.0	24.0	26.5
21	31.0	27.5	29.0	33.5	28.0	30.5	---	---	---	25.0	21.0	23.0
22	28.0	25.0	26.0	31.5	28.0	29.5	---	---	---	24.5	23.0	23.5
23	27.0	24.0	25.5	33.0	28.0	30.0	30.5	27.5	28.5	24.0	22.5	23.5
24	26.0	24.5	25.0	33.5	28.5	31.0	30.0	26.5	28.0	22.5	21.0	21.5
25	27.5	24.5	26.0	33.5	28.5	31.0	30.0	26.5	28.0	22.0	20.5	21.5
26	29.0	26.5	28.0	33.5	28.5	30.5	30.0	26.0	28.0	22.5	20.5	21.5
27	30.0	27.5	28.5	34.0	28.5	30.5	30.0	26.0	27.5	24.5	20.5	22.0
28	30.0	27.5	28.5	34.0	28.5	31.0	30.5	25.5	27.5	24.5	22.0	23.5
29	31.5	27.0	29.0	33.5	29.0	31.0	30.5	26.0	28.0	25.0	20.5	22.5
30	32.0	28.0	30.0	31.5	28.0	29.5	31.0	26.5	28.5	27.0	22.0	24.5
31	---	---	---	32.0	27.5	29.5	31.0	26.5	28.5	---	---	---
MONTH	32.0	22.5	27.0	34.0	24.0	29.5	33.0	22.0	28.5	31.5	20.5	25.5
YEAR	34.0	.0	18.0									

RED RIVER BASIN

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07312700 WICHITA RIVER NEAR CHARLIE, TX

LOCATION.--Lat 34°03'11", long 98°17'47", Clay County, Hydrologic Unit 11130206, on right bank at upstream side of bridge on Farm Road 810, 3.0 mi southeast of Charlie, and 5.7 mi northwest of Petrolia.

DRAINAGE AREA.--3,439 mi², of which 2,086 mi² is above Lake Kemp Dam and 143 mi² is above Lake Wichita Dam.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 872.71 ft above sea level.

REMARKS.--Records good. Since installation of gage in October 1967, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 71 mi upstream. Records furnished by the City of Wichita Falls show that 13,348 acre-ft was returned to river above this station as wastewater effluent.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	e134	696	55	41	147	130	597	899	245	196	126
2	69	e133	416	53	40	122	144	822	653	222	194	122
3	62	e123	269	55	40	e109	151	922	493	204	147	119
4	58	103	183	56	40	91	215	853	487	188	144	114
5	56	79	144	56	40	83	243	631	385	178	152	115
6	54	65	127	54	47	73	195	408	326	132	147	111
7	50	142	111	60	179	70	172	302	284	138	171	114
8	47	198	92	58	214	73	203	251	274	137	201	118
9	52	96	85	61	109	73	191	1690	315	127	209	121
10	144	98	84	67	107	73	169	3360	296	142	213	123
11	151	84	81	57	96	66	504	3540	258	149	205	118
12	147	74	78	53	80	66	1000	2190	246	156	283	107
13	135	68	72	43	97	65	1210	964	217	147	248	98
14	128	74	68	52	89	62	883	846	218	128	250	103
15	124	69	66	56	72	60	433	908	311	116	294	112
16	121	74	63	53	65	58	277	1070	332	108	e282	124
17	107	113	62	50	59	59	204	1240	643	110	e275	115
18	99	121	62	47	57	60	173	1440	485	116	337	114
19	79	73	62	46	59	121	163	1650	399	112	467	113
20	70	69	60	46	336	119	148	2030	310	108	348	111
21	107	69	61	47	1960	111	130	1960	231	106	325	112
22	176	66	61	46	2150	102	151	2080	197	104	242	115
23	177	65	62	45	1720	120	282	2070	295	232	285	130
24	142	420	59	43	779	135	176	1940	306	196	227	155
25	133	980	58	40	398	126	234	1800	1000	152	249	199
26	124	805	54	41	281	130	893	1570	798	134	216	795
27	115	397	52	40	245	107	1200	1220	551	126	172	545
28	124	240	54	40	180	101	1420	1020	398	138	165	236
29	131	435	51	41	---	106	1200	895	315	171	157	166
30	145	928	52	41	---	113	727	1410	273	303	153	141
31	139	---	53	41	---	132	---	1620	---	266	136	---
TOTAL	3350	6395	3498	1543	9580	2933	13221	43299	12195	4891	7090	4892
MEAN	108	213	113	49.8	342	94.6	441	1397	407	158	229	163
MAX	177	980	696	67	2150	147	1420	3540	1000	303	467	795
MIN	47	65	51	40	40	58	130	251	197	104	136	98
AC-FT	6640	12680	6940	3060	19000	5820	26220	85880	24190	9700	14060	9700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997#, BY WATER YEAR (WY)

	MEAN	380	316	201	176	265	375	336	598	702	303	329	439
MAX	2032	2194	1556	1005	1411	1832	2377	3094	2815	1330	2766	2598	
(WY)	1987	1973	1992	1992	1992	1993	1990	1990	1995	1992	1995	1986	
MIN	101	63.2	51.5	46.1	45.6	70.2	61.2	103	135	92.5	111	111	
(WY)	1971	1982	1979	1974	1995	1972	1989	1988	1994	1972	1994	1994	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1968 - 1997#

ANNUAL TOTAL	58378	112887	
ANNUAL MEAN	160	309	
HIGHEST ANNUAL MEAN			368
LOWEST ANNUAL MEAN			986
HIGHEST DAILY MEAN	1050	Sep 16	125
LOWEST DAILY MEAN	47	Oct 8	125
ANNUAL SEVEN-DAY MINIMUM	53	Dec 25	7740
INSTANTANEOUS PEAK FLOW			24
INSTANTANEOUS PEAK STAGE			29
ANNUAL RUNOFF (AC-FT)	115800	223900	266800
10 PERCENT EXCEEDS	281	887	893
50 PERCENT EXCEEDS	123	134	142
90 PERCENT EXCEEDS	70	54	65

e Estimated

Period of regulated streamflow.

RED RIVER BASIN

07312700 WICHITA RIVER CHARLIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to September 1981, October 1989 to September 1997 (discontinued).**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1967 to September 1981, June 1996 to current year.

WATER TEMPERATURE: October 1967 to September 1981, June 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,000 microsiemens Apr. 25, 1972; minimum daily, 213 microsiemens Apr. 15, 1997.

WATER TEMPERATURE: Maximum daily, 34.5°C July 25, 1981; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,240 microsiemens May 19; minimum daily, 213 microsiemens Apr. 15.

WATER TEMPERATURE: Maximum daily, 33.5°C on July 27; minimum daily, 0.0°C on several days..

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	
DEC 30...	1340	49	4540	8.4	9.0	14.6	131	930	740	220	
MAR 19...	1155	140	4270	8.1	13.0	10.3	101	800	600	180	
MAY 21...	1230	1930	3740	7.6	20.0	7.1	81	680	580	180	
JUL 01...	1130	245	3370	8.2	29.5	7.3	101	630	500	160	
SEP 02...	1115	131	4550	8.3	28.0	7.7	103	830	740	210	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
DEC 30...	93	630	9	9.2	190	510	1100	0.70	2.6	2680	
MAR 19...	84	570	9	9.8	200	460	1000	0.80	2.0	2430	
MAY 21...	56	513	9	8.1	100	610	830	0.33	6.6	2260	
JUL 01...	56	450	8	8.2	120	490	730	0.37	8.1	1970	
SEP 02...	75	638	10	9.0	95	660	1000	0.50	6.3	2690	

RED RIVER BASIN

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07312700 WICHITA RIVER CHARLIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	3090	2930	3030	---	---	e4420	2210	1320	1860	4890	4430	4620
2	3350	3030	3210	---	---	e4660	2200	1840	1980	4860	4520	4680
3	3440	2880	3230	---	---	e4460	2210	1950	2030	4790	4360	4630
4	2910	327	2010	4690	4400	4510	2430	2210	2360	4930	4390	4580
5	3250	323	1610	4590	4340	4470	2670	2390	2520	4940	4580	4740
6	3950	2920	3420	4510	4330	4380	2880	2670	2780	4910	4240	4660
7	4290	3890	4150	4450	3480	4000	3090	2880	2990	4880	4380	4580
8	4640	2740	4270	3850	1900	2750	3380	3090	3210	4820	4270	4530
9	4370	2110	3190	3060	1610	2190	3520	3300	3380	4730	4450	4540
10	5730	4270	4680	4070	3060	3640	3780	3520	3620	4780	4330	4520
11	5950	4650	5180	4670	3890	4140	3970	3780	3860	4650	4290	4430
12	4850	4660	4760	4670	4350	4480	4090	3910	3990	4420	4120	4250
13	5150	4710	4910	4810	4360	4550	4260	3990	4130	4660	4120	4380
14	4950	4580	4760	4580	3920	4230	4400	4160	4250	4740	4400	4520
15	4990	4480	4730	4800	3920	4410	4580	4140	4360	4760	4370	4500
16	4930	4450	4670	4410	4130	4310	4680	4370	4490	4600	4140	4390
17	4980	4480	4700	4580	4100	4310	4840	4460	4630	5060	4360	4680
18	4910	4520	4720	4400	2690	3900	4990	4500	4730	4920	4640	4740
19	5050	4550	4800	2740	2450	2600	5030	4630	4780	4690	4370	4470
20	5070	4630	4860	3960	2740	3510	5080	4680	4850	4550	3700	4320
21	---	---	e4650	4510	3960	4270	5030	4670	4840	4500	4130	4340
22	---	---	e4280	4570	4270	4410	4950	4510	4730	4600	4190	4370
23	3750	2810	3450	4860	4420	4680	5090	4590	4790	4570	4250	4380
24	4350	2800	3650	4770	924	3610	5000	4540	4750	4590	4110	4320
25	4740	4350	4540	2810	720	1470	5010	4510	4740	4580	4100	4330
26	4870	4450	4650	2160	1260	1530	4980	4630	4780	4640	3860	4340
27	4660	4350	4480	1920	1580	1810	4970	4590	4760	4850	4060	4470
28	---	---	e4370	1920	1810	1880	4900	4540	4700	4910	2070	3670
29	4510	3620	4190	1940	1250	1680	4900	4620	4740	4790	3890	4400
30	4420	3680	4180	1500	577	1070	4850	4510	4650	4740	3960	4390
31	4620	4200	4390	---	---	---	4930	4470	4680	4680	3810	4370
MONTH	5950	323	4120	4860	577	3540	5090	1320	3970	5060	2070	4460

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	4560	3780	4260	2490	2360	2460	5040	4810	4880	1900	1750	1850
2	4410	3780	4090	---	---	e2600	5000	4690	4830	1890	1400	1600
3	4360	2510	3670	---	---	e2800	4820	4600	4740	1400	1220	1320
4	4340	3810	4030	2910	2840	2850	4610	4310	4500	1250	1200	1220
5	4340	2210	3930	3060	2830	2900	4590	3490	4140	1350	1250	1290
6	4300	3840	4010	3280	3060	3180	3800	3290	3580	1580	1350	1480
7	4130	3150	3810	3460	3280	3360	4420	3520	4180	1720	1580	1670
8	3150	1720	2080	3600	3320	3450	4820	4350	4590	3010	1720	2010
9	2130	1660	1790	5310	3440	4440	4990	4660	4900	3190	1020	2190
10	3670	2130	2880	5340	3520	4880	5320	4500	5020	2250	1920	2120
11	4150	3460	3650	3870	3550	3710	4510	2350	3460	2130	1980	2050
12	4540	4150	4320	3860	3680	3760	3650	997	1870	1990	1900	1950
13	4980	3790	4450	4010	3670	3840	3810	1510	2320	2780	1900	2440
14	4030	3030	3590	4130	3860	3980	1610	499	774	2920	2330	2570
15	3030	2470	2690	4070	3880	3950	642	213	561	2650	2330	2460
16	3130	2590	2920	4140	3890	3960	1700	617	963	3080	2300	2660
17	3440	2590	3070	4200	3960	4030	2700	1480	2180	3960	3080	3550
18	3470	3120	3300	4330	3990	4090	3020	2700	2900	4740	3960	4330
19	3990	3260	3590	4460	4090	4210	3190	3020	3130	6240	3690	5300
20	3960	985	2790	5750	4270	5060	3250	3180	3220	4560	2890	3350
21	1840	702	1100	5350	4540	5080	3370	3100	3260	3800	3100	3600
22	2230	953	1320	4540	4080	4220	3490	3240	3360	3580	3230	3420
23	1400	1060	1180	4270	4090	4200	3660	2400	3240	3730	3580	3670
24	1670	1240	1440	4740	4040	4230	3290	1420	2520	3970	3660	3890
25	2020	1670	1860	4790	4490	4610	2620	1410	1660	3980	3930	3950
26	2240	1980	2090	4860	4610	4730	3710	1130	2110	4000	3900	3940
27	2330	2130	2220	4680	4510	4570	2790	1690	2220	3940	3890	3900
28	2410	2180	2300	4600	4330	4420	2430	1460	1840	3970	3790	3930
29	---	---	---	4950	4500	4780	1480	1360	1430	3940	3790	3890
30	---	---	---	4750	4480	4590	1750	1470	1610	3940	1430	3040
31	---	---	---	5010	4700	4790	---	---	---	2520	1300	1980
MONTH	4980	702	2940	5750	2360	3990	5320	213	3000	6240	1020	2790

e Estimated

RED RIVER BASIN

07312700 WICHITA RIVER CHARLIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	2720	2130	2420	3350	3220	3290	4130	2910	3820	4640	3130	3850
2	3020	2720	2890	3430	3290	3350	4360	2910	3860	4610	3350	4010
3	3250	3020	3170	3510	3340	3450	4510	4310	4380	4630	4130	4400
4	3330	2740	3200	3710	3270	3500	4590	4300	4440	4490	4130	4340
5	3020	2590	2850	3660	3400	3550	4700	4390	4540	4390	4060	4240
6	3370	2910	3020	3580	2780	3190	4690	4440	4560	4550	4160	4330
7	3390	3120	3270	3730	3360	3570	4640	4310	4520	4380	4040	4240
8	3520	3250	3410	3660	3360	3560	4650	3650	4360	4480	4110	4300
9	3590	2550	3470	3710	3340	3560	4350	3790	4160	4580	4230	4400
10	3740	2940	3210	3990	3590	3720	4410	4220	4300	4630	4360	4460
11	3510	2220	3280	4070	3690	3880	4420	3960	4150	4650	4360	4480
12	3660	2810	3340	4060	3760	3910	4020	2950	3510	4630	4400	4510
13	3670	3090	3530	4140	3790	3970	3620	3020	3400	4620	4430	4500
14	3620	3000	3430	4150	3430	3910	3960	3610	3790	4640	4440	4500
15	3680	3000	3310	4100	3460	3790	3960	2700	3720	4620	4130	4350
16	3000	2090	2510	4060	2060	3730	4520	3730	4080	4730	4360	4520
17	4170	2290	3260	4330	3110	4050	4510	4190	4400	4670	4420	4510
18	3850	2340	2740	4270	3830	4070	4540	3820	4170	4710	4440	4550
19	3080	2810	2930	4100	3850	3960	3880	2400	3210	4710	4420	4550
20	2860	2670	2780	4120	3800	3980	2490	1910	2250	4770	4420	4530
21	2870	2680	2780	4110	3880	4010	4160	2440	3520	4820	4500	4630
22	3260	2870	2980	4230	3960	4110	4120	3410	3700	4790	4570	4660
23	3280	3100	3170	4260	3870	4020	3940	3360	3690	4720	4240	4550
24	3210	2270	2600	4150	2190	2870	4250	2980	3650	4650	4050	4450
25	3700	1280	2370	4100	2750	3680	4280	3820	4040	4580	4050	4290
26	1590	1260	1470	4390	4060	4220	4470	4250	4360	5590	1030	3120
27	2010	1520	1730	4170	3970	4080	4620	3770	4130	1510	1040	1250
28	2610	2010	2340	4240	3840	4090	3990	2830	3760	2270	1490	1890
29	3000	2610	2800	4440	3840	4090	4110	2230	3620	2920	2270	2580
30	3250	3000	3110	4480	4250	4330	4410	3020	3970	3230	2920	3130
31	---	---	---	4460	1800	2790	4410	3560	4190	---	---	---
MONTH	4170	1260	2910	4480	1800	3750	4700	1910	3940	5590	1030	4070
YEAR	6240	213	3630									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	22.5	19.0	21.0	---	---	---	9.0	8.0	8.5	14.5	12.5	13.0
2	23.0	20.0	21.5	---	---	---	8.5	7.5	8.0	15.0	13.5	14.0
3	22.5	19.5	20.5	---	---	---	9.0	7.5	8.0	16.5	14.5	15.5
4	20.5	19.0	20.0	15.0	12.0	13.5	8.5	7.0	7.5	16.5	15.0	16.0
5	21.0	19.0	20.0	16.5	13.5	15.0	8.5	7.0	8.0	15.0	11.5	13.0
6	23.0	20.0	21.5	18.5	16.5	17.5	10.0	8.0	9.0	11.5	8.5	10.0
7	23.0	20.5	22.0	17.0	15.0	15.5	10.0	8.5	9.5	8.5	6.5	7.0
8	23.0	21.0	22.0	15.0	13.0	14.0	9.5	8.0	9.0	6.5	5.0	5.5
9	22.0	19.5	21.0	13.5	11.0	12.5	10.5	8.5	9.5	5.5	4.0	5.0
10	21.5	19.5	20.5	13.5	11.5	13.0	12.5	10.0	11.5	5.5	4.0	4.5
11	21.0	19.0	20.0	14.0	12.0	13.0	13.0	11.5	12.5	4.0	1.0	2.5
12	22.0	19.0	20.5	14.0	13.0	13.5	13.0	11.0	12.0	1.0	.0	.0
13	22.5	20.0	21.0	15.5	12.5	14.0	12.0	10.0	11.0	.0	.0	.0
14	22.5	20.0	21.5	17.5	15.0	16.0	12.0	10.5	11.5	.0	.0	.0
15	22.5	20.0	21.5	18.5	17.0	17.5	12.0	8.0	9.5	1.5	.0	.5
16	23.5	21.0	22.0	19.0	18.0	18.5	8.0	6.0	6.5	2.0	1.0	1.5
17	23.0	20.0	21.5	18.5	14.0	15.5	6.5	3.5	5.0	1.5	.0	1.0
18	20.0	17.0	18.0	14.5	12.5	13.5	3.5	1.5	2.0	3.0	.5	1.5
19	17.5	15.0	16.0	15.5	13.5	14.5	1.5	.0	.5	5.5	2.5	3.5
20	19.0	15.5	17.0	17.0	15.5	16.5	1.5	.0	.5	8.0	4.5	6.0
21	---	---	---	17.0	14.0	15.5	5.0	1.5	3.0	11.5	8.0	9.5
22	---	---	---	14.0	13.0	13.0	8.5	5.0	6.5	11.5	10.0	11.0
23	15.5	12.5	14.0	15.0	13.0	14.0	9.5	8.0	9.0	12.0	10.5	11.0
24	16.5	13.5	14.5	14.5	7.0	10.0	8.0	5.0	6.0	12.0	10.5	11.5
25	19.0	16.0	17.0	7.5	4.5	6.0	5.0	3.5	4.5	11.0	8.5	9.5
26	20.5	18.5	19.5	6.0	5.0	5.5	6.0	5.0	5.5	11.0	9.0	10.0
27	21.0	18.5	20.0	5.5	4.5	5.0	6.5	4.0	5.5	11.5	7.5	10.5
28	18.5	16.5	17.0	7.0	4.5	5.5	8.5	6.5	7.5	7.5	3.5	4.5
29	18.5	16.5	17.5	8.5	6.5	7.0	8.5	7.5	8.0	3.5	2.0	3.0
30	18.0	16.0	17.0	9.0	8.0	8.5	10.0	8.0	9.0	5.0	2.5	3.5
31	17.0	15.0	16.0	---	---	---	12.5	10.0	11.5	8.0	5.0	6.5
MONTH	23.5	12.5	19.5	19.0	4.5	12.5	13.0	.0	7.5	16.5	.0	7.0

RED RIVER BASIN

07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'47", long 98°46'43", Archer County, Hydrologic Unit 11130209, on intake tower near left end of dam on North Fork Little Wichita River, 8.2 mi south of Mankins, and 9.2 mi northwest of Archer City.

DRAINAGE AREA.--275 mi²

PERIOD OF RECORD.--February 1946 to current year. Prior to October 1965, end of month contents only.

Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by City of Wichita Falls). Prior to Oct. 8, 1946, water-stage recorder at same site and datum. Non-recording gage read twice daily prior to Feb. 17, 1974, once daily thereafter.

REMARKS.--The lake is formed by a rolled earthfill dam 8,200 ft long, including a 483-foot-wide reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Dec. 15, 1945, and storage began Feb. 1, 1946. The service outlet consists of two gate-controlled 4- by 5-foot conduits. The dam and lake are owned by the City of Wichita Falls, which uses the water for their municipal supply. The capacity table is based on U.S. Geological Survey topographic maps, dated 1929. The capacity curve, dated November 1946, was entitled "Lake Kickapoo Area & Capacity Curve". Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	1,062.0	--
Design flood (2-foot freeboard)	1,060.0	221,000
Crest of spillway	1,045.0	106,000
Lowest gated outlet (invert)	1,000.92	0

COOPERATION.--Capacity curve, record of lake elevations, and diversions for municipal use are provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 134,300 acre-ft Aug. 2, 1950 (elevation, 1,049.2 ft); minimum observed since first filling in July 1950, 35,660 acre-ft June 30, 1953 (elevation, 1,029.8 ft).

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 74,420 acre-ft June 25-29 (elevation, 1039.6 ft); minimum daily contents, 61,140 acre-ft Sept. 28-30 (elevation, 1,036.8 ft).

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

1029.0	33,500	1036.0	57,700	1044.0	99,700
1030.0	36,200	1038.0	66,500	1048.0	126,000
1032.0	42,500	1040.0	76,500	1049.0	132,900
1034.0	49,700	1042.0	87,700	1050.0	140,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67940	65600	68420	66050	64250	69380	67460	68420	71300	73900	68900	65150
2	68420	65600	69380	66050	64250	69380	66980	68420	70340	73380	68900	64700
3	68420	65600	68420	66050	64250	69380	66980	68420	70340	73380	68420	64700
4	68420	65600	68420	66050	63800	68900	66980	68420	70820	73380	68420	64700
5	67940	65150	68420	66050	64700	68420	66980	68420	70340	73380	68420	64700
6	67940	65150	68420	65600	64250	68420	66980	67940	70820	73380	68420	64250
7	67940	65150	68420	65600	64250	68420	66980	67940	70340	72860	68420	64250
8	67940	65150	68420	65600	64700	68900	66500	67460	70340	72860	68420	64250
9	67940	64250	67940	65600	64250	68900	66500	68420	70340	72860	68420	64250
10	67460	64700	67940	66050	64250	68900	66500	69380	69860	72340	68420	63800
11	67460	64700	66980	65600	63800	68900	66500	69860	69860	72340	67940	63800
12	67460	64700	66500	65600	64250	68900	66980	69380	69860	72340	67940	63800
13	67460	64700	67940	65150	64250	68420	66980	69380	69860	71820	67460	63800
14	67460	64700	67940	65150	63800	68420	66980	69380	69860	70820	67460	63350
15	67460	64700	67460	65600	63800	68420	66980	69380	70340	71300	67460	62900
16	66980	64700	67460	65150	63800	68420	66980	68900	70820	71300	67460	62900
17	66980	64700	67460	65600	64700	68420	66500	69380	70340	71300	67460	62900
18	66500	64700	67460	65150	64250	68420	66500	68900	70340	71300	67460	62900
19	66980	64250	66980	65150	64250	68420	66500	68900	70340	71300	66500	62900
20	66980	64700	66980	64700	64700	68420	66500	69860	70340	70820	66500	62000
21	66980	64700	66980	65150	64700	68420	66500	71820	70340	69860	66500	62000
22	66500	64700	66980	65150	69380	67940	66500	71820	70340	70340	66500	62000
23	66980	64250	66980	64700	69380	67940	66980	72340	70340	69860	66050	62450
24	66050	64700	66500	64700	69380	67940	66980	72340	71300	68420	66050	62000
25	66050	65600	66500	64700	69380	67460	66980	72340	74420	68900	66050	62000
26	65600	66500	66500	64700	69860	67460	67460	72340	74420	69860	66050	61570
27	65600	66500	66500	64250	69380	67460	67940	71820	74420	69380	66050	61570
28	66050	66500	66500	64700	69860	67460	68420	71820	74420	69380	65600	61140
29	66050	66500	66500	64700	---	67460	68420	71820	74420	68900	65600	61140
30	66050	68420	66500	64250	---	67460	68420	72340	73900	68900	65600	61140
31	65600	---	66050	64250	---	67460	---	71300	---	68900	65150	---
MAX	68420	68420	69380	66050	69860	69380	68420	72340	74420	73900	68900	65150
MIN	65600	64250	66050	64250	63800	67460	66500	67460	69860	68420	65150	61140
(+)	1037.8	1038.4	1037.9	1037.5	1038.7	1038.2	1038.4	1039.0	1039.5	1038.5	1037.7	1036.8
(@)	-2820	+2820	-2370	-1800	+5610	-2400	+960	+2880	+2600	-5000	-3750	-4010
(++)	1091	1134	1182	1227	963	953	1086	1146	1293	1442	1173	1298
CAL YR 1996	MAX	91830	MIN	64250	(@)	-25190	(++)	14377				
WTR YR 1997	MAX	74420	MIN	61140	(@)	-7280	(++)	13988				

(+) Elevations, in feet, at end of month.

(@) Change in contents, in acre-feet.

(++) Diversions, in acre-feet, for municipal use by the City of Wichita Falls, and for wholesale customer use.

07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'45", long 98°36'46", Archer County, Hydrologic Unit 11130209, on left bank at downstream side of bridge on State Highway 79, 1.5 mi downstream from confluence of North and Middle Forks, and 4.8 mi north of Archer City.

DRAINAGE AREA.--481 mi², of which 275 mi² is above Lake Kickapoo.

PERIOD OF RECORD.--May 1932 to January 1956, August 1966 to current year.

Water-quality records.--Chemical analyses: January 1953 to January 1956. Water temperatures: January 1953 to January 1956. Sediment records: May 1968 to September 1975.

REVISED RECORDS.--WSP 827: 1932-35. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 934.72 ft above sea level. Aug. 17, 1954, to Jan. 6, 1956, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1946, at least 10% of contributing drainage area has been regulated by Lake Kickapoo (07314000) on North Fork Little Wichita River. Records furnished by the city of Wichita Falls show that 13,990 acre-ft was diverted from Lake Kickapoo for municipal use and wholesale customers during the current year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1933-45) 110 ft³/s (79,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1933-45).--Maximum discharge, 17,900 ft³/s Oct. 31, 1941 (gage height, 21.80 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1930 reached a stage of about 28 ft, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	e.11	e39	.00	.00	2.1	.06	2.6	.32	.38	.00	.00
2	.35	e.11	e4.1	.00	.00	1.5	e.05	1.4	.25	.33	.00	.00
3	.28	e.11	e.39	.00	.00	1.0	e.04	.71	.25	.22	.00	.00
4	.25	e.10	e.04	.00	.00	.77	e.03	.54	.32	.09	.00	.00
5	.20	e.09	e.03	.00	.00	.59	e.02	.64	.29	.07	.00	.00
6	.15	e.09	e.02	.00	.05	.39	e.01	.61	.28	.04	.00	.00
7	.18	e91	e.03	.00	38	.27	.01	.58	.28	.03	.01	.00
8	.23	e319	e.03	.00	48	.24	.02	.63	.32	.04	.00	.00
9	.21	e20	e.03	.00	10	.19	.01	.64	.31	.04	.00	.00
10	e.16	e.13	e.02	.00	4.3	.13	.00	131	e.24	.03	.00	.00
11	e.17	e.09	e.03	.00	1.8	.12	1.5	22	e.08	.04	.01	.00
12	e.17	e.07	e.03	.00	2.3	.16	52	5.8	.05	.05	.01	.00
13	e.16	e.05	e.02	.00	50	.14	9.1	2.1	1.2	.06	.00	.00
14	e.13	e.03	e.02	.00	31	.14	3.4	1.1	10	.03	.00	.00
15	e.11	e.02	e.02	.00	9.3	.17	1.5	.36	119	.01	.00	.00
16	e.21	e.02	e.02	.00	3.6	.15	.65	.23	70	.00	.00	.00
17	e.10	e.02	e.02	.00	1.5	.17	.43	.20	35	.00	.01	.00
18	e.09	e.02	e.02	.00	.87	.16	.23	.26	32	.00	.01	.00
19	e.09	e.02	e.02	.01	.56	.13	.07	.48	11	.00	.04	.00
20	e.09	e.02	.02	.03	377	.15	.06	93	5.2	.00	.04	.00
21	e.15	e.02	.03	.02	857	.12	.01	184	3.3	.00	.01	.00
22	e.33	e.03	.02	.00	740	.09	.02	88	e2.2	.00	.01	.00
23	e.15	e.03	.00	.00	40	.10	.03	15	e1.3	.00	.00	.00
24	e.12	e3.6	.00	.00	14	.18	.07	5.1	78	.00	.00	.00
25	e.10	e80	.00	.00	7.5	.23	.77	2.4	26	.00	.00	.00
26	e.10	e14	.00	.00	4.5	.20	49	e1.1	6.0	.00	.00	.00
27	e.16	e2.4	.00	.00	2.8	.12	97	e.72	2.2	.00	.00	.00
28	e.14	e.34	.00	.00	2.0	.04	66	.54	1.0	.00	.00	.00
29	e.15	e35	.00	.00	---	.02	19	.39	.62	.00	.00	.00
30	e.11	e312	.00	.00	---	.05	5.9	.32	.46	.00	.00	.00
31	e.19	---	.00	.00	---	.05	---	.33	---	.00	.00	---
TOTAL	5.43	878.52	43.96	0.06	2246.08	9.87	306.99	626.14	407.47	1.46	0.15	0.00
MEAN	.18	29.3	1.42	.002	80.2	.32	10.2	20.2	13.6	.047	.005	.000
MAX	.40	319	39	.03	857	2.1	97	184	119	.38	.04	.00
MIN	.09	.02	.00	.00	.00	.02	.00	.20	.05	.00	.00	.00
AC-FT	11	1740	87	.1	4460	20	609	1240	808	2.9	.3	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1997#, BY WATER YEAR (WY)

	MEAN	58.0	16.5	22.8	14.3	24.7	41.1	42.1	164	123	23.7	46.0	67.3
MAX	771	160	194	154	176	309	637	1224	944	282	1337	624	
(WY)	1982	1987	1992	1990	1993	1990	1990	1982	1985	1950	1950	1989	
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
(WY)	1953	1946	1946	1953	1947	1950	1971	1984	1953	1974	1967	1954	

SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1946 - 1997#

ANNUAL TOTAL	4526.13		
ANNUAL MEAN	12.4		53.4
HIGHEST ANNUAL MEAN			252
LOWEST ANNUAL MEAN			2.49
HIGHEST DAILY MEAN	857	Feb 21	9550
LOWEST DAILY MEAN	.00	Dec 23	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Dec 23	.00
INSTANTANEOUS PEAK FLOW	987	Feb 22	20100
INSTANTANEOUS PEAK STAGE	17.93	Feb 22	27.03
ANNUAL RUNOFF (AC-FT)	8980		38690
10 PERCENT EXCEEDS	10		63
50 PERCENT EXCEEDS	.07		.32
90 PERCENT EXCEEDS	.00		.00

e Estimated

Period of regulated streamflow.

07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX

LOCATION.--Lat 33°45'51", long 98°22'17", Clay County, Hydrologic Unit 11130209, at intake tower near center of dam on Little Wichita River, 2.3 mi upstream from Lake Creek, 11 mi southwest of Henrietta, and 12.3 mi southeast of Wichita Falls.

DRAINAGE AREA.--822 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 0.40 ft below sea level.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 15,900 ft long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft wide located near the left end of dam. The dam was completed in December 1966 and storage began in June 1967. The service outlet works, located in a cylindrical service tower at upstream side of dam, consist of two gated 5-foot-diameter inlets that can be used for controlled releases. The dam was built by the city of Wichita Falls to impound water for municipal, industrial, and recreational uses. The area-capacity curves are based on U.S. Geological Survey topographic maps. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Gage height (feet)	Capacity (acre-feet)
Top of dam	944.4	-
Design flood	939.95	551,400
Crest of spillway (top of conservation pool)	926.4	262,100
Lowest gated outlet (invert)	874.1	-

COOPERATION.--Capacity table provided by Homer Hunter and Associates and Biggs and Mathews, Consulting Engineers, for the city of Wichita Falls. Area-capacity curves provided by Homer Hunter and Associates. Record of diversions provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 287,500 acre-ft May 4, 1990 (gage height, 927.92 ft); minimum since first appreciable storage, 4,640 acre-ft Aug. 31 to Sept. 4, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 241,700 acre-ft June 20 at 1200 hours (gage height, 925.10 ft); minimum, 188,100 acre-ft Nov. 6 (gage height, 921.32 ft).

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

921.0	183,900	924.0	225,200	927.0	272,000
922.0	197,000	925.0	240,100	928.0	288,900
923.0	210,800	926.0	255,700		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	194100	189100	199100	197400	194900	215300	210500	213900	241100	237800	225600	216300
2	193600	188800	202200	198000	194700	215700	210500	212600	240400	237400	225300	215700
3	193400	188800	202200	198100	194700	216000	210800	212300	241100	237100	224600	215700
4	193400	188700	201700	197000	194200	215300	210900	212800	240800	236200	224200	215200
5	193600	188500	205800	197000	195000	215300	210700	212300	240800	236000	223900	214900
6	193300	190000	204700	196500	195900	215300	210500	212300	240300	235700	223600	214500
7	193300	191100	204000	196700	196200	215500	210400	212500	240300	236000	223600	214200
8	192900	192000	203300	197000	196600	215600	210100	219700	240300	235400	223600	213900
9	192600	192800	203000	197000	196900	215000	210100	227700	240100	234800	223100	213000
10	192200	192200	202100	196100	196900	215200	210900	229900	239800	234200	222700	212600
11	191400	192200	200800	195700	197000	215200	210700	230000	239100	233900	223000	212200
12	191400	192400	199900	195800	197500	215000	210800	229700	239500	233600	222300	211900
13	191400	192400	199900	195900	197800	213900	210800	229700	238900	233000	222500	211500
14	191400	190700	197800	196600	198400	214000	210700	229200	239100	232600	222700	211400
15	191600	191100	199100	195500	198800	214200	210500	229200	239800	232100	222500	211100
16	191300	191800	198400	195700	198800	214200	210500	228900	240300	232700	222000	210900
17	190700	192100	197800	195800	198800	214700	210700	229200	241100	232600	221500	210400
18	190800	192000	197500	195800	198600	214200	210500	228600	241200	231800	221500	209700
19	190000	191800	198100	195800	199200	214000	210500	229700	241100	231500	221100	209300
20	190500	191800	198900	196100	205800	214200	210200	233600	240900	231100	220800	208300
21	190000	191400	198200	195900	210700	213200	210200	236300	240400	230300	220600	208000
22	190400	191300	198600	195800	213900	213300	210200	237700	241200	230000	220300	208100
23	189500	191400	197400	195900	215500	213000	210200	238300	240800	229700	220300	207300
24	189200	193600	197400	195700	214900	212300	210500	238800	240400	229600	219900	207000
25	189400	194400	197800	195800	215500	211200	210900	238300	240300	229300	219000	207000
26	189600	194900	197100	195900	215900	211200	211500	238100	240100	228300	219200	206900
27	189500	194700	197800	194100	216000	211600	212500	237800	240000	228000	218600	206500
28	189900	194700	197300	194900	215900	210900	212600	237800	239500	227500	218000	205800
29	189700	196900	197100	194900	---	210100	213600	237700	238800	227100	217700	205500
30	189500	197800	197100	195000	---	210700	212900	239500	238300	226200	217300	205200
31	188800	---	197300	195000	---	210700	---	241100	---	226400	216600	---
MAX	194100	197800	205800	198100	216000	216000	213600	241100	241200	237800	225600	216300
MIN	188800	188500	197100	194100	194200	210100	210100	212300	238300	226200	216600	205200
(+)	921.38	922.06	922.02	921.85	923.36	922.99	923.15	925.06	924.88	924.08	923.41	922.60
(@)	-5500	+9000	-500	-2300	+20900	-5200	+2200	+28200	-2800	-11900	-9800	-11400
(++)	783	357	422	329	420	759	616	790	926	2174	1716	1819
CAL YR 1996	MAX	233000	MIN	184700	(@)	-34200	(++)	13735				
WTR YR 1997	MAX	241200	MIN	188500	(@)	+10900	(++)	11111				

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

(@) Change in contents, in acre-feet.

(++) Diversions, in acre-feet, for municipal use by the City of Wichita Falls, and for wholesale customer use.

RED RIVER BASIN

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07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX

LOCATION.--Lat 33°49'36", long 98°14'23", Clay County, Hydrologic Unit 11130209, on right bank at downstream side of bridge on U.S. Highways 822 and 287, 1.0 mi downstream from Duck Creek, 2.8 mi west of Henrietta, 6.6 mi upstream from Turkey Creek, and 7.6 mi upstream from Dry Fork Little Wichita River.

DRAINAGE AREA.--1,037 mi².

PERIOD OF RECORD.--January 1953 to current year. Prior to October 1974, published as "near Henrietta".

Water-quality records.--Chemical analyses: December 1952 to January 1956, November 1959 to September 1966. January 1968 to September 1985.

REVISED RECORDS.--WDR TX-93-1: Daily discharge.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 831.57 ft above sea level. Prior to June 26, 1953, nonrecording gage. Prior to July 11, 1975, at site 2.6 mi downstream at same datum.

REMARKS.--Records fair. Since installation of gage in July 1975, at least 10% of contributing drainage area has been regulated by Lake Arrowhead, 39 mi upstream (capacity, 262,100 acre-feet). The city of Wichita Falls diverted 13,990 acre-ft from Lake Kickapoo and 11,110 acre-ft from Lake Arrowhead for municipal uses, and returned 13,347 acre-ft as wastewater effluent and filter plant wash water to the Wichita River below station 07312500 at Wichita Falls and above station 07312700 near Charlie. The city of Henrietta diverted 546 acre-ft from pool at gage for municipal use. Records of diversions were furnished by the cities of Wichita Falls and Henrietta.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1954-66) prior to completion of Lake Arrowhead, 124 ft³/s (89,840 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1954-66).--Maximum discharge, 6,390 ft³/s May 2, 1957; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 21 ft at former site, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	.00	131	.00	.00	8.4	.00	18	33	.00	.00	18
2	4.5	.00	61	.00	.00	4.5	.00	12	27	.00	.00	18
3	2.3	.00	34	.00	.00	1.7	.00	6.3	18	.00	.00	20
4	1.3	.00	22	.00	.00	.40	.00	2.4	12	.00	.00	12
5	.27	.00	15	.00	.00	.19	.00	.52	6.6	.00	.00	.79
6	.03	6.8	10	.00	.14	.00	.00	.11	2.4	.00	.00	.00
7	.00	49	6.2	.00	4.4	.00	.00	.00	.37	.00	.00	.00
8	.00	31	3.3	.00	11	.00	.00	25	.00	.00	.00	.00
9	.00	28	1.7	.00	6.5	.00	.03	906	.00	.00	.00	.00
10	.00	24	.41	.00	2.3	.00	.04	1840	.00	.00	.00	.00
11	.00	6.7	.00	.00	.53	.00	19	1090	.00	.00	.00	.00
12	.00	.00	.00	.00	.75	.00	24	96	.00	.00	.00	.00
13	.00	.00	.00	.00	6.5	.00	26	35	.00	.00	.00	.00
14	.00	.00	.00	.00	11	.00	15	22	.00	.00	.00	.00
15	.00	.00	.00	.00	5.4	.00	4.2	15	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	1.8	11	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.34	6.1	.00	8.1	2.1	.00
18	.00	.00	.00	6.0	.00	.00	.00	3.8	.00	17	.32	.00
19	.00	.00	.00	16	.00	.00	.00	16	.00	17	.00	.00
20	.00	.00	.00	16	340	.00	.00	259	.00	18	.00	.00
21	.00	.00	.00	16	e790	.00	.00	310	.00	7.5	.00	.00
22	.00	.00	.00	16	e369	.00	.00	130	.00	.00	.00	.00
23	.00	.00	.00	14	e123	.00	.00	59	.00	.00	.00	.00
24	.00	59	.00	5.9	e54	.00	.00	35	.00	.00	.00	.00
25	.00	103	.00	1.3	30	.00	28	22	.00	.00	.00	.00
26	.00	58	.00	.08	22	.00	94	14	.00	.00	.00	.00
27	.00	37	.00	.00	17	.00	126	8.2	.00	.00	.00	.00
28	.00	23	.00	.00	12	.00	94	1.6	.00	.00	.00	.00
29	.00	141	.00	.00	---	.00	56	.75	.00	.00	.00	.00
30	.00	203	.00	.00	---	.00	31	48	.00	.00	5.2	.00
31	.00	---	.00	.00	---	.00	---	32	.00	.00	17	---
TOTAL	16.40	769.50	284.61	91.28	1805.52	15.19	519.41	5024.78	99.37	67.60	24.62	68.79
MEAN	.53	25.6	9.18	2.94	64.5	.49	17.3	162	3.31	2.18	.79	2.29
MAX	8.0	203	131	16	790	8.4	126	1840	33	18	17	20
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	33	1530	565	181	3580	30	1030	9970	197	134	49	136

RED RIVER BASIN

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1997#, BY WATER YEAR (WY)

MEAN	29.8	13.8	24.0	15.3	31.9	87.3	88.3	227	210	31.3	5.61	52.4
MAX	329	141	251	131	275	937	2169	2272	1652	549	76.6	549
(WY)	1982	1987	1992	1992	1987	1990	1990	1982	1992	1992	1995	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1968	1967	1967	1967	1967	1967	1971	1971	1977	1968	1967	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1967 - 1997#
ANNUAL TOTAL	1436.29	8787.07	
ANNUAL MEAN	3.92	24.1	68.1
HIGHEST ANNUAL MEAN			498
LOWEST ANNUAL MEAN			1.00
HIGHEST DAILY MEAN	203 Nov 30	1840 May 10	10500 May 3 1990
LOWEST DAILY MEAN	.00 Jan 1	.00 Oct 7	.00 Oct 16 1966
ANNUAL SEVEN-DAY MINIMUM	.00 Jan 1	.00 Oct 7	.00 Oct 19 1966
INSTANTANEOUS PEAK FLOW		1930 May 10	14200 May 3 1990
INSTANTANEOUS PEAK STAGE		20.95 May 10	24.96 May 3 1990
ANNUAL RUNOFF (AC-FT)	2850	17430	49320
10 PERCENT EXCEEDS	5.3	28	51
50 PERCENT EXCEEDS	.00	.00	.00
90 PERCENT EXCEEDS	.00	.00	.00

e Estimated

Period of regulated streamflow.

07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX

LOCATION.--Lat 33°48'46", long 98°05'05", Clay County, Hydrologic Unit 11130209, at downstream side of bridge on U.S. Highway 82, 5.8 mi upstream from Little Wichita River, 6.4 mi east of Henrietta, and 8.9 mi west of Ringgold.

DRAINAGE AREA.--178 mi².

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

REVISED RECORDS.--WRD TX-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 825.32 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. No known regulation or diversions. Satellite telemeter at site.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1941 reached a stage of 28.8 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	0900	8,270	26.36	May 21	1130	1,140	18.12
May 11	0330	1,030	17.44	May 31	0400	1,770	20.20

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.15	34	.05	.05	8.7	1.9	6.6	383	.69	.48	.00
2	.77	.16	8.2	.05	.05	7.1	1.8	4.5	18	.65	.47	.00
3	.62	.17	2.5	.05	.04	18	1.8	3.4	9.3	.60	.44	.00
4	.50	.18	1.1	.06	.04	34	2.1	2.6	6.5	.53	.36	.00
5	.42	.19	.64	.06	.04	14	2.2	2.2	4.9	.50	.28	.00
6	.42	.21	.48	.06	.10	7.7	2.1	1.7	4.0	.46	.23	.00
7	.41	9.8	.38	.05	21	4.8	2.4	1.3	3.5	.43	.20	.00
8	.32	8.2	.35	.06	87	3.7	2.4	1.3	3.0	.43	.16	.00
9	.28	5.4	.29	.06	21	3.5	2.5	57	2.7	.37	.13	.00
10	.23	1.8	.22	.06	5.1	3.5	2.3	639	3.3	.34	.09	.00
11	.21	.99	.20	.06	1.7	3.4	10	570	5.3	.30	.04	.00
12	.18	.53	.21	.07	1.0	3.4	75	28	5.2	.27	.02	.00
13	.17	.51	.19	.08	57	3.3	26	16	3.1	.25	.00	.00
14	.16	.48	.15	.08	91	3.1	9.9	12	2.2	.21	.00	.00
15	.15	.50	.13	.08	17	3.1	5.8	10	1.8	.18	.00	.00
16	.14	.58	.12	.08	4.8	3.0	4.1	8.5	1.5	.18	.00	.00
17	.14	.54	.11	.09	1.8	2.8	3.3	7.6	1.6	.18	.00	.00
18	.14	.51	.12	.10	.96	2.6	2.6	6.7	1.5	.19	.00	.00
19	.15	.48	.12	.10	.76	2.5	2.4	6.6	1.3	.18	.00	.00
20	.16	.45	.13	.09	2590	2.4	2.3	293	1.2	.17	.00	.00
21	.17	.42	.11	.05	6200	2.5	1.7	1090	1.1	.15	.00	.00
22	.16	.41	.10	.05	e1760	2.4	3.0	976	1.0	.14	.00	.00
23	.15	.41	.10	.05	e526	2.4	3.2	292	1.1	.13	.00	.00
24	.15	35	.09	.05	70	2.4	2.4	32	1.0	.12	.00	.00
25	.15	135	.09	.04	11	2.7	25	17	.94	.11	.00	.00
26	.15	44	.08	.05	11	2.7	141	11	.91	.11	.00	.00
27	.16	17	.07	.04	16	2.4	125	7.3	.88	.11	.00	.00
28	.17	7.2	.07	.05	13	2.5	56	4.8	.84	.11	.00	.00
29	.16	36	.06	.06	---	2.3	23	3.6	.81	.98	.00	.00
30	.14	117	.06	.06	---	2.1	11	718	.73	1.6	.00	.00
31	.14	---	.06	.05	---	1.9	---	1530	---	.68	.00	---
TOTAL	8.27	424.27	50.53	1.94	11507.44	160.9	554.2	6359.7	472.21	11.35	2.90	0.00
MEAN	.27	14.1	1.63	.063	411	5.19	18.5	205	15.7	.37	.094	.000
MAX	1.0	135	34	.10	6200	34	141	1530	383	1.6	.48	.00
MIN	.14	.15	.06	.04	.04	1.9	1.7	1.3	.73	.11	.00	.00
AC-FT	16	842	100	3.8	22830	319	1100	12610	937	23	5.8	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

	MEAN	38.3	12.6	21.5	12.2	29.1	44.9	42.1	113	67.9	6.33	5.72	13.0
MAX	902	97.3	303	139	411	295	686	453	508	123	48.7	102	
(WY)	1982	1974	1992	1985	1997	1985	1990	1989	1992	1973	1995	1980	
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
(WY)	1979	1972	1966	1966	1966	1967	1971	1971	1971	1964	1969	1979	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1964 - 1997

ANNUAL TOTAL	640.48	19553.71	
ANNUAL MEAN	1.75	53.6	34.7
HIGHEST ANNUAL MEAN			128
LOWEST ANNUAL MEAN			.44
HIGHEST DAILY MEAN	135	6200	16900
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		8270	32500
INSTANTANEOUS PEAK STAGE		26.36	31.70
ANNUAL RUNOFF (AC-FT)	1270	38780	25130
10 PERCENT EXCEEDS	.62	19	19
50 PERCENT EXCEEDS	.11	.48	.15
90 PERCENT EXCEEDS	.00	.00	.00

e Estimated

RED RIVER MAIN STEM

07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, on left bank at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi downstream from Chicago, Rock Island, and Railroad Co. bridge, 1.2 mi south of Terral, 3.6 mi downstream from Little Wichita River, and at mile 872.

DRAINAGE AREA.--28,723 mi² of which 5,936 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft above sea level. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair. Since installation of gage in April 1938, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are many small diversions upstream from station for irrigation, oil field operations, and for municipal uses. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1935, reached a stage of 27.2 ft, although floods in 1891 and on May 1, 1908, are reported to have reached about the same stage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3290	3170	5640	1120	823	6800	1340	18600	11900	3750	733	1370
2	2540	2440	4050	980	838	6910	1380	14200	10400	3330	1070	1260
3	2150	1850	3110	921	874	6740	1360	11700	8780	2700	1550	1020
4	2100	1520	3730	899	918	6370	1330	9070	6660	2240	1500	886
5	1990	1330	4350	882	1020	5910	1410	7250	5200	1890	1470	823
6	1870	1200	3360	870	1070	5710	7710	6440	4390	1600	1440	784
7	1740	1480	2810	866	1070	5470	11000	4880	3970	1450	1440	860
8	1640	2000	2720	997	1250	4850	9680	4420	3570	1330	1560	1130
9	1570	1630	2890	1120	1660	4560	7820	5800	3360	1260	1860	1230
10	1540	1210	2230	1100	1410	4360	7970	14300	3910	1250	1810	1010
11	1580	1070	1730	1110	1220	4110	9860	15900	4670	1340	1840	786
12	1580	978	1590	1050	1110	3470	18700	10600	4240	1860	1770	734
13	1700	922	1510	1040	1080	3150	23000	7620	4270	2420	4260	686
14	1740	892	1650	723	1320	3030	21800	6770	5140	2830	9040	644
15	1640	897	1850	699	1470	2670	17000	6590	7860	6580	6460	605
16	1490	896	1460	760	1360	2460	11800	7020	7640	5130	4930	590
17	1390	994	1340	764	1280	2290	11000	6980	9550	3180	8580	582
18	1300	2800	1220	898	1250	2090	11200	6380	11000	2170	7410	566
19	1150	2130	1150	1200	1280	1920	10900	6040	8100	1730	4580	551
20	1020	2000	1160	1120	5020	1870	10400	8840	6730	1440	3730	743
21	991	1670	1110	1140	12800	1810	10100	11300	5390	1250	3270	831
22	1110	2230	1090	1020	23500	1710	9140	10200	4810	1270	2750	694
23	1100	2830	1330	1140	18500	1660	8760	8620	3670	1140	4410	675
24	1080	3770	1290	1250	11200	1640	8620	7410	3090	979	4630	11500
25	1080	5820	1040	1230	7060	1610	8740	6730	2900	902	3970	14000
26	1030	4850	986	1120	6110	1480	15500	6190	4010	834	4560	9610
27	983	3510	968	1150	6350	1450	31900	5450	3220	766	3080	7300
28	954	2650	975	1120	6720	1450	44200	5930	2600	718	2590	5790
29	955	3130	1160	945	---	1400	34500	5870	2480	734	2170	4350
30	1250	6040	1240	887	---	1330	25000	7060	4000	725	1910	3390
31	1710	---	1250	848	---	1330	---	12600	---	741	1630	---
TOTAL	47263	67909	61989	30969	119563	101610	393120	266760	167510	59539	102003	75000
MEAN	1525	2264	2000	999	4270	3278	13100	8605	5584	1921	3290	2500
MAX	3290	6040	5640	1250	23500	6910	44200	18600	11900	6580	9040	14000
MIN	954	892	968	699	823	1330	1330	4420	2480	718	733	551
AC-FT	93750	134700	123000	61430	237200	201500	779800	529100	332300	118100	202300	148800

RED RIVER MAIN STEM

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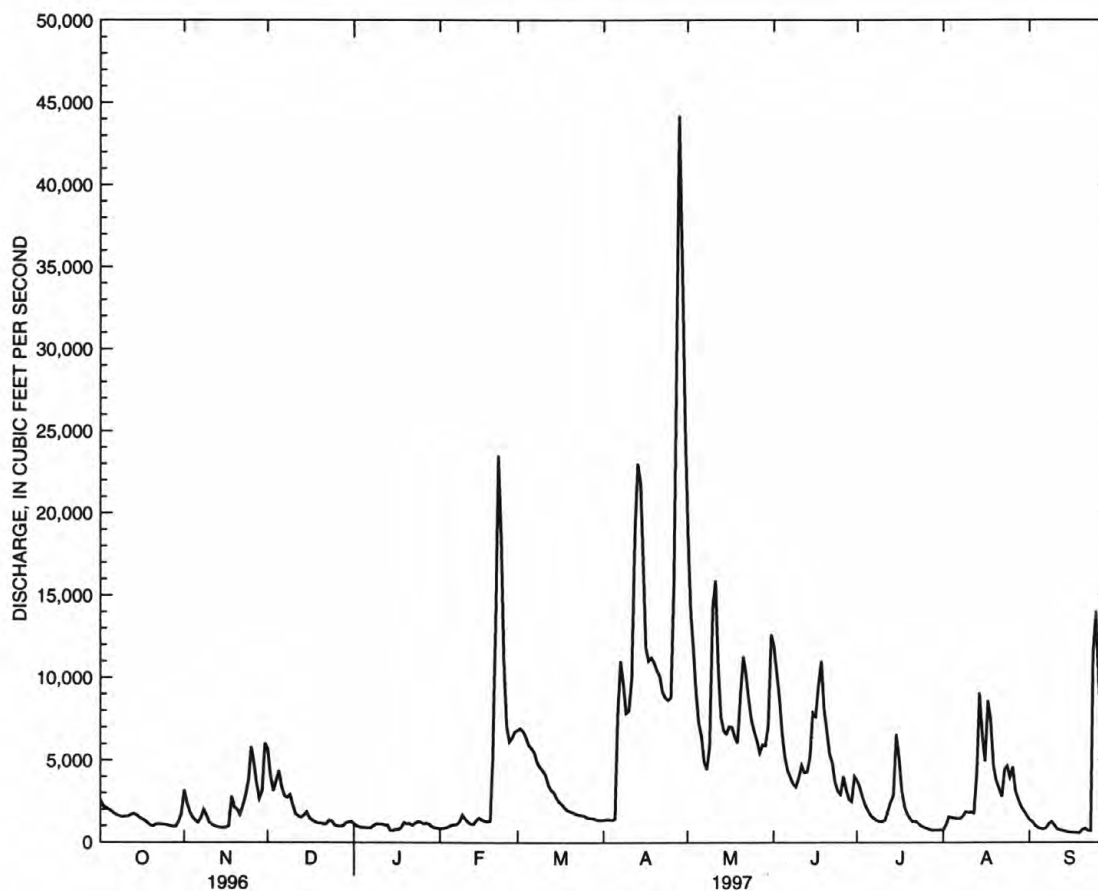
07315500 RED RIVER NEAR TERRAL, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1997#, BY WATER YEAR (WY)

MEAN	3062	1523	1123	891	1285	1815	2640	6759	6442	1690	1375	2100
MAX	23900	9713	11810	5306	9320	12560	18080	43580	37460	8077	14730	9653
(WY)	1987	1987	1992	1992	1987	1990	1990	1957	1941	1950	1995	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	109
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	1956

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1938 - 1997#	
ANNUAL TOTAL	657765		1493235			
ANNUAL MEAN	1797		4091		2558	
HIGHEST ANNUAL MEAN					8925	
LOWEST ANNUAL MEAN					523	
HIGHEST DAILY MEAN	17000	Sep 6	44200	Apr 28	215000	Jun 7 1995
LOWEST DAILY MEAN	377	May 23	551	Sep 19	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	390	May 22	603	Sep 13	47	Mar 18 1940
INSTANTANEOUS PEAK FLOW			46200	Apr 28	236000	Jun 7 1995
INSTANTANEOUS PEAK STAGE			18.92	Apr 28	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	1305000		2962000		1853000	
10 PERCENT EXCEEDS	4340		9640		5660	
50 PERCENT EXCEEDS	1010		1860		601	
90 PERCENT EXCEEDS	520		890		177	

Period of regulated streamflow.



07315500 RED RIVER NEAR TERRAL, OK
MEAN DAILY DISCHARGE (CFS)

07315500 RED RIVER NEAR TERRAL, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1997 (discontinued); Microbiological sampling: May 1997 to September 1997.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1997 (discontinued).

WATER TEMPERATURE: October 1967 to September 1997 (discontinued).

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 13,000 microsiemens June 15, 1984; minimum daily, 255 microsiemens Jan. 1, 1985.

WATER TEMPERATURE: Maximum daily, 35.0°C Aug. 13, 16, 17, 1983, July 6, 1996; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,740 microsiemens Apr. 6; minimum daily, 1,130 microsiemens Dec. 2.

WATER TEMPERATURE: Maximum daily, 34.0°C July 28: minimum daily, 0.0°C. on several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	
JAN	02...	1040	980	4820	8.4	13.0	10.4	102	--	--	1100
FEB	14...	1205	1320	6050	8.3	7.0	14.0	120	--	--	1100
MAR	19...	1035	1940	4150	7.6	11.0	11.8	111	--	--	900
MAY	16...	1200	6800	3030	8.0	22.0	10.1	119	240	360	710
JUN	26...	0945	3310	3780	8.1	27.0	6.7	87	1000	610	--
	30...	1000	4100	4810	8.0	28.0	7.2	96	--	--	1000
AUG	01...	0955	713	4930	8.0	28.5	6.8	92	K120	270	--
SEP	03...	1405	970	4090	8.1	30.0	7.2	98	K8	K4	770
	26...	1215	9730	1270	7.4	21.0	7.4	86	5800	4300	--

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
JAN 02...	890	290	90	650	9	6.9	200	840	1000	0.50
FEB 14...	960	300	95	880	11	6.7	180	950	1400	0.40
MAR 19...	740	220	81	566	8	6.4	150	770	890	0.40
MAY 16...	550	190	56	336	5	7.6	160	590	560	0.46
JUN 26...	--	--	--	--	--	--	140	--	--	--
30...	910	260	90	642	9	8.4	100	920	1000	0.42
AUG 01...	--	--	--	--	--	--	110	--	--	--
SEP 03...	680	200	67	531	8	8.4	85	690	850	0.38
26...	--	--	--	--	--	--	85	--	--	--

[illegible]

RED RIVER MAIN STEM

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07315500 RED RIVER NEAR TERRAL, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)
JAN 02...	0.21	--	--	--	--	--	--	--	--	--
FEB 14...	0.12	--	--	--	--	--	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--
MAY 16...	0.17	4	<1	169	<1.0	<1	<1.0	6	3.0	4
JUN 26...	--	--	--	--	--	--	--	--	--	--
JUN 30...	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--
SEP 03...	--	2	<2	159	<1.0	<1	<1.0	<10	2.9	1
SEP 26...	--	--	--	--	--	--	--	--	--	--

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, DIS- SOLVED (UG/L AS ZN)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN)
JAN 02...	--	--	--	--	--	--	--	--	--	--
FEB 14...	--	--	--	--	--	--	--	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--
MAY 16...	9.1	<1.0	<10	<3.0	<0.1	<0.10	2	<1.0	<9.0	10
JUN 26...	--	--	--	--	--	--	--	--	--	--
JUN 30...	--	--	--	--	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--	--	--	--	--
SEP 03...	<9.0	<1.0	<10	<3.0	0.1	<0.01	3	<1.0	<9.0	3
SEP 26...	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	47263	4150	2470	315600	910	116500	600	76490	760
NOV.	1996	67909	3160	1860	340800	670	123700	450	82300	580
DEC.	1996	61989	3970	2370	396500	880	146600	570	96120	720
JAN.	1997	30969	5240	3200	267300	1200	101600	780	65160	950
FEB.	1997	119563	2560	1500	483200	540	173900	360	116500	470
MAR.	1997	101610	3140	1830	502700	660	180500	440	121100	570
APR.	1997	393120	2410	1390	1470900	490	517500	330	353000	440
MAY	1997	266760	2770	1600	1154900	570	409900	390	277700	510
JUNE	1997	167510	3110	1820	822500	650	295900	440	198300	570
JULY	1997	59539	3640	2150	345300	780	125900	520	83470	660
AUG.	1997	102003	2750	1590	438900	570	155900	380	105500	500
SEPT	1997	75000	2400	1390	281700	500	100400	330	67780	440
TOTAL		1493235.00	**	**	6820400	**	2448300	**	1643500	**
WTD.AVG.		4090	2900	1690	**	610	**	410	**	530

RED RIVER MAIN STEM

07315500 RED RIVER NEAR TERRAL, OK--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2990	6210	2850	4380	6120	2270	4510	2030	e1900	3110	4680	3800
2	2990	3630	1130	4500	6140	2680	4360	2220	1740	3510	4510	3800
3	3460	3630	2230	4730	6130	2680	4340	2490	3300	3510	2590	e4050
4	3750	3640	4240	5000	6190	2540	4560	2560	1830	3340	2540	4330
5	3990	3800	e4100	e5320	5800	2660	4620	2780	4050	3390	2260	4610
6	4120	4100	3990	5630	5170	2680	6740	3120	3750	3660	2530	4700
7	4120	3930	3770	5390	5090	2630	3520	3040	3540	3930	2380	4710
8	3960	3310	e3840	5610	5210	2590	e2100	3160	3460	4340	2410	4920
9	3940	3730	3880	4550	e4800	2630	2520	3150	3470	5340	2370	3940
10	3950	4560	3490	4890	4600	2640	2630	2360	2920	5090	2280	3580
11	3790	4570	3970	4810	4710	2830	2490	1920	e3100	4940	2300	3590
12	4030	4690	4420	e4880	4850	3220	1760	2430	3200	4990	2800	4050
13	e4350	5000	4780	e5000	e5500	2750	2100	2490	4590	4300	2740	4330
14	4780	5160	5480	5340	6090	3650	2020	2530	4610	3220	1590	4330
15	4330	5290	4270	5150	6220	3850	1880	e2750	e3200	4380	1480	4730
16	5360	5100	4390	e5130	5620	3860	1880	2980	3710	2700	3130	4840
17	4760	5050	e4560	5110	6170	4180	1960	3220	3320	2250	2310	4960
18	4370	2410	e4820	5210	5930	e4190	2100	3250	1320	e2400	2030	5030
19	4390	3230	5140	5920	5640	4200	2280	3350	3120	2680	2890	4870
20	4840	2680	5310	e5940	1910	4270	2170	3090	3150	e2980	3300	5160
21	4740	3160	5390	5960	1910	4160	2520	1980	3530	3550	3310	5430
22	4830	e3600	5370	6110	1730	4230	2680	2120	3230	3670	2720	e5500
23	4580	4210	5410	6490	e1680	4390	3050	e2670	4010	3730	3730	e5610
24	4770	e1420	3900	5920	1640	4410	e3380	3370	3860	3670	e3770	1870
25	4650	1650	e4350	3670	1970	4180	e3500	3710	3970	3460	e3810	1400
26	4620	1730	4790	5290	2160	4230	2460	3800	3850	4300	3840	1280
27	4750	2360	5250	4210	2120	4330	e2400	e4300	2920	4300	2710	1720
28	4740	3900	5470	5680	2670	4450	2350	4630	3360	4320	3340	e1900
29	4960	2820	5510	e5520	---	4300	1900	4660	e4000	4460	3350	2090
30	4900	1940	5520	5370	---	e4380	1940	3860	4700	4450	3250	2530
31	3710	---	4830	5780	---	4470	---	2260	---	4910	3740	---
MEAN	4310	3680	4400	5240	4420	3570	2890	2980	3360	3830	2930	3920

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	10.0	8.0	17.0	11.0	11.0	15.0	17.0	---	27.0	31.0	29.0
2	18.0	13.0	7.0	18.0	6.0	11.0	16.0	19.0	24.0	28.0	31.0	27.0
3	18.0	12.0	7.0	17.0	5.0	12.0	16.0	17.0	22.0	28.0	31.0	30.0
4	20.0	15.0	7.0	15.0	12.0	13.0	17.0	20.0	23.0	29.0	27.0	27.0
5	19.0	14.0	---	---	9.0	10.0	15.0	20.0	23.0	26.0	28.0	27.0
6	21.0	9.0	10.0	10.0	8.0	10.0	15.0	25.0	23.0	28.0	28.0	28.0
7	24.0	15.0	8.0	3.0	2.0	11.0	14.0	22.0	26.0	26.0	23.0	28.0
8	19.0	10.0	---	3.0	6.0	12.0	---	22.0	25.0	26.0	22.0	25.0
9	19.0	11.0	8.0	1.0	---	11.0	12.0	21.0	24.0	30.0	24.0	25.0
10	19.0	11.0	11.0	3.0	7.0	11.0	12.0	17.0	24.0	28.0	28.0	25.0
11	18.0	11.0	12.0	.0	8.0	13.0	11.0	20.0	---	29.0	28.0	23.0
12	18.0	11.0	11.0	---	7.0	14.0	7.0	20.0	25.0	29.0	26.0	28.0
13	---	10.0	11.0	.0	---	12.0	10.0	17.0	25.0	28.0	22.0	25.0
14	22.0	17.0	14.0	.0	7.0	8.0	11.0	18.0	27.0	27.0	26.0	26.0
15	19.0	15.0	7.0	1.0	7.0	10.0	13.0	---	---	30.0	27.0	25.0
16	21.0	17.0	5.0	---	8.0	11.0	12.0	21.0	27.0	30.0	27.0	25.0
17	19.0	13.0	---	.0	9.0	10.0	15.0	19.0	25.0	31.0	28.0	25.0
18	15.0	12.0	---	2.0	13.0	---	13.0	27.0	28.0	---	27.0	26.0
19	18.0	15.0	.0	5.0	13.0	10.0	14.0	24.0	28.0	28.0	27.0	26.0
20	20.0	15.0	.0	---	14.0	12.0	15.0	18.0	27.0	---	30.0	25.0
21	20.0	13.0	5.0	10.0	17.0	12.0	20.0	19.0	27.0	28.0	28.0	26.0
22	11.0	---	8.0	9.0	11.0	16.0	18.0	19.0	27.0	29.0	27.0	25.0
23	11.0	13.0	10.0	10.0	---	18.0	16.0	---	26.0	28.0	28.0	23.0
24	18.0	---	5.0	10.0	10.0	18.0	---	20.0	25.0	30.0	---	23.0
25	18.0	5.0	---	9.0	10.0	16.0	---	20.0	26.0	30.0	---	19.0
26	20.0	4.0	5.0	11.0	7.0	13.0	12.0	25.0	27.0	30.0	26.0	20.0
27	16.0	4.0	7.0	8.0	7.0	14.0	---	---	27.0	30.0	25.0	20.0
28	16.0	5.0	7.0	4.0	11.0	18.0	12.0	26.0	29.0	34.0	26.0	---
29	19.0	7.0	7.0	---	---	15.0	15.0	23.0	---	30.0	27.0	20.0
30	19.0	7.0	8.0	3.0	---	---	19.0	23.0	27.0	29.0	28.0	23.0
31	14.0	---	11.0	1.0	---	17.0	---	22.0	---	31.0	28.0	---
MEAN	18.5	11.0	7.5	6.5	9.0	12.5	14.0	21.0	25.5	29.0	27.0	25.0

07315950 MOSS LAKE NEAR GAINESVILLE, TX

LOCATION.--Lat 33°46'26", long 97°12'50", Cooke County, Hydrologic Unit 11130201, on top of upstream side of dam adjacent to guardrail of roadway about 250 ft from right end of Fish Creek dam on Fish Creek, 1.6 mi upstream from Bearhead Creek, 3.7 mi upstream from mouth, and 10 mi northwest of Gainesville.

DRAINAGE AREA.--65.0 mi².

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

Water-quality records.--Chemical analyses: October 1969 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr. 20, 1979, recording gage at site about 150 ft upstream at same datum.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 1,460 ft long. The dam was completed and storage began Dec. 2, 1966. An uncontrolled morning-glory-type spillway with a 7- by 7-foot opening is designed to discharge 2,500 ft³/s at a 10-foot head. A 400-foot-wide spillway has been cut through natural ground, and is located about 100 ft to left of the left end of dam. The dam was built by the city of Gainesville to impound water for municipal use. Area and capacity tables are based on a 1961 survey. There was no diversion from the lake during the current water year. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	740.0	-
Top of design flood pool	736.0	55,230
Crest of spillway	725.0	36,440
Crest of spillway morning-glory type (top of conservation pool) ..	715.0	23,210
Lowest gated outlet (invert)	666.0	78

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 50,990 acre-ft Oct. 13, 1981 (elevation, 733.72 ft); minimum since lake filled in May 1968, 11,490 acre-ft Jan. 18, 1990 (elevation, 702.08 ft, from graph).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,450 acre-ft Feb. 20 at 0900 hours (elevation, 720.08 ft); minimum, 21,530 acre-ft Sept. 30 (elevation, 713.46 ft).

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

707.0	15,340	718.0	26,770	730.0	44,440
710.0	18,040	720.0	29,340	733.0	49,700
712.0	20,010	722.0	32,070	734.0	51,490
714.0	22,110	724.0	34,950		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23090	23100	23420	23210	23160	23530	21850	23390	23530	23390	22450	22110
2	23090	23180	23420	23230	23160	23550	21900	23340	23420	23380	22430	22100
3	23070	23190	23390	23240	23160	23580	22020	23300	23350	23340	22420	22080
4	23060	23190	23390	23210	23130	23540	22870	23280	23290	23270	22400	22040
5	23060	23210	23390	23180	23160	23450	23150	23270	23260	23200	22360	22010
6	23060	23230	23370	23140	23380	23420	23220	23270	23220	23130	22550	21990
7	23040	23650	23370	23140	23640	23380	23290	23260	23200	23080	22530	21970
8	23020	23520	23370	23160	23550	23380	23270	23260	23210	23010	22510	21950
9	23010	23470	23350	23170	23500	23420	23280	23240	23290	22990	22500	21930
10	23000	23450	23310	23160	23460	23410	23300	23240	23290	22900	22480	21900
11	22970	23430	23280	23160	23430	23390	24360	23230	23280	22880	22470	21870
12	22970	23380	23270	23160	23440	23440	23950	23210	23290	22850	22470	21840
13	22960	23380	23260	23140	23650	23450	23740	23210	23300	22850	22460	21820
14	22940	23360	23280	23130	23580	23380	23590	23220	23350	22840	22440	21820
15	22960	23350	23360	23130	23490	23340	23510	23210	23520	22810	22410	21830
16	22920	23380	23340	23130	23450	23340	23450	23220	23520	22810	22390	21810
17	22880	23470	23300	23130	23420	23350	23410	23210	23680	22800	22350	21780
18	22870	23490	23270	23130	23390	23180	23370	23200	23740	22780	22330	21750
19	22870	23470	23220	23160	25870	23010	23360	23220	23740	22760	22310	21740
20	22890	23470	23200	23180	28460	22860	23320	23280	23730	22750	22330	21700
21	22840	23470	23230	23180	25560	22690	23320	23260	23690	22730	22310	21680
22	22840	23470	23240	23170	24430	22490	23310	23270	25010	22690	22340	21660
23	22800	23450	23220	23180	24000	22330	23280	23260	24590	22680	22320	21660
24	22830	23450	23200	23160	23760	22160	23260	23270	24240	22660	22300	21640
25	22830	23450	23190	23170	23640	22650	23730	23260	24120	22630	22280	21610
26	22830	23450	23170	23190	23800	22550	23750	23380	23890	22610	22250	21610
27	22910	23440	23190	23120	23690	22430	23670	23310	23790	22590	22230	21580
28	23100	23440	23190	23120	23610	22260	23580	23260	23590	22570	22200	21560
29	23110	23430	23190	23120	---	22100	23510	23240	23530	22530	22180	21540
30	23100	23420	23220	23120	---	21910	23430	23960	23520	22490	22150	21530
31	23100	---	23210	23140	---	21820	---	23700	---	22470	22130	---
MAX	23110	23650	23420	23240	28460	23580	24360	23960	25010	23390	22550	22110
MIN	22800	23100	23170	23120	23130	21820	21850	23200	23200	22470	22130	21530
(+)	714.90	715.17	715.00	714.94	715.35	713.73	715.19	715.43	715.27	714.33	714.02	713.46
(@)	0	+320	-210	-70	+470	-1790	+1610	+270	-180	-1050	-340	-600
CAL YR 1996	MAX	24230	MIN	18550	(@)	+4740						
WTR YR 1997	MAX	28460	MIN	21530	(@)	-1570						

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

(@) Change in contents, in acre-feet.

RED RIVER MAIN STEM

07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 sec.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--30,782 mi² of which 5,936 mi² probably is noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above sea level. Prior to Jan. 17, 1939, and Feb. 13, 1965, to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records poor. Since 1943, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000), by Lake Altus (station 07302500 in Oklahoma), since 1946 by Lake Kickapoo (station 07314000), since 1967 by Lake Arrowhead (station 07314800 in Texas) and Moss Lake (station 07315950). U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft³/s.

Date	Time	Discharge (ft³/s)	Gage height (ft)	Date	Time	Discharge (ft³/s)	Gage height (ft)
Feb. 23	0100	50,000	22.05	Apr. 29	1300	60,100	23.79
Apr. 14	1500	33,500	19.10	May 11	1700	31,500	18.59

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6800	1390	e7100	1430	982	10000	1280	27900	22000	3300	e930	e1800
2	e5800	1920	e8000	1440	928	e10500	1240	20300	20600	4090	e950	e1700
3	e4350	3120	e6600	1350	891	e9250	1240	16600	17100	3590	e1100	e1500
4	e4050	2740	e5900	1210	878	e8400	1810	15000	14700	e2900	e1600	e1300
5	e3700	2250	e5000	1130	903	7800	1840	12700	9200	e2600	e1400	e1250
6	e3250	1910	e4600	1080	1220	e7200	1540	10900	7090	e2100	1210	e1200
7	e2800	2750	e3750	1050	1810	e6500	6600	10300	5740	e1950	e2500	e1150
8	e2500	2900	e3400	1030	2060	e6200	15200	8620	5110	e1700	e2300	e1100
9	2150	e2800	e3150	1050	1950	e5600	12000	10800	4830	e1600	e2000	e1200
10	2070	e3000	e2800	1130	1980	e5200	8120	14100	6740	e1550	e1900	e1250
11	2030	e2300	2550	1250	2020	e4750	8370	28200	9760	e1700	e1850	e1100
12	1950	e1900	2120	1240	e1800	e4350	15900	26400	9360	e1650	e1800	e1050
13	1940	e1700	1770	1200	e1700	e4000	25700	17800	7830	e1800	e1750	e1000
14	1900	e1550	1600	1120	e1550	e3600	31200	12700	5950	e2000	e3000	e950
15	1980	e1430	e2200	923	e1600	e3300	23200	10800	4810	e2400	10300	e930
16	2040	e1350	e2100	808	e1700	e2900	16200	9330	6430	3780	8110	e920
17	1920	e3330	e1900	791	e1700	2670	9400	9210	9110	6270	5240	e890
18	1740	e3080	e1800	890	e1500	2520	8530	9190	8520	4130	5580	e870
19	1640	3150	e1650	938	1940	e2500	8120	8560	15900	e3200	8820	e860
20	1550	4040	1570	966	13800	e2400	7550	9360	12100	e2500	5950	e850
21	1400	e3700	1520	1250	27000	e2250	6700	14000	10400	e2000	4000	e840
22	1310	e3400	1500	1240	43500	e2100	6120	19300	8250	e1700	3510	e830
23	1280	3310	1440	1240	46400	e2050	5570	15300	6200	e1400	e3000	e820
24	1390	3310	1370	1180	29700	1870	4690	11700	5240	e1200	e3200	e800
25	1460	2390	1460	1190	17400	e1800	4950	9870	4070	1060	4220	14900
26	1350	4600	1550	1310	12000	1790	6840	8680	3540	e1000	3750	16400
27	1380	e4800	1320	1300	11100	e1700	22200	7430	3610	e980	3600	13600
28	1750	e4500	1270	1190	9870	1650	48400	6510	4040	e970	3690	9960
29	1600	e5000	1240	1150	---	e1550	58500	6020	3300	e960	e3000	7060
30	1310	e6000	1200	1190	---	e1400	44600	7160	e3000	e950	e2500	5220
31	1210	---	1310	1050	---	e1300	---	12400	---	e940	e2100	---
TOTAL	71600	89620	84740	35316	239882	129100	413610	407140	254530	67970	104860	93300
MEAN	2310	2987	2734	1139	8567	4165	13790	13130	8484	2193	3383	3110
MAX	6800	6000	8000	1440	46400	10500	58500	28200	22000	6270	10300	16400
MIN	1210	1350	1200	791	878	1300	1240	6020	3000	940	930	800
AC-FT	142000	177800	168100	70050	475800	256100	820400	807600	504900	134800	208000	185100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1997#, BY WATER YEAR (WY)

	MEAN	3857	2001	1610	1198	1782	2625	3566	8265	8534	2212	1661	2589
MAX	31080	14020	14990	7152	9984	14690	27400	47780	43510	9857	20730	12880	
(WY)	1942	1942	1992	1985	1987	1987	1990	1957	1941	1950	1995	1986	
MIN	119	137	125	82.4	151	90.5	153	204	640	166	163	108	
(WY)	1953	1955	1940	1940	1953	1940	1971	1971	1966	1964	1970	1956	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1937 - 97#

ANNUAL TOTAL	1028976	1991668	
ANNUAL MEAN	2811	5457	3327
HIGHEST ANNUAL MEAN			11890
LOWEST ANNUAL MEAN			651
HIGHEST DAILY MEAN	36100	58500	232000
LOWEST DAILY MEAN	500	791	48
ANNUAL SEVEN-DAY MINIMUM	519	839	48
INSTANTANEOUS PEAK FLOW		60100	265000
INSTANTANEOUS PEAK STAGE		23.79	40.08
ANNUAL RUNOFF (AC-FT)	2041000	2411000	
10 PERCENT EXCEEDS	6160	12700	7350
50 PERCENT EXCEEDS	1530	2500	857
90 PERCENT EXCEEDS	736	1060	216

e Estimated

Period of regulation.

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WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1994 to current year.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1994 to current year.

WATER TEMPERATURE: October 1994 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1994**REMARKS.**--Samples were collected monthly, and specific conductance, pH, water temperature, alkalinity and dissolved oxygen were determined in the field.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum, 7,800 microsiemens July 15, 16, 1997; minimum, 402 microsiemens Nov. 14, 1994.

WATER TEMPERATURE: Maximum, 35.5°C July 2, 1996; minimum, 0.0°C several days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded (greater than 20 percent missing record), 7,800 microsiemens July 15, 16; minimum recorded, 474 microsiemens Feb. 20.

WATER TEMPERATURE: Maximum, 34.5°C July 28,29; minimum, 0.0°C Jan. 12-15.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
NOV											
20...	1133	556	15.0	742	1028	1028	4040	10.85	3560	9.0	7.9
20...	1136	496	15.0	742	1028	1028	4040	10.85	3580	8.8	7.9
20...	1139	436	15.0	742	1028	1028	4040	10.85	3580	8.8	7.9
20...	1142	376	15.0	742	1028	1028	4040	10.85	3590	8.8	7.9
20...	1145	316	15.0	742	1028	1028	4040	10.85	3590	8.8	7.9
20...	1148	256	15.0	742	1028	1028	4040	10.85	3580	8.8	7.9
20...	1151	196	15.0	742	1028	1028	4040	10.85	3560	8.9	7.9
20...	1154	136	15.5	742	1028	1028	4040	10.85	3540	8.9	7.9
20...	1157	76.0	15.5	742	1028	1028	4040	10.85	3530	8.8	7.9
20...	1200	16.0	15.5	742	1028	1028	4040	10.85	3490	8.8	7.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CaCO3) (00900)
OCT												
10...	1200	1028	80020	2080	4060	8.4	21.0	21.0	760	9.8	113	680
NOV												
20...	1030	1028	80020	4040	3540	8.1	20.5	15.0	740	8.8	91	730
DEC												
12...	1530	1028	80020	2070	3460	8.2	20.0	14.0	750	10	100	750
JAN												
23...	1610	1028	80020	1250	6030	8.4	15.5	12.0	750	12	119	1100
FEB												
19...	1100	1028	80020	1630	5330	8.5	16.5	12.5	750	12	116	980
MAR												
17...	1700	1028	80020	2870	3110	8.4	21.0	12.5	750	12	121	680
APR												
23...	0915	1028	80020	5800	2390	8.2	18.5	19.0	750	8.3	92	590
MAY												
21...	1330	1028	80020	14200	2730	8.2	18.5	20.0	760	7.3	82	600
JUN												
18...	1230	1028	80020	7740	3710	8.1	26.0	28.0	750	7.2	95	770
JUL												
25...	1130	1028	80020	1060	3740	8.4	38.5	31.5	748	7.7	108	790
AUG												
06...	1245	1028	80020	1210	2670	8.4	31.5	31.5	753	5.7	79	600
SEP												
24...	1530	1028	80020	800	*5170	8.3	20.5	22.0	750	8.3	98	1100

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L) AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L) AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L) AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L) AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L) AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L) AS CL) (00940)
OCT 10...	590	170	63	560	64	9	7.4	99	5	89	610	910
NOV 20...	580	190	61	470	58	8	6.6	182	0	149	540	760
DEC 12...	580	200	60	440	56	7	7.3	205	0	168	590	730
JAN 23...	930	300	95	830	61	11	6.5	242	8	212	900	1400
FEB 19...	800	260	81	800	64	11	6.4	205	8	182	740	1300
MAR 17...	520	170	61	380	55	6	6.5	196	0	161	510	630
APR 23...	430	160	50	260	49	5	6.4	198	0	162	470	390
MAY 21...	430	160	50	310	53	6	6.6	210	0	172	480	510
JUN 18...	630	210	62	470	57	7	8.1	170	0	139	660	730
JUL 25...	660	210	67	480	56	7	9.1	155	6	137	670	740
AUG 06...	470	150	55	330	54	6	6.7	148	5	133	470	520
SEP 24...	1100	280	110	750	59	10	8.6	96	0	79	1000	1200

*SPECIFIC CONDUCTANCE, LAB (US/CM)

DATE	FLUO- RIDE, DIS- SOLVED (MG/L) AS F) (00950)	SILICA, DIS- SOLVED (MG/L) AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS N) (00618)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS NO3) (71851)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N) (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS NO2) (71856)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N) (00608)
OCT 10...	0.3	7.5	2380	3.24	13400	78	--	--	<0.01	--	<0.05	0.02
NOV 20...	0.4	8.2	2130	2.89	23200	650	--	--	<0.01	--	0.50	0.02
DEC 12...	0.4	11	2140	2.91	12000	318	--	--	<0.01	--	0.78	0.04
JAN 23...	0.4	8.0	3670	4.99	12400	12	1.16	5.1	0.04	0.13	1.20	0.03
FEB 19...	0.4	5.9	3300	4.49	14500	34	0.28	1.2	0.05	0.16	0.33	
<0.015												
MAR 17...	0.4	4.8	1860	2.53	14400	66	--	--	<0.01	--	<0.05	
<0.015												
APR 23...	0.4	9.5	1440	1.96	22600	707	--	--	<0.01	--	0.68	0.04
MAY 21...	0.4	9.9	1630	2.22	62500	1230	--	--	<0.01	--	0.35	0.02
JUN 18...	0.5	11	2240	3.04	46700	106	--	--	<0.01	--	0.57	0.02
JUL 25...	0.4	10	2260	3.07	6460	110	--	--	<0.01	--	<0.05	<0.01
AUG 06...	0.4	6.6	1610	2.19	5270	107	--	--	<0.01	--	<0.05	<0.01
SEP 24...	0.4	3.0	3420	4.65	7390	17	--	--	<0.01	--	<0.05	0.07

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04) (00660)	PHOS- PHORUS ORGANIC TOTAL (MG/L AS P) (00670)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	
OCT 10...		0.03	0.78	0.8	0.80	0.15	<0.01	<0.01	--	0.15	2	2	100
NOV 20...		0.03	1.8	1.8	2.3	0.48	0.02	0.02	0.06	0.48	4	2	300
DEC 12...		0.05	0.86	0.9	1.7	0.28	0.06	0.07	0.21	0.28	4	3	<100
JAN 23...		0.04	0.47	0.5	1.7	0.05	0.03	0.04	0.12	0.05	2	2	100
FEB 19...	--	1.0	1.0	1.3	0.04	<0.01	<0.01	--	0.04	2	2	<100	
MAR 17...	--	1.3	1.3	1.3	0.19	<0.01	<0.01	--	0.19	2	1	200	
APR 23...		0.05	1.5	1.6	2.2	0.52	0.07	0.04	0.13	0.52	6	3	100
MAY 21...		0.03	1.4	1.4	1.7	0.41	0.04	0.04	0.13	0.41	5	3	<100
JUN 18...		0.02	2.3	2.3	2.9	0.71	0.04	0.04	0.13	0.71	6	3	<100
JUL 25...	--	0.70	0.7	0.70	0.11	--	0.01	0.04	0.11	4	4	<100	
AUG 06...	--	0.75	0.7	0.75	0.07	0.02	0.02	0.05	0.07	3	3	100	
SEP 24...		0.09	0.74	0.8	0.81	0.09	0.01	<0.01	--	0.09	2	1	200

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT 10...	200	<1	<3	<1	<1	4	<30	650	<9	2	<30	50
NOV 20...	180	<1	<3	4	<1	10	<30	8900	<9	9	<30	490
DEC 12...	140	<1	<3	6	<1	7	<30	4500	<9	4	<30	170
JAN 23...	140	<1	3	<1	<1	2	<30	160	<9	64	40	30
FEB 19...	120	<1	<3	<1	<1	2	<30	260	<9	2	<30	40
MAR 17...	170	<1	7	2	<1	5	<30	1900	<9	15	<30	110
APR 23...	160	<1	<3	13	<1	14	<30	9600	<9	8	<30	300
MAY 21...	170	<1	<3	15	<1	13	<30	10000	<9	120	<30	580
JUN 18...	170	<1	<3	15	1.7	20	<30	10000	320	14	<30	720
JUL 25...	160	<1	<3	3	<1	6	<30	1200	<9	4	30	100
AUG 06...	110	<1	<3	2	<1	3	<30	1100	<9	45	60	130
SEP 24...	170	<1	<3	<2	<2	2	<30	370	<9	<1	<30	70

RED RIVER MAIN STEM

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 10...	<3	<0.1	<0.1	<100	<30	2	2	<1	<1	10	<9
NOV 20...	<3	<0.1	<0.1	<100	<30	2	2	<1	<2	30	<9
DEC 12...	5	<0.1	<0.1	<100	<30	2	2	<1	<1	20	<9
JAN 23...	14	<0.1	<0.1	<100	<30	3	3	<1	<1	10	<9
FEB 19...	17	<0.1	<0.1	<100	<30	3	3	<1	<1	<10	39
MAR 17...	6	<0.1	<0.1	<100	<30	2	2	<1	<1	<10	25
APR 23...	<3	<0.1	<0.1	<100	<30	2	1	<1	<1	40	15
MAY 21...	3	<0.1	<0.1	<100	<30	2	1	<1	<1	40	<9
JUN 18...	<3	<0.1	<0.1	<100	<30	2	2	<1	<1	60	<9
JUL 25...	<3	<0.1	<0.1	<100	<30	2	3	<1	<1	20	<9
AUG 06...	<3	0.1	<0.1	<100	30	2	2	<1	<1	10	<9
SEP 24...	4	<0.1	<0.1	<100	<30	4	3	<2	<2	<10	9

DATE	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ALDRIN, TOTAL (UG/L) (39330)
OCT 10...	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.040
NOV 20...	--	--	--	--	--	--	--	--
DEC 12...	--	--	--	--	--	--	--	--
JAN 23...	--	--	--	--	--	--	--	--
FEB 19...	--	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--	--
APR 23...	--	--	--	--	--	--	--	--
MAY 21...	--	--	--	--	--	--	--	--
JUN 18...	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.040
JUL 25...	--	--	--	--	--	--	--	--
AUG 06...	--	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--	--

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)
OCT 10...	<0.1	<0.020	<0.060	<0.030	<0.8	<0.030	<2
NOV 20...	--	--	--	--	--	--	--
DEC 12...	--	--	--	--	--	--	--
JAN 23...	--	--	--	--	--	--	--
FEB 19...	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--
APR 23...	--	--	--	--	--	--	--
MAY 21...	--	--	--	--	--	--	--
JUN 18...	<0.1	<0.020	<0.060	<0.030	<0.8	<0.030	<2
JUL 25...	--	--	--	--	--	--	--
AUG 06...	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1770	1530	1610	4600	4180	4370	1600	1380	1510	5070	4850	4980
2	1720	1550	1630	4700	4320	4590	1450	1030	1290	5070	4760	4990
3	2200	1720	1950	5890	3820	4560	1030	986	1000	4760	4300	4460
4	2760	2200	2470	5900	4050	5040	1400	1030	1190	4310	4220	4280
5	3150	2760	2960	4050	3660	3770	2010	1400	1690	4220	4170	4190
6	3460	3150	3320	3970	3730	3880	4540	2000	2940	4440	4200	4310
7	3620	3460	3550	3730	1990	2560	5080	4430	4860	4640	4440	4500
8	3840	3620	3750	2810	2260	2520	4460	3510	3860	4770	4640	4700
9	4040	3040	3920	2920	2680	2820	3530	3420	3470	4770	4720	4740
10	4060	3950	4020	3000	2800	2910	3710	3440	3570	4920	4740	4820
11	3950	3850	3880	2960	2670	2740	3710	3590	3660	5260	4920	5090
12	3860	3700	3740	3380	2740	3070	3640	3330	3490	---	---	e5000
13	3830	3730	3800	3840	3370	3630	3330	3220	3260	---	---	e4800
14	3840	3750	3790	4080	3840	3940	3680	3320	3510	---	---	e4600
15	4010	3800	3900	4230	4080	4140	3650	3080	3350	---	---	e4400
16	4700	4010	4240	4430	4200	4290	4220	3610	3880	4400	4330	4380
17	4890	4590	4790	4330	1640	2980	4850	4220	4550	4510	4330	4410
18	4590	4260	4380	2980	2670	2810	4850	4210	4550	4580	4500	4540
19	5160	4490	4910	3650	2980	3300	4210	3920	3990	4610	4520	4580
20	5160	4550	4860	3580	2150	3140	4090	3980	4050	4520	4210	4290
21	4570	4200	4390	2150	1330	1530	4340	4090	4220	4920	4230	4500
22	4200	4070	4110	2510	1620	2210	4480	4340	4420	5660	4920	5390
23	4350	3830	4170	2420	1460	2220	4550	4390	4450	6030	5640	5860
24	4610	4350	4480	1880	652	1320	4730	4550	4660	5980	5700	5870
25	4600	4190	4480	2290	1880	2070	4880	4680	4780	5980	5650	5760
26	4270	3880	4040	1980	1280	1630	4950	4830	4880	6330	5980	6110
27	4490	4160	4360	1300	1200	1250	4940	4450	4720	6410	6110	6290
28	4330	3510	4010	1220	1140	1180	4460	4040	4190	6110	5540	5820
29	3800	3260	3480	1250	841	1120	4280	4040	4130	5540	5410	5440
30	4020	3580	3830	1400	1190	1330	4640	4280	4480	5810	5410	5550
31	4180	3990	4050	---	---	---	4870	4630	4700	5900	5730	5850
MONTH	5160	1530	3770	5900	652	2900	5080	986	3650	---	---	4980

e Estimated

RED RIVER MAIN STEM

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e5620	1890	1790	1820	3890	3790	3840	1920	1780	1860
2	---	---	e5830	2000	1890	1940	3810	3780	3800	2010	1920	1960
3	---	---	e6050	2310	2000	2130	3930	3800	3860	2200	2010	2100
4	---	---	e5320	2530	2310	2440	3830	2690	3050	2420	2200	2320
5	---	---	e4920	2600	2500	2550	3030	2870	2940	2490	2420	2460
6	---	---	e4430	2620	2590	2610	3300	3030	3160	2570	2470	2500
7	---	---	e3400	2620	2590	2600	5420	3300	3950	2870	2570	2730
8	---	---	e3300	2660	2610	2640	5350	3330	3900	3020	2870	2980
9	---	---	e3260	2650	2540	2610	3340	2670	3050	2980	2080	2530
10	---	---	e3330	2550	2500	2530	2670	2380	2490	2340	2080	2130
11	---	---	e3750	2680	2550	2610	2390	1610	2000	2980	2200	2560
12	---	---	e3870	2690	2410	2600	2000	1730	1840	2200	1810	1940
13	---	---	e3420	2500	2450	2470	2000	1540	1770	2170	1810	1970
14	---	---	e3560	2670	2450	2500	2290	1610	1900	2360	2170	2270
15	---	---	e4130	3050	2670	2940	2300	1840	2050	2460	2360	2400
16	---	---	e4220	3120	3050	3090	---	---	e2000	2540	2450	2480
17	---	---	e5260	3180	3060	3090	---	---	e1900	2760	2540	2640
18	---	---	e5490	3670	3180	3500	1860	1790	1810	3010	2760	2890
19	5430	587	4800	3590	3410	3510	1980	1860	1920	3110	2920	3050
20	1180	474	890	3410	3320	3350	2090	1980	2040	2970	2700	2820
21	1420	703	1090	3520	3320	3400	2290	2090	2190	3130	2680	2780
22	1320	637	895	3640	3510	3590	2340	2280	2300	3170	1500	2340
23	1350	1260	1310	3650	3290	3530	2420	2340	2390	1500	1340	1410
24	1320	1270	1290	---	---	e3500	2620	2420	2490	1920	1470	1700
25	1450	1320	1380	---	---	e3200	2770	1980	2580	2360	1900	2140
26	1610	1380	1500	---	---	e3300	2470	2160	2320	3140	2020	2750
27	1730	1610	1690	---	---	e3400	2780	2050	2340	3390	3130	3270
28	1820	1690	1740	---	---	e3500	2660	2150	2280	3650	3390	3540
29	---	---	---	3490	3440	3460	2270	1910	2090	3890	3650	3760
30	---	---	---	3590	3460	3520	1910	1770	1810	3980	2320	3690
31	---	---	---	3870	3590	3680	---	---	---	3990	2780	3160
MONTH	---	---	3420	---	---	2960	---	---	2540	3990	1340	2550

e Estimated

RED RIVER MAIN STEM

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07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2990	1730	2400	3720	3240	3440	4560	4290	4390	---	---	e3200
2	1730	1310	1470	4740	3720	4360	4690	4560	4620	---	---	e3200
3	1380	1270	1310	4650	3420	3970	4970	4690	4810	---	---	e3300
4	1480	1390	1460	3610	3410	3450	5150	4970	5080	---	---	e3300
5	2320	1480	1780	3830	3610	3770	5000	3050	4400	---	---	e3400
6	3400	2320	2980	3740	3530	3630	3050	2480	2720	---	---	e3500
7	3850	3400	3680	3530	3480	3490	---	---	e2400	---	---	e3600
8	3830	3520	3670	3520	3480	3500	---	---	e2500	---	---	e3700
9	3520	2510	3290	3750	3520	3620	---	---	e2600	---	---	e3700
10	3140	2530	2920	3990	3750	3880	2620	2560	2600	---	---	e3800
11	2530	1700	1970	4490	3990	4190	2620	2510	2570	---	---	e3400
12	2030	1880	1960	5250	4490	4990	2670	2500	2610	---	---	e3500
13	1990	1920	1940	5230	4970	5120	2500	2370	2410	---	---	e3700
14	2750	1990	2380	5020	4960	4990	2720	2400	2470	---	---	e4000
15	3090	2750	2860	7800	5020	5830	3440	2190	2900	---	---	e4100
16	4690	3090	4090	7800	3640	5270	2190	1680	1880	---	---	e4200
17	4640	4250	4470	5000	3680	4460	1770	1600	1650	---	---	e4400
18	4520	3280	3800	3920	2980	3300	3520	1770	2610	---	---	e4500
19	3440	1760	2640	2980	2620	2790	3510	2260	2930	---	---	e4700
20	1760	1440	1520	2630	2600	2610	2440	2110	2200	---	---	e4800
21	2190	1590	1860	2740	2620	2660	3140	2440	2750	---	---	e5000
22	2900	2190	2510	3130	2740	2920	3360	3140	3310	---	---	e5200
23	3380	2900	3230	3420	3120	3290	3310	3160	3230	---	---	e5400
24	3590	3250	3480	3680	3420	3580	3250	2770	2950	---	---	e5500
25	3880	3550	3740	3750	3520	3690	4100	2790	3200	---	---	e3600
26	3880	3570	3720	3890	3440	3630	5610	4100	5220	---	---	e1100
27	3970	3680	3800	3910	3790	3850	5270	4030	4510	---	---	e1200
28	4150	3720	4010	4200	3830	4040	4120	3650	3990	---	---	e1400
29	3720	3070	3440	4380	4190	4300	3650	2870	3200	---	---	e1500
30	3240	2980	3070	4380	4310	4360	2870	2730	2770	---	---	e1690
31	---	---	---	---	---	e4350	---	---	e2960	---	---	---
MONTH	4690	1270	2850	---	---	3910	---	---	3180	---	---	3590

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.5	19.5	20.0	15.5	12.0	13.5	8.5	7.5	8.0	14.0	12.5	13.0
2	22.5	19.5	21.0	13.5	11.0	12.0	8.5	7.5	8.0	15.5	13.0	14.0
3	22.0	21.0	21.5	12.5	11.0	12.0	8.5	7.5	8.0	17.5	14.5	16.0
4	22.0	20.5	21.5	14.0	11.5	12.5	8.0	7.0	7.5	17.5	15.5	16.5
5	22.5	20.5	21.5	16.5	13.0	14.5	9.0	7.5	8.5	15.5	11.5	13.0
6	23.5	21.0	22.0	19.5	16.0	17.5	10.0	8.0	9.0	11.5	7.5	9.5
7	24.5	21.5	23.0	17.5	14.5	15.5	10.0	8.5	9.5	7.5	6.0	6.5
8	23.5	21.5	22.5	15.0	12.5	13.5	10.0	8.0	9.0	6.0	4.5	5.0
9	23.0	20.5	22.0	13.5	11.0	12.5	10.5	8.5	9.5	6.5	4.0	5.0
10	22.5	20.0	21.5	13.5	11.5	12.5	13.0	10.5	11.5	5.5	4.0	5.0
11	21.5	19.5	20.5	14.0	11.0	12.5	14.0	12.0	13.0	4.0	1.0	2.5
12	22.0	19.0	20.5	13.0	12.0	12.5	14.0	12.0	13.0	1.0	.0	.0
13	22.5	19.5	21.0	14.0	11.5	12.5	13.5	11.5	12.5	.0	.0	.0
14	22.5	20.0	21.5	16.0	13.0	14.5	14.5	12.5	13.5	.0	.0	.0
15	23.0	20.5	21.5	16.0	15.5	15.5	13.5	9.0	11.0	3.0	.0	1.0
16	24.0	21.5	22.5	17.5	15.5	16.5	9.0	7.5	8.5	3.5	1.5	2.0
17	23.5	20.0	22.0	17.0	13.0	14.5	8.0	4.5	6.0	3.0	.5	2.0
18	20.0	17.5	19.0	14.0	11.5	13.0	4.5	2.5	3.0	4.5	1.0	2.5
19	18.5	16.5	17.0	15.0	12.5	13.5	2.5	1.0	2.0	6.5	2.5	4.0
20	19.5	16.0	17.5	16.5	14.5	15.5	3.0	.5	2.0	9.0	4.5	6.5
21	19.5	16.0	18.5	16.0	14.0	15.0	6.5	2.0	4.0	12.5	8.5	11.0
22	16.0	14.0	14.5	14.0	13.0	13.0	10.5	6.5	8.5	12.5	10.5	11.5
23	16.0	12.0	14.0	14.5	13.0	13.5	13.5	9.5	11.5	12.0	10.5	11.0
24	16.5	13.5	15.0	14.0	8.5	10.5	9.5	6.0	7.0	12.5	10.5	11.5
25	18.5	15.5	17.0	8.5	6.0	7.0	6.0	4.5	5.5	11.0	9.0	10.0
26	21.5	18.5	20.0	6.5	5.5	6.0	7.0	5.5	6.0	11.5	8.5	10.0
27	23.0	20.5	21.5	6.0	5.0	5.5	8.0	5.5	6.5	11.5	6.5	10.0
28	20.5	18.5	19.0	5.5	5.0	5.5	9.0	7.0	8.0	6.5	3.0	4.5
29	19.5	17.5	18.5	7.5	5.5	6.5	10.5	7.5	9.0	5.0	2.0	3.5
30	19.5	16.0	18.0	8.5	7.0	8.0	11.5	9.0	10.0	6.5	2.5	4.5
31	17.5	15.5	16.5	---	---	---	12.5	11.5	12.0	9.5	4.5	6.5
MONTH	24.5	12.0	19.7	19.5	5.0	12.2	14.5	.5	8.4	17.5	.0	7.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.5	7.5	9.0	12.0	9.5	10.5	17.0	16.0	16.5	19.0	17.5	18.5
2	12.5	9.0	11.0	11.5	10.5	11.0	18.0	15.5	16.5	21.0	18.5	19.5
3	14.0	11.0	12.0	11.5	9.5	10.5	18.0	17.0	17.5	20.5	19.0	19.5
4	13.0	11.0	12.0	14.0	11.0	12.5	18.5	17.5	17.5	20.5	19.0	20.0
5	11.0	9.5	10.5	13.5	12.5	13.0	19.5	16.0	18.0	21.0	19.0	20.0
6	10.0	8.5	9.0	13.0	11.0	12.0	18.5	15.5	17.0	22.5	20.5	21.5
7	8.5	7.0	8.0	12.0	11.5	11.5	17.0	15.5	16.5	23.0	22.0	22.0
8	7.0	6.0	6.5	12.5	11.5	12.0	16.5	15.0	15.5	23.0	22.0	22.5
9	6.0	5.5	6.0	14.5	12.5	13.5	15.0	14.0	14.5	22.0	20.0	21.0
10	7.0	5.5	6.0	15.5	13.5	14.5	15.5	13.5	14.5	21.0	19.5	20.5
11	8.5	5.5	7.0	16.0	13.5	15.0	15.5	12.5	14.5	20.5	20.0	20.5
12	8.5	7.5	8.0	15.5	15.0	15.0	12.5	11.0	11.5	20.0	19.0	19.5
13	7.5	6.5	7.0	16.0	15.0	15.5	11.5	10.0	10.5	20.5	18.5	19.5
14	9.0	6.5	7.5	15.5	12.5	13.5	11.5	9.5	10.5	20.5	19.5	20.0
15	10.0	6.5	8.5	13.5	10.5	12.0	13.0	11.0	12.0	21.5	20.0	20.5
16	11.5	8.0	9.5	12.5	11.0	11.5	15.0	12.5	13.5	23.5	20.5	22.0
17	12.5	9.5	11.0	13.0	10.5	11.5	17.0	15.0	15.5	25.0	22.5	23.5
18	13.5	10.5	12.0	14.0	13.0	13.5	17.5	16.0	16.5	26.0	24.0	25.0
19	14.0	12.5	13.0	13.5	11.5	12.5	19.5	17.0	18.0	25.5	23.5	24.5
20	14.0	11.5	12.5	16.0	11.5	13.5	21.0	18.5	19.5	23.5	21.0	22.5
21	13.5	12.5	13.0	18.5	14.0	16.0	22.0	19.5	21.0	21.0	19.5	20.5
22	12.5	12.0	12.5	18.5	15.5	17.0	21.5	20.0	21.0	20.5	19.0	19.5
23	12.0	11.0	11.5	18.5	15.0	16.5	21.0	19.0	20.0	21.5	20.0	20.5
24	11.0	10.5	11.0	---	---	---	20.0	17.0	18.5	24.0	21.5	22.5
25	10.5	10.0	10.5	---	---	---	17.0	14.0	15.0	25.0	23.0	24.0
26	10.0	9.0	9.5	---	---	---	14.0	13.5	13.5	27.5	24.0	26.0
27	10.0	8.5	9.0	---	---	---	13.5	12.5	13.0	28.0	26.5	27.5
28	9.5	9.0	9.5	19.5	16.5	18.5	14.0	12.0	13.0	27.5	25.5	26.5
29	---	---	---	20.0	16.5	18.0	16.5	14.0	15.0	26.5	24.5	25.5
30	---	---	---	19.0	16.0	17.5	18.5	16.5	17.5	25.5	23.0	25.0
31	---	---	---	18.0	15.0	16.5	---	---	---	25.0	23.5	24.5
MONTH	14.0	5.5	9.7	---	---	---	22.0	9.5	15.8	28.0	17.5	22.1

[illegible]

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft downstream from Denison Dam powerhouse, 0.4 mi upstream from Shawnee Creek (spillway flow return), 4.5 mi north of Denison, and at mile 725.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--39,720 mi², of which 5,936 mi² is probably noncontributing. At site used prior to October 1961 drainage area was 39,777 mi², of which 5,936 mi² probably was noncontributing.

PERIOD OF RECORD.--October 1923 to September 1989; December 1996 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, TX", and October 1934 to September 1961, published as "near Colbert, OK". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 807: 1935 (M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934 (M), 1935.

GAGE.--Water-stage recorder. Datum of gage is 495.00 ft above National Geodetic Vertical Datum of 1929. Oct. 9, 1923, to Sept. 24, 1934, nonrecording gage, and July 29, 1942, to Sept. 30, 1961, water-stage recorder, at county road bridge 2.5 mi downstream. Prior to Oct. 1, 1931, at datum 11.85 ft higher; Oct. 1, 1931, to Sept. 24, 1934, at datum 12.07 ft higher; and July 29, 1942, to Sept. 30, 1961, at datum 2.36 ft higher; Sept. 25, 1934, to July 28, 1942, water-stage recorder at railway bridge 1.9 mi downstream at datum 12.36 ft higher. July 29, 1942 to Sept. 30, 1989, at same site and datum 5.00 ft higher.

REMARKS.--Records fair. Since October 1944, at least 10% of contributing drainage area has been regulated by Lake Texoma. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1924-43) prior to regulation by Lake Texoma, 5,684 ft³/s.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (at site and datum used July 29, 1942, to Sept. 30, 1961); from record of National Weather Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e10000	10500	312	29900	8610	29800	153	11300	7310	3920
2	---	---	e14000	10300	149	29900	8510	29800	12000	11300	3160	3940
3	---	---	e15500	10400	5030	29800	8580	29800	17300	7030	3000	3950
4	---	---	e15500	5350	5280	29800	8920	29800	17500	6470	5210	3950
5	---	---	e15000	9680	7620	29800	1640	29700	17500	6470	5650	3950
6	---	---	e15500	11400	7670	26700	181	29800	17500	6490	5500	358
7	---	---	e15500	7730	7730	20300	6360	29800	17500	3020	3220	270
8	---	---	e15500	4000	7190	18200	11500	29700	17500	153	2980	3380
9	---	---	e16000	4280	7050	18100	11500	26800	17600	4320	439	3450
10	---	---	e16000	3870	7200	18200	11400	28100	17700	4900	387	3460
11	---	---	16000	1200	11200	17300	11600	30200	17500	4870	5770	3470
12	---	---	16000	e250	11800	14700	11400	30300	17500	2820	5980	2540
13	---	---	16000	e2800	12000	13600	14600	30200	16500	2740	5540	325
14	---	---	16100	3000	11800	13500	16700	30200	15700	4980	5490	262
15	---	---	16200	1780	8770	13600	18700	27000	15800	5990	5530	1190
16	---	---	16100	3080	8270	13700	19900	21000	15800	6410	5490	1210
17	---	---	16100	2900	8290	12600	19800	14700	15700	6460	5510	1210
18	---	---	14400	250	5320	12000	19600	16800	15800	6460	5530	1210
19	---	---	10300	145	5500	12100	19500	14500	15800	6920	7450	1230
20	---	---	10400	4870	1650	11700	19500	12600	14100	6900	8920	304
21	---	---	10500	5590	512	12100	19500	16500	788	6920	8930	261
22	---	---	10400	5500	194	12100	19300	16500	153	6920	3790	1200
23	---	---	10500	3480	3610	12100	17100	16500	10300	6930	5380	1220
24	---	---	10300	512	13300	12300	12800	16500	11000	6970	5010	1140
25	---	---	10500	140	21300	12600	10500	14800	11200	7090	4510	5590
26	---	---	10700	142	21200	12300	603	10100	11200	3990	3960	1180
27	---	---	10700	2720	22900	12300	213	10200	11200	3830	3960	2370
28	---	---	10700	528	27600	12300	5810	12700	852	6980	3940	2420
29	---	---	10800	147	---	990	15200	12700	7150	7180	3940	2400
30	---	---	10800	4850	---	156	23400	11300	11300	7260	2530	5350
31	---	---	10800	3110	---	7640	---	666	---	7290	2510	---
TOTAL	---	---	412800	124504	250447	492386	372927	659066	387596	187363	146526	66710
MEAN	---	---	13320	4016	8945	15880	12430	21260	12920	6044	4727	2224
MAX	---	---	16200	11400	27600	29900	23400	30300	17700	11300	8930	5590
MIN	---	---	10000	140	149	156	181	666	153	153	387	261
AC-FT	---	---	818800	247000	496800	976600	739700	1307000	768800	371600	290600	132300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 1997#, BY WATER YEAR (WY)

	MEAN	5101	3748	3320	3174	3204	3978	4515	8011	11670	5326	3401	2618
MAX	27860	18880	13320	13560	13800	24760	20400	34710	66960	21820	25570	10330	
(WY)	1987	1975	1997	1985	1987	1987	1945	1957	1957	1982	1950	1950	
MIN	66.7	79.6	447	271	237	202	253	138	389	165	681	111	
(WY)	1957	1957	1944	1945	1944	1944	1944	1944	1944	1944	1944	1944	

SUMMARY STATISTICS

FOR 1997 WATER YEAR

WATER YEARS 1943 - 1997#

ANNUAL MEAN											4781		
HIGHEST ANNUAL MEAN											16030		1987
LOWEST ANNUAL MEAN											345		1944
HIGHEST DAILY MEAN							30300	May 1		296200		Jun 5	1957
LOWEST DAILY MEAN							140	Jan 25		12		Jan 10	1944
ANNUAL SEVEN-DAY MINIMUM							938	Sep 18		33		Jul 8	1944
INSTANTANEOUS PEAK FLOW							35800	Apr 30		201000		May 21	1935
INSTANTANEOUS PEAK STAGE							18.07	Apr 30		32.00		Apr 25	1942
ANNUAL RUNOFF (AC-FT)										3464000			
10 PERCENT EXCEEDS							19700			10600			
50 PERCENT EXCEEDS							8920			2750			
90 PERCENT EXCEEDS							921			183			

e Estimated.

Period of regulated streamflow

RED RIVER MAIN STEM

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to August 1989; October 1996 to September 1997.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: May 1944 to September 1989; February 1997 to September 1997.

WATER TEMPERATURE: October 1945 to September 1989; February 1997 to September 1997.

INSTRUMENTATION.--Water-quality monitor February 1997 to September 1997.**REMARKS.**--Samples were collected monthly, and specific conductance, pH, water temperature, alkalinity and dissolved oxygen were determined in the field.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum daily, 3,520 microsiemens Aug. 14, 1944; minimum daily, 656 microsiemens Oct. 16, 1945.

WATER TEMPERATURE: Maximum daily, 31.0°C July 17, 1969; minimum daily, 3.0°C Feb. 2-4, 7, 1966.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded (greater than 20 per cent missing record), 2,290 microsiemens Feb. 21; minimum recorded, 1,490 microsiemens Apr. 4.

WATER TEMPERATURE: Maximum, 27.0°C Aug. 22, Sept. 10; minimum, 6.0°C Feb. 1, 2.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)
OCT										
29...	1634	30.0	19.5	749	1028	1028	E4450	1980	7.9	7.9
29...	1636	60.0	19.5	749	1028	1028	E4450	1980	7.9	7.9
29...	1638	90.0	19.5	749	1028	1028	E4450	1980	7.9	7.9
29...	1640	120	19.5	749	1028	1028	E4450	1980	7.8	7.9
29...	1642	150	19.5	749	1028	1028	E4450	1980	7.9	7.9
29...	1644	180	19.5	749	1028	1028	E4450	1980	7.9	7.9
29...	1646	210	19.5	749	1028	1028	E4450	1980	7.8	7.9
29...	1648	250	19.5	749	1028	1028	E4450	1980	7.8	7.9
29...	1650	300	19.5	749	1028	1028	E4450	1980	7.9	7.9
29...	1653	350	19.5	749	1028	1028	E4450	1980	7.9	8.0
29...	1656	400	19.5	749	1028	1028	E4450	1980	7.9	8.0
29...	1659	450	19.5	749	1028	1028	E4450	1980	7.9	8.0
29...	1702	500	19.5	749	1028	1028	E4450	1980	7.9	8.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
OCT												
29...	1545	1028	80020	E4450	1950	7.9	22.5	19.5	750	7.9	88	440
NOV												
19...	0930	1028	80020	E9820	1880	8.2	19.0	16.0	750	9.3	96	430
DEC												
10...	1100	1028	80020	15200	1770	8.2	22.0	12.5	750	12	116	400
JAN												
30...	1430	1028	80020	397	1670	8.3	18.5	8.5	760	15	130	390
FEB												
18...	1530	1028	80020	5420	1900	8.2	19.5	7.0	750	11	94	430
MAR												
18...	1600	1028	80020	12200	1530	8.3	17.5	11.0	760	10	95	400
APR												
22...	1130	1028	80020	19300	1560	8.4	22.5	16.0	750	11	113	400
MAY												
21...	1000	1028	80020	16400	1680	8.3	17.5	18.5	760	7.2	78	410
JUN												
17...	1400	1028	80020	15800	1730	8.2	25.5	22.0	750	8.4	98	440
JUL												
23...	1530	1028	80020	11200	1750	7.8	40.5	24.5	750	3.0	37	430
AUG												
07...	1415	--	80020	7250	1830	7.7	20.0	23.0	754	2.1	25	450
SEP												
24...	1130	1028	80020	202	1880	7.8	21.5	24.0	760	6.0	73	480

RED RIVER MAIN STEM

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 29...	340	110	39	230	53	5	5.7	119	0	98	330	360
NOV 19...	320	110	37	220	52	5	5.9	127	0	104	310	330
DEC 10...	290	100	36	200	52	4	5.6	129	0	106	300	310
JAN 30...	270	100	33	180	49	4	14	146	0	120	270	280
FEB 18...	300	110	37	220	52	5	5.1	157	0	129	310	340
MAR 18...	260	100	34	150	45	3	5.0	168	0	138	270	240
APR 22...	260	110	34	170	47	4	5.0	181	0	148	260	250
MAY 21...	250	110	35	180	48	4	5.0	204	0	167	290	270
JUN 17...	300	110	36	180	46	4	5.8	170	0	139	310	270
JUL 23...	300	110	37	170	46	4	5.8	166	0	136	320	260
AUG 07...	320	120	39	200	49	4	5.9	168	0	138	330	300
SEP 24...	340	120	44	190	46	4	5.9	171	0	140	350	290

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	FLUO- RIDE, DIS- SOLVED (MG/L) AS F (00950)	SILICA, DIS- SOLVED (MG/L) AS SIO2 (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS N (00618)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) AS NO3 (71851)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS NO2 (71856)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N (00608)
OCT 29...	0.30	7.9	1140	1.55	--	5	0.230	1.0	0.020	0.07	0.250	0.060
NOV 19...	0.40	7.3	1080	1.48	--	8	--	--	<0.010	--	0.270	0.060
DEC 10...	0.30	8.1	1030	1.39	--	3	--	--	<0.010	--	0.360	0.070
JAN 30...	0.30	8.1	959	1.30	1030	<1	0.360	1.6	0.020	0.07	0.380	0.040
FEB 18...	0.30	8.5	1110	1.51	16200	2	0.330	1.5	0.040	0.13	0.370	<0.015
MAR 18...	0.3	8.0	890	1.21	29300	5	0.350	1.5	0.010	0.03	0.360	0.100
APR 22...	0.2	7.7	924	1.26	48100	2	0.369	1.6	0.02	0.07	0.39	0.07
MAY 21...	0.4	5.2	990	1.35	43800	1	0.219	0.97	0.02	0.08	0.24	0.10
JUN 17...	0.3	7.4	1010	1.37	43000	1	0.290	1.3	0.01	0.04	0.30	0.04
JUL 23...	0.3	9.1	1000	1.36	30300	<1	0.083	0.37	0.02	0.06	0.10	0.16
AUG 07...	0.3	9.1	1090	1.49	21400	<1	--	--	<0.01	--	<0.05	0.27
SEP 24...	0.3	11	1110	1.51	604	<1	0.071	0.31	0.02	0.06	0.09	0.49

RED RIVER MAIN STEM

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	PHOS- PHORUS ORGANIC TOTAL (MG/L AS P) (00670)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	
OCT 29...		0.08	0.54	0.6	0.85	0.06	0.02	0.02	0.06	0.06	1	1	<100
NOV 19...		0.08	0.44	0.5	0.77	0.05	<0.01	0.02	0.06	0.05	2	2	100
DEC 10...		0.09	0.43	0.5	0.86	0.03	0.02	0.02	0.06	0.03	2	2	<100
JAN 30...		0.05	0.36	0.4	0.78	0.03	0.02	0.02	0.06	0.03	1	2	200
FEB 18...	--	--	<0.2	--	0.01	<0.01	0.01	0.03	0.01	2	2	<100	
MAR 18...		0.13	0.40	0.5	0.86	0.03	0.02	0.02	0.06	0.03	1	1	100
APR 22...		0.09	0.36	0.4	0.82	0.03	<0.01	0.01	0.04	0.03	2	2	<100
MAY 21...		0.13	0.48	0.6	0.82	0.02	<0.01	0.01	0.03	0.02	1	1	<100
JUN 17...		0.04	0.41	0.4	0.75	<0.01	<0.01	0.01	0.04	--	2	2	<100
JUL 23...		0.21	0.33	0.5	0.60	0.05	0.04	0.04	0.13	0.05	3	3	<100
AUG 07...		0.35	0.54	0.8	0.81	0.15	0.07	0.09	0.27	0.15	4	3	100
SEP 24...		0.63	0.48	1	1.1	0.19	0.16	0.14	0.42	0.19	4	4	200

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)
OCT												
29...	160	<1	<1	<1	<1	10	<10	120	5	3	<10	20
NOV												
19...	160	<1	<1	<1	<1	3	<10	90	<3	11	20	20
DEC												
10...	160	<1	<1	<1	<1	3	<10	80	<3	54	<10	20
JAN												
30...	140	<1	<1	<1	<1	2	<10	60	<3	3	<10	10
FEB												
18...	150	<1	<1	<1	<1	1	<10	40	<3	<1	<10	20
MAR												
18...	140	<1	1	<1	<1	3	<10	80	<3	25	<10	10
APR												
22...	140	<1	<1	<1	<1	1	<10	40	<3	<1	<10	<10
MAY												
21...	150	<1	1	24	<1	27	<10	21000	<3	21	<10	1400
JUN												
17...	150	<1	<1	<1	<1	2	<10	40	<3	18	<10	110
JUL												
23...	140	<1	<1	<1	<1	<1	<10	30	<3	3	<10	230
AUG												
07...	150	<1	1	1	<1	6	<10	110	3	7	<10	250
SEP												
24...	160	<1	<1	<1	<1	2	<10	100	6	24	<10	590

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 29...	4	<0.1	<0.1	<100	<10	<1	<1	<1	<1	30	31
NOV 19...	1	<0.1	<0.1	<100	<10	<1	<1	<1	<1	10	19
DEC 10...	2	<0.1	<0.1	<100	<10	<1	<1	<1	<1	10	<3
JAN 30...	2	<0.1	<0.1	<100	<10	<1	<1	48	1	10	11
FEB 18...	5	<0.1	<0.1	<100	<10	<1	<1	<1	<1	<10	11
MAR 18...	2	<0.1	<0.1	<100	<10	<1	<1	<1	<1	10	16
APR 22...	2	<0.1	<0.1	<100	<10	<1	<1	<1	<1	<10	14
MAY 21...	10	<0.1	<0.1	<100	<10	2	<1	<1	<1	80	<3
JUN 17...	110	<0.1	<0.1	<100	<10	<1	<1	<1	<1	<10	<3
JUL 23...	260	<0.1	<0.1	200	<10	<1	<1	<1	<1	10	<3
AUG 07...	340	<0.1	<0.1	<100	<10	<1	<1	<1	<1	30	<3
SEP 24...	600	<0.1	<0.1	<100	<10	<1	<1	<1	<1	<10	7

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ALDRIN, TOTAL (UG/L) (39330)
OCT 29...	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.040
NOV 19...	--	--	--	--	--	--	--	--
DEC 10...	--	--	--	--	--	--	--	--
JAN 30...	--	--	--	--	--	--	--	--
FEB 18...	--	--	--	--	--	--	--	--
MAR 18...	--	--	--	--	--	--	--	--
APR 22...	--	--	--	--	--	--	--	--
MAY 21...	--	--	--	--	--	--	--	--
JUN 17...	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.040
JUL 23...	--	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--	--

RED RIVER MAIN STEM

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX- APHENE, TOTAL (UG/L) (39400)
OCT 29...	<0.1	<0.020	<0.060	<0.030	<0.8	<0.030	<2
NOV 19...	--	--	--	--	--	--	--
DEC 10...	--	--	--	--	--	--	--
JAN 30...	--	--	--	--	--	--	--
FEB 18...	--	--	--	--	--	--	--
MAR 18...	--	--	--	--	--	--	--
APR 22...	--	--	--	--	--	--	--
MAY 21...	--	--	--	--	--	--	--
JUN 17...	<0.1	<0.020	<0.060	<0.030	<0.8	<0.030	<2
JUL 23...	--	--	--	--	--	--	--
AUG 07...	--	--	--	--	--	--	--
SEP 24...	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1670	1640	1650	1780	1750	1760	1540	1520	1530	1620	1550	1580
2	1670	1650	1660	1750	1710	1730	1550	1530	1530	1610	1560	1580
3	1680	1660	1670	1720	1710	1710	1540	1530	1530	1570	1510	1560
4	1670	1660	1670	1740	1710	1730	1530	1490	1520	1590	1560	1570
5	1670	1660	1670	1740	1690	1700	1540	1510	1530	1620	1570	1590
6	1670	1630	1660	1700	1660	1670	1540	1520	1530	1710	1620	1660
7	1680	1640	1670	1670	1640	1650	1530	1510	1520	1750	1640	1660
8	1680	1660	1670	1660	1650	1660	1520	1510	1510	---	---	e1660
9	1680	1660	1670	1660	1630	1650	1520	1510	1510	---	---	e1650
10	1720	1660	1680	1650	1620	1640	1520	1510	1510	---	---	e1650
11	1720	1690	1700	1630	1610	1620	1520	1490	1510	---	---	e1660
12	1750	1710	1730	1630	1610	1620	1520	1510	1510	---	---	e1660
13	1710	1690	1700	1620	1600	1610	1520	1510	1520	---	---	e1650
14	1720	1680	1700	1620	1570	1590	1520	1520	1520	---	---	e1650
15	1780	1710	1730	1590	1530	1570	1530	1520	1520	---	---	e1650
16	2010	1730	1770	1530	1510	1520	1530	1520	1530	---	---	e1660
17	1990	1760	1810	1560	1530	1550	1530	1520	1530	---	---	e1700
18	1950	1880	1920	1550	1530	1540	1520	1520	1520	---	---	e1670
19	1940	1770	1880	1540	1530	1540	1630	1520	1590	---	---	e1670
20	2210	1840	2020	1530	1520	1530	1740	1550	1600	---	---	e1680
21	2290	1750	1990	1550	1530	1540	1740	1550	1610	---	---	e1700
22	2180	1750	1980	1550	1550	1550	1590	1530	1560	1690	1670	1680
23	2210	1780	1920	1550	1540	1550	1590	1540	1560	1760	1680	1730
24	1810	1760	1780	1550	1540	1540	1680	1570	1630	1830	1730	1780
25	1800	1770	1780	1550	1530	1540	1610	1550	1590	1880	1810	1850
26	1800	1740	1770	1540	1540	1540	2100	1600	1900	1890	1810	1860
27	1800	1760	1770	1550	1540	1550	2100	2040	2080	1810	1720	1760
28	1800	1770	1780	1550	1540	1550	2070	1510	1730	1730	1710	1720
29	---	---	---	1580	1530	1550	1560	1520	1540	1780	1710	1740
30	---	---	---	1570	1540	1550	1590	1540	1570	1840	1780	1800
31	---	---	---	1550	1530	1540	---	---	---	1850	1760	1800
MONTH	2290	1630	1760	1780	1510	1600	2100	1490	1580	---	---	1680

e Estimated

RED RIVER MAIN STEM

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07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1840	1800	1820	1680	1640	1650	1970	1740	1790	---	---	e1880
2	1810	1720	1740	1670	1630	1660	2060	1760	1890	---	---	e1870
3	1750	1730	1730	1690	1650	1660	2070	1780	1930	---	---	e1870
4	1760	1730	1750	1820	1630	1680	2060	1790	1900	---	---	e1870
5	1780	1720	1750	2120	1660	1740	2040	1800	1890	---	---	e1870
6	1800	1770	1790	2150	1680	1780	2020	1820	1890	---	---	e1980
7	1820	1790	1800	2130	1720	1840	2020	1810	1920	---	---	e1980
8	1840	1800	1820	2120	1920	2020	2020	1760	1900	---	---	e1880
9	1860	1760	1830	2040	1740	1870	2000	1890	1980	---	---	e1860
10	1850	1710	1800	2050	1750	1840	2000	1960	1980	---	---	e1860
11	1860	1800	1820	2040	1740	1840	1980	1840	1900	---	---	e1860
12	1840	1820	1830	2010	1740	1850	1970	1770	1840	---	---	e1900
13	1880	1810	1840	1990	1730	1850	1930	1760	1820	---	---	e1960
14	1880	1750	1810	1960	1690	1800	1940	1750	1820	---	---	e1980
15	1770	1730	1750	1890	1700	1750	1930	1780	1830	---	---	e1950
16	1760	1750	1750	1920	1700	1750	1960	1760	1840	---	---	e1900
17	1750	1700	1720	1830	1690	1720	1980	1750	1830	---	---	e1900
18	1720	1670	1690	1810	1680	1720	2010	1730	1830	---	---	e1900
19	1680	1560	1660	1810	1700	1720	2000	1740	1800	---	---	e1890
20	1650	1560	1620	1800	1700	1730	1930	1720	1760	---	---	e1950
21	1700	1630	1670	1820	1710	1730	1950	1730	1760	---	---	e1980
22	1730	1630	1690	1830	1720	1740	---	---	e1880	---	---	e1900
23	1690	1670	1680	1810	1720	1750	---	---	e1860	---	---	e1900
24	1680	1650	1660	1820	1730	1760	---	---	e1850	---	---	e1920
25	1670	1650	1660	1830	1730	1760	---	---	e1900	---	---	e1880
26	1670	1630	1660	1860	1720	1790	---	---	e1950	---	---	e1900
27	1680	1660	1670	1920	1720	1810	---	---	e1950	---	---	e1890
28	1760	1670	1720	1940	1730	1790	---	---	e1950	---	---	e1890
29	1770	1650	1700	1930	1730	1780	---	---	e1960	---	---	e1890
30	1670	1650	1660	1950	1730	1780	---	---	e1980	---	---	e1880
31	---	---	---	1950	1730	1780	---	---	e1980	---	---	---
MONTH	1880	1560	1740	2150	1630	1770	---	---	1880	---	---	1900

e Estimated

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.0	6.0	7.0	8.5	8.0	8.0	12.5	12.0	12.5	16.0	15.0	15.5
2	9.5	6.0	7.5	8.5	8.5	8.5	12.5	12.0	12.5	16.5	15.0	15.5
3	7.5	6.5	7.0	9.0	8.5	8.5	12.5	12.5	12.5	16.5	16.0	16.0
4	---	---	---	9.0	8.5	8.5	13.0	12.5	12.5	16.0	16.0	16.0
5	---	---	---	9.0	8.5	9.0	15.0	12.5	13.5	16.0	16.0	16.0
6	7.5	7.0	7.0	9.5	9.0	9.0	15.5	11.5	13.5	16.5	16.0	16.0
7	7.0	6.5	7.0	9.5	9.0	9.0	13.5	11.5	12.5	16.5	16.0	16.5
8	7.0	6.5	6.5	9.5	9.0	9.5	13.5	13.0	13.0	---	---	---
9	7.0	6.5	6.5	10.0	9.5	9.5	13.5	13.0	13.5	---	---	---
10	7.0	6.5	7.0	10.0	9.5	9.5	13.5	13.5	13.5	---	---	---
11	7.0	6.5	7.0	10.0	9.5	10.0	13.5	13.0	13.5	---	---	---
12	7.0	6.5	7.0	10.0	9.5	10.0	13.5	13.0	13.0	---	---	---
13	7.0	6.5	6.5	10.5	9.5	10.0	13.5	13.0	13.0	---	---	---
14	7.0	6.5	7.0	11.5	10.5	11.0	13.5	13.0	13.5	---	---	---
15	7.0	6.5	7.0	10.5	10.0	10.5	13.5	13.0	13.5	18.0	17.5	17.5
16	7.5	6.5	7.0	10.5	10.0	10.0	13.5	13.0	13.5	18.0	17.5	18.0
17	7.0	6.5	7.0	10.0	10.0	10.0	14.0	13.5	13.5	18.0	17.0	17.5
18	7.0	7.0	7.0	11.0	10.0	10.5	14.0	13.5	14.0	18.0	17.0	17.5
19	7.5	7.0	7.0	10.5	10.5	10.5	14.0	13.5	13.5	19.0	17.0	18.0
20	10.0	7.0	8.5	10.5	10.0	10.5	14.0	13.5	14.0	19.0	18.5	19.0
21	8.5	7.5	8.0	11.0	10.5	10.5	14.5	13.5	14.0	19.0	18.5	19.0
22	10.0	7.0	8.0	11.0	10.5	11.0	16.5	14.5	15.5	19.0	18.5	18.5
23	7.5	7.0	7.5	11.5	11.0	11.0	16.0	15.5	16.0	19.0	18.5	18.5
24	7.5	7.5	7.5	11.0	10.5	11.0	15.5	14.5	15.0	19.0	18.5	18.5
25	7.5	7.5	7.5	11.5	10.5	11.0	15.0	14.5	15.0	19.0	18.5	19.0
26	8.0	7.5	8.0	12.0	11.0	11.5	14.5	13.5	14.0	19.5	18.5	19.0
27	8.0	8.0	8.0	12.0	11.5	11.5	15.0	13.5	14.0	20.5	18.5	19.5
28	8.0	7.5	8.0	12.5	11.5	12.0	15.5	13.0	14.5	21.0	20.0	20.5
29	---	---	---	14.5	11.0	12.5	15.0	15.0	15.0	20.0	19.5	19.5
30	---	---	---	14.5	11.0	12.5	15.5	15.0	15.0	20.0	19.5	19.5
31	---	---	---	12.5	11.0	12.0	---	---	---	21.0	18.0	19.0
MONTH	---	---	---	14.5	8.0	10.3	16.5	11.5	13.8	---	---	---

RED RIVER MAIN STEM

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE		JULY			AUGUST			SEPTEMBER		
1	20.5	16.5	18.5	23.0	22.0	22.5	25.0	22.5	24.5	26.5	23.5	25.0
2	20.0	18.0	20.0	23.5	22.5	23.0	25.0	22.0	23.5	26.5	24.0	25.0
3	20.0	20.0	20.0	23.0	21.0	22.5	25.5	22.0	23.5	26.5	24.0	25.0
4	20.0	20.0	20.0	24.5	21.0	23.5	25.5	22.0	24.0	26.5	24.0	25.0
5	20.5	20.0	20.0	23.5	21.5	23.0	25.5	22.5	24.0	26.5	24.0	25.0
6	20.0	19.5	20.0	23.5	22.0	23.0	25.0	22.5	24.0	25.0	24.0	24.0
7	20.5	20.0	20.0	23.5	21.5	22.5	25.0	22.0	23.5	24.0	23.0	23.5
8	20.5	20.0	20.5	22.5	20.5	21.5	25.0	22.0	23.5	26.5	23.0	24.5
9	21.5	20.0	20.5	23.5	20.5	22.0	23.5	22.0	22.0	26.5	23.5	25.0
10	22.0	20.0	20.5	23.5	21.5	22.5	22.0	21.5	21.5	27.0	24.0	25.0
11	21.0	20.5	20.5	23.0	21.5	22.5	25.0	21.5	23.5	26.5	24.0	25.0
12	21.0	20.5	20.5	23.0	21.0	22.5	25.5	22.5	24.5	26.5	24.0	25.0
13	21.5	20.5	21.0	23.5	21.0	22.5	25.5	22.5	24.5	25.0	23.5	24.0
14	21.5	21.0	21.5	24.0	21.0	23.0	25.5	23.0	24.5	23.5	23.5	23.5
15	21.5	20.5	21.0	24.0	22.0	23.0	25.0	23.0	24.0	25.5	23.5	24.0
16	22.0	20.5	21.0	24.0	22.0	23.0	25.0	22.5	24.0	25.5	24.0	24.5
17	23.5	21.0	22.5	24.0	22.0	23.5	25.5	23.0	24.0	25.5	24.0	24.5
18	22.5	22.0	22.0	24.5	22.0	23.5	26.0	23.0	24.5	25.5	24.0	24.5
19	22.0	21.5	21.5	24.0	22.0	23.5	26.0	23.5	25.0	26.0	24.0	24.5
20	21.5	21.5	21.5	24.5	22.5	24.0	26.5	24.0	25.5	25.0	24.0	24.0
21	22.0	19.5	21.0	24.5	22.5	24.0	26.5	24.5	26.0	24.0	23.5	23.5
22	21.5	18.5	20.0	24.5	22.5	24.0	27.0	24.5	26.0	25.5	23.5	24.5
23	22.0	19.0	21.5	24.5	22.5	24.0	26.5	24.0	25.5	26.0	24.0	24.5
24	22.5	21.0	21.5	24.5	22.5	24.0	26.5	23.5	25.0	25.5	24.0	24.5
25	22.5	21.5	22.5	24.5	22.5	24.0	26.5	23.5	25.0	25.5	24.0	25.0
26	23.0	22.0	22.5	25.0	22.0	23.5	26.5	23.5	25.0	25.5	23.5	24.5
27	22.5	22.0	22.5	25.0	21.5	23.0	26.5	23.5	25.0	25.5	23.5	24.5
28	22.0	20.0	21.0	25.0	21.5	24.0	26.5	23.5	25.0	25.5	23.5	24.5
29	22.5	19.0	21.0	25.0	22.5	24.0	26.5	23.5	25.0	25.0	23.5	24.5
30	23.0	22.0	22.0	25.0	22.5	24.0	26.5	23.5	24.5	25.0	23.5	24.5
31	---	---	---	25.0	22.5	24.5	26.5	23.5	24.5	---	---	---
MONTH	23.5	16.5	21.0	25.0	20.5	23.2	27.0	21.5	24.3	27.0	23.0	24.5

RED RIVER MAIN STEM

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07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'30", long 95°30'06", in NW 1/4 sec.11, T.8 S., R.17 E., Choctaw County, OK, Hydrologic Unit 11140101, on right downstream bank of bridge on U.S. Highway 271 at Arthur City, 10.6 mi downstream from Muddy Boggy River, 26.0 mi upstream from Kiamichi River, and at mile 633.1.

DRAINAGE AREA.--44,531 mi², of which 5,936 mi² probably is noncontributing.

PERIOD OF RECORD.--January to September 1905 (gage heights and discharge measurements only), October 1905 to December 1911, July 1936 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1891 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1241: Drainage area. WSP 1311: 1906-11.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft above sea level. From 1905-11 nonrecording gage at St. Louis- San Francisco Railway Co. bridge 200 ft upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records fair. Since October 1943, at least 10% of contributing drainage areas have been regulated by Lake Texoma, 92.8 mi upstream from station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1906-11, 1937-43) prior to regulation by Lake Texoma, 9,266 ft³/s (6,713,000 acre-ft/yr.).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1906-11, 1937-43).--Maximum discharge, 400,000 ft³/s May 28, 1908 (gage height, 43.2 ft), on basis of records for later years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21800	16700	40300	12200	2360	36600	4600	24100	13600	9550	7270	3320
2	15900	20200	35300	12000	3740	38900	8060	31100	6210	12100	7210	2880
3	12600	17100	32400	11700	2470	39500	9080	31400	5370	11900	7040	3700
4	11700	13700	33300	11700	1330	38400	12200	30300	16500	10100	4170	4070
5	11100	11200	31300	10500	3790	34900	41400	29800	19600	8040	3400	4080
6	9360	9910	28700	8230	6420	33000	41000	29700	19600	7640	4930	4060
7	7970	32300	26100	10500	10500	30500	23900	29700	19500	7490	5790	4070
8	7200	53300	24100	9910	16400	27100	12500	29700	19400	7340	5960	2090
9	7340	36100	22900	7710	17800	23600	13900	31300	19500	4880	4130	900
10	4830	28100	22200	6360	14700	23300	14900	31100	20500	2250	3500	1500
11	4660	22700	21800	5840	11900	23800	14300	27800	26600	4090	1830	3370
12	4130	21900	21500	5390	11100	23700	16800	30900	24600	5660	915	3500
13	3970	19300	21300	3250	17200	27800	21500	30800	22100	5650	3960	3550
14	4670	18000	20900	2370	27300	30700	19500	30400	22700	4050	5920	3050
15	5080	16200	21600	3640	23200	27100	21000	30400	19400	3560	6000	1750
16	3270	15800	24500	4540	14400	21900	19600	30000	18600	5220	5640	8830
17	2640	18700	24100	3460	10800	19300	21600	25500	18300	6490	5580	900
18	2810	26400	21900	4440	9760	17800	21400	20300	18200	6700	5450	1350
19	2480	26500	19700	4280	9480	15200	21100	22100	18200	6870	5600	1390
20	3320	22900	16500	2690	17000	14200	20900	21800	18900	6900	5700	1380
21	7040	21800	14200	1820	43900	13700	20800	18500	18400	7240	7100	1370
22	22200	20600	13600	4910	38100	12800	21500	20300	12100	7260	8680	1240
23	25900	17100	13500	6420	27700	12700	22700	22600	5060	7270	8890	870
24	22700	28300	13200	6490	21600	12500	22200	22600	4390	7290	8600	800
25	17800	53200	13000	4950	23100	12500	18200	23000	11300	7270	6220	1270
26	16900	42400	12800	3070	32900	15500	21800	23100	12000	7250	5490	1360
27	12200	32400	12600	1980	37000	17500	29600	21500	12000	7170	4880	3680
28	17300	29100	12500	1530	36300	14200	22000	19500	12100	5100	4690	2920
29	25300	32000	12400	3200	---	13400	14700	21400	10100	4530	4400	1870
30	21500	41700	12400	2020	---	10600	16700	19800	4460	6520	4330	2380
31	15200	---	12300	1400	---	5670	---	21200	---	7220	4290	---
TOTAL	350870	765610	652900	178500	492250	688370	589440	801700	469290	210600	167565	69500
MEAN	11320	25520	21060	5758	17580	22210	19650	25860	15640	6794	5405	2317
MAX	25900	53300	40300	12200	43900	39500	41400	31400	26600	12100	8890	4080
MIN	2480	9910	12300	1400	1330	5670	4600	18500	4390	2250	915	800
AC-FT	696000	1519000	1295000	354100	976400	1365000	1169000	1590000	930800	417700	332400	137900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1997#, BY WATER YEAR (WY)

	MEAN	7121	7620	7364	6493	8325	10510	11540	17530	18720	7945	4985	4954
MAX	40240	37170	32340	39930	24200	38610	55500	103900	83820	27700	34840	19010	
(WY)	1982	1975	1992	1992	1946	1987	1990	1990	1957	1989	1950	1950	
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859	
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1944 - 97#

ANNUAL TOTAL	3401690	5436595											
ANNUAL MEAN	9294	14890											
HIGHEST ANNUAL MEAN										9420			
LOWEST ANNUAL MEAN										23290			1990
HIGHEST DAILY MEAN	53300	Nov 8	53300	Nov 8	269000	May 4	1990			2754			1964
LOWEST DAILY MEAN	970	Mar 5	800	Sep 24	134	Dec 11	1956			134			
ANNUAL SEVEN-DAY MINIMUM	1680	May 17	1180	Sep 20	134	Dec 11	1956			134			
INSTANTANEOUS PEAK FLOW			59800	Nov 8	275000	May 4	1990			34.21			
INSTANTANEOUS PEAK STAGE			18.08	Nov 8	6824000	May 4	1990						
ANNUAL RUNOFF (AC-FT)	6747000	10780000											
10 PERCENT EXCEEDS	22200	30300								24500			
50 PERCENT EXCEEDS	5050	12700								4320			
90 PERCENT EXCEEDS	2100	3060								1360			

e Estimated

Period of regulated streamflow.

RED RIVER MAIN STEM

07336820 RED RIVER NEAR DE KALB, TX

LOCATION.--Lat 33°40'59", long 94°41'39", Bowie County, Hydrologic Unit 11140106, on right bank at downstream side of bridge on U.S. Highway 259, 4.8 mi upstream from North Mill Creek, 13 mi north of De Kalb, and at mile 556.9.

DRAINAGE AREA.--47,348 mi², of which 5,936 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 302.92 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in December 1967, at least 10% of contributing drainage area has been regulated by Lake Texoma (station 07331500) located approximately 169 mi upstream, and low flows may be affected by releases for the generation of electric power. Storage and/or releases from Lake Hugo on the Kiamichi River, a tributary to the Red River about 45 mi upstream, may also affect flows. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1957, 205,000 ft³/s June 1957 (gage height, 32.2 ft), from rating curve extended above 186,500 ft³/s. The greatest flood since 1936 occurred in February 1938, stage unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32200	27000	68700	16700	4570	54000	7600	20500	22200	8500	9540	5510
2	29500	28700	65600	16600	3580	57000	5390	26400	16700	8630	9490	5270
3	22800	34100	56900	16500	4490	60400	7350	33500	8810	13100	8640	4580
4	16900	32200	53100	16400	5010	60700	10800	35000	6110	13900	8540	4490
5	14000	27800	55400	16200	4210	56600	29200	34400	13000	13000	7240	5030
6	13100	25700	53300	15400	5490	50800	53300	34400	19400	10500	5480	5190
7	11600	34000	49800	12700	10800	47500	48800	34300	20800	9590	5760	5190
8	9730	68400	46900	14200	16200	42500	30600	34200	21100	9300	7110	5200
9	8540	77300	44600	15000	20800	37200	21200	34900	21500	9100	7470	4890
10	8480	58100	43700	12700	21900	34000	20700	35400	22700	7850	6750	3360
11	6620	47100	42800	10100	21100	31500	22400	34700	23900	5660	5450	2860
12	5740	42700	41900	9240	19600	30900	21900	31400	30300	5180	4870	3810
13	5390	42300	38900	8560	20700	39300	23100	32200	31400	6810	3730	4490
14	5050	41300	35700	7190	28600	44400	26600	32400	27800	7250	3790	4610
15	5180	39800	35500	5890	34300	42300	23600	32000	28500	6800	6160	4630
16	5700	37800	38700	5780	28800	37500	22600	32000	27200	6070	7030	4160
17	5300	41500	39500	6970	21000	31300	22100	31400	24100	7050	6910	3140
18	3960	46600	38300	6580	17400	29000	22400	26700	22900	8620	6840	2600
19	3720	50900	34100	6520	14200	27600	22400	21700	22700	9160	6720	2660
20	3670	47800	29700	6870	18000	25000	21800	21900	23600	9420	6740	2920
21	4570	42700	24300	6320	52700	22600	22100	22400	23200	9460	6800	2920
22	16700	38700	20900	5180	67700	20100	22900	19800	21900	9700	7470	2900
23	30900	33500	19500	5430	53800	18400	24700	20100	17400	9900	9310	3030
24	35700	37000	19100	8390	38400	17600	25800	23000	9560	9860	10200	2830
25	33900	74500	18600	9040	34900	17300	25400	23500	6910	9880	10300	2440
26	30600	95200	18100	8070	39100	17100	26400	23800	11200	9870	8900	2400
27	29300	77200	17800	6300	50900	19100	33000	24200	15300	9850	7180	2750
28	26600	59000	17400	5130	54700	21200	37400	23900	14900	9820	6420	2930
29	30700	53000	17200	5330	---	16900	29500	23500	14600	8830	6130	4560
30	37700	59300	17000	5130	---	14900	21900	24900	14300	7370	5750	3750
31	34100	---	16900	5750	---	12700	---	22600	---	8000	5600	---
TOTAL	527950	1421200	1119900	296170	712950	1037400	732940	871100	583990	278030	218320	115100
MEAN	17030	47370	36130	9554	25460	33460	24430	28100	19470	8969	7043	3837
MAX	37700	95200	68700	16700	67700	60700	53300	35400	31400	13900	10300	5510
MIN	3670	25700	16900	5130	3580	12700	5390	19800	6110	5180	3730	2400
AC-FT	1047000	2819000	2221000	587500	1414000	2058000	1454000	1728000	1158000	551500	433000	228300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997#, BY WATER YEAR (WY)

	MEAN	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	9274	15020	14830	11360	14490	20090	18890	25620	26620	9760	5876	6153																			
MAX	39980	53170	45440	49500	31000	48590	62330	125500	67360	35030	21150	24010																			
(WY)	1982	1975	1972	1992	1969	1987	1990	1990	1987	1982	1995	1974																			
MIN	1783	2105	1608	1699	2876	2492	3005	4707	2909	2598	1418	1368																			
(WY)	1979	1980	1978	1981	1976	1980	1981	1972	1988	1972	1972	1988																			

SUMMARY STATISTICS

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1968 - 1997#
ANNUAL TOTAL	5416210	7915050	
ANNUAL MEAN	14800	21690	14770
HIGHEST ANNUAL MEAN			30100
LOWEST ANNUAL MEAN			4690
HIGHEST DAILY MEAN	95200	95200	278000
LOWEST DAILY MEAN	1380	2400	254
ANNUAL SEVEN-DAY MINIMUM	2420	2750	529
INSTANTANEOUS PEAK FLOW		97300	279000
INSTANTANEOUS PEAK STAGE		26.61	34.42
ANNUAL RUNOFF (AC-FT)	10740000	15700000	10700000
10 PERCENT EXCEEDS	38700	44500	40500
50 PERCENT EXCEEDS	8460	18600	7160
90 PERCENT EXCEEDS	3100	5020	2200

Period of regulated streamflow.

RED RIVER MAIN STEM

07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 02...	--	--	--	--	--	--	--	--	--	--
DEC 10...	--	--	--	--	--	--	--	--	--	--
FEB 05...	--	1	130	<0.50	2.0	<5.0	<3.0	<10	19	<10
APR 03...	--	--	--	--	--	--	--	--	--	--
MAY 28...	--	--	--	--	--	--	--	--	--	--
JUL 30...	5.1	2	134	<0.50	<1.0	<1.0	<3.0	1.1	<3.0	<1.0
SEP 09...	6.9	2	153	--	<1.0	<1.0	--	2.4	<3.0	<1.0
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 02...	--	--	--	--	--	--	--	--	--	--
DEC 10...	--	--	--	--	--	--	--	--	--	--
FEB 05...	10	37	<0.1	<10	<10	<1	1.0	720	<6	16
APR 03...	--	--	--	--	--	--	--	--	--	--
MAY 28...	--	--	--	--	--	--	--	--	--	--
JUL 30...	16	2.8	<0.1	<10	<10	<1	<1.0	968	<6	<3.0
SEP 09...	--	6.9	<0.1	--	<10	<1	<1.0	--	--	<3.0

RED RIVER MAIN STEM

185

07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.7, T.14 S., R.28 W., Miller County, Hydrologic Unit 11140106, near right bank on downstream side of southbound bridge on U.S. Highway 71 at Index, 2.2 mi south of Ogden, 20.6 mi upstream from Little River, and at mile 485.3.

DRAINAGE AREA.--48,030 mi², of which 5,936 mi² is probably noncontributing.

PERIOD OF RECORD.--July 1936 to current year. Gage-height records collected at same site since 1917 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft above sea level. Prior to Dec. 12, 1939, nonrecording gage, and Dec. 12, 1939, to July 19, 1979, water-stage recorder, at site 500 ft downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since Oct. 31, 1943 at least 10% of contributing drainage area has been regulated by Lake Texoma, 241 mi upstream, capacity, 5,392,900 acre-ft. Additional regulation since Sept. 28, 1967, by Pat Mayse Lake, capacity, 352,700 acre-ft, and since Jan. 18, 1974, by Hugo Lake (Oklahoma) capacity, 966,700 acre-ft. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e36300	29300	66600	12600	5210	59700	12500	28200	24700	13300	6730	5250
2	e31700	26000	70900	12400	5110	59900	8490	25900	23900	9240	7820	5130
3	e27800	26900	65200	12300	4140	64900	6210	30700	19100	6820	8550	5080
4	23400	29800	56500	12300	4440	66400	6930	36100	11700	10300	8030	4670
5	18600	27800	54200	12100	5250	66100	17100	36500	8020	12300	7700	4230
6	15700	24400	55800	11800	4970	61300	41900	35700	12100	12100	7290	4370
7	14500	24700	53400	11400	4980	53900	54500	35200	19600	10100	5660	4760
8	13200	41400	49300	9600	9650	49300	45400	34800	21700	8790	5290	4820
9	11200	64000	46100	10900	16500	43100	32900	34800	21800	8340	6150	4840
10	9810	62200	43600	12200	21400	37900	25800	35000	21600	8110	6730	4810
11	9340	47600	42700	10400	22100	34300	25300	35200	21900	7530	6650	4010
12	8120	40000	41500	7950	20900	32400	26900	34100	23100	5690	5580	2920
13	6980	37200	39700	7050	22600	39100	26500	32000	27300	4420	4830	2800
14	6560	37400	36100	6480	27500	51000	27900	32600	28400	5200	3930	3780
15	6150	36400	33200	5760	34900	49400	30400	32600	26100	6390	3180	4200
16	5990	35200	35800	4840	35100	43500	27500	32300	26800	6510	4220	4310
17	6260	35200	38400	4390	27500	37400	26500	32100	26300	5690	5910	4230
18	6400	40000	37400	4980	19700	32000	26100	31300	23900	5770	6280	3630
19	5520	43100	34100	5200	15800	30200	26200	27900	22200	6900	6200	2730
20	4910	44500	28900	4880	14000	28700	26100	24200	21600	7880	6160	2360
21	5090	40400	24200	5110	30900	25800	25300	24200	22200	8190	6060	2480
22	7740	36000	19500	5030	65500	22900	25600	24700	22000	8340	6180	2640
23	18900	32400	16600	4380	69700	19800	26600	22100	20800	8450	6430	2770
24	30300	29100	15000	4310	54000	17600	28000	22300	17300	8700	7320	2890
25	32200	45700	14300	6090	41100	16900	28900	24900	10200	8760	8560	2980
26	29200	78300	14100	7270	39900	16900	30700	25400	6550	8760	8960	2560
27	26300	91700	13800	6980	50600	16700	37000	25700	8060	8780	8600	2230
28	24900	77500	13600	6110	58800	18100	45200	26000	12900	8760	7230	2250
29	23200	61300	13300	5090	---	19700	45300	25600	13900	8720	6280	2500
30	27100	60100	12900	4920	---	16400	36400	25100	13200	8380	5770	2940
31	32100	---	12700	4880	---	14500	---	26300	---	7140	5510	---
TOTAL	525470	1305600	1099400	239700	732250	1145800	850130	919500	578930	254360	199790	109170
MEAN	16950	43520	35460	7732	26150	36960	28340	29660	19300	8205	6445	3639
MAX	36300	91700	70900	12600	69700	66400	54500	36500	28400	13300	8960	5250
MIN	4910	24400	12700	4310	4140	14500	6210	22100	6550	4420	3180	2230
AC-FT	1042000	2590000	2181000	475400	1452000	2273000	1686000	1824000	1148000	504500	396300	216500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1997#, BY WATER YEAR (WY)

	MEAN	8387	11050	11980	10460	13930	16680	17240	24590	22820	9978	5886	6109
MAX	41690	47140	47910	52290	38960	67730	61460	121000	94400	33990	39230	30340	
(WY)	1946	1975	1992	1992	1946	1945	1990	1990	1957	1989	1950	1950	
MIN	716	642	1206	1360	2127	2233	2096	4199	3098	1162	1025	909	
(WY)	1957	1957	1957	1964	1964	1967	1956	1972	1988	1944	1944	1944	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1944 - 1997#
ANNUAL TOTAL	5379050	7960100	
ANNUAL MEAN	14700	21810	13240
HIGHEST ANNUAL MEAN			30420
LOWEST ANNUAL MEAN			4383
HIGHEST DAILY MEAN	91700	Nov 27	268000
LOWEST DAILY MEAN	2070	Mar 9	384
ANNUAL SEVEN-DAY MINIMUM	2900	Mar 6	397
INSTANTANEOUS PEAK FLOW			270000
INSTANTANEOUS PEAK STAGE			32.30
INSTANTANEOUS LOW FLOW			378
ANNUAL RUNOFF (AC-FT)	10670000	15790000	9594000
10 PERCENT EXCEEDS	36300	45200	35500
50 PERCENT EXCEEDS	9070	18600	6000
90 PERCENT EXCEEDS	3570	4840	2290

e Estimated.

a Prior to regulation, water years 1937-43, 11,970 ft³/s.

b Maximum discharge for period of record, 297,000 ft³/s Feb. 22, 1938.

c Maximum gage height for period of record, 34.25 ft Feb. 22, 1938 from graph based on gage readings.

Period of regulated streamflow.

RED RIVER BASIN

07342465 SOUTH SULPHUR RIVER AT COMMERCE, TX

LOCATION.--Lat 33°12'42", long 95°54'50", Hunt County, Hydrologic Unit 11140301, on right bank at downstream side of bridge on south-bound State Highway 50, 13 mi. upstream from Dunbar Creek, and 2.8 mi. south of Commerce.

DRAINAGE AREA.--150 mi².

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 460.74 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 7	1215	3,730	17.21	Feb. 20	2030	8,090	26.11
Nov. 25	0915	6,520	23.60	Mar. 13	0115	2,940	16.13
Nov. 30	1600	3,290	17.01	Apr. 05	1230	6,560	24.56
Feb. 13	1300	5,470	22.53	Jun. 14	0845	2,710	15.52

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	308	698	4.4	3.4	173	7.5	17	23	.63	.00	.01
2	1.5	828	134	4.2	2.8	578	5.2	12	8.4	.44	.00	.01
3	.84	114	53	4.3	2.7	826	4.6	8.2	4.3	.32	.00	.01
4	.49	28	27	3.9	2.3	218	2150	6.0	2.5	.23	.00	.00
5	.31	13	19	3.5	1.9	134	4920	4.7	1.5	.16	.00	.00
6	.22	7.6	17	3.1	2.4	151	1160	4.1	1.0	.14	.00	.00
7	.13	2240	15	3.1	499	51	74	3.5	.40	.14	.06	.00
8	.07	2390	11	28	467	29	32	3.1	.36	.14	18	.00
9	.04	160	8.0	85	135	25	20	2.7	1.0	.19	6.4	.00
10	.03	34	6.5	29	59	286	15	2.3	228	.15	2.1	.00
11	.02	15	5.2	19	33	124	27	2.0	63	.07	.94	.00
12	.01	8.4	4.4	11	1420	627	163	1.8	14	.05	.55	.00
13	.01	5.3	4.0	7.1	4960	1530	54	1.6	13	.05	13	.00
14	.01	3.7	5.1	5.2	1360	143	23	1.4	1610	.04	33	.00
15	.01	2.9	366	5.1	160	45	14	1.7	168	.02	1.2	.00
16	.01	2.4	489	4.2	80	39	11	1.4	32	.02	.65	.00
17	.00	840	146	3.5	45	34	8.4	1.2	11	.01	.32	.00
18	.00	365	58	3.4	25	29	7.0	1.1	5.0	.01	.21	.00
19	.00	63	28	5.7	229	24	5.9	1.5	2.9	.01	.12	.00
20	.00	23	16	3.9	4570	20	5.3	1.9	1.9	.01	.08	.00
21	.03	13	12	3.2	3440	16	5.0	1.4	1.2	.01	.08	.00
22	29	8.6	11	3.0	458	11	8.5	17	.83	.01	.10	.00
23	9.6	6.4	10	4.5	125	9.6	18	13	.70	.01	.10	.00
24	6.8	2870	9.3	94	71	8.4	22	7.7	.55	.00	.09	.00
25	4.2	4560	7.8	68	53	15	234	3.9	.47	.00	.05	.00
26	2.3	868	6.8	26	279	26	1830	2.6	.38	.00	.03	.04
27	1.1	148	5.7	14	442	23	1250	2.0	.38	.00	.02	.11
28	1260	73	6.3	9.2	168	15	171	1.6	1.0	.00	.02	.07
29	1730	1100	4.8	6.2	---	10	63	1.2	2.0	.00	.01	.03
30	159	2290	4.6	4.8	---	31	28	1.3	1.1	.00	.01	.02
31	31	---	4.3	4.0	---	15	---	11	---	.00	.01	---
TOTAL	3239.13	19388.3	2192.8	473.5	19093.5	5266.0	12336.4	141.9	2199.87	2.86	77.15	0.30
MEAN	104	646	70.7	15.3	682	170	411	4.58	73.3	.092	2.49	.010
MAX	1730	4560	698	94	4960	1530	4920	17	1610	.63	33	.11
MIN	.00	2.4	4.0	3.0	1.9	8.4	4.6	1.1	.36	.00	.00	.00
AC-FT	6420	38460	4350	939	37870	10450	24470	281	4360	5.7	153	.6
CFSM	.70	4.31	.47	.10	4.55	1.13	2.74	.03	.49	.00	.02	.00
IN.	.80	4.81	.54	.12	4.74	1.31	3.06	.04	.55	.00	.02	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997
MEAN	189	221	261	87.8	244	191
MAX	451	646	804	224	682	346
(WY)	1994	1997	1992	1992	1997	1992
MIN	.008	.093	.33	8.89	.12	8.01
(WY)	1993	1996	1996	1996	1996	1996

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1992 - 1997

ANNUAL TOTAL	27662.09	64411.71	157
ANNUAL MEAN	75.6	176	297
HIGHEST ANNUAL MEAN			7.81
LOWEST ANNUAL MEAN			1992
HIGHEST DAILY MEAN	4560	Nov 25	8230
LOWEST DAILY MEAN	.00	Apr 29	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Apr 29	.00
INSTANTANEOUS PEAK FLOW		8090	11400
INSTANTANEOUS PEAK STAGE		26.11	27.60
ANNUAL RUNOFF (AC-FT)	54870	127800	113500
ANNUAL RUNOFF (CFSM)	.50	1.18	1.04
ANNUAL RUNOFF (INCHES)	6.86	15.97	14.20
10 PERCENT EXCEEDS	63	282	267
50 PERCENT EXCEEDS	.32	4.7	3.3
90 PERCENT EXCEEDS	.00	.00	.00

RED RIVER BASIN

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07342470 SOUTH SULPHUR RIVER NEAR COMMERCE, TX

LOCATION.--Lat 33°13'11", long 95°51'45", Hunt County, Hydrologic Unit 11140301, at State Highway 11, 0.7 mi upstream from St. Louis Southwestern Railroad bridge, 1.8 mi downstream from Dunbar Creek, and 3.0 mi southeast of Commerce.

DRAINAGE AREA.--189 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 11...	1040	1.0	775	8.2	18.0	60	25	8.2	87	1.6	--	--
DEC 10...	0851	10	491	8.0	12.0	72	18	10.4	98	1.0	K110	700
MAR 10...	1700	824	229	7.8	12.0	100	600	8.9	83	3.7	K7300	K12000
MAY 29...	1424	3.1	809	8.4	27.0	20	13	16.0	202	4.4	K140	1400
JUL 09...	1310	1.3	721	8.9	31.0	30	13	19.2	261	4.2	K25	110
31...	1240	1.7	782	9.0	31.0	32	11	13.4	183	0.3	K18	200

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 11...	70	0	24	2.5	130	7	7.1	170	68	61	0.40	7.3
DEC 10...	160	10	56	5.0	37	1	4.5	150	53	20	0.20	12
MAR 10...	86	0	30	2.5	12	0.6	2.6	90	17	5.9	0.20	6.8
MAY 29...	230	34	76	8.8	76	2	5.4	190	110	54	0.31	8.1
JUL 09...	130	0	43	4.6	98	4	7.2	140	87	58	0.30	4.1
31...	90	0	30	3.3	119	5	7.3	150	88	62	0.39	1.3

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 11...	473	36	3	33	14.9	0.070	15.0	0.040	0.76	0.80	1.90
DEC 10...	288	34	6	28	2.09	0.010	2.10	0.030	0.57	0.60	0.370
MAR 10...	134	1470	200	1270	0.470	0.010	0.480	<0.015	--	0.50	0.070
MAY 29...	479	29	13	16	4.49	0.026	4.51	<0.015	--	0.57	0.526
JUL 09...	434	35	8	27	10.7	0.189	10.9	<0.015	--	0.85	1.12
31...	451	34	13	21	9.76	0.368	10.1	0.088	1.1	1.2	1.21

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 11...	2.10	6.4	6.7	--	--	--	--	--	--	--	--
DEC 10...	0.380	1.2	7.8	--	--	--	--	--	--	--	--
MAR 10...	0.080	0.25	33	3	39	<0.50	<1.0	<5.0	<3.0	<10	33
MAY 29...	0.505	1.5	12	2	95	<0.50	<1.0	<5.0	<3.0	<10	<3.0
JUL 09...	0.961	2.9	9.6	--	--	--	--	--	--	--	--
31...	1.13	3.5	9.0	4	40	<0.50	<1.0	<5.0	<3.0	16	11

RED RIVER BASIN

07342470 SOUTH SULPHUR RIVER NEAR COMMERCE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 11...	--	--	--	--	--	--	--	--	--	--	--
DEC 10...	--	--	--	--	--	--	--	--	--	--	--
MAR 10...	<10	<4	2.0	<0.1	<10	<10	<1	<1.0	320	<6	<3.0
MAY 29...	<10	12	42	<0.1	<10	<10	<1	<1.0	784	<6	37
JUL 09...	--	--	--	--	--	--	--	--	--	--	--
31...	<10	11	20	<0.1	32	<10	<1	<1.0	242	8	57

RED RIVER BASIN

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07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX

LOCATION.--Lat 33°15'59", long 95°54'55", Hunt County, Hydrologic Unit 11140301, at right end of bridge on State Highway 11 at downstream side of highway embankment, 1.5 mi upstream from Willow Creek and 1.5 mi northwest of Post Office in Commerce.

DRAINAGE AREA.--44.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage not determined.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 25	0215	2,530	14.86	Apr. 5	0600	2,730	15.01
Feb. 13	0645	3,830	15.60	Jun. 14	0745	6,870	16.68
Feb. 20	0700	2,990	15.17				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	142	338	.72	.59	30	2.0	6.2	6.3	.04	.00	.00
2	.00	154	38	.62	.49	203	1.7	3.8	2.5	.04	.00	.00
3	.00	16	16	.66	.42	268	1.5	2.1	.77	.07	.00	.00
4	.00	3.0	7.9	.64	.44	47	785	1.4	.26	.08	.00	.00
5	.00	.71	6.6	.56	.43	41	2190	1.1	.10	.07	.00	.00
6	.00	.37	5.8	.56	.55	50	214	.87	.05	.06	.00	.00
7	.00	717	3.9	.56	241	11	22	.74	.03	.05	.18	.00
8	.00	402	2.5	9.3	179	4.4	11	.61	.01	.04	5.4	.00
9	.00	16	1.4	16	31	11	7.3	.51	.01	.02	5.0	.00
10	.00	3.9	1.2	10	15	158	5.5	.47	9.5	.01	1.1	.00
11	.00	1.4	1.2	4.7	9.1	34	8.5	.39	13	.01	.47	.00
12	.00	.51	1.2	2.1	499	280	54	.41	3.1	.00	.28	.00
13	.00	.33	.99	1.2	2760	1030	18	.34	78	.00	.24	.00
14	.00	.29	.90	.89	317	96	8.6	.32	3400	.00	.16	.00
15	.00	.28	175	.87	37	27	5.5	.29	190	.00	.09	.00
16	.00	.23	162	.85	14	13	3.9	.31	21	.00	.06	.00
17	.00	272	37	.75	6.3	9.3	3.0	.30	8.4	.00	.04	.00
18	.00	101	15	.67	3.6	8.2	2.3	.27	3.8	.00	.02	.00
19	.00	14	6.1	.61	102	6.6	1.9	2.8	1.8	.00	.01	.00
20	.00	4.8	3.1	.56	2190	5.1	1.6	10	1.0	.00	.00	.00
21	.44	2.2	2.4	.53	1300	4.4	1.4	44	.67	.00	.00	.00
22	3.4	1.0	2.3	.56	73	3.7	2.0	15	.47	.00	.02	.00
23	.90	1.1	2.1	5.8	21	3.0	5.9	3.8	.31	.00	.02	.00
24	.22	1180	1.5	41	8.4	2.4	5.8	16	.30	.00	.01	.00
25	.07	1690	1.2	22	5.9	4.2	114	3.0	.22	.00	.01	.00
26	.05	238	.85	8.0	140	12	896	1.2	.18	.00	.00	.00
27	.06	31	.80	3.9	139	8.8	406	1.2	.15	.00	.00	.00
28	229	13	.71	2.0	39	5.2	56	1.0	.11	.00	.00	.00
29	127	371	.68	1.1	---	3.6	20	.64	.09	.00	.00	.00
30	11	979	.68	.68	---	9.1	10	.26	.06	.00	.00	.00
31	1.7	---	.68	.58	---	3.5	---	4.7	---	.00	.00	---
TOTAL	373.85	6356.12	837.69	138.97	8133.22	2392.5	4864.4	124.03	3742.19	0.49	13.11	0.00
MEAN	12.1	212	27.0	4.48	290	77.2	162	4.00	125	.016	.42	.000
MAX	229	1690	338	41	2760	1030	2190	44	3400	.08	5.4	.00
MIN	.00	.23	.68	.53	.42	2.4	1.4	.26	.01	.00	.00	.00
AC-FT	742	12610	1660	276	16130	4750	9650	246	7420	1.0	26	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997
MEAN	54.0	75.5	93.7	34.5	94.0	73.2
MAX	179	212	257	81.1	290	130
(WY)	1994	1997	1992	1992	1997	1993
MIN	.001	.41	.000	3.45	.10	5.41
(WY)	1993	1996	1996	1996	1996	1992

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1992 - 1997
ANNUAL TOTAL	8421.54	26976.57	
ANNUAL MEAN	23.0	73.9	57.8
HIGHEST ANNUAL MEAN			99.8
LOWEST ANNUAL MEAN			2.37
HIGHEST DAILY MEAN	1690	3400	3400
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		6870	6870
INSTANTANEOUS PEAK STAGE		16.68	16.68
ANNUAL RUNOFF (AC-FT)	16700	53510	41860
10 PERCENT EXCEEDS	16	119	81
50 PERCENT EXCEEDS	.07	.89	.64
90 PERCENT EXCEEDS	.00	.00	.00

07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
DEC 10...	1017	1.3	359	7.8	12.0	68	14	11.0	104	0.9	K30	130
MAR 11...	1000	33	265	7.7	14.0	140	72	8.9	87	2.3	2800	7900
MAY 29...	1115	0.57	273	7.2	24.0	100	29	6.2	74	1.8	210	1500
JUL 09...	1007	0.02	461	7.7	26.0	30	4.9	6.0	75	1.1	K7	42

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
DEC 10...	140	16	51	4.1	15	0.5	4.3	130	37	7.0	0.20	12
MAR 11...	100	5	35	3.6	13	0.6	3.0	98	25	4.9	0.20	9.3
MAY 29...	99	14	35	2.7	11	0.5	3.4	85	27	6.0	0.20	8.8
JUL 09...	200	26	67	6.5	24	0.7	4.6	170	62	7.7	0.28	6.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLA- TILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
DEC 10...	208	21	4	17	--	<0.010	<0.050	<0.015	--	0.40	0.140
MAR 11...	154	120	110	10	0.070	0.010	0.080	0.030	0.67	0.70	0.080
MAY 29...	157	45	15	30	2.21	0.221	2.43	0.067	0.79	0.86	0.145
JUL 09...	280	9	4	5	--	<0.010	0.051	<0.015	--	0.39	0.058

[illegible][illegible]

07342495 COOPER LAKE NEAR COOPER, TX

LOCATION.--Lat 33°20'00", long 95°37'30", Delta-Hopkins County line, Hydrologic Unit 11140301, in control room near center of dam on South Sulphur River, about 4.0 mi southeast of Cooper, and at river mile 23.2.

DRAINAGE AREA.--479.0 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--The lake is formed by a rolled earthfill dam, 28,070 ft long, including the dike. Closure of dam and deliberate impoundment of water began Sept. 28, 1991. The spillway is a 700-foot wide vertical faced uncontrolled ogee weir located near the right abutment of the dam. The service spillway (outlet works) consists of both service and emergency gates and low-flow release facilities. The outlet works structures is 452 feet long, and consists of an approach channel, approach channel U-frame structure, intake structure and service bridge, over 10.5-foot diameter conduits, and a stilling basin and discharge channel. The emergency part of the outlet structure consists of five 40- x 20-foot tainter gates. The dam was built, and is owned by the U.S. Army Corps of Engineers in cooperation with the North Texas Municipal Water District, the Sulphur River Municipal Water District, and the city of Irving. The principal uses of the dam and lake are for flood control, water supply, and recreation. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	459.0	-
Top of Flood Control Pool	446.2	441,400
Top of Conservation Pool	440.0	310,000
Invert, lowest gated outlet	398.0	-

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Records of elevations and contents provided by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 441,900 acre-ft May 10, 1995 (elevation, 445.05 ft); minimum since first appreciable storage and after deliberate impoundment, 77 acre-ft Oct. 1-3, 1991 (elevation, 395.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 425,600 acre-ft Feb. 21 (elevation, 445.53 ft); minimum, 286,500 acre-ft Sept. 30 (elevation, 438.74 ft).

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

395.0	77	425.0	102,500	440.0	310,300
405.0	5,970	430.0	155,100	444.0	392,000
413.0	26,210	435.0	222,800	448.0	482,500
419.0	57,050				

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292700	309500	420200	313600	311700	398300	311300	326500	317500	313600	301700	296400
2	292700	312400	419500	313400	311700	400600	311300	323000	317100	313000	301300	296000
3	292300	313000	415300	313600	311900	402800	311300	319100	316900	312600	300900	295500
4	297000	313200	410700	313400	311700	399300	311700	315500	316500	311900	300700	294900
5	296800	313200	405200	312800	311500	394600	360300	313400	316300	311300	300000	294300
6	296600	315000	400000	312400	312200	389800	369300	312400	316100	311100	299000	294000
7	296600	331300	394600	312100	316700	384700	366100	312200	315900	310700	302500	293800
8	296200	339700	389200	314400	319300	379600	363000	312200	315700	310700	302800	293600
9	296000	341700	383800	314400	319300	376200	358700	311900	316700	310100	302500	293200
10	295500	340900	379200	314000	317700	373900	353500	311700	317900	309700	302300	292500
11	295100	339900	373700	313200	315700	369700	350000	311500	317100	309300	302100	291900
12	294900	337900	368400	312600	328500	372000	344500	311100	315500	309200	301900	291300
13	294700	335100	362800	312100	369100	385100	339300	310700	321000	308600	302100	291000
14	294300	331900	358200	311900	380900	382400	334100	310500	342700	308400	301900	290800
15	294100	328900	357200	312400	379800	377300	328700	311500	348000	309300	301300	290600
16	294000	326900	355800	312100	377500	372400	324400	311500	348400	309000	300900	290200
17	294000	329900	352100	312200	374700	367200	320600	311300	346400	308600	300700	289900
18	293200	330100	347000	312100	371400	362600	317700	311100	342700	308200	300400	289500
19	292700	328300	341100	311900	372000	357000	315900	311700	338700	307800	300000	289300
20	292500	325300	336500	311900	398900	351900	314600	312100	334700	307400	299800	288900
21	295800	322000	333100	312200	425600	346600	314600	313800	330500	307200	299200	288400
22	295600	319400	329500	312200	424200	341100	314000	313800	326500	306700	300000	288900
23	295100	318900	326300	314200	419500	335700	312600	314200	323600	306100	299800	289300
24	294700	346200	322800	315900	414500	330300	312400	314400	321000	305700	299400	288700
25	294700	376800	319600	315500	410000	325900	318700	314400	318500	305300	298900	288200
26	294700	385600	317500	315000	409400	321600	334500	314800	317300	304900	298500	287600
27	295500	386000	316300	314800	406500	318500	342900	315500	316500	304600	298100	287300
28	298900	384500	315700	313200	402600	316100	341500	315200	315700	304400	297700	286900
29	303000	395400	315000	312600	---	314800	336900	314800	315000	303600	297300	286700
30	304700	414900	314400	312100	---	313000	331900	317700	314400	302800	297000	286500
31	305300	---	314000	311700	---	311900	---	317700	---	302500	296800	---
MAX	305300	414900	420200	315900	425600	402800	369300	326500	348400	313600	302800	296400
MIN	292300	309500	314000	311700	311500	311900	311300	310500	314400	302500	296800	286500
(+)	439.74	445.05	440.19	440.07	444.49	440.08	441.10	440.38	440.21	439.59	439.29	438.74
(@)	+12500	+109600	-	-2300	+90900	-90700	+20000	-14200	-3300	-11900	-5700	-10300
CAL YR	MAX	420200	MIN	288600	(@)	+18700						
WTR YR	MAX	425600	MIN	286500	(@)	-6300						

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

(@) Change in contents, in acre feet.

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1992 to current year.

331938095374701 - COOPER LAKE SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
MAR													
10...	1534	377000	1.00	197	8.6	13.0	0.52	12.0	116		K1	K1	71
10...	1538	--	10.0	197	8.0	12.0	--	9.4	89	--	--	--	--
10...	1543	--	20.0	199	7.9	12.0	--	9.3	88	--	--	--	--
10...	1547	--	30.0	198	7.8	12.0	--	9.0	85	--	--	--	--
10...	1551	--	40.0	199	7.8	12.0	--	9.0	85	--	--	--	--
10...	1555	--	46.0	199	7.6	12.0	--	9.7	91	--	--	--	71
MAY													
29...	1259	316000	1.00	190	8.0	24.0	0.49	8.1	98		K1	K2	73
29...	1302	--	10.0	190	8.0	23.0	--	7.9	94	--	--	--	--
29...	1305	--	20.0	191	7.3	21.5	--	5.1	59	--	--	--	--
29...	1309	--	30.0	193	7.0	20.0	--	2.6	29	--	--	--	--
29...	1313	--	42.0	198	6.8	19.5	--	0.8	9	--	--	--	77
JUL													
31...	1217	304000	1.00	197	7.7	30.0	1.31	5.0	67		K1	K1	75
31...	1221	--	10.0	198	7.3	29.5	--	2.6	34	--	--	--	--
31...	1225	--	20.0	200	7.0	28.5	--	0.3	4	--	--	--	--
31...	1229	--	30.0	209	6.9	26.0	--	0.4	5	--	--	--	--
31...	1234	--	41.0	225	6.9	24.0	--	0.8	10	--	--	--	82

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
MAR												
10...	0	24	2.6	9.9	0.5	3.3	74	13	6.1	0.20	3.2	108
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	0	24	2.6	9.8	0.5	3.3	74	12	5.8	0.20	3.5	107
MAY												
29...	3	25	2.6	8.9	0.5	3.3	70	11	4.5	0.18	1.6	100
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	3	26	2.8	9.5	0.5	3.3	74	11	4.6	0.21	4.7	109
JUL												
31...	0	25	2.7	9.1	0.5	3.0	79	10	4.6	0.21	1.6	105
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	0	28	3.0	9.3	0.4	3.0	92	6.0	4.7	0.22	6.5	122

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR											
10...	0.190	0.010	0.200	<0.015	--	0.50	<0.010	0.010	0.03	20	2.0
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.210	0.020	0.230	0.030	0.57	0.60	<0.010	0.020	0.06	14	3.0
MAY											
29...	--	<0.010	0.240	<0.015	--	0.41	<0.010	<0.010	--	7.6	3.4
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<0.010	0.455	<0.015	--	0.35	<0.010	0.026	0.08	10	291
JUL											
31...	--	<0.010	<0.050	<0.015	--	0.25	<0.010	<0.010	--	6.4	2.8
31...	--	<0.010	<0.050	<0.015	--	0.29	<0.010	0.014	0.04	14	25
31...	--	<0.010	<0.050	<0.015	--	0.31	0.061	0.045	0.14	95	323
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.050	0.537	0.50	1.0	0.334	0.368	1.1	2500	1300

RED RIVER BASIN

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07342495 COOPER LAKE NEAR COOPER, TX--Continued

332110095422201 - COOPER LAKE SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL AS CAC03	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
MAR												
10...	1616	1.00	195	8.8	14.5	0.40	11.8	118	K5	K18	71	0
10...	1621	10.0	197	8.4	13.5	--	10.8	105	--	--	--	--
10...	1626	24.0	205	7.5	12.5	--	7.9	75	--	--	74	0
MAY												
29...	1336	1.00	188	8.9	25.0	0.45	10.2	126	K1	K2	72	1
29...	1341	10.0	190	8.3	24.5	--	7.6	93	--	--	--	--
29...	1347	22.0	199	6.8	23.0	--	0.5	6	--	--	76	0
JUL												
31...	1254	1.00	199	8.6	31.5	0.73	7.1	97	K3	K2	76	0
31...	1257	10.0	201	7.9	30.5	--	4.8	65	--	--	--	--
31...	1301	20.0	212	7.1	30.0	--	1.3	17	--	--	78	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAR											
10...	24	2.6	10	0.5	3.3	73	12	6.0	0.20	2.6	104
10...	--	--	--	--	--	--	--	--	--	--	--
10...	25	2.7	11	0.6	3.3	76	12	6.4	0.20	3.6	111
MAY											
29...	25	2.6	9.6	0.5	4.1	71	11	4.6	0.21	0.93	100
29...	--	--	--	--	--	--	--	--	--	--	--
29...	26	2.8	9.6	0.5	3.8	77	12	4.5	0.21	2.6	108
JUL											
31...	26	2.7	9.5	0.5	3.0	81	11	4.8	0.21	2.0	108
31...	--	--	--	--	--	--	--	--	--	--	--
31...	27	2.8	9.5	0.5	3.1	89	9.0	4.9	0.19	3.4	114

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR											
10...	--	<0.010	<0.050	<0.015	--	0.60	<0.010	<0.010	--	6.0	4.0
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.110	0.010	0.120	0.160	0.54	0.70	<0.010	0.010	0.03	12	50
MAY											
29...	--	<0.010	0.076	<0.015	--	0.32	<0.010	<0.010	--	<3.0	2.0
29...	--	<0.010	0.077	<0.015	--	0.33	<0.010	<0.010	--	5.5	73
29...	0.094	0.016	0.110	0.022	0.34	0.36	<0.010	<0.010	--	6.2	270
JUL											
31...	--	<0.010	<0.050	0.017	0.29	0.31	0.017	0.019	0.06	4.6	13
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	<0.010	<0.050	0.173	0.35	0.52	<0.010	0.014	0.04	52	419

331818095422501 - COOPER LAKE SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL AS CAC03	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
MAR												
10...	1647	1.00	178	8.4	14.0	0.24	10.7	105	K1	K4	67	0
10...	1651	10.0	171	7.6	13.0	--	9.0	87	--	--	--	--
10...	1655	20.0	175	7.4	12.0	--	7.5	71	--	--	--	--
10...	1700	30.0	181	7.2	11.5	--	6.2	58	--	--	--	--
10...	1704	37.0	186	7.2	11.5	--	6.0	56	--	--	67	0
MAY												
29...	1430	1.00	187	9.0	24.5	0.37	11.4	139	K1	K1	72	4
29...	1438	10.0	187	8.8	23.5	--	9.4	113	--	--	--	--
29...	1446	20.0	192	7.2	21.5	--	1.1	13	--	--	--	--
29...	1453	33.0	207	6.9	19.5	--	0.4	4	--	--	81	0
JUL												
31...	1317	1.00	197	7.7	31.5	1.20	5.4	74	K3	K2	75	0
31...	1321	10.0	197	7.4	30.5	--	3.6	49	--	--	--	--
31...	1326	20.0	199	7.2	29.5	--	3.4	45	--	--	--	--
31...	1331	32.0	227	6.5	26.0	--	0.3	4	--	--	84	0

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

331818095422501 - COOPER LAKE SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAR											
10...	23	2.3	8.4	0.4	3.0	67	11	4.6	0.20	5.0	99
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	23	2.3	8.6	0.5	3.2	72	11	4.6	0.20	6.5	104
MAY											
29...	24	2.6	9.3	0.5	4.5	68	11	4.4	0.20	1.5	99
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	28	2.6	8.8	0.4	3.3	88	8.2	3.8	0.20	5.9	117
JUL											
31...	26	2.7	9.1	0.5	3.1	80	9.6	4.6	0.21	1.9	105
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	29	2.7	8.1	0.4	3.7	100	2.3	3.9	0.21	8.4	130

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR											
10...	0.220	0.010	0.230	<0.015	--	0.50	0.060	0.050	0.15	36	2.0
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
10...	0.220	0.020	0.240	0.280	0.52	0.80	0.020	0.030	0.09	22	170
MAY											
29...	--	<0.010	0.138	<0.015	--	0.35	0.042	0.040	0.12	5.1	12
29...	--	<0.010	0.139	<0.015	--	0.34	0.042	0.043	0.13	10	149
29...	0.137	0.012	0.149	0.024	0.38	0.41	0.017	0.041	0.13	9.4	116
29...	--	<0.010	<0.050	0.524	0.45	0.97	0.443	0.441	1.4	1200	678
JUL											
31...	--	<0.010	<0.050	<0.015	--	0.23	<0.010	0.017	0.05	8.2	18
31...	--	<0.010	<0.050	<0.015	--	0.28	0.038	0.036	0.11	17	39
31...	--	<0.010	<0.050	0.034	0.34	0.37	0.087	0.097	0.30	100	133
31...	--	<0.010	<0.050	1.19	0.47	1.7	0.805	0.851	2.6	3600	741

332019095441901 - COOPER LAKE SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAR							
10...	1717	1.00	178	8.1	15.5	10.5	107
10...	1719	10.0	178	7.2	13.5	7.3	71
10...	1721	15.0	270	7.1	13.0	4.2	41
MAY							
29...	1515	1.00	192	8.4	25.5	9.0	112
29...	1519	5.00	194	7.7	24.5	6.3	77
29...	1523	9.00	196	7.2	23.5	2.1	25
JUL							
31...	1346	1.00	198	8.2	31.5	7.4	102
31...	1350	10.0	201	7.5	30.0	4.5	60

RED RIVER BASIN

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07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1996 to September 1997

Date	3-10-97
Time	1534

TOTAL CELLS/mL	11,034
NUMBER OF SPECIES	12
DEPTH COLLECTED (ft.)	0.85

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

2,171

Order Pennales

Fragilaria crotonensis var. *crotonensis*

446

CHLOROPHYTA

Ankistrodesmus falcatus

59

Chlamydomonas sp.

446

Pediastrum duplex

30

Scenedesmus opoliensis

89

Scenedesmus quadricauda

89

Selenastrum Westii

387

CYANOPHYTA

Aphanocapsa delicatissima

4,164

Chroococcus limneticus

119

EUGLENOPHYTA

Trachelomonas sp.

2,439

CRYPTOPHYTA

Cryptomonas erosa

595

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site CC (331818095422501)

Phytoplankton Analyses October 1996 to September 1997

Date	3-10-97
Time	1647

TOTAL CELLS/mL	14,423
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	0.40

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	1,963
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	484
<i>Synedra ulna</i> var. <i>ulna</i>	81
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	892
<i>Cosmarium</i> sp.	30
<i>Oocystis</i> sp.	30
<i>Scenedesmus opoliensis</i>	59
<i>Scenedesmus quadricauda</i>	59
<i>Selenastrum Westii</i>	149
CYANOPHYTA	
<i>Anabaena</i> sp.	297
<i>Aphanocapsa delicatissima</i>	2,974
<i>Chroococcus limneticus</i>	476
EUGLENOPHYTA	
<i>Euglena</i> sp.	149
<i>Phacus</i> sp.	59
<i>Trachelomonas</i> sp.	5,234
PYRRHOPHYTA	
<i>Ceratium hirundinella</i>	30
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	1,457

RED RIVER BASIN

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07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1996 to September 1997

Date	5-29-97
Time	1259

TOTAL CELLS/mL	6,126
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	0.8

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

1,511

Stephanodiscus astraea

94

CHLOROPHYTA

Chlamydomonas sp.

238

Pediastrum duplex

30

Scenedesmus opoliensis

30

CYANOPHYTA

Aphanocapsa delicatissima

4,164

EUGLENOPHYTA

Trachelomonas sp.

59

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site EC (331838095465601)

Phytoplankton Analyses October 1996 to September 1997

Date	5-29-97
Time	1650

TOTAL CELLS/mL	4,699
NUMBER OF SPECIES	4
DEPTH COLLECTED (ft.)	0.5

<u>Organisms</u>	<u>Cells/mL</u>
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BACILLARIOPHYTA

Order Pennales

<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	208
--	-----

CYANOPHYTA

<i>Aphanocapsa delicatissima</i>	595
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<i>Oscillatoria</i> sp.	3,866
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EUGLENOPHYTA

<i>Trachelomonas</i> sp.	30
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RED RIVER BASIN

199

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1996 to September 1997

Date	7-31-97
Time	1217

TOTAL CELLS/mL	56,388
NUMBER OF TAXA	18
DEPTH COLLECTED (ft.)	2.15

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	59
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	149
<i>Nitzschia palea</i> var <i>palea</i>	149
CHLOROPHYTA	
<i>Coelastrum microporum</i>	30
<i>Cosmarium</i> sp.	30
<i>Micractinium pusillum</i>	30
<i>Oocystis</i> sp.	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	1,784
<i>Aphanizomenon flos-aquae</i>	3,866
<i>Aphanocapsa delicatissima</i>	38,067
<i>Aphanocapsa elachista</i>	4,164
<i>Aphanothece nidulans</i>	595
<i>Chroococcus limneticus</i>	2,022
<i>Merismopedia tenuissima</i>	1,428
<i>Oscillatoria</i> sp.	3,569
CHRYSTOPHYTA	
<i>Mallomonas</i> sp.	59
EUGLENOPHYTA	
<i>Euglena</i> sp.	30
<i>Trachelomonas</i> sp.	327

RED RIVER BASIN

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site EC (331838095465601)

Phytoplankton Analyses October 1996 to September 1997

Date	7-31-97
Time	1535

TOTAL CELLS/mL	5,830
NUMBER OF TAXA	10
DEPTH COLLECTED (ft.)	0.5

OrganismsCells/mL

BACILLARIOPHYTA

Order Pennales

Fragilaria crotonensis var. *crotonensis*

149

CHLOROPHYTA

Chlamydomonas sp.

387

Coelastrum microporum

30

Oocystis sp.

30

Pediastrum duplex

30

Scenedesmus bijuga

59

Scenedesmus opoliensis

238

Staurastrum sp.

30

CYANOPHYTA

Aphanocapsa delicatissima

4,164

EUGLENOPHYTA

Trachelomonas sp.

773

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°21'23", long 95°35'41", Delta County, Hydrologic Unit 11140301, on levee on left bank 110 ft downstream from bridge on State Highways 19 and 154, 1.0 mi downstream from Big Creek, 1.0 mi upstream from Brushy Creek, 4.5 mi downstream from Doctors Creek, and 5.6 mi southeast of Cooper.

DRAINAGE AREA.--527 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 371.91 ft above sea level. Prior to Feb. 15, 1985, at site 360 ft to right and 90 ft upstream at same datum. Oct. 1, 1970, at datum 3.00 ft higher. May 9, 1942, to Nov. 8, 1949, nonrecording gage, and Nov. 9, 1949, to May 13, 1955, water-stage recorder at site 1,060 ft to right of present gage. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since September 28, 1991, at least 10% of contributing drainage area has been regulated by Cooper Dam, 13.4 miles upstream from station. No known diversions.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--49 years (water years 1943-91), 416 ft³/s (10.72 in/yr), 301,400 acre-ft/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1943-1991).--Maximum discharge 47,200 ft³/s May 13, 1982 (gage height, 27.21 ft, from floodmark in gage well); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	217	496	215	13	2670	217	2510	13	164	e14	e13
2	2.9	125	544	204	7.3	2920	14	2110	6.7	112	e14	e13
3	2.2	8.5	1700	113	5.5	3640	8.2	1260	4.4	74	e14	e13
4	1.9	2.7	2870	108	4.2	2820	714	1260	2.8	14	e14	13
5	2.0	1.5	2990	108	4.1	2650	1310	1030	2.6	14	e14	e13
6	1.3	1.2	2960	107	4.0	2570	612	499	2.1	14	e20	e13
7	1.3	1250	2910	107	260	2540	1530	14	1.2	14	e85	e12
8	2.4	481	2860	117	514	2510	1600	6.9	1.3	14	e29	e12
9	2.6	108	2820	215	510	2510	1480	5.9	1.5	14	e14	e12
10	2.7	165	2800	239	787	2550	2420	5.6	109	14	e13	e12
11	.46	470	2780	228	999	2500	2470	5.4	272	14	e13	e12
12	.28	700	2740	218	1400	2830	2490	5.3	720	14	e13	e12
13	.28	1400	2720	217	2290	4800	2450	5.4	755	14	e14	e12
14	.28	1400	2700	135	951	3140	2410	5.4	834	14	e14	e11
15	.30	1370	2980	11	1170	2650	2390	7.2	263	14	e14	e11
16	.31	1360	3000	9.3	1250	2510	2030	8.2	359	14	e14	e16
17	.33	1790	2860	7.4	1300	2460	1500	6.0	832	14	e14	e14
18	.27	1360	2760	5.1	1390	2430	1320	4.0	1370	14	e13	e13
19	.27	1110	2700	4.1	1690	2420	692	5.5	1570	14	e13	e12
20	.33	1360	2380	3.7	3230	2400	679	237	1560	14	e13	e11
21	.76	1340	1600	3.6	4850	2380	553	233	1550	14	e13	e11
22	102	1140	1580	3.1	2740	2360	396	25	1550	14	e20	e11
23	20	758	1500	11	2790	2340	396	7.2	1330	14	e15	e14
24	2.5	2270	1280	298	2730	2320	259	6.7	985	14	e13	e14
25	.90	3310	1260	458	2700	2290	207	7.7	982	14	e13	e13
26	.54	543	1140	443	3060	1970	1230	5.4	669	14	e13	e13
27	.34	341	595	438	2970	1370	1330	20	204	14	e13	e12
28	112	961	405	428	2750	1020	1630	11	201	14	e13	e12
29	30	1330	406	386	---	678	2600	5.3	202	14	e13	e11
30	5.6	924	345	235	---	674	2550	27	201	14	e13	e11
31	1.5	---	224	166	---	553	---	121	---	14	e13	---
TOTAL	302.85	27596.9	60905	5241.3	42369.1	73475	39487.2	9460.1	16553.6	742	518	372
MEAN	9.77	920	1965	169	1513	2370	1316	305	552	23.9	16.7	12.4
MAX	112	3310	3000	458	4850	4800	2600	2510	1570	164	85	16
MIN	.27	1.2	224	3.1	4.0	553	8.2	4.0	1.2	14	13	11
AC-FT	601	54740	120800	10400	84040	145700	78320	18760	32830	1470	1030	738
CFSM	.02	1.75	3.73	.32	2.87	4.50	2.50	.58	1.05	.05	.03	.02
IN.	.02	1.95	4.30	.37	2.99	5.19	2.79	.67	1.17	.05	.04	.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997#, BY WATER YEAR (WY)

MEAN	138	592	916	474	590	1384	764	724	403	269	230	21.7
MAX	551	1280	1965	748	1513	2768	1316	1902	939	839	1205	99.5
(WY)	1994	1995	1997	1993	1997	1992	1997	1995	1995	1992	1992	1994
MIN	2.22	3.12	3.39	3.68	.71	4.17	5.16	15.7	5.95	2.32	3.07	.96
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1993	1996	1993	1993

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1992 - 1997#

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1992 - 1997#
ANNUAL TOTAL	90558.52	277023.05	
ANNUAL MEAN	247	759	543
HIGHEST ANNUAL MEAN			759
LOWEST ANNUAL MEAN			5.52
HIGHEST DAILY MEAN	3310	4850	4850
LOWEST DAILY MEAN	.27 Oct 18	.27 Oct 18	.00 Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	.29 Oct 13	.29 Oct 13	.00 Oct 1 1991
INSTANTANEOUS PEAK FLOW		6160	6160
INSTANTANEOUS PEAK STAGE		19.45	19.90
ANNUAL RUNOFF (AC-FT)	179600	549500	393400
ANNUAL RUNOFF (CFSM)	.47	1.44	1.03
ANNUAL RUNOFF (INCHES)	6.39	19.55	14.00
10 PERCENT EXCEEDS	1140	2580	1690
50 PERCENT EXCEEDS	1.8	121	26
90 PERCENT EXCEEDS	.61	3.7	1.2

e Estimated

Period of regulated streamflow

RED RIVER BASIN

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1966, October 1967 to current year. Chemical and biochemical analyses: December 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1958 to September 1966, October 1967 to September 1989.

WATER TEMPERATURE: October 1958 to September 1966, October 1967 to September 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,710 microsiemens Aug. 14, 1973; minimum daily, 82 microsiemens July 2, 1976, July 12, 1988.

WATER TEMPERATURE: Maximum daily, 36.0°C Aug. 6, 1960, Aug. 10, 1962; minimum daily, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)
OCT 01...	1012	4.8	251	7.8	22.0	15	19	7.8	90	1.6	89
MAR 10...	1900	2540	198	7.4	15.0	50	17	12.1	122	1.6	71
MAY 15...	1001	6.8	291	7.5	19.5	50	20	5.1	56	2.0	92
MAY 29...	1401	5.1	201	7.5	25.0	50	22	7.6	93	1.6	73
JUL 31...	0945	14	215	7.4	26.5	30	21	5.4	68	1.5	78
SEP 04...	1630	13	215	7.7	28.0	16	18	6.2	80	1.3	75
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS 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 01...	0	30	3.5	16	0.7	3.9	100	14	11	0.30	2.7
MAR 10...	0	24	2.6	10	0.5	3.4	73	13	5.8	0.20	3.0
MAY 15...	0	31	3.6	17	0.8	3.1	93	24	13	0.20	3.0
MAY 29...	0	25	2.6	9.6	0.5	3.0	75	13	5.2	0.20	1.6
JUL 31...	0	26	2.8	10	0.5	3.0	87	9.8	5.8	0.24	2.9
SEP 04...	0	26	2.8	9.7	0.5	3.2	81	10	5.6	0.24	3.3
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 01...	141	40	10	30	--	<0.010	<0.050	<0.015	--	0.50	<0.010
MAR 10...	107	26	9	17	0.180	0.010	0.190	<0.015	--	0.40	<0.010
MAY 15...	153	22	15	7	0.439	0.052	0.491	0.125	0.42	0.55	0.030
MAY 29...	107	25	11	14	--	<0.010	0.303	0.150	0.25	0.40	0.039
JUL 31...	115	68	16	52	0.190	0.023	0.213	0.027	0.42	0.45	0.054
SEP 04...	110	46	10	36	0.139	0.017	0.156	0.104	0.40	0.51	0.019

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

[illegible][illegible]

RED RIVER BASIN

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°28'29", long 95°35'15", Lamar County, Hydrologic Unit 11140301, on left bank at downstream side of highway embankment near left end of downstream bridge on State Highways 19 and 24, 2.3 mi upstream from Auds Creek, 5.5 mi upstream from Hickory Creek, 8.7 mi northeast of Cooper, and 15.6 mi upstream from mouth.

DRAINAGE AREA.--276 mi².

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 372.42 ft above sea level. Prior to Nov. 8, 1949, nonrecording gage, Nov. 8, 1949, to May 21, 1960, water-stage recorder at site 50 ft upstream at datum 9.00 ft higher, and from May 22, 1960, to Sept. 30, 1970, at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. In 1928-29, the channel was rectified for a distance of 28 mi upstream and 18 mi downstream from this station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 2, 1944, reached a stage of 35.6 ft, present datum, and flood in 1932 reached about same stage, from information by U.S. Army Corps of Engineers and local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)					
No peak greater than base discharge.												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997												
DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	1510	1080	32	23	1030	11	38	25	4.5	.30	.12
2	5.9	717	279	32	23	2040	11	30	13	3.9	.28	.10
3	5.1	103	145	32	23	2820	10	23	8.6	3.3	.24	.09
4	4.6	46	98	32	23	320	5100	19	7.0	3.0	.20	.08
5	4.2	32	114	28	21	628	5920	17	5.9	2.7	.17	.07
6	4.1	27	104	25	372	222	491	16	5.8	2.9	.12	.06
7	4.2	4790	75	24	1990	89	149	15	4.7	3.2	.27	.06
8	3.9	630	59	39	645	72	94	14	4.3	3.3	.18	.06
9	3.8	163	52	119	172	72	73	14	4.6	2.8	7.2	.07
10	3.4	102	49	74	110	326	61	14	354	2.8	4.3	.06
11	3.1	76	48	44	67	93	416	12	43	2.5	2.5	.05
12	3.1	64	45	35	2880	1400	464	11	15	2.2	1.7	.05
13	2.9	57	41	31	7630	4400	98	10	668	2.0	1.4	.05
14	2.9	53	40	30	922	573	60	9.7	2270	1.8	17	.05
15	2.9	51	2430	31	354	135	46	15	108	4.9	6.9	.08
16	2.9	48	716	30	214	75	39	26	34	6.8	2.8	.31
17	2.9	1740	246	30	159	60	34	13	21	3.9	1.5	.17
18	2.5	297	103	29	134	54	31	10	16	2.5	.98	.10
19	2.7	118	69	30	1040	45	28	8.9	12	2.0	.65	.07
20	3.1	88	66	29	8290	39	26	54	9.6	1.6	.45	.06
21	217	72	55	28	4530	32	24	62	8.1	1.2	.31	.05
22	1040	54	57	29	636	25	273	20	7.3	1.0	.90	.05
23	136	42	50	33	292	20	166	14	8.1	.86	2.1	.39
24	29	6390	41	183	184	17	44	23	7.0	.73	3.3	.52
25	15	7800	35	79	154	25	985	19	6.4	.69	1.9	.35
26	12	866	36	43	1760	44	5120	17	13	.60	1.2	.24
27	11	310	35	35	829	25	1750	23	9.1	.55	.73	.17
28	3640	186	35	30	316	21	332	17	6.3	.50	.50	.14
29	718	4240	33	26	---	16	107	11	5.3	.40	.33	.11
30	138	3780	32	25	---	15	57	11	4.7	.50	.21	.11
31	59	---	32	24	---	12	---	54	---	.42	.16	---
TOTAL	6090.4	34452	6300	1291	33793	14745	22020	640.6	3704.8	70.05	105.33	3.89
MEAN	196	1148	203	41.6	1207	476	734	20.7	123	2.26	3.40	.13
MAX	3640	7800	2430	183	8290	4400	5920	62	2270	6.8	27	.52
MIN	2.5	27	32	24	21	12	10	8.9	4.3	.40	.12	.05
AC-FT	12080	68340	12500	2560	67030	29250	43680	1270	7350	139	209	7.7
CFSM	.71	4.16	.74	.15	4.37	1.72	2.66	.07	.45	.01	.01	.00
IN.	.82	4.64	.85	.17	4.55	1.99	2.97	.09	.50	.01	.01	.00

RED RIVER BASIN

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07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1997, BY WATER YEAR (WY)

MEAN	227	257	272	197	366	337	404	482	312	102	21.4	113
MAX	1784	1406	1527	1172	1483	1223	3017	2461	1792	872	160	584
(WY)	1972	1958	1992	1950	1950	1968	1966	1982	1989	1976	1971	1973
MIN	.000	.000	.000	.16	.81	4.43	2.97	2.43	.28	.000	.000	.000
(WY)	1953	1956	1956	1964	1976	1954	1972	1972	1988	1954	1952	1952

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR			FOR 1997 WATER YEAR			WATER YEARS 1950 - 1997		
ANNUAL TOTAL	59244.11			123216.07					
ANNUAL MEAN	162			338					
HIGHEST ANNUAL MEAN							257		
LOWEST ANNUAL MEAN							541		
HIGHEST DAILY MEAN	7800			8290			34.7		
LOWEST DAILY MEAN	.08			.05			40900		
ANNUAL SEVEN-DAY MINIMUM	.19			.06			.00		
INSTANTANEOUS PEAK FLOW				15400			.00		
INSTANTANEOUS PEAK STAGE				15.12			90600		
ANNUAL RUNOFF (AC-FT)	117500			244400			36.16		
ANNUAL RUNOFF (CFSM)	.59			1.22			185900		
ANNUAL RUNOFF (INCHES)	7.99			16.61			.93		
10 PERCENT EXCEEDS	167			654			12.63		
50 PERCENT EXCEEDS	6.4			25			288		
90 PERCENT EXCEEDS	.66			.32			11		
							.00		

RED RIVER BASIN

07343500 WHITE OAK CREEK NEAR TALCO, TX

LOCATION.--Lat 33°19'20", long 95°05'33", Titus County, Hydrologic Unit 11140303, near center of main channel at downstream side of bridge on U.S. Highway 271, 0.8 mi downstream from Lewis Creek, 2.4 mi upstream from Ripley Creek, 2.7 mi south of Talco, and 38.4 mi upstream from mouth.

DRAINAGE AREA.--494 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1949 to current year.

REVISED RECORDS.--WSP 1711: Elevation of historical maximum.

GAGE.--Water-stage recorder. Datum of gage is 286.45 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. There are several small diversions upstream from station for municipal supply. The cities of Sulphur Springs and Mount Vernon discharged wastewater effluent into tributaries above this station. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1951-72) prior to regulation by Lake Sulphur Springs (station 07343460, discontinued), 405 ft³/s (293,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1951-72).--Maximum discharge 48,000 ft³/s Dec. 11, 1971 (gage height, 21.20 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, 22.9 ft Mar. 31, 1945, from floodmarks and from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	32	4200	114	127	2340	109	5310	93	46	e6.2	e7.3
2	23	52	5250	111	120	2050	104	3400	324	45	e6.0	e6.8
3	17	82	5590	114	117	2270	103	1790	411	41	e5.8	e6.0
4	13	93	4380	112	123	3730	305	851	215	39	e5.6	e5.2
5	9.4	79	3010	111	123	4910	1860	590	107	36	e5.4	4.9
6	7.1	61	1630	111	124	3870	4840	e437	83	34	e5.2	4.1
7	6.1	329	659	111	208	2640	7150	e356	e68	35	e5.1	3.6
8	6.0	785	362	208	651	1910	5360	e295	e54	36	86	4.1
9	5.4	1000	263	898	940	1390	3700	e246	e41	44	838	4.1
10	5.0	1010	207	1390	882	581	2570	e197	e29	254	998	3.6
11	4.5	799	185	1520	611	547	1460	e158	307	264	1020	3.7
12	4.3	339	170	1320	445	766	399	e121	362	118	619	4.0
13	3.8	114	159	1000	2750	1700	197	87	239	e71	208	3.6
14	3.6	63	146	395	9180	3180	166	75	1540	e51	e81	3.3
15	3.4	44	202	216	10300	6010	137	73	4200	e38	e53	3.0
16	3.7	35	706	193	6910	4850	117	75	5120	e29	e39	3.0
17	3.0	73	1070	199	4540	3260	102	74	3000	e24	e30	3.0
18	2.3	443	e1250	188	3040	2100	92	72	1650	e20	e24	3.0
19	2.1	753	e1210	166	1660	1210	86	73	680	e17	e19	2.8
20	1.7	736	852	148	1540	400	78	82	296	e15	e17	2.6
21	29	533	e438	140	8410	230	74	100	187	e13	e15	3.3
22	301	231	247	137	15900	185	100	76	136	e12	e13	3.5
23	484	121	202	134	9620	163	125	69	115	e11	e12	4.6
24	535	2910	182	191	5690	146	176	105	101	e10	e11	5.2
25	491	21100	168	370	3690	144	162	100	92	e9.1	e10	4.9
26	283	20000	156	391	2260	269	1070	84	88	e8.6	e9.7	4.3
27	101	11400	141	323	2180	317	2990	79	82	e8.0	e9.2	4.1
28	59	6860	133	214	2540	237	7070	104	74	e7.6	e8.9	5.1
29	48	4640	125	180	---	171	10200	204	62	e7.1	e8.4	6.2
30	42	3910	120	164	---	136	8030	154	52	e6.8	e8.1	6.5
31	36	---	116	138	---	121	---	148	---	e6.4	e8.0	---
TOTAL	2567.4	78627	33529	11007	94681	51833	58932	15585	19808	1356.6	4184.6	129.4
MEAN	82.8	2621	1082	355	3381	1672	1964	503	660	43.8	135	4.31
MAX	535	21100	5590	1520	15900	6010	10200	5310	5120	264	1020	7.3
MIN	1.7	32	116	111	117	121	74	69	29	6.4	5.1	2.6
AC-FT	5090	156000	66500	21830	187800	102800	116900	30910	39290	2690	8300	257
CFSM	.17	5.31	2.19	.72	6.85	3.38	3.98	1.02	1.34	.09	.27	.01
IN.	.19	5.92	2.52	.83	7.13	3.90	4.44	1.17	1.49	.10	.32	.01

RED RIVER BASIN

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07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1997#, BY WATER YEAR (WY)

MEAN	245	776	924	590	894	943	754	717	492	340	88.0	67.1
MAX	1744	2984	2889	3222	3381	3491	2329	3166	2620	3743	898	867
(WY)	1982	1975	1983	1980	1997	1990	1973	1990	1981	1992	1992	1974
MIN	.000	.34	3.22	2.27	5.90	12.2	29.0	7.35	.83	.39	.000	.000
(WY)	1979	1976	1990	1976	1996	1996	1981	1988	1988	1978	1978	1978

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1973 - 1997#	
ANNUAL TOTAL	134619.9		372240.0			
ANNUAL MEAN	368		1020			
HIGHEST ANNUAL MEAN					567	
LOWEST ANNUAL MEAN					1160	
HIGHEST DAILY MEAN	21100	Nov 25	21100	Nov 25	55.8	1992
LOWEST DAILY MEAN	1.7	Oct 20	1.7	Oct 20	31700	1996
ANNUAL SEVEN-DAY MINIMUM	2.8	Oct 14	2.8	Oct 14	.00	Jan 24 1980
INSTANTANEOUS PEAK FLOW			26400		.00	Aug 30 1973
INSTANTANEOUS PEAK STAGE			19.31		34600	Jul 24 1978
ANNUAL RUNOFF (AC-FT)	267000		738300	Nov 25	19.86	Jan 24 1980
ANNUAL RUNOFF (CFSM)	.74		2.06		410900	
ANNUAL RUNOFF (INCHES)	10.14		28.03		1.15	
10 PERCENT EXCEEDS	523		3210		15.60	
50 PERCENT EXCEEDS	15		127		1570	
90 PERCENT EXCEEDS	3.9		5.2		57	
					1.6	

e Estimated

Period of regulated streamflow

RED RIVER BASIN

07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD--Chemical analyses: October 1967 to June 1989. Chemical and biochemical analyses: November 1982 to September 1985, October 1991 to current year.

PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: October 1967 to September 1989.

WATER TEMPERATURES: October 1967 to September 1989.

EXTREMES FOR PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: Maximum daily, 1,220 micromhos June 15, 1972; minimum daily 33 micromhos May 16, 1969.

WATER TEMPERATURE: Maximum daily, 37.0°C July 18, Aug. 3, 15, 1975, and Aug. 7, 1986; minimum daily, 0.0°C on several days during January 1968, 1970, 1978, and 1984.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)
OCT 03...	1046	18	209	7.0	22.0	160	30	6.5	75	1.5	51
FEB 06...	1140	124	398	7.5	10.0	160	32	9.2	82	0.5	94
APR 16...	1101	117	335	7.2	14.5	110	28	8.2	81	0.8	80
MAY 13...	1401	82	296	7.3	20.5	150	50	7.4	84	1.1	71
JUL 11...	1145	272	252	7.2	27.0	120	62	6.1	77	1.7	53
SEP 05...	1500	4.6	398	7.3	28.0	60	17	5.6	72	1.0	82

DATE	HARDNESS NONCARBONATE DIS-SOLVED (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM DIS-SOLVED (MG/L AS Mg)	SODIUM DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM DIS-SOLVED (MG/L AS K)	ALKALINITY WATER DIS-SOLVED (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE DIS-SOLVED (MG/L AS Cl)	FLUORIDE DIS-SOLVED (MG/L AS F)	SILICA DIS-SOLVED (MG/L AS SiO2)
OCT 03...	9	13	4.5	14	0.9	9.9	42	24	15	0.20	8.8
FEB 06...	54	21	10	36	2	6.7	40	75	37	0.20	9.5
APR 16...	30	19	8.0	28	1	5.4	50	60	26	0.15	12
MAY 13...	25	17	7.0	27	1	5.5	46	49	22	0.17	11
JUL 11...	9	13	4.9	22	1	9.5	44	31	20	0.21	7.6
SEP 05...	0	20	8.1	40	2	9.5	84	49	32	0.33	6.0

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	RESIDUE FIXED NON-FILTERABLE (MG/L)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOSPHORUS DIS-SOLVED (MG/L AS P)
OCT 03...	119	36	20	16	--	<0.010	0.840	0.040	0.86	0.90	0.180
FEB 06...	223	28	1	27	0.690	0.030	0.720	0.030	0.57	0.60	0.070
APR 16...	189	36	24	12	--	--	--	--	--	--	--
MAY 13...	169	60	21	39	--	<0.010	0.675	0.043	0.50	0.55	0.043
JUL 11...	139	94	11	83	0.897	0.050	0.947	0.203	0.33	0.53	0.120
SEP 05...	216	28	9	19	0.384	0.014	0.398	0.030	0.50	0.53	0.061

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07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

[illegible]

07343850 WHITE OAK CREEK NEAR OMAHA, TX

LOCATION.--Lat 33°16'30", long 94°44'30", Morris County, Hydrologic Unit 11140303, at bridge, on U.S Highway 259, 6.2 mi north of Omaha, and 10.5 mi upstream from mouth.

DRAINAGE AREA.--772 mi².

PERIOD OF RECORD.--Occasional discharge measurements: February 1965 to August 1967. Water-quality records.--Chemical and biochemical analyses: October 1968 to September 1977, October 1991 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)
OCT 03...	0932	69	205	7.5	19.5	180	49	7.3	79	2.4	47
FEB 06...	0800	286	408	7.2	10.5	150	44	10.0	90	1.0	95
APR 02...	0841	129	364	7.2	17.0	--	--	6.2	64	0.8	--
MAY 14...	1130	55	307	7.1	20.0	150	67	6.1	68	1.9	74
JUL 16...	0915	20	248	6.7	27.0	120	62	4.8	61	1.2	54
SEP 04...	1100	30	324	7.2	28.5	80	24	5.0	65	1.1	72

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
OCT 03...	13	12	4.2	15	0.9	8.5	34	23	20	0.20	8.8
FEB 06...	63	20	11	37	2	5.6	32	82	45	0.10	9.8
APR 02...	--	--	--	--	--	--	52	--	--	--	--
MAY 14...	27	17	7.5	28	1	5.4	47	49	27	0.15	12
JUL 16...	8	13	5.2	21	1	7.2	46	--	--	--	8.4
SEP 04...	18	16	7.6	28	1	7.9	54	42	30	0.22	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT 03...	115	103	10	93	0.620	0.020	0.640	0.090	0.71	0.80	0.080
FEB 06...	232	56	7	49	0.370	0.030	0.400	0.040	0.66	0.70	0.020
APR 02...	--	--	--	--	0.700	0.020	0.720	0.070	0.63	0.70	0.030
MAY 14...	177	116	36	80	0.525	0.010	0.535	0.061	0.50	0.57	0.017
JUL 16...	--	22	22	0	1.01	0.024	1.03	0.046	0.69	0.73	0.054
SEP 04...	176	53	11	42	--	<0.010	0.138	0.028	0.45	0.48	0.033

[illegible]

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

[illegible]

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX

LOCATION.--Lat 33°18'16", long 94°09'38", Bowie-Cass County line, Hydrologic Unit 11140302, in intake structure of Wright Patman Dam on the Sulphur River, 0.5 mi upstream from U.S. Highway 59, 10 mi southwest of Texarkana, and 44.5 mi upstream from mouth.

DRAINAGE AREA.--3,443 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--July 1953 to current year. Published as Texarkana Reservoir prior to October 1970 and as Lake Texarkana from October 1970 to September 1972.

REVISED RECORDS.--WSP 1561: 1957(M). WSP 1711: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). July 19 to Dec. 31, 1953, nonrecording gage at site about 125 ft upstream at datum 200 ft higher.

REMARKS.--The lake is formed by a rolled earthfill dam 18,500 ft long, including a 200-foot uncontrolled spillway and a 1-mile long dike. Temporary impoundment of water began July 2, 1953, and deliberate impoundment began June 27, 1956. The dam was completed in December 1957. The flood-control outlet works consist of two 20.0-foot-diameter conduits controlled by four 10.0- by 20.0-foot electrically driven broome-type gates. Flow is affected at times by discharge from the flood-detention pools of 25 floodwater-retarding structures with a combined detention capacity of 13,450 acre-ft. These structures control runoff from 40.0 mi² in the Sulphur River and Langford Creek drainage basins. Outflow discharging over the spillway passes into an outlet channel and then to the Sulphur River. The lake was built for flood control and for conservation. An unknown amount of water is diverted for industrial and municipal uses. The capacity table is based on a 1948 survey. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam.	286.0	-
Crest of spillway.	259.5	2,654,300
Top of conservation pool.	220.0	145,300
Lowest gated outlet (invert)	200.0	2,600

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,912,100 acre-ft May 9, 1966 (elevation, 252.64 ft); minimum since first appreciable storage and after deliberate impoundment began, 137,500 acre-ft Sept. 5, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,029,000 acre-ft Mar. 20, 21 (elevation, 241.59 ft); minimum, 186,700 acre-ft Nov. 27 (elevation, 221.89 ft).

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

220.0	145,300	228.0	364,100	234.0	607,900
222.0	189,300	230.0	437,200	235.0	655,900
224.0	240,200	232.0	518,400	240.0	929,395
226.0	298,500			245.0	1,264,145

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302800	242400	433800	442700	214100	814900	907800	943400	555900	340900	299100	285700
2	297300	235900	494500	426500	212600	845300	890600	976100	536100	337300	297900	284500
3	289900	234200	533500	410400	211800	864900	871800	990500	517600	335300	297600	283000
4	285700	240200	563400	395000	209800	881200	864300	1000000	498600	332600	296600	281800
5	283000	242100	588400	377800	208300	897100	864900	1003000	480100	331000	294500	281800
6	281500	242400	607400	362000	208300	913700	862600	1000000	462400	332000	292000	280900
7	281200	243800	620600	345600	210100	928200	856200	994300	443800	332300	293300	280300
8	280600	242400	627300	336600	208500	938500	851600	984900	425000	332600	300000	279700
9	279400	241800	628800	320600	208800	948300	866000	970500	417500	331000	300000	279700
10	276100	240200	626800	306600	210600	951300	890000	952600	408100	328700	299700	278200
11	272300	239400	622500	295100	212800	951300	912500	933000	400400	327100	300000	277300
12	268400	239100	616400	281200	219700	956600	916700	913700	396100	325400	300400	275800
13	264100	240200	607400	268700	232900	978000	917900	894100	395300	324100	301900	275500
14	260100	237200	598100	256600	236900	982400	914300	873600	392100	322500	302500	274600
15	256100	230200	596200	244900	234000	981700	907800	855100	394600	321600	302200	274000
16	252100	228400	590700	238000	233700	987400	899400	835100	399000	319900	301900	273400
17	249000	229400	585200	234800	241800	998700	889400	816000	397900	318300	300700	271100
18	244600	226500	577400	230800	273400	1016000	878800	797100	391700	316700	300000	271400
19	240200	221600	567000	226300	315100	1025000	866000	772600	387000	315800	298800	270500
20	236400	221300	557200	220800	351000	1029000	853900	753300	382400	314500	297300	269000
21	244900	223100	548300	216100	391700	1029000	839100	736800	379500	313900	295700	267600
22	252100	221000	542200	209600	418600	1025000	832300	717500	376700	312300	297300	267000
23	252700	208500	540400	205800	445800	1018000	817700	701100	374600	311600	296600	271400
24	255200	205100	532600	204100	505300	1010000	801000	685300	371400	310400	295700	271700
25	254900	199400	524900	202600	595800	1003000	791600	668300	367200	309100	294200	271100
26	256100	191400	521000	204600	686300	990500	810400	651000	364100	307900	293000	270200
27	257200	186700	512100	209600	742600	979200	839100	646200	357900	306600	291700	269000
28	255800	191700	501600	210600	788900	965500	871800	631200	353800	305700	290500	268200
29	254400	257500	488700	214600	---	953800	887600	610700	348300	303800	289300	267900
30	251300	354800	474800	215900	---	939700	913100	594400	344600	302200	288100	267000
31	246000	---	459200	215600	---	924600	---	576100	---	300400	286600	---
MAX	302800	354800	628800	442700	788900	1029000	917900	1003000	555900	340900	302500	285700
MIN	236400	186700	433800	202600	208300	814900	791600	576100	344600	300400	286600	267000
(+)	224.21	227.73	230.56	223.07	237.56	239.92	239.73	233.31	227.43	226.06	225.61	224.95
(@)	-61200	+108800	+104400	-243600	+573300	+135700	-11500	-337000	-231500	-44200	-13800	-19600
CAL YR 1996	MAX	628800	MIN	157800	(@)	+272500						
WTR YR 1997	MAX	1029000	MIN	186700	(@)	-40200						

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

(@) Change in contents, in acre feet.

RED RIVER BASIN

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07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1967 to September 1984 and February 1992 to current year.

REVISED RECORDS.--WDR TX-93-1: Phytoplankton.

331838094095901 - WRIGHT PATMAN LAKE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARDS UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, CENT SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
FEB												
11...	1025	212000	1.00	224	8.0	8.5	0.58	10.3	88	K4	K5	70
11...	1029	--	10.0	227	7.9	8.0	--	10.1	86	--	--	--
11...	1034	--	20.0	232	7.9	8.0	--	10.3	87	--	--	--
11...	1038	--	26.0	232	7.9	8.0	--	10.3	87	--	--	71
MAY												
28...	0927	641000	1.00	160	7.7	22.5	0.88	7.9	92	K1	K1	62
28...	0931	--	10.0	160	7.6	22.5	--	7.8	91	--	--	--
28...	0934	--	20.0	160	7.6	22.5	--	7.7	90	--	--	--
28...	0938	--	30.0	157	7.0	21.0	--	4.6	52	--	--	--
JUL												
29...	1020	305000	1.00	177	8.4	32.0	1.00	6.6	91	K6	K3	63
29...	1024	--	10.0	179	8.2	32.0	--	5.7	79	--	--	--
29...	1029	--	20.0	183	7.2	31.5	--	2.0	27	--	--	--
29...	1035	--	27.0	195	7.0	30.5	--	0.1	1	--	--	68

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB												
11...	16	23	3.1	14	0.7	3.6	54	27	15	0.10	6.8	126
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
11...	18	23	3.2	15	0.8	3.7	53	30	17	0.10	6.9	132
MAY												
28...	6	21	2.3	7.5	0.4	3.2	56	11	5.9	0.12	0.58	86
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
29...	2	21	2.5	9.1	0.5	3.1	61	11	7.9	0.16	3.4	95
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	0	23	2.6	9.1	0.5	3.1	70	9.1	8.1	0.15	5.3	106

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
11...	0.120	0.010	0.130	<0.015	--	0.30	<0.010	<0.010	--	74	4.0
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	0.150	0.020	0.170	<0.015	--	0.40	<0.010	<0.010	--	110	4.0
MAY											
28...	--	<0.010	<0.050	<0.015	--	0.45	<0.010	0.017	0.05	100	4.6
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
29...	--	<0.010	<0.050	<0.015	--	0.26	<0.010	0.020	0.06	6.3	2.4
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<0.010	<0.050	0.020	0.20	0.22	0.051	0.048	0.15	13	95
29...	--	<0.010	<0.050	0.192	0.25	0.44	0.363	0.341	1.0	720	1400

RED RIVER BASIN

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

332142094115001 - WRIGHT PATMAN LAKE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
FEB									
11...	1059	1.00	144	7.6	7.5	10.4	87	0.010	<0.050
11...	1103	8.00	140	7.5	7.0	10.3	85	<0.010	<0.050
MAY									
28...	1004	1.00	153	7.6	24.0	7.5	90	<0.010	<0.050
28...	1007	10.0	152	7.4	23.0	6.8	80	--	--
28...	1010	20.0	156	6.8	20.5	0.5	6	<0.010	<0.050
JUL									
29...	1055	1.00	167	8.8	34.5	8.2	118	<0.010	<0.050
29...	1100	11.0	168	8.7	33.5	6.9	98	<0.010	<0.050

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
11...	<0.015	--	0.30	<0.010	<0.010	--	87	7.0
11...	<0.015	--	0.30	<0.010	<0.010	--	84	6.0
MAY								
28...	<0.015	--	0.37	<0.010	<0.010	--	88	32
28...	--	--	--	--	--	--	--	--
28...	0.079	0.46	0.54	0.012	0.031	0.09	120	1470
JUL								
29...	0.015	0.22	0.24	<0.010	0.013	0.04	7.3	3.0
29...	<0.015	--	0.42	<0.010	0.016	0.05	6.3	5.4

331935094112901 - WRIGHT PATMAN LAKE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
FEB									
11...	1128	1.00	167	8.1	9.0	10.9	95	<0.010	<0.050
11...	1133	10.0	170	7.8	8.5	10.0	86	--	--
11...	1138	17.0	183	7.8	8.5	10.2	87	<0.010	0.060
MAY									
28...	1025	1.00	152	7.6	23.0	7.6	90	<0.010	<0.050
28...	1028	10.0	152	7.5	23.0	7.4	87	--	--
28...	1031	20.0	152	7.2	22.0	5.7	66	--	--
28...	1034	28.0	152	6.8	19.0	0.5	5	<0.010	0.062
JUL									
29...	1119	1.00	170	8.8	33.0	7.4	104	<0.010	<0.050
29...	1122	10.0	166	8.1	32.5	5.6	78	--	--
29...	1126	20.0	200	7.0	28.5	0.2	3	<0.010	<0.050

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB								
11...	<0.015	--	0.40	<0.010	<0.010	--	70	2.0
11...	--	--	--	--	--	--	--	--
11...	<0.015	--	0.30	<0.010	<0.010	--	52	4.0
MAY								
28...	<0.015	--	0.44	<0.010	<0.010	--	81	24
28...	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--
28...	0.131	0.51	0.64	0.024	0.038	0.12	120	958
JUL								
29...	0.016	0.21	0.22	<0.010	0.019	0.06	18	120
29...	--	--	--	--	--	--	--	--
29...	0.775	0.17	0.94	0.392	0.468	1.4	3200	2450

RED RIVER BASIN

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07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331706094130501 - WRIGHT PATMAN LAKE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB							
11...	1156	1.00	314	8.3	9.5	11.0	97
11...	1159	10.0	312	7.9	7.5	10.6	89
11...	1203	20.0	314	8.0	7.5	10.4	87
11...	1207	26.0	314	7.9	7.5	10.3	86
MAY							
28...	1054	1.00	162	7.6	22.5	7.8	91
28...	1056	10.0	161	7.5	22.0	7.0	81
28...	1059	20.0	163	7.0	20.5	3.2	36
28...	1102	30.0	173	6.9	20.0	1.3	14
28...	1105	38.0	178	6.9	19.5	0.5	5
JUL							
29...	1148	1.00	188	8.4	33.5	6.9	98
29...	1150	10.0	189	7.8	32.5	4.7	66
29...	1153	20.0	213	7.1	29.5	0.5	7
29...	1155	27.0	238	7.1	28.0	0.2	3

331519094141101 - WRIGHT PATMAN LAKE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 KF AGAR (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS./ 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB FLD. AS CACO3 (MG/L)
FEB												
11...	1229	1.00	304	8.4	7.5	1.00	12.0	100	21	23	90	26
11...	1234	10.0	301	8.0	6.5	--	11.0	90	--	--	--	--
11...	1240	18.0	301	7.9	6.5	--	10.8	88	--	--	91	28
MAY												
28...	1125	1.00	151	7.3	21.5	0.79	6.4	73	K4	K13	60	7
28...	1130	10.0	151	7.2	21.5	--	5.8	66	--	--	--	--
28...	1134	24.0	161	6.9	20.5	--	1.6	18	--	--	63	5
JUL												
29...	1216	1.00	196	7.8	32.5	0.61	6.0	84	K3	K3	71	0
29...	1220	10.0	198	7.2	31.5	--	2.4	33	--	--	--	--
29...	1224	16.0	200	7.1	31.5	--	1.5	21	--	--	72	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
FEB											
11...	29	4.3	21	1	3.8	64	45	23	0.20	6.8	172
11...	--	--	--	--	--	--	--	--	--	--	--
11...	29	4.4	21	1	3.8	63	43	24	0.20	6.4	170
MAY											
28...	20	2.2	6.9	0.4	3.1	53	10	5.3	0.13	1.5	82
28...	--	--	--	--	--	--	--	--	--	--	--
28...	21	2.3	7.0	0.4	3.2	58	10	5.4	0.13	4.0	90
JUL											
29...	24	2.8	9.8	0.5	3.4	73	11	8.3	0.18	6.1	109
29...	--	--	--	--	--	--	--	--	--	--	--
29...	24	2.8	9.8	0.5	3.6	76	11	8.4	0.18	6.7	113

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
11...	0.120	0.020	0.140	0.020	0.28	0.30	<0.010	<0.010	27	6.0
11...	--	--	--	--	--	--	--	--	--	--
11...	0.160	0.020	0.180	<0.015	--	0.40	<0.010	<0.010	35	17
MAY										
28...	--	<0.010	<0.050	<0.015	--	0.37	0.038	0.045	0.14	51
28...	--	--	--	--	--	--	--	--	--	--
28...	--	<0.010	0.066	0.225	0.46	0.68	0.081	0.075	0.23	487
JUL										
29...	--	<0.010	<0.050	0.015	0.22	0.24	0.056	0.063	0.19	4.8
29...	--	--	--	--	--	--	--	--	--	--
29...	--	<0.010	<0.050	0.032	0.38	0.41	0.067	0.061	0.19	15

RED RIVER BASIN

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

331533094210901 - WRIGHT PATMAN LAKE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL AS CACO3	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB												
11...	1423	1.00	313	7.8	7.5	0.30	10.5	87	K1700	K4000	100	26
11...	1430	10.0	313	7.8	7.5	--	10.5	87	--	--	--	--
11...	1436	16.0	313	7.8	7.5	--	10.5	87	--	--	100	26
MAY												
28...	1307	1.00	148	7.3	23.5	0.97	6.7	80	K9	55	59	5
28...	1311	10.0	159	6.7	20.5	--	0.4	4	--	--	--	--
28...	1316	20.0	150	6.6	19.0	--	0.3	3	--	--	--	--
28...	1321	26.0	149	6.6	19.0	--	0.4	4	--	--	57	0
JUL												
29...	1403	1.00	222	7.2	32.5	0.49	5.0	70	K23	K32	78	0
29...	1407	10.0	213	6.8	30.5	--	0.1	1	--	--	--	--
29...	1412	19.0	253	6.8	28.0	--	0.4	5	--	--	85	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB											
11...	35	3.8	20	0.9	3.5	77	45	19	0.20	6.7	181
11...	--	--	--	--	--	--	--	--	--	--	--
11...	35	3.8	20	0.9	3.4	77	45	19	0.20	6.6	181
MAY											
28...	20	2.1	6.5	0.4	2.7	54	9.5	4.6	0.13	2.4	81
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	19	2.2	6.4	0.4	3.3	58	7.4	5.0	0.12	5.1	86
JUL											
29...	26	3.0	12	0.6	3.4	83	11	9.6	0.20	7.0	122
29...	--	--	--	--	--	--	--	--	--	--	--
29...	29	3.4	13	0.6	3.5	96	12	12	0.19	7.1	142

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
11...	0.340	0.020	0.360	0.040	0.46	0.50	0.030	0.020	0.06	42	15
11...	--	--	--	--	--	--	--	--	--	--	--
11...	0.330	0.010	0.340	0.030	0.47	0.50	0.030	0.020	0.06	52	17
MAY											
28...	--	<0.010	<0.050	<0.015	--	0.45	0.036	0.044	0.13	50	28
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	<0.010	<0.050	0.208	0.55	0.76	0.227	0.233	0.71	840	708
JUL											
29...	--	<0.010	<0.050	0.018	0.23	0.25	0.038	0.040	0.12	52	211
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	<0.010	<0.050	0.339	0.27	0.61	0.412	0.470	1.4	2100	1360

RED RIVER BASIN

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07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site AC (331838094095901)

Phytoplankton Analyses October 1996 to September 1997

Date	2-11-97
Time	1025
<hr/>	
TOTAL CELLS/mL	12,668
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	0.95
<hr/>	

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	892
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	1,535
<i>Meridion circulare</i>	71
<i>Synedra ulna</i> var. <i>ulna</i>	178
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	1,606
<i>Chlamydomonas</i> sp.	297
<i>Oocystis</i> sp.	30
<i>Scenedesmus opoliensis</i>	59
<i>Selenastrum Westii</i>	119
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	4,164
<i>Aphanocapsa elachista</i>	892
<i>Chroococcus limneticus</i>	238
EUGLENOPHYTA	
<i>Euglena</i> sp.	59
<i>Trachelomonas</i> sp.	833
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	1,695

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site GC (331533094210901)

Phytoplankton Analyses October 1996 to September 1997

Date	2-11-97
Time	1423

TOTAL CELLS/mL	5,680
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	0.50

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	416
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	98
<i>Gyrosigma</i> sp.	33
<i>Pinnularia brevicostata</i> var. <i>brevicostata</i>	98
<i>Synedra ulna</i> var. <i>ulna</i>	456
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	1,219
<i>Chlamydomonas</i> sp.	89
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,974
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	59
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	238

RED RIVER BASIN

219

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site AC (331838094095901)

Phytoplankton Analyses October 1996 to September 1997

Date	5-28-97
Time	927

TOTAL CELLS/mL	65,427
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	1.45

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

1,809

Melosira varians

362

Order Pennales

Asterionella formosa var *formosa*

208

CHLOROPHYTA

Chlamydomonas sp.

238

Crucigenia quadrata

59

Mougeotia sp.

16,863

Pediastrum duplex

59

Scenedesmus opoliensis

238

CYANOPHYTA

Anabaena sp.

297

Aphanocapsa delicatissima

37,472

Aphanocapsa elachista

2,379

Chroococcus limneticus

238

Merismopedia tenuissima

4,283

EUGLENOPHYTA

Trachelomonas sp.

625

CRYPTOPHYTA

Cryptomonas erosa

297

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site GC (331533094210901)

Phytoplankton Analyses October 1996 to September 1997

Date	5-28-97
Time	1307

TOTAL CELLS/mL	20,669
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	1.50

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	506
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	238
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	654
<i>Mougeotia</i> sp.30	
<i>Scenedesmus opoliensis</i> 30	
<i>Staurastrum</i> sp.	6,126
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	8,922
<i>Aphanocapsa elachista</i>	1,784
<i>Chroococcus limneticus</i>	119
<i>Merismopedia tenuissima</i>	1,428
CHRYSTOPHYTA	
<i>Dinobryon bavaricum</i>	119
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	416
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	297

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site AC (331838094095901)

Phytoplankton Analyses October 1996 to September 1997

Date	7-29-97
Time	1020

TOTAL CELLS/mL	134,575
NUMBER OF SPECIES	22
DEPTH COLLECTED (ft.)	1.65

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	119
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	297
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	119
<i>Coelastrum microporum</i>	30
<i>Cosmarium</i> sp.	30
<i>Micractinium pusillum</i>	30
<i>Pediastrum duplex</i>	30
<i>Scenedesmus opoliensis</i>	119
<i>Selenastrum Westii</i>	149
<i>Staurastrum</i> sp.	59
CYANOPHYTA	
<i>Anabaena spiroides</i>	2,468
<i>Aphanizomenon flos-aquae</i>	595
<i>Aphanocapsa delicatissima</i>	30,335
<i>Aphanocapsa elachista</i>	8,327
<i>Chroococcus limneticus</i>	595
<i>Lyngbya contorta</i>	20,223
<i>Lyngbya limnetica</i>	2,379
<i>Merismopedia tenuissima</i>	1,428
<i>Oscillatoria</i> sp.	66,915
EUGLENOPHYTA	
<i>Euglena</i> sp.	30
<i>Trachelomonas</i> sp.	268
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	30

RED RIVER BASIN

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued

Wright Patman Lake Site GC (331533094210901)

Phytoplankton Analyses October 1996 to September 1997

Date	7-29-97
Time	1403

TOTAL CELLS/mL	21,146
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	0.8

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	238
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	1,160
<i>Coelastrum microporum</i>	30
<i>Pediastrum duplex</i>	30
<i>Scenedesmus bijuga</i>	59
<i>Scenedesmus opoliensis</i>	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	238
<i>Aphanocapsa delicatissima</i>	14,870
<i>Aphanocapsa elachista</i>	1,190
<i>Chroococcus limneticus</i>	357
<i>Lyngbya contorta</i>	297
<i>Oscillatoria</i> sp.	1,190
EUGLENOPHYTA	
<i>Euglena</i> sp.	89
<i>Trachelomonas</i> sp.	1,368

RED RIVER BASIN

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07344210 SULPHUR RIVER NEAR TEXARKANA, TX

LOCATION.--Lat 33°18'20", long 94°09'03", Bowie County, Hydrologic Unit 11140302, on downstream side of highway embankment near left end of northbound bridge on U.S. Hwy 59, 0.4 mi downstream from Texarkana dam, 1.4 mi upstream from Elliott Creek, 11.7 mi southwest of Texarkana, end at mi 44.1.

DRAINAGE AREA.--3,433 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1983 to September 1985, October 1991 to current year. Water-elevation records.--October 1985 to September 1995 (midnight elevations). August 1937 to July 1953 and October 1953 to September 1979 (daily gage heights): January to December 1933, January 1937 to December 1942, and January 1945 to September 1979 (discharge measurements): January to December 1939, January 1945 to September 1979 (daily discharges) published by U.S. Army Corps of Engineers: October 1979 to September 1985 (daily discharges).

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
FEB 11...	1200	2690	237	7.9	8.0	74	16	11.6	98	1.5	71
MAY 28...	1615	9420	161	7.3	23.0	60	5.5	9.2	109	0.8	58
JUL 29...	1100	241	188	7.2	31.0	32	4.4	5.2	70	0.8	67
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
FEB 11...	19	23	3.2	14	0.7	3.6	52	28	16	0.10	6.4
MAY 28...	3	19	2.1	7.1	0.4	2.8	55	12	6.2	0.13	1.6
JUL 29...	2	23	2.7	9.2	0.5	3.3	65	10	8.1	0.15	4.5
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
FEB 11...	126	15	2	13	0.110	0.010	0.120	<0.015	--	0.40	0.030
MAY 28...	85	8	3	5	--	<0.010	0.059	<0.015	--	0.39	0.023
JUL 29...	101	17	12	5	--	<0.010	<0.050	0.190	0.20	0.39	0.105
DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB 11...	<0.010	--	9.5	<1	41	<0.50	<1.0	<5.0	3.0	<10	96
MAY 28...	0.027	0.08	9.7	<1	33	<0.50	<1.0	<5.0	<3.0	<10	240
JUL 29...	0.124	0.38	8.6	4	30	<0.50	<1.0	<5.0	<3.0	<10	230
DATE	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	STRON-TIUM, DIS-SOLVED (UG/L AS SR)	VANA-DIUM, DIS-SOLVED (UG/L AS V)	ZINC, DIS-SOLVED (UG/L AS ZN)
FEB 11...	<10	<4	5.0	<0.1	<10	<10	<1	<1.0	200	<6	20
MAY 28...	<10	<4	44	<0.1	<10	<10	<1	<1.0	167	<6	<3.0
JUL 29...	<10	5	530	<0.1	<10	<10	<1	<1.0	196	<6	6.6

07344486 BRUSHY CREEK AT SCROGGINS, TX

LOCATION.--Lat 32°58'32", long 95°11'03", Franklin County, Hydrologic Unit 11140305, at downstream side of highway embankment near left end of bridge on Farm Road 115, 0.1 mi north of Scroggins, 0.3 mi downstream from Briary Creek, 2.5 mi upstream from South Brushy Creek, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--23.4 mi².

PERIOD OF RECORD.--December 1977 to current year.

REVISED RECORDS.--WDR TX-89-1: 1983-88 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 343.90 ft above sea level.

REMARKS.--Records poor. No known regulation or diversions. Several observations of water temperature were made during the year. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0045	955	e12.88	Apr. 28	1000	1,300	13.10
Feb. 20	0600	1,400	13.15	Jul. 7	1545	1,030	12.93
Apr. 4	1915	875	e12.82				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	8.2	58	8.4	9.0	e36	12	23	8.0	3.7	.61	.51
2	2.5	9.0	22	7.9	8.4	e40	11	18	5.7	3.3	.59	.55
3	2.2	7.9	15	7.9	9.6	e69	10	15	4.2	2.5	.55	.56
4	2.6	7.3	13	7.7	15	e40	115	13	3.7	1.9	.54	.57
5	2.7	7.6	20	6.6	9.1	e36	129	12	5.0	1.8	.50	.57
6	3.0	7.5	16	6.5	8.1	e40	36	12	2.7	2.5	1.0	.55
7	3.1	e38	12	17	39	e32	15	11	2.5	338	227	.55
8	2.2	e24	9.8	57	33	e20	12	11	2.4	194	292	.58
9	2.0	13	8.9	65	18	e26	10	10	13	20	149	.56
10	2.0	10	9.0	28	14	e40	8.5	9.6	24	14	20	.58
11	1.7	9.3	9.1	18	12	e104	9.3	8.6	12	10	13	.46
12	1.6	8.1	8.6	15	49	e40	13	8.0	7.6	7.3	9.7	.41
13	1.8	7.8	7.4	13	e471	e40	8.1	7.8	7.7	5.4	6.9	.43
14	1.7	7.7	7.9	12	e56	e81	6.5	7.4	83	3.3	4.8	.44
15	1.5	7.9	38	16	e36	36	5.2	8.3	19	4.2	3.1	.47
16	1.6	8.0	60	16	e25	26	3.9	12	14	12	2.0	.50
17	2.0	e26	29	12	e22	23	3.0	9.1	243	7.0	1.4	.53
18	1.5	24	18	11	19	23	2.2	7.5	54	4.0	1.8	.46
19	1.3	14	14	12	40	21	1.6	7.2	18	2.4	1.2	.42
20	1.8	12	13	11	e615	21	1.8	7.2	13	1.2	2.0	.50
21	8.4	11	13	13	e84	20	1.7	9.3	11	.95	1.2	.48
22	34	10	14	15	e45	18	13	9.0	11	.84	2.2	.59
23	22	9.6	13	21	e33	15	12	7.8	13	.82	7.6	17
24	14	e300	13	35	e26	15	4.8	13	9.8	5.9	2.2	9.3
25	11	e435	10	19	e92	26	25	13	7.7	4.7	1.0	.57
26	9.1	e61	11	14	e61	26	213	11	6.6	1.4	.82	.69
27	8.2	21	12	13	e42	16	225	7.8	6.3	.82	.67	.71
28	7.8	15	11	18	e36	15	346	24	5.5	.79	.63	.86
29	8.4	e225	9.9	12	---	13	116	14	4.9	.75	.62	.87
30	8.5	e415	9.1	10	---	14	34	10	4.4	.69	.55	1.1
31	7.7	---	8.7	9.5	---	13	---	10	---	.64	.50	---
TOTAL	180.5	1759.9	513.4	527.5	1927.2	985	1403.6	346.6	622.7	656.80	755.68	42.37
MEAN	5.82	58.7	16.6	17.0	68.8	31.8	46.8	11.2	20.8	21.2	24.4	1.41
MAX	34	435	60	65	615	104	346	24	243	338	292	17
MIN	1.3	7.3	7.4	6.5	8.1	13	1.6	7.2	2.4	.64	.50	.41
AC-FT	358	3490	1020	1050	3820	1950	2780	687	1240	1300	1500	84

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1997, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	13.8	22.6	30.5	20.2	27.8	27.4	21.3	25.1	15.4	8.50	3.95	3.96								
MAX	80.5	143	103	62.7	68.8	66.1	54.9	68.2	70.0	32.2	24.4	41.7								
(WY)	1992	1995	1983	1993	1997	1990	1990	1991	1981	1981	1997	1979								
MIN	.68	2.51	2.99	6.33	5.31	8.15	3.64	1.64	.26	.007	.003	.14								
(WY)	1979	1990	1979	1981	1996	1986	1978	1988	1984	1978	1985	1984								

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1978 - 1997

ANNUAL TOTAL	3766.39	9721.25	
ANNUAL MEAN	10.3	26.6	
HIGHEST ANNUAL MEAN			18.8
LOWEST ANNUAL MEAN			35.6
HIGHEST DAILY MEAN	435	615	2800
LOWEST DAILY MEAN	.54	.41	.00
ANNUAL SEVEN-DAY MINIMUM	.81	.46	.00
INSTANTANEOUS PEAK FLOW		1400	7520
INSTANTANEOUS PEAK STAGE		13.15	14.39
ANNUAL RUNOFF (AC-FT)	7470	19280	13630
10 PERCENT EXCEEDS	14	40	30
50 PERCENT EXCEEDS	4.7	9.8	7.1
90 PERCENT EXCEEDS	.93	.70	.48

e Estimated

07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 95°00'07", Titus County, Hydrologic Unit 11140305, in control room in left abutment of service spillway at left end of Fort Sherman Dam on Big Cypress Creek, 1.7 mi upstream from Tankersley Creek, 3.5 mi upstream from bridge on U.S. Highway 271, 5.7 mi southwest of the county courthouse in Mount Pleasant, and 129.2 mi upstream from mouth.

DRAINAGE AREA.--239 mi².

PERIOD OF RECORD.--August 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr. 12, 1978, a nonrecording gage was located at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 10,800 ft long, including spillways. Deliberate impoundment began Aug. 8, 1977, and dam was completed by April 1978. The spillway is an excavated channel cut through natural ground. The spillway is 4,500 ft wide, located to the left of the left end of the dam. The service spillway is 289.5 ft wide with 160 ft of net flow width controlled by four 40- by 22.5-foot tainter gates. The dam was built, and is owned, maintained, and operated by the Titus County Fresh Water Supply District No. 1 to provide water for municipal use. Flow from 75.0 mi² above this station is controlled by Lake Cypress Springs on Big Cypress Creek and 36.0 mi² is controlled by Montecello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. Rain gage at station. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-ft)
Top of dam	349.0	337,300
Crest of uncontrolled spillway	341.3	251,000
Crest of gated spillway	316.5	64,740
Lowest gated outlet (invert)	294.5	3,280

COOPERATION.--Capacity table 1-C was compiled by Forest and Cotton, Inc., Consulting Engineers. A new capacity table, 2-C, was prepared by the U.S. Army Corps of Engineers, and put into effect October 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 224,400 acre-ft Nov. 5, 1994 (elevation, 338.65 ft); minimum, 516 acre-ft Aug. 8-17, 1977 (elevation, 290.00 ft) using previous capacity table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 202,300 acre-ft Oct. 2 at 1600 hours (elevation, 336.32 ft); minimum, 171,300 acre-ft July 23 (elevation, 332.80 ft).

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

290.0	514	310.0	37,850	330.0	148,700
300.0	11,000	320.0	82,660	339.0	227,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183300	184600	211500	213400	213500	213400	213900	214200	213600	213200	209500	212100
2	183300	184300	214400	213400	213500	214300	213900	214000	213500	213000	209400	211400
3	183100	184200	214000	213600	213300	214100	213900	213800	213400	212700	209100	211100
4	183000	184200	213600	213400	213400	213600	214800	214200	213300	212300	208600	210800
5	182900	184200	213300	212700	213400	213400	213800	214200	213300	211900	208200	210300
6	182700	184200	213600	213000	213400	213800	214000	214200	213200	212200	208000	210200
7	182700	186400	213800	213200	213400	213400	214300	214000	213100	216300	208600	209900
8	182400	186400	213400	214200	213400	213400	213800	214000	213000	214200	212300	209500
9	182200	186400	213100	213200	213500	214100	214100	214100	213800	214400	214000	209300
10	181900	186300	213100	212300	213500	213900	214000	214100	214200	214400	214300	209000
11	181500	186300	212900	212600	213400	213600	213700	214200	214200	214400	214400	208700
12	181300	186100	212900	213400	213900	213900	213600	213900	214200	214400	214600	208200
13	181100	186200	213100	213500	213700	214100	213800	214000	214500	214300	214800	208000
14	180800	186100	213300	213700	213200	213700	214000	213900	214200	214200	214800	207900
15	180700	186200	213600	213000	214000	213800	214100	214100	214500	214200	214700	207500
16	180400	186300	213500	212100	213800	213800	214200	213900	214100	214200	214600	207000
17	180100	187200	213100	212200	213200	213700	214300	213900	214300	214100	214500	206800
18	180000	187300	212600	212300	213400	213800	214100	213900	214400	213900	214500	206400
19	179700	187500	212600	212500	213400	213700	213900	214000	213900	213700	214400	206000
20	179600	187500	212700	212600	215000	213800	214000	213700	213800	213400	214200	205700
21	183700	187500	213400	213000	212900	213900	214000	213900	213700	213300	213900	205600
22	184500	187500	213700	213300	213200	213900	213800	213700	214300	213300	214100	205000
23	184300	187500	214000	213900	213400	213900	213800	214200	214300	212400	214000	205500
24	184300	194000	213400	213500	213700	213900	213800	213800	214300	212200	213800	205300
25	184300	199900	213100	213300	213200	213800	215200	214000	214300	211900	213800	204900
26	184300	202900	212900	213400	213500	213700	214400	214000	214300	211600	213200	204600
27	184500	203900	213000	213300	213500	213800	215000	213800	214200	211400	213000	204600
28	184500	204800	213300	213200	213400	213500	214000	213800	213900	211200	212800	204300
29	184700	208000	213400	213300	---	213900	214400	213700	213600	210600	212400	204100
30	184500	211100	213500	213400	---	213700	214000	213800	213400	210300	212300	204000
31	184500	---	213600	213600	---	213800	---	213700	---	209800	212100	---
MAX	184700	211100	214400	214200	215000	214300	215200	214200	214500	216300	214800	212100
MIN	179600	184200	211500	212100	212900	213400	213600	213700	213000	209800	208000	204000
(+)	334.33	337.26	337.53	337.53	337.50	337.55	337.57	337.54	337.51	337.13	337.37	336.50
(@)	+900	+26600	+2500	0	-200	+400	+200	-300	-300	-3600	+2300	-8100
CAL YR 1996	MAX	214400	MIN	171600	(@)	+21600						
WTR YR 1997	MAX	216300	MIN	179600	(@)	+20400						

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

(@) Change in contents, in acre-feet.

RED RIVER BASIN

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 33°01'15", long 94°52'55", Camp-Titus County line, Hydrologic Unit 11140305, near center of stream at downstream side of bridge on State Highway 11, 0.5 mi upstream from Louisiana & Arkansas Railway Co. bridge, 1.4 mi upstream from Williamson Creek, 5.2 mi east of Pittsburg, 19.2 mi downstream from Lake Bob Sandlin, and 110.0 mi upstream from mouth.

DRAINAGE AREA.--366 mi².

PERIOD OF RECORD.--April 1943 to December 1962 (published as Cypress Creek near Pittsburg), October 1967 to September 1989. October 1989 to current year, (peak discharges greater than base discharge). Gage-height records collected at this site from September 1963 to December 1967, are published in reports by the U.S. Army Corps of Engineers.

Water-quality records.--Chemical analyses: March 1965 to August 1989. Chemical and biochemical analyses: January 1983 to September 1985.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 247.49 ft above sea level. Prior to Nov. 12, 1954, water-stage recorder at site 1,900 ft downstream at present datum.

REMARKS.--Records fair. Daily values and peak discharges less than 2,500 ft³/s are not published. Flow partly regulated by Lake Cypress Springs (station 07344484, discontinued) since July 1970, and by Monticello Reservoir (on Blundell Creek) since August 1972. Flow largely regulated by Lake Bob Sandlin (station 07344489) since August 1977. Wastewater effluent was returned to a tributary above this station by the city of Mount Pleasant, and wastewater effluent was returned to a tributary below this station by the city of Pittsburg. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE.--22 years (water years 1944-62, 1968-70), prior to regulation by Lake Cypress Springs, 349 ft³/s (12.96 in/yr), 253,000 acre-ft/yr; 19 years (water years 1971-89) regulated, 237 ft³/s (171,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to regulation by Lake Cypress Springs, 58,500 ft³/s Mar. 30, 1945 (gage height, 28.3 ft, from floodmark, and adjusted to present site on basis of record for flood of Apr. 27, 1958), from rating curve extended above 20,000 ft³/s; no flow Aug. 20 to Oct 3, 1954, July 19 to Nov. 4, 1956; maximum discharge for regulated period, 50,400 ft³/s Mar. 17, 1987 (gage height, 23.65 ft). Maximum stage since at least 1895, that of Mar. 30, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1938 reached a stage of about 25 ft from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	2015	8,100	16.56	Mar. 14	0045	4,390	14.56
Feb. 21	1215	15,500	19.48	Apr. 05	1415	e6,140	e15.55
Feb. 27	0900	5,960	15.45	Apr. 28	2015	10,700	17.69

e Estimated

07345900 LAKE O' THE PINES NEAR JEFFERSON, TX

LOCATION.--Lat 32°45'90", long 94°29'57", Marion County, Hydrologic Unit 11140305, on left bank 1,500 ft upstream from left end of Ferrell's Bridge Dam on Big Cypress Creek, on Farm Road 726, 9.0 mi west of Jefferson, and 80.1 mi upstream from mouth.

DRAINAGE AREA.--850 mi².

PERIOD OF RECORD.--August 1957 to current year.

Water-quality records.--Chemical and biochemical analyses: October 1969 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Nov. 12, 1957, non-recording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 10,600 ft long, including a 200-foot-wide concrete spillway. Impoundment of water began Aug. 21, 1957, and the dam was completed June 25, 1958. Official operation began Dec. 11, 1959. The flood-control outlet works consist of two 10.0-foot-diameter conduits that are controlled by two 8.0- by 12.5-foot electrically driven broome-type gates. The low-flow outlet works consist of a controlled 14-inch pipe. Flow over the spillway is discharged into a 2,000-foot-long rectified channel and then into Cypress Creek. The capacity table is based on a survey made in 1950. The lake was built for conservation, flood control, and water supply. During the current year, an unknown amount of water was diverted from the lake for municipal and industrial uses. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	277.0	-
Crest of spillway	249.5	842,100
Top of conservation pool	228.5	254,900
Crest of intake to wet well (14 in)	202.5	5,760
Lowest gated outlet (invert)	200.0	2,860

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 694,360 acre-ft May 5, 1966 (elevation, 245.41 ft); minimum since December 1959, 210,100 acre-ft Oct. 6, 1984 (elevation, 225.98 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 463,100 acre-ft Mar. 16 (elevation, 237.79 ft); minimum, 252,400 acre-ft Oct. 20 (elevation, 228.37 ft).

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

227.0	227,600	231.0	303,800	235.0	392,700
228.0	245,600	232.0	324,800	236.0	417,100
229.0	264,300	233.0	346,500	237.0	442,500
230.0	283,700	234.0	369,100	238.0	468,700

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260500	272500	269800	260300	257700	428200	396100	440100	331200	287300	280700	275600
2	258800	270600	268700	259900	257700	434500	390800	447600	325600	286900	280100	275400
3	258000	268700	268700	259700	257700	440100	384800	449200	320100	286500	280100	275100
4	257500	267900	268100	260900	257700	447400	384100	450800	314600	286300	279700	274100
5	257300	266800	266600	260900	257500	451800	381300	452600	310000	285300	278800	273700
6	256900	265800	264300	262200	258000	452100	386700	453100	306100	285900	279000	273300
7	256900	267700	261800	262900	261400	452100	390300	451800	302400	297300	279700	272900
8	256500	267500	258400	266200	260500	451000	390300	449500	298500	297300	281900	272900
9	256300	267300	257600	265800	260100	449700	387400	445000	296700	296100	280700	272900
10	255800	266900	256900	266200	260100	447100	383600	439400	295900	294500	281100	272300
11	255200	267100	257500	265800	260100	444300	382900	433800	294100	293700	281100	271200
12	255200	266900	258200	266200	270200	444800	376300	428200	292500	293700	280900	270600
13	254900	266400	258600	266900	277600	450800	371200	422100	295300	293100	280500	270400
14	254500	265400	259200	267300	288500	457300	366400	416400	294900	291900	280300	270000
15	254300	264300	263100	267900	305300	462600	361800	411200	295900	290700	279700	269800
16	254100	263300	264800	265800	314000	463100	356800	405300	297100	289300	279200	269400
17	255600	264800	266400	264300	318400	461500	351400	399400	302000	287900	279200	268900
18	253000	264100	266000	263100	320500	460700	346100	393900	304900	286900	278800	268500
19	252600	263900	266800	262600	323500	455700	341000	388800	308000	286300	278600	268300
20	252400	263500	267900	261600	330600	451300	335800	385700	308800	285500	278600	268100
21	262400	262600	268700	260900	339700	447100	331000	381300	307600	284900	278200	267300
22	264300	261200	268700	259500	365700	442500	328000	377500	304700	284500	279200	266800
23	267100	260500	269800	261800	381000	437300	322600	373300	301000	284900	278800	270400
24	268900	265200	266900	262200	388100	432000	317400	369800	297900	284300	278400	271200
25	270800	265400	265200	260900	392900	429700	316500	364800	294700	284100	278000	270000
26	273100	264700	265200	260700	400900	424400	319000	360000	292300	283700	277600	268700
27	274500	264700	264300	262000	406500	419900	334900	357000	290700	283500	277400	267900
28	274300	265800	263700	260300	420100	415600	377700	351900	289700	283100	277000	267300
29	274100	270800	262800	259700	---	411900	414400	346300	288500	282700	276600	266400
30	272900	274500	261600	258600	---	407000	434800	342100	287700	281900	276200	265800
31	271900	---	260900	257800	---	401400	---	336600	---	281300	276000	---
MAX	274500	274500	269800	267900	420100	463100	434800	453100	331200	297300	281900	275600
MIN	252400	260500	256700	257800	257500	401400	316500	336600	287700	281300	276000	265800
(+)	229.40	229.53	228.82	228.66	236.12	235.36	236.70	232.55	230.20	229.88	229.61	229.08
(@)	+10800	+2600	-13600	-3100	+162300	-18700	+33400	-98200	-48900	-6400	-5300	-10200
CAL YR 1996	MAX 274500	MIN 244500	(@) +13500									
WTR YR 1997	MAX 463100	MIN 252400	(@) +4700									

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

(@) Change in contents, in acre feet.

RED RIVER BASIN

07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°44'58", long 94°29'55", Marion County, Hydrologic Unit 11140306, on left bank 950 ft downstream from Ferrell's Bridge Dam, 7.6 mi upstream from French Creek, and 8.5 mi west of Jefferson.

DRAINAGE AREA.--850 mi².

PERIOD OF RECORD.--August 1924 to December 1959 (published as Cypress Creek near Jefferson), October 1979 to current year. Records of stage and discharge for the period October 1959 to September 1979 published by the U.S. Army Corps of Engineers, New Orleans District.

GAGE.--Water-stage recorder. Datum of gage is 180.00 ft above sea level (U.S. Army Corps of Engineers benchmark). Prior to Nov. 2, 1933, staff gage, and Nov. 2, 1933 to Dec. 8, 1955, water-stage recorder, at site about 950 ft upstream at datum 3.70 ft higher. After Dec. 9, 1955, at site about 550 ft downstream or at present site at datum 180.00 ft.

REMARKS.--No estimated daily discharges. Records good. Since August 1957, flow completely regulated by Lake O' the Pines (station 07345900), 950 ft upstream. No known diversions. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1925-57), prior to completion of Ferrell's Bridge Dam, 660 ft³s (478,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION, (WATER YEARS, 1925-57).--Maximum discharge, 57,100 ft³s Apr. 1, 1945 (gage height, 28.78 ft, site and datum then in use), from rating curve extended above 29,000 ft³s; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	545	2110	528	484	775	2600	968	2480	255	36	35
2	333	546	2350	496	447	953	2590	521	2470	180	36	35
3	334	541	1790	432	444	853	2580	192	2470	177	35	35
4	290	538	1870	277	445	1400	2590	150	2460	176	35	36
5	111	536	2120	266	443	2140	2600	245	2180	176	35	36
6	102	534	2140	267	441	2510	2570	462	1830	180	38	36
7	102	545	2140	273	563	2620	2570	816	1790	394	43	36
8	102	543	2130	321	867	2680	2560	1440	1760	525	38	37
9	67	535	1680	675	894	2690	2560	2170	1490	705	33	36
10	66	531	912	877	896	2710	2550	2520	1180	966	33	36
11	73	528	512	894	896	2700	2550	2540	1110	811	33	36
12	72	526	299	894	984	2700	2540	2580	1100	589	33	36
13	71	523	281	893	951	2790	2530	2610	1130	554	33	37
14	73	522	279	893	606	2750	2520	2610	1190	547	38	37
15	74	520	287	896	489	2730	2520	2610	1140	545	35	37
16	74	519	416	895	467	2730	2510	2600	1290	542	33	37
17	74	526	536	891	461	2730	2500	2590	1910	540	33	38
18	73	527	671	891	656	2730	2490	2570	2380	431	33	38
19	73	522	877	889	1090	2720	2490	2570	2410	297	33	38
20	73	656	907	888	1660	2720	2480	2570	2420	290	33	38
21	84	809	916	892	1570	2720	2480	2570	2420	255	47	38
22	124	735	919	892	1070	2720	2500	2550	2420	70	46	39
23	91	563	917	899	964	2720	2500	2540	2420	56	36	41
24	103	551	912	928	766	2720	2490	2540	2100	54	34	41
25	246	579	908	911	469	2720	2500	2540	1770	47	34	146
26	302	653	907	896	324	2700	2550	2530	1490	38	34	249
27	304	819	907	893	300	2680	2610	2530	977	37	34	250
28	371	844	905	889	449	2670	2440	2530	645	37	34	249
29	526	864	904	886	---	2650	1270	2510	575	36	34	250
30	540	1240	903	884	---	2640	873	2500	442	36	34	250
31	541	---	741	752	---	2620	---	2490	---	36	34	---
TOTAL	5802	18420	34146	23058	20096	76191	73113	63164	51449	9582	1100	2283
MEAN	187	614	1101	744	718	2458	2437	2038	1715	309	35.5	76.1
MAX	541	1240	2350	928	1660	2790	2610	2610	2480	966	47	250
MIN	66	519	279	266	300	775	873	150	442	36	33	35
AC-FT	11510	36540	67730	45740	39860	151100	145000	125300	102000	19010	2180	4530

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1997#, BY WATER YEAR (WY)

	MEAN	230	461	698	883	1253	1288	1082	881	904	425	198	109
MAX	728	2690	1946	2685	2688	2645	2669	2979	3209	3057	2349	482	
(WY)	1995	1958	1958	1993	1993	1988	1990	1958	1958	1958	1958	1958	
MIN	3.35	4.82	4.13	4.16	40.6	37.2	47.7	32.4	32.5	19.9	16.2	8.70	
(WY)	1981	1989	1982	1981	1996	1996	1996	1992	1987	1980	1982	1980	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1958 - 1997#

ANNUAL TOTAL	73751.2	378404	
ANNUAL MEAN	202	1037	
HIGHEST ANNUAL MEAN			701
LOWEST ANNUAL MEAN			1859
HIGHEST DAILY MEAN	2350	Dec 2	47.9
LOWEST DAILY MEAN	7.2	Jan 17	4500
ANNUAL SEVEN-DAY MINIMUM	8.4	Jan 11	.00
INSTANTANEOUS PEAK FLOW			1.4
INSTANTANEOUS PEAK STAGE			3220
ANNUAL RUNOFF (AC-FT)	146300		19.97
10 PERCENT EXCEEDS	545		507500
50 PERCENT EXCEEDS	66		2530
90 PERCENT EXCEEDS	34		187
			23

Period of regulated streamflow.

07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX

LOCATION.--Lat 32°46'40", long 94°21'26", Marion County, Hydrologic Unit 11140306 near center of channel at downstream side of bridge on U.S. Highway 59, 1.1 mi north of Jefferson, 2.0 mi upstream from Texas and Pacific Railway Co. bridge, and 5.2 mi upstream from mouth.

DRAINAGE AREA.--365 mi².

PERIOD OF RECORD.--September 1968 to current year. May 1938 to September 1955 (daily gage heights) and November 1956 to August 1968 (daily gage heights and discharge measurements) published by U.S. Army Corps of Engineers as "Black Cypress Creek at Jefferson". September 1964 to August 1968 operated as low-flow partial-record station only.

Water-quality records.--Chemical analyses: October 1967 to September 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 171.47 ft above sea level (U.S. Army Corps of Engineers benchmark).

REMARKS.--Records good, except those for estimated daily discharges which are fair. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1938, 22.42 ft Apr. 29, 1958, from records by U.S. Army Corps of Engineers.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 29	2100	10,100	18.88				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	454	433	1320	393	613	1530	380	6410	618	232	12	3.1
2	401	321	1150	401	536	1560	368	4260	651	212	11	e2.2
3	332	244	1070	394	474	1690	356	2650	652	213	9.5	e1.8
4	246	203	1030	374	459	1710	353	1780	567	218	7.7	e1.6
5	178	186	1030	348	410	1660	418	1320	427	190	5.6	e1.4
6	134	169	1040	343	376	1700	462	1010	311	156	4.5	e1.2
7	108	207	985	367	435	1800	470	792	235	258	4.0	e1.1
8	91	252	848	425	565	1660	567	625	193	511	7.5	e.93
9	78	244	713	566	552	1380	710	484	166	329	25	e.81
10	67	248	593	581	534	1150	848	392	238	202	34	e.71
11	57	306	496	595	577	963	887	336	252	165	31	e.60
12	48	365	432	656	797	829	772	296	287	152	36	e.51
13	43	399	383	696	1560	978	624	266	447	142	44	e.44
14	37	430	347	713	1770	1110	492	243	728	128	54	e.40
15	32	440	347	723	1960	1190	406	224	657	114	60	e.35
16	29	407	458	684	2180	1620	356	213	599	103	57	e.30
17	26	361	528	594	2170	1900	321	204	828	92	46	e.26
18	22	323	515	496	1970	1800	292	193	1080	80	34	e.22
19	19	294	582	438	1630	1500	268	185	1130	65	24	e.20
20	17	280	680	406	1390	1190	248	185	1070	54	17	e.18
21	46	316	734	395	1510	965	229	202	985	46	13	e.15
22	396	371	759	395	1690	802	268	206	900	40	11	e.12
23	497	407	732	397	2180	693	357	246	925	34	13	e.70
24	709	446	652	667	2590	609	310	335	861	29	16	3.4
25	1180	597	540	800	2700	558	325	453	711	26	12	15
26	1210	689	456	786	2280	536	731	601	542	27	9.5	9.0
27	1020	689	438	865	1900	488	1260	674	403	27	8.0	4.1
28	942	729	414	870	1640	448	3880	709	320	24	7.7	e1.9
29	879	864	388	779	---	415	8360	609	266	21	7.0	e.81
30	758	1130	377	705	---	398	8610	491	244	17	5.7	e.33
31	596	---	381	661	---	388	---	526	---	14	3.9	---
TOTAL	10652	12350	20418	17513	37448	35220	33928	27120	17293	3921	630.6	53.82
MEAN	344	412	659	565	1337	1136	1131	875	576	126	20.3	1.79
MAX	1210	1130	1320	870	2700	1900	8610	6410	1130	511	60	15
MIN	17	169	347	343	376	388	229	185	166	14	3.9	.12
AC-FT	21130	24500	40500	34740	74280	69860	67300	53790	34300	7780	1250	107
CFSM	.94	1.13	1.80	1.55	3.66	3.11	3.10	2.40	1.58	.35	.06	.00
IN.	1.09	1.26	2.08	1.78	3.82	3.59	3.46	2.76	1.76	.40	.06	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1997, BY WATER YEAR (WY)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	88.2	267	548	514	641	715	607	486	302	94.8	45.7	54.3																	
MAX	415	1344	2157	1508	1612	1606	2006	1934	1321	576	623	581																	
(WY)	1974	1975	1988	1991	1975	1990	1973	1991	1974	1992	1979	1974																	
MIN	.009	13.6	62.1	99.0	69.6	108	109	50.8	4.68	.97	.060	.000																	
(WY)	1979	1984	1990	1971	1996	1996	1971	1984	1984	1978	1969	1969																	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1969 - 1997

ANNUAL TOTAL	72568.8	216547.42	
ANNUAL MEAN	198	593	
HIGHEST ANNUAL MEAN			362
LOWEST ANNUAL MEAN			647
HIGHEST DAILY MEAN	1320	8610	10700
LOWEST DAILY MEAN	8.8	.12	.00
ANNUAL SEVEN-DAY MINIMUM	12	.20	.00
INSTANTANEOUS PEAK FLOW		10100	11600
INSTANTANEOUS PEAK STAGE		18.88	19.34
ANNUAL RUNOFF (AC-FT)	143900	429500	262300
ANNUAL RUNOFF (CFSM)	.54	1.63	.99
ANNUAL RUNOFF (INCHES)	7.40	22.07	13.48
10 PERCENT EXCEEDS	502	1340	885
50 PERCENT EXCEEDS	101	396	167
90 PERCENT EXCEEDS	24	7.7	1.9

e Estimated

RED RIVER BASIN

07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX

LOCATION.--Lat 32°40'21", long 94°45'03", Upshur County, Hydrologic Unit 11140307, on right bank at downstream side of bridge on U.S. Highway 259, 4 mi downstream from Clear Creek, 9 mi south of Ore City, and 12 mi north of Longview.

DRAINAGE AREA.--383 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. Major beaver dam activity during the water year 400 ft downstream of gage. No known regulation or diversions. During the year, the city of Gilmer discharged a small amount of wastewater effluent into a tributary above this station. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in March 1945; maximum stage since 1945, that of Apr. 24, 1966. The flood in April 1958 reached a stage of 19.4 ft, or 1.3 ft lower than the flood of March 1945 at a point 6 mi upstream, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 23	0130	5,700	13.10	Apr. 29	0230	8,820	14.26

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	27	641	150	262	1390	225	3870	136	46	41	27
2	2.4	31	646	142	200	1660	198	2450	103	38	38	25
3	2.8	31	620	133	162	1610	174	1690	86	32	33	22
4	2.9	29	550	126	153	1350	179	1250	75	28	30	21
5	3.5	27	471	120	145	1410	464	911	66	25	29	20
6	3.5	27	395	119	143	1570	677	678	60	22	28	20
7	5.3	38	322	165	263	1330	632	481	55	109	41	19
8	6.2	102	256	292	545	1100	1160	301	50	457	103	17
9	6.7	114	216	518	513	941	1260	193	48	470	208	16
10	7.8	93	183	524	408	933	1000	150	60	325	263	16
11	9.4	87	165	433	398	869	785	127	101	482	287	15
12	9.5	81	144	397	716	794	626	111	104	1340	335	14
13	8.7	69	124	408	2410	1170	483	99	117	1310	351	13
14	6.8	57	111	428	2460	1580	337	90	155	974	185	15
15	6.9	51	175	440	2740	1820	243	83	153	676	67	16
16	7.0	48	493	443	2990	2030	194	78	187	313	52	15
17	9.9	49	626	400	2290	1650	159	76	290	100	46	14
18	12	60	562	299	1590	1250	132	74	391	99	41	12
19	12	71	491	215	1270	1000	114	73	426	109	38	11
20	12	80	469	176	1350	832	102	73	456	82	36	9.4
21	54	90	467	163	2640	709	94	78	781	56	33	8.3
22	270	94	458	170	3590	596	99	103	1160	47	37	7.6
23	255	88	438	202	5300	489	127	173	1020	42	40	9.0
24	227	91	390	574	3420	390	125	420	726	37	42	11
25	190	293	286	693	2070	336	145	991	448	34	42	18
26	168	509	202	573	1550	342	576	1030	209	34	40	30
27	144	519	175	489	1430	298	1120	781	107	35	42	34
28	115	450	171	451	1230	256	5660	590	74	38	41	35
29	86	433	162	418	---	245	8340	428	60	42	38	34
30	56	547	160	363	---	251	6170	301	53	42	34	33
31	33	---	158	314	---	252	---	202	---	41	32	---
TOTAL	1735.5	4286	10727	10338	42238	30453	31600	17955	7757	7485	2673	557.3
MEAN	56.0	143	346	333	1509	982	1053	579	259	241	86.2	18.6
MAX	270	547	646	693	5300	2030	8340	3870	1160	1340	351	35
MIN	2.2	27	111	119	143	245	94	73	48	22	28	7.6
AC-FT	3440	8500	21280	20510	83780	60400	62680	35610	15390	14850	5300	1110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1997, BY WATER YEAR (WY)

	MEAN	55.1	188	374	353	488	562	574	466	206	72.0	26.5	55.8
MAX	412	1508	1965	1275	1509	1478	3007	1834	905	426	392	614	
(WY)	1994	1975	1988	1991	1997	1987	1966	1968	1974	1992	1979	1974	
MIN	.000	1.10	3.70	25.6	42.0	40.9	54.3	23.9	2.09	.005	.000	.000	
(WY)	1964	1966	1990	1964	1996	1966	1971	1984	1971	1984	1984	1963	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1963 - 1997

ANNUAL TOTAL	29357.67	167804.8	288	
ANNUAL MEAN	80.2	460	599	1975
HIGHEST ANNUAL MEAN			35.7	1964
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	737	Jun 2	8340	Apr 29
LOWEST DAILY MEAN	.20	Jul 26	2.2	Oct 1
ANNUAL SEVEN-DAY MINIMUM	.36	Jul 5	3.2	Oct 1
INSTANTANEOUS PEAK FLOW			8820	Apr 29
INSTANTANEOUS PEAK STAGE			14.26	Apr 29
ANNUAL RUNOFF (AC-FT)	58230	332800	208600	
10 PERCENT EXCEEDS	193	1250	762	
50 PERCENT EXCEEDS	40	162	71	
90 PERCENT EXCEEDS	6.3	17	.30	

07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°42'46", long 94°20'45", Harrison County, Hydrologic Unit 11140307, at downstream side of upstream bridge on U.S. Highway 59, 0.3 mi downstream from Texas and Pacific Railway Co. bridge, 3.3 mi downstream from Grays Creek, 3.5 mi south of Jefferson, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--675 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1946 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 174.60 ft above sea level. Prior to Sept. 19, 1947, nonrecording gage at upstream side of bridge at same datum.

REMARKS.--Records good. No known regulation or diversions. Wastewater effluent is discharged into tributaries that enter Little Cypress Creek above this station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 21.1 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	827	430	1160	526	774	3290	635	6900	948	308	13	2.2
2	477	326	1350	483	722	2930	574	6830	762	209	8.8	1.1
3	227	247	1390	459	708	2870	537	5500	583	166	6.2	1.2
4	153	200	1370	444	996	2560	539	4180	418	138	4.0	.91
5	124	179	1230	424	1090	2380	758	3190	313	116	2.0	.50
6	109	165	1060	417	812	2380	884	2480	250	100	.95	.30
7	95	201	943	555	759	2270	785	2000	210	169	.81	.18
8	85	274	861	765	1070	2080	755	1580	181	646	1.2	.21
9	82	276	802	1300	1030	1970	769	1270	163	1470	2.8	.35
10	72	272	762	1410	946	2070	810	1050	188	1930	24	.39
11	60	277	730	1240	920	2030	863	866	209	1460	103	.44
12	53	281	696	1140	1280	1870	1050	686	277	1020	167	.42
13	48	273	652	1040	3310	2160	1310	507	388	768	206	.44
14	44	253	588	947	3840	2690	1320	387	654	603	225	.39
15	42	233	542	867	3540	2680	1170	324	825	545	240	.35
16	41	214	707	804	3290	2520	997	291	726	647	251	.34
17	43	210	904	749	3150	2360	848	268	664	785	236	.35
18	38	237	947	722	2980	2310	711	244	623	828	131	.32
19	32	257	954	708	2990	2440	576	225	587	749	45	.30
20	30	268	945	696	3030	2450	463	215	616	532	22	.37
21	e45	254	921	689	3340	2240	390	238	610	259	19	.37
22	e905	234	887	685	3230	1950	407	325	570	175	23	.40
23	e973	218	841	648	3280	1640	467	347	542	137	53	.64
24	e956	250	853	745	3610	1380	428	298	539	95	51	.69
25	e911	536	823	796	4180	1210	425	308	600	66	35	.64
26	e880	668	796	761	5360	1120	880	394	706	51	20	.61
27	e845	660	825	777	5280	1020	1120	482	796	43	12	.53
28	794	615	800	867	4190	938	2850	846	811	35	8.5	.44
29	759	599	748	914	---	857	3670	1090	723	28	6.1	.37
30	692	787	669	889	---	782	4620	1140	523	22	4.3	.28
31	568	---	588	838	---	710	---	1110	---	17	3.0	---
TOTAL	11010	9894	27344	24305	69707	62157	31611	45571	16005	14117	1924.66	16.03
MEAN	355	330	882	784	2490	2005	1054	1470	534	455	62.1	.53
MAX	973	787	1390	1410	5360	3290	4620	6900	948	1930	251	2.2
MIN	30	165	542	417	708	710	390	215	163	17	.81	.18
AC-FT	21840	19620	54240	48210	138300	123300	62700	90390	31750	28000	3820	32
CFSM	.53	.49	1.31	1.16	3.69	2.97	1.56	2.18	.79	.67	.09	.00
IN.	.61	.55	1.51	1.34	3.84	3.43	1.74	2.51	.88	.78	.11	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1997, BY WATER YEAR (WY)

	MEAN	116	311	652	723	925	998	1017	1014	456	137	48.4	101
MAX	927	2709	3391	2664	2853	2367	4584	4212	2525	689	667	941	
(WY)	1950	1958	1961	1991	1950	1969	1966	1958	1946	1992	1979	1979	
MIN	.000	.017	.53	8.33	73.1	75.7	117	61.6	4.67	.24	.000	.000	
(WY)	1953	1957	1957	1957	1996	1996	1972	1971	1971	1964	1956	1952	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1946 - 1997
ANNUAL TOTAL	80499.9	313661.69	
ANNUAL MEAN	220	859	536
HIGHEST ANNUAL MEAN			1260
LOWEST ANNUAL MEAN			67.3
HIGHEST DAILY MEAN	1390	Dec 3	32700
LOWEST DAILY MEAN	8.7	Jul 8	.00
ANNUAL SEVEN-DAY MINIMUM	12	Jul 4	.33
INSTANTANEOUS PEAK FLOW		7490	35500
INSTANTANEOUS PEAK STAGE		14.95	22.28
ANNUAL RUNOFF (AC-FT)	159700	622100	388400
ANNUAL RUNOFF (CFSM)	.33	1.27	.79
ANNUAL RUNOFF (INCHES)	4.44	17.29	10.79
10 PERCENT EXCEEDS	751	2370	1370
50 PERCENT EXCEEDS	88	615	178
90 PERCENT EXCEEDS	23	3.6	1.5

RED RIVER BASIN

07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: June 1964 to October 1997(discontinued). Pesticide analyses: January 1968 to June 1981.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1967 to September 1990.

WATER TEMPERATURE: October 1967 to September 1990.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,350 microsiemens Nov. 9, 1969; minimum, 20 microsiemens Mar. 29, 30, 1989.

WATER TEMPERATURE (water years 1967-87, 1989-90): Maximum, 32.5°C on several days during July and August 1987; minimum, 0.0°C on several days during winter months of 1983, 1985.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)
OCT 02...	1710	388	106	6.6	19.5	7.0	76	1.0	20
DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 02...	6	4.8	1.9	8.5	0.8	3.9	14	12	13
DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 02...	<0.10	15	68	<0.010	0.060	<0.015	0.50	<0.010	<0.010

WESTERN GULF OF MEXICO BASINS

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SABINE RIVER MAIN STEM

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX

LOCATION.--Lat 33°07'58", long 96°04'36", Hunt County, Hydrologic Unit 12010001, on left bank 103 ft downstream from centerline of downstream bridge on Interstate Highway 30, 0.3 mi downstream from Horse Creek, 0.9 mi downstream from Louisiana and Arkansas Railroad Co. bridge, 1.8 mi east of Greenville, and at mile 558.3.

DRAINAGE AREA.--77.7 mi².

PERIOD OF RECORD.--February 1959 to current year. Prior to October 1963, published as Sabine River at Greenville.

REVISED RECORDS.--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 485.07 ft above sea level.

REMARKS.--No estimated daily discharges. Records poor. No known regulation. The city of Greenville diverts water from city lakes upstream from gage and from Lake Tawakoni for municipal use. Wastewater effluent was returned to a tributary downstream from gage. Extreme low flows are largely sustained by return water from a water treatment plant upstream. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1895, 22 ft in May 1935, from information by local resident and city engineer of Greenville. Flood of July 3, 1913, reached a stage of 20 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 07	1715	3680	16.30	Feb. 20	0930	4620	16.63
Nov. 24	2145	3780	16.33	Apr. 05	0730	4460	16.76
Nov. 29	2345	3010	16.08	Jun. 14	1100	5710	16.90
Feb. 13	1030	5330	16.81				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	532	674	1.7	.98	259	8.5	13	7.6	7.5	.18	.00
2	.01	492	73	2.2	.81	482	6.3	9.9	2.1	3.4	.18	.01
3	.01	40	36	1.4	.87	687	5.6	6.6	1.4	1.5	.17	.08
4	.00	18	22	1.1	1.5	88	1290	3.8	.44	.94	.16	.09
5	.00	10	18	.81	1.0	128	3180	2.7	.23	1.1	.15	.09
6	.00	5.1	14	.74	3.6	78	253	2.5	.34	1.1	1.3	.02
7	.00	2320	10	1.1	479	30	51	2.0	.26	.84	9.7	.00
8	.00	854	6.9	19	179	20	30	1.7	.20	.64	.69	.01
9	.05	40	4.3	45	35	16	22	1.4	.23	.79	.29	.00
10	.04	16	3.1	22	19	42	18	1.3	1080	.59	.17	.00
11	.01	7.9	2.6	11	13	21	26	.93	42	.52	.14	.00
12	.00	4.7	2.1	4.8	933	383	60	.72	9.5	.48	.14	.00
13	.00	3.3	1.3	2.2	4180	1180	23	.64	26	.45	.18	.00
14	.00	2.3	1.1	1.5	377	143	15	.89	2720	.36	.17	.00
15	.00	1.4	323	1.7	64	51	12	1.7	186	.33	.19	.00
16	.00	1.2	186	1.8	33	27	11	1.2	31	.56	.13	.00
17	.00	689	61	2.6	19	19	9.3	.58	16	.52	.10	.00
18	.00	101	27	1.5	13	16	8.6	.48	9.0	.37	.08	.00
19	.00	25	15	1.1	333	11	8.4	6.8	3.8	.31	.07	.00
20	.00	14	9.6	1.0	3250	7.0	7.9	12	1.7	.27	.37	.06
21	6.3	9.5	6.9	1.0	1800	4.6	7.9	1.6	1.2	.25	.73	.15
22	22	6.2	6.4	1.0	136	3.3	13	.64	1.0	.24	1.3	.12
23	7.3	3.5	5.5	10	45	2.8	14	.66	1.1	.24	.19	.02
24	.60	1790	3.9	148	24	2.5	14	5.7	1.0	.25	.03	.00
25	.14	2500	2.4	42	21	25	192	1.5	.95	.33	.01	.00
26	.12	239	1.6	19	228	38	1820	.62	1.4	.35	.00	.00
27	19	66	1.5	12	195	13	807	.42	89	.28	.00	.00
28	1860	34	1.3	5.6	42	6.6	92	.34	4.6	.24	.00	.00
29	670	1130	1.1	2.8	---	4.5	36	.30	635	.22	.00	.00
30	52	2020	1.1	1.8	---	52	19	10	60	.20	.00	.00
31	23	---	1.1	1.3	---	15	---	41	---	.19	.00	---
TOTAL	2660.62	12975.1	1522.8	368.75	12426.76	3855.3	8060.5	133.62	4933.05	25.36	16.82	0.65
MEAN	85.8	433	49.1	11.9	444	124	269	4.31	164	.82	.54	.022
MAX	1860	2500	674	148	4180	1180	3180	41	2720	7.5	9.7	.15
MIN	.00	1.2	1.1	.74	.81	2.5	5.6	.30	.20	.19	.00	.00
AC-FT	5280	25740	3020	731	24650	7650	15990	265	9780	50	33	1.3
CFSM	1.10	5.57	.63	.15	5.71	1.60	3.46	.06	2.12	.01	.01	.00
IN.	1.27	6.21	.73	.18	5.95	1.85	3.86	.06	2.36	.01	.01	.00

WESTERN GULF OF MEXICO BASINS

SABINE RIVER MAIN STEM

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1997, BY WATER YEAR (WY)

MEAN	56.6	59.6	90.8	54.9	89.6	95.2	100	141	63.3	23.5	5.93	29.6
MAX	354	433	573	193	444	390	431	540	353	264	95.2	258
(WY)	1972	1997	1972	1969	1997	1984	1966	1982	1981	1989	1977	1974
MIN	.001	.025	.11	.24	.22	.48	.85	.33	.032	.023	.000	.012
(WY)	1996	1996	1990	1986	1996	1996	1971	1988	1988	1991	1985	1983

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1959 - 1997	
ANNUAL TOTAL	18187.97		46979.33		68.2	
ANNUAL MEAN	49.7		129		146	
HIGHEST ANNUAL MEAN					2.85	
LOWEST ANNUAL MEAN					1995	
HIGHEST DAILY MEAN	2500	Nov 25	4180	Feb 13	9730	May 13 1982
LOWEST DAILY MEAN	.00	May 23	.00	Oct 4	.00	Aug 4 1964
ANNUAL SEVEN-DAY MINIMUM	.00	May 23	.00	Oct 12	.00	Aug 4 1972
INSTANTANEOUS PEAK FLOW			5710	Jun 14	15300	May 13 1982
INSTANTANEOUS PEAK STAGE			16.90	Jun 14	18.47	May 13 1982
ANNUAL RUNOFF (AC-FT)	36080		93180		49440	
ANNUAL RUNOFF (CFSM)	.64		1.66		.88	
ANNUAL RUNOFF (INCHES)	8.71		22.49		11.93	
10 PERCENT EXCEEDS	22		193		55	
50 PERCENT EXCEEDS	.16		2.4		1.4	
90 PERCENT EXCEEDS	.00		.00		.04	

08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX

LOCATION.--Lat 32°53'52", long 96°15'11", Hunt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 1565, 2.4 mi upstream from Dry Creek, 6.2 mi upstream from Bearpen Creek, 7 mi southwest of Quinlan, and 25 mi upstream from mouth.

DRAINAGE AREA.--78.7 mi².

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 461.40 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. Wastewater effluent was discharged by Royse City into the river above this station during the water year. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 21 ft July 29, 1902, from information by local resident. Flood of Apr. 27, 1957, reached a stage of 17.76 ft, from floodmarks.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 28	1115	6,990	16.90	Feb. 12	2030	10,900	17.27
Nov. 24	2030	4,580	16.38	Apr. 4	2015	11,700	17.40
Nov. 29	2300	4,650	16.37				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	3.6	937	.56	2.7	271	7.7	8.4	5.6	2.9	.01	.00
2	.22	2.5	67	.78	2.3	546	5.4	5.3	1.5	1.2	.00	.00
3	.14	1.8	26	.48	2.0	732	4.3	2.6	.96	.61	.00	.00
4	.16	.92	14	.33	2.3	97	4040	1.6	.97	.47	.00	.00
5	.09	1.1	24	.20	1.8	30	3990	1.3	1.1	.43	.00	.00
6	.03	1.2	21	.16	1.9	11	340	1.1	.85	.39	.00	.00
7	.01	641	11	.24	156	3.4	54	.96	.91	.84	215	.00
8	.00	477	5.7	70	134	1.3	31	2.6	1.2	.57	460	.00
9	.00	31	3.3	156	40	1.1	12	1.6	1.6	.36	42	.00
10	.00	9.4	2.6	51	21	54	7.5	1.1	181	.27	13	.00
11	.00	3.9	2.6	19	11	22	61	.82	24	.25	5.1	.00
12	.00	2.0	2.1	6.5	3450	683	97	.69	6.2	.27	2.3	.00
13	.00	1.1	1.5	2.2	5560	1900	23	.61	24	.21	1.0	.00
14	.00	.77	1.4	1.3	531	319	12	.59	717	.19	.70	.00
15	.00	.66	40	1.6	94	61	7.5	.60	172	.21	.40	.00
16	.00	.72	192	2.3	37	33	5.5	.64	52	.26	.12	.00
17	.00	253	105	1.5	11	22	4.4	1.3	427	.18	.06	.00
18	.00	93	31	.97	4.7	19	2.8	.85	72	.14	.05	.00
19	.00	21	12	.74	123	16	2.1	.62	20	.10	.04	.00
20	.00	9.9	6.1	.62	1270	14	1.6	200	10	.05	.03	.00
21	8.7	5.4	4.4	.65	1840	12	1.6	26	4.9	.03	.02	.00
22	117	3.0	4.5	.76	165	11	1.7	8.6	2.5	.02	.01	.00
23	40	2.1	4.1	14	55	10	1.2	5.0	1.6	.02	.02	.00
24	11	1730	3.3	194	19	8.2	2.1	13	1.3	.01	.02	.00
25	5.3	2570	2.1	41	64	42	186	12	1.4	.05	.04	.00
26	1.6	396	1.3	18	568	48	1850	5.5	117	.02	.14	.00
27	7.0	54	.94	10	345	18	1150	2.3	696	.01	.15	.00
28	3040	25	.88	6.0	57	12	130	1.3	74	.03	.12	.00
29	567	1370	.75	3.7	---	7.8	50	.97	17	.02	.07	.00
30	35	2290	.36	3.0	---	37	22	.75	6.6	.03	.03	.00
31	9.8	---	.44	2.8	---	19	---	11	---	.02	.01	---
TOTAL	3843.39	10001.07	1528.37	610.39	14568.7	5060.8	12103.4	319.70	2642.19	10.16	740.44	0.00
MEAN	124	333	49.3	19.7	520	163	403	10.3	88.1	.33	23.9	.000
MAX	3040	2570	937	194	5560	1900	4040	200	717	2.9	460	.00
MIN	.00	.66	.36	.16	1.8	1.1	1.2	.59	.85	.01	.00	.00
AC-FT	7620	19840	3030	1210	28900	10040	24010	634	5240	20	1470	.00
CFSM	1.58	4.24	.63	.25	6.61	2.07	5.13	.13	1.12	.00	.30	.00
IN.	1.82	4.73	.72	.29	6.89	2.39	5.72	.15	1.25	.00	.35	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1997, BY WATER YEAR (WY)

	MEAN	102	65.8	95.5	60.3	118	108	130	149	90.6	29.3	5.74	26.1
MAX	656	655	459	277	556	572	693	674	1128	490	96.8	353	
(WY)	1982	1995	1972	1974	1983	1977	1966	1979	1981	1981	1974	1974	
MIN	.000	.000	.000	.000	.000	.11	.062	.038	.000	.000	.000	.000	
(WY)	1964	1964	1964	1976	1976	1972	1971	1988	1977	1964	1965	1963	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1959 - 1997

ANNUAL TOTAL	16292.13	51428.61	
ANNUAL MEAN	44.5	141	
HIGHEST ANNUAL MEAN			82.5
LOWEST ANNUAL MEAN			187
HIGHEST DAILY MEAN	3040	5560	3.29
LOWEST DAILY MEAN	.00	.00	13300
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		11700	.00
INSTANTANEOUS PEAK STAGE		17.40	23000
ANNUAL RUNOFF (AC-FT)	32320	102000	18.77
ANNUAL RUNOFF (CFSM)	.57	1.79	59750
ANNUAL RUNOFF (INCHES)	7.70	24.31	1.05
10 PERCENT EXCEEDS	21	193	14.24
50 PERCENT EXCEEDS	.97	2.3	57
90 PERCENT EXCEEDS	.12	.00	.40
			.00

SABINE RIVER MAIN STEM

08017400 LAKE TAWAKONI NEAR WILLS POINT, TX

LOCATION.--Lat 32°48'31", long 95°55'10", Rains County, Hydrologic Unit 12010001, in stairwell at left end of spillway of Iron Bridge Dam on Sabine River, 750 ft upstream from bridge on Farm Road 47, 3.8 mi upstream from McBee Creek, 9.0 mi northeast of Wills Point, and at mile 514.5.

DRAINAGE AREA.--756 mi².

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--The lake is formed by a rolled earthfill dam 29,500 ft long, including a 480-foot uncontrolled concrete ogee spillway. Outlet works consist of two 4- by 6-foot sluice gates and two 20-inch steel pipes controlled by service valves. Closure of earthen dam began July 1, 1960, and deliberate impoundment of water began Oct. 7, 1960. Capacity table is based on a 1984 survey. Diversions are made for municipal use by the city of Dallas and various other users in the Sabine River basin. The lake was built for water conservation. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	454.0	-
Design flood	446.2	1,290,000
Crest of spillway	437.5	936,200
Lowest intake to wet well (invert)	416.5	335,600
Lowest gated outlet (invert)	378.0	0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,130,400 acre-ft May 1, 1966 (elevation, 442.58 ft); minimum since lake first filled in May 1965, 802,700 acre-ft Oct. 21, 1972 (elevation, 433.65 ft) using Capacity Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,026,300 acre-ft Apr. 6 at 0700 hours (elevation, 439.93 ft); minimum daily, 651,300 acre-ft Oct. 20 (elevation, 428.82 ft).

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

428.0	627,500	435.0	848,200	440.0	1,029,000
430.0	686,500	437.0	918,200	441.0	1,067,600
433.0	781,200	439.0	991,300	443.0	1,147,300

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	673600	667000	781200	795100	800800	974300	952900	975400	943500	945600	916000	917100
2	672700	666100	787900	795100	801100	978700	952100	975000	942800	944200	915300	916800
3	671500	666100	788500	794800	801400	981600	950700	969800	942000	942800	914300	915700
4	670300	666100	788900	796800	801400	982800	978000	966500	941300	941700	913600	914600
5	669400	665800	789200	795800	800800	982000	1019000	964300	940200	943100	912200	913200
6	668800	665200	790200	796500	801100	978000	1026000	962100	939500	942000	911400	912900
7	667900	670000	790200	795500	804700	975000	1016000	959900	938800	942000	925800	911800
8	666700	676900	789800	798400	806100	972400	1007000	959100	938000	940900	936600	910700
9	665800	682600	789200	800100	807100	972400	999200	956900	942800	940600	938800	910400
10	664000	682600	789500	801800	807100	970200	992400	954700	943800	939500	938400	908600
11	662200	682300	790200	801100	807400	968400	993900	952900	944200	938400	938000	906500
12	661300	682000	790500	800800	830900	978700	985700	951100	943500	937300	937300	905100
13	660700	681700	790200	799100	883100	1000000	979800	949300	945600	936600	936200	904400
14	659800	681400	790200	798400	909000	1004000	975700	948500	950000	935900	935200	903700
15	658900	680200	793800	799800	913200	996500	972000	947800	957300	936600	933700	902600
16	657400	680800	795100	799100	913900	990900	969800	947100	960200	935900	933000	901500
17	656800	683800	798400	798100	913600	986400	966900	946000	960600	934400	931900	900800
18	655300	687800	797500	797800	914300	984600	963900	944900	959900	934100	930800	899400
19	653000	689300	796800	797800	915700	977600	962100	946400	957300	933700	930100	898700
20	651300	689900	795500	797100	935200	974300	959900	946400	955400	932600	929700	898400
21	661000	689600	795500	797500	967200	971300	959100	945300	953600	931500	928300	896200
22	656200	688100	795100	798100	974300	969100	958400	944600	951800	930100	927900	894800
23	655600	689300	798800	798400	972000	965800	955400	946400	951100	929400	927200	896600
24	654700	710300	796500	800400	970900	963200	953600	946000	950000	928700	926100	895900
25	654700	725700	794500	801100	969100	964300	963200	945600	948900	927600	924700	893800
26	653900	740400	795800	801800	973900	962100	977600	945300	948200	925800	923600	891600
27	653900	743600	795100	806100	976100	959100	988300	944900	947800	924700	922500	890600
28	655000	743900	795100	801800	975000	958800	989000	943100	947500	923200	921400	890200
29	661300	751200	795500	801100	---	954300	984600	942000	947100	921100	920300	889200
30	666400	769700	795500	800800	---	955400	981600	946000	947100	920000	919300	888400
31	667000	---	795500	801100	---	954000	---	944900	---	917800	918200	---
MAX	673600	769700	798800	806100	976100	1004000	1026000	975400	960600	945600	938800	917100
MIN	651300	665200	781200	794800	800800	954000	950700	942000	938000	917800	911400	888400
(+)	429.35	432.64	433.43	433.60	438.56	437.99	438.74	437.74	437.80	436.99	437.00	436.16
(@)	+2200	+102700	+25800	+5600	+173900	-21000	+27600	-36700	+2200	-29300	+400	-29800
CAL YR 1996	MAX 814300	MIN 651300	(@) -12400									
WTR YR 1997	MAX 1026000	MIN 651300	(@) +223600									

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

SABINE RIVER MAIN STEM

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08017410 SABINE RIVER NEAR WILLS POINT, TX

LOCATION.--Lat 32°48'22", long 95°55'09", Van Zandt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 47, 750 ft downstream from Iron Bridge Dam that forms Lake Tawakoni, 3.6 mi upstream from McBee Creek, 9.0 mi northeast of Wills Point, and at mile 514.3.

DRAINAGE AREA.--756 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 370.00 ft above sea level.

REMARKS.--Records good. Since installation of gage in October 1970, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (see station 08017400) 750 ft upstream. Several observations of water temperature were obtained during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since construction of Iron Bridge Dam in 1960, about 21,000 ft³/s May 1, 1966, from theoretical rating curve of flow over dam 750 ft upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	7.5	62	.21	.97	1810	456	1890	217	184	6.5	8.1
2	.72	7.4	7.6	.20	1.0	2030	428	1630	149	144	4.8	8.2
3	1.1	7.1	2.4	.24	1.1	2240	398	1530	115	110	4.7	8.5
4	1.4	7.4	1.8	.24	1.1	2450	867	1210	98	126	4.7	8.4
5	1.5	7.5	2.4	.20	1.1	2530	3650	1040	84	148	5.0	8.2
6	2.1	7.4	2.2	.22	1.2	2150	5340	921	47	106	6.3	8.5
7	1.9	7.7	1.5	.22	1.6	1790	4970	786	35	79	100	e8.6
8	1.7	5.9	1.1	42	1.8	1570	4340	684	27	53	302	e8.7
9	1.5	5.6	.89	136	1.9	1410	3720	663	29	36	163	9.8
10	1.7	5.7	.83	33	1.9	1400	3110	549	219	24	76	20
11	1.9	6.2	1.2	7.8	2.0	1300	2920	448	186	11	53	9.7
12	2.1	6.0	1.7	2.6	249	1390	2710	448	143	6.9	34	9.1
13	2.1	5.5	1.8	1.5	786	2870	2190	364	119	4.1	25	9.2
14	2.3	5.6	1.9	1.3	247	3910	1820	297	224	5.6	16	9.2
15	2.5	5.0	53	1.4	38	3560	1530	272	371	19	9.7	9.2
16	3.0	6.9	60	1.2	15	3040	1330	253	548	6.8	9.1	9.3
17	3.1	6.4	8.5	1.1	9.4	2700	1180	219	920	5.1	9.1	9.3
18	3.2	5.1	.89	1.1	7.1	2390	1030	186	822	5.0	9.0	9.3
19	3.1	5.2	.23	1.1	7.3	2190	914	176	671	5.7	9.1	8.8
20	3.9	5.0	.19	1.2	216	1720	789	270	547	6.1	15	8.9
21	7.1	4.9	.21	1.6	1260	1470	699	214	460	5.9	14	9.4
22	8.0	5.4	.23	1.4	1750	1330	804	172	402	7.3	35	9.1
23	5.1	5.1	.25	1.3	1840	1190	691	153	361	7.3	11	9.7
24	4.1	340	.16	1.6	1640	1040	494	200	324	7.2	8.5	29
25	4.6	462	.17	2.5	1520	1040	524	189	292	6.8	8.5	20
26	5.2	90	.18	2.0	1710	964	1360	173	275	6.7	8.2	9.2
27	5.4	8.7	.19	3.8	1930	822	2010	181	258	6.6	8.3	9.2
28	6.0	3.2	.18	2.3	1910	725	2310	256	236	6.5	8.2	9.2
29	6.6	84	.16	1.1	---	639	2360	128	211	15	8.3	9.1
30	6.8	211	.16	.96	---	772	2200	118	203	9.8	8.2	9.1
31	7.4	---	.17	.96	---	534	---	310	---	7.7	8.2	---
TOTAL	108.00	1340.4	214.19	252.35	15150.47	54976	57144	15930	8593	1172.1	988.4	312.0
MEAN	3.48	44.7	6.91	8.14	541	1773	1905	514	286	37.8	31.9	10.4
MAX	8.0	462	62	136	1930	3910	5340	1890	920	184	302	29
MIN	.72	3.2	.16	.20	.97	534	398	118	27	4.1	4.7	8.1
AC-FT	214	2660	425	501	30050	109000	113300	31600	17040	2320	1960	619

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1997#, BY WATER YEAR (WY)

	MEAN	207	399	499	302	517	700	735	952	608	185	36.2	51.4
MAX	1726	2539	3377	1606	2482	1911	2090	3888	2825	1229	332	868	
(WY)	1974	1975	1992	1995	1975	1990	1986	1990	1989	1981	1979	1974	
MIN	.21	.76	.16	3.14	1.87	2.84	1.31	5.35	.81	.56	.12	.25	
(WY)	1991	1979	1991	1996	1976	1976	1971	1996	1972	1972	1986	1987	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1971 - 1997#
ANNUAL TOTAL	2791.74	156180.91	
ANNUAL MEAN	7.63	428	432
HIGHEST ANNUAL MEAN			1064
LOWEST ANNUAL MEAN			3.66
HIGHEST DAILY MEAN	462	Nov 25	20000
LOWEST DAILY MEAN	.10	Jan 3	.00
ANNUAL SEVEN-DAY MINIMUM	.17	Dec 24	.00
INSTANTANEOUS PEAK FLOW		5850	20600
INSTANTANEOUS PEAK STAGE		15.33	19.11
ANNUAL RUNOFF (AC-FT)	5540	309800	312900
10 PERCENT EXCEEDS	7.1	1630	1350
50 PERCENT EXCEEDS	4.0	9.3	21
90 PERCENT EXCEEDS	1.5	1.1	.26

e Estimated

Period of regulated streamflow

SABINE RIVER MAIN STEM

08018500 SABINE RIVER NEAR MINEOLA, TX

LOCATION.--Lat 32°36'49", long 95°29'08", Wood County, Hydrologic Unit 12010001, on left bank at downstream side of highway embankment 3 ft downstream from left end of bridge on U.S. Highway 69, 3.5 mi south of Mineola, 4.5 mi upstream from Missouri Pacific Railway Lines bridge, 16.2 mi upstream from Lake Fork Creek, and at mile 461.1.

DRAINAGE AREA.--1,357 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1939 to September 1959, October 1967 to current year. Gage-height records collected at this site since July 1946 are contained in reports published by the National Weather Service.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 304.16 ft above sea level. May 12, 1939, to Dec. 11, 1955, at site 55 ft upstream from downstream side of bridge; Dec. 12, 1955, to Dec. 12, 1959, at downstream side of bridge; Oct. 1, 1967, to Sept. 12, 1968, nonrecording gage at downstream side of bridge; Sept. 13, 1968, to Oct. 23, 1974, water-stage recorder at downstream side of bridge; Oct. 24, 1974, to Oct. 16, 1975, at site on right bank 75 ft downstream from bridge. All gages at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since October 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (see station 08017400), capacity 936,200 acre-ft, 53 mi upstream. Additional regulation since September 1962, by Lake Holbrook (capacity, 7,990 acre-ft), located on Keys Creek, a tributary to the Sabine River 8.0 mi upstream. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi² area in the Mill Creek drainage basin. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1940-59) prior to regulation by Lake Tawakoni, (station 08017400) 1,054 ft³/s (763,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-59).--Maximum discharge 76,000 ft³/s Apr. 1, 1945 (gage height, 24.00 ft); maximum gage height, 24.37 ft June 8, 1943; no flow at times. Maximum stage since at least 1890, that of June 8, 1943.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	13	e1320	58	78	3640	1010	7570	811	280	14	16
2	13	12	1340	55	73	3520	875	6240	730	249	17	16
3	11	11	1240	55	68	3640	714	4920	520	222	19	15
4	8.9	11	674	54	66	4330	1240	3680	310	177	17	15
5	7.8	10	265	51	61	5320	3240	2880	214	139	15	15
6	6.6	11	202	51	60	5410	5290	2430	166	139	14	15
7	5.9	22	209	76	151	4820	6170	2120	143	183	17	15
8	5.6	36	189	269	411	4250	6950	1740	105	152	41	15
9	5.2	38	133	893	509	3860	6930	1360	82	119	515	15
10	4.7	53	91	1280	432	3560	6690	1110	260	90	1070	14
11	4.2	63	70	1440	279	3270	6220	955	718	68	1150	14
12	4.4	46	56	1210	642	3200	5710	827	982	52	646	14
13	6.2	32	47	630	2490	4300	5120	683	722	39	193	14
14	5.7	25	42	257	3850	5770	4550	592	429	30	88	21
15	6.1	20	200	165	5470	6760	4070	509	753	26	58	21
16	7.3	17	792	141	6610	7460	3650	407	927	22	43	17
17	8.5	23	1170	126	5550	6600	3170	346	925	19	36	15
18	8.7	32	1230	114	3290	5740	2630	311	1150	18	30	14
19	9.0	28	911	106	1620	5000	2280	276	1530	23	25	13
20	9.7	24	404	92	1080	4320	1930	239	1820	21	22	13
21	13	21	191	81	2850	3700	1570	238	1850	19	20	13
22	49	22	132	81	6940	3290	1300	309	1480	17	21	13
23	66	24	108	86	9060	2900	1130	291	1030	16	20	17
24	88	343	96	213	7530	2520	1060	264	688	15	21	17
25	95	1220	87	331	5750	2280	1070	423	510	16	25	15
26	62	e1360	75	368	4740	2080	1920	547	428	16	28	14
27	37	e1550	69	278	4240	1980	4410	409	414	17	23	14
28	25	e1930	67	186	3880	1920	7880	357	450	17	20	22
29	20	e1880	67	134	---	1760	10200	637	395	16	18	24
30	18	e1510	65	104	---	1470	8990	623	335	15	16	19
31	15	---	63	87	---	1170	---	848	---	15	16	---
TOTAL	644.5	10387	11605	9072	77780	119840	117969	44141	20877	2247	4258	475
MEAN	20.8	346	374	293	2778	3866	3932	1424	696	72.5	137	15.8
MAX	95	1930	1340	1440	9060	7460	10200	7570	1850	280	1150	24
MIN	4.2	10	42	51	60	1170	714	238	82	15	14	13
AC-FT	1280	20600	23020	17990	154300	237700	234000	87550	41410	4460	8450	942

SABINE RIVER MAIN STEM

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08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997#, BY WATER YEAR (WY)

MEAN	292	822	1171	824	1306	1647	1429	2112	1026	278	62.6	63.9
MAX	2158	5296	5873	3174	4334	4175	4086	6934	4083	1626	419	616
(WY)	1974	1975	1992	1995	1975	1969	1990	1968	1973	1992	1979	1974
MIN	3.42	9.88	10.9	28.8	20.3	28.0	31.8	29.6	5.72	4.87	.071	.048
(WY)	1988	1990	1990	1981	1996	1996	1971	1988	1971	1969	1987	1987

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR				FOR 1997 WATER YEAR				WATER YEARS 1968 - 1997#			
ANNUAL TOTAL	30936.6				419295.5				918			
ANNUAL MEAN	84.5				1149				1904			
HIGHEST ANNUAL MEAN									29.8			
LOWEST ANNUAL MEAN									36200			
HIGHEST DAILY MEAN	1930				10200				.00			
LOWEST DAILY MEAN	2.7				4.2				.00			
ANNUAL SEVEN-DAY MINIMUM	4.1				5.1				37700			
INSTANTANEOUS PEAK FLOW					10600				21.53			
INSTANTANEOUS PEAK STAGE					18.22				664700			
ANNUAL RUNOFF (AC-FT)	61360				831700				2820			
10 PERCENT EXCEEDS	108				4270				141			
50 PERCENT EXCEEDS	21				177				7.7			
90 PERCENT EXCEEDS	6.3				14							

e Estimated

Period of regulated streamflow

SABINE RIVER MAIN STEM

08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to October 1997(discontinued). Biochemical analyses: October 1973 to September 1996.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1967 to September 1991.

WATER TEMPERATURE: October 1967 to September 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,400 microsiemens June 3, 1971; minimum daily, 64 microsiemens May 5, 1990.

WATER TEMPERATURE: Maximum daily, 36.0°C Aug. 21, 1984; minimum daily, 0.0°C Jan. 15, Feb. 1, 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
OCT 04...	1055	8.8	496	7.2	20.5	6.4	71	1.6	72	30
DATE		CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 04...	20		5.3	57	3	6.1	42	38	90	0.20
DATE		SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 04...	11		253	0.120	0.010	0.130	<0.015	0.40	<0.010	<0.010

08018800 LAKE FORK RESERVOIR NEAR QUITMAN, TX

LOCATION.--Lat 32°48'48", long 95°31'40", Wood County, Hydrologic Unit 12010003, in room at left end of gated concrete spillway structure of Lake Fork Dam on Lake Fork Creek, 2,000 ft upstream from bridge on State Highway 182, 2.3 mi upstream from Alum Branch, and 4.4 mi west-northwest of the county courthouse in Quitman.

DRAINAGE AREA.--490 mi².

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

Water-quality records.--Chemical analyses: October 1980 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 12,660 ft long, including a 260-foot gated concrete spillway. The outlet works consist of two 5- by 8-foot low-flow sluice gates, five 40- by 20-foot taintor gates, and two 5- by 6-foot sluice gates that open into a wet well where there are two 36-inch and one 10-inch valve-controlled and metered-outlet pipes. Deliberate impoundment began June 29, 1979, and closure of the dam was completed in January 1980. The lake was built for water conservation and is owned by the Sabine River Authority. No known diversions were made from the lake this year. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with a combined detention capacity of 20,270 acre-ft. These structures control runoff 60 mi² above the lake. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	419.5	1,270,000
Top of taintor gates	405.0	733,000
Crest of gated spillway	385.0	291,900
Invert of upper sluice gate	383.0	260,400
Invert of lower sluice gate	360.5	43,120
Invert of sluice gate in two center pieces	360.0	40,620

COOPERATION.--Area and capacity tables 1-A and 1-C were prepared and provided by URS/Forest and Cotton, Inc., Consulting Engineers for the Sabine River Authority. Observed elevations for the period Oct. 31, 1979, to Jan. 31, 1980, were provided by the Sabine River Authority. A new capacity table, Table 2-C, provided by the Sabine River Authority was put into use beginning Oct. 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 737,300 acre-ft May 4, 1990 (elevation, 405.15 ft); minimum observed, 46,140 acre-ft Dec. 11-14, 1979 (elevation, 361.10 ft) using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 699,700 acre-ft Feb. 21 at 0845 hours (elevation 403.85 ft); minimum, 592,100 acre-ft Oct. 12 (elevation, 399.83).

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

361.0	45,600	391.0	396,900	404.0	703,900
371.0	114,700	401.0	622,100	405.0	733,000
381.0	230,700	402.0	648,500	406.0	762,700

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	594300	591600	669800	669000	667600	674200	669500	673900	677500	678900	668200	666300
2	594100	590800	672000	669300	667900	679500	669800	674700	677500	678600	667900	666300
3	593600	590100	672500	669000	668200	682300	669300	672300	677200	678300	667400	665500
4	593300	589800	673100	669800	668200	680900	680600	671700	676900	678100	667100	664600
5	593100	589800	673600	669800	668200	681200	686800	672000	676700	678100	666500	663800
6	592800	589600	674200	670400	668200	678900	683700	672000	676400	677500	669800	663000
7	592600	592100	674200	670400	670100	676400	679800	671500	676100	677500	672000	662700
8	592300	592800	673900	673600	669800	673600	676400	671900	676100	677200	682800	662200
9	591800	592600	673900	675500	670100	672300	672500	672000	676400	676900	682800	661900
10	591600	592600	673600	676700	670100	670900	669500	671500	677800	676700	679800	661100
11	590800	592300	674200	676400	670100	669300	670400	671200	678100	676400	676400	660300
12	590300	592300	674500	675800	682000	674700	667400	670900	677800	676100	675300	658900
13	590100	592100	674200	674500	692400	683400	666300	670400	678900	675800	675000	658400
14	589800	592100	673900	673900	687100	681200	666300	670900	679800	675500	674700	657800
15	589600	591800	678100	674500	681700	677500	666300	671500	680000	675300	673900	657500
16	589100	591800	677800	673600	678100	675000	666500	671500	680000	675000	673900	657000
17	590100	593100	677800	672800	675500	673100	666000	671200	682000	674700	673400	656700
18	588600	593100	676400	672300	674200	672500	666000	670900	681700	674200	673100	655900
19	587800	593100	675000	672000	673900	669500	666000	671500	681400	673900	672800	655900
20	587600	593100	673600	671700	691300	668500	666000	672500	681200	673400	672300	655900
21	593300	593300	673100	671500	694900	668200	666000	673100	681200	673400	672000	654500
22	591800	592800	671700	671200	685900	668500	666800	673100	681400	672800	672300	653700
23	591800	592600	672300	671500	680600	668200	666500	674200	681200	672500	671500	655900
24	591600	621000	670400	671500	677500	667400	666300	674700	680900	672300	671200	655100
25	591300	634500	669000	670900	674200	669800	671700	674700	680600	671500	670400	654300
26	591300	639800	669000	670400	675000	669800	680000	674700	680600	671200	669500	653500
27	591800	644000	668700	671700	675000	669500	684300	675300	680300	670900	669300	652600
28	591300	647500	669000	669800	673400	670100	687900	674700	680000	670400	668500	652600
29	591600	654800	669000	669000	---	670900	682600	674200	679800	670100	667900	651800
30	591600	664900	669000	668500	---	669800	678100	676700	679500	669300	667600	651000
31	591300	---	669000	667900	---	669500	---	677500	---	668700	667100	---
MAX	594300	664900	678100	676700	694900	683400	687900	677500	682000	678900	682800	666300
MIN	587600	589600	668700	667900	667600	667400	666000	670400	676100	668700	666500	651000
(+)	399.80	402.60	402.75	402.71	402.91	402.77	403.08	403.06	403.13	402.74	402.68	402.09
(@)	-3300	+73600	+4100	-1100	+5500	-3900	+8600	-600	+2000	-10800	-1600	-16100
CAL YR 1996	MAX	678100	MIN	587600	(@)	+52100						
WTR YR 1997	MAX	694900	MIN	587600	(@)	+56400						

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

(@) Change in contents, in acre-feet.

SABINE RIVER BASIN

08019000 LAKE FORK CREEK NEAR QUITMAN, TX

LOCATION.--Lat 32°45'47", long 95°27'46", Wood County, Hydrologic Unit 12010003, at downstream side of highway embankment near left end of bridge on State Highway 37, 0.3 mi downstream from Dry Creek, 2.4 mi south of Quitman, and 23.4 mi upstream from mouth.

DRAINAGE AREA.--585 mi².

PERIOD OF RECORD.--June 1924 to April 1926, February 1939 to current year. Discharge from some high-water periods in 1925-26 published in WSP 1342. Monthly discharge only for some periods, published in WSP 1312. Prior to October 1961, published as Lake Fork Sabine River near Quitman. Water-quality records.--Chemical analyses: December 1961 to August 1989. Specific Conductance: November 1967 to September 1989. Water Temperature: December 1967 to September 1989.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 317.42 ft above sea level. From June 27, 1924, to Apr. 30, 1926, a nonrecording gage was located at site 1,000 ft downstream at same datum. Prior to Sept. 5, 1978, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Since water year 1980, at least 10% of contributing drainage area has been regulated by Lake Quitman (capacity, 7,440 acre-ft) on Dry Creek, a tributary above this station and below Lake Fork Reservoir. Construction of Lake Fork Dam and Reservoir (capacity, 675,800 acre-ft), located about 5 mi upstream from this station, began in 1975. Deliberate impoundment began June 29, 1979, and the dam was completed in January 1980. Lake Fork Reservoir controls runoff from 490 mi² above this station. The city of Quitman discharges wastewater effluent into a tributary above this station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--41 years (water years 1925, 1940-79), prior to regulation by Lake Fork Reservoir, 432 ft³/s (313,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925, 1940-79).--Maximum discharge, 75,600 ft³/s Mar. 30, 1945 (gage height, 29.85 ft, from floodmark), from rating curve extended above 49,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1895 reached a stage of about 25.9 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	99	421	26	301	2540	63	3900	124	58	48	41
2	99	99	289	25	127	1810	64	2610	86	56	48	41
3	99	98	158	24	72	1640	76	1690	78	55	49	41
4	99	98	86	24	68	2380	588	675	67	54	50	41
5	99	64	84	23	67	2740	4010	149	65	55	54	41
6	100	33	83	23	73	2740	5210	75	62	58	49	41
7	101	51	59	34	211	2610	4680	64	60	59	89	41
8	102	87	45	158	224	2550	3310	57	59	62	225	42
9	102	42	37	401	126	2540	3090	52	59	62	546	41
10	102	31	33	349	103	2690	2950	49	91	60	1560	40
11	102	28	30	446	103	2400	2110	44	75	58	2490	40
12	100	27	28	441	484	2130	1910	41	61	e58	2570	40
13	100	28	26	400	1330	2910	1820	40	58	e57	1490	40
14	101	27	24	374	9120	4020	967	36	78	e55	443	40
15	101	26	137	361	9050	4000	195	37	83	e53	93	40
16	102	26	845	349	8610	2820	75	72	72	53	54	40
17	103	31	1150	332	4790	2540	63	50	168	52	50	40
18	103	45	1160	316	2250	2080	57	43	261	52	48	39
19	103	40	1120	302	2010	1900	52	38	132	52	58	39
20	103	32	1090	288	2240	1840	50	38	91	52	62	40
21	107	29	1070	281	8390	1430	48	36	77	52	62	40
22	202	28	1060	297	12600	561	55	35	72	53	62	43
23	149	29	1050	311	8180	137	78	33	76	53	62	42
24	111	422	1050	389	4270	84	57	35	67	52	61	41
25	103	1370	1040	386	3870	99	98	38	62	52	60	40
26	101	1260	1000	345	3880	156	1140	36	60	51	48	40
27	101	780	399	327	3200	112	4600	34	64	51	43	40
28	102	399	53	331	2720	92	6790	36	59	50	42	41
29	102	239	32	330	---	82	6860	35	56	49	42	42
30	103	409	28	319	---	76	5720	38	56	49	42	53
31	100	---	27	315	---	71	---	181	---	48	41	---
TOTAL	3301	5977	13714	8327	88469	53780	56786	10297	2479	1681	10641	1230
MEAN	106	199	442	269	3160	1735	1893	332	82.6	54.2	343	41.0
MAX	202	1370	1160	446	12600	4020	6860	3900	261	62	2570	53
MIN	99	26	24	23	67	71	48	33	56	48	41	39
AC-FT	6550	11860	27200	16520	175500	106700	112600	20420	4920	3330	21110	2440

SABINE RIVER BASIN

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08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1997#, BY WATER YEAR (WY)

MEAN	75.8	297	584	439	876	794	580	686	308	262	96.5	34.4
MAX	603	1552	2853	1480	3160	2938	1991	2807	1280	1795	940	167
(WY)	1994	1989	1992	1995	1997	1990	1990	1990	1986	1994	1992	1992
MIN	1.23	2.92	9.31	4.43	14.1	25.3	4.29	13.1	8.51	1.43	.13	.76
(WY)	1983	1981	1982	1981	1981	1996	1981	1988	1984	1985	1980	1982

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1980 - 1997#	
ANNUAL TOTAL	40864		256682		417	
ANNUAL MEAN	112		703		1006	
HIGHEST ANNUAL MEAN					43.2	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	1370	Nov 25	12600	Feb 22	23600	May 18 1989
LOWEST DAILY MEAN	22	Mar 25	23	Jan 5	.00	Aug 23 1980
ANNUAL SEVEN-DAY MINIMUM	23	Mar 3	25	Dec 31	.00	Aug 23 1980
INSTANTANEOUS PEAK FLOW			13900	Feb 22	24200	May 18 1989
INSTANTANEOUS PEAK STAGE			19.46	Feb 22	21.75	May 18 1989
ANNUAL RUNOFF (AC-FT)	81050		509100		302300	
10 PERCENT EXCEEDS	142		2540		1190	
50 PERCENT EXCEEDS	45		78		40	
90 PERCENT EXCEEDS	25		36		4.2	

e Estimated

Period of regulated streamflow.

SABINE RIVER BASIN

08019500 BIG SANDY CREEK NEAR BIG SANDY, TX

LOCATION.--Lat 32°36'14", long 95°05'29", Upshur County, Hydrologic Unit 12010002, on downstream side of highway embankment near left end of bridge on State Highway 155, 0.5 mi upstream from St. Louis Southwestern Railway Lines bridge, 1.6 mi northeast of Big Sandy, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--231 mi².

PERIOD OF RECORD.--February 1939 to current year.

Water-quality records.--Chemical analyses: March 1961 to September 1986. Chemical and biochemical analyses: October 1984 to September 1986.

REVISED RECORDS.--WSP 1732: 1941(M), 1945-46, 1956, drainage area. WSP 1922: 1944(M), 1945-46.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 278.38 ft above sea level. Prior to Oct. 5, 1940, nonrecording gage, and Oct. 5, 1940, to Nov. 26, 1951, water-stage recorder at site 1.3 mi upstream at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Since June 1962, streamflow has been affected by Lake Winnsboro, about 27 miles upstream (capacity 8,100 acre-ft, drainage area 27.1 mi²) and by several other smaller lakes. Several observations of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 16	0245	2,160	14.12	Apr. 7	1730	1,830	13.54
Feb. 23	1445	2,850	15.05	Apr. 30	0800	3,820	16.11

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	51	491	125	157	1330	181	2410	96	65	23	25
2	37	55	376	122	147	1280	168	1390	91	59	22	22
3	33	52	400	117	143	1090	158	962	83	53	23	21
4	30	50	482	111	145	922	225	694	78	47	24	21
5	27	49	404	106	143	924	540	495	72	42	20	20
6	26	49	270	106	143	1130	872	357	69	37	31	18
7	25	64	184	123	191	982	1640	268	63	232	344	17
8	24	78	156	163	224	845	1490	210	56	983	319	17
9	23	91	148	218	237	778	1030	178	56	482	325	17
10	22	101	135	243	273	650	723	159	138	284	254	17
11	20	116	118	301	305	499	507	147	155	238	255	17
12	20	109	105	412	412	422	380	130	113	258	283	17
13	19	79	97	484	959	733	294	118	93	173	278	16
14	19	63	92	388	1090	919	241	111	105	105	183	16
15	18	58	152	270	1690	998	214	102	119	90	102	17
16	18	56	241	209	1990	1240	196	99	143	131	67	17
17	17	59	250	180	1360	1010	169	94	210	80	52	18
18	17	75	288	165	920	740	147	91	288	67	44	18
19	17	83	359	159	653	546	133	94	270	57	39	17
20	19	91	401	150	706	426	123	107	284	48	36	16
21	41	104	311	143	1470	338	115	160	670	42	34	17
22	152	100	209	141	1330	285	149	119	633	38	34	18
23	167	84	167	152	2570	248	167	123	377	37	36	28
24	212	97	150	250	2050	219	158	132	193	42	34	51
25	187	182	140	213	1330	209	174	145	126	44	31	47
26	179	217	134	220	1070	219	528	132	103	40	28	34
27	138	294	135	276	1130	219	1350	122	107	36	26	31
28	83	659	136	290	1130	217	2020	119	112	33	26	34
29	61	1020	133	226	---	218	3160	114	94	29	25	30
30	54	787	131	186	---	212	3670	105	77	27	24	27
31	51	---	129	166	---	196	---	100	---	26	24	---
TOTAL	1798	4973	6924	6415	23968	20044	20922	9587	5074	3925	3046	681
MEAN	58.0	166	223	207	856	647	697	309	169	127	98.3	22.7
MAX	212	1020	491	484	2570	1330	3670	2410	670	983	344	51
MIN	17	49	92	106	143	196	115	91	56	26	20	16
AC-FT	3570	9860	13730	12720	47540	39760	41500	19020	10060	7790	6040	1350

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1997, BY WATER YEAR (WY)

	MEAN	66.4	140	229	240	291	319	325	313	165	79.3	34.5	49.4
MAX	469	884	884	798	915	1746	1068	977	705	416	150	441	
(WY)	1994	1975	1988	1993	1950	1945	1973	1953	1946	1994	1979	1974	
MIN	8.38	19.2	24.6	32.3	43.7	47.5	42.2	35.1	9.61	6.99	4.65	8.51	
(WY)	1957	1956	1957	1957	1996	1966	1956	1984	1984	1984	1984	1956	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1939 - 1997

ANNUAL TOTAL	27955.7	107357	
ANNUAL MEAN	76.4	294	188
HIGHEST ANNUAL MEAN			415
LOWEST ANNUAL MEAN			40.6
HIGHEST DAILY MEAN	1020	Nov 29	3670
LOWEST DAILY MEAN	9.7	Jul 5	16
ANNUAL SEVEN-DAY MINIMUM	11	Jul 3	17
INSTANTANEOUS PEAK FLOW			3820
INSTANTANEOUS PEAK STAGE			16.11
ANNUAL RUNOFF (AC-FT)	55450	212900	136300
10 PERCENT EXCEEDS	151	919	420
50 PERCENT EXCEEDS	49	135	80
90 PERCENT EXCEEDS	19	23	17

08020000 SABINE RIVER NEAR GLADEWATER, TX

LOCATION.--Lat 32°31'37", long 94°57'36", Gregg County, Hydrologic Unit 12010002, on right bank 46 ft downstream from bridge on U.S. Highway 271, 0.4 mi downstream from Glade Creek, 1.2 mi southwest of Gladewater, and at mile 397.5.

DRAINAGE AREA.--2,791 mi².

PERIOD OF RECORD.--October 1932 to current year.

REVISED RECORDS.--WSP 1732: Drainage area. WRD TX-73-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 243.85 ft above sea level. Prior to Oct. 13, 1933, nonrecording gage at same site and datum.

REMARKS.--Records good, except those for estimated daily discharges which are fair. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft. Additional regulation by Lake Fork Creek Reservoir (station 08018800), capacity 675,800 acre-ft, and by five tributary reservoirs with a total combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Several observations of water temperature were obtained during the year. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1933-60) prior to regulation by Lake Tawakoni, 2,012 ft³/s (1,458,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1933-60).--Maximum discharge, 138,000 ft³/s Apr. 2, 1945 (gage height, 44.16 ft, from floodmark), from rating curve extended above 91,000 ft³/s; minimum, 5.6 ft--s Aug. 16, 1939. Maximum stage since at least 1892, that of Apr. 2, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of about 41.7 ft (discharge, 85,900 ft³/s), from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	298	209	3450	550	986	15700	3350	e7680	1050	674	124	133
2	228	216	3260	488	936	14500	2570	e7930	1280	568	119	125
3	189	225	2820	452	908	13100	1970	e8410	1290	488	114	120
4	160	218	2480	425	840	11900	1740	e9200	1140	429	111	117
5	139	206	2280	400	682	10800	2710	e10200	907	384	111	113
6	125	193	1820	403	575	9960	3460	e11000	672	333	113	111
7	118	365	1200	506	732	9720	3900	e11200	526	1210	514	108
8	115	404	839	737	1350	9110	4460	10500	435	3610	1010	104
9	107	358	706	1170	1430	8650	5010	8950	383	3900	1000	103
10	97	361	635	1520	1490	8480	5550	7470	554	2820	970	104
11	91	355	560	1870	1430	8340	6170	6340	948	1520	1230	102
12	87	329	493	2080	1950	8210	6950	5210	981	900	1580	100
13	83	284	437	2260	4210	8570	7890	3860	1100	712	1840	99
14	81	236	400	2310	5010	8850	8730	2460	1210	558	1890	99
15	80	190	573	1990	5200	8920	8920	1540	1120	451	1730	99
16	80	160	1360	1510	5320	8950	8770	1170	954	428	1620	100
17	82	168	1770	1210	5520	9060	8430	1010	1180	423	1390	102
18	80	187	2070	1070	5800	9380	7960	895	1470	344	857	100
19	74	232	2250	994	6280	9750	7360	815	1580	287	451	91
20	74	277	2410	956	7130	10100	6760	755	1650	245	275	86
21	101	288	2430	941	10200	10100	6160	736	1830	214	211	80
22	808	272	2130	931	12400	9870	5510	712	2120	195	192	78
23	1030	240	1750	933	12600	9480	4710	692	2250	181	191	106
24	785	331	1540	1250	12400	9010	3680	763	2120	169	189	138
25	703	934	1420	1460	13400	8410	2660	836	1750	187	186	157
26	594	1560	1350	1420	15800	7750	e2880	862	1280	186	179	138
27	515	2080	1310	1430	17000	7090	4880	888	973	167	169	118
28	418	2400	1290	1520	16700	6410	6520	944	942	157	163	105
29	314	2770	1230	1420	---	5780	e7220	868	965	147	161	96
30	249	3260	982	1200	---	5010	e7500	845	833	140	159	90
31	220	---	691	1060	---	4170	---	967	---	126	148	---
TOTAL	8125	19308	47936	36466	168279	285130	164380	125708	35493	22153	18997	3222
MEAN	262	644	1546	1176	6010	9198	5479	4055	1183	715	613	107
MAX	1030	3260	3450	2310	17000	15700	8920	11200	2250	3900	1890	157
MIN	74	160	400	400	575	4170	1740	692	383	126	111	78
AC-FT	16120	38300	95080	72330	333800	565600	326000	249300	70400	43940	37680	6390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997#, BY WATER YEAR (WY)

	MEAN	454	1297	2459	1993	2627	3415	2888	4127	1857	689	209	280
MAX	3361	7839	10580	6693	9664	9717	9644	17100	6745	4261	1291	2566	
(WY)	1974	1975	1972	1992	1975	1992	1990	1966	1973	1994	1992	1974	
MIN	29.4	86.9	101	199	174	204	241	188	49.0	17.9	18.1	27.0	
(WY)	1964	1964	1966	1964	1996	1996	1971	1988	1971	1964	1964	1985	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1961 - 1997#	
ANNUAL TOTAL	138028		935197			
ANNUAL MEAN	377		2562		1855	
HIGHEST ANNUAL MEAN					3831	
LOWEST ANNUAL MEAN					209	
HIGHEST DAILY MEAN	3450	Dec 1	17000	Feb 27	51000	May 22 1989
LOWEST DAILY MEAN	38	Jul 9	74	Oct 19	7.4	Jul 20 1971
ANNUAL SEVEN-DAY MINIMUM	48	Jul 5	79	Oct 14	9.5	Jul 16 1971
INSTANTANEOUS PEAK FLOW			17200	Feb 27	52300	May 22 1989
INSTANTANEOUS PEAK STAGE			34.81	Feb 27	38.98	Apr 30 1966
ANNUAL RUNOFF (AC-FT)	273800		1855000		1344000	
10 PERCENT EXCEEDS	842		8680		5410	
50 PERCENT EXCEEDS	198		965		541	
90 PERCENT EXCEEDS	82		112		59	

e Estimated

Period of regulated streamflow.

LOCATION.--Lat 32°28'47", long 94°48'15", Gregg County, Hydrologic Unit 12010002, on left bank at city of Longview pumping station at the end of Swinging Bridge Road, 1.4 mi southwest of the intersection of Swinging Bridge Road and Farm Road 2206 in Longview, 2.5 mi downstream from Hawkins Creek, 2.6 mi upstream from U.S. Highway 259, and at mile 357.4.

PERIOD OF RECORD.--August 1983 to current year (low flow).

REMARKS.--Records fair. Daily discharges below 500 ft³/s are published. Since installation of gage in August 1983, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft. Additional regulation by Lake Fork Reservoir (station 08018800), capacity 675,800 acre-ft, and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for municipal and industrial supply, and for oil field operations. Satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 29.22 ft Feb. 28 at 2045 hours; minimum daily discharge, 3.2 ft³/s Sep. 16.

[illegible]

SABINE RIVER MAIN STEM

247

08020900 SABINE RIVER BELOW LONGVIEW, TX

LOCATION.--Lat 32°25'00", long 94°42'33", Gregg County, Hydrologic Unit 12010002, on downstream side of Highway 149 bridge, 5 mi south of Longview, 14 mi northwest of Tatum, TX.

DRAINAGE AREA.--3,155 mi².

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 230.00 ft above sea level.

REMARKS.--Records good. Since installation of gage in October 1995, at least 10% of contributing drainage area has been regulated by seven upstream reservoirs, with a combined capacity of 1,654,000 acre-ft. There are several diversions above this station for municipal, industrial and for oil field operations. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi² area in the Mill Creek drainage basin. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e242	151	138	266	275	228	422	488	236	89	229	279
2	e262	153	134	367	269	220	423	431	1380	88	204	278
3	253	150	143	392	269	217	385	377	1380	78	192	265
4	219	150	152	382	268	208	350	323	901	84	197	238
5	195	152	149	367	264	218	558	288	509	87	203	206
6	176	162	145	361	261	248	921	264	319	93	202	175
7	170	166	139	351	270	340	959	239	236	80	228	146
8	160	173	223	336	283	270	942	221	195	73	234	121
9	156	174	405	297	295	232	985	213	154	65	188	103
10	154	168	319	293	296	214	922	208	132	92	208	85
11	145	166	291	297	280	205	815	452	108	113	383	77
12	142	158	313	278	293	194	663	705	98	73	539	77
13	130	152	319	264	283	195	616	776	87	74	420	75
14	138	148	297	255	272	197	589	1010	87	82	295	60
15	135	140	273	242	262	195	509	1120	99	117	239	67
16	127	130	273	230	226	197	458	1100	88	198	219	88
17	121	123	268	242	201	189	404	991	86	233	208	66
18	120	130	454	338	182	205	360	849	146	272	215	64
19	125	140	513	387	179	247	313	701	149	293	181	124
20	121	166	443	379	181	261	280	537	141	245	173	643
21	123	183	440	368	186	286	375	378	126	199	160	920
22	117	171	443	372	182	315	389	270	112	159	145	788
23	118	160	420	429	190	328	534	219	96	144	132	468
24	117	149	377	618	185	311	438	179	140	941	124	828
25	115	138	334	459	177	306	377	149	194	785	117	1090
26	116	135	299	408	169	294	352	127	261	374	116	880
27	115	133	274	371	165	284	319	115	154	271	196	1500
28	117	132	245	340	227	323	283	104	110	355	478	1260
29	123	132	221	303	263	351	483	93	95	364	643	935
30	131	134	218	281	---	383	554	84	112	307	490	692
31	135	---	244	275	---	387	---	83	---	251	330	---
TOTAL	4618	4519	8906	10548	6853	8048	15978	13094	7931	6679	7888	12598
MEAN	149	151	287	340	236	260	533	422	264	215	254	420
MAX	262	183	513	618	296	387	985	1120	1380	941	643	1500
MIN	115	123	134	230	165	189	280	83	86	65	116	60
AC-FT	9160	8960	17670	20920	13590	15960	31690	25970	15730	13250	15650	24990

SUMMARY STATISTICS

FOR 1996 WATER YEAR

ANNUAL TOTAL	107660	
ANNUAL MEAN	294	
HIGHEST DAILY MEAN	1500	Sep 27
LOWEST DAILY MEAN	60	Sep 14
ANNUAL SEVEN-DAY MINIMUM	71	Sep 12
INSTANTANEOUS PEAK FLOW	1620	Sep 27
INSTANTANEOUS PEAK STAGE	10.62	Sep 27
ANNUAL RUNOFF (AC-FT)	213500	
10 PERCENT EXCEEDS	544	
50 PERCENT EXCEEDS	229	
90 PERCENT EXCEEDS	109	

e Estimated

SABINE RIVER MAIN STEM

08020900 SABINE RIVER BELOW LONGVIEW, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	508	282	3980	847	1200	16200	6720	9330	922	864	180	e146
2	384	287	3850	695	1110	16600	5300	9380	1030	725	168	e144
3	304	269	3520	620	1080	e16400	3680	9770	1230	631	161	e140
4	256	264	3050	574	1090	e16100	2400	10600	1270	545	155	e135
5	224	259	2630	549	981	e15500	e3170	11900	1150	482	143	131
6	193	241	2320	524	817	14800	e4090	13100	958	516	141	129
7	175	381	1820	728	990	14100	3820	13800	757	2300	188	127
8	156	541	1250	1300	1650	13400	4000	13800	612	4560	689	125
9	147	508	889	2180	1770	12700	4320	13500	557	4600	1260	116
10	141	432	775	2120	1690	12200	4700	13000	1000	4400	1210	115
11	134	395	700	1980	1660	11700	5070	12200	1110	3510	970	113
12	122	388	628	2110	2440	11200	5490	11200	1140	1970	1030	105
13	114	369	562	2250	5360	11500	5930	9930	1100	1100	1220	102
14	107	333	506	2370	6720	11800	6440	8070	1730	790	e1290	100
15	100	292	760	2400	7180	11800	7090	5560	1490	613	1150	105
16	99	252	1950	2150	7060	11600	7840	2800	1250	503	1090	102
17	96	282	2380	1680	6640	11300	8530	1390	1540	451	e1030	100
18	92	319	e2300	1360	6350	11000	9010	1070	1740	439	867	95
19	94	315	2330	1200	6240	10800	9250	919	1670	380	522	96
20	88	306	2390	1110	e6500	10700	9250	837	1660	337	251	99
21	108	335	2490	1090	8070	10700	9040	769	1710	305	188	99
22	1100	338	2480	1100	9860	10900	8660	715	1880	275	119	98
23	1540	324	2220	1120	10900	11100	8070	684	2140	253	137	151
24	1290	406	1930	1600	11700	11200	7090	693	2230	250	92	168
25	923	1010	1690	1760	12500	11200	5880	791	2150	236	96	146
26	764	1360	1540	1700	13300	11100	5070	802	1930	222	119	166
27	631	1710	1520	1620	14300	10800	4970	812	1410	225	141	176
28	539	2090	1460	1840	15300	10400	6620	1090	1120	216	162	159
29	458	2500	1410	1810	---	9850	8390	1020	1040	199	156	146
30	372	3370	1320	1590	---	9090	9160	866	999	190	152	139
31	309	---	1100	1350	---	8050	---	835	---	186	e149	---
TOTAL	11568	20158	57750	45327	164458	375790	189050	181233	40525	32273	15226	3773
MEAN	373	672	1863	1462	5874	12120	6302	5846	1351	1041	491	126
MAX	1540	3370	3980	2400	15300	16600	9250	13800	2230	4600	1290	176
MIN	88	241	506	524	817	8050	2400	684	557	186	92	95
AC-FT	22950	39980	114500	89910	326200	745400	375000	359500	80380	64010	30200	7480

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997#, BY WATER YEAR (WY)

	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997	1996	1997
MEAN	261	411	1075	901	3005	6191	3417	3134	808	628	373	273
MAX	373	672	1863	1462	5874	12120	6302	5846	1351	1041	491	420
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1996
MIN	149	151	287	340	236	260	533	422	264	215	254	126
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1996 - 1997#
ANNUAL TOTAL	179093	1137131	
ANNUAL MEAN	489	3115	1703
HIGHEST ANNUAL MEAN			3115
LOWEST ANNUAL MEAN			294
HIGHEST DAILY MEAN	3980	Dec 1	16600
LOWEST DAILY MEAN	60	Sep 14	60
ANNUAL SEVEN-DAY MINIMUM	71	Sep 12	97
INSTANTANEOUS PEAK FLOW			16600
INSTANTANEOUS PEAK STAGE			32.40
ANNUAL RUNOFF (AC-FT)	355200	2255000	1234000
10 PERCENT EXCEEDS	1100	10900	6420
50 PERCENT EXCEEDS	282	1110	336
90 PERCENT EXCEEDS	99	140	117

e Estimated

Period of regulated streamflow

SABINE RIVER MAIN STEM

249

08022040 SABINE RIVER NEAR BECKVILLE, TX

LOCATION.--Lat 32°19'38", long 94°21'12", Panola County, Hydrologic Unit 12010002, on downstream side of highway embankment near right end of downstream bridge on U.S. Highway 59, 0.9 mi upstream from Eightmile Creek, 6.0 mi upstream from Farm Road 1794, 8.4 mi northeast of Beckville, 12.4 mi downstream from State Highway 43 and at mile 327.0.

DRAINAGE AREA.--3,589 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Prior to October 1978, published as "near Tatum" (station 08022000).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.00 ft above sea level. Prior to Oct. 1, 1978, at site 12.4 mi upstream at datum 14.18 ft higher. Prior to Sept. 21, 1945, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by eight major upstream reservoirs, with a combined capacity of 1,701,000 acre-ft. There are several diversions above this station and below Lake Tawakoni for municipal, industrial and for oil field operations. Low flows are sustained by wastewater effluents that are returned to the river above the station. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi² area in the Mill Creek drainage basin. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1939-60) prior to regulation by Lake Tawakoni, 2,663 ft³/s (1,929,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD PRIOR TO REGULATION (WATER YEARS 1939-60).--Maximum discharge, 123,000 ft³/s Apr. 4, 1945 (gage height, 33.80 ft), site and datum then in use, from graph based on gage readings, from rating curve extended above 66,000 ft³/s on basis of partly estimated discharge measurement of 88,900 ft³/s; minimum observed, 2.4 ft³/s Aug. 11, 1964. Maximum stage since at least 1884, that of Apr. 4, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of about 2 ft lower than flood of Apr. 4, 1945. These dates and gage heights are based on information for stations near Tatum (08022000, discontinued) and at Logansport, La. (08022500).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1020	480	5760	1390	1870	14400	9040	11700	1960	1270	235	186
2	776	481	6360	1140	1660	15000	7870	11400	1720	1060	236	167
3	600	502	5780	980	1540	16200	6200	11200	1690	893	206	213
4	491	415	4750	903	2020	17300	4620	11000	1760	793	191	200
5	411	377	4040	847	2680	17100	9870	10900	1680	681	200	176
6	366	373	3540	796	2110	16700	11800	11100	1440	608	176	150
7	319	411	2980	915	2090	16100	9200	11500	1200	999	184	138
8	280	768	2270	1660	3710	15400	6870	11900	969	6340	262	148
9	241	886	1640	4240	4250	14500	6040	12300	815	7450	1150	154
10	210	735	1270	5510	3490	14100	6010	12500	1090	6510	1790	149
11	208	608	1100	4350	3010	13500	6200	12500	2060	5740	1480	128
12	200	583	1000	3360	3640	13200	6860	12400	1850	4230	1310	118
13	175	577	899	3250	9960	13300	7100	11900	1770	2440	1520	127
14	173	505	800	3200	13200	14000	7260	11200	3430	1570	1850	130
15	182	458	768	3190	12700	14100	7610	9660	5950	1250	2030	119
16	159	411	1830	3130	11800	13500	8000	6700	3840	1050	1980	108
17	153	372	3840	2750	10400	13200	8350	3310	2880	821	1860	119
18	150	389	4000	2110	9170	12700	8690	2000	3770	702	1710	129
19	144	442	3490	1770	8160	12200	8960	1610	3290	644	1360	127
20	130	447	3320	1610	7650	11900	9130	1550	2600	556	923	136
21	129	439	3270	1570	9040	11500	9180	1980	2410	480	623	182
22	1290	459	3240	1690	11000	11100	9150	1680	2380	429	546	136
23	3280	451	3090	1790	11500	10900	9050	1260	2550	373	503	133
24	2950	480	2820	3090	11500	10800	8740	1150	2780	323	457	169
25	1730	1330	2580	4070	11900	10900	7980	1280	2800	326	333	229
26	1390	2310	2190	3680	12600	11200	7770	1400	2700	321	305	185
27	1230	2430	2070	2840	13500	11300	7850	1640	2310	289	271	185
28	1030	2380	2110	2870	14300	11100	10300	9800	1760	273	234	180
29	846	2750	1980	3130	---	10900	12700	10700	1460	281	215	171
30	706	4040	1860	2640	---	10500	12400	5530	1370	264	223	171
31	577	---	1680	2180	---	9890	---	2670	---	234	210	---
TOTAL	21546	27289	86327	76651	210450	408490	250800	227420	68284	49200	24573	4663
MEAN	695	910	2785	2473	7516	13180	8360	7336	2276	1587	793	155
MAX	3280	4040	6360	5510	14300	17300	12700	12500	5950	7450	2030	229
MIN	129	372	768	796	1540	9890	4620	1150	815	234	176	108
AC-FT	42740	54130	171200	152000	417400	810200	497500	451100	135400	97590	48740	9250

SABINE RIVER MAIN STEM

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997#, BY WATER YEAR (WY)

MEAN	604	1639	3198	3111	3936	4527	4021	4924	2813	964	332	428
MAX	4325	8221	9866	10960	11930	13180	11330	21010	11580	3834	1725	3434
(WY)	1974	1975	1975	1992	1975	1997	1990	1966	1989	1992	1979	1974
MIN	42.5	82.1	144	239	322	317	355	317	77.5	32.1	36.7	33.8
(WY)	1964	1964	1966	1964	1996	1996	1971	1972	1971	1964	1969	1985

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR			FOR 1997 WATER YEAR			WATER YEARS 1961 - 1997#		
ANNUAL TOTAL	252351			1455693					
ANNUAL MEAN	689			3988			2534		
HIGHEST ANNUAL MEAN							4857		
LOWEST ANNUAL MEAN							311		
HIGHEST DAILY MEAN	6360			17300			48100		
LOWEST DAILY MEAN	67			108			2.4		
ANNUAL SEVEN-DAY MINIMUM	76			121			3.8		
INSTANTANEOUS PEAK FLOW				17900			49400		
INSTANTANEOUS PEAK STAGE				28.33			38.87		
ANNUAL RUNOFF (AC-FT)	500500			2887000			1836000		
10 PERCENT EXCEEDS	1820			11700			7480		
50 PERCENT EXCEEDS	369			1850			870		
90 PERCENT EXCEEDS	141			185			91		

Period of regulated streamflow

WATER-QUALITY RECORDS

SPECIFIC CONDUCTANCE: Maximum daily, 741 microsiemens Sept. 26; minimum daily, 86 microsiemens July 11.
WATER TEMPERATURE: Maximum daily, 32.0°C July 20, 27, 28, and Aug. 4; minimum daily, 3.0°C Jan. 13 and 17.

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 03...	1025	602	408	7.3	22.0	7.6	87	50	18	14
DEC 04...	1200	4800	179	7.6	9.0	10.1	87	36	16	9.3
FEB 04...	1225	2000	281	7.4	14.0	11.0	106	54	28	14
MAR 19...	1125	12200	179	7.2	14.5	11.0	110	46	16	12
MAY 15...	0910	9950	185	7.3	21.0	6.4	72	49	12	14
JUL 02...	1025	1070	245	8.0	29.5	--	--	57	27	17

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
OCT 03...	3.6	53	3	5.3	32	32	80	0.20	11	220
DEC 04...	3.0	17	1	5.1	20	23	24	0.10	11	104
FEB 04...	4.7	28	2	4.0	26	35	38	0.20	12	151
MAR 19...	3.6	12	0.8	4.2	30	17	17	0.12	5.0	89
MAY 15...	3.4	13	0.8	4.2	37	14	16	0.14	6.7	94
JUL 02...	3.7	21	1	3.8	38	19	24	0.17	8.5	115

[illegible]

SABINE RIVER MAIN STEM

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	21546	331	185	10750	46	2680	33	1910	59
NOV. 1996	27289	330	184	13560	45	3340	33	2440	60
DEC. 1996	86327	230	130	30210	29	6870	25	5830	48
JAN. 1997	76651	243	137	28300	31	6490	26	5430	50
FEB. 1997	210450	175	99	56200	22	12290	20	11200	39
MAR. 1997	408490	160	91	100200	20	21520	18	20240	36
APR. 1997	250800	177	100	67830	22	14800	20	13540	39
MAY 1997	227420	147	84	51360	18	11030	17	10380	33
JUNE 1997	68284	216	122	22480	28	5080	24	4360	46
JULY 1997	49200	163	92	12250	20	2710	18	2420	35
AUG. 1997	24573	246	138	9190	32	2150	26	1730	49
SEPT 1997	4663	545	299	3760	85	1070	46	577	73
TOTAL	1455693.00	**	**	406100	**	90020	**	80050	**
WTD.AVG.	3990	183	103	**	23	**	20	**	40

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e422	294	199	227	302	153	224	109	262	240	347	447
2	e430	315	165	250	306	135	239	108	300	236	338	475
3	393	375	174	267	288	133	244	116	279	236	347	481
4	381	376	183	279	279	130	251	116	270	244	368	500
5	e385	377	207	294	224	132	198	117	277	262	381	504
6	461	488	238	300	223	131	203	123	240	285	418	530
7	517	637	215	305	224	138	196	121	267	282	445	555
8	554	502	228	284	243	146	167	125	314	140	457	514
9	551	393	241	210	210	157	161	129	330	111	442	498
10	520	335	256	210	216	164	154	134	318	98	335	517
11	507	344	268	215	233	173	157	144	249	86	215	556
12	502	349	282	211	200	179	157	153	239	120	167	577
13	515	341	304	280	228	174	158	165	238	145	179	586
14	536	347	315	357	161	159	154	175	170	180	201	521
15	532	339	335	309	145	162	155	181	126	194	193	592
16	530	343	356	256	135	160	157	196	180	219	175	363
17	555	358	261	242	196	161	159	231	267	242	187	355
18	557	e375	233	245	161	164	163	269	165	257	195	424
19	550	e394	205	244	189	167	172	280	173	279	189	480
20	544	378	230	248	160	172	174	291	202	293	205	e505
21	548	331	310	243	154	174	181	279	234	319	231	496
22	386	364	274	258	147	173	187	291	217	316	295	587
23	305	373	243	252	134	170	197	286	212	329	340	576
24	317	355	241	234	126	166	201	297	209	341	e345	634
25	210	462	250	221	122	165	203	306	e188	354	335	709
26	209	351	232	229	127	170	199	280	e174	368	323	741
27	210	308	229	205	210	174	191	280	201	359	312	707
28	226	e240	213	218	222	181	150	106	270	365	345	674
29	e233	240	212	224	---	186	121	119	245	386	374	547
30	e249	256	294	221	---	194	108	167	256	364	398	501
31	e270	---	e253	226	---	205	---	213	---	356	329	---
MEAN	423	365	247	250	199	163	179	191	236	258	304	538

e Estimated

SABINE RIVER MAIN STEM

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	20.0	12.0	16.0	10.0	12.0	17.0	17.0	24.0	28.0	30.0	29.0
2	---	16.0	10.0	17.0	12.0	13.0	17.0	18.0	25.0	29.0	29.0	28.0
3	---	16.0	10.0	15.0	12.0	13.0	18.0	18.0	24.0	29.0	31.0	29.0
4	---	16.0	10.0	19.0	12.0	15.0	19.0	20.0	24.0	29.0	32.0	28.0
5	---	18.0	10.0	16.0	11.0	14.0	17.0	19.0	24.0	29.0	31.0	26.0
6	---	20.0	13.0	13.0	10.0	12.0	18.0	19.0	24.0	28.0	30.0	29.0
7	---	18.0	12.0	11.0	10.0	15.0	16.0	20.0	24.0	28.0	28.0	30.0
8	---	16.0	12.0	10.0	9.0	16.0	17.0	20.0	25.0	25.0	26.0	30.0
9	---	16.0	14.0	6.0	8.0	16.0	17.0	20.0	25.0	26.0	26.0	28.0
10	---	16.0	16.0	6.0	8.0	17.0	18.0	20.0	25.0	26.0	27.0	27.0
11	---	14.0	15.0	5.0	8.0	17.0	18.0	21.0	24.0	26.0	27.0	25.0
12	---	14.0	15.0	5.0	9.0	17.0	15.0	20.0	26.0	27.0	27.0	25.0
13	---	16.0	18.0	3.0	8.0	17.0	15.0	20.0	25.0	30.0	28.0	26.0
14	---	16.0	18.0	4.0	8.0	15.0	15.0	20.0	25.0	29.0	28.0	27.0
15	---	16.0	14.0	5.0	8.0	15.0	15.0	20.0	25.0	29.0	27.0	27.0
16	---	16.0	12.0	5.0	10.0	13.0	15.0	20.0	26.0	29.0	28.0	30.0
17	---	18.0	13.0	3.0	9.0	15.0	15.0	21.0	26.0	30.0	29.0	28.0
18	---	---	9.0	4.0	9.0	16.0	16.0	23.0	27.0	30.0	30.0	28.0
19	---	18.0	5.0	6.0	11.0	13.0	16.0	23.0	26.0	30.0	30.0	27.0
20	---	18.0	5.0	6.0	13.0	14.0	18.0	23.0	27.0	32.0	29.0	27.0
21	---	18.0	9.0	8.0	12.0	15.0	19.0	21.0	27.0	31.0	30.0	28.0
22	---	16.0	10.0	10.0	12.0	15.0	18.0	21.0	27.0	31.0	28.0	28.0
23	---	16.0	17.0	9.0	13.0	15.0	18.0	22.0	27.0	30.0	28.0	25.0
24	---	16.0	9.0	11.0	12.0	17.0	18.0	23.0	27.0	31.0	---	25.0
25	---	12.0	11.0	10.0	12.0	17.0	17.0	23.0	27.0	31.0	27.0	23.0
26	---	12.0	12.0	12.0	15.0	16.0	16.0	25.0	26.0	31.0	28.0	25.0
27	21.0	10.0	13.0	12.0	12.0	17.0	16.0	25.0	27.0	32.0	26.0	23.0
28	21.0	---	17.0	10.0	12.0	19.0	15.0	21.0	27.0	32.0	29.0	27.0
29	20.0	10.0	18.0	9.0	---	18.0	15.0	22.0	28.0	31.0	30.0	26.0
30	20.0	10.0	14.0	8.0	---	18.0	17.0	23.0	28.0	31.0	29.0	25.0
31	20.0	---	---	8.0	---	18.0	---	23.0	---	28.0	31.0	---
MEAN	20.5	15.5	12.5	9.0	10.5	15.5	16.5	21.0	25.5	29.5	28.5	27.0

SABINE RIVER BASIN

08022060 MARTIN LAKE NEAR TATUM, TX

LOCATION.--Lat 32°15'42", long 94°34'23", Rusk County, Hydrologic Unit 12010002, on retaining wall, 30 ft to right of intake to generating plant No. 1, 1.9 mi upstream from Martin Dam on Martin Creek, 5.8 mi southwest of Tatum and 21.9 mi upstream from mouth.

DRAINAGE AREA.--130 mi².

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

Water-quality records.--Chemical analyses: October 1974 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1976, non-recording gage near left end of dam 1.9 mi downstream at same datum.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 8,675 ft long, including a 1,000-foot uncontrolled spillway. Deliberate impoundment began in April 1974. The uncontrolled spillway is an excavated channel cut through natural ground and located at the left end of the dam. The controlled spillway is a concrete ogee design with four 14.0- by 40.0-foot-wide tainter gates located near the left end of the dam. The low-flow outlet works consist of a 3.0- by 5.0-foot conduit with a sluice gate located in one of the gate piers. There is an 8-inch pipe with sluice gate. The area and capacity tables are based on an aerial survey made in October 1971. There are no known diversions. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	321.5	-
Crest of uncontrolled spillway	312.0	111,500
Top of gates	308.0	87,960
Top of conservation pool	306.0	77,500
Crest of gated spillway	294.0	31,040
Lowest gated outlet (invert)	284.0	10,320

COOPERATION.--Area and capacity tables provided by Forrest and Cotton, Consulting Engineers, for Texas Utilities Services, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 118,000 acre-ft Mar. 29, 1989 (elevation, 313.00 ft); minimum since first appreciable storage, 45,230 acre-ft Sept. 18, 1996 (elevation, 298.45 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 78,860 acre-ft Feb. 13 at 0330 hours (elevation, 306.27 ft); minimum, 48,860 acre-ft Oct. 21 (elevation, 299.45 ft).

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

298.0	43,620	304.0	67,880	310.0	99,300
300.0	50,960	306.0	77,500	312.0	111,500
302.0	59,040	308.0	87,960	313.0	118,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50300	51730	55180	58950	69690	77000	77200	77400	77650	75460	70820	70490
2	50270	51650	55390	59040	69830	77750	77200	77400	77600	75160	70680	70300
3	50230	51570	55510	59120	70160	77150	77250	77350	77500	74970	70490	70110
4	50150	51540	55630	59040	70490	77450	77850	77050	77400	74770	70350	69880
5	50110	51500	55710	58950	70630	77200	77250	77250	77300	74570	70160	69690
6	50040	51570	55750	58950	70680	77500	77600	77450	77250	74530	69970	69550
7	50000	51880	55790	59120	72630	77200	77000	77750	77150	74770	69880	69410
8	49920	51920	55830	60740	73990	77400	77050	77750	77050	74720	70250	69270
9	49850	51960	55830	62480	74430	77650	77200	77700	76950	74570	72390	69220
10	49770	51880	55880	62920	74620	77350	77250	77650	76850	74430	73360	68990
11	49660	51850	55960	63010	74770	77150	77200	77650	76800	74280	73410	68800
12	49580	51810	55880	63050	78460	77250	77050	77550	76650	74130	73310	68620
13	49540	51810	55920	63100	77300	77650	77100	77550	76650	73940	73210	68430
14	49470	51770	56000	63230	77600	77100	77150	77550	76550	73790	73160	68290
15	49390	51730	56530	63270	77000	77500	77150	77550	76500	73750	73020	68200
16	49350	51730	57520	63320	77250	77150	77200	77600	76450	73550	72830	68010
17	49170	51690	58110	63400	77450	77450	77200	77650	76750	73410	72680	67830
18	49090	51730	58240	63490	77000	77000	77250	77600	76750	73260	72490	67690
19	48980	51730	58280	63490	77150	77150	77200	77600	76600	73120	72350	67550
20	48900	51770	58320	63630	78050	77300	77250	77600	76500	72970	72390	67370
21	49730	51610	58400	63940	77400	77000	77250	77600	76300	72730	72060	67190
22	51260	51610	58490	64070	77300	77050	77250	77650	76300	72540	72060	67050
23	51610	51650	58490	65740	77000	77100	77250	77750	76200	72390	71910	67920
24	51650	52350	58490	68010	77750	77200	77200	77750	76100	72200	71770	67830
25	51770	52790	58530	68850	77900	77250	77200	77850	76100	72060	71630	67740
26	51850	52980	58610	69080	77500	77300	77250	77850	76150	71910	71480	67690
27	51880	52980	58700	69220	77300	77050	77850	77950	76100	71770	71290	67550
28	51880	53060	58740	69310	77300	76900	77350	77950	76000	71580	71150	67460
29	51880	53660	58820	69450	---	77100	77350	77850	75850	71390	70960	67370
30	51880	54460	58870	69590	---	77200	77200	77800	75660	71290	70770	67280
31	51850	---	58910	69640	---	77200	---	77750	---	71060	70630	---
MAX	51880	54460	58910	69640	78460	77750	77850	77950	77650	75460	73410	70490
MIN	48900	51500	55180	58950	69690	76900	77000	77050	75660	71060	69880	67050
(+)	300.23	300.89	301.97	304.38	305.96	305.94	305.94	306.05	305.63	304.68	304.59	303.87
(@)	+1620	+2610	+4450	+10730	+7660	-100	0	+550	-2090	-4600	-430	-3350

CAL YR 1996 MAX 60230 MIN 45330 (@) +1050
WTR YR 1997 MAX 78460 MIN 48900 (@) +17050

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

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DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.75	17.89	20.27	20.57	22.29	27.82	25.78	26.92	25.55	24.41	23.10	22.62
2	18.29	18.12	20.87	20.62	22.29	29.80	25.61	28.41	24.95	24.38	23.13	22.76
3	18.05	18.17	21.00	20.90	22.09	30.62	25.48	29.23	24.63	24.37	23.22	22.40
4	18.05	18.15	21.03	20.55	21.91	30.41	26.36	28.70	24.46	24.33	22.96	22.37
5	18.05	18.08	20.55	20.36	22.00	30.47	28.94	28.02	24.32	24.34	22.83	22.35
6	17.99	18.29	19.99	20.28	22.06	30.27	30.16	27.35	24.20	24.43	22.95	22.50
7	18.04	18.07	19.64	20.48	22.06	30.08	29.95	26.95	24.27	24.51	22.74	22.44
8	18.02	18.04	19.49	21.07	22.74	29.72	29.14	26.44	24.28	24.49	22.80	22.32
9	18.01	18.24	19.47	21.92	23.21	29.52	28.08	26.12	24.21	24.63	24.10	22.17
10	18.05	18.27	19.46	22.28	23.26	29.18	26.93	26.02	24.17	24.70	24.36	22.18
11	18.00	18.17	19.39	22.48	23.17	28.91	26.08	25.98	24.28	24.65	24.18	22.09
12	18.00	18.12	19.16	22.41	23.98	28.80	25.30	25.90	24.42	24.60	24.09	22.05
13	17.92	18.11	19.19	22.08	25.38	29.28	24.95	25.99	24.21	24.53	23.83	22.00
14	17.93	18.16	19.36	21.82	25.94	29.28	24.81	25.75	24.35	24.37	23.81	21.94
15	17.93	18.23	19.07	21.71	26.56	29.38	24.76	25.69	24.63	24.21	23.92	21.89
16	17.94	18.12	19.76	21.53	27.08	29.58	24.74	25.97	24.73	24.21	23.74	21.82
17	17.83	17.93	20.30	21.69	27.31	29.01	24.72	26.07	24.77	24.12	23.63	21.77
18	17.88	18.11	20.71	21.69	27.22	28.45	24.79	25.20	24.72	23.99	23.60	21.79
19	17.88	18.06	20.79	21.57	26.91	28.63	24.81	24.72	24.81	24.02	23.57	21.73
20	18.08	18.17	20.71	21.58	26.62	28.14	24.87	24.28	24.77	24.03	23.28	21.67
21	18.24	17.94	20.59	21.68	26.29	28.06	24.97	24.28	24.71	23.98	23.27	21.54
22	17.98	18.10	20.54	21.64	26.41	27.24	24.89	24.29	24.70	23.78	23.28	21.68
23	18.38	18.15	20.43	22.19	26.24	27.05	24.90	24.29	24.59	23.90	23.18	21.73
24	18.84	18.23	20.17	23.00	26.39	27.03	25.00	24.49	24.54	23.66	23.17	21.49
25	18.60	18.24	20.43	23.66	26.84	26.88	25.11	24.63	24.56	23.68	23.06	21.57
26	18.30	18.90	20.28	23.62	27.23	27.18	25.21	24.59	24.56	23.48	22.94	21.71
27	18.21	19.04	20.42	23.33	27.40	26.49	25.34	24.39	24.57	23.55	22.89	21.63
28	18.19	19.01	20.49	23.05	27.55	26.36	25.67	25.03	24.59	23.47	22.81	21.59
29	18.17	19.00	20.63	22.77	---	26.05	26.08	25.60	24.73	23.38	22.71	21.58
30	18.10	19.47	20.74	22.56	---	25.90	26.53	25.71	24.59	23.25	22.66	21.57
31	18.26	---	20.57	22.45	---	25.87	---	25.82	---	23.21	22.78	---
MAX	18.84	19.47	21.03	23.66	27.55	30.62	30.16	29.23	25.55	24.70	24.36	22.76
MIN	17.83	17.89	19.07	20.28	21.91	25.87	24.72	24.28	24.17	23.21	22.66	21.49
CAL YR 1996	MAX 21.03	MIN 17.21										
WTR YR 1997	MAX 30.62	MIN 17.83										

SABINE RIVER MAIN STEM

08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010004, in powerhouse at right end of Toledo Bend Dam on Sabine River, 15 mi northeast of Burkeville and at mile 156.5.

DRAINAGE AREA.--7,178 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Sabine River Authority). Prior to July 20, 1967, nonrecording gage at same site and datum. July 20, 1967, to June 30, 1973, recording gage at right end of spillway 1.6 mi north of present site and at same datum.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam. Closure of embankment completed and deliberate impoundment began Oct. 3, 1966. The reservoir is operated for hydro-electric power generation and water conservation. Releases during high inflow periods are controlled by eleven 40 x 28-foot tainter gates. An 8.33 x 12-foot gated conduit through the dam is used for low-flow releases. Two additional 20-inch-diameter conduits, that bypass the larger conduit, may also be used for low-flow releases. Water for turbines is admitted through four 16.75 x 29-foot penstocks and controlled by vertically operated caterpillar-type gates. The capacity table is based on U.S. Geological Survey topographic maps. For statement regarding regulation by upstream reservoirs, see station 08020000. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	185.0	-
Design flood	175.3	5,103,000
Top of gates	173.0	4,660,000
Top of power drawdown storage	172.0	4,476,000
Top of power head storage	162.2	2,922,000
Crest of spillway (controlled)	145.0	1,162,000
Lowest gated outlet (invert)	100.0	4,090

COOPERATION.--Capacity table furnished by the Sabine River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,840,000 acre-ft May 18, 1989 (elevation, 173.95 ft); minimum since initial filling of reservoir in June 1968, 3,290,000 acre-ft Nov. 14, 15, 1987 and Oct. 20, 1994 (elevation, 164.78 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,766,000 acre-ft Apr. 7 at 0245 hours (elevation, 173.56 ft); minimum, 3,351,000 acre-ft Oct. 22 (elevation, 165.19 ft).

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

164.0	3,175,000	170.0	4,123,000	173.0	4,660,000
166.0	3,473,000	172.0	4,476,000	174.0	4,849,000
168.0	3,788,000				

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3428000	3455000	3509000	3816000	4091000	4614000	4570000	4614000	4542000	4493000	4294000	4189000
2	3437000	3447000	3510000	3811000	4070000	4658000	4570000	4658000	4542000	4493000	4273000	4179000
3	3441000	3429000	3543000	3806000	4065000	4692000	4559000	4642000	4509000	4487000	4273000	4189000
4	3441000	3425000	3538000	3831000	4075000	4703000	4542000	4636000	4482000	4487000	4257000	4168000
5	3437000	3429000	3547000	3851000	4045000	4703000	4653000	4614000	4465000	4460000	4236000	4158000
6	3437000	3411000	3575000	3861000	4030000	4636000	4743000	4614000	4465000	4471000	4210000	4126000
7	3432000	3456000	3594000	3841000	4065000	4631000	4732000	4581000	4460000	4455000	4215000	4126000
8	3432000	3449000	3591000	3861000	4060000	4636000	4703000	4575000	4455000	4449000	4194000	4126000
9	3423000	3431000	3582000	3838000	4081000	4642000	4658000	4581000	4460000	4460000	4252000	4126000
10	3423000	3426000	3582000	3870000	4086000	4653000	4603000	4559000	4465000	4449000	4326000	4111000
11	3414000	3431000	3591000	3894000	4081000	4642000	4625000	4548000	4455000	4449000	4347000	4096000
12	3414000	3431000	3605000	3900000	4168000	4636000	4570000	4570000	4433000	4455000	4352000	4081000
13	3414000	3431000	3605000	3900000	4278000	4664000	4537000	4537000	4465000	4455000	4358000	4070000
14	3405000	3432000	3595000	3938000	4320000	4675000	4531000	4526000	4455000	4455000	4336000	4070000
15	3405000	3414000	3642000	3938000	4347000	4642000	4537000	4515000	4455000	4449000	4320000	4065000
16	3401000	3423000	3652000	3940000	4369000	4620000	4542000	4515000	4449000	4433000	4315000	4050000
17	3423000	3450000	3710000	3992000	4369000	4614000	4537000	4498000	4487000	4433000	4331000	4035000
18	3405000	3432000	3710000	3970000	4401000	4642000	4531000	4482000	4493000	4417000	4315000	4024000
19	3387000	3437000	3690000	3963000	4401000	4653000	4537000	4476000	4509000	4406000	4299000	4014000
20	3378000	3429000	3681000	3953000	4428000	4625000	4531000	4471000	4504000	4412000	4310000	3994000
21	3378000	3452000	3690000	3960000	4515000	4608000	4531000	4449000	4515000	4390000	4294000	4009000
22	3396000	3434000	3705000	3965000	4498000	4597000	4548000	4455000	4509000	4379000	4310000	3984000
23	3396000	3425000	3762000	3994000	4504000	4581000	4553000	4449000	4509000	4358000	4294000	4014000
24	3405000	3456000	3753000	4030000	4553000	4564000	4548000	4471000	4515000	4358000	4288000	4055000
25	3423000	3479000	3734000	4035000	4564000	4608000	4592000	4465000	4509000	4342000	4278000	4040000
26	3423000	3462000	3767000	4050000	4586000	4603000	4581000	4465000	4504000	4347000	4267000	4019000
27	3432000	3467000	3758000	4179000	4603000	4586000	4597000	4504000	4509000	4336000	4252000	4014000
28	3428000	3467000	3762000	4116000	4603000	4597000	4597000	4504000	4509000	4326000	4231000	4014000
29	3441000	3485000	3786000	4116000	---	4581000	4586000	4504000	4498000	4304000	4215000	4009000
30	3441000	3504000	3801000	4111000	---	4608000	4614000	4509000	4498000	4326000	4210000	4009000
31	3432000	---	3811000	4091000	---	4586000	---	4537000	---	4310000	4194000	---
MAX	3441000	3504000	3811000	4179000	4603000	4703000	4743000	4658000	4542000	4493000	4358000	4189000
MIN	3378000	3411000	3509000	3806000	4030000	4564000	4531000	4449000	4433000	4304000	4194000	3984000
(+)	165.73	166.20	168.14	169.81	172.69	172.60	172.75	172.33	172.12	171.07	170.41	169.33
(@)	+13000	+72000	+307000	+280000	+512000	-17000	+28000	-77000	-39000	-188000	-116000	-185000

CAL YR 1996 MAX 3811000 MIN 3315000 (@) +352000
WTR YR 1997 MAX 4743000 MIN 3378000 (@) +590000

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

SABINE RIVER MAIN STEM

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08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010005, in powerhouse at right end of Toledo Bend Dam, 10 mi upstream from Sabine River near Burkeville gage and at mile 156.5.

DRAINAGE AREA.--7,178 mi².

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

Water-quality records.--Chemical and biochemical analyses: October 1967 to September 1986.

GAGE.--Water-stage recorders. Datum of gage is at sea level (levels by Sabine River Authority).

REMARKS.--No estimated daily discharges. Records fair. Daily discharges are a combination of releases from various outlets at the dam. Discharges for releases through the turbines are computed using scroll case differential relationships and operation logs. Tainter gate releases, low-flow sluiceway releases, bypass gate releases, and turbine leakages are based on discharge measurements and operation logs. Since installation of gage in 1972, at least 10% of contributing drainage area has been regulated by Toledo Bend Reservoir (station 08025350). Satellite telemeter at gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	1110	204	204	9180	20000	16800	14800	6820	4340	6440	3600
2	697	204	828	204	8500	30300	13400	16600	6750	1960	6060	3400
3	174	204	204	204	9450	41100	11900	23200	9780	1280	204	3820
4	1020	820	204	204	8620	47300	10400	31000	13900	1310	6740	3500
5	174	204	1100	204	8770	49900	22800	31900	13400	2750	6400	3800
6	174	819	204	204	9500	50400	34900	28000	9690	174	6440	3420
7	711	204	204	204	8820	35800	43900	25800	174	4550	4480	174
8	174	976	204	204	204	25900	45800	24600	174	5330	7170	3830
9	691	204	785	204	204	25200	45800	21800	2890	5000	6100	3920
10	174	204	204	204	4040	24900	42500	17700	3110	5120	204	3820
11	860	860	204	204	6830	25000	38200	14200	3470	4970	6420	4250
12	174	204	1090	204	10100	25000	34800	14000	3110	4830	6450	4110
13	174	785	204	204	11400	27500	24900	13900	3510	204	6560	4170
14	780	204	204	204	11000	34000	9050	14600	204	4690	6440	174
15	174	1300	204	204	13400	37900	6650	14900	204	4940	6240	3920
16	760	204	769	204	12800	34000	6420	14900	3320	4860	6080	3890
17	153	204	204	2500	13300	27800	6530	14800	3480	4940	204	4030
18	894	797	204	2420	13200	25200	6520	14800	552	5020	8440	3120
19	144	204	992	2340	13700	27800	6520	14800	174	3570	3760	4130
20	144	773	204	2430	14000	31800	6550	14800	378	204	6420	4910
21	580	204	204	2790	13800	27600	6610	14400	204	4940	6650	271
22	174	1050	204	2360	13600	25400	6580	7070	204	5380	6340	3960
23	651	204	204	1850	13400	21700	6600	3060	3120	5290	6080	152
24	174	204	204	2360	13500	19900	6600	242	2690	5190	204	144
25	1010	735	204	2290	14200	20000	6580	224	3340	5360	6860	144
26	174	204	204	2380	18300	20200	9810	284	3050	2920	6490	144
27	174	793	204	2300	20100	20200	11700	163	2580	174	6180	144
28	722	204	204	4410	20000	20100	11600	3250	204	5250	7000	144
29	174	1110	204	6110	---	20100	11700	6200	204	5260	6220	890
30	429	204	511	10900	---	15700	11600	6340	4640	6900	4520	174
31	204	---	204	9080	---	16800	---	6660	---	5200	204	---
TOTAL	12886	15396	10971	59784	313918	874500	523720	428993	105326	121906	164000	76155
MEAN	416	513	354	1929	11210	28210	17460	13840	3511	3932	5290	2539
MAX	1020	1300	1100	10900	20100	50400	45800	31900	13900	6900	8440	4910
MIN	144	204	204	204	204	15700	6420	163	174	174	204	144
AC-FT	25560	30540	21760	118600	622700	1735000	1039000	850900	208900	241800	325300	151100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1997#, BY WATER YEAR (WY)

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	1188	2202	5386	8749	9671	10520	8455	8248	6147	4692	3640	2988														
MAX	6809	13340	17720	27680	20510	28210	19270	22170	24960	18790	6732	7323														
(WY)	1992	1995	1975	1974	1975	1997	1991	1991	1989	1989	1976	1991														
MIN	59.0	50.7	74.5	90.0	339	231	247	311	508	493	470	424														
(WY)	1976	1976	1976	1978	1981	1972	1978	1984	1996	1996	1996	1983														

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1972 - 1997#

ANNUAL TOTAL	179189	2707555	
ANNUAL MEAN	490	7418	
HIGHEST ANNUAL MEAN			5975
LOWEST ANNUAL MEAN			10370
HIGHEST DAILY MEAN	3970	Jan 19	517
LOWEST DAILY MEAN	144	Oct 19	114000
ANNUAL SEVEN-DAY MINIMUM	204	Jan 1	30
ANNUAL RUNOFF (AC-FT)	355400		34
10 PERCENT EXCEEDS	984		Nov 21 1975
50 PERCENT EXCEEDS	204		
90 PERCENT EXCEEDS	204		

Period of regulated streamflow.

08026000 SABINE RIVER NEAR BURKEVILLE, TX

LOCATION.--Lat 31°03'50", long 93°31'10", Newton County, Texas-Vernon Parish, Louisiana State line, Hydrologic Unit 12010005, near left edge of low-water channel on downstream side of bridge on State Highway 63, about 200 ft downstream from Pearl Creek, 10 mi northeast of Burkeville, 16 mi downstream from Bayou Toro and at mile 139.7.

DRAINAGE AREA.--7,482 mi².

PERIOD OF RECORD.--September 1955 to current year. Published as "below Toledo Bend near Burkeville" for period 1955-75.

Water-quality records.--Chemical and biochemical analyses: May 1968 to September 1986. Pesticide analyses: October 1972 to September 1981.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 60.59 ft above sea level. Prior to Aug. 23, 1958, nonrecording gage at current site. Prior to Jan. 1, 1989, at datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Since 1966, additional regulation by Toledo Bend Reservoir 16.8 mi. upstream. Telephone telemeter at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860: Flood in May 1884 reached a stage of 45.9 ft, current datum, from information by local resident. Flood of Apr. 15, 1945, reached a stage of 45.8 ft, current datum. Flood of May 23, 1953, reached a stage of 45.3 ft, current datum, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	697	768	524	486	9740	19800	16200	12800	7010	4940	5750	2100
2	517	699	1030	433	9240	22300	14700	16000	7210	3620	5660	2860
3	535	293	498	409	9540	31300	11800	18300	7800	1990	2720	3440
4	686	551	355	395	8960	35700	10700	26400	12700	1990	3760	3230
5	638	593	1160	377	9070	38900	16700	28700	13200	3090	5960	3180
6	250	767	502	365	9260	41200	28100	28700	11700	1920	5790	3140
7	484	421	345	374	8940	41300	34500	26200	3250	2990	4800	1630
8	523	789	327	382	4530	34100	37900	25400	909	4850	5160	2070
9	483	704	834	403	1210	28700	39600	23900	2100	4650	6230	3330
10	512	294	418	402	2550	25800	40000	19600	3570	4920	3140	3340
11	561	817	326	403	6200	24800	38800	15200	3720	4950	3940	3360
12	566	381	1050	396	8960	24500	36800	13900	3570	4250	5830	3590
13	229	773	452	417	18700	25900	33900	13700	3490	3180	5920	3480
14	469	374	322	418	14200	29800	20000	14000	2250	2820	5870	1860
15	519	1210	333	470	15600	33200	9710	14500	770	4600	5700	2050
16	460	467	1590	799	13300	33800	7630	14600	2060	4590	5620	3290
17	493	499	2040	2310	12600	30900	7360	14500	3540	4600	2790	3370
18	330	1160	1300	2950	12600	27100	7260	14300	2480	4640	3930	3150
19	474	468	1500	2950	12700	25800	7210	14200	955	3850	5580	3030
20	174	794	608	2970	13300	28700	7180	14300	849	2250	5350	3430
21	365	409	426	3730	15000	28800	7160	14300	929	2850	5870	2490
22	448	1110	402	3290	14500	26200	7130	10300	580	4660	6040	2160
23	433	457	391	3300	13700	23700	7110	3580	1900	4890	5690	1880
24	480	330	372	3350	13000	20400	7090	2410	3450	4860	2900	444
25	788	963	359	3350	17000	19600	7110	1560	3460	4770	3840	346
26	865	649	366	3100	19700	20600	8990	1240	3540	3650	6060	325
27	369	955	421	3270	21800	20900	12200	1020	3230	1860	5750	299
28	568	453	455	4050	20900	20400	12100	1970	1930	2750	5950	275
29	555	1170	462	7930	---	20000	11800	7020	676	4810	6010	452
30	321	582	839	10100	---	16900	11700	7340	2880	5260	4550	681
31	410	---	632	9800	---	16000	---	6950	---	6080	2190	---
TOTAL	15202	19900	20639	73379	336800	837100	518440	426890	115708	121130	154350	68282
MEAN	490	663	666	2367	12030	27000	17280	13770	3857	3907	4979	2276
MAX	865	1210	2040	10100	21800	41300	40000	28700	13200	6080	6230	3590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997#, BY WATER YEAR (WY)

MEAN	1167	1939	5550	8129	8914	9849	8154	8304	5581	3959	2835	2599
MAX	6846	12880	17990	28510	21470	27000	26530	32070	25310	23750	6662	7099
(WY)	1992	1995	1962	1974	1975	1997	1969	1966	1989	1989	1976	1991
MIN	82.5	86.2	247	484	266	485	231	471	400	166	91.7	77.6
(WY)	1968	1968	1968	1968	1968	1968	1971	1967	1970	1964	1967	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1960 - 1997#
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ANNUAL TOTAL	251546		2707820						
ANNUAL MEAN	687		7419			5568			
HIGHEST ANNUAL MEAN						11190			1995
LOWEST ANNUAL MEAN						548			1967
HIGHEST DAILY MEAN	5400	Feb 5	41300	Mar 7		111000			May 20 1989
LOWEST DAILY MEAN	174	Oct 20	174	Oct 20		38			Sep 14 1967
ANNUAL SEVEN-DAY MINIMUM	352	Jan 12	385	Jan 4		41			Sep 9 1967
INSTANTANEOUS PEAK FLOW			43200	Mar 7		116000			May 20 1989
INSTANTANEOUS PEAK STAGE			40.26	Mar 7		47.45			May 20 1989
ANNUAL RUNOFF (AC-FT)	498900		5371000			4034000			
10 PERCENT EXCEEDS	1030		22000			15300			
50 PERCENT EXCEEDS	582		3370			2560			
90 PERCENT EXCEEDS	351		407			257			

Period of regulated streamflow.

SABINE RIVER MAIN STEM

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08028500 SABINE RIVER NEAR BON WIER, TX

LOCATION.--Lat 30°44'49", long 93°36'30", Beauregard Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, near left bank on downstream side of bridge on U.S. Highway 190, 0.7 mi upstream from Quicksand Creek, 0.8 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.0 mi east of Bon Wier, 2.4 mi upstream from Caney Creek and at mile 97.7.

DRAINAGE AREA.--8,229 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1312. Gage-height records collected in this vicinity since 1913 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: 1953. WSP 1442: 1924, 1926-27(M), 1929(M), 1939. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 33.42 ft above sea level. Prior to July 8, 1931, nonrecording gage at site 0.8 mi downstream at datum 13.00 ft higher. July 8, 1931, to Oct. 15, 1958, nonrecording gage at present site at datum 13.00 ft higher. Oct. 16, 1958, to Sept. 30, 1975, water-stage recorder at present site at datum 13.00 ft higher. Oct. 1, 1975, to Dec. 31, 1988, at present site at datum 10.00 ft higher.

REMARKS.--Records fair. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Additional regulation since October 1966, by Toledo Bend Reservoir 58.8 mi upstream. Telephone telemeter at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--36 years (water years 1924-59) prior to completion of Lake Tawakoni.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1924-59).--Maximum discharge, 115,000 ft³/s May 19, 1953 (gage height, 38.70 ft, current datum); minimum, 160 ft³/s Sept. 29, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 43.5 ft Apr. 23 or 24, 1913, from information by Gulf, Colorado, and Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of 39 ft. Floods occurring about 1844 and 1860 were higher than flood in May 1884, from information by local residents. All flood data referenced to current datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	1040	1650	1660	10400	29100	18400	13600	8950	4020	6730	2370
2	1380	1040	1540	1370	10300	27700	18200	15400	9170	5760	6650	2890
3	1030	1040	1830	1230	9930	28600	15800	17300	8730	4190	6480	3510
4	1090	814	1400	1130	10600	32300	13700	20700	10500	2650	2930	3990
5	972	916	1120	1040	10700	36900	e12500	26000	13900	2480	4920	3790
6	1110	1050	1490	1000	10300	42300	e18000	28400	14300	3810	6610	3820
7	728	1050	1230	1010	10300	47000	e27800	29000	11100	2510	6660	3720
8	755	930	955	1070	10600	39800	e35000	27800	3850	4910	5770	1870
9	929	972	918	1170	5780	e33000	38900	26800	1850	6960	6700	2770
10	730	1100	1150	1280	3090	e28000	42800	25000	3510	6370	8180	3870
11	873	732	1000	1210	5050	e25900	45400	20900	4710	6060	4190	3880
12	737	956	843	1090	8590	e25700	46000	17000	4700	6210	5510	4000
13	920	852	1230	1030	22200	e27000	44300	15500	4450	5740	6920	4110
14	624	935	1030	1040	26000	30700	39300	15200	4430	3420	7040	4040
15	663	827	878	1100	22600	32700	25300	15500	2610	4090	6840	2000
16	900	1160	2190	1530	22100	35500	13800	15900	1450	5540	6620	2710
17	725	1000	6510	2100	18600	36500	10400	15900	3040	5470	6490	3780
18	898	1150	5870	3170	16000	34500	9430	15800	4410	5460	3010	3910
19	665	1960	4300	3410	15300	31600	9010	15700	2960	5480	5650	3540
20	854	1660	3580	3260	15400	30200	8770	15800	1650	4560	5620	3640
21	603	1540	2430	3270	17400	30600	8620	17800	1490	2730	6190	4200
22	597	1240	1950	3660	19800	30600	8520	17300	1490	4140	6710	2390
23	838	1440	1850	3640	18700	29100	8430	10400	1180	5560	7040	3010
24	718	1160	1750	3940	17200	26400	8340	5230	2690	5680	6850	2350
25	1020	1050	1700	3850	21100	23300	8310	4300	4220	5660	3160	1160
26	1510	1840	1580	3550	29000	23200	9120	4100	4960	5610	5090	897
27	2170	1670	1470	3510	29900	24300	12700	3170	4680	4240	6690	783
28	1380	1670	1470	4520	30000	24100	14700	2920	4240	2160	6450	711
29	1230	1280	1520	8460	---	23100	14500	5250	2470	3720	6780	658
30	1280	1670	1990	9610	---	22200	14100	8780	1380	5710	6620	728
31	971	---	2070	10700	---	19100	---	8970	---	7260	5240	---
TOTAL	30330	35744	60494	89610	446940	931000	600150	481420	149070	148160	186340	85097
MEAN	978	1191	1951	2891	15960	30030	20010	15530	4969	4779	6011	2837
MAX	2170	1960	6510	10700	30000	47000	46000	29000	14300	7260	8180	4200
MIN	597	732	843	1000	3090	19100	8310	2920	1180	2160	2930	658
AC-FT	60160	70900	120000	177700	886500	1847000	1190000	954900	295700	293900	369600	168800

SABINE RIVER MAIN STEM

08028500 SABINE RIVER NEAR BON WIER, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997#, BY WATER YEAR (WY)

MEAN	1664	2614	6738	9668	10790	11420	9649	9366	6482	4758	3324	3088
MAX	7315	13250	21420	30930	23200	30030	27370	31210	26340	31490	7288	8247
(WY)	1992	1995	1983	1974	1975	1997	1969	1966	1989	1989	1976	1991
MIN	188	217	822	1000	746	1288	634	1011	663	530	211	206
(WY)	1968	1968	1981	1981	1968	1981	1971	1996	1970	1964	1967	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1960 - 1997#	
ANNUAL TOTAL	498349		3244355			
ANNUAL MEAN	1362		8889		6612	
HIGHEST ANNUAL MEAN					12670	1975
LOWEST ANNUAL MEAN					1172	1967
HIGHEST DAILY MEAN	6510	Dec 17	47000	Mar 7	98000	Jul 4 1989
LOWEST DAILY MEAN	597	May 28	597	Oct 22	134	Nov 9 1966
ANNUAL SEVEN-DAY MINIMUM	739	Oct 18	739	Oct 18	142	Nov 3 1966
INSTANTANEOUS PEAK FLOW			50500	Mar 8	98200	Jul 4 1989
INSTANTANEOUS PEAK STAGE			34.78	Mar 8	37.90	Jul 4 1989
ANNUAL RUNOFF (AC-FT)	988500		6435000		4790000	
10 PERCENT EXCEEDS	2180		26600		16900	
50 PERCENT EXCEEDS	1110		4240		3470	
90 PERCENT EXCEEDS	794		972		672	

e Estimated

Period of regulated streamflow.

SABINE RIVER MAIN STEM

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08028500 SABINE RIVER NEAR BON WEIR, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year. Chemical and biochemical analyses: October 1969 to May 1973. Sediment analyses: April 1957 to September 1962.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1969 to June 1983.

WATER TEMPERATURE: November 1969 to June 1983.

COLOR: November 1969 to June 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 407 microsiemens Aug. 31, 1978; minimum daily, 34 microsiemens Feb. 3, 1983.

WATER TEMPERATURE: Maximum daily, 33.0°C July 17, 1978, and July 14, 26, 1980; minimum daily, 4.0°C Feb. 2, 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV							
09...	1430	965	202	20.0	60	28	19
17...	1115	960	176	20.0	50	22	18
22...	1630	1140	280	20.0	80	51	27
24...	1240	1090	219	20.0	80	34	21
DEC							
06...	1305	1740	192	18.0	120	28	18
10...	1645	1380	202	17.0	80	29	19
28...	1653	1520	115	17.0	100	14	12
31...	1345	2100	115	18.0	120	15	12
JAN							
06...	1335	973	152	20.0	120	21	14
16...	1335	1700	155	8.0	100	22	15
20...	1210	3300	146	10.0	80	18	15
26...	1105	3920	145	13.0	80	18	14
FEB							
02...	1125	1150	146	15.0	30	16	15
09...	1755	4230	122	11.0	70	15	12
16...	1320	22200	115	11.0	65	12	12
23...	1645	18500	128	13.0	75	14	13
MAR							
03...	1355	29000	111	14.0	20	10	11
09...	1020	16300	150	15.0	30	16	16
16...	1150	35800	169	15.0	40	15	17
23...	1248	29500	155	19.0	35	17	20
29...	1655	23000	125	19.0	20	10	14
APR							
05...	1145	13000	145	18.0	35	14	16
11...	1045	45500	140	18.0	50	13	16
16...	1350	12900	250	19.0	130	18	30
26...	1110	8930	118	18.0	40	10	12
30...	1340	14000	155	20.0	70	17	17
MAY							
05...	0730	25500	145	20.0	60	15	16
08...	1130	27800	157	20.0	60	17	18
14...	0730	15200	153	26.0	70	17	17
22...	1110	17600	130	22.0	70	13	13
JUN							
04...	1750	12000	140	26.0	70	15	15
08...	0955	3920	154	26.0	70	18	16
12...	1050	4780	132	26.0	70	13	13
15...	1815	3850	170	29.0	80	20	17
22...	0950	1520	183	29.0	80	22	17
29...	0920	2600	232	30.0	100	25	16
JUL							
06...	1215	4350	143	30.0	60	16	14
13...	1025	6090	143	30.0	70	16	15
20...	1610	5060	140	31.0	50	15	14
27...	1640	4470	141	31.0	60	15	14
AUG							
03...	1055	7260	125	30.0	160	13	12
10...	1110	9240	124	28.0	120	13	12
17...	1215	7380	141	29.0	35	15	15
24...	0920	7360	140	29.0	35	15	14
31...	1055	5520	137	30.0	40	14	13
SEP							
07...	1155	4010	139	30.0	35	15	14
14...	0905	3980	138	28.0	50	14	14
22...	1710	1570	136	28.0	45	13	13
30...	1120	426	164	28.0	100	19	15

SABINE RIVER BASIN

08029500 BIG COW CREEK NEAR NEWTON, TX

LOCATION.--Lat 30°49'08", long 93°47'07", Newton County, Hydrologic Unit 12010005, near center of span on downstream side of bridge on State Highway 87, 2.6 mi southwest of Newton, 5.0 mi downstream from Melhomes Creek, and 8.0 mi upstream from White Oak Creek.

DRAINAGE AREA.--128 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 134.69 ft above sea level. Prior to Dec. 19, 1957, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 27.5 ft in April 1922, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 17	1000	1,190	14.30	Mar. 14	0200	1,310	14.54
Feb. 13	1400	4,090	16.19	Apr. 6	0600	1,530	14.86
Feb. 25	2400	3,120	15.83				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	47	158	90	79	296	83	108	91	44	135	36
2	71	45	113	79	75	257	80	92	73	42	61	41
3	66	43	72	74	70	226	78	86	65	40	48	41
4	61	42	60	70	68	172	90	86	60	39	42	43
5	57	42	56	66	70	149	909	77	58	38	38	38
6	55	42	54	61	64	140	1250	71	57	38	39	36
7	53	45	52	61	73	124	310	70	56	41	47	36
8	50	48	50	64	331	115	150	68	64	44	98	36
9	48	56	48	76	178	111	119	66	65	46	186	37
10	45	47	47	87	102	108	106	64	87	57	295	40
11	43	43	47	69	84	154	98	63	72	45	127	45
12	42	42	47	61	391	159	143	60	61	41	74	39
13	41	41	47	67	2720	857	148	59	55	43	63	35
14	40	41	47	81	1480	874	104	58	52	40	54	35
15	40	41	49	123	374	259	91	57	51	38	52	35
16	40	41	475	292	199	157	85	315	50	37	48	34
17	40	59	1050	148	152	131	81	221	59	36	45	34
18	43	120	356	99	129	151	77	92	75	38	43	34
19	43	74	132	82	118	783	75	78	74	40	42	34
20	40	58	97	75	119	417	78	85	55	40	41	34
21	40	53	84	71	713	198	81	562	58	43	41	34
22	41	50	79	84	588	143	75	263	53	51	44	33
23	43	47	79	117	224	121	74	120	48	39	271	47
24	48	53	84	104	153	110	73	111	46	37	165	134
25	57	330	77	81	1350	104	71	429	49	36	71	113
26	118	228	70	69	2270	118	349	238	56	40	50	71
27	112	103	80	64	1100	132	467	111	61	40	43	48
28	67	71	95	221	506	107	516	210	91	42	40	45
29	54	62	132	269	---	98	316	177	65	39	38	44
30	50	81	189	128	---	91	151	103	49	138	37	43
31	48	---	124	90	---	87	---	82	---	325	36	---
TOTAL	1680	2095	4150	3123	13780	6949	6328	4282	1856	1657	2414	1355
MEAN	54.2	69.8	134	101	492	224	211	138	61.9	53.5	77.9	45.2
MAX	118	330	1050	292	2720	874	1250	562	91	325	295	134
MIN	40	41	47	61	64	87	71	57	46	36	36	33
AC-FT	3330	4160	8230	6190	27330	13780	12550	8490	3680	3290	4790	2690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1997, BY WATER YEAR (WY)

MEAN	67.4	102	157	184	214	170	166	154	111	70.8	56.2	63.2
MAX	278	440	489	645	743	345	533	817	414	426	221	353
(WY)	1995	1987	1983	1974	1984	1990	1953	1953	1993	1989	1973	1961
MIN	17.4	27.3	39.3	42.2	57.4	46.4	29.4	31.7	16.6	14.2	14.5	17.3
(WY)	1957	1968	1982	1982	1996	1996	1971	1971	1971	1971	1956	1956

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1952 - 1997

ANNUAL TOTAL	27160	49669	
ANNUAL MEAN	74.2	136	126
HIGHEST ANNUAL MEAN			246
LOWEST ANNUAL MEAN			46.1
HIGHEST DAILY MEAN	1320	2720	9720
LOWEST DAILY MEAN	23	33	10
ANNUAL SEVEN-DAY MINIMUM	25	34	11
INSTANTANEOUS PEAK FLOW		4090	20200
INSTANTANEOUS PEAK STAGE		16.19	19.45
ANNUAL RUNOFF (AC-FT)	53870	98520	91250
10 PERCENT EXCEEDS	111	261	221
50 PERCENT EXCEEDS	47	70	63
90 PERCENT EXCEEDS	29	40	27

SABINE RIVER MAIN STEM

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08030500 SABINE RIVER NEAR RULIFF, TX

LOCATION.--Lat 30°18'13", long 93°44'37", Calcasieu Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, on downstream side of bridge on State Highway 12, 2.4 mi north of Ruliff, 4.2 mi upstream from the Kansas City Southern Railway Co. bridge, 4.5 mi downstream from Cypress Creek and at mile 40.2.

DRAINAGE AREA.--9,329 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1924 to current year.

REVISED RECORDS.--WSP 1282: 1941(M), 1942. WSP 1442: 1925-29, 1937-39, 1943. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.92 ft below sea level. Prior to Mar. 1, 1941, nonrecording gage at Kansas City Southern Railway Co. bridge, 4.2 mi downstream and at datum 7.98 ft higher than current datum. Mar. 1, 1941, to Dec. 8, 1948, nonrecording gage at present site and at datum 10.00 ft higher than current datum. Dec. 9, 1948, to Dec. 31, 1989, recording gage at present site and at datum 10.00 ft higher than current datum.

REMARKS.--Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni and three additional upstream reservoirs. Additional regulation since October 1966, by Toledo Bend Reservoir 116.3 mi upstream. Telephone telemeter at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1925-59) prior to completion of Lake Tawakoni, 8,842 ft³/s (6,406,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925-59).--Maximum discharge, 121,000 ft³/s May 22, 1953, (gage-height, 29.98 ft, current datum); minimum, 270 ft³/s Sept. 27-30, Oct. 1-3, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1835, 32.2 ft in May or June 1884 (adjusted to present site and datum on basis of slope of flood of June 8, 9, 1950); flood of Apr. 26-29, 1913, reached a stage of 29.5 ft, present site and datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7190	1560	2000	2950	11400	42600	21900	13900	8210	3170	5830	7080
2	5240	1380	2480	2870	12300	42100	20500	14300	9020	2740	6920	5910
3	3500	1290	2600	2460	12400	37400	19300	14300	9410	4350	7430	3630
4	2450	1470	2540	2130	12800	33200	18600	14100	9540	5220	7420	3520
5	1990	1340	2380	1910	12700	31100	18700	14400	9560	4310	6780	3880
6	1710	1160	1910	1760	12400	32000	18100	15100	9810	3220	5150	4090
7	1710	e1310	1770	1800	12200	35600	17500	16600	10700	3170	5640	4040
8	1520	1450	1880	1870	12000	40200	18000	19200	11800	3550	6510	4050
9	1280	1450	1570	1920	11900	44800	22300	21900	12300	3700	6930	3410
10	1330	1320	1360	2010	11700	47700	28400	22900	10500	5260	6960	2470
11	1260	1480	1330	2110	10200	46800	33300	22600	7050	6360	7250	3310
12	1240	1360	1470	2050	8360	42400	37500	21600	5770	6770	7580	3860
13	1170	1190	1300	1920	10500	39700	39900	19800	5610	6800	6930	4060
14	1220	1310	1260	1840	14200	36200	41200	17900	5490	6710	6740	4240
15	1150	1200	1500	1870	17700	34900	41200	16400	5300	6210	7080	4280
16	979	1280	1670	2050	26000	35900	38300	15400	4660	4670	7350	3680
17	1080	1300	3050	2370	34300	37200	29800	14900	3010	4880	7420	2540
18	1080	1690	6090	2950	31900	38100	22100	14600	2580	5520	7350	3270
19	1080	1920	8290	3400	27100	41700	17800	14600	3770	5740	6780	3780
20	1050	2650	9180	3850	23000	43200	15400	14700	4290	5820	5330	3910
21	1010	2850	8220	3970	21000	40500	13300	15600	3210	5740	5860	3710
22	1030	2480	6330	3930	19900	37500	12100	16100	2240	4850	6270	3950
23	876	2160	4410	4080	19600	34800	11100	17100	2030	3660	6720	4040
24	932	1880	3250	4240	20900	32700	10400	18400	1780	4780	7080	3140
25	1050	1960	2810	4520	24100	30400	10200	17700	2020	5570	7360	e3000
26	1150	1670	2600	4870	25300	28600	10600	15000	3540	5890	7130	2320
27	1790	2080	2440	4830	26800	26100	10400	12000	4690	5990	5740	1660
28	2710	2490	2250	4960	34700	24700	10800	9580	5360	5830	5970	1350
29	2480	2270	2170	5870	---	24100	11700	7300	5370	4550	6610	1190
30	1940	2090	2220	7440	---	23900	12900	6360	4800	3170	6930	1090
31	1810	---	2540	9490	---	23100	---	7130	---	4450	7130	---
TOTAL	56007	51040	94870	104290	517360	1109200	633300	481470	183420	152650	208180	104460
MEAN	1807	1701	3060	3364	18480	35780	21110	15530	6114	4924	6715	3482
MAX	7190	2850	9180	9490	34700	47700	41200	22900	12300	6800	7580	7080
MIN	876	1160	1260	1760	8360	23100	10200	6360	1780	2740	5150	1090
AC-FT	111100	101200	188200	206900	1026000	2200000	1256000	955000	363800	302800	412900	207200

SABINE RIVER MAIN STEM

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997#, BY WATER YEAR (WY)

MEAN	2382	3380	8212	11730	12690	13290	11390	10500	7896	5785	3887	3693
MAX	9591	14910	22070	35570	27990	35780	33240	32980	26240	42320	7982	10530
(WY)	1995	1995	1983	1961	1974	1997	1969	1966	1989	1989	1975	1973
MIN	292	327	1366	1422	1559	1695	1030	1395	1383	805	382	333
(WY)	1968	1968	1981	1981	1968	1996	1971	1996	1963	1967	1967	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1960 - 1997#	
ANNUAL TOTAL	748823		3696247			
ANNUAL MEAN	2046		10130		7882	
HIGHEST ANNUAL MEAN					14210	1975
LOWEST ANNUAL MEAN					1959	1967
HIGHEST DAILY MEAN	9180	Dec 20	47700	Mar 10	108000	Jul 6 1989
LOWEST DAILY MEAN	876	Oct 23	876	Oct 23	278	Oct 28 1967
ANNUAL SEVEN-DAY MINIMUM	1000	Oct 19	1000	Oct 19	282	Oct 9 1967
INSTANTANEOUS PEAK FLOW			48700	Mar 10	109000	Jul 6 1989
INSTANTANEOUS PEAK STAGE			25.90	Mar 10	29.15	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	1485000		7332000		5710000	
10 PERCENT EXCEEDS	3410		28500		18500	
50 PERCENT EXCEEDS	1550		5640		4600	
90 PERCENT EXCEEDS	1150		1370		1130	

e Estimated

Period of regulated streamflow.

SABINE RIVER MAIN STEM

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08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: September 1945 to September 1946, October 1947 to current year. Chemical and biochemical analyses: February 1968 to current year. Pesticide analyses: January 1968 to May 1982. Radio- chemical analyses: October 1969 to September 1995. Sediment analyses: October 1974 to September 1995.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1945 to September 1946, October 1947 to current year.

WATER TEMPERATURE: October 1947 to current year.

COLOR: November 1969 to December 1975.

INSTRUMENTATION.--From October 31, 1992 to current year, a water-quality monitor continuously recorded specific conductance and water temperature at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 779 microsiemens Aug. 31, 1966; minimum daily, 27 microsiemens Feb. 16, 1984.

WATER TEMPERATURE: Maximum daily, 36.0°C Aug. 14, 1962; minimum daily, 1.0°C Jan. 28, 1948.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 367 microsiemens Oct. 8; minimum, 71 microsiemens Feb. 16.

WATER TEMPERATURE: Maximum, 32.0°C July 27; minimum, 5.5°C Jan. 14-16.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)
MAR 18...	0940	37300	130	6.2	15.5	8.2	82	28	8	7.0	2.5	14
MAY 06...	0930	14700	164	6.8	20.0	7.0	76	30	12	7.5	2.8	15
JUL 02...	1025	2490	136	7.1	29.5	6.4	84	28	5	7.2	2.5	14
AUG 19...	1020	7020	142	7.0	29.5	6.8	89	30	6	7.5	2.7	13
SEP 04...	0905	3480	150	7.1	30.0	6.4	84	31	1	7.6	3.0	12

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
MAR 18...	1	2.5	20	14	18	<0.10	5.4	76	<0.010	<0.050	<0.015	--
MAY 06...	1	3.1	18	17	21	<0.10	4.9	83	<0.010	<0.050	<0.015	--
JUL 02...	1	2.6	23	15	15	<0.10	8.6	78	<0.010	<0.050	<0.015	--
AUG 19...	1	3.1	24	16	15	<0.10	5.1	77	<0.010	0.060	0.020	0.26
SEP 04...	1	3.0	30	14	14	<0.10	6.5	79	<0.010	0.060	<0.015	--

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	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)
MAR 18...	0.30	<0.010	<0.010	<1	50	<0.50	<1.0	<5.0	<3.0	12	130
MAY 06...	0.41	<0.010	<0.010	<1	50	1.2	1.4	<5.0	<3.0	<10	87
JUL 02...	0.24	<0.010	<0.010	--	--	--	--	--	--	--	--
AUG 19...	0.28	<0.010	<0.010	<1	52	<0.50	<1.0	<5.0	<3.0	<10	51
SEP 04...	0.27	<0.010	<0.010	--	--	--	--	--	--	--	--

SABINE RIVER MAIN STEM

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAR 18...	<10	4	25	<0.1	<10	<10	<1	<1.0	94	<6	18
MAY 06...	<10	<4	66	<0.1	<10	11	<1	<1.0	98	<6	6.3
JUL 02...	--	--	--	--	--	--	--	--	--	--	--
AUG 19...	15	<4	2.0	<0.1	<10	<10	<1	<1.0	97	<6	20
SEP 04...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	56007	244	137	20710	27	4080	35	5230	26
NOV. 1996	51040	170	100	13750	20	2770	22	2990	30
DEC. 1996	94870	114	68	17540	14	3570	14	3540	24
JAN. 1997	104290	138	82	23180	17	4710	17	4780	28
FEB. 1997	517360	107	65	90510	13	18480	13	17840	24
MAR. 1997	1109200	135	81	241700	16	49070	17	49810	27
APR. 1997	633300	168	99	169200	20	34130	21	36580	30
MAY 1997	481470	157	93	120800	19	24440	20	25690	30
JUNE 1997	183420	161	95	46990	19	9500	20	10040	30
JULY 1997	152650	143	85	35060	17	7110	18	7290	28
AUG. 1997	208180	133	80	44850	16	9110	16	9180	27
SEPT 1997	104460	145	86	24390	18	4940	18	5090	29
TOTAL	3696247.00	**	**	848700	**	171900	**	178100	**
WTD.AVG.	10130	143	85	**	17	**	18	**	28

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	212	197	203	187	176	185	189	121	164	---	---	e135
2	242	211	224	192	188	188	121	98	101	---	---	e132
3	301	242	269	---	---	e189	104	98	101	---	---	e136
4	316	301	313	190	186	190	98	93	95	---	---	e135
5	338	315	324	---	---	e195	95	92	93	---	---	e138
6	363	338	353	---	---	e199	140	94	114	---	---	e139
7	362	344	350	201	192	199	152	140	149	---	---	e134
8	367	347	359	192	179	187	---	---	e160	---	---	e133
9	356	325	334	179	177	177	---	---	e171	143	138	141
10	335	324	327	170	170	170	---	---	e188	146	134	139
11	361	335	349	---	---	e169	---	---	e204	137	132	135
12	362	326	345	---	---	e172	212	206	208	144	132	139
13	333	323	325	---	---	e174	213	180	201	141	136	138
14	337	313	328	163	152	158	197	179	184	146	141	145
15	313	300	306	171	157	166	208	197	202	150	148	149
16	305	295	301	160	151	154	206	142	176	149	147	149
17	295	280	286	176	160	170	150	135	139	149	146	148
18	300	279	294	169	151	158	163	85	123	147	138	142
19	295	282	290	169	125	144	85	79	81	144	128	134
20	282	276	278	134	125	129	81	78	80	141	128	131
21	281	276	279	162	126	141	82	79	81	145	141	143
22	276	144	211	138	126	132	---	---	e87	150	144	147
23	176	144	146	---	---	e148	---	---	e90	156	150	153
24	141	137	140	---	---	e164	---	---	e96	156	151	154
25	---	---	e135	---	---	e180	---	---	e102	157	150	153
26	---	---	e130	---	---	e196	---	---	e109	155	133	141
27	139	120	129	204	190	195	---	---	e115	150	134	140
28	116	109	112	219	153	194	---	---	e120	152	137	145
29	147	138	142	180	152	165	---	---	e129	144	129	136
30	150	145	146	191	180	187	---	---	e135	135	106	123
31	176	150	166	---	---	---	---	---	e137	121	109	118
MONTH	367	109	255	219	125	173	213	78	133	157	106	140

e Estimated

SABINE RIVER MAIN STEM

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08030500 SABINE RIVER NEAR RULIFF, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	132	120	126	85	82	83	170	165	167	146	145	146
2	139	131	134	89	82	85	172	169	171	147	146	146
3	139	127	131	98	89	93	174	171	172	150	147	148
4	133	126	129	110	98	104	185	174	177	153	150	152
5	132	127	129	122	109	116	184	176	179	155	153	154
6	133	128	130	131	122	127	178	172	175	164	155	160
7	135	131	133	136	130	133	179	171	174	164	162	163
8	139	133	136	138	135	137	175	167	170	163	160	161
9	138	136	137	140	138	139	171	169	170	161	159	160
10	137	119	125	142	140	141	174	171	172	161	159	160
11	121	116	119	143	142	142	185	172	179	160	158	159
12	117	112	114	144	142	143	173	172	172	158	146	155
13	121	107	115	143	141	142	173	172	173	146	140	141
14	107	77	88	143	142	143	173	171	172	168	166	167
15	80	73	75	143	139	141	171	170	170	166	163	164
16	76	71	74	139	133	136	171	166	169	169	163	165
17	80	74	76	136	133	135	166	163	164	170	161	164
18	91	80	85	140	136	138	163	161	162	169	163	166
19	107	91	99	142	139	141	161	158	160	172	168	170
20	119	107	114	141	140	141	159	156	157	175	170	172
21	130	119	123	142	139	140	157	156	157	174	170	173
22	130	124	126	139	138	138	175	157	163	171	164	167
23	130	120	123	145	139	143	172	159	162	164	158	160
24	121	114	118	152	145	148	165	158	162	160	155	157
25	115	107	110	160	152	155	166	158	161	156	147	152
26	108	104	107	161	154	156	159	156	158	150	144	147
27	105	94	100	162	152	157	157	154	156	147	137	142
28	94	84	88	165	156	162	155	148	152	140	137	138
29	---	---	---	165	159	163	149	147	148	141	136	138
30	---	---	---	164	159	162	147	145	146	142	140	141
31	---	---	---	165	161	164	---	---	---	152	136	142
MONTH	139	71	113	165	82	137	185	145	166	175	136	156

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	153	151	152	175	169	171	134	131	133	154	152	153
2	156	151	153	176	136	161	131	116	119	153	151	152
3	155	153	154	189	141	157	127	119	123	154	151	152
4	156	153	155	147	134	138	133	121	126	158	153	156
5	156	153	155	158	141	149	123	120	122	155	147	152
6	158	155	157	160	156	158	128	121	123	151	147	149
7	159	158	159	160	149	154	131	124	127	150	147	149
8	160	158	159	157	149	153	126	122	124	152	148	150
9	159	157	158	157	150	153	128	120	124	153	149	152
10	158	152	156	155	131	141	130	118	125	155	149	151
11	157	152	154	136	131	133	123	118	121	156	148	153
12	171	157	164	132	126	130	119	112	116	152	146	149
13	165	160	163	133	126	130	142	117	123	151	146	148
14	165	161	164	133	128	131	149	142	145	150	146	148
15	168	163	166	150	132	142	149	142	146	149	145	147
16	170	166	168	149	139	143	150	144	147	149	146	147
17	171	168	169	155	139	147	148	144	145	152	146	148
18	175	170	173	156	138	147	144	140	141	153	149	151
19	180	172	175	139	135	137	142	139	140	152	146	148
20	173	167	169	136	131	134	159	138	142	150	131	140
21	169	167	167	132	125	129	159	137	141	135	131	133
22	172	169	170	133	127	130	141	136	139	135	131	134
23	172	170	171	142	133	138	138	132	135	135	129	131
24	176	172	174	144	139	140	136	132	134	130	128	128
25	180	175	178	154	141	150	137	127	131	---	---	e130
26	176	171	175	177	141	169	133	125	130	131	130	131
27	171	163	167	163	127	143	147	129	133	132	130	131
28	164	158	161	168	135	147	151	137	143	134	130	131
29	165	159	163	143	136	139	147	139	144	138	134	136
30	169	162	166	146	142	144	152	141	146	137	134	136
31	---	---	---	145	134	140	155	148	152	---	---	---
MONTH	180	151	164	189	125	144	159	112	134	158	128	144
YEAR	367	71	155									

e Estimated

SABINE RIVER MAIN STEM

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

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

NECHES RIVER MAIN STEM

08032000 NECHES RIVER NEAR NECHES, TX

LOCATION.--Lat 31°53'32", long 95°25'50". Anderson-Cherokee County line, Hydrologic Unit 12020001, on left bank just downstream from bridge on U.S. Highway 79, 1.0 mi downstream from Missouri Pacific Railroad Co. bridge, 1.4 mi downstream from Walnut Creek, 4.4 mi northeast of Neches and at mile 333.2.

DRAINAGE AREA.--1,145 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1939 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 264.06 ft above sea level. Prior to Oct. 27, 1945, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of the contributing drainage area has been regulated by Lake Palestine 11 mi upstream and by Lake Athens 50 mi upstream (combined capacity 454,600 acre-ft). No known diversions. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1940-61) unregulated, 804 ft³/s (502,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1940-61).--Maximum discharge, 45,500 ft³/s Apr. 2, 1945 (gage height, 22.07 ft); no flow Oct. 3-5, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 (stage 24.3 ft) was the highest since flood in May 1884, which was probably higher.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	93	443	158	178	5480	946	5400	771	646	104	92
2	90	92	344	155	175	4910	851	5800	778	560	102	93
3	87	92	248	153	172	4540	779	5250	736	496	99	94
4	87	91	201	152	170	4090	846	4570	683	442	97	93
5	86	90	184	150	165	3610	1180	3790	641	419	96	91
6	86	90	181	143	156	3230	1330	3150	605	407	96	90
7	85	107	170	170	269	2950	1490	2680	551	365	109	91
8	84	149	156	282	508	2650	1680	2300	496	334	164	92
9	82	148	149	508	390	2410	1900	1980	502	299	443	92
10	82	130	150	490	307	2300	2080	1740	1000	293	593	91
11	82	119	145	380	252	2170	2130	1520	1330	293	328	90
12	80	111	139	280	392	2030	2060	1300	1330	259	209	89
13	79	106	132	235	1200	2150	2000	1110	1210	232	161	89
14	78	101	127	212	1540	2160	1860	960	1500	211	138	89
15	77	99	200	203	1430	2250	1600	833	1870	200	125	89
16	76	98	547	211	1180	2380	1330	807	2060	278	117	88
17	76	101	596	203	1080	2400	1130	723	1940	220	112	87
18	76	126	479	186	1070	2350	1010	628	1710	170	108	87
19	75	137	338	176	1100	2250	900	533	1570	148	106	87
20	75	131	249	172	1180	2220	799	480	1450	140	106	87
21	75	127	216	175	1770	2120	729	601	1270	130	104	87
22	234	125	203	208	2220	1910	705	696	1120	121	103	87
23	361	116	195	232	2740	1680	721	614	1020	115	110	132
24	208	130	206	516	3110	1490	675	577	949	111	104	281
25	142	323	205	481	4570	1430	591	647	875	109	100	192
26	124	375	186	370	5320	1760	807	613	828	106	98	146
27	118	336	182	279	5940	1590	1080	559	909	105	96	120
28	111	261	182	246	6060	1410	1650	551	869	103	95	106
29	105	222	183	227	---	1220	2400	621	818	105	94	100
30	101	340	172	192	---	1090	3810	596	734	103	93	96
31	98	---	163	182	---	1020	---	646	---	105	92	---
TOTAL	3314	4566	7271	7727	44644	75250	41069	52275	32125	7625	4502	3148
MEAN	107	152	235	249	1594	2427	1369	1686	1071	246	145	105
MAX	361	375	596	516	6060	5480	3810	5800	2060	646	593	281
MIN	75	90	127	143	156	1020	591	480	496	103	92	87
AC-FT	6570	9060	14420	15330	88550	149300	81460	103700	63720	15120	8930	6240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1997#, BY WATER YEAR (WY)

	MEAN	225	413	773	799	1064	1267	1247	1299	792	216	121	199
MAX	2064	2559	3344	3097	3097	2879	4162	5289	4129	1076	617	1313	
(WY)	1974	1975	1992	1991	1992	1987	1966	1968	1973	1976	1979	1973	
MIN	12.8	16.0	82.1	102	181	92.0	60.1	43.3	23.7	12.5	9.70	8.37	
(WY)	1964	1964	1990	1981	1981	1972	1972	1972	1971	1964	1964	1964	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1962 - 1997#

ANNUAL TOTAL	51243	283516	699	1995
ANNUAL MEAN	140	777	1358	1972
HIGHEST ANNUAL MEAN			106	
LOWEST ANNUAL MEAN			26200	May 13 1968
HIGHEST DAILY MEAN	660	Aug 30	6060	Feb 28
LOWEST DAILY MEAN	45	Aug 6	75	Oct 19
ANNUAL SEVEN-DAY MINIMUM	46	Aug 2	76	Oct 15
INSTANTANEOUS PEAK FLOW			6180	Feb 28
INSTANTANEOUS PEAK STAGE			15.93	Feb 28
ANNUAL RUNOFF (AC-FT)	101600	562400	19.46	May 13 1968
10 PERCENT EXCEEDS	219	2140	1730	
50 PERCENT EXCEEDS	124	249	258	
90 PERCENT EXCEEDS	58	91	55	

Period of regulated streamflow.

NECHES RIVER MAIN STEM

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08032000 NECHES RIVER NEAR NECHES, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: December 1969 to current year. Biochemical analyses: October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1969 to September 1991.

WATER TEMPERATURES: December 1983 to September 1991.

INSTRUMENTATION.--Specific conductance was recorded from December 1969 to September 1991. Water temperature was recorded continuously from December 1983 to September 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (1974-88): Maximum, 1,190 microsiemens Aug. 29, 1976; minimum 65 microsiemens June 1, 1990.

WATER TEMPERATURE: Maximum, 36.0°C July 16, 1985; minimum, 0.0°C Dec. 24, 25, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
MAR 05...	0925	3680	194	6.8	14.0	8.8	86	1.3	--	--
APR 25...	1145	574	192	7.1	17.5	6.5	69	1.0	43	17
MAY 27...	1108	561	180	7.0	24.0	6.6	79	1.2	44	21
JUN 27...	0830	921	155	6.5	25.5	5.2	64	1.9	35	10
JUL 31...	1050	105	185	6.8	29.5	6.0	79	3.2	43	12
AUG 28...	1428	95	202	8.1	28.5	8.0	103	4.2	44	14

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
MAR 05...	--	--	--	--	--	25	--	--	--	--
APR 25...	11	4.0	16	1	4.2	26	22	22	0.11	5.7
MAY 27...	10	4.4	13	0.8	3.7	23	18	22	0.11	7.9
JUN 27...	8.3	3.3	12	0.9	3.9	25	15	18	0.11	7.4
JUL 31...	11	3.9	15	1	4.3	31	17	22	<0.10	8.1
AUG 28...	11	4.2	17	1	5.1	30	15	26	0.15	9.0

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
MAR 05...	--	--	<0.010	<0.050	<0.015	--	0.40	<0.010	<0.010	--
APR 25...	100	--	<0.010	0.054	0.037	0.41	0.45	0.017	<0.010	--
MAY 27...	94	--	<0.010	0.130	0.038	0.42	0.46	<0.010	<0.010	--
JUN 27...	84	--	<0.010	0.103	0.058	0.29	0.35	<0.010	<0.010	--
JUL 31...	100	--	<0.010	0.050	<0.015	--	0.34	<0.010	0.010	0.03
AUG 28...	106	0.199	0.017	0.216	0.053	0.91	0.97	0.023	0.027	0.08

NECHES RIVER MAIN STEM

08033000 NECHES RIVER NEAR DIBOLL, TX

(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°07'58", long 94°48'35", Angelina-Polk County line, Hydrologic Unit 12020002, near center of main span of downstream bridge on U.S. Highway 59, 700 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.9 mi downstream from Alabama Creek, 3.8 mi south of Diboll and at mile 203.5

DRAINAGE AREA.--2,724 mi².

PERIOD OF RECORD.--October 1923 to September 1925, March 1939 to September 1985. Monthly discharge only for some periods, published in WSP 1312. October 1985 to September 1989 (annual maximum), October 1989 to present (peaks above base discharge).

Water-quality records: Chemical and biochemical analyses: October 1969 to September 1981.

REVISED RECORDS.--WSP 1242: 1950. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.46 ft above sea level. Prior to July 10, 1925, nonrecording gage at site 630 ft upstream; July 10 to Aug. 31, 1925, and Mar. 30, 1939, to Sept. 24, 1943, nonrecording gage at site 500 ft upstream; Sept. 25, 1943, to Aug. 16, 1973, nonrecording gage at site 70 ft upstream; all at present datum.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine 140 mi upstream and by Lake Athens 180 mi upstream (combined capacity 454,600 acre-ft). Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE.--24 years (water years 1923-25, 1939-61) unregulated, 1,807 ft³/s (1,309,000 acre-ft/yr); 24 years (water years 1962-85) regulated, 1,353 ft³/s (980,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,900 ft³/s May 4, 1944 (gage height, 18.70 ft); no flow Aug. 15-22, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 21 ft in May 1884 (discharge, about 110,000 ft³/s) from rating curve extended above 40,000 ft³/s; flood in 1900 reached a stage of 19.9 ft (discharge, about 80,000 ft³/s), from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 14	0200	10,300	14.69	Mar. 14	0200	9,440	14.49
Feb. 26	0800	8,310	14.22	Apr. 7	1100	9,440	14.50
Mar. 5	0300	12,800	15.15				

NECHES RIVER MAIN STEM

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08033500 NECHES RIVER NEAR ROCKLAND, TX
(Hydrologic index station)

LOCATION.--Lat 31°01'29", long 94°23'55", Tyler County, Hydrologic Unit 12020003, on downstream side of bridge at U.S. Highway 69, 2,200 ft upstream from abandoned ferry crossing, 0.8 mi upstream from Texas and New Orleans Railway Co. bridge, 1.2 mi north of Rockland, 3.2 mi downstream from Billiams Creek and 32.4 mi upstream from Angelina River.

DRAINAGE AREA.--3,636 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1903 to current year.

REVISED RECORDS.--WSP 878: 1926-27. WSP 1342: 1922(M), 1935. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 88.41 ft above sea level. Prior to May 23, 1973, nonrecording gage located 2,200 ft downstream at datum 3.00 ft higher. May 23, 1973, to Sept. 30, 1975, recording gage at present site at datum 3.00 ft higher.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine and by Lake Athens. Between October and September of the current year, the Upper Neches Municipal Water Authority diverted 3,580 acre-ft from the Neches River at a diversion point about 10 mi downstream from station Neches River near Neches. This water is used for municipal and industrial purposes in the Palestine area. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--58 years (water years 1904-61) 2,362 (1,711,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-61).--Maximum discharge, 49,800 ft³/s May 6, 1944 (gage height, 35.04 ft), present site; minimum observed during period of daily records, 1.6 ft³/s Sept. 28-30, and Oct. 1, 2, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with flood in May 1884, which reached a stage of 38.0 ft, present site, from information by local resident (discharge, about 62,000 ft³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2260	411	1140	2800	3280	11300	4370	5000	4040	3070	298	215
2	1860	345	1090	2360	3030	11600	4200	5080	3940	2680	295	212
3	1420	298	1080	1880	2500	11700	4100	4780	3740	2270	271	226
4	1010	264	1120	1530	1860	11400	4500	4340	3350	1910	241	216
5	682	240	1090	1200	1440	11100	8330	4060	2800	1650	216	204
6	486	225	1020	928	1230	11500	10300	3870	2290	1460	201	198
7	390	228	944	777	1280	12500	12800	3770	2100	1600	193	191
8	329	240	881	714	2140	13300	13000	3710	2780	1630	199	182
9	289	271	807	1050	2680	13400	12100	3630	2490	1690	254	183
10	260	309	710	2550	2480	13200	11800	3560	2060	1620	822	210
11	232	302	616	2920	2290	13000	11300	3530	3280	1230	1070	196
12	212	315	551	2770	3840	12300	10400	3710	3320	1000	1350	194
13	198	338	503	2840	9370	12700	9210	4000	2440	873	1620	195
14	186	340	469	2910	10700	12900	7970	4330	2010	755	1790	183
15	174	322	561	3020	12500	14000	6740	4610	1860	658	1840	183
16	166	303	2330	3270	13300	14200	5650	5090	1880	600	1810	173
17	159	289	3720	2790	13400	13600	4830	5250	1950	562	1780	164
18	151	273	3830	2210	13100	12600	4170	5160	2460	537	1790	159
19	143	253	3250	1760	12300	12000	3700	5100	3070	492	1800	153
20	142	234	2900	1420	11300	10900	3390	4910	3430	455	1550	149
21	142	221	2660	1230	12000	9930	3270	4490	3550	432	983	144
22	150	211	2380	2600	11600	8930	3240	4150	3690	423	652	141
23	177	211	2040	2730	11500	7990	3140	3820	3920	399	552	164
24	188	234	1740	2370	10900	7130	3060	3320	3990	381	469	215
25	195	580	1500	2500	11700	6340	2970	5380	3970	353	386	561
26	205	e1070	1300	2320	11700	6540	3850	5700	4040	316	339	811
27	566	1190	1210	2120	11400	6280	3920	4930	4120	293	293	735
28	699	1090	1090	3480	11300	5820	4090	4260	4050	267	267	667
29	669	1000	1860	4050	---	5380	4550	4030	3820	247	255	706
30	579	1050	3100	3740	---	5080	4780	3980	3440	249	245	718
31	479	---	3260	3430	---	4630	---	3730	---	292	228	---
TOTAL	14798	12657	50752	72269	216120	323250	189730	135280	93880	30394	24059	8648
MEAN	477	422	1637	2331	7719	10430	6324	4364	3129	980	776	288
MAX	2260	1190	3830	4050	13400	14200	13000	5700	4120	3070	1840	811
MIN	142	211	469	714	1230	4630	2970	3320	1860	247	193	141
AC-FT	29350	25110	100700	143300	428700	641200	376300	268300	186200	60290	47720	17150

NECHES RIVER MAIN STEM

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1997#, BY WATER YEAR (WY)

MEAN	810	1123	2417	3472	3804	4029	3781	3972	2669	1164	406	475
MAX	10620	6142	8982	12850	13930	13750	11990	12730	10360	11260	2673	3042
(WY)	1995	1974	1995	1995	1992	1992	1979	1969	1990	1989	1991	1979
MIN	36.6	65.8	213	263	368	395	282	307	102	42.9	34.2	43.1
(WY)	1964	1965	1981	1981	1971	1996	1971	1996	1971	1971	1964	1964

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1962 - 1997#	
ANNUAL TOTAL	206801		1171837			
ANNUAL MEAN	565		3211		2336	
HIGHEST ANNUAL MEAN					5328	
LOWEST ANNUAL MEAN					352	
HIGHEST DAILY MEAN	4030	Sep 28	14200	Mar 16	41600	Jul 2 1989
LOWEST DAILY MEAN	99	Jul 4	141	Sep 22	18	Aug 30 1970
ANNUAL SEVEN-DAY MINIMUM	103	Jul 11	150	Oct 16	23	Jul 21 1971
INSTANTANEOUS PEAK FLOW			14500	Mar 15	42300	Oct 20 1994
INSTANTANEOUS PEAK STAGE			23.12	Mar 15	33.29	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	410200		2324000		1692000	
10 PERCENT EXCEEDS	1080		11200		6160	
50 PERCENT EXCEEDS	400		1860		910	
90 PERCENT EXCEEDS	127		211		109	

e Estimated

Period of regulated streamflow.

NECHES RIVER MAIN STEM

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08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1941 to September 1942, September 1945 to September 1947. Chemical and biochemical analyses: December 1967 to current year. Sediment analyses: 1961 to 1963.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1941 to September 1942, and September 1945 to September 1947.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)	
FEB 12...	0933	11300	293	6.8	9.0	10.2	88	1.5	59	23	
MAR 28...	0920	5850	205	6.3	19.0	6.2	67	1.3	49	19	
APR 24...	1410	3070	200	6.6	20.0	6.8	76	1.3	43	20	
MAY 27...	1510	4810	150	6.7	24.0	6.2	74	1.1	34	18	
JUN 25...	1450	3970	135	6.5	27.0	6.2	78	1.6	29	13	
JUL 31...	1420	305	216	6.8	30.0	5.8	77	2.0	44	10	
DATE		CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
FEB 12...	15	5.2	30	2	3.4	36	51	34	<0.10	15	
MAR 28...	12	4.4	18	1	3.6	30	26	22	<0.10	8.9	
APR 24...	11	4.1	17	1	3.7	23	23	25	<0.10	7.9	
MAY 27...	8.5	3.2	13	0.9	2.7	16	21	18	<0.10	9.6	
JUN 25...	7.3	2.7	11	0.9	3.1	16	16	16	<0.10	11	
JUL 31...	11	4.0	21	1	3.8	34	17	28	0.13	15	
DATE		SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
FEB 12...	176	0.100	0.030	0.130	<0.015	--	0.50	<0.010	<0.010	--	
MAR 28...	113	--	<0.010	<0.050	0.040	0.56	0.60	<0.010	<0.010	--	
APR 24...	105	--	<0.010	0.101	<0.015	--	0.46	<0.010	0.011	0.03	
MAY 27...	86	--	<0.010	0.132	0.024	0.48	0.50	<0.010	0.012	0.04	
JUN 25...	76	--	<0.010	0.124	0.018	0.41	0.43	<0.010	0.015	0.05	
JUL 31...	121	0.154	0.012	0.166	0.053	0.32	0.37	0.015	0.016	0.05	
DATE		ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)
FEB 12...	<1	64	<0.50	3.0	<5.0	<3.0	<10	270	<10	15	
MAR 28...	--	--	--	--	--	--	--	--	--	--	
APR 24...	--	--	--	--	--	--	--	--	--	--	
MAY 27...	--	--	--	--	--	--	--	--	--	--	
JUN 25...	--	--	--	--	--	--	--	--	--	--	
JUL 31...	1	57	<0.50	1.1	<5.0	<3.0	<10	55	27	8	

NECHES RIVER MAIN STEM

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
FEB 12...	100	<0.1	<10	<10	<1	<1.0	180	<6	9.0
MAR 28...	--	--	--	--	--	--	--	--	--
APR 24...	--	--	--	--	--	--	--	--	--
MAY 27...	--	--	--	--	--	--	--	--	--
JUN 25...	--	--	--	--	--	--	--	--	--
JUL 31...	115	<0.1	<10	<10	<1	<1.0	122	<6	11

08036500 ANGELINA RIVER NEAR ALTO, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, near center of rectified channel on downstream side of bridge on State Highway 21, 0.4 mi upstream from Allen Creek, 1.5 mi upstream from Bingham Creek, 7.5 mi east of Alto, and 149.3 mi upstream from mouth.

DRAINAGE AREA.--1,276 mi².

PERIOD OF RECORD.--May to August 1940 (discharge measurements only), September 1940 to March 1949 (fragmentary for 1941-42, 1944-49), February 1959 to current year.

Water-quality records.--Chemical analyses: November 1961 to September 1963.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 204.30 ft above sea level. May 9, 1940, to Mar. 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft to right at same datum. Feb. 18 to Sept. 15, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good. Since installation of gage in water year 1959, at least 10% of contributing drainage area has been regulated by Striker Creek Reservoir. No known diversions. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, that of Mar. 31, 1989. A flood in May 1908 reached a stage of about 22 ft, from information by local residents. Flood in 1932 reached a stage of 21.5 ft, from floodmarks and from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1230	411	901	457	1920	7500	e2200	2920	748	408	73	140
2	1210	258	939	434	1430	7800	e1950	3440	653	392	83	135
3	1030	200	1090	416	948	7380	1780	3860	596	378	81	137
4	593	178	1240	403	660	7140	1630	4020	572	351	73	139
5	276	166	1330	398	656	7120	2510	3960	528	251	67	138
6	199	158	1330	436	810	6440	2420	3790	473	211	63	133
7	172	169	1250	477	1030	5540	3050	3500	398	251	83	123
8	155	257	1100	590	1270	4530	4070	3080	334	246	179	116
9	142	401	869	995	1370	3790	4480	2580	303	310	1350	114
10	132	503	596	1150	1550	3280	4110	1990	687	379	2390	111
11	121	501	425	1360	1770	2910	3660	1420	1350	304	3440	115
12	111	385	364	1570	2230	2590	3170	1010	1320	218	5040	146
13	103	302	336	1780	3010	2610	2720	683	1250	178	5330	146
14	96	269	320	1930	3230	2580	2280	536	1100	155	4470	122
15	90	234	357	1980	4410	2680	1810	486	745	144	3550	105
16	85	201	652	1830	6580	3160	1390	537	487	133	2770	97
17	84	181	878	1580	7300	3720	1040	574	413	122	1940	92
18	89	181	1080	1270	6580	3940	795	507	432	122	993	88
19	81	253	1290	894	5670	3750	679	438	454	125	384	85
20	77	315	1460	626	4640	3320	610	494	523	123	273	81
21	80	280	1580	547	4590	2950	565	748	498	123	239	79
22	119	228	1610	617	4410	e2750	537	734	452	114	217	77
23	249	225	1530	703	5780	e2500	562	859	465	104	224	196
24	535	259	1370	912	7500	e2300	649	1040	429	97	246	415
25	693	368	1160	1140	7850	e2200	602	1210	445	91	299	345
26	762	515	919	1390	7400	e2150	780	1140	374	86	272	520
27	777	691	746	1710	6880	e2400	1120	1210	389	78	219	550
28	794	860	684	2060	7080	e2500	1840	1290	502	79	189	383
29	856	968	663	2330	---	e2450	2060	1290	475	80	170	250
30	844	980	588	2400	---	e2400	2370	1010	428	77	157	190
31	665	---	501	2250	---	e2300	---	845	---	74	147	---
TOTAL	12450	10897	29158	36635	108554	118680	57439	51201	17823	5804	35011	5368
MEAN	402	363	941	1182	3877	3828	1915	1652	594	187	1129	179
MAX	1230	980	1610	2400	7850	7800	4480	4020	1350	408	5330	550
MIN	77	158	320	398	656	2150	537	438	303	74	63	77
AC-FT	24690	21610	57830	72670	215300	235400	113900	101600	35350	11510	69440	10650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1997#, BY WATER YEAR (WY)

	MEAN	280	497	1166	1367	1604	1620	1491	1392	830	281	160	192
MAX	2350	2081	4836	4874	4643	4622	4301	4484	4316	1718	1129	950	
(WY)	1974	1986	1961	1991	1983	1969	1969	1966	1993	1976	1997	1973	
MIN	5.56	18.0	67.8	150	158	183	172	119	34.2	18.0	22.4	16.2	
(WY)	1968	1968	1965	1981	1967	1967	1972	1972	1971	1971	1972	1972	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1959 - 1997#	
ANNUAL TOTAL	108796		489020		900	
ANNUAL MEAN	297		1340		1917	
HIGHEST ANNUAL MEAN					154	
LOWEST ANNUAL MEAN					1917	
HIGHEST DAILY MEAN	1610	Dec 22	7850	Feb 25	41600	Mar 31 1989
LOWEST DAILY MEAN	34	Jul 12	63	Aug 6	2.1	Aug 14 1964
ANNUAL SEVEN-DAY MINIMUM	45	Jul 7	73	Jul 31	3.5	Aug 8 1964
INSTANTANEOUS PEAK FLOW			8040	Mar 2	42500	Mar 31 1989
INSTANTANEOUS PEAK STAGE			18.38	Mar 2	23.20	Mar 31 1989
ANNUAL RUNOFF (AC-FT)	215800		970000		652200	
10 PERCENT EXCEEDS	699		3680		2310	
50 PERCENT EXCEEDS	189		649		332	
90 PERCENT EXCEEDS	56		114		51	

e Estimated

Period of regulated streamflow.

NECHES RIVER BASIN

08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX

LOCATION.--Lat 31°35'19", long 94°49'31", Nacogdoches County, Hydrologic Unit 12020004, at upstream side of dam on Bayou Loco near service outlet tower and 10 mi west of Nacogdoches.

DRAINAGE AREA.--87.9 mi².

PERIOD OF RECORD.--March 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam. Deliberate impoundment began July 14, 1976. Water is used for industrial and municipal supply by the city of Nacogdoches. The spillway is an uncontrolled 500-foot-wide cut through natural ground located near the right end of dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter top opening that is connected to an 8 x 7-foot conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve by a 30-inch conduit through the dam. The valve box directs water to a purification plant. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	303.0	-
Top of design flood	298.5	100,100
Crest of spillway	286.0	56,770
Crest of drop inlet (top of conservation pool)	279.0	39,520
Lowest gated outlet (invert of 30 in. conduit)	238.25	15

COOPERATION.--The capacity table, furnished by the Texas Water Development Board, dated June 16, 1994, is from a March 1994 survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 54,640 acre-ft Oct. 17, 1994 (elevation, 284.18 ft); minimum since first appreciable storage, 20,540 acre-ft Nov. 26, 1977 (elevation, 266.62 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 47,690 acre-ft Apr. 5 at 1700 hours (elevation, 282.55 ft); minimum, 33,130 acre-ft Oct. 20 (elevation, 275.87 ft).

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

266.0	17,360	274.0	29,680	282.0	46,340
268.0	20,130	276.0	33,370	284.0	51,360
270.0	23,100	278.0	37,390	285.0	54,020
272.0	26,250	280.0	41,700		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33690	33390	35870	38840	39370	41200	39870	40520	40000	38820	37770	38460
2	33700	33350	36040	38840	39330	44280	39670	40830	39830	38750	37580	38410
3	33690	33290	36140	38840	39350	43770	39650	40980	39650	38690	37520	38370
4	33690	33330	36140	38860	39460	42760	42620	40630	39500	38690	37500	38330
5	33630	33260	36200	38860	39460	42550	47620	40410	39350	38600	37430	38280
6	33630	33310	36240	38820	39410	42160	45520	40150	39310	38710	37370	38240
7	33610	33450	36240	38840	39830	41660	43680	39980	39240	38860	38390	38140
8	33570	33430	36300	39390	40200	41200	42480	39800	39200	38820	38840	38140
9	33530	33350	36320	40330	40170	40850	41660	39690	39180	38750	46980	38160
10	33510	33390	36320	40240	40070	40610	41090	39560	39630	38710	45800	38110
11	33410	33350	36340	40130	39980	40410	40830	39410	39590	38650	43680	38010
12	33370	33350	36390	39890	41860	40350	40740	39370	39480	38580	42300	37940
13	33350	33310	36340	39850	44140	41910	40460	39240	39390	38560	41390	37920
14	33330	33330	36410	39690	43080	41700	40220	39200	39310	38520	40780	37880
15	33310	33310	36840	39630	42210	41240	40000	39160	39290	38520	40300	37840
16	33310	33330	37580	39540	41570	40920	39830	39090	39220	38430	39910	37790
17	33290	33310	38140	39500	41090	40570	39720	39030	39560	38370	39690	37750
18	33260	33330	38220	39370	40740	40390	39590	38970	39480	38520	39480	37710
19	33200	33290	38350	39310	40520	40280	39480	38970	39330	38430	39330	37690
20	33140	33290	38410	39310	40590	40110	39370	40040	39240	38330	39160	37690
21	33160	33290	38480	39480	42460	39980	39350	40440	39180	38260	39090	37620
22	33330	33260	38520	39780	41930	39850	39330	40260	39180	38220	38970	37580
23	33370	33240	38600	39800	41390	39740	39220	40020	39140	38160	38920	37900
24	33410	33470	38690	40280	41020	39670	39220	40960	39090	38090	38840	38050
25	33450	33650	38730	40220	40920	40590	39350	41310	39030	38030	38750	38050
26	33450	33690	38770	40070	41310	41350	39630	41000	39010	37990	38690	38030
27	33450	33740	38730	39780	41880	41050	40410	40650	39090	37940	38630	37990
28	33450	33760	38800	39780	41530	40760	41480	40570	39030	37860	38580	37940
29	33450	33840	38820	39670	---	40460	41200	40350	38920	37840	38540	37880
30	33430	34690	38820	39540	---	40260	40850	40220	38860	37860	38500	37860
31	33410	---	38840	39480	---	40070	---	40130	---	37820	38430	---
MAX	33700	34690	38840	40330	44140	44280	47620	41310	40000	38860	46980	38460
MIN	33140	33240	35870	38820	39330	39670	39220	38970	38860	37820	37370	37580
(+)	276.02	276.67	278.68	278.98	279.92	279.25	279.61	279.28	278.69	278.20	278.49	278.22
(@)	-310	+1280	+4150	+640	+2050	-1460	+780	-720	-1270	-1040	+610	-570
(++)	312	230	191	160	168	155	186	194	217	390	368	444

CAL YR 1996 MAX 38840 MIN 31810 (@) +3580 (++) 3807
WTR YR 1997 MAX 47620 MIN 33140 (@) +4140 (++) 3015

(+) Elevation in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, by the city of Nacogdoches.

NECHES RIVER BASIN

279

08037000 ANGELINA RIVER NEAR LUFKIN, TX

LOCATION.--Lat 31°27'26", long 94°43'34", Angelina-Nacogdoches County line, Hydrologic Unit 12020004, near right bank on downstream side of bridge on U.S. Highway 59, 100 ft upstream from Procella Creed, 1.5 mi downstream from Bayou Loco, 1.5 mi upstream from Southern Pacific Transportation Co. (formerly Southern Pacific Lines) bridge, 8 mi north of Lufkin and 109.5 mi upstream from mouth.

DRAINAGE AREA.--1,600 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1954 to September 1978, January 1994 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1954 to September 1978.

WATER TEMPERATURES: October 1954 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,090 microsiemens Nov. 10, 11, 1963; minimum 38 microsiemens Sept. 21, 1958, May 2, 1962.

WATER TEMPERATURE: Maximum, 32.0° C on several day during July 1966; minimum, 0.0° C Jan. 11, 12, 1962, Jan. 19, 1977.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CaCO3)
FEB 13...	0932	2500	88	6.6	8.0	240	61	9.0	76	2.4	21
MAR 27...	1015	2700	148	6.4	17.5	120	17	6.0	63	1.1	40
APR 16...	1340	2800	145	7.0	15.0	170	20	7.8	77	1.3	35
JUN 26...	1015	616	154	6.6	25.5	150	30	6.6	81	0.9	35
JUL 31...	1315	65	182	6.8	29.0	180	29	5.8	76	1.6	40
AUG 20...	1500	475	129	6.2	28.5	180	13	4.4	57	2.0	31
SEP 04...	1155	1700	154	7.1	30.0	180	24	6.5	86	1.4	32

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LILITY WAT DIS FIX END FIELD CaCO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
FEB 13...	10	4.9	2.2	6.4	0.6	2.8	11	15	8.0	<0.10	5.2
MAR 27...	15	8.6	4.4	11	0.7	3.0	25	18	13	<0.10	11
APR 16...	16	7.6	3.9	11	0.8	3.0	19	18	16	<0.10	12
JUN 26...	10	7.7	3.9	12	0.9	3.2	25	13	18	0.11	17
JUL 31...	1	8.8	4.4	16	1	3.7	39	18	16	0.11	16
AUG 20...	11	6.9	3.4	8.9	0.7	3.7	20	17	12	<0.10	13
SEP 04...	2	7.0	3.6	15	1	2.8	30	13	15	0.12	17

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, TILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
FEB 13...	52	64	20	44	0.070	0.020	0.090	<0.015	--	0.50	0.030
MAR 27...	85	6	5	1	--	<0.010	0.120	0.050	0.55	0.60	0.030
APR 16...	84	11	4	7	--	<0.010	0.185	<0.015	--	0.52	0.036
JUN 26...	91	14	2	12	--	<0.010	0.239	0.038	0.26	0.30	<0.010
JUL 31...	108	<1	6	--	0.267	0.010	0.277	0.039	0.25	0.29	0.014
AUG 20...	78	11	5	6	--	<0.010	0.128	0.070	0.52	0.59	0.050
SEP 04...	92	15	9	6	0.310	0.010	0.320	0.019	0.28	0.30	<0.010

NECHES RIVER BASIN

08037000 ANGELINA RIVER NEAR LUFKIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

[illegible][illegible]

NECHES RIVER BASIN

281

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°30'15", long 94°18'15", Nacogdoches-San Augustine County Line, Hydrologic Unit 12020005, near right bank on downstream side of bridge on State Highway 21, 2.2 mi upstream from Amaladeros Creek, 2.8 mi east of Chireno, 5.4 mi downstream from Arenoso Creek and 41 mi upstream from mouth.

DRAINAGE AREA.--503 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1924 to September 1925, July 1939 to November 1954, and October 1955 to Sept. 30, 1985. Monthly discharge only for some periods, published in WSP 1312 and 1732. October 1985 to September 1989 (annual maximum). October 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 169.58 ft above sea level. Jan. 24, 1924, to Aug. 29, 1925, and Sept. 6, 1957, to Oct. 27, 1958, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 15,870 acre-ft. These structures control runoff from 46.7 mi² above this station. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE.--45 years (water years 1940-54, 1956-1985) 479 ft³/s (12.93 in/yr), 347,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft³/s Nov. 24, 1940 (gage height, 25.97 ft); minimum, 0.8 ft³/s Aug. 26, 27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft June 29, 1902, from information by local residents. Flood in July 1933 reached a stage of 25.2 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 15	0100	6,450	18.86	Apr. 6	0900	12,800	21.04
Mar. 3	2400	8,320	19.53	Aug. 10	1400	26,800	24.84

NECHES RIVER BASIN

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1994 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CACO3)
FEB 12...	1306	1240	146	6.8	11.5	220	72	9.1	83	1.6	40
MAR 27...	0815	1100	110	6.2	17.0	120	42	6.6	68	1.6	33
APR 16...	1650	1230	110	7.2	15.0	120	27	9.2	91	1.6	30
MAY 27...	1358	600	140	6.9	23.0	140	45	6.9	81	1.4	35
JUN 25...	1710	154	125	6.6	25.0	110	24	6.2	75	1.1	34
AUG 21...	1100	597	88	7.0	27.5	140	21	4.9	62	2.2	27

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
FEB 12...	19	8.6	4.5	9.7	0.7	2.3	21	26	10	<0.10	9.3
MAR 27...	11	6.7	3.9	6.0	0.5	2.5	22	18	6.6	<0.10	10
APR 16...	8	5.9	3.8	6.8	0.5	2.1	22	16	7.3	<0.10	11
MAY 27...	19	6.6	4.4	9.5	0.7	2.6	16	22	12	<0.10	12
JUN 25...	8	6.6	4.1	8.7	0.7	2.3	26	12	9.7	<0.10	16
AUG 21...	2	5.5	3.2	4.9	0.4	3.1	25	5.0	7.0	<0.10	9.8

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
FEB 12...	84	66	22	44	0.120	0.030	0.150	<0.015	--	0.40	0.020
MAR 27...	69	25	5	20	--	<0.010	0.240	0.050	0.45	0.50	0.030
APR 16...	68	10	14	0	0.292	0.010	0.302	<0.015	--	0.35	0.028
MAY 27...	81	47	9	38	0.393	0.011	0.404	0.017	0.43	0.45	0.019
JUN 25...	78	13	2	11	--	<0.010	0.537	0.030	0.21	0.24	<0.010
AUG 21...	55	42	2	40	0.197	0.010	0.207	0.082	0.54	0.62	0.049

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
FEB 12...	<0.010	--	5.1	<1	32	<0.50	2.0	<5.0	<3.0	<10	150
MAR 27...	0.020	0.06	14	--	--	--	--	--	--	--	--
APR 16...	0.015	0.05	11	<1	34	<0.50	1.3	<5.0	<3.0	<10	280
MAY 27...	0.011	0.03	11	--	--	--	--	--	--	--	--
JUN 25...	0.017	0.05	8.5	--	--	--	--	--	--	--	--
AUG 21...	0.035	0.11	11	<1	48	<0.50	<1.0	<5.0	<3.0	<10	240

NECHES RIVER BASIN

283

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
FEB 12...	<10	5	34	<0.1	<10	<10	<1	<1.0	100	<6	17
MAR 27...	--	--	--	--	--	--	--	--	--	--	--
APR 16...	17	5	76	<0.1	<10	<10	<1	2.5	80	<6	25
MAY 27...	--	--	--	--	--	--	--	--	--	--	--
JUN 25...	--	--	--	--	--	--	--	--	--	--	--
AUG 21...	12	<4	129	<0.1	<10	<10	<1	<1.0	80	<6	23

NECHES RIVER BASIN

08039100 AYISH BAYOU NEAR SAN AUGUSTINE, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°23'46", Long 94°09'03", San Augustine County, Hydrologic Unit 12020005, near center of span on downstream side of bridge on State Highway 103, 3.0 mi upstream from Turkey Creek and 9.5 mi south of San Augustine.

DRAINAGE AREA.--89.0 mi².

PERIOD OF RECORD.--February 1959 to September 1985 (daily mean discharge), October 1985 to September 1989 (annual maximum), October 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1922: 1959(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.22 ft above sea level. Prior to June 2, 1959, nonrecording gage at same site and datum.

REMARKS.--Records fair. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE.--26 years (water years 1960-85), 83.7 ft³/s, 12.77 in/yr, 60,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft³/s Sept. 14, 1978 (gage height, 18.02 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since October 1957, 15,900 ft³/s on Sept. 21 or 22, 1958 (gage height, 17.5 ft, from floodmarks).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0500	5,140	14.02	Aug. 10	0800	2,200	12.81
Apr. 5	1900	1,690	12.48				

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX

LOCATION.--Lat 31°03'38", long 94°06'21", Jasper County, Hydrologic Unit 12020005, in the powerhouse-intake structure of Sam Rayburn Dam on the Angelina River, 10 mi northwest of Jasper and 25.2 mi upstream from mouth.

DRAINAGE AREA.--3,449 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Apr. 20, 1965, nonrecording gage at same site and datum.

REMARKS.--The reservoir is formed by a rolled earthfill dam 19,430 ft long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar. 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft wide, on right bank 7,000 ft to right of outlet works and is designed to discharge 125,300 ft³/s at maximum flood design. The flood-control outlet works consists of two 10.0 x 20.0-foot rectangular concrete-lined conduits controlled by two 10.0 x 20.0-foot tractor-type service gates and one 10.0 x 20.0-foot tractor-type emergency gate. Water for turbines is admitted through four 18.0 x 26.0-foot penstocks and controlled by two wheeled-leaf-type headgates. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the U.S. Army Corps of Engineers and detailed sedimentation ranges established in 1961 and dated February 1965. For statement regarding regulation by Natural Resource Conservation Service flood-water-retarding structures, see station 08038000. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	190.0	-
Design flood	183.0	5,610,000
Crest of spillway	176.0	4,442,400
Top of flood-control pool	173.0	3,997,600
Top of conservation pool (power pool)	164.0	2,852,600
Top of power head and sediment pool	149.0	1,452,000
Lowest gated outlet (invert)	105.0	21,940

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,881,000 acre-ft Feb. 7, 1974 (elevation, 172.17 ft); minimum since conservation storage was reached in 1968, 1,585,000 acre-ft Aug. 10, 1996 (elevation, 150.74 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,414,000 acre-ft Apr. 12 (elevation, 168.67 ft); minimum, 1,701,000 acre-ft Oct. 1 (elevation, 152.19 ft).

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

150.0	1,527,000	166.0	3,085,000	171.0	3,720,000
155.0	1,941,000	168.0	3,329,000	172.0	3,857,000
158.0	2,221,000	170.0	3,586,000	173.0	3,998,000
162.0	2,631,000				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1701000	1736000	1782000	1969000	2186000	2875000	3203000	3107000	2951000	2898000	2738000	2874000
2	1703000	1730000	1785000	1973000	2193000	2928000	3187000	3103000	2944000	2896000	2732000	2870000
3	1707000	1726000	1790000	1974000	2202000	2973000	3167000	3091000	2935000	2890000	2725000	2864000
4	1710000	1728000	1791000	1984000	2212000	3019000	3193000	3074000	2927000	2889000	2718000	2857000
5	1713000	1729000	1795000	1989000	2215000	3060000	3273000	3061000	2919000	2881000	2711000	2848000
6	1715000	1726000	1801000	1992000	2219000	3076000	3326000	3052000	2910000	2881000	2701000	2838000
7	1716000	1740000	1806000	1990000	2242000	3090000	3349000	3040000	2907000	2876000	2702000	2831000
8	1718000	1739000	1806000	1999000	2246000	3102000	3366000	3038000	2906000	2879000	2713000	2824000
9	1717000	1735000	1808000	2001000	2253000	3111000	3372000	3051000	2906000	2876000	2734000	2824000
10	1716000	1734000	1810000	2015000	2259000	3121000	3376000	3053000	2908000	2873000	2775000	2816000
11	1714000	1736000	1815000	2019000	2264000	3129000	3413000	3058000	2905000	2868000	2834000	2807000
12	1716000	1736000	1820000	2030000	2343000	3155000	3414000	3068000	2900000	2865000	2800000	2780000
13	1713000	1736000	1822000	2035000	2421000	3207000	3411000	3061000	2899000	2862000	2880000	2795000
14	1712000	1736000	1823000	2039000	2462000	3239000	3409000	3046000	2902000	2857000	2887000	2787000
15	1712000	1734000	1847000	2052000	2490000	3252000	3397000	3035000	2899000	2853000	2892000	2778000
16	1712000	1738000	1859000	2060000	2517000	3256000	3380000	3020000	2898000	2842000	2900000	2769000
17	1717000	1745000	1881000	2066000	2533000	3263000	3363000	3002000	2920000	2837000	2910000	2764000
18	1712000	1744000	1882000	2070000	2552000	3286000	3342000	2987000	2925000	2829000	2914000	2757000
19	1707000	1744000	1882000	2076000	2569000	3292000	3323000	2979000	2926000	2822000	2919000	2751000
20	1705000	1744000	1883000	2082000	2600000	3299000	3301000	2978000	2926000	2814000	2925000	2746000
21	1710000	1747000	1889000	2094000	2652000	3302000	3273000	2972000	2927000	2807000	2928000	2737000
22	1710000	1745000	1894000	2106000	2676000	3296000	3254000	2965000	2921000	2800000	2936000	2728000
23	1708000	1743000	1908000	2113000	2700000	3288000	3226000	2959000	2921000	2793000	2935000	2745000
24	1709000	1763000	1910000	2126000	2734000	3272000	3198000	2969000	2920000	2789000	2929000	2747000
25	1713000	1764000	1909000	2128000	2769000	3294000	3184000	2967000	2921000	2781000	2923000	2738000
26	1716000	1762000	1923000	2134000	2801000	3289000	3180000	2964000	2918000	2775000	2917000	2727000
27	1720000	1763000	1925000	2165000	2828000	3275000	3169000	2963000	2912000	2766000	2910000	2721000
28	1721000	1762000	1931000	2156000	2855000	3265000	3155000	2970000	2908000	2759000	2903000	2715000
29	1726000	1773000	1944000	2163000	---	3250000	3138000	2965000	2905000	2749000	2897000	2709000
30	1727000	1782000	1953000	2170000	---	3239000	3127000	2963000	2902000	2756000	2891000	2705000
31	1727000	---	1962000	2177000	---	3219000	---	2959000	---	2748000	2881000	---
MAX	1727000	1782000	1962000	2177000	2855000	3302000	3414000	3107000	2951000	2898000	2936000	2874000
MIN	1701000	1726000	1782000	1969000	2186000	2875000	3127000	2959000	2898000	2748000	2701000	2705000
(+)	152.51	153.17	155.23	157.55	164.02	167.11	166.35	164.93	164.43	163.07	164.25	162.68
(@)	+28000	+55000	+180000	+215000	+678000	+364000	-92000	-168000	-57000	-154000	+133000	-176000
CAL YR 1996	MAX	2098000	MIN	1585000	(@)	-123000						
WTR YR 1997	MAX	3414000	MIN	1701000	(@)	+1006000						

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

(@) Change in contents, in acre feet.

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1984, September 1993 to current year. Biochemical analyses: November 1967 to September 1984, September 1993 to current year.

310816094041401 - SAM RAYBURN RESERVOIR SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB									
13...	1250	2420000	1.00	155	7.0	10.0	1.60	9.4	84
13...	1252	--	10.0	155	7.0	10.0	--	9.5	85
13...	1254	--	20.0	155	7.0	10.0	--	9.5	85
13...	1256	--	30.0	155	7.0	10.0	--	9.5	85
13...	1258	--	40.0	160	7.0	10.0	--	9.5	85
13...	1300	--	45.0	160	7.0	10.0	--	9.5	85
APR									
18...	0905	3340000	1.00	180	6.8	17.0	1.30	9.0	93
18...	0907	--	10.0	175	6.8	17.0	--	9.0	93
18...	0909	--	20.0	175	6.8	17.0	--	9.0	93
18...	0911	--	30.0	175	6.8	16.5	--	9.0	92
18...	0913	--	40.0	175	6.8	16.5	--	9.0	92
18...	0915	--	50.0	175	6.6	16.0	--	9.0	91
18...	0917	--	58.0	175	6.6	16.0	--	8.9	90
AUG									
21...	1610	2930000	1.00	160	6.7	30.5	2.40	6.2	83
21...	1612	--	10.0	160	6.5	30.0	--	5.5	73
21...	1614	--	20.0	160	6.4	30.0	--	5.4	71
21...	1616	--	30.0	170	6.4	26.0	--	0.1	1
21...	1618	--	40.0	170	6.4	23.0	--	0.1	1
21...	1620	--	50.0	170	6.3	22.5	--	0.1	1

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CaCO3)
FEB											
13...	0805	1.00	160	7.2	10.0	1.52	9.8	88	K10	K11	30
13...	0807	10.0	160	7.2	10.0	--	9.8	88	--	--	--
13...	0809	20.0	160	7.2	10.0	--	9.8	88	--	--	--
13...	0811	30.0	160	7.2	10.0	--	9.8	88	--	--	--
13...	0813	40.0	160	7.2	10.0	--	9.8	88	--	--	--
13...	0815	50.0	160	7.2	10.0	--	9.8	88	--	--	--
13...	0817	60.0	160	7.2	10.0	--	9.7	87	--	--	--
13...	0819	70.0	160	7.1	10.0	--	9.7	87	--	--	--
13...	0821	80.0	160	7.0	10.0	--	9.7	87	--	--	29
APR											
17...	1130	1.00	180	7.0	18.0	1.30	9.4	98	--	--	29
17...	1132	10.0	180	7.0	18.0	--	9.4	98	--	--	--
17...	1134	20.0	180	7.0	18.0	--	9.4	98	--	--	--
17...	1136	30.0	180	6.9	18.0	--	9.3	97	--	--	--
17...	1138	40.0	180	6.9	18.0	--	9.2	96	--	--	--
17...	1140	50.0	180	6.8	18.0	--	9.1	95	--	--	--
17...	1142	60.0	180	6.7	15.0	--	8.6	85	--	--	--
17...	1144	70.0	180	6.6	15.0	--	8.5	84	--	--	--
17...	1146	85.0	180	6.6	15.0	--	8.5	84	--	--	30
AUG											
21...	0854	1.00	155	6.2	30.0	2.40	6.8	90	K1	K10	31
21...	0856	10.0	155	6.2	29.0	--	5.4	70	--	--	--
21...	0858	20.0	160	6.1	28.5	--	3.6	46	--	--	--
21...	0900	30.0	160	6.1	26.5	--	0.4	5	--	--	--
21...	0902	40.0	175	6.2	21.0	--	0.4	4	--	--	--
21...	0904	50.0	180	6.1	20.5	--	0.1	1	--	--	--
21...	0906	60.0	180	6.1	20.0	--	0.1	1	--	--	--
21...	0908	70.0	180	6.1	20.0	--	0.1	1	--	--	--
21...	0910	82.0	180	6.4	20.0	--	0.2	2	--	--	34

NECHES RIVER BASIN

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08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS STO2)
FEB											
13...	12	6.9	3.0	18	1	2.6	18	21	21	<0.10	7.7
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	11	6.9	2.8	17	1	2.6	18	21	19	<0.10	7.7
APR											
17...	11	6.8	3.0	18	1	2.9	18	23	20	<0.10	7.6
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	12	7.3	2.9	19	2	3.1	18	23	21	<0.10	9.0
AUG											
21...	8	7.0	3.3	15	1	2.8	23	19	16	<0.10	7.4
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	0	8.3	3.2	16	1	3.2	39	16	20	<0.10	12
DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
13...	91	0.030	<0.050	<0.015	--	<0.20	<0.010	<0.010	--	4.0	3.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	0.020	<0.050	<0.015	--	<0.20	<0.010	<0.010	--	6.0	4.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	88	0.020	<0.050	<0.015	--	<0.20	0.010	<0.010	--	21	17
APR											
17...	93	<0.010	<0.050	<0.015	--	0.27	<0.010	<0.010	--	61	8.4
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<0.010	<0.050	<0.015	--	0.31	0.011	<0.010	--	71	29
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<0.010	0.057	<0.015	--	0.22	<0.010	<0.010	--	51	165
17...	--	--	--	--	--	--	--	--	--	--	--
17...	97	<0.010	0.126	0.017	0.25	0.26	<0.010	<0.010	--	81	67
AUG											
21...	84	<0.010	<0.050	<0.015	--	0.22	<0.010	<0.010	--	28	133
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	<0.010	<0.050	0.028	0.20	0.22	<0.010	0.013	0.04	560	1180
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	<0.010	<0.050	0.342	0.26	0.61	0.072	0.069	0.21	2900	1770
21...	--	--	--	--	--	--	--	--	--	--	--
21...	108	<0.010	<0.050	0.430	0.52	0.95	0.116	0.115	0.35	2900	1950

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

310802094112201 - SAM RAYBURN RESERVOIR SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
13...	0920	1.00	175	7.2	10.0	1.50	9.6	86
13...	0922	10.0	175	7.2	10.0	--	9.6	86
13...	0924	20.0	175	7.2	10.0	--	9.6	86
13...	0926	30.0	175	7.2	10.0	--	9.6	86
13...	0928	40.0	175	7.2	10.0	--	9.5	85
13...	0930	50.0	175	7.2	10.0	--	9.6	86
13...	0932	60.0	175	7.2	10.0	--	9.6	86
13...	0934	70.0	175	7.2	10.0	--	9.9	89
APR								
17...	1230	1.00	180	7.0	18.0	1.12	9.2	97
17...	1232	10.0	180	6.9	17.5	--	9.2	96
17...	1234	20.0	180	6.9	17.0	--	9.1	94
17...	1236	30.0	185	6.9	17.0	--	9.0	93
17...	1238	40.0	185	6.9	16.0	--	8.9	90
17...	1240	50.0	190	6.9	15.5	--	8.8	88
17...	1242	60.0	190	6.9	15.5	--	8.8	88
17...	1244	70.0	190	6.9	15.5	--	8.8	88
17...	1246	82.0	190	6.9	15.5	--	8.7	87
AUG								
21...	0949	1.00	155	6.5	30.0	2.40	6.8	90
21...	0951	10.0	155	6.4	30.0	--	6.6	87
21...	0953	20.0	155	6.1	29.5	--	5.9	77
21...	0955	30.0	165	6.1	26.5	--	0.4	5
21...	0957	40.0	170	6.1	23.5	--	0.1	1
21...	0959	50.0	170	6.0	22.5	--	0.1	1
21...	1001	60.0	170	6.0	22.0	--	0.1	1
21...	1003	76.0	175	6.0	21.0	--	0.1	1

311039094141201 - SAM RAYBURN RESERVOIR SITE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
13...	0945	1.00	180	7.2	10.0	1.70	9.6	86
13...	0947	10.0	180	7.2	10.0	--	9.6	86
13...	0949	20.0	180	7.2	10.0	--	9.6	86
13...	0951	30.0	180	7.2	10.0	--	9.6	86
13...	0953	40.0	180	7.2	10.0	--	9.6	86
13...	0955	50.0	180	7.2	10.0	--	9.6	86
13...	0957	62.0	180	7.2	10.0	--	9.6	86
APR								
17...	1255	1.00	170	6.9	18.0	1.10	9.1	95
17...	1257	10.0	170	6.9	18.0	--	9.0	94
17...	1259	20.0	175	6.9	17.5	--	9.0	93
17...	1301	30.0	175	6.8	17.0	--	8.8	90
17...	1303	40.0	190	6.7	16.0	--	8.6	86
17...	1305	50.0	190	6.9	16.0	--	8.6	86
17...	1307	60.0	190	6.8	16.0	--	8.5	85
17...	1309	74.0	190	6.9	16.0	--	8.6	86
AUG								
21...	1036	1.00	155	6.7	30.0	2.10	6.9	91
21...	1038	10.0	155	6.6	30.0	--	6.6	87
21...	1040	20.0	155	6.5	29.5	--	6.1	80
21...	1042	30.0	160	6.1	26.5	--	2.9	36
21...	1044	40.0	170	6.2	23.0	--	2.8	33
21...	1046	50.0	170	6.4	22.0	--	0.1	1
21...	1048	60.0	175	6.4	22.0	--	0.1	1
21...	1050	67.0	175	6.4	21.5	--	0.1	1

NECHES RIVER BASIN

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08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 KF AGAR (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS DISSOLV FLD. AS CACO3 (MG/L)
FEB												
13...	1020	1.00	215	7.0	10.0	1.20	9.4	84	220	K4	34	16
13...	1022	10.0	215	7.0	10.0	--	9.4	84	--	--	--	--
13...	1024	20.0	215	7.1	10.0	--	9.4	84	--	--	--	--
13...	1026	30.0	215	7.1	10.0	--	9.4	84	--	--	--	--
13...	1028	40.0	215	7.1	10.0	--	9.4	84	--	--	--	--
13...	1030	50.0	215	7.1	10.0	--	9.4	84	--	--	--	--
13...	1032	58.0	215	7.1	10.0	--	9.4	84	--	--	34	16
APR												
17...	1330	1.00	155	7.0	19.5	0.90	9.2	99	--	--	29	12
17...	1332	10.0	140	6.8	18.0	--	9.0	94	--	--	--	--
17...	1334	20.0	140	6.8	17.5	--	8.9	92	--	--	--	--
17...	1336	30.0	140	6.7	17.5	--	8.9	92	--	--	--	--
17...	1338	40.0	140	6.7	17.5	--	8.8	91	--	--	--	--
17...	1340	50.0	155	6.6	17.5	--	8.4	87	--	--	--	--
17...	1342	62.0	155	6.8	17.5	--	8.4	87	--	--	29	13
AUG												
21...	1126	1.00	150	6.8	31.0	1.80	7.2	97	K1	89	31	7
21...	1128	10.0	150	6.4	30.5	--	6.7	89	--	--	--	--
21...	1130	20.0	150	6.3	29.5	--	5.3	69	--	--	--	--
21...	1132	30.0	150	6.1	27.5	--	1.2	15	--	--	--	--
21...	1134	40.0	175	6.4	23.0	--	0.2	2	--	--	--	--
21...	1136	50.0	175	6.4	22.5	--	0.2	2	--	--	--	--
21...	1138	60.0	175	6.5	22.5	--	0.1	1	--	--	30	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB											
13...	7.5	3.6	27	2	3.5	18	31	30	<0.10	11	125
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	7.6	3.6	27	2	3.5	18	31	30	<0.10	11	125
APR											
17...	6.1	3.3	12	0.9	3.1	17	21	15	<0.10	8.7	80
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	6.3	3.2	13	1	3.2	16	21	16	<0.10	10	83
AUG											
21...	6.8	3.4	14	1	2.8	24	17	14	<0.10	8.0	80
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	6.0	3.6	15	1	3.0	38	12	20	<0.10	12	104

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOS DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
13...	0.100	0.040	0.140	<0.015	--	0.20	<0.010	<0.010	--	50	2.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.080	0.030	0.110	<0.015	--	0.20	<0.010	<0.010	--	65	3.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.070	0.020	0.090	<0.015	--	0.20	<0.010	<0.010	--	79	3.0
APR											
17...	--	<0.010	0.054	<0.015	--	0.35	<0.010	<0.010	--	180	111
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<0.010	0.092	0.205	0.28	0.48	<0.010	<0.010	--	240	246
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<0.010	0.068	0.124	0.30	0.43	<0.010	<0.010	--	220	122
AUG											
21...	--	<0.010	<0.050	<0.015	--	0.25	<0.010	<0.010	--	19	69
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	<0.010	<0.050	0.021	0.21	0.23	0.044	<0.010	--	410	338
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	<0.010	<0.050	0.731	0.25	0.99	0.203	0.206	0.63	6000	1680
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	<0.010	<0.050	0.751	0.35	1.1	0.230	0.232	0.71	6100	1520

311804094234901 - SAM RAYBURN RESERVOIR SITE JC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
13...	1130	1.00	230	6.8	10.0	0.90	9.0	80
13...	1132	10.0	230	6.8	10.0	--	9.0	80
13...	1134	20.0	230	6.8	10.0	--	8.9	80
13...	1136	32.0	230	6.8	10.0	--	9.1	81
APR								
17...	1445	1.00	150	7.0	19.0	0.70	8.9	95
17...	1447	10.0	150	6.9	18.5	--	8.8	93
17...	1449	20.0	150	6.8	18.5	--	8.6	91
17...	1451	30.0	150	6.8	18.5	--	8.6	91
17...	1453	44.0	150	6.8	18.5	--	8.5	90
AUG								
21...	1315	1.00	175	7.4	32.0	1.20	7.8	106
21...	1317	10.0	175	6.5	30.5	--	6.0	80
21...	1319	20.0	185	6.5	29.5	--	2.2	29
21...	1321	30.0	220	6.6	28.5	--	0.5	6
21...	1323	40.0	250	6.5	28.0	--	0.5	6

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
FEB												
14...	0730	1.00	155	6.4	9.0	0.20	8.0	70	200	360	27	18
14...	0732	10.0	155	6.4	9.0	--	8.0	70	--	--	--	--
14...	0734	22.0	155	6.4	9.0	--	8.0	70	--	--	27	18
APR												
17...	1520	1.00	130	6.6	19.0	0.50	8.3	89	--	--	30	9
17...	1522	10.0	130	6.6	18.0	--	8.3	87	--	--	--	--
17...	1524	15.0	130	6.6	18.0	--	8.3	87	--	--	--	--
17...	1526	20.0	130	6.7	18.0	--	8.3	87	--	--	--	--
17...	1528	30.0	130	6.7	18.0	--	8.2	86	--	--	31	9
AUG												
21...	1408	1.00	110	7.3	32.0	0.50	4.6	63	K1	26	22	6
21...	1410	10.0	110	7.2	30.0	--	2.6	34	--	--	--	--
21...	1412	20.0	120	6.5	30.0	--	0.3	4	--	--	--	--
21...	1414	26.0	120	6.6	30.0	--	0.2	3	--	--	23	7

NECHES RIVER BASIN

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08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB											
14...	5.7	3.0	15	1	3.0	9.0	25	18	<0.10	8.3	84
14...	--	--	--	--	--	--	--	--	--	--	--
14...	5.7	3.0	15	1	3.0	9.0	25	18	<0.10	8.4	84
APR											
17...	6.4	3.5	9.1	0.7	2.9	21	14	12	<0.10	11	73
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	6.5	3.5	9.3	0.7	3.0	22	14	13	<0.10	11	76
AUG											
21...	5.1	2.3	9.9	0.9	2.9	16	14	12	<0.10	11	67
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	5.3	2.4	10	0.9	2.9	16	14	12	<0.10	10	68

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOS DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
14...	0.120	0.020	0.140	0.020	0.28	0.30	<0.010	<0.010	--	220	61
14...	0.080	0.030	0.110	0.020	0.28	0.30	<0.010	<0.010	--	220	61
14...	0.080	0.020	0.100	<0.015	--	0.40	<0.010	<0.010	--	190	61
APR											
17...	--	<0.010	0.172	<0.015	--	0.46	0.024	<0.010	--	710	33
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<0.010	0.204	<0.015	--	0.47	<0.010	<0.010	--	590	33
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	<0.010	0.210	<0.015	--	0.42	0.010	0.013	0.04	990	25
AUG											
21...	--	<0.010	<0.050	<0.015	--	0.41	0.011	<0.010	--	350	105
21...	--	<0.010	0.054	0.073	0.27	0.35	0.012	<0.010	--	320	135
21...	--	--	--	--	--	--	--	--	--	--	--
21...	0.051	0.010	0.061	0.085	0.41	0.49	0.040	<0.010	--	300	271

311000094010301 - SAM RAYBURN RESERVOIR SITE LC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
FEB										
13...	1315	1.00	155	6.9	10.5	1.80	9.1	82	0.030	0.030
13...	1317	10.0	155	6.9	10.0	--	9.2	82	--	--
13...	1319	20.0	155	6.9	10.0	--	9.2	82	--	--
13...	1321	30.0	155	6.8	10.0	--	9.1	81	--	--
13...	1323	37.0	155	6.9	10.0	--	9.2	82	--	0.030
APR										
18...	1010	1.00	165	7.0	18.0	1.25	9.3	98	--	<0.010
18...	1012	10.0	170	6.9	17.0	--	9.1	94	--	--
18...	1014	20.0	175	6.9	16.5	--	9.1	93	--	--
18...	1016	34.0	175	6.9	16.5	--	9.1	93	--	<0.010
AUG										
21...	1725	1.00	160	6.7	32.0	1.40	5.7	78	--	<0.010
21...	1727	10.0	160	6.4	31.0	--	5.4	72	--	--
21...	1729	20.0	160	6.6	29.5	--	3.1	41	--	--
21...	1731	30.0	165	6.8	26.5	--	0.2	2	--	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOS DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
13...	0.060	<0.015	--	<0.20	<0.010	<0.010	--	48	3.0
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	<0.050	<0.015	--	<0.20	<0.010	<0.010	--	45	6.0
APR									
18...	<0.050	<0.015	--	0.27	<0.010	<0.010	--	93	4.4
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	<0.050	<0.015	--	0.32	<0.010	<0.010	--	160	7.5
AUG									
21...	<0.050	<0.015	--	<0.20	<0.010	<0.010	--	44	404
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	<0.050	0.591	0.22	0.81	<0.010	0.014	0.04	900	1420

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

311137094051401 - SAM RAYBURN RESERVOIR SITE MC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
FEB									
13...	1400	1.00	150	7.0	10.0	1.70	9.5	85	0.020
13...	1402	10.0	150	7.0	10.0	--	9.5	85	--
13...	1404	20.0	155	6.9	9.5	--	9.1	80	0.020
APR									
18...	0935	1.00	140	6.9	18.5	1.00	9.1	97	<0.010
18...	0937	10.0	140	7.0	17.0	--	9.2	95	--
18...	0939	20.0	140	7.0	17.0	--	9.2	95	--
18...	0941	30.0	140	6.9	17.0	--	9.1	94	--
18...	0943	40.0	140	6.9	17.0	--	9.1	94	--
18...	0945	48.0	140	6.9	17.0	--	9.1	94	<0.010
AUG									
21...	1441	1.00	160	6.7	32.0	2.20	7.1	97	<0.010
21...	1443	10.0	160	6.4	30.5	--	6.5	86	--
21...	1445	20.0	160	6.2	29.5	--	5.2	68	--
21...	1447	30.0	160	6.3	28.5	--	0.7	9	--
21...	1449	44.0	160	6.3	26.0	--	0.2	2	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
13...	<0.050	<0.015	--	0.20	<0.010	<0.010	--	23	3.0
13...	--	--	--	--	--	--	--	--	--
13...	<0.050	<0.015	--	<0.20	<0.010	<0.010	--	23	3.0
APR									
18...	<0.050	<0.015	--	0.26	<0.010	<0.010	--	260	13
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
18...	0.055	<0.015	--	0.29	<0.010	<0.010	--	100	9.3
AUG									
21...	<0.050	<0.015	--	0.28	<0.010	<0.010	--	16	141
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	<0.050	0.274	0.26	0.53	<0.010	0.018	0.05	2000	1610

311817094190701 - SAM RAYBURN RESERVOIR SITE NC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
FEB										
13...	1100	1.00	140	6.8	9.5	0.70	9.0	80	0.120	0.030
13...	1102	10.0	140	6.8	9.5	--	9.1	80	--	--
13...	1104	20.0	140	7.0	9.0	--	9.4	82	0.130	0.020
APR										
17...	1405	1.00	95	6.8	20.0	0.40	8.8	96	0.114	0.012
17...	1407	10.0	95	6.8	18.0	--	8.6	90	--	--
17...	1409	20.0	90	6.8	18.0	--	8.6	90	--	--
17...	1411	35.0	90	6.8	18.0	--	8.5	89	--	<0.010
AUG										
21...	1215	1.00	115	6.8	31.5	1.10	7.2	97	--	<0.010
21...	1217	10.0	115	6.2	30.5	--	5.3	71	--	--
21...	1219	20.0	85	6.1	29.5	--	2.5	33	--	--
21...	1221	33.0	75	6.1	28.0	--	0.4	5	--	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
13...	0.150	0.020	0.28	0.30	<0.010	<0.010	--	270	31
13...	--	--	--	--	--	--	--	--	--
13...	0.150	0.020	0.38	0.40	0.020	<0.010	--	280	32
APR									
17...	0.126	0.047	0.38	0.42	<0.010	0.010	0.03	380	15
17...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
17...	0.132	0.034	0.36	0.39	0.033	<0.010	--	450	16
AUG									
21...	<0.050	<0.015	--	0.28	<0.010	<0.010	--	79	72
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	<0.050	0.435	0.38	0.81	0.024	0.024	0.07	1200	843

NECHES RIVER BASIN

293

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1996 to September 1997

Date	2-13-97
Time	0805

TOTAL CELLS/mL	5,205
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	2.49

OrganismsCells/mL

BACILLARIOPHYTA

Order Pennales

Asterionella formosa var. *formosa*

30

CHLOROPHYTA

Ankistrodesmus falcatus

30

Chlamydomonas sp.

327

Mougeotia sp.

1,219

CYANOPHYTA

Aphanocapsa delicatissima

3,569

EUGLENOPHYTA

Trachelomonas sp.

30

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1996 to September 1997

Date	2-13-97
Time	1020

TOTAL CELLS/mL	4,759
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	1.97

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Pennales	
<i>Synedra ulna</i> var. <i>ulna</i>	149
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	178
<i>Chlamydomonas</i> sp.	357
<i>Mougeotia</i> sp.	297
<i>Pediastrum duplex</i>	30
<i>Scenedesmus quadricauda</i>	149
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,974
<i>Merismopedia tenuissima</i>	476
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	119

NECHES RIVER BASIN

295

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1996 to September 1997

Date	2-14-97
Time	0730

TOTAL CELLS/mL	715
NUMBER OF SPECIES	9
DEPTH COLLECTED (ft.)	0.33

OrganismsCells/mL

BACILLARIOPHYTA

Order Pennales

<i>Asterionella formosa</i> var. <i>formosa</i>	127
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	127
<i>Navicula</i> sp.	42
<i>Synedra ulna</i> var. <i>ulna</i>	85

CHLOROPHYTA

<i>Ankistrodesmus falcatus</i>	24
<i>Chlamydomonas</i> sp.	24
<i>Closterium</i> sp.	12

CYANOPHYTA

<i>Oscillatoria</i> sp.	238
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EUGLENOPHYTA

<i>Trachelomonas</i> sp.	36
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08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1996 to September 1997

Date	4-17-97
Time	1130
<hr/>	
TOTAL CELLS/mL	5,710
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	2.13
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<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	15
<i>Melosira varians</i>	79
<i>Stephanodiscus astraea</i>	25
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	2
<i>Mougeotia</i> sp.	26
<i>Scenedesmus opoliensis</i>	2
CYANOPHYTA	
<i>Anabaena spiroides</i>	892
<i>Aphanizomenon flos-aquae</i>	297
<i>Aphanocapsa delicatissima</i>	2,974
<i>Aphanocapsa elachista</i>	1,190
CHRYSTOPHYTA	
<i>Dinobryon bavaricum</i>	30
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	59
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	119

NECHES RIVER BASIN

297

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1996 to September 1997

Date	4-17-97
Time	1330
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TOTAL CELLS/mL	7,048
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	1.48
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<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	28
<i>Melosira varians</i>	101
<i>Stephanodiscus astraea</i>	19
Order Pennales	
<i>Meridion circulare</i>	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	89
<i>Chlamydomonas</i> sp.	149
<i>Mougeotia</i> sp.	595
CYANOPHYTA	
<i>Anabaena spiroides</i>	595
<i>Aphanizomenon flos-aquae</i>	3,718
<i>Aphanocapsa delicatissima</i>	1,190
<i>Apahnocapsa elachista</i>	297
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	59
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	178

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1996 to September 1997

Date	4-17-97
Time	1520
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TOTAL CELLS/mL	4,015
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	0.82
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<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	13
<i>Stephanodiscus astraea</i>	46
Order Pennales	
<i>Cymbella inelegans</i> var. <i>inelegans</i>	30
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	238
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,974
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	476
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	238
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NECHES RIVER BASIN

299

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1996 to September 1997

Date	8-21-97
Time	854

TOTAL CELLS/mL	49,813
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	3.94

OrganismsCells/mL

BACILLARIOPHYTA

Order Penales

Cocconeis placentula var *placentula*

565

Fragilaria crotonensis var *crotonensis*

565

CHLOROPHYTA

Ankistrodesmus falcatus

2,617

Chlamydomonas sp.

416

Scenedesmus opoliensis

89

CYANOPHYTA

Aphanocapsa delicatissima

20,223

Oscillatoria sp.

25,279

EUGLENOPHYTA

Trachelomonas sp.

59

NECHES RIVER BASIN

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1996 to September 1997

Date	8-21-97
Time	1126
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TOTAL CELLS/mL	9,191
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	2.96
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<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Penales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	89
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	119
<i>Chlamydomonas</i> sp.	1,219
<i>Scenedesmus opoliensis</i>	149
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	3,569
<i>Aphanocapsa elachista</i>	1,190
<i>Merismopedia tenuissima</i>	476
<i>Oscillatoria</i> sp.	1,190
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	1,160
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NECHES RIVER BASIN

301

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1996 to September 1997

Date	8-21-97
Time	1408

TOTAL CELLS/mL	57,010
NUMBER OF SPECIES	12
DEPTH COLLECTED (ft.)	0.80

OrganismsCells/mL

BACILLARIOPHYTA

Order Penales

Fragilaria crotonensis var *crotonensis*

803

CHLOROPHYTA

Ankistrodesmus falcatus

2,260

Chlamydomonas sp.

238

Cosmarium sp.

59

Staurastrum sp.

30

CYANOPHYTA

Aphanizomenon flos-aquae

892

Aphanocapsa delicatissima

23,792

Aphanocapsa elachista

1,784

Chroococcus limneticus

238

Oscillatoria sp.

26,766

EUGLENOPHYTA

Trachelomonas sp.

59

PYRRHOPHYTA

Peridinium pusillum

89

NECHES RIVER BASIN

08039500 ANGELINA RIVER AT STATE HIGHWAY 63 NEAR EBENEZER, TX

LOCATION.--Lat 31°00'54", long 94°09'07", Jasper County, Hydrologic Unit 1202005, at bridge on state highway 63, 1.7 miles south of Ebenezer, 0.25 mile east of the abandoned town of Horger, 7 miles upstream from Indian Creek and 20 miles upstream from mouth.

DRAINAGE AREA.--3,435 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1994 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
FEB 11...	1551	--	118	6.5	13.5	86	14	9.7	93	1.2	21
APR 17...	0938	12500	178	7.1	17.0	40	7.2	9.8	101	1.0	30
AUG 21...	0845	--	155	6.6	27.5	27	1.8	4.1	52	1.3	31

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS-FIX END FIELD CaCO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
FEB 11...	6	4.9	2.0	13	1	1.9	15	14	14	<0.10	13
APR 17...	10	6.8	3.1	19	1	2.9	20	24	21	<0.10	7.5
AUG 21...	6	7.0	3.2	15	1	2.8	25	19	16	<0.10	7.7

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON-FILTER-ABLE (MG/L)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)
FEB 11...	72	4	10	0	0.020	<0.050	<0.015	--	<0.20	<0.010	<0.010
APR 17...	96	7	1	6	<0.010	0.066	<0.015	--	0.29	0.013	<0.010
AUG 21...	86	2	<1	--	<0.010	<0.050	0.034	0.36	0.40	0.036	<0.010

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS Ba)	BERYL-LIUM, DIS-SOLVED (UG/L AS Be)	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHRO-MIUM, DIS-SOLVED (UG/L AS Cr)	COBALT, DIS-SOLVED (UG/L AS Co)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)
FEB 11...	9.5	<1	57	<0.50	2.0	<5.0	<3.0	<10	120	<10
APR 17...	7.3	<1	42	<0.50	2.4	<5.0	<3.0	<10	52	23
AUG 21...	9.1	1	45	<0.50	<1.0	<5.0	<3.0	<10	150	12

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)
FEB 11...	5	60	<0.1	<10	<10	<1	<1.0	68	<6	6.0
APR 17...	5	5.5	<0.1	<10	<10	<1	<1.0	88	<6	20
AUG 21...	5	317	<0.1	<10	<10	<1	<1.0	92	<6	8.3

NECHES RIVER MAIN STEM

303

08040000 B.A. STEINHAGEN LAKE AT TOWN BLUFF, TX

LOCATION.--Lat 30°47'43", long 94°10'48", Tyler County, Hydrologic Unit 12020003, near right bank 70 ft upstream from outlet structure of Town Bluff Dam on Neches River, 0.4 mi north of Town Bluff and at mile 113.7.

DRAINAGE AREA.--7,573 mi².

PERIOD OF RECORD.--April 1951 to current year. Prior to October 1967, published as Dam B Reservoir at Town Bluff.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct. 25, 1954, at site 490 ft upstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam with concrete spillway sections. The total length of dam is 6,698 ft, including a concrete spillway and non-overflow section. Deliberate impoundment of water began Apr. 16, 1951, and the dam was completed in June 1951. The uncontrolled spillway is 6,100 ft long. A 326-foot-long gated service spillway with six 40.0- by 35.0-foot tainter gates is located near right end of dam. The capacity of the spillways at maximum flood design is 218,300 ft³/s. The capacity table is based on a survey made in 1945. Water is used for industrial, municipal and irrigation supplies. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam (nonoverflow)	95.0	-
Design flood	93.0	306,400
Crest of uncontrolled spillway (top of tainter gates)	85.0	124,700
Top of conservation pool	83.0	94,200
Bottom of tainter gates (sill)	50.0	0

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128,400 acre-ft May 22, 1953 (elevation, 85.21 ft); no storage Sept. 18 to Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 100,700 acre-ft Apr. 5 (elevation, 83.46 ft); minimum, 71,330 acre-ft Aug. 26 (elevation, 81.15 ft).

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

75.0	22,310	79.0	50,090	82.0	81,280
76.0	27,960	80.0	59,320	83.0	94,250
77.0	34,460	81.0	69,680	84.0	108,700
78.0	41,830				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94390	94110	91540	85270	88360	83630	89150	85270	88760	74850	91270	74850
2	94940	92620	90740	84890	86040	87840	88760	85520	89540	77190	91270	77300
3	94250	91670	91000	84130	85270	88620	86930	83500	89540	78850	90740	80180
4	93700	91410	90740	85520	85400	86160	90070	81400	89020	79940	90740	77540
5	93300	91000	90740	85780	84760	80540	100700	81770	88490	79690	90210	77300
6	93300	89940	91000	85400	84640	77070	91940	81890	89150	79210	89680	77420
7	93300	91140	90740	84380	86810	76830	86040	81520	87450	78850	89280	77900
8	93570	90870	90210	84890	85910	81400	88100	86680	84260	79210	90210	78130
9	93300	90340	90340	83880	85650	87190	89020	85910	84760	80060	90470	78850
10	93020	90070	89540	84890	85270	92350	87320	82380	85140	80790	91270	79090
11	92750	89940	89280	86550	83750	97160	87060	80660	86290	81030	92480	79330
12	92620	89680	89150	88490	92350	95350	85140	79940	89150	80420	92750	81280
13	92350	89540	88620	88100	90800	95490	83380	80180	90600	78730	90870	83250
14	91940	89410	87710	87190	95350	88760	80060	84010	90740	77900	89020	84510
15	91540	88760	91140	89020	92080	81150	77540	89540	90070	78370	88360	85520
16	91270	88890	93700	91810	90070	79690	78850	94800	89410	79210	87190	86420
17	91540	89940	91670	92350	89020	82880	79570	96460	90470	82260	85910	87060
18	90470	89540	86930	91410	88360	87060	78730	96600	89280	83250	85520	87320
19	89810	89280	83750	89810	87190	92080	77780	90470	87060	84260	83630	86810
20	89410	88890	81890	86680	89280	84640	78970	85650	83750	84760	81030	86420
21	88490	89150	81400	86290	91410	74270	80300	79330	80300	84890	74500	85910
22	89280	88360	80060	88360	86810	77780	82140	78130	76250	84890	73470	86290
23	88890	87710	78970	86040	85400	81400	83750	85400	72910	84890	73130	88100
24	89810	88890	76600	85520	86550	81150	83380	94660	73130	85140	71890	86160
25	91140	87580	73020	84010	92210	81280	85020	95490	76010	85520	71560	85520
26	91540	88360	74390	82880	92480	80790	86160	90210	77070	86160	71330	86930
27	92210	90070	77070	86550	86420	81770	86550	88890	78730	86810	72570	86290
28	92350	91270	79450	93980	83500	85020	86040	87840	78250	87320	71780	86810
29	92350	93300	83000	94800	---	87450	85140	85910	76950	87580	71440	87190
30	92890	94940	83500	92620	---	89020	85270	85020	75200	89810	71780	87970
31	93160	---	84760	90210	---	89410	---	86680	---	90600	72910	---
MAX	94940	94940	93700	94800	98000	97160	100700	96600	90740	90600	92750	88100
MIN	88490	87580	73020	82880	83500	74270	77540	78130	72910	74850	71330	74850
(+)	82.92	83.05	82.28	82.70	82.18	82.64	82.32	82.43	81.49	82.73	81.29	82.53
(@)	+1350	+1780	-10180	+5450	-6710	+5910	-4140	+1410	-11480	+15400	-17690	+15060

CAL YR 1996 MAX 102200 MIN 23370 (@) +11510
WTR YR 1997 MAX 100700 MIN 71330 (@) -3840

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

NECHES RIVER MAIN STEM

08040600 NECHES RIVER NEAR TOWN BLUFF, TX

LOCATION.--Lat 30°47'27", long 94°09'03", Jasper-Tyler County line, Hydrologic Unit 12020003, on left bank 1.8 mi down stream from Town Bluff Dam, 2.0 mi northeast of Town Bluff, 1.0 mi upstream from Walnut Run, 6.5 mi downstream from Wolf Creek and at mile 114.9.

DRAINAGE AREA.--7,574 mi².

PERIOD OF RECORD.--March 1951 to current year. Prior to Oct. 27, 1989, published as Neches River at Town Bluff.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Dec. 4, 1954 to Oct. 27, 1989, water-stage recorder at site 1.5 mi upstream at same datum. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec. 3, 1954, nonrecording gage at former site at same datum.

REMARKS.--Records fair. Since installation of gage in water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake (station 08040000) 1.8 mi upstream and by Sam Rayburn Reservoir (station 08039300) 37.9 mi upstream. There are some diversions upstream from station. Prior to October 1989, published as "Neches River at Town Bluff, Tx." (station 08040500). Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1884 reached a stage about 86.8 ft (discharge, about 120,000 ft³/s) and is the highest since that date, from information by the U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1860	498	3210	3470	4860	13600	16500	17200	7960	5980	3330	3240
2	2080	653	2330	3240	4830	13400	16500	17200	8210	4180	3270	3150
3	2530	725	1400	2710	4150	13800	16400	17200	8540	3790	3240	2950
4	1760	553	1360	2020	2980	14800	16500	16800	8540	3710	3260	3640
5	1380	549	1350	1740	2140	16200	17700	15800	8270	3700	3250	3530
6	757	548	1310	1720	1710	17500	17800	15000	7210	3690	3250	3200
7	600	542	1330	1550	1830	17400	16900	14900	6410	3690	3260	3190
8	468	515	1270	1330	3070	17500	16600	13900	6650	3620	3280	3130
9	490	523	808	1540	3510	17700	16600	e11400	5630	3630	3260	3170
10	464	518	1210	2280	3460	18100	16500	e8950	4380	3640	3220	3170
11	472	517	1050	2280	3430	18800	16400	e7570	4280	3590	3210	3160
12	471	520	1050	2520	5070	18900	16400	e6800	4210	3600	3260	2780
13	473	526	984	3420	13600	19500	16400	e7030	4190	3600	3600	2360
14	473	530	876	3890	15700	19100	16500	8300	4150	3570	3940	2670
15	471	527	1000	3550	13800	17800	16900	11900	4140	3580	3850	2820
16	475	526	2610	3680	13500	17000	16900	12400	4140	3550	3910	2830
17	478	509	7140	3560	13400	16900	17100	13300	4150	3490	3930	2830
18	473	512	6910	3470	13400	17100	17600	14300	4560	3550	4110	2740
19	475	522	5880	3450	13400	18400	17600	14400	e5440	3310	4890	3000
20	477	515	4840	3430	13000	18400	17000	14300	e6040	3320	5210	3060
21	472	501	4410	2600	14200	17900	16300	13300	e6740	3460	5300	3060
22	480	501	3670	2740	15500	17200	16300	10900	e7120	3500	4390	2760
23	483	507	3570	4700	14000	16400	16300	7470	e7230	3510	3610	2830
24	478	1110	3550	4280	12600	16300	16600	5460	6590	3520	4260	3890
25	477	2650	3530	3480	15200	16300	17000	9230	5550	3410	3740	3960
26	492	1120	2280	3430	18500	16300	17400	13300	6310	3230	3590	2850
27	486	617	834	2710	17700	16300	17500	12200	6470	3220	3180	2970
28	663	602	917	3270	15900	16300	17500	10800	6510	3220	3310	3100
29	1010	599	1300	5150	---	16400	17500	10600	6510	3190	3600	3090
30	502	1190	3440	5620	---	16500	17300	9790	6450	3270	3250	3110
31	486	---	3540	5350	---	16500	---	8640	---	3480	3220	---
TOTAL	23156	20225	78959	98180	274440	524300	506500	370340	182580	111800	113980	92240
MEAN	747	674	2547	3167	9801	16910	16880	11950	6086	3606	3677	3075
MAX	2530	2650	7140	5620	18500	19500	17800	17200	8540	5980	5300	3960
MIN	464	498	808	1330	1710	13400	16300	5460	4140	3190	3180	2360
AC-FT	45930	40120	156600	194700	544400	1040000	1005000	734600	362100	221800	226100	183000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1997#, BY WATER YEAR (WY)

	MEAN	2230	2637	4311	6064	7235	8291	7874	9249	5846	3807	2477	2208
MAX	13040	18490	18170	25690	20800	26430	20220	48140	17000	22870	8252	6652	
(WY)	1995	1958	1961	1961	1974	1992	1969	1953	1979	1989	1979	1973	
MIN	88.1	32.0	18.6	120	252	1178	1231	1003	856	756	288	124	
(WY)	1955	1957	1957	1957	1981	1971	1981	1971	1956	1964	1951	1956	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1951 - 1997#

ANNUAL TOTAL	674805	2396700	
ANNUAL MEAN	1844	6566	5216
HIGHEST ANNUAL MEAN			12010
LOWEST ANNUAL MEAN			961
HIGHEST DAILY MEAN	17300	19500	90100
LOWEST DAILY MEAN	464	464	.00
ANNUAL SEVEN-DAY MINIMUM	471	471	.00
INSTANTANEOUS PEAK FLOW		19900	90900
INSTANTANEOUS PEAK STAGE		67.38	82.85
ANNUAL RUNOFF (AC-FT)	1338000	4754000	3779000
10 PERCENT EXCEEDS	2810	16900	14700
50 PERCENT EXCEEDS	1570	3600	2880
90 PERCENT EXCEEDS	523	526	492

e Estimated

Period of regulated streamflow.

NECHES RIVER MAIN STEM

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08041000 NECHES RIVER AT EVADALE, TX

LOCATION.--Lat 30°21'20", long 94°05'35", Jasper-Hardin County line, Hydrologic Unit 12020003, near right bank on downstream side of bridge on U.S. Highway 96 at Evadale, 0.8 mi upstream from Mill Creek, 16 mi upstream from Village Creek, and at mile 55.6.

DRAINAGE AREA.--7,951 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1904 to December 1906, April 1921 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 718: 1929. WSP 1342: 1905-07, 1924. WSP 1732: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 8.25 ft above sea level. July 1, 1904, to Dec. 31, 1906, nonrecording gage on Gulf, Colorado, and Santa Fe Railway Co. bridge at site 1.2 mi downstream at datum 5.50 ft lower; Apr. 1, 1921, to Dec. 7, 1948, nonrecording gages at site 1.2 mi downstream at present datum; Dec. 8, 1948, to Nov. 8, 1963, water-stage recorder at site 1.2 mi downstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake 58.1 mi upstream. Additional regulation by Sam Rayburn Reservoir 95.7 mi upstream. There are some diversions upstream for municipal use. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--31 years (water years 1905-06, 1922-50) 7,089 ft³/s (5,136,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1905-06, 1922-50).--Maximum discharge, 92,100 ft³/s May 11, 1944 (gage height, 23.58 ft, from floodmark), at site then in use; minimum daily, 148 ft³/s Sept. 10, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 26.2 ft, at former site (discharge, about 125,000 ft³/s), and flood in August 1915 reached a stage of 24.5 ft, at former site (discharge, about 102,000 ft³/s). These are the highest floods since at least 1884. Stages furnished by Gulf, Colorado, and Santa Fe Railway Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9690	556	857	3110	5520	21600	18100	19500	11100	7050	4430	3560
2	5110	548	2320	3210	5130	20100	18100	19300	9880	6850	4190	3530
3	2550	552	2650	3120	4850	17700	18200	19000	9190	5810	3850	3490
4	2520	658	1740	2700	4490	16200	18500	18800	9110	4800	3680	3380
5	1930	622	1420	2100	3530	15800	19300	18700	9180	4380	3620	3620
6	1560	567	1330	1680	2510	16200	19900	18500	9170	4250	3590	3870
7	1100	564	1260	1560	1900	17300	20700	17800	9390	4230	3580	3610
8	862	566	1240	1490	1780	18500	20700	16900	8820	4220	3590	3490
9	680	548	1210	1290	2520	19200	19900	16400	8160	4190	3610	3420
10	614	e535	1120	1260	3260	19400	19100	15300	7550	4130	3630	3420
11	583	e535	969	1740	3370	19600	18700	12200	6280	4110	3650	3430
12	567	e530	1030	1990	3600	20100	18600	9290	5520	4070	3640	3420
13	551	e522	1030	2150	5850	21700	18400	7730	5210	4030	3650	3210
14	e545	e510	1010	2810	9400	22200	18200	7010	5060	4030	3810	2660
15	e540	e512	964	3440	13100	22400	18200	7320	4960	4050	4180	2750
16	e530	e540	1190	3420	16700	22200	18200	9270	4900	4010	4270	2960
17	e526	578	3100	3480	17300	21200	18400	11400	4890	3970	4250	3000
18	e517	643	6110	3410	16500	20400	18500	12900	4930	3920	4300	3010
19	e510	668	7000	3300	15800	20700	18700	14000	5200	3920	4390	2950
20	e505	662	6630	3240	15500	20800	19000	15300	6090	3820	4840	3050
21	e501	624	5480	3210	15900	21200	19200	17100	6690	3660	5350	3250
22	e496	588	4230	2840	15600	21200	19000	16600	7360	3740	5500	3270
23	e492	554	3680	2420	15900	20700	18400	15500	7720	3810	5370	3180
24	e484	559	3490	3980	17000	19900	18000	13600	7820	3850	4410	3050
25	e490	705	3380	4480	18000	19000	18000	11900	7720	3860	4510	3620
26	e525	1910	3300	3830	17500	18800	19100	10700	7200	3820	4350	4290
27	563	1600	2730	3470	18800	18700	19500	11900	6850	3620	4060	3470
28	554	998	1360	3980	21200	18500	19900	13700	6940	3530	3770	3170
29	550	789	899	4100	---	18300	19900	13800	7030	3510	3520	3270
30	761	767	951	5060	---	18200	19800	13000	7080	3730	3860	3290
31	707	---	2250	5540	---	18200	---	12200	---	4240	3680	---
TOTAL	38113	20510	75930	93410	292510	606000	568200	436620	217000	131210	127130	99690
MEAN	1229	684	2449	3013	10450	19550	18940	14080	7233	4233	4101	3323
MAX	9690	1910	7000	5540	21200	22400	20700	19500	11100	7050	5500	4290
MIN	484	510	857	1260	1780	15800	18000	7010	4890	3510	3520	2660
AC-FT	75600	40680	150600	185300	580200	1202000	1127000	866000	430400	260300	252200	197700

NECHES RIVER MAIN STEM

08041000 NECHES RIVER AT EVADALE, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1997#, BY WATER YEAR (WY)

MEAN	2435	2788	4728	6781	7943	9070	8715	9845	6599	4374	2733	2375
MAX	15780	16580	18680	31060	22720	28790	21440	46790	19920	25680	9644	7090
(WY)	1995	1958	1961	1961	1995	1992	1995	1953	1991	1989	1979	1979
MIN	169	110	143	159	394	1352	1432	1220	1112	863	358	194
(WY)	1955	1957	1957	1957	1957	1971	1981	1981	1963	1955	1951	1956

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1951 - 1997#	
ANNUAL TOTAL	674103		2706323			
ANNUAL MEAN	1842		7415		5688	
HIGHEST ANNUAL MEAN					13480	
LOWEST ANNUAL MEAN					1128	
HIGHEST DAILY MEAN	11100	Sep 30	22400	Mar 15	80000	May 24 1953
LOWEST DAILY MEAN	484	Oct 24	484	Oct 24	63	Nov 26-28 1956
ANNUAL SEVEN-DAY MINIMUM	497	Oct 19	497	Oct 19	66	Nov 23 1956
INSTANTANEOUS PEAK FLOW			22500	Mar 15	47900	Jul 6 1989
INSTANTANEOUS PEAK STAGE			16.96	Mar 15	20.79	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	1337000		5368000		4121000	
10 PERCENT EXCEEDS	2880		19000		15900	
50 PERCENT EXCEEDS	1530		4050		3120	
90 PERCENT EXCEEDS	555		586		641	

e Estimated

Period of regulated streamflow.

NECHES RIVER MAIN STEM

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08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: September 1939 to August 1994. Pesticide analyses: February 1968 to July 1981.
Sediment analyses: October 1960 to August 1994.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to current year.

WATER TEMPERATURE: October 1947 to current year.

INSTRUMENTATION.--From October 1954 to September 1963, water temperature was continuously recorded at this station.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 670 microsiemens Mar. 21, 25, 31, 1994; minimum daily, 23 microsiemens Sept. 19, 1963.

WATER TEMPERATURE (1947-85, 1987 to current year): Maximum daily, 36.0°C many days in Aug. 1997; minimum daily, 3.0°C Jan. 30, 31, 1948, Jan. 31, 1949, and Jan 24, 1963.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 294 microsiemens Apr. 6; minimum daily, 100 microsiemens Feb. 27.

WATER TEMPERATURE: Maximum daily, 36.0°C many days in Aug.; minimum daily, 6.0°C several days in Feb.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	38113	132	82	8430	17	1710	19	1940	29
NOV.	1996	20510	131	82	4520	16	910	19	1040	29
DEC.	1996	75930	171	99	20340	22	4500	24	4960	35
JAN.	1997	93410	193	108	27130	25	6310	27	6840	37
FEB.	1997	292510	136	83	65360	17	13550	19	15290	29
MAR.	1997	606000	162	95	155200	21	33910	23	37530	33
APR.	1997	568200	195	106	163400	25	39080	27	41920	37
MAY	1997	436620	185	105	123300	24	28300	26	30780	36
JUNE	1997	217000	169	98	57590	22	12690	24	14000	34
JULY	1997	131210	175	101	35760	23	8000	25	8780	35
AUG.	1997	127130	169	99	33820	22	7430	24	8210	34
SEPT	1997	99690	160	95	25570	20	5500	23	6120	33
TOTAL		2706323.00	**	**	720400	**	161900	**	177400	**
WTD. AVG.		7410	172	99	**	22	**	24	**	34

NECHES RIVER MAIN STEM

08041000 NECHES RIVER AT EVADALE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	119	136	204	199	127	224	174	156	149	168	156
2	127	130	149	181	180	135	191	164	174	151	161	158
3	130	130	140	202	206	135	191	213	150	168	153	159
4	112	124	148	189	212	114	245	198	231	193	175	159
5	123	125	152	196	202	146	197	216	155	155	163	159
6	128	126	188	186	206	142	294	179	175	165	161	159
7	174	126	176	185	206	147	184	220	158	167	166	159
8	132	126	159	193	202	157	284	220	163	162	186	161
9	154	125	174	194	235	106	170	175	159	162	168	160
10	192	129	166	177	172	152	139	173	149	166	169	161
11	198	131	165	193	175	147	123	199	159	167	179	160
12	144	129	217	194	164	198	189	202	162	192	185	160
13	138	129	175	194	139	174	127	202	198	207	162	161
14	132	130	182	202	169	137	142	182	163	180	204	160
15	132	132	165	195	194	132	143	211	180	174	166	160
16	131	133	153	213	158	188	175	179	164	176	172	162
17	130	132	164	181	149	234	148	187	181	170	195	160
18	130	133	180	213	111	212	193	172	174	174	167	162
19	132	125	174	203	131	197	234	185	159	192	173	160
20	132	130	168	229	102	157	227	177	154	186	174	160
21	140	126	178	208	116	152	200	209	195	169	176	162
22	130	127	151	200	111	130	195	170	186	170	186	162
23	132	130	158	195	123	172	260	221	173	174	168	160
24	130	136	171	194	108	173	177	174	169	182	156	161
25	128	138	170	200	112	196	197	190	164	216	156	160
26	144	136	193	196	125	177	283	153	174	172	156	160
27	127	136	173	196	100	151	171	160	176	170	156	161
28	121	128	185	175	109	169	165	158	159	170	156	160
29	117	134	222	154	---	176	164	148	158	174	156	160
30	120	146	197	164	---	179	194	138	151	246	156	160
31	124	---	199	183	---	187	---	167	---	182	156	---
MEAN	136	130	172	193	158	161	194	184	169	177	169	160

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.0	23.0	15.0	11.0	7.0	7.0	13.0	14.0	21.0	30.0	35.0	35.5
2	29.0	21.0	15.0	11.0	7.0	7.5	13.0	14.0	25.0	30.0	35.0	35.5
3	29.0	21.0	15.0	11.0	7.0	7.5	13.0	14.0	25.0	30.0	35.0	35.5
4	29.0	21.0	15.0	11.0	7.0	8.0	13.0	16.0	25.0	30.0	36.0	34.5
5	29.0	21.0	13.0	11.0	6.5	8.5	13.0	16.0	25.0	31.0	36.0	34.0
6	29.0	21.0	14.0	10.0	6.5	8.5	14.0	16.0	25.0	31.0	36.0	33.5
7	29.0	21.0	13.0	10.0	6.5	9.0	14.0	16.0	25.0	31.0	36.0	33.0
8	29.0	21.0	14.0	10.0	6.5	9.5	14.0	16.0	26.0	31.0	36.0	32.5
9	29.0	21.0	13.0	9.5	6.5	10.0	14.0	16.0	26.0	31.0	36.0	32.0
10	29.0	19.0	13.0	9.5	6.5	10.0	14.0	16.0	26.0	31.0	36.0	32.0
11	29.0	19.0	13.0	9.5	6.5	10.0	14.0	17.0	26.0	31.0	36.0	32.0
12	29.0	19.0	13.0	9.0	6.5	10.0	14.0	17.0	26.0	31.0	36.0	32.0
13	27.0	19.0	13.0	9.0	6.5	10.0	14.0	17.0	26.0	34.0	36.0	32.0
14	27.0	19.0	13.0	9.0	6.0	10.0	14.0	17.0	26.0	34.0	36.0	32.5
15	27.0	19.0	13.0	8.5	6.0	10.0	14.5	17.0	25.0	34.0	36.0	32.5
16	27.0	17.0	11.0	8.5	6.0	10.0	14.0	17.0	27.0	34.0	36.0	33.0
17	27.0	17.0	11.0	8.5	6.0	10.0	14.0	19.0	27.0	34.0	36.0	33.0
18	27.0	17.0	11.0	8.5	6.0	10.0	14.0	17.0	27.0	35.0	36.0	33.0
19	27.0	17.0	11.0	8.0	6.0	10.0	14.0	17.0	27.0	34.0	36.0	32.5
20	25.0	17.0	11.0	8.0	6.0	12.0	14.0	18.0	27.0	35.0	36.0	32.5
21	25.0	17.0	13.0	8.0	6.0	12.0	14.0	18.0	27.0	34.0	36.0	32.5
22	25.0	17.0	11.0	8.0	6.0	12.0	14.0	17.0	27.0	34.0	36.0	32.5
23	23.0	17.0	11.0	8.0	6.0	12.0	14.0	17.0	29.0	34.0	36.0	32.0
24	25.0	17.0	11.0	7.5	6.0	12.0	14.0	18.0	29.0	34.0	36.0	32.0
25	23.0	17.0	11.0	7.5	6.0	12.0	14.0	17.0	27.0	34.0	36.0	32.0
26	23.0	15.0	11.0	7.5	6.0	12.0	14.0	18.0	27.0	34.0	36.0	32.0
27	23.0	15.0	11.0	7.5	6.0	12.0	14.0	18.0	27.0	35.0	36.0	32.0
28	23.0	15.0	11.0	7.5	6.0	12.0	14.0	18.0	27.0	35.0	36.0	32.0
29	23.0	15.0	11.0	7.0	---	12.0	14.0	18.0	27.0	35.0	36.0	32.0
30	23.0	15.0	11.0	7.0	---	13.0	14.0	18.0	27.0	35.0	36.0	32.0
31	23.0	---	11.0	7.0	---	13.0	---	18.0	---	35.0	36.0	---
MEAN	26.5	18.5	12.5	9.0	6.5	10.5	14.0	17.0	26.0	33.0	36.0	33.0

08041500 VILLAGE CREEK NEAR KOUNTZE, TX

LOCATION.--Lat 30°23'52", long 94°15'48", Hardin County, Hydrologic Unit 12020006, on downstream side of bridge on Farm Road 418, 1.6 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.1 mi upstream from Cypress Creek, 3.4 mi northeast of Kountze and 4.3 mi downstream from Beech Creek.

DRAINAGE AREA.--860 mi².

PERIOD OF RECORD.--May 1924 to September 1927, October 1927 to November 1929 (discharge measurements only), April 1939 to current year. Water-quality records: November 1967 to September 1985.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 25.12 ft above sea level. Prior to Apr. 30, 1939, nonrecording gage at site 1.6 mi downstream at different datum. Apr. 30, 1939, to Sept. 30, 1966, water-stage recorder at site 2,000 ft downstream at present datum.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are small diversions above station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1884, about 34 ft in August 1915 at site 2,000 ft downstream at present datum; stage was determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi downstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 16	1300	8,190	17.55	Mar. 16	1200	6,760	16.80
Feb. 28	1400	8,780	17.83	Apr. 8	1500	7,050	16.96

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7350	274	525	1490	1200	7120	918	1810	874	695	538	121
2	4410	245	682	1390	1040	5190	783	1420	770	496	646	113
3	2660	226	863	1090	775	3980	711	961	627	402	549	109
4	1250	208	682	799	649	3170	846	699	484	349	358	106
5	706	196	499	669	621	2730	2160	608	396	312	257	125
6	573	189	430	595	599	2510	3760	562	346	284	211	131
7	505	188	387	541	551	2150	4750	503	944	266	197	123
8	457	188	354	503	563	1700	6440	450	3520	254	190	122
9	413	196	325	518	771	1340	5640	415	4650	255	182	116
10	368	265	306	562	1030	1130	3810	394	4280	279	335	113
11	333	285	287	593	1070	1010	2390	378	3210	231	623	119
12	304	248	275	586	1070	1020	1500	359	2430	216	518	147
13	279	216	267	540	2260	1670	1100	345	2080	200	401	177
14	259	199	262	547	4130	3100	957	327	1660	186	322	157
15	245	186	268	648	5810	4560	858	310	1170	177	280	132
16	234	187	661	822	7810	6450	765	311	764	166	241	116
17	225	219	1600	970	6280	5280	690	437	587	161	205	107
18	218	256	2150	1120	4190	3800	636	509	528	151	181	102
19	206	270	2490	1100	2750	3140	594	524	575	147	166	98
20	202	282	2790	845	1700	2850	564	462	780	162	155	94
21	205	270	2610	660	1380	2780	542	608	681	157	145	91
22	204	243	1670	622	1810	3860	532	544	607	165	139	89
23	195	221	948	802	2310	4180	534	553	557	168	144	103
24	192	222	793	1240	3010	2950	550	858	552	153	183	118
25	244	410	729	1470	5050	1960	543	2830	561	163	292	173
26	326	640	653	1400	5600	1360	861	3790	660	179	310	338
27	500	832	594	1260	6300	1180	1400	3110	835	189	238	317
28	561	800	568	1590	8340	1250	1780	2220	1010	196	189	237
29	479	579	743	1650	---	1230	2050	1430	1080	186	159	185
30	373	446	934	1410	---	1170	2050	811	937	193	143	157
31	308	---	1270	1350	---	1100	---	796	---	337	131	---
TOTAL	24784	9186	27615	29382	78669	86920	50714	29334	38155	7475	8628	4236
MEAN	799	306	891	948	2810	2804	1690	946	1272	241	278	141
MAX	7350	832	2790	1650	8340	7120	6440	3790	4650	695	646	338
MIN	192	186	262	503	551	1010	532	310	346	147	131	89
AC-FT	49160	18220	54770	58280	156000	172400	100600	58180	75680	14830	17110	8400
CFSM	.93	.36	1.04	1.10	3.27	3.26	1.97	1.10	1.48	.28	.32	.16
IN.	1.07	.40	1.19	1.27	3.40	3.76	2.19	1.27	1.65	.32	.37	.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1997, BY WATER YEAR (WY)

	MEAN	392	708	1057	1478	1458	1220	1175	1175	874	488	258	319
MAX	4743	6430	5835	5693	4420	3311	6733	6932	6668	4963	1580	2111	
(WY)	1995	1941	1941	1974	1966	1992	1979	1953	1950	1989	1975	1961	
MIN	22.8	34.9	115	113	169	206	104	89.5	69.5	31.1	28.8	26.5	
(WY)	1968	1968	1955	1957	1968	1940	1971	1963	1956	1971	1956	1956	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1924 - 1997

ANNUAL TOTAL	168738	395098	
ANNUAL MEAN	461	1082	883
HIGHEST ANNUAL MEAN			2248
LOWEST ANNUAL MEAN			190
HIGHEST DAILY MEAN	18400	Sep 29	62200
LOWEST DAILY MEAN	61	Aug 9	16
ANNUAL SEVEN-DAY MINIMUM	70	Aug 3	18
INSTANTANEOUS PEAK FLOW			67200
INSTANTANEOUS PEAK STAGE			27.60
ANNUAL RUNOFF (AC-FT)	334700	783700	639500
ANNUAL RUNOFF (CFSM)	.54	1.26	1.03
ANNUAL RUNOFF (INCHES)	7.30	17.09	13.95
10 PERCENT EXCEEDS	682	2890	2140
50 PERCENT EXCEEDS	222	553	330
90 PERCENT EXCEEDS	100	162	81

NECHES RIVER BASIN

08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX

LOCATION.--Lat 30°06'21", long 94°20'04", Jefferson-Hardin County line, Hydrologic Unit 12020007, on right bank on downstream side of bridge on county road and 5.1 mi southeast of Sour Lake.

DRAINAGE AREA.--336 mi².

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

Water-quality records.--Chemical analyses: February 1968 to June 1989. Specific conductance: February 1968 to September 1989. Water temperature: February 1968 to September 1989.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Records good. No known regulation. Low flow for period March through September is affected by small diversions and return flow from irrigated fields. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s :

	Date	Time	Discharge (ft ³ /s)	Gage height (ft)		Date	Time	Discharge (ft ³ /s)	Gage height (ft)			
	Oct. 1	0015	4,040	27.71								
	DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES											
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3860	41	100	258	1160	2040	673	677	214	27	147	25
2	3390	76	71	267	1160	2050	529	715	157	28	110	24
3	2940	34	54	240	1100	1960	381	705	110	25	88	21
4	2490	21	50	202	972	1800	316	563	79	32	69	20
5	2050	17	45	156	739	1590	597	294	53	29	55	22
6	1670	14	38	118	433	1340	1060	144	44	28	50	17
7	1270	19	31	120	218	1090	1450	95	41	35	49	13
8	929	19	24	145	146	807	1750	64	79	55	47	14
9	572	13	19	144	131	515	1950	46	94	107	52	12
10	266	11	16	126	139	293	1970	42	75	106	55	20
11	141	9.3	14	108	139	185	1850	39	71	87	63	22
12	93	8.3	13	95	354	442	1620	35	65	75	60	20
13	65	7.8	12	130	1340	1320	1290	30	48	62	62	15
14	55	7.7	12	193	1640	1580	864	25	33	53	64	12
15	38	7.6	42	235	1930	1830	413	19	29	44	53	12
16	29	93	e320	270	2040	2180	189	21	25	35	51	10
17	34	332	e550	261	2060	2850	119	26	39	39	52	8.6
18	35	319	677	233	2070	2990	84	28	47	39	44	e8.0
19	18	148	684	202	1980	3380	62	30	35	36	46	7.7
20	15	66	644	168	1810	3070	49	21	32	43	e41	7.0
21	14	36	552	135	1690	2680	41	21	36	39	39	6.7
22	12	23	462	112	1400	2350	39	40	32	e58	38	7.6
23	11	17	367	97	1130	2140	33	83	28	e43	52	17
24	10	32	254	113	970	1910	28	469	30	43	65	19
25	38	145	179	208	1300	1630	24	981	28	38	72	14
26	130	109	128	344	1480	1340	110	1200	24	36	56	12
27	78	76	105	394	1760	1050	318	1220	28	34	48	11
28	46	60	90	391	1950	813	475	1020	29	33	34	9.3
29	34	54	78	563	---	636	549	654	25	49	32	8.1
30	28	111	121	831	---	520	612	331	25	109	34	7.4
31	23	---	194	1060	---	623	---	258	---	133	29	---
TOTAL	20384	1926.7	5946	7919	33241	49004	19445	9896	1655	1600	1757	422.4
MEAN	658	64.2	192	255	1187	1581	648	319	55.2	51.6	56.7	14.1
MAX	3860	332	684	1060	2070	3380	1970	1220	214	133	147	25
MIN	10	7.6	12	95	131	185	24	19	24	25	29	6.7
AC-FT	40430	3820	11790	15710	65930	97200	38570	19630	3280	3170	3490	838

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

	MEAN	490	368	560	694	637	604	614	537	643	394	183	205
MAX	8080	2095	2159	2206	1850	1838	4972	3589	2795	3291	1660	1487	
(WY)	1995	1987	1987	1974	1992	1993	1979	1989	1981	1989	1983	1979	
MIN	2.90	2.48	12.4	4.75	13.5	14.7	21.4	24.4	37.8	33.4	12.3	10.1	
(WY)	1970	1989	1990	1971	1989	1996	1987	1996	1984	1980	1977	1984	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR			FOR 1997 WATER YEAR			WATER YEARS 1968 - 1997		
ANNUAL TOTAL	68062.7			153196.1			493		
ANNUAL MEAN	186			420			1167		
HIGHEST ANNUAL MEAN							133		
LOWEST ANNUAL MEAN							1970		
HIGHEST DAILY MEAN	3910	Sep 30		3860	Oct 1		47400	Oct 20	1994
LOWEST DAILY MEAN	5.5	Mar 23		6.7	Sep 21		.00	Oct 21	1979
ANNUAL SEVEN-DAY MINIMUM	6.5	Mar 18		7.9	Sep 16		.62	Sep 14	1984
INSTANTANEOUS PEAK FLOW				4040	Oct 1		48800	Oct 20	1994
INSTANTANEOUS PEAK STAGE				27.71	Oct 1		37.50	Oct 20	1994
ANNUAL RUNOFF (AC-FT)	135000			303900			357400		
10 PERCENT EXCEEDS	464			1600			1360		
50 PERCENT EXCEEDS	34			76			87		
90 PERCENT EXCEEDS	11			16			9.9		

e Estimated

TAYLOR BAYOU MAIN STEM

311

08042000 TAYLOR BAYOU NEAR LABELLE, TX

LOCATION.--Lat 29°52'30", long 94°09'34", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 0.7 mi south of LaBelle, 6.0 mi upstream from Hillebrandt Bayou, 7.2 mi upstream from State Highway 73 and 11.2 mi upstream from saltwater gates and barge locks. Distances are measured along rectified channel.

DRAINAGE AREA.--262 mi².

PERIOD OF RECORD.--April 1954 to September 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for period Sept. 10-22, 1961). October 1984 to current year (gage heights only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by several comparisons of water surface with auxiliary water-stage recorder 7.2 mi downstream during times of no flow and ideal weather conditions. Prior to October 1984, auxiliary water-stage recorder 7.2 mi downstream.

REMARKS.--Records poor. Prior to October 1984, records were computed using fall as a factor. Low flow is regulated by drainage from ricefields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for irrigation of ricefields.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,590 ft³/s Sept. 22, 1963, and Apr. 23, 1979; maximum gage height, 11.78 ft Sept. 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft July 17, 1954. Maximum stage since at least 1941, that of Sept. 20, 1963, and Apr. 23, 1979. Flood of Sept. 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.4 ft Oct. 1 at 0600 hours; minimum, 5.1 ft June 21 at 0330 hours.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.39	---	---	6.17	---	---	5.99	6.06	5.99	5.77	5.98	5.65
2	8.17	---	---	6.18	---	---	6.18	6.06	5.93	5.69	6.08	5.67
3	7.58	---	---	6.00	---	---	6.21	6.12	5.60	5.51	5.95	5.64
4	7.30	---	---	6.06	---	---	6.36	5.92	5.71	5.41	5.66	5.68
5	7.37	---	---	6.09	---	6.08	6.70	6.03	5.80	5.33	5.70	5.67
6	7.48	---	---	5.87	---	5.99	6.87	6.08	5.89	5.40	5.78	5.80
7	7.55	---	---	6.90	---	5.96	6.51	6.12	6.05	5.53	5.82	5.86
8	7.61	---	---	6.99	---	6.07	6.42	6.17	6.19	5.77	5.90	5.92
9	7.42	---	---	6.69	---	6.13	6.43	6.24	6.29	5.92	5.96	6.01
10	6.72	---	---	5.90	---	6.14	6.47	6.08	6.47	5.81	6.05	6.00
11	6.34	---	---	5.75	---	6.18	6.53	6.18	6.40	5.82	5.76	5.67
12	6.39	---	---	6.09	---	6.82	6.53	6.17	6.28	5.91	5.93	5.70
13	6.37	---	---	6.50	---	7.44	6.07	6.09	6.22	5.78	6.00	6.07
14	6.38	---	---	6.55	---	7.38	5.99	5.96	6.20	5.92	5.77	5.73
15	6.40	---	---	6.65	---	6.55	6.04	5.75	5.98	6.09	5.91	5.56
16	6.40	---	---	6.50	---	6.50	6.05	5.96	5.96	6.15	6.00	5.64
17	6.30	---	---	5.92	---	6.70	6.04	6.05	6.31	6.06	6.05	5.71
18	6.33	---	---	5.96	---	7.00	5.87	6.12	6.30	6.09	5.75	5.76
19	6.05	---	---	6.04	---	7.14	5.98	6.19	6.25	6.17	5.84	5.83
20	6.20	---	---	5.68	---	6.42	6.01	6.04	5.91	5.79	5.85	5.90
21	6.29	---	---	5.71	---	5.95	5.93	6.16	5.72	5.62	5.82	5.99
22	6.49	---	---	5.86	---	6.09	6.06	6.23	5.96	5.74	5.85	6.02
23	5.65	---	5.82	---	---	6.09	5.69	6.17	5.92	5.77	5.86	6.34
24	6.28	---	5.94	---	---	6.09	5.83	6.50	5.96	5.80	5.97	6.47
25	7.18	---	5.60	---	---	6.27	6.33	6.62	5.89	5.80	6.00	5.84
26	7.48	---	5.85	---	---	6.42	6.86	6.57	5.79	5.81	5.94	5.29
27	7.34	---	5.99	---	---	6.27	6.88	6.45	5.76	5.73	5.71	5.26
28	6.94	---	6.02	---	---	6.39	6.73	6.25	5.76	5.79	5.85	5.42
29	6.61	---	5.77	---	---	6.41	5.85	6.01	5.82	5.69	5.59	5.47
30	---	---	5.81	---	---	6.35	6.01	6.02	5.78	5.62	5.58	5.47
31	---	---	5.94	---	---	5.85	---	6.23	---	5.98	5.59	---
MAX	---	---	---	---	---	---	6.88	6.62	6.47	6.17	6.08	6.47

TAYLOR BAYOU BASIN

08042500 HILLEBRANDT BAYOU NEAR LOVELL LAKE, TX

LOCATION.--Lat 29°55'44", long 94°06'35", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 1.3 mi southeast of Lovell Lake and 4.4 mi upstream (along rectified channel) from Taylor Bayou.

DRAINAGE AREA.--128 mi².

PERIOD OF RECORD.--April 1954 to September 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for the period September 11-18, 1961). October 1984 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by comparisons of water surface with Taylor Bayou near LaBelle, an auxiliary gage 5.6 mi downstream, during times of no flow and calm wind conditions. Prior to Aug. 28, 1963, auxiliary water-stage recorder on Taylor Bayou, 1.2 mi downstream from Hillebrandt Bayou, nonrecording gages on Taylor Bayou 2.3 and 5.2 mi downstream from Hillebrandt Bayou; Aug. 28, 1963, to Sept. 30, 1984, auxiliary water-stage recorder 3.0 mi downstream. Gage was destroyed on Aug. 24, 1991 and re-installed on Mar. 4, 1992.

REMARKS.--Records good. Prior to October 1984, records were computed using fall as a factor. Low flow regulated by drainage from ricefields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s Sept. 18, 1963; maximum gage height, 12.34 ft Sept. 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft July 17, 1954. Maximum stage since at least 1941, 12.34 ft Sept. 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.7 ft Oct. 8, at 1645 hours; minimum, 5.1 ft Nov. 26, at 1415 hours.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.12	6.34	6.39	6.27	6.09	6.81	6.20	6.23	6.15	5.92	6.12	5.81
2	7.02	6.38	5.95	6.28	6.09	6.81	6.37	6.23	6.04	5.80	6.22	5.82
3	7.07	6.15	6.11	6.14	6.11	6.46	6.38	6.29	5.69	5.69	6.06	5.80
4	7.28	6.27	6.00	6.22	6.26	6.27	6.57	6.03	5.81	5.55	5.88	5.81
5	7.52	6.28	6.16	6.19	5.94	6.28	6.89	6.19	5.85	5.63	5.88	5.80
6	7.66	6.34	6.09	5.93	5.91	6.14	7.05	6.25	5.93	5.70	5.92	5.86
7	7.69	6.58	6.02	6.79	6.01	6.17	6.68	6.30	6.01	5.82	5.94	6.01
8	7.74	6.26	5.90	6.81	6.02	6.31	6.59	6.30	6.21	5.98	6.01	6.08
9	7.20	6.16	5.95	6.69	5.88	6.41	6.57	6.38	6.32	6.11	6.10	6.17
10	6.77	6.25	5.89	5.98	5.94	6.41	6.66	6.23	6.40	5.99	6.13	6.17
11	6.49	5.88	5.93	5.83	5.75	6.42	6.73	6.29	6.32	5.91	5.81	5.87
12	6.54	5.79	5.73	6.14	7.64	6.95	6.71	6.29	6.34	5.94	5.99	5.88
13	6.54	5.98	5.81	6.45	7.65	7.42	6.27	6.27	6.32	5.81	6.13	6.26
14	6.54	6.14	5.77	6.56	6.43	7.05	6.17	6.06	6.31	5.93	5.93	5.91
15	6.57	6.08	6.22	6.79	6.43	6.53	6.23	5.84	6.09	6.18	6.03	5.88
16	6.58	7.05	6.67	6.53	6.31	6.70	6.25	5.95	6.05	6.03	6.20	5.82
17	6.51	7.67	6.26	5.98	6.27	6.93	6.22	6.06	6.34	5.99	6.25	5.90
18	6.48	7.44	5.97	6.08	6.20	7.24	6.01	6.19	6.32	6.13	5.99	5.94
19	6.29	7.05	5.89	6.16	6.27	7.26	6.12	6.25	6.32	6.18	5.97	5.98
20	6.40	6.82	5.82	5.79	6.59	6.14	6.16	6.12	6.00	5.83	5.99	6.01
21	6.58	6.83	6.11	5.85	6.91	6.12	6.08	6.22	5.77	5.91	5.98	6.10
22	6.71	6.69	6.18	5.95	6.11	6.30	6.21	6.30	5.94	5.94	5.85	6.23
23	5.85	6.44	6.17	5.91	6.08	6.29	5.85	6.28	6.00	5.94	5.99	6.46
24	6.52	6.64	5.98	5.98	6.63	6.30	5.97	6.61	6.00	5.91	6.05	6.63
25	7.41	6.67	5.69	5.88	6.95	6.46	6.47	6.64	6.13	5.86	6.14	5.97
26	7.63	5.91	5.94	5.99	7.04	6.59	6.98	6.52	6.02	5.83	6.13	5.41
27	7.48	5.73	6.09	6.10	6.93	6.49	7.00	6.50	5.96	5.80	5.91	5.39
28	7.10	5.89	6.16	6.48	6.68	6.60	6.84	6.37	5.92	5.98	5.99	5.53
29	6.79	6.03	5.89	6.11	---	6.59	5.99	6.08	5.94	5.86	5.76	5.61
30	6.51	6.37	5.89	6.11	---	6.54	6.18	6.19	5.98	5.80	5.75	5.61
31	6.28	---	6.02	6.05	---	5.98	---	6.40	---	6.19	5.76	---
MAX	7.74	7.67	6.67	6.81	7.65	7.42	7.05	6.64	6.40	6.19	6.25	6.63

e Estimated

TRINITY RIVER MAIN STEM

08043000 BRIDGEPORT RESERVOIR ABOVE BRIDGEPORT, TX

LOCATION.--Lat 33°13'22", long 97°49'54", Wise County, Hydrologic Unit 12030101, in brick valve house on upstream side and near left end of Bridgeport Dam on West Fork Trinity River, 4.6 mi west of Bridgeport, 13 mi upstream from Big Sandy Creek and at mile 626.

DRAINAGE AREA.--1,111 mi².

PERIOD OF RECORD.--April 1932 to current year. Prior to October 1950, end-of-month values only.
Water-quality records.--Chemical analyses: October 1969 to September 1984.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Jan. 12, 1988, nonrecording gages at various sites in vicinity of present gage at present datum.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 2,040 ft long. The dam was completed in December 1931 and storage began Apr. 1, 1932. The original dam was 1,900 ft long, but was lengthened to the present length (2,040 ft) in 1971-72. The original service spillway was eliminated during construction (1971-72), and a new spillway with approach and discharge channels was built through natural ground 2,800 ft from the left end of dam. The new spillway is 90 ft wide and has eight vertical lift gates that are 11.25 x 22-ft. The controlled outlet works consist of a 48-inch diameter and an 18-inch diameter pipe encased in a concrete conduit extending through the dam. In addition, a controlled 60-inch diameter steel pipe extends through the service spillway wall to the spillway discharge basin. For elevations of outlet works, see table below. Capacity tables are based on surveys made in 1956 and 1968. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	874.0	--
Crest of spillway	866.0	889,700
Top of gates	842.0	457,000
Top of conservation pool	836.0	374,800
Sill of gates	820.0	202,200
Lowest value outlet (invert)	751.4	0

COOPERATION.--Capacity table No. 5-C was provided by Tarrant Regional Water District. The table was put into use Oct. 1, 1988.

EXTREMES FOR PERIOD OF RECORD.--Prior to Jan. 12, 1988, once-daily reading of nonrecording gage at 0700 hours; maximum contents observed, 491,700 acre-ft May 5, 1990 (elevation, 844.36 ft); minimum contents observed since first appreciable storage in 1935, 7,170 acre-ft Oct. 12-16, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 401,300 acre-ft Feb. 22 at 2230 hours (elevation, 838.01 ft); minimum 290,600 acre-ft Oct. 27 (elevation, 828.96 ft).

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

820.0	202,200	832.0	325,300	840.0	428,500
823.0	229,500	834.0	349,500	842.0	457,000
827.0	269,400	836.0	374,800	844.0	486,300
830.0	302,100	838.0	401,200	845.0	501,400

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	296200	302200	326400	329000	326000	375300	375600	377800	381800	376100	371100	373100
2	296200	301900	327800	328700	326000	378100	376000	377400	380300	375800	370800	372800
3	296000	301500	329000	328200	326000	378200	377100	377300	378700	375700	370400	356600
4	295800	301800	329500	328900	325800	377500	378800	377100	377000	375400	370200	356100
5	295800	302300	329700	329000	326400	376200	379200	377100	376600	375300	369900	355300
6	295700	303000	329900	328900	328100	375400	378800	377100	376400	376900	369600	354800
7	295600	303500	329900	328700	330000	375400	377700	377300	376400	377300	369800	354300
8	295500	303200	329900	328400	330300	375600	376700	380800	376500	377400	369700	353800
9	295300	303700	329700	328500	331100	375600	376600	390700	377300	377500	369400	353000
10	295100	304200	330700	328400	331700	375400	376200	390900	377800	377400	369300	352300
11	295000	304600	331300	328100	331900	375100	378400	391200	377100	377300	369200	351800
12	295000	304700	331300	327800	335100	375300	378400	389900	376100	377000	369000	352100
13	295000	304700	331200	327800	339400	375100	377700	386400	377300	377000	368900	351800
14	295000	304500	331100	327500	341300	374400	377100	380500	376100	376900	368500	351400
15	294800	303600	330800	327600	342700	374400	376900	378200	379300	376200	368000	351000
16	294800	304500	330700	327300	343800	374500	376900	377400	376100	375800	367800	350600
17	294000	304800	330600	327300	344000	374500	376700	376200	375300	375700	367500	350300
18	293200	304700	328900	327300	344300	374900	377000	375800	375400	375300	367100	349800
19	292900	305000	328100	327200	349800	375100	377100	375600	375400	374900	366500	349300
20	292400	305000	328200	327000	385900	375100	377300	376200	375300	374700	365900	348900
21	292400	304800	328300	327100	396600	375300	377300	376800	375100	374500	365100	348400
22	292300	304600	329500	327200	401300	375200	377500	377500	376000	374200	364600	348200
23	292100	306400	329500	327100	398300	375200	377500	378300	376700	374000	363900	348000
24	291800	309100	329400	327100	392400	375300	377300	377800	376700	373600	363100	347200
25	291000	312400	329300	326900	385000	376600	379100	376200	376900	373300	362500	346600
26	290700	315200	329300	326400	377500	376400	380500	375400	376900	373000	361500	346100
27	293200	316700	329000	326500	374200	375100	381300	375200	376700	372600	360500	345500
28	300000	318400	329100	326300	374900	375600	380800	375200	376600	372500	361200	345000
29	302700	322200	329000	326400	---	376000	379000	375100	376500	372100	369600	344600
30	302600	325100	329100	326300	---	375600	378400	380700	376200	371700	373800	344000
31	302700	---	329000	326000	---	375600	---	381800	---	371300	373400	---
MAX	302700	325100	331300	329000	401300	378200	381300	391200	381800	377500	373800	373100
MIN	290700	301500	326400	326000	325800	374400	375600	375100	375100	371300	360500	344000
(+)	830.05	831.98	832.31	832.06	836.01	836.06	836.28	836.54	836.11	835.73	835.89	833.55
(@)	+6300	+22400	+3900	-3000	+48900	+700	+2800	+3400	-5600	-4900	+2100	-29400
CAL YR 1996	MAX	336200	MIN	268400	(@)	-7000						
WTR YR 1997	MAX	401300	MIN	290700	(@)	+47600						

(+) Elevations, in feet, at end of month.

(@) Change in contents, in acre-feet.

08043950 BIG SANDY CREEK NEAR CHICO, TX

LOCATION.--Lat 33°16'27", long 97°40'42", Wise County, Hydrologic Unit 12030101, at left downstream side of bridge on Farm Road 1810, 4.5 mi upstream from Greathouse Branch, 6.0 mi east of Chico, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--312 mi².

PERIOD OF RECORD.--October 1936 to current year. Prior to 1996 water year, published as "near Bridgeport" (station 08044000).

Water-quality records.--Chemical and biochemical analyses: April 1993 to September 1995; sediment analyses: April 1993 to September 1995.

REVISED RECORDS.--WSP 1148: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage has not been determined. Prior to May 24, 1996 at datum of 724.44 ft, prior to Oct. 1, 1984, at datum 3.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges and daily discharges below 1 ft³/s, which are fair. Since May 1, 1956, runoff from 100 mi² above this station is affected at times by storage in Lake Amon G. Carter, 30 mi upstream, with a capacity of 15,240 acre-ft at elevation 920.0 ft (spillway crest). During the year, the city of Bowie diverted water from Lake Amon G. Carter for municipal use and discharged wastewater effluent into tributaries to Big Sandy Creek upstream from this station. Flow was also affected at times by discharge from the flood-detention pools of 19 floodwater-retarding structures with a combined capacity of 11,430 acre-ft. These structures control runoff from a 46.0 mi² area upstream from this station and below Lake Amon G. Carter. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1936-55), 85.6 ft³/s (62,030 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1936-55).--Maximum discharge, 53,000 ft³/s June 10, 1941 (gage height, 15.69 ft) at site and datum then in use; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1887 occurred in 1908 and 1915 and reached about the same stage as that of June 10, 1941.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.2	3.3	8.3	6.8	6.8	13	5.0	.00	.34	.07	74
2	1.9	3.0	2.8	14	7.3	11	9.8	5.3	.00	.33	.05	.02
3	1.9	2.2	4.1	19	7.4	9.0	9.6	5.3	.00	.17	.02	.00
4	1.9	2.2	4.5	15	6.8	6.9	9.2	4.9	.25	.17	.02	.00
5	2.0	2.2	4.1	11	7.0	6.0	16	4.7	1.1	.15	.02	.01
6	2.0	2.4	3.9	9.5	7.8	6.5	27	4.6	.02	.14	.02	.03
7	2.0	2.5	3.7	8.8	8.7	5.5	18	4.1	.00	.14	.03	.05
8	2.0	2.2	4.6	8.1	9.8	4.5	13	3.9	.11	.13	.03	.06
9	2.0	2.4	3.8	8.1	8.9	5.0	12	3.7	.35	.13	.03	.06
10	1.9	2.4	3.1	8.4	8.4	6.4	9.4	3.5	.41	.14	.01	.06
11	1.9	2.2	2.5	8.3	7.7	6.7	8.9	3.5	.26	.15	.00	.06
12	1.9	2.2	2.7	8.0	7.2	5.6	9.0	3.2	.07	.19	.00	.06
13	1.5	2.4	3.1	7.7	7.1	7.0	16	3.2	.02	.19	.00	.06
14	1.5	2.5	3.7	7.8	7.3	11	23	2.2	.32	.35	.00	.06
15	1.5	2.6	4.0	7.8	7.4	8.7	14	1.9	.30	.40	.00	540
16	1.6	2.6	3.8	7.7	7.4	8.3	9.7	1.9	.22	.30	.00	296
17	1.7	2.7	6.7	8.1	7.3	6.4	8.5	1.9	.50	.25	.00	43
18	1.8	2.9	e14	8.1	7.3	6.1	8.2	1.7	.34	.24	.00	15
19	1.7	2.9	e16	8.0	8.4	6.4	7.8	1.4	.22	.23	.00	21
20	1.6	3.0	e10	8.0	8.4	7.7	7.0	.82	.38	.23	.00	14
21	1.5	2.9	8.7	7.8	8.5	7.4	6.6	.59	.56	.23	.00	6.8
22	1.6	e2.9	8.0	7.8	8.0	6.3	15	.38	.44	.23	.01	3.8
23	1.6	e2.9	7.4	7.8	8.1	6.4	46	.33	.33	.19	.01	2.7
24	1.6	e2.9	6.7	7.6	7.4	7.9	22	.27	.29	.09	.01	2.5
25	1.7	e2.9	6.3	7.3	7.8	6.9	12	.32	.30	.10	.01	2.4
26	1.8	e2.9	6.5	7.4	7.3	7.4	8.4	.05	.20	.26	.00	2.3
27	1.8	e2.9	6.5	7.3	8.4	19	6.8	.33	.29	.44	.00	39
28	2.0	2.9	6.4	6.8	8.0	110	6.3	.58	.50	.21	.00	44
29	1.8	2.9	6.4	7.1	7.6	52	6.0	.03	.46	.15	.02	9.0
30	1.8	3.1	7.3	7.1	---	28	5.3	.00	.39	.12	.00	4.2
31	1.9	---	7.5	6.9	---	18	---	.00	---	.09	23	---
TOTAL	55.3	79.9	182.1	270.6	225.5	410.8	383.5	69.60	8.63	6.48	23.36	1120.23
MEAN	1.78	2.66	5.87	8.73	7.78	13.3	12.8	2.25	.29	.21	.75	37.3
MAX	2.0	3.2	16	19	9.8	110	46	5.3	1.1	.44	.23	540
MIN	1.5	2.2	2.5	6.8	6.8	4.5	5.3	.00	.00	.09	.00	.00
AC-FT	110	158	361	537	447	815	761	138	17	13	46	2220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1996#, BY WATER YEAR (WY)

	MEAN	109	42.0	42.6	30.5	40.9	83.4	104	233	144	20.2	11.6	29.7
MAX	1829	298	743	257	214	570	1175	1284	1250	181	230	491	491
(WY)	1982	1965	1992	1992	1992	1977	1957	1990	1989	1973	1973	1962	1962
MIN	.000	.000	.000	.000	.72	.000	.000	.002	.000	.000	.000	.000	.000
(WY)	1959	1956	1956	1956	1959	1956	1956	1980	1956	1964	1957	1956	1956

SUMMARY STATISTICS FOR 1995 CALENDAR YEAR FOR 1996 WATER YEAR WATER YEARS 1956 - 1996#

ANNUAL TOTAL	24120.7	2836.00	74.5	1982
ANNUAL MEAN	66.1	7.75	317	1956
HIGHEST ANNUAL MEAN			2.12	1981
LOWEST ANNUAL MEAN			23800	1956
HIGHEST DAILY MEAN	1820	May 9	540	Sep 15
LOWEST DAILY MEAN	1.5	Oct 13	.00	May 30
ANNUAL SEVEN-DAY MINIMUM	1.6	Oct 13	.00	Aug 11
INSTANTANEOUS PEAK FLOW			1970	Feb 21
INSTANTANEOUS PEAK STAGE			13.38	Feb 21
ANNUAL RUNOFF (AC-FT)	47840	5630	53940	94
10 PERCENT EXCEEDS	133	10	94	6.8
50 PERCENT EXCEEDS	20	2.9	94	.02
90 PERCENT EXCEEDS	2.2	.02	94	.00

e Estimated
Period of regulated streamflow
g At site and datum then in use

TRINITY RIVER BASIN

08043950 BIG SANDY CREEK NEAR CHICO, TX--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.0	94	9.5	9.0	262	52	91	195	14	1.1	.37
2	1.9	1.9	46	9.9	9.4	267	50	84	135	13	1.0	.35
3	1.4	1.7	30	9.9	9.4	294	51	77	117	11	1.0	.79
4	1.2	1.6	23	9.8	9.1	226	148	70	109	9.4	.97	5.2
5	1.1	1.4	21	9.2	8.8	197	117	65	96	9.0	.88	1.5
6	1.1	1.6	20	9.9	26	177	80	62	85	65	.84	.47
7	1.1	24	18	9.5	93	163	60	60	78	40	2.8	.33
8	1.0	18	15	10	86	153	54	58	73	17	2.1	.30
9	.99	9.1	16	11	45	146	51	434	71	14	1.5	.29
10	.99	5.2	16	11	29	141	49	234	70	12	1.2	.29
11	.92	3.8	15	10	23	129	152	103	67	10	.95	.29
12	.88	2.9	14	8.8	34	124	238	80	60	8.7	.85	.29
13	.81	2.7	12	8.8	246	125	110	73	82	8.0	.79	.29
14	.79	3.1	12	7.9	139	116	82	67	62	7.3	.68	.28
15	.77	3.4	12	8.6	64	106	70	62	139	6.9	.62	.27
16	.79	4.1	13	8.8	42	97	63	56	70	6.7	.50	.25
17	.81	10	12	8.2	32	93	59	53	52	6.4	.52	.23
18	1.7	8.3	13	8.0	28	91	54	49	44	5.6	.54	.22
19	1.6	6.6	12	8.2	51	86	54	45	39	5.3	.53	.21
20	1.1	5.6	11	8.6	1350	81	e53	87	33	4.8	.49	.22
21	1.2	4.9	11	9.4	1700	78	e52	84	27	4.4	.47	.21
22	1.3	4.3	12	9.3	1040	74	326	74	25	4.0	.51	.23
23	1.4	4.5	12	8.7	581	70	e989	63	73	3.6	.52	.28
24	1.3	234	10	8.8	487	67	e808	59	72	3.2	.48	.25
25	1.3	237	9.8	8.2	435	82	e550	54	39	2.9	.46	.23
26	1.4	143	9.7	8.2	394	89	416	50	28	2.6	.45	.21
27	1.4	68	9.4	8.4	349	71	e236	45	30	2.3	.42	.20
28	15	33	9.9	7.8	298	65	141	40	23	2.0	.40	.18
29	13	256	9.7	7.4	---	60	115	38	22	1.3	.40	.24
30	5.2	309	9.3	7.6	---	56	103	567	17	1.2	.38	.18
31	2.7	---	9.3	8.3	---	53	---	660	---	1.2	.36	---
TOTAL	68.65	1410.7	537.1	277.7	7617.7	3839	5383	3644	2033	302.8	24.71	14.65
MEAN	2.21	47.0	17.3	8.96	272	124	179	118	67.8	9.77	.80	.49
MAX	.15	309	94	11	1700	294	989	660	195	65	2.8	5.2
MIN	.77	1.4	9.3	7.4	8.8	53	49	38	17	1.2	.36	.18
AC-FT	136	2800	1070	551	15110	7610	10680	7230	4030	601	49	29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1997#, BY WATER YEAR (WY)

	MEAN	106	42.2	42.0	30.0	46.4	84.3	106	230	142	19.9	11.3	29.0
MAX	1829	298	743	257	272	570	1175	1284	1250	181	230	491	
(WY)	1982	1965	1992	1992	1997	1977	1957	1990	1989	1973	1973	1962	
MIN	.000	.000	.000	.000	.72	.000	.000	.002	.000	.000	.000	.000	
(WY)	1959	1956	1956	1956	1959	1956	1956	1980	1956	1964	1957	1956	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1956 - 1997#
ANNUAL TOTAL	4535.15	25153.01	
ANNUAL MEAN	12.4	68.9	74.3
HIGHEST ANNUAL MEAN			317
LOWEST ANNUAL MEAN			2.12
HIGHEST DAILY MEAN	540	1700	23800
LOWEST DAILY MEAN	.00	.18	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.21	.00
INSTANTANEOUS PEAK FLOW		1970	g45000
INSTANTANEOUS PEAK STAGE		13.38	g14.78
ANNUAL RUNOFF (AC-FT)	9000	49890	53850
10 PERCENT EXCEEDS	16	147	96
50 PERCENT EXCEEDS	5.0	12	7.0
90 PERCENT EXCEEDS	.02	.49	.00

e Estimated

Period of regulated streamflow

g At site and datum then in use

TRINITY RIVER MAIN STEM

317

08044500 WEST FORK TRINITY RIVER NEAR BOYD, TX

LOCATION.--Lat 33°05'07", long 97°33'30", Wise County, Hydrologic Unit 12030101, on right bank on downstream side of highway embankment, 10 ft right of right abutment of bridge on Farm Road 730, 0.6 mi northeast of Boyd, 3.5 mi downstream from Boggy Creek and at mile 602.

DRAINAGE AREA.--1,725 mi².

PERIOD OF RECORD.--January 1947 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 660.57 ft above sea level. Prior to Dec. 14, 1954, water-stage recorder at site 2.2 mi downstream at datum 5.48 ft lower.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in January 1947, at least 10% of contributing drainage area has been regulated by Bridgeport Reservoir (station 08043000) 25 mi upstream and by Lake Carter. In addition, flow from a 91.2 mi² area above station is affected at times by discharge from the flood- detention pools of 36 floodwater-retarding structures with a total combined detention capacity of 24,450 acre-ft in the Big Sandy and Salt Creek drainage basins. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, about 25 ft in May 1908, present site and datum, from information by local residents, who also reported a flood of about the same gage height between 1870-80. A flood in April 1942 reached a stage of 20.6 ft, present site and datum, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	320	748	37	32	1500	127	1090	99	77	20	227
2	13	260	289	36	32	999	120	820	121	70	20	227
3	13	144	164	36	30	1350	119	523	378	67	19	231
4	14	101	107	36	29	1290	703	276	1170	63	19	264
5	14	73	89	34	28	1220	1660	144	1090	64	18	161
6	13	63	75	35	195	1180	1000	133	635	156	17	144
7	14	783	70	37	725	1040	642	125	333	642	306	139
8	14	428	62	38	563	717	692	119	186	418	477	137
9	14	127	58	41	206	593	711	1040	155	145	140	136
10	14	70	53	40	98	530	484	3270	368	100	55	136
11	14	52	50	38	68	495	470	3030	441	76	41	148
12	15	48	47	37	253	476	864	2940	482	63	34	115
13	17	49	45	35	1140	500	711	3100	516	57	30	72
14	17	46	43	35	1140	468	677	2460	700	53	27	71
15	17	45	44	37	544	434	625	2590	992	49	25	70
16	17	45	43	36	201	348	466	2180	1340	45	23	69
17	17	224	44	34	121	197	301	1600	3090	42	26	69
18	26	112	44	34	93	184	232	1200	2180	40	25	69
19	77	51	43	35	346	172	148	804	882	39	70	69
20	77	42	41	35	4610	163	138	535	359	37	219	70
21	80	39	41	36	6270	158	286	479	206	34	228	71
22	85	36	43	36	5370	150	187	545	162	32	231	73
23	83	34	43	35	5540	139	210	575	286	30	232	74
24	80	1900	40	35	5530	143	171	713	395	26	232	91
25	79	2520	36	35	5920	291	323	931	238	25	232	135
26	79	1330	36	34	6190	363	753	982	195	23	232	133
27	84	783	35	33	6080	418	866	762	310	22	229	130
28	2320	324	36	31	4730	395	662	366	139	22	229	131
29	4610	605	35	31	---	374	765	131	109	22	232	127
30	1190	1060	36	31	---	250	1050	95	93	23	229	125
31	489	---	35	31	---	134	---	96	---	21	229	---
TOTAL	9611	11714	2575	1094	56084	16671	16163	33654	17650	2583	4146	3714
MEAN	310	390	83.1	35.3	2003	538	539	1086	588	83.3	134	124
MAX	4610	2520	748	41	6270	1500	1660	3270	3090	642	477	264
MIN	13	34	35	31	28	134	119	95	93	21	17	69
AC-FT	19060	23230	5110	2170	111200	33070	32060	66750	35010	5120	8220	7370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 1997#, BY WATER YEAR (WY)

	MEAN	312	196	186	109	146	203	276	742	488	204	225	183
MAX	4063	1248	3073	929	2003	1366	4339	5908	5439	1330	1157	1643	
(WY)	1982	1982	1992	1992	1997	1987	1990	1990	1989	1950	1950	1962	
MIN	2.96	4.81	2.21	.75	.10	.26	.59	25.2	2.76	7.11	.025	.23	
(WY)	1957	1984	1953	1956	1953	1955	1955	1959	1953	1979	1980	1956	

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1947 - 1997#

ANNUAL TOTAL	53470	175659	
ANNUAL MEAN	146	481	
HIGHEST ANNUAL MEAN			274
LOWEST ANNUAL MEAN			1094
HIGHEST DAILY MEAN	4610	Oct 29	6270 Feb 21
LOWEST DAILY MEAN	13	Oct 2	13 Oct 2
ANNUAL SEVEN-DAY MINIMUM	14	Oct 2	14 Oct 2
INSTANTANEOUS PEAK FLOW			8780 Oct 28
INSTANTANEOUS PEAK STAGE			19.15 Oct 28
ANNUAL RUNOFF (AC-FT)	106100	348400	198200
10 PERCENT EXCEEDS	253	1110	508
50 PERCENT EXCEEDS	71	131	69
90 PERCENT EXCEEDS	17	27	3.9

Period of regulated streamflow.

TRINITY RIVER BASIN

08044800 WALNUT CREEK AT RENO, TX

LOCATION.--Lat 32°56'44", long 97°34'58", Parker County, Hydrologic Unit 12030101, on left bank at abandoned bridge abutment, 100 ft upstream from bridge on FM 1542, 3,500 ft upstream from Cottonwood Branch and 2.4 mi west of intersection of FM 1542 and FM 730 in Center Point.

DRAINAGE AREA.--75.6 mi².

PERIOD OF RECORD.--April 1992 to September 1995 (annual maximum). October 1995 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 681.11 ft above sea level. Prior to December 11, 1995, at site 100 ft downstream on FM 1542 bridge.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 7	0145	4,040	15.86	Feb. 20	1500	2,570	12.45
Nov. 24	0300	6,510	20.83	Apr. 4	1900	3,130	13.80
Feb. 19	2130	6,500	20.82	May 30	1030	6,200	20.21

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	7.6	22	9.0	7.0	83	45	23	33	12	5.7	3.2
2	1.8	5.3	18	9.0	7.7	199	44	22	24	13	5.5	3.2
3	1.8	3.6	16	8.9	7.1	145	44	20	21	12	5.4	18
4	1.5	3.6	15	8.8	6.9	85	768	20	19	13	5.1	5.9
5	1.4	3.8	15	8.2	6.4	72	290	20	18	17	5.0	3.7
6	1.5	325	13	8.6	123	64	69	20	16	260	5.0	3.5
7	1.4	1060	12	8.3	210	63	48	20	16	68	282	3.5
8	1.4	15	12	8.8	26	61	44	21	15	18	25	3.5
9	1.4	8.6	11	9.1	8.6	60	43	856	16	13	7.3	3.4
10	1.3	7.7	11	8.9	7.3	58	41	58	102	11	24	3.4
11	1.4	7.3	11	8.6	6.6	56	131	29	19	10	7.9	3.4
12	1.3	7.0	10	8.1	440	59	66	25	13	9.4	5.0	3.3
13	1.3	6.8	10	8.1	501	66	42	22	9.9	9.0	4.6	3.1
14	1.2	6.6	10	8.2	79	56	38	20	8.8	8.8	4.3	2.9
15	1.2	6.4	10	8.7	34	52	35	29	204	8.6	4.2	2.9
16	1.4	6.3	9.7	8.4	24	51	34	26	101	8.4	3.8	2.8
17	1.4	12	9.9	8.0	33	49	33	20	433	8.2	3.7	2.7
18	1.4	7.0	9.5	8.1	31	50	32	18	45	8.0	3.6	2.7
19	1.4	6.0	9.4	8.3	1080	48	31	17	26	7.8	3.5	2.7
20	1.4	5.7	9.4	8.2	1410	68	28	23	21	7.6	3.5	2.8
21	1.7	5.5	9.5	8.2	228	67	28	21	18	7.4	3.5	2.8
22	2.0	5.3	9.6	8.0	112	63	28	20	23	7.1	3.5	2.9
23	2.4	5.3	9.4	7.7	95	59	24	18	55	7.1	3.5	3.2
24	2.5	1720	9.1	7.7	92	58	23	19	23	6.7	3.6	3.4
25	3.1	41	9.0	7.9	89	291	213	18	17	6.2	3.6	3.4
26	3.5	27	9.1	7.7	137	88	100	17	15	6.2	3.6	3.4
27	4.0	18	9.1	7.2	104	65	55	16	14	6.1	3.5	3.2
28	129	18	9.1	6.3	89	58	34	16	13	5.9	3.5	3.1
29	12	220	9.1	6.2	---	53	28	15	12	5.9	3.4	2.9
30	4.0	42	9.1	6.6	---	48	25	1300	12	5.7	3.3	3.2
31	3.2	---	9.0	6.9	---	46	---	89	---	5.7	3.3	---
TOTAL	196.1	3613.4	345.0	250.7	4994.6	2341	2464	2858	1362.7	592.8	452.4	112.1
MEAN	6.33	120	11.1	8.09	178	75.5	82.1	92.2	45.4	19.1	14.6	3.74
MAX	129	1720	22	9.1	1410	291	768	1300	433	260	282	18
MIN	1.2	3.6	9.0	6.2	6.4	46	23	15	8.8	5.7	3.3	2.7
AC-FT	389	7170	684	497	9910	4640	4890	5670	2700	1180	897	222

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997, BY WATER YEAR (WY)

	MEAN	3.34	60.5	7.02	5.97	88.9	41.2	46.7	46.8	23.5	9.89	12.8	4.13
MAX	6.33	120	11.1	8.09	178	75.5	82.1	92.2	45.4	19.1	14.6	4.52	
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1996
MIN	.36	.53	2.92	3.86	2.59	6.95	11.4	1.43	1.56	.65	11.0	3.74	
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1997	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1996 - 1997

ANNUAL TOTAL	5494.03	19582.8	
ANNUAL MEAN	15.0	53.7	28.8
HIGHEST ANNUAL MEAN			53.7
LOWEST ANNUAL MEAN			3.98
HIGHEST DAILY MEAN	1720	1720	1720
LOWEST DAILY MEAN	.32	1.2	.21
ANNUAL SEVEN-DAY MINIMUM	.35	1.3	.30
INSTANTANEOUS PEAK FLOW		6510	7760
INSTANTANEOUS PEAK STAGE		20.83	21.21
ANNUAL RUNOFF (AC-FT)	10900	38840	20850
10 PERCENT EXCEEDS	11	88	51
50 PERCENT EXCEEDS	2.0	10	3.9
90 PERCENT EXCEEDS	.51	3.1	.47

08045000 EAGLE MOUNTAIN RESERVOIR ABOVE FORT WORTH, TX

LOCATION.--Lat 32°52'39", long 97°28'29", Tarrant County, Hydrologic Unit 12030101, at right end of main section of Eagle Mountain Dam on West Fork Trinity River, 11.8 mi northwest of Fort Worth and at mile 583.3.

DRAINAGE AREA.--1,970 mi².

PERIOD OF RECORD.--February 1934 to current year. Prior to October 1950, end-of-month values only.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct. 16, 1988, nonrecording gages at several sites within 1.0 mi of present site at present datum.

REMARKS.--Records good. The reservoir is formed by two sections of rolled earthfill and a concrete spillway separated by high natural ground. Total length of the dam including spillway is 4,800 ft. The dam was completed Oct. 24, 1932, and storage began Feb. 24, 1934. The spillway is a 1,300-foot-wide cut through natural ground located between the two sections of earthfill that make up the dam. The original service spillway, located in the section to the right of the main dam, contains a concrete spillway with four 25-foot bays, three are equipped with vertical lift gates and the fourth is left open. In 1971, a side-channel spillway was constructed. The newest spillway is located 300 ft to the left of the original service spillway and has six 11.25 x 22-foot-wide roller lift gates. The main section of the dam contains the outlet works that consist of two concrete conduits with two 48-inch diameter valves in each conduit. The reservoir is used for flood control and for part of the municipal water supply for the city of Fort Worth. Capacities are based on a survey made in 1968. For statement regarding regulation by Natural Resource Conservation Service floodwater-retarding structures, see station 08044500. For storage above the reservoir, see REMARKS for West Fork Trinity River near Boyd (station 08044500). Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	682.0	-
Crest of spillway	676.0	545,900
Top of gates (new side-channel spillway)	659.0	283,200
Crest of (old service) spillway (top of conservation pool)	649.1	178,400
Crest of spillway (new side-channel spillway)	637.0	89,450
Lowest gated outlet (invert)	599.9	36

COOPERATION.--New capacity table, No. 4-C, furnished by Tarrant Regional Water District, was put into use Oct. 1, 1988.

EXTREMES FOR PERIOD OF RECORD.--Prior to Oct. 16, 1987, once-daily reading of nonrecording gage at 0700 hours, maximum contents observed, 333,500 acre-ft Apr. 26, 1942 (elevation, 659.9 ft); minimum observed since first appreciable storage in 1935, 57,690 acre-ft Nov. 19, 20, 1956 (elevation, 629.3 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 196,100 acre-ft Feb. 21 at 0345 hours (elevation, 650.99 ft); minimum, 141,000 acre-ft Oct. 20 (elevation, 644.57 ft).

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

631.0	57,400	646.0	152,100	655.0	237,300
641.0	115,400	649.0	177,500	658.0	271,300
644.0	136,700	652.0	206,000	660.0	295,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146400	158100	179500	178900	178600	177200	177600	178000	179800	178300	172300	168000
2	146300	158700	178800	178900	178500	179200	178000	178400	178800	178400	172700	168000
3	145900	159000	178400	179000	178600	179100	178300	178200	178900	178300	172700	168300
4	145700	159200	178400	179100	178400	178700	183800	178300	179300	178600	172300	168300
5	145400	163500	178500	178900	178200	178000	180500	178600	179000	178800	171300	168100
6	145200	170100	178800	178900	180500	178000	178900	178900	178800	180400	170600	167900
7	145000	174900	178800	178500	179900	178200	178400	178900	178600	179500	172900	167900
8	144700	176500	178900	178900	178300	178300	178800	180400	179000	178500	173500	167700
9	144400	177100	178700	178900	178100	178900	178900	185400	179500	177800	173500	167500
10	144000	177300	178900	179000	178200	178900	178600	183500	180700	177900	173600	167200
11	143600	177400	179000	178900	178300	178800	180600	184300	180000	177700	173000	167000
12	143300	177500	179000	178900	182900	179400	179600	184800	179200	177600	172900	166600
13	143000	177300	179000	178600	180900	179500	179000	184700	179100	177500	172800	166200
14	142700	177200	179400	178500	178600	179100	178700	184400	178800	177400	172100	166100
15	142400	177500	178900	178700	177800	178900	178600	184200	179100	177300	171500	165700
16	142200	178500	178800	178700	178000	178900	178900	183600	181500	177100	171000	165400
17	142100	178900	178700	178600	178000	179000	178600	182600	181600	177000	170300	165000
18	141600	179100	178200	178600	178700	179600	178500	180600	179900	176700	170000	164500
19	141200	179200	178000	178700	192600	179400	178700	178900	178900	176400	169600	164200
20	141000	179400	177500	178700	195300	179400	178800	178200	178900	176100	169400	164200
21	142000	179200	178000	178900	193400	179500	179800	178800	178900	176000	169300	163700
22	141700	178900	178100	179000	189000	179500	178900	179200	179200	175800	169300	163300
23	141500	184400	178700	179100	185300	179300	178400	179100	179600	175400	169100	163400
24	141400	187100	178300	179200	182300	179100	178500	179200	179400	175100	169000	162800
25	141200	184700	178200	179000	180500	182000	181800	179400	179200	174900	168800	162400
26	141500	181200	178400	179100	180600	181400	180300	179900	178900	174500	168700	162200
27	142400	179800	178500	179800	179800	179900	179200	180300	179000	174300	168500	162000
28	144300	179800	178500	178900	178000	179200	178500	179800	178700	174000	168400	162000
29	145400	180200	178700	178900	---	178400	178600	178900	178700	173900	168300	161700
30	154300	180300	178900	178700	---	178100	179000	183000	178600	173300	168200	161700
31	157100	---	178900	178700	---	177800	---	180600	---	172900	167900	---
MAX	157100	187100	179500	179800	195300	182000	183800	185400	181600	180400	173600	168300
MIN	141000	158100	177500	178500	177800	177200	177600	178000	178600	172900	167900	161700
(+)	646.62	649.31	649.15	649.13	649.06	649.03	649.17	649.35	649.12	648.48	647.91	647.18
(@)	+10400	+23200	-1400	-200	-700	-200	+1200	+1600	-2000	-5700	-5000	-6200

CAL YR 1996 MAX 187100 MIN 136600 (@) +17000
WTR YR 1997 MAX 195300 MIN 141000 (@) +15000

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

TRINITY RIVER MAIN STEM

08045400 LAKE WORTH ABOVE FORT WORTH, TX

LOCATION.--Lat 32°47'21", long 97°24'58", Tarrant County, Hydrologic Unit 12030102, on top of Lake Worth Dam on West Fork Trinity River, 240 ft to right of right end of uncontrolled concrete spillway, 2.9 mi upstream from Farmer's Branch, 3.3 mi upstream from bridge on State Highway 183 crossing West Fork Trinity River, 5.3 mi northwest of Tarrant County Courthouse in Fort Worth and at river mile 572.0.

DRAINAGE AREA.--2,064 mi².

PERIOD OF RECORD.--October 1981 to current year.

Water-quality records.--Chemical analyses: January 1970 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Record good. The lake is formed by a rolled earthfill dam 3,200 ft long, with an uncontrolled concrete spillway 700 ft long near the center of the dam. Deliberate impoundment began in June 1914 and the dam was completed in October 1914. There is a 48-inch diameter pipe controlled by a 36-inch valve, which may be used to make small releases through the dam. The dam is owned by the city of Fort Worth. Area-capacity curves are based on a survey made in 1968. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	606.3	-
Crest of concrete spillway	594.0	37,070
Lowest gated outlet (invert)	584.25	12,290

COOPERATION.--Copies of the capacity table (prepared by the U.S. Army Corps of Engineers) and area-capacity curve (prepared by Freese and Nichols Consulting Engineers Inc.) were provided by Tarrant Regional Water District Improvement.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 56,040 acre-ft May 3, 1990 (elevation, 598.70 ft); minimum, 24,730 acre-ft Sept. 9-10, 1985 (elevation, 589.95 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 48,430 acre-ft Feb. 20 at 0615 hours (elevation, 596.96 ft); minimum, 31,700 acre-ft Aug. 3 (elevation, 592.37 ft).

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

589.0	22,300	594.0	37,070	598.0	52,890
592.0	30,540	596.0	44,520	599.0	57,400

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32680	33150	39590	36360	35450	42560	38040	39700	42680	36830	31730	34970
2	32740	32990	39270	36290	35520	41020	37860	39590	41330	36630	31760	34970
3	32740	32810	38690	36360	35620	40450	37900	39230	40020	36430	31730	35010
4	32740	32710	38190	36500	35580	40420	39340	38510	39450	36660	31890	34910
5	32810	33470	37680	36560	35650	40170	42410	38010	39550	36700	32170	34840
6	32810	34700	37430	36660	36460	39910	41750	37680	39450	38330	32620	34770
7	32770	35410	37290	36600	38910	39730	40380	37500	38760	38870	34810	34740
8	32710	35480	37210	36770	39610	39520	39480	37610	37970	38980	34910	34700
9	32650	35410	37180	36630	38850	39160	39050	40490	37570	38550	35110	34640
10	32580	35350	37210	36600	38150	38760	38940	41130	37900	37720	35350	34540
11	32460	35280	37180	36500	37750	38690	39590	41210	38400	37320	35410	34430
12	32430	35210	37180	36500	39630	38830	39520	41250	38550	37070	35310	34370
13	32330	35080	37180	36360	42210	38760	39590	41170	38580	36900	35110	34430
14	32270	34940	37610	36290	41560	38620	39480	41290	38580	36730	35040	34430
15	32240	34940	37320	36260	40380	38470	39230	41440	39300	36500	34970	34370
16	32170	34940	37250	36120	38940	38370	38830	41330	41100	36330	35010	34300
17	32170	34970	37320	36060	38110	38260	38760	41210	41360	36090	35040	34230
18	31980	35010	37180	35990	37720	37970	38550	41170	41870	35850	35010	34200
19	31890	35010	37140	35950	44720	37830	38220	41040	41020	35650	35080	34130
20	31890	35110	37070	35890	46930	37750	38730	39950	39370	35410	34970	34160
21	32430	35180	37000	35850	46320	37720	38550	38650	38150	35180	35080	34130
22	32240	35210	36930	35820	46110	37650	38730	38220	37860	34940	35110	34160
23	32240	37360	36930	35790	45620	37610	38760	38470	38470	34670	35140	34370
24	32170	42370	36730	35720	45420	37540	38220	38730	38370	34330	35110	34260
25	32020	43640	36600	35520	45250	38470	39340	38870	38220	33930	35110	34160
26	32080	42750	36660	35580	45340	38730	40900	38910	38010	33560	35080	34130
27	32960	41090	36630	35680	45130	39190	40600	38830	37830	33280	35080	34030
28	33410	39990	36530	35410	45050	39300	40020	38800	37750	32960	35040	34030
29	33370	39810	36500	35350	---	39220	39190	38580	37430	32650	35010	33930
30	33280	39730	36460	35380	---	38730	39090	42100	37110	32270	35010	33890
31	33220	---	36430	35410	---	38440	---	41940	---	31920	34970	---
MAX	33410	43640	39590	36770	46930	42560	42410	42100	42680	38980	35410	35010
MIN	31890	32710	36430	35350	35450	37540	37860	37500	37110	31920	31730	33890
(+)	592.85	594.74	593.81	593.51	596.13	594.38	594.56	595.33	594.01	592.44	593.38	593.06
(@)	+540	+6510	-3300	-1020	+9640	-6610	+650	+2850	-4830	-5190	+3050	-1080
CAL YR 1996	MAX	43640	MIN	30220	(@)	+70						
WTR YR 1997	MAX	46930	MIN	31730	(@)	+1210						

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

TRINITY RIVER BASIN

321

08045850 CLEAR FORK TRINITY RIVER NEAR WEATHERFORD, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 32°44'25", long 97°39'06", Parker County, Hydrologic Unit 12030102, near left end of bridge on weigh station exit road associated with Interstate Highway 20, 150 ft downstream from Squaw Creek, 2.8 mi downstream from Lake Weatherford Dam on the Clear Fork Trinity River, 3.8 mi upstream from South Fork Trinity River and 8.5 mi east of county courthouse in Weatherford.

DRAINAGE AREA.--121 mi².

PERIOD OF RECORD.--May 1980 to September 1985. October 1985 to current year (peaks above base discharge).
Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 810.00 ft above sea level.

REMARKS.--Records fair. Flow regulated by Lake Weatherford, 2.8 mi upstream. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD (water years 1981-85).-- 23.0 ft³/s (16,660 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,810 ft³/s Apr. 27, 1990 (gage height, 22.07 ft); minimum, no flow Sept. 12-15, 1984.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 190 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 27	2045	539	11.74	May 30	1030	292	10.40
Nov. 7	0015	621	12.01	June 17	0115	379	10.80
Feb. 20	2145	1840	16.62	July 4	1115	197	9.86
Mar. 26	1130	321	10.54	July 5	1300	324	10.55
Apr. 6	1315	319	10.53	July 6	1530	402	10.89
Apr. 27	1300	244	10.14	Aug. 7	0415	276	10.32
May 9	1430	410	10.92				

TRINITY RIVER BASIN

08046500 BENBROOK LAKE NEAR BENBROOK, TX

LOCATION.--Lat 32°39'02", long 97°26'54", Tarrant County, Hydrologic Unit 12030102, in intake structure of Benbrook Dam on Clear Fork Trinity River, 2.5 mi south of Benbrook, 3.5 mi upstream from Marys Creek and 14.6 mi upstream from mouth.

DRAINAGE AREA.--429 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--September 1952 to current year. Prior to October 1970, published as Benbrook Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--The lake is formed by a rolled earthfill dam 9,130 ft long, including a 500-foot uncontrolled off-channel concrete-gravity spillway with a 100-foot notch in center of ogee weir section. The outlet works consist of a 13.0-foot-diameter concrete conduit controlled by two 6.5 x 13.0-foot broome-type gates and two 30-inch steel pipes controlled by slide gates. Deliberate impoundment began Sept. 29, 1952. From August 1950 to Sept. 28, 1952, the lake was operated as a detention basin only. The capacity table is based on a survey made in 1945. The lake was built for flood control, navigation and low-flow regulation. Inflow is affected at times by the discharge from flood-detention pools of 12 floodwater-retarding structures with a combined detention capacity of 11,170 acre-ft. These structures control runoff from 37.6 mi². Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	747.0	-
Crest of spillway	724.0	258,600
Crest of notch in spillway	710.0	164,800
Top of conservation storage	694.0	88,250
Crest of intake to wet wells (inverts)	656.0	6,550
Lowest gated outlet (invert)	622.0	12

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily contents, 212,200 acre-ft May 3, 1990 (elevation, 717.54 ft); minimum since lake first filled in 1957, 61,450 acre-ft Oct. 10, 1984 (elevation, 686.16 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 165,800 acre-ft Mar. 2 (elevation, 710.18 ft); minimum, 83,060 acre-ft Sept. 30 (elevation, 692.60 ft).

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

688.0	67,250	696.0	96,000	701.0	117,600
691.0	77,350	697.0	100,050	702.0	122,300
692.0	80,890	698.0	104,200	703.0	127,200
693.0	84,520	699.0	108,600	710.0	164,800
694.0	88,250	700.0	113,000	711.0	170,660
695.0	92,060				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87760	88630	103100	88970	88850	161900	88930	93230	89800	88590	87800	87200
2	87680	88590	101500	89040	88780	165800	88590	91220	89690	88590	87680	87160
3	87530	88630	99800	89080	88660	165700	88850	89800	89530	88590	87610	87160
4	87380	88590	98080	89040	88550	162300	94880	88810	89270	88550	87530	87160
5	87230	88660	96190	88970	88470	158100	101200	88590	88890	89270	87420	87080
6	87120	88930	94720	88850	88970	153500	101200	88630	88780	91180	87350	87010
7	86970	93070	93540	88810	89380	148600	99840	88780	88780	92560	89270	86930
8	86860	94170	92260	88930	89190	143600	98040	88890	88810	92330	89610	86860
9	86820	93850	91020	88930	88740	138500	96150	93230	88810	92020	89760	86710
10	86710	93300	89760	88810	88510	133600	94090	94990	88850	91410	89990	86560
11	86670	92680	89080	88740	88780	128600	93690	94950	88970	91100	90180	86340
12	86600	91950	88740	88660	93300	124800	92680	93970	88970	91020	89950	86110
13	86520	91220	88810	88590	100500	121500	90830	92100	88930	90910	89720	85850
14	86490	90450	88930	88550	102300	117800	89270	90450	88930	90680	89500	85630
15	86410	90220	89120	88510	102100	113900	88740	91680	89420	90410	89120	85370
16	86370	90300	89190	88440	101500	110200	88510	91950	89610	90180	88810	85190
17	86300	90410	89190	88440	100600	107000	89080	91830	90330	89880	88510	84930
18	86190	90300	89160	88510	98980	104300	89690	91560	90370	89610	88290	84670
19	86110	89880	89120	88550	112400	101800	90180	91140	90140	89340	88210	84450
20	86080	89500	89160	88700	131400	99310	90790	91290	89720	89120	88130	84190
21	86230	89080	89120	88810	139800	96790	91290	90830	89230	88850	88060	84010
22	86410	88810	89120	88930	143100	94200	91560	89880	89190	88700	88020	83860
23	86410	89160	89120	89040	145500	92410	91720	89720	89530	88630	87950	83680
24	86370	95830	89120	89120	148300	91220	91830	89800	89270	88510	87910	83460
25	86370	99970	89080	89270	151800	90870	94090	89720	88970	88400	87760	83390
26	86370	101900	89040	89380	156600	90910	97270	89570	88810	88320	87720	83310
27	86750	102400	89040	89340	159000	90180	98650	89380	88780	88210	87610	83280
28	88170	101800	89000	89270	160700	89650	99470	89120	88700	88170	87530	83170
29	88470	103200	89000	89190	---	89880	98650	88850	88660	88060	87460	83130
30	88510	103900	88970	89080	---	89760	95910	89340	88590	87950	87350	83060
31	88630	---	88970	88970	---	89500	---	89760	---	87910	87270	---
MAX	88630	103900	103100	89380	160700	165800	101200	94990	90370	92560	90180	87200
MIN	86080	88590	88740	88440	88470	89500	88510	88590	88590	87910	87270	83060
(+)	694.10	697.92	694.19	694.19	709.30	694.33	695.98	694.40	694.09	693.91	693.74	692.60
(@)	+760	+15270	-14930	0	+71730	-71200	+6410	-6150	-1170	-680	-640	-4210

CAL YR 1996 MAX 103100 MIN 81930 (@) +1660
WTR YR 1997 MAX 165800 MIN 83060 (@) -4810

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

TRINITY RIVER BASIN

323

08047000 CLEAR FORK TRINITY RIVER NEAR BENBROOK, TX

LOCATION.--Lat 32°39'54", long 97°26'30", Tarrant County, Hydrologic Unit 12030102, on left bank 1.5 mi downstream from Benbrook Dam, 1.7 mi southeast of Benbrook, 2.9 mi upstream from Marys Creek and 13.1 mi upstream from mouth.

DRAINAGE AREA.--431 mi².

PERIOD OF RECORD.--July 1947 to current year.

REVISED RECORDS.--WDR TX-89-1: 1988.

GAGE.--Water-stage recorder. Datum of gage is 604.22 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Since water year 1953, at least 10% of contributing drainage area has been regulated by Benbrook Lake (station 08046500), 1.5 mi upstream. There is a diversion 1.0 mi upstream for Pecan Valley Golf Course. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1948-52) prior to regulation by Benbrook Lake, 105 ft³/s (76,070 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1948-52).--Maximum discharge, 82,900 ft³/s May 17, 1949 (gage height, 28.72 ft), from rating curve extended above 11,000 ft³/s on basis of velocity-area studies and slope-area measurement of 82,900 ft³/s; no flow at times most years. Maximum stage since at least 1922, that of May 17, 1949.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	12	1200	85	96	203	462	1700	351	26	8.2	1.7
2	64	12	1340	87	96	539	377	1280	351	27	8.3	1.7
3	60	13	1330	87	93	1640	121	953	351	27	8.3	2.5
4	59	13	1320	87	94	2720	194	695	351	26	8.3	1.8
5	58	15	1310	88	95	2860	581	298	351	28	7.9	2.2
6	58	19	1060	88	103	2910	1320	126	225	40	8.2	2.2
7	27	27	908	88	357	3040	1590	91	145	305	24	2.2
8	5.1	344	903	92	520	3070	1580	86	145	579	8.9	1.7
9	4.3	650	902	91	513	3050	1570	110	144	581	8.6	1.7
10	3.8	607	901	91	310	3030	1560	383	138	575	8.8	26
11	4.2	598	623	91	13	3000	1570	718	125	316	78	46
12	4.7	600	271	91	56	2580	1560	1010	136	141	130	46
13	5.0	605	95	91	24	2280	1560	1360	135	141	123	46
14	4.9	616	95	90	538	2270	1290	1080	135	140	118	46
15	5.2	312	97	90	978	2260	834	739	141	141	113	46
16	5.4	95	91	90	969	2250	358	554	247	142	107	46
17	5.8	97	91	63	966	2030	9.7	547	407	142	102	46
18	5.6	225	91	17	1330	1710	9.6	541	397	128	44	46
19	6.4	344	90	14	1380	1560	8.6	540	396	113	3.2	46
20	5.9	333	90	11	27	1550	9.1	264	396	113	1.3	46
21	7.6	327	90	8.5	13	1540	9.8	668	395	113	1.3	46
22	6.7	183	86	8.2	11	1520	61	919	402	68	1.4	47
23	4.6	110	82	8.4	11	1140	136	451	424	24	1.4	46
24	4.7	141	82	8.3	15	892	109	352	395	24	1.3	32
25	5.0	98	82	8.5	14	895	167	349	393	19	1.4	1.3
26	5.3	95	82	8.5	20	887	153	349	269	8.8	1.6	.99
27	25	556	82	46	11	886	144	348	138	8.8	1.4	.89
28	6.1	1020	84	98	10	638	130	345	138	9.0	1.3	.82
29	5.6	1020	84	97	---	215	856	345	138	8.7	1.4	.72
30	7.1	1000	84	97	---	209	1710	363	100	8.7	1.4	.74
31	8.2	---	84	96	---	370	---	348	---	8.4	1.6	---
TOTAL	542.2	10087	13730	2016.4	8663	53744	20039.8	17912	7859	4031.4	934.5	680.16
MEAN	17.5	336	443	65.0	309	1734	668	578	262	130	30.1	22.7
MAX	64	1020	1340	98	1380	3070	1710	1700	424	581	130	47
MIN	3.8	12	82	8.2	10	203	8.6	86	100	8.4	1.3	.72
AC-FT	1080	20010	27230	4000	17180	106600	39750	35530	15590	8000	1850	1350

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1997#, BY WATER YEAR (WY)

	MEAN	24.3	97.0	60.1	79.1	87.7	156	109	237	218	61.6	23.9	17.8
	MAX	215	1479	680	1845	792	1734	881	2351	1804	1070	198	164
	(WY)	1994	1992	1992	1992	1992	1997	1977	1990	1957	1989	1979	1962
	MIN	.000	.053	.042	.000	.000	.13	.10	.000	.000	.029	.000	.000
	(WY)	1953	1971	1954	1953	1953	1953	1959	1959	1953	1953	1953	1953

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1953 - 1997#

ANNUAL TOTAL	26665.66	140239.46	97.5
ANNUAL MEAN	72.9	384	514
HIGHEST ANNUAL MEAN			.27
LOWEST ANNUAL MEAN			.00
HIGHEST DAILY MEAN	1340	3070	.00
LOWEST DAILY MEAN	.31	.72	.00
ANNUAL SEVEN-DAY MINIMUM	.57	1.4	.00
INSTANTANEOUS PEAK FLOW		3090	67400
INSTANTANEOUS PEAK STAGE		9.22	14.71
ANNUAL RUNOFF (AC-FT)	52890	278200	70670
10 PERCENT EXCEEDS	95	1310	198
50 PERCENT EXCEEDS	5.1	97	6.8
90 PERCENT EXCEEDS	2.1	5.0	.10

Period of regulated streamflow.

TRINITY RIVER BASIN

08047500 CLEAR FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°43'56", long 97°21'31", Tarrant County, Hydrologic Unit 12030102, at Fort Worth pumping station on left bank, 240 ft upstream from the Texas and Pacific Railway Co. bridge in Fort Worth, 830 ft upstream from East West Expressway bridge, 2.5 mi upstream from mouth, 5 mi downstream from Marys Creek and 10 mi downstream from Benbrook Dam.

DRAINAGE AREA.--518 mi².

PERIOD OF RECORD.--March 1924 to current year.

REVISED RECORDS.--WSP 1392: 1924-25, 1927. WSP 1922: Drainage area.

GAGE.--Water-stage recorder, crest-stage gage and concrete control. Datum of gage is 532.91 ft above sea level. Prior to Apr. 3, 1970, various nonrecording and recording gages were located within 650 ft of present site at different datums.

REMARKS.--No estimated daily discharges. Records good. Since September 1952, at least 10% of contributing drainage area has been regulated by Benbrook Lake (station 08046500) 10 mi upstream. The city of Fort Worth diverted water from pool at gage during the current year. The Benbrook Water and Sewage Authority diverted water from the river upstream from station during the current year for municipal use. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1925-52) prior to regulation by Benbrook Lake, 112 ft³/s (81,140 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1925-52).--Maximum discharge, 107,000 ft³/s May 17, 1949 (gage height, 28.20 ft, present datum), from rating curve extended above 16,000 ft³/s on basis of contracted-opening measurement of 107,000 ft³/s; no flow at times. Maximum stage since at least 1900, that of May 17, 1949, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 25, 1922, reached a stage of 27.5 ft, present datum (discharge, 74,300 ft³/s, by slope-area measurement of peak flow); data furnished by Fort Worth city engineer.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	18	1120	72	67	185	378	1570	201	23	9.6	7.3
2	20	15	1290	78	67	1080	358	1220	200	17	8.2	7.4
3	18	13	1280	85	67	1680	109	839	193	14	8.0	9.3
4	16	11	1270	85	63	2880	1190	623	193	75	7.9	20
5	16	9.5	1270	83	60	3070	828	277	193	88	7.2	13
6	18	15	1060	80	229	3080	1270	108	144	309	6.7	12
7	28	928	871	76	293	3190	1540	71	64	192	737	11
8	14	204	853	104	425	3260	1540	68	61	336	61	8.5
9	7.4	525	860	84	411	3260	1540	618	60	375	31	7.3
10	4.1	494	861	80	318	3280	1540	251	121	340	32	7.1
11	4.0	484	632	76	36	3260	2050	555	54	209	44	41
12	4.0	473	305	76	1220	2980	1590	800	49	54	83	37
13	4.3	467	106	76	865	2510	1540	1220	51	51	85	31
14	5.8	467	100	76	481	2440	1300	999	51	55	85	31
15	6.4	318	247	75	935	2380	795	1200	197	73	85	31
16	6.2	87	103	72	924	2380	420	370	104	76	85	29
17	4.9	122	96	65	897	2140	52	331	774	76	85	29
18	4.9	127	92	34	1150	1760	46	316	231	75	68	31
19	4.5	245	87	33	5370	1530	45	312	219	68	21	30
20	4.0	246	85	31	2210	1540	165	194	215	64	15	31
21	175	246	85	27	337	1540	182	356	207	64	12	31
22	102	180	85	26	145	1540	54	654	374	55	11	32
23	20	243	85	25	108	1160	109	279	602	25	11	32
24	13	1920	72	26	152	830	94	224	227	28	9.6	35
25	12	262	72	25	202	1050	948	180	216	30	12	16
26	11	175	72	23	517	832	476	180	167	24	20	8.0
27	363	412	72	25	159	825	218	183	60	21	14	7.8
28	240	923	72	57	112	663	155	187	60	19	11	4.7
29	38	1410	72	57	---	196	623	187	55	19	9.9	3.4
30	24	1080	72	57	---	187	1570	619	51	18	7.5	2.1
31	17	---	72	61	---	278	---	240	---	13	7.3	---
TOTAL	1226.5	12119.5	13419	1850	17820	56986	22725	15231	5394	2886	1689.9	595.9
MEAN	39.6	404	433	59.7	636	1838	758	491	180	93.1	54.5	19.9
MAX	363	1920	1290	104	5370	3280	2050	1570	774	375	737	41
MIN	4.0	9.5	72	23	36	185	45	68	49	13	6.7	2.1
AC-FT	2430	24040	26620	3670	35350	113000	45080	30210	10700	5720	3350	1180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1997#, BY WATER YEAR (WY)

	MEAN	58.8	115	88.3	108	133	220	172	330	271	77.5	33.0	32.6
MAX	353	1555	1118	2198	1019	1838	1013	3020	2219	1300	247	245	
(WY)	1994	1992	1992	1992	1992	1997	1977	1990	1989	1989	1979	1962	
MIN	.000	.84	1.68	2.28	2.84	.91	3.12	3.41	.27	.75	.54	.28	
(WY)	1953	1955	1979	1957	1953	1956	1954	1959	1953	1954	1954	1954	

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1953 - 1997#

ANNUAL TOTAL	32951.74	151942.8	
ANNUAL MEAN	90.0	416	
HIGHEST ANNUAL MEAN			137
LOWEST ANNUAL MEAN			660
HIGHEST DAILY MEAN	1920	Nov 24	5370
LOWEST DAILY MEAN	.75	May 10	2.1
ANNUAL SEVEN-DAY MINIMUM	1.3	Jul 2	5.0
INSTANTANEOUS PEAK FLOW			16900
INSTANTANEOUS PEAK STAGE			15.72
ANNUAL RUNOFF (AC-FT)	65360	301400	
10 PERCENT EXCEEDS	241	1270	
50 PERCENT EXCEEDS	11	87	
90 PERCENT EXCEEDS	3.0	11	
			.84

Period of regulated streamflow

08048000 WEST FORK TRINITY RIVER AT FORT WORTH, TX

LOCATION.--Lat 32°45'39", long 97°19'56", Tarrant County, Hydrologic Unit 12030102, on left bank 125 ft upstream from Texas Electric Service Co. concrete dam, 980 ft downstream from centerline of Paddock Viaduct (North Main Street) at Fort Worth, 2,600 ft downstream from Clear Fork Trinity River and at mile 556.8.

DRAINAGE AREA.--2,615 mi².

PERIOD OF RECORD.--October 1920 to current year. Gage-height records collected in this vicinity since 1910 are contained in reports of the National Weather Service.

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

REVISED RECORDS.--WSP 1392: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete dam control with angle-iron-crested notch for flow below 50 ft³/s. Datum of gage is 519.24 ft above sea level. Prior to Aug. 22, 1954, at site 1,200 ft upstream at same datum. Aug. 22, 1954, to Oct. 15, 1955, at site 2,000 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in October 1920, at least 10% of contributing drainage area has been regulated by Lake Worth (station 08045400) on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. The city of Fort Worth diverts water from river upstream from station and from Cedar Creek Reservoir (station 08063010) for municipal and industrial uses and returns wastewater effluent to river downstream from station 08048543. There are many small diversions upstream from station. Maximum stage since at least 1866, that of May 17, 1949. Maximum stages have been affected by levee construction, levee breaks and channel rectification. Rain gage at station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	47	2710	135	120	6900	878	2710	3890	58	40	13
2	24	40	2820	139	123	4780	703	2720	4200	36	26	14
3	23	32	2400	135	128	4060	317	2040	2510	30	20	16
4	20	29	1930	131	120	5040	1980	1490	1680	390	18	30
5	21	27	1640	128	121	5250	3640	768	1510	396	15	26
6	23	37	1310	130	492	4900	4970	358	1460	783	14	22
7	27	1500	1050	129	534	4760	4360	228	1170	1020	1250	18
8	26	214	999	198	1780	4720	3100	191	671	1380	170	16
9	16	554	970	148	1620	4400	2560	2570	342	1440	57	12
10	11	522	961	139	1050	4130	2360	2670	715	947	59	9.2
11	8.9	511	777	130	352	3910	3330	3360	412	496	87	43
12	8.2	512	453	128	2270	3760	2850	3640	642	168	178	61
13	8.3	512	211	131	4070	3190	2790	4130	707	128	170	37
14	9.3	520	199	133	4240	3070	2610	3880	711	126	165	36
15	9.9	409	586	136	3760	2950	1870	4410	1530	166	163	38
16	10	137	242	134	2500	2820	1340	3340	1460	165	161	36
17	9.8	200	251	127	1610	2590	684	3160	4340	165	161	35
18	8.8	163	251	57	1520	2190	628	3050	3560	159	137	36
19	8.9	329	211	46	6760	1900	454	2990	3740	139	38	36
20	8.8	325	186	42	13600	1800	568	2420	2290	135	26	38
21	366	315	177	38	10000	1780	1100	1450	1150	129	19	41
22	227	254	163	35	9300	1760	521	1310	952	118	17	44
23	36	247	152	33	8840	1400	879	782	1420	40	17	44
24	25	5080	149	35	8350	1030	626	955	908	38	18	47
25	22	7090	138	33	8150	1570	1920	961	833	41	18	39
26	21	5580	132	32	8730	1480	2390	1010	690	40	25	21
27	850	4480	130	32	7890	1640	2470	1010	389	38	23	16
28	512	3140	129	107	7620	1730	2030	985	322	37	21	17
29	71	3490	130	122	---	1210	1890	954	259	36	18	16
30	50	2950	132	123	---	1000	2600	2340	164	36	15	14
31	38	---	133	121	---	937	---	4470	---	38	14	---
TOTAL	2524.9	39246	21722	3187	115650	92657	58418	66352	44627	8918	3160	871.2
MEAN	81.4	1308	701	103	4130	2989	1947	2140	1488	288	102	29.0
MAX	850	7090	2820	198	13600	6900	4970	4470	4340	1440	1250	61
MIN	8.2	27	129	32	120	937	317	191	164	30	14	9.2
AC-FT	5010	77840	43090	6320	229400	183800	115900	131600	88520	17690	6270	1730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1997#, BY WATER YEAR (WY)

	MEAN	298	295	275	245	385	485	617	1175	802	251	119	156
MAX	4548	3855	6071	3521	4130	3103	5595	12430	10240	3030	1447	2482	
(WY)	1982	1982	1992	1992	1997	1945	1942	1990	1989	1941	1950	1962	
MIN	.12	3.64	5.02	6.08	5.57	4.72	7.71	15.2	5.73	1.33	.000	.000	
(WY)	1940	1956	1935	1930	1940	1940	1930	1959	1954	1956	1956	1930	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1921 - 1997#

ANNUAL TOTAL	76149.0	457333.1	
ANNUAL MEAN	208	1253	
HIGHEST ANNUAL MEAN			425
LOWEST ANNUAL MEAN			1823
HIGHEST DAILY MEAN	7090	Nov 25	15.6
LOWEST DAILY MEAN	4.6	May 25	47300
ANNUAL SEVEN-DAY MINIMUM	5.6	May 23	.00
INSTANTANEOUS PEAK FLOW			.00
INSTANTANEOUS PEAK STAGE			85000
ANNUAL RUNOFF (AC-FT)	151000	907100	25.91
10 PERCENT EXCEEDS	329	3810	307900
50 PERCENT EXCEEDS	25	317	1090
90 PERCENT EXCEEDS	9.3	21	40
			6.0

Period of regulated streamflow.

TRINITY RIVER MAIN STEM

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX

LOCATION.--Lat 32°45'06", long 97°17'21", Tarrant County, Hydrologic Unit 12030102, on downstream side of bridge on Beach Street, 1,700 ft downstream from Sycamore Creek, 0.9 mi downstream from Riverside Drive bridge, 2.6 mi east of the Tarrant County Courthouse and at mile 549.6.

DRAINAGE AREA.--2,685 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 478.70 ft above sea level.

REMARKS.--Records good. Since installation of gage in October 1976, at least 10% of contributing drainage area has been regulated by Lake Worth (station 08045400) on the West Fork Trinity River and by Benbrook Lake (station 08046500) on the Clear Fork Trinity River. At times, flow is sustained by releases from the flood-detention pool of Benbrook Lake. There are many diversions upstream from this station for municipal, industrial and other uses. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1866 probably occurred in May 1949 (stage and discharge unknown). Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	71	2940	122	123	7040	968	2770	3690	105	46	14
2	25	57	3000	125	125	5690	770	2830	3970	59	27	16
3	23	39	2650	130	129	4330	377	2240	2700	45	21	22
4	22	31	2190	125	126	5030	3430	1710	1880	548	18	54
5	19	28	1870	121	130	5230	3930	874	1630	546	13	37
6	21	34	1510	124	753	4850	4800	394	1590	1080	11	28
7	23	2200	1120	123	653	4680	4250	248	1270	1190	1750	24
8	30	241	1050	231	1960	4650	3200	202	729	1520	305	21
9	22	587	1020	166	1970	4350	2750	3780	376	1540	95	15
10	15	555	1010	139	1310	4090	2570	2810	1120	1120	79	7.2
11	10	536	877	129	462	3880	3740	3310	418	592	81	16
12	8.4	528	509	126	3430	4060	3020	3460	640	203	151	85
13	7.8	525	246	130	5120	3370	2910	3870	721	148	163	56
14	8.0	532	208	133	4190	3230	2790	3740	735	128	157	47
15	8.7	491	918	144	3830	3110	2110	4660	1940	173	154	50
16	9.2	197	280	145	2830	3000	1600	3430	1510	169	154	50
17	9.5	337	282	138	1970	e2840	745	3280	5040	173	152	49
18	8.8	191	274	94	1760	e2560	665	3200	3430	169	143	49
19	8.2	366	234	70	6340	e2310	501	3170	3570	145	75	51
20	8.1	359	207	60	14600	e2210	565	2790	2530	138	32	53
21	659	345	206	53	10200	e2100	1570	1760	1340	138	21	58
22	471	313	187	51	8980	1950	558	1650	1210	134	18	61
23	82	164	172	46	8540	1610	888	954	1780	81	15	66
24	37	6420	160	48	8160	962	703	1170	981	51	16	62
25	27	7500	150	47	8150	1860	2590	1120	878	52	16	58
26	24	5910	146	44	8700	1730	2850	1120	748	48	22	44
27	779	4650	137	42	7920	1860	2750	1100	429	47	26	25
28	1460	3440	132	83	7610	2010	2300	1050	343	39	23	21
29	176	4060	128	129	---	1370	2010	1010	285	33	20	20
30	80	3250	124	127	---	1130	2730	2160	188	35	17	20
31	55	---	121	125	---	996	---	4150	---	26	20	---
TOTAL	4161.7	43957	24058	3370	120071	98088	64640	70012	47671	10475	3841	1179.2
MEAN	134	1465	776	109	4288	3164	2155	2258	1589	338	124	39.3
MAX	1460	7500	3000	231	14600	7040	4800	4660	5040	1540	1750	85
MIN	7.8	28	121	42	123	962	377	202	188	26	11	7.2
AC-FT	8250	87190	47720	6680	238200	194600	128200	138900	94560	20780	7620	2340

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1997#, BY WATER YEAR (WY)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	459	517	498	332	585	844	723	1859	1344	249	109	92.7									
MAX	4881	3878	6459	4067	4288	3164	5668	12540	9448	1654	557	216									
(WY)	1982	1982	1992	1992	1997	1997	1990	1990	1989	1982	1995	1980									
MIN	9.82	23.8	13.7	30.2	33.5	43.9	35.3	20.2	22.4	5.67	9.21	9.27									
(WY)	1978	1980	1978	1978	1996	1986	1983	1996	1978	1978	1985	1984									

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1977 - 1997#

ANNUAL TOTAL	92916.9	491523.9	
ANNUAL MEAN	254	1347	
HIGHEST ANNUAL MEAN			634
LOWEST ANNUAL MEAN			2071
HIGHEST DAILY MEAN	7500	Nov 25	14600
LOWEST DAILY MEAN	2.2	Aug 7	7.2
ANNUAL SEVEN-DAY MINIMUM	5.3	Jun 25	8.6
INSTANTANEOUS PEAK FLOW			20800
INSTANTANEOUS PEAK STAGE			28.91
ANNUAL RUNOFF (AC-FT)	184300	974900	459500
10 PERCENT EXCEEDS	514	3870	1730
50 PERCENT EXCEEDS	39	359	53
90 PERCENT EXCEEDS	8.0	22	15

e Estimated

Period of regulated streamflow.

TRINITY RIVER MAIN STEM

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08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued
(National water-quality assessment program)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to current year.

pH: October 1976 to current year.

WATER TEMPERATURE: October 1976 to current year.

DISSOLVED OXYGEN: October 1976 to current year.

INSTRUMENTATION.--Since October 1976, a four-parameter water-quality monitor continuously records water temperature, dissolved oxygen, pH, and specific conductance at this station:

REMARKS.--Interruptions in the record were due to malfunctions of the instrument, pump, or power failure. 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 U.S. Geological Survey District Office upon request. Dissolved oxygen values bypassing saturation can be attributed to algae blooms in close proximity to the well intake. NAWQA program data are included in this record.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,000 microsiemens Nov. 6, 1978; minimum, 90 microsiemens Sept. 10, 1992.

pH: Maximum, 9.8 units Aug. 8, Sept. 2, 1980; minimum, 6.6 units Aug. 15, 1987.

WATER TEMPERATURE: Maximum, 38.5°C Aug. 21, 1993; minimum, 0.0°C Jan. 31, Feb. 1, 2, 1985.

DISSOLVED OXYGEN: Maximum, 22.1 mg/L Oct. 4, 1983; minimum, 0.0 mg/L on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 579 microsiemens Aug. 7; minimum, 136 microsiemens Nov. 7.

pH: Maximum, 8.8 units Mar. 29 and 31; minimum, 7.3 units Nov. 26 and Sept. 10.

WATER TEMPERATURE: Maximum, 35.0°C July 29; minimum, 2.0°C Jan. 13 and 14.

DISSOLVED OXYGEN: Maximum, 15.7 mg/L Jan. 13; minimum, 2.5 mg/L Sept. 18.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	4161.7	330	188	2110	22	246	26	287	130
NOV.	1996	43957	365	208	24680	24	2910	29	3420	140
DEC.	1996	24058	398	227	14740	27	1770	32	2100	150
JAN.	1997	3370	480	273	2480	35	317	43	388	170
FEB.	1997	120071	368	210	67930	25	7970	29	9360	140
MAR.	1997	98088	371	211	55970	25	6570	29	7720	140
APR.	1997	64640	400	228	39730	27	4780	33	5680	150
MAY	1997	70012	431	246	46420	30	5720	36	6880	160
JUNE	1997	47671	395	225	28960	27	3470	32	4120	150
JULY	1997	10475	382	218	6150	26	733	31	868	140
AUG.	1997	3841	431	245	2550	30	313	36	376	160
SEPT	1997	1179.2	454	259	823	33	105	40	128	160
TOTAL		491523.88	**	**	292500	**	34900	**	41330	**
WTD.AVG.		1350	387	220	**	26	**	31	**	150

TRINITY RIVER MAIN STEM

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	451	428	441	405	342	364	405	396	401	487	468	482
2	449	434	442	407	359	375	400	393	398	492	458	474
3	450	438	446	396	374	385	398	372	392	479	455	470
4	465	449	457	419	394	405	393	373	383	480	455	471
5	468	455	462	432	415	426	396	380	385	482	459	472
6	480	464	472	466	276	437	392	379	384	478	462	473
7	477	449	466	301	136	252	400	387	390	481	463	475
8	479	458	468	308	259	297	399	385	388	480	443	457
9	489	457	476	356	235	297	396	373	381	454	425	445
10	493	472	480	365	353	360	380	376	378	453	432	439
11	501	472	492	368	358	363	394	377	382	442	435	439
12	513	485	501	368	349	363	410	393	400	455	438	449
13	514	474	498	364	360	362	436	410	425	451	440	447
14	522	489	510	368	361	364	443	432	438	462	446	455
15	539	494	523	388	367	372	440	289	387	474	450	462
16	555	537	546	392	385	389	414	385	400	480	456	471
17	561	548	556	394	332	373	426	400	414	471	452	465
18	561	530	548	385	372	377	435	414	425	480	456	470
19	540	524	534	391	371	382	---	---	e430	496	469	486
20	543	527	536	391	343	373	---	---	e440	514	484	500
21	544	172	426	368	351	360	---	---	e460	521	497	511
22	391	299	364	378	367	373	481	477	479	532	507	520
23	380	360	369	384	346	376	486	478	483	533	508	523
24	410	372	392	442	177	248	486	478	483	539	515	528
25	442	404	425	440	391	411	485	478	482	537	508	526
26	457	442	451	456	389	408	493	478	488	535	505	521
27	479	165	407	422	401	410	489	471	483	552	511	528
28	---	---	e210	417	392	401	484	457	475	561	535	552
29	---	---	e220	402	335	369	472	454	465	544	535	541
30	320	287	298	400	383	391	482	455	469	554	543	550
31	362	316	331	---	---	---	489	475	484	556	496	538
MONTH	561	165	443	466	136	369	493	289	428	561	425	488

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	496	464	477	384	362	367	443	425	433	431	428	430
2	475	464	471	397	303	358	435	427	431	433	429	430
3	477	466	473	372	325	357	---	---	e440	437	433	435
4	478	469	475	357	331	345	---	---	e340	442	435	438
5	494	474	485	357	323	336	408	249	335	454	428	449
6	492	356	440	360	356	358	416	408	413	---	---	e460
7	421	379	406	378	355	361	415	411	413	---	---	e470
8	527	359	450	372	368	370	415	414	415	---	---	e480
9	446	440	443	375	368	370	417	415	416	---	---	e380
10	446	437	442	372	369	371	416	415	416	430	367	416
11	467	442	456	371	369	371	417	339	380	443	430	438
12	469	263	335	375	339	365	408	379	403	440	433	438
13	---	---	e300	379	369	374	410	407	408	440	424	436
14	---	---	e340	374	372	373	414	409	411	444	430	439
15	---	---	e380	---	---	e370	422	414	419	445	358	407
16	---	---	e400	---	---	e370	428	422	423	451	399	435
17	---	---	e430	---	---	e375	436	428	433	455	448	453
18	---	---	e420	---	---	e380	442	436	439	456	450	454
19	423	176	359	---	---	e380	461	442	450	456	450	455
20	377	172	327	---	---	e380	---	---	e420	460	455	457
21	364	339	355	---	---	e380	---	---	e360	478	460	464
22	367	329	351	397	388	391	427	269	391	495	443	453
23	382	365	376	400	388	394	442	426	433	468	446	456
24	396	382	387	408	400	406	464	442	454	468	428	458
25	396	379	387	411	371	387	457	248	382	466	451	457
26	388	381	383	410	373	393	384	252	327	463	453	458
27	381	368	377	414	397	404	418	384	405	---	---	e470
28	369	362	364	415	411	412	432	418	426	---	---	e500
29	---	---	---	424	413	416	460	431	440	---	---	e510
30	---	---	---	432	424	427	441	423	426	---	---	e340
31	---	---	---	439	424	432	---	---	---	---	---	e360
MONTH	527	172	403	439	303	380	464	248	409	495	358	443

e Estimated

TRINITY RIVER MAIN STEM

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08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	e370	462	425	444	503	471	486	473	464	469
2	---	---	e380	475	452	463	488	471	479	498	470	482
3	---	---	e410	502	468	487	495	468	485	492	456	484
4	---	---	e420	516	169	417	521	485	500	491	427	472
5	438	428	434	373	243	341	543	510	531	555	470	505
6	436	433	434	344	167	292	572	538	552	470	446	456
7	445	436	441	386	242	275	579	230	430	472	460	466
8	453	445	448	418	363	392	---	---	e410	482	472	478
9	---	---	e460	435	414	417	---	---	e420	496	478	486
10	---	---	e350	419	384	401	---	---	e420	517	493	504
11	396	344	374	424	401	414	---	---	e430	528	510	522
12	443	347	417	441	424	434	---	---	e400	533	471	501
13	447	427	438	455	392	433	---	---	e400	485	472	479
14	439	424	434	444	392	423	---	---	e430	501	484	493
15	431	268	351	454	410	421	---	---	e440	510	491	501
16	453	351	416	459	404	421	---	---	e440	513	475	506
17	400	189	336	430	413	421	---	---	e440	509	499	504
18	416	398	410	427	408	418	---	---	e440	509	497	503
19	417	411	414	428	406	417	---	---	e440	498	472	488
20	417	406	413	424	405	414	---	---	e440	479	468	474
21	425	416	419	431	407	416	---	---	e440	468	459	463
22	440	342	416	422	408	415	455	430	443	465	452	459
23	427	248	322	439	412	426	494	454	469	---	---	e44
24	431	236	340	481	439	460	503	466	487	---	---	e430
25	441	430	435	481	464	471	472	461	466	455	448	450
26	449	417	436	474	466	471	470	454	462	---	---	e450
27	436	416	429	486	461	470	477	446	459	---	---	e460
28	439	415	431	488	465	474	483	434	457	---	---	e470
29	456	421	446	494	468	481	448	434	440	---	---	e480
30	461	408	443	503	469	481	461	445	454	---	---	e500
31	---	---	---	522	476	495	527	456	468	---	---	---
MONTH	461	189	409	522	167	426	579	230	453	555	427	466
YEAR	579	136	427									
e Estimated												

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.3	7.9	8.1	7.9	7.6	7.7	8.0	7.9	8.0	8.4	7.9	8.1
2	8.3	7.8	8.0	7.8	7.7	7.7	7.9	7.8	7.9	8.4	7.9	8.1
3	8.4	7.8	8.0	7.8	7.7	7.7	8.0	7.8	7.9	8.4	7.9	8.1
4	8.2	7.8	8.0	7.8	7.7	7.8	7.9	7.9	7.9	8.4	7.9	8.1
5	8.3	7.8	8.0	8.1	7.8	7.9	8.0	7.9	7.9	8.4	7.9	8.1
6	8.3	7.8	8.0	8.0	7.8	7.9	8.0	7.8	7.9	8.3	7.9	8.1
7	8.2	7.9	8.0	8.5	7.6	7.8	7.9	7.8	7.8	8.4	8.0	8.2
8	8.2	7.8	7.9	7.8	7.7	7.8	7.9	7.8	7.9	8.4	8.1	8.2
9	8.4	7.9	8.1	7.9	7.7	7.8	8.1	7.8	8.0	8.6	8.1	8.3
10	8.3	7.9	8.1	8.1	7.9	8.0	8.1	8.1	8.1	8.6	8.1	8.3
11	8.4	8.0	8.1	8.1	7.9	8.0	8.2	8.1	8.1	8.5	8.2	8.3
12	8.4	7.9	8.1	8.0	7.9	7.9	8.2	8.1	8.1	8.5	8.2	8.3
13	8.4	7.9	8.1	8.1	7.9	7.9	8.2	8.0	8.1	8.7	8.2	8.5
14	8.4	7.9	8.1	8.1	7.9	8.0	8.2	7.9	8.0	8.7	8.4	8.5
15	8.3	7.9	8.1	8.1	7.9	8.0	8.0	7.8	7.9	8.6	8.3	8.4
16	8.4	7.9	8.1	8.1	7.9	8.0	7.9	7.7	7.8	8.6	8.2	8.4
17	8.4	7.9	8.2	8.1	7.7	7.9	7.9	7.7	7.8	8.5	8.2	8.3
18	8.5	8.0	8.2	8.0	7.8	7.9	8.0	7.8	7.9	8.4	8.1	8.2
19	8.4	8.1	8.2	8.1	7.8	7.9	8.1	8.0	8.0	8.3	8.1	8.2
20	8.4	7.9	8.2	8.2	7.9	8.0	8.2	8.0	8.1	8.3	8.0	8.1
21	8.3	7.7	7.9	8.2	7.9	8.0	8.2	8.1	8.1	8.1	8.0	8.0
22	7.7	7.6	7.7	8.2	8.0	8.0	8.2	8.0	8.1	8.1	7.9	8.0
23	7.7	7.5	7.6	8.0	7.8	7.9	8.3	8.0	8.2	8.1	7.8	8.0
24	7.7	7.6	7.6	8.0	7.5	7.7	8.2	8.0	8.1	8.1	7.8	7.9
25	7.7	7.5	7.6	7.9	7.4	7.8	8.2	7.9	8.1	8.2	7.8	8.0
26	7.7	7.6	7.6	8.0	7.3	7.8	8.3	7.9	8.1	8.1	7.8	7.9
27	7.9	7.6	7.6	8.0	7.9	7.9	8.3	7.9	8.1	8.0	7.7	7.9
28	8.1	7.5	7.7	8.0	7.9	7.9	8.3	7.9	8.1	7.9	7.7	7.8
29	8.2	7.6	7.7	8.0	7.9	7.9	8.4	7.9	8.1	7.9	7.7	7.8
30	8.1	7.6	7.6	8.0	7.9	8.0	8.3	7.9	8.1	7.9	7.7	7.8
31	7.6	7.6	7.6	---	---	---	8.3	7.9	8.1	8.0	7.7	7.8
MONTH	8.5	7.5	7.9	8.5	7.3	7.9	8.4	7.7	8.0	8.7	7.7	8.1

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.9	7.6	7.8	7.8	7.7	7.8	8.5	8.2	8.4	8.1	8.0	8.1
2	8.0	7.7	7.9	7.8	7.7	7.8	---	---	---	8.2	8.0	8.1
3	8.0	7.7	7.9	7.8	7.8	7.8	---	---	---	8.2	8.1	8.2
4	8.1	7.7	7.9	7.8	7.8	7.8	---	---	---	8.2	8.1	8.2
5	8.0	7.7	7.9	7.9	7.8	7.8	8.2	7.8	8.0	8.2	8.1	8.2
6	8.0	7.7	7.7	7.9	7.8	7.8	8.3	8.2	8.2	---	---	---
7	7.8	7.6	7.7	7.9	7.8	7.8	8.3	8.2	8.2	---	---	---
8	7.8	7.6	7.7	7.9	7.8	7.9	8.3	8.2	8.3	---	---	---
9	7.8	7.8	7.8	7.9	7.9	7.9	8.3	8.2	8.3	---	---	---
10	7.9	7.8	7.9	7.9	7.8	7.9	8.3	8.2	8.3	8.1	7.8	8.0
11	8.0	7.8	7.9	7.9	7.8	7.9	8.3	8.1	8.2	8.2	8.0	8.1
12	7.9	7.5	7.7	7.9	7.8	7.8	8.4	8.2	8.3	8.2	8.0	8.1
13	---	---	---	7.9	7.8	7.9	8.4	8.3	8.4	8.2	8.0	8.1
14	---	---	---	7.9	7.9	7.9	8.4	8.3	8.4	8.2	8.1	8.1
15	---	---	---	---	---	---	---	---	---	8.2	8.0	8.1
16	---	---	---	---	---	---	---	---	---	8.2	8.0	8.1
17	---	---	---	---	---	---	---	---	---	8.3	8.1	8.2
18	---	---	---	---	---	---	---	---	---	8.3	8.2	8.3
19	8.2	7.6	8.0	---	---	---	---	---	---	8.3	8.2	8.2
20	8.0	7.9	7.9	---	---	---	---	---	---	8.2	8.1	8.2
21	8.0	7.8	8.0	---	---	---	---	---	---	8.2	8.1	8.2
22	7.9	7.8	7.9	8.0	7.9	8.0	8.2	7.8	8.0	8.2	8.1	8.2
23	7.9	7.8	7.9	8.0	7.9	8.0	8.3	8.1	8.2	8.2	8.1	8.2
24	7.8	7.8	7.8	8.0	7.9	8.0	8.4	8.2	8.3	8.2	8.1	8.2
25	7.9	7.8	7.8	8.1	7.8	8.0	8.3	8.1	8.2	8.5	8.1	8.3
26	7.8	7.8	7.8	8.1	7.8	7.9	8.3	8.1	8.2	8.5	8.1	8.3
27	7.8	7.8	7.8	8.7	7.9	8.3	8.4	8.3	8.3	8.4	8.1	8.2
28	7.8	7.8	7.8	8.6	8.5	8.6	8.4	8.3	8.4	---	---	---
29	---	---	---	8.8	8.4	8.6	8.4	8.3	8.4	---	---	---
30	---	---	---	8.6	8.3	8.5	8.4	8.0	8.2	---	---	---
31	---	---	---	8.8	8.3	8.5	---	---	---	---	---	---
MONTH	8.2	7.5	7.8	8.8	7.7	8.0	8.5	7.8	8.3	8.5	7.8	8.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	---	---	---	8.3	7.9	8.1	8.3	8.1	8.2	8.0	7.6	7.8
2	---	---	---	8.2	7.8	8.0	8.3	8.1	8.2	8.0	7.6	7.7
3	---	---	---	8.1	7.7	7.9	8.4	8.0	8.2	8.0	7.5	7.7
4	---	---	---	8.1	7.6	7.7	8.5	8.0	8.2	8.0	7.5	7.7
5	---	---	---	7.8	7.6	7.7	8.3	7.8	8.1	8.0	7.6	7.8
6	---	---	---	7.9	7.6	7.7	8.2	7.8	8.0	7.9	7.5	7.7
7	---	---	---	7.9	7.7	7.8	8.2	7.7	7.9	7.9	7.5	7.7
8	---	---	---	8.1	7.8	8.0	---	---	---	8.0	7.5	7.7
9	---	---	---	8.2	7.9	8.1	---	---	---	7.8	7.5	7.6
10	---	---	---	8.2	7.9	8.0	---	---	---	7.8	7.3	7.5
11	8.3	7.9	8.1	8.1	7.9	8.0	---	---	---	7.8	7.4	7.6
12	8.3	8.0	8.2	8.2	7.8	8.0	---	---	---	---	---	---
13	8.3	8.2	8.3	8.4	7.9	8.1	---	---	---	8.3	7.8	8.1
14	8.4	8.2	8.3	8.3	7.8	8.0	---	---	---	8.4	7.8	8.1
15	8.4	7.9	8.0	8.4	7.8	8.0	---	---	---	---	---	---
16	8.3	8.0	8.2	8.3	7.8	8.0	---	---	---	8.5	7.8	8.0
17	8.2	7.9	8.0	8.3	7.8	8.0	---	---	---	8.3	7.8	8.0
18	8.3	8.1	8.2	8.4	7.9	8.1	---	---	---	8.3	7.9	8.0
19	8.3	8.1	8.2	8.4	7.9	8.1	---	---	---	8.2	7.8	8.0
20	8.4	8.1	8.2	8.4	7.9	8.1	---	---	---	8.3	7.8	8.0
21	8.4	8.2	8.3	8.5	7.9	8.2	---	---	---	---	---	---
22	8.4	8.1	8.2	8.5	8.0	8.2	8.4	7.9	8.1	---	---	---
23	8.2	8.0	8.0	8.4	8.0	8.2	8.4	7.9	8.1	---	---	---
24	8.3	7.9	8.1	8.5	8.0	8.2	8.4	8.0	8.2	---	---	---
25	8.5	8.1	8.2	8.4	8.1	8.2	8.3	7.8	8.0	---	---	---
26	8.4	8.2	8.3	8.4	8.1	8.2	8.3	7.8	8.0	---	---	---
27	8.4	8.3	8.4	8.6	8.1	8.3	8.3	7.9	8.0	---	---	---
28	8.4	8.3	8.3	8.6	8.2	8.4	8.3	7.7	7.9	---	---	---
29	8.4	8.2	8.3	8.7	8.2	8.4	8.2	7.6	7.9	---	---	---
30	8.4	7.9	8.2	8.6	8.1	8.3	8.2	7.7	7.9	---	---	---
31	---	---	---	8.5	8.1	8.3	8.2	7.8	7.9	---	---	---
MONTH	8.5	7.9	8.2	8.7	7.6	8.1	8.5	7.6	8.0	8.5	7.3	7.8
YEAR	8.8	7.3	8.0									

TRINITY RIVER MAIN STEM

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08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

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

TRINITY RIVER MAIN STEM

08048543 WEST FORK TRINITY RIVER AT BEACH STREET, FORT WORTH, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	25.5	25.0	25.0	---	---	---	31.5	29.5	30.5	31.0	29.5	30.0
2	26.0	25.0	25.5	---	---	---	31.5	29.5	30.5	31.0	29.5	30.5
3	25.5	24.5	25.5	---	---	---	31.5	29.0	30.0	31.0	28.5	30.0
4	26.0	24.5	25.5	---	---	---	31.5	29.5	30.5	28.5	25.0	27.5
5	27.0	25.5	26.0	---	---	---	32.0	30.0	31.0	28.5	26.5	27.5
6	27.0	25.5	26.0	---	---	---	31.5	30.0	30.5	29.0	27.0	28.0
7	26.0	25.0	25.5	---	---	---	30.0	23.0	26.5	29.5	27.0	28.0
8	26.5	25.5	26.0	28.5	26.0	27.0	25.5	24.0	24.5	30.0	28.0	29.0
9	27.0	25.0	26.0	29.0	28.0	28.5	26.5	24.0	25.0	30.5	28.5	29.5
10	26.0	23.5	25.0	29.0	28.0	28.5	28.0	26.5	27.0	29.5	28.0	29.0
11	26.5	23.5	25.0	30.0	28.0	29.0	28.5	27.5	28.0	29.0	26.5	28.0
12	28.5	26.0	27.0	30.5	28.0	29.0	30.5	28.0	29.0	29.0	26.5	27.5
13	29.0	27.5	28.0	31.0	28.5	30.0	31.0	29.0	30.0	29.0	27.0	28.0
14	30.0	26.0	28.5	32.0	29.5	30.5	32.0	29.5	30.5	30.0	28.0	29.0
15	30.0	27.0	28.5	31.5	29.5	30.5	31.5	29.0	30.0	30.5	28.5	29.5
16	29.0	27.5	28.0	32.0	29.0	30.5	31.0	29.0	30.0	30.5	28.5	29.5
17	27.5	24.5	25.0	32.5	30.0	31.0	31.5	29.0	30.0	30.5	28.5	29.5
18	28.0	25.0	27.0	32.5	30.0	31.0	31.5	29.5	30.5	30.5	28.5	29.5
19	29.0	28.0	28.5	32.5	30.0	31.0	31.0	29.5	30.0	30.5	28.5	29.5
20	29.0	28.5	28.5	32.5	30.0	31.5	31.5	28.5	30.0	30.5	28.5	29.5
21	29.0	28.0	28.5	32.5	30.0	31.5	32.0	29.5	31.0	29.5	28.0	28.5
22	28.0	26.0	27.0	33.0	30.0	31.5	31.5	30.0	31.0	28.5	27.5	28.0
23	26.5	25.5	26.0	33.0	30.5	31.5	31.0	29.5	30.0	27.5	27.0	27.5
24	28.0	25.5	26.5	33.0	30.5	31.5	30.0	28.5	29.5	27.0	25.5	26.0
25	29.0	26.5	27.5	33.0	30.5	32.0	30.0	28.0	29.0	25.5	24.5	25.0
26	28.5	27.5	28.0	33.0	30.5	31.5	30.0	28.0	29.0	26.0	23.5	25.0
27	---	---	---	32.5	30.5	31.5	30.5	28.5	29.0	26.5	24.5	25.5
28	---	---	---	32.5	30.5	31.5	30.5	28.5	29.5	27.5	25.0	26.5
29	---	---	---	32.5	30.5	31.5	31.0	29.0	30.0	28.0	26.0	27.0
30	---	---	---	32.0	30.5	31.0	31.0	29.0	30.0	28.0	26.5	27.0
31	---	---	---	32.0	30.0	31.0	31.0	29.0	30.0	---	---	---
MONTH	30.0	23.5	26.5	33.0	26.0	30.5	32.0	23.0	29.5	31.0	23.5	28.0
YEAR	33.0	7.0	20.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.2	7.7	9.1	8.2	6.9	7.7	10.7	10.3	10.5	14.4	9.9	11.9
2	11.8	7.4	8.9	8.9	8.1	8.5	10.6	10.3	10.4	14.2	9.8	11.9
3	11.8	7.7	8.9	8.8	8.4	8.6	10.7	10.3	10.5	13.7	9.4	11.3
4	10.2	7.1	8.3	9.3	8.5	8.9	10.7	10.3	10.5	13.1	9.0	10.8
5	11.2	7.4	8.9	10.2	8.7	9.1	10.5	10.0	10.3	13.4	9.5	11.3
6	10.9	7.1	8.7	9.4	8.0	8.6	10.3	9.8	10.1	12.9	10.3	11.5
7	10.8	7.1	8.6	9.5	8.3	8.9	10.4	9.7	10.1	13.1	10.9	12.0
8	9.4	7.0	7.9	9.5	8.4	9.0	10.5	9.9	10.2	13.0	10.7	11.6
9	10.5	6.9	8.4	9.1	8.7	9.0	11.4	9.6	10.0	14.3	11.5	12.6
10	10.3	6.9	8.6	9.4	8.7	9.0	11.0	9.3	9.9	14.4	11.3	12.7
11	11.3	7.5	9.0	9.6	8.7	9.1	10.2	9.3	9.7	14.7	12.0	13.2
12	11.3	7.0	8.9	9.4	8.7	9.0	10.2	9.2	9.7	14.9	12.5	13.6
13	11.7	7.4	9.4	9.6	8.8	9.1	10.5	9.3	9.8	15.7	13.2	14.3
14	11.9	7.5	9.4	9.7	8.8	9.1	10.2	9.1	9.6	15.5	13.6	14.5
15	11.5	7.4	9.3	9.3	8.6	8.9	9.9	8.9	9.4	15.6	13.5	14.5
16	11.5	7.3	9.3	9.4	8.5	8.8	10.3	9.1	9.6	15.4	12.9	14.1
17	11.2	7.2	8.9	10.2	8.2	9.1	10.8	9.2	9.9	15.7	12.9	14.1
18	11.5	7.4	9.1	10.3	8.8	9.6	12.4	9.7	10.8	15.2	12.8	13.8
19	11.7	8.0	9.5	10.4	9.0	9.6	13.4	10.7	12.2	15.1	12.9	13.6
20	11.7	7.7	9.3	10.3	8.7	9.5	14.6	10.9	13.3	15.2	12.4	13.4
21	8.9	6.4	7.6	9.9	8.5	9.0	14.5	11.4	12.3	13.2	10.7	11.7
22	7.5	6.8	7.2	10.3	8.7	9.4	12.2	10.5	11.3	12.1	10.6	11.3
23	8.4	6.7	7.3	---	---	---	11.9	9.9	10.8	13.6	10.8	12.1
24	7.9	7.0	7.4	---	---	---	12.8	10.0	11.2	13.7	11.0	12.3
25	---	---	---	---	---	---	12.9	10.1	11.5	14.3	12.0	13.0
26	---	---	---	---	---	---	13.1	10.3	11.6	14.5	11.7	12.9
27	---	---	---	11.1	10.9	11.0	13.6	10.5	12.0	13.0	10.7	11.6
28	---	---	---	11.0	10.6	10.8	14.1	10.5	12.2	14.9	10.9	13.0
29	---	---	---	10.7	10.4	10.6	14.7	10.3	12.3	14.7	11.2	13.1
30	7.2	6.7	7.0	10.4	10.2	10.4	14.2	10.2	12.0	14.8	11.0	13.0
31	7.0	6.7	6.8	---	---	---	13.6	9.9	11.5	14.6	10.8	12.8
MONTH	11.9	6.4	8.5	11.1	6.9	9.2	14.7	8.9	10.8	15.7	9.0	12.7

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OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	14.0	10.6	12.5	11.2	10.8	11.0	10.8	8.9	9.7	9.4	8.6	9.0
2	13.3	10.1	12.0	11.1	10.8	10.9	10.6	8.7	9.5	9.3	8.3	8.7
3	12.6	9.7	11.2	11.1	10.8	10.9	9.6	9.0	9.3	9.6	8.2	8.8
4	12.9	9.1	11.2	11.0	10.7	10.9	9.5	8.4	9.2	9.5	8.2	8.8
5	12.8	9.6	11.4	11.0	10.6	10.8	9.3	8.7	9.1	---	---	---
6	12.0	9.3	10.2	11.2	10.5	10.9	9.8	9.1	9.4	---	---	---
7	10.9	10.3	10.5	11.1	10.6	10.9	10.0	9.2	9.6	---	---	---
8	11.4	10.6	11.0	11.0	10.7	10.8	9.9	9.3	9.5	---	---	---
9	11.3	10.9	11.1	10.8	10.5	10.7	10.1	9.3	9.6	---	---	---
10	11.5	10.8	11.1	10.9	10.6	10.7	10.0	9.2	9.6	---	---	---
11	11.4	10.5	10.9	10.9	10.7	10.8	9.5	9.1	9.3	---	---	---
12	---	---	---	10.8	10.4	10.6	10.3	9.5	9.9	---	---	---
13	---	---	---	10.7	10.4	10.5	10.6	9.7	10.1	---	---	---
14	---	---	---	11.0	10.5	10.8	10.7	9.8	10.1	---	---	---
15	---	---	---	---	---	---	10.9	9.6	10.2	8.7	8.4	8.6
16	---	---	---	---	---	---	10.9	9.5	10.2	8.7	8.3	8.5
17	---	---	---	---	---	---	11.6	9.3	10.2	8.5	7.9	8.3
18	---	---	---	---	---	---	11.4	8.8	10.0	8.3	7.8	8.0
19	---	---	---	---	---	---	10.8	9.0	9.9	8.2	7.8	7.9
20	---	---	---	---	---	---	10.7	8.1	9.2	7.9	7.5	7.8
21	---	---	---	---	---	---	9.3	6.9	8.0	8.0	7.3	7.6
22	---	---	---	11.0	9.7	10.3	8.4	7.1	7.8	8.3	7.8	8.1
23	---	---	---	11.1	9.8	10.5	9.1	7.5	8.3	8.3	7.4	7.8
24	---	---	---	10.6	9.4	10.0	9.0	8.0	8.4	8.0	7.1	7.6
25	---	---	---	9.8	8.9	9.4	9.3	7.8	8.4	8.1	6.6	7.3
26	11.5	11.3	11.4	10.7	9.4	10.0	9.4	9.3	9.3	7.8	6.1	6.9
27	11.5	11.2	11.4	11.3	9.5	10.3	9.3	9.1	9.2	7.0	5.9	6.2
28	11.3	11.1	11.3	11.1	9.5	10.3	9.5	8.9	9.2	6.8	5.5	6.1
29	---	---	---	11.3	9.2	10.0	9.3	8.7	9.0	6.8	5.2	6.0
30	---	---	---	11.0	9.0	9.8	9.2	8.7	8.9	6.3	5.2	5.7
31	---	---	---	11.6	9.0	9.9	---	---	---	6.1	5.2	5.5
MONTH	14.0	9.1	11.2	11.6	8.9	10.5	11.6	6.9	9.3	9.6	5.2	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	8.1	4.8	6.4	---	---	---	---	---	---
2	---	---	---	8.0	4.4	6.1	---	---	---	---	---	---
3	---	---	---	7.3	4.5	5.7	---	---	---	---	---	---
4	---	---	---	5.9	3.9	4.8	---	---	---	---	---	---
5	7.1	6.2	6.7	5.9	3.1	4.4	---	---	---	---	---	---
6	6.8	5.9	6.3	6.1	4.3	5.4	---	---	---	---	---	---
7	6.7	5.7	6.2	6.2	5.4	5.8	---	---	---	---	---	---
8	6.7	5.2	5.8	6.1	4.9	5.5	---	---	---	---	---	---
9	7.7	4.5	5.8	5.1	4.0	4.7	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	8.2	4.3	6.1
15	---	---	---	---	---	---	---	---	---	8.3	4.5	6.3
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	8.3	5.1	6.6	---	---	---	7.8	4.3	6.1
18	---	---	---	8.4	4.6	6.4	---	---	---	6.9	3.8	5.3
19	---	---	---	8.8	4.7	6.6	---	---	---	6.4	2.5	4.8
20	---	---	---	8.6	4.6	6.4	---	---	---	6.8	3.1	5.0
21	---	---	---	7.8	4.5	6.1	---	---	---	5.8	2.7	4.5
22	---	---	---	7.7	4.4	5.9	---	---	---	5.0	2.7	4.1
23	---	---	---	7.4	4.3	5.7	7.4	3.5	5.3	---	---	---
24	---	---	---	7.5	4.8	5.9	7.6	3.3	5.1	---	---	---
25	---	---	---	7.2	4.6	5.8	8.0	4.0	5.9	---	---	---
26	---	---	---	---	---	---	7.6	4.1	5.7	---	---	---
27	---	---	---	6.9	4.7	5.7	---	---	---	---	---	---
28	---	---	---	8.4	5.1	6.6	7.4	3.8	5.6	---	---	---
29	---	---	---	7.7	5.4	6.5	6.7	4.3	5.4	---	---	---
30	---	---	---	8.6	5.5	6.6	---	---	---	---	---	---
31	---	---	---	7.7	5.5	6.5	---	---	---	---	---	---
MONTH	7.7	4.5	6.2	8.8	3.1	5.9	8.0	3.3	5.4	9.2	2.5	5.4
YEAR	15.7	2.5	9.3									

TRINITY RIVER BASIN

08048970 VILLAGE CREEK AT EVERMAN, TX

LOCATION.--Lat 32°36'12", long 97°15'53", Tarrant County, Hydrologic Unit 12030102, at center of channel on downstream side of bridge on Rendon Road (Tarrant County Road 1015), 1.4 mi downstream from Deer Creek and 1.8 mi southeast of Everman High School.

DRAINAGE AREA.--84.5 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 589.93 ft above sea level (Tarrant County Public Works Department reference mark).

REMARKS.--No estimated daily discharges. Records good except those less than 10 ft³/s, which are poor. Peak discharge from rating extended above 7,700 ft³/s on basis of area-velocity study. No flow at times. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since about 1930, 27.37 ft date uncertain, but may be same date, Mar. 27, 1977, as date of maximum stage at discontinued downstream station, Village Creek at Kennedale (08048980). Flood of May 18, 1989, may have equalled, or slightly exceeded, the indicated known maximum stage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	4.8	7.2	2.3	2.8	54	10	9.7	6.5	4.3	2.9	.05
2	.04	4.8	4.7	2.5	2.7	722	10	9.1	6.1	4.1	2.8	.03
3	.04	4.5	4.2	2.7	2.3	502	10	8.3	6.2	3.9	2.7	.02
4	.04	4.7	3.7	2.6	2.8	89	1910	7.7	6.1	3.8	2.5	.02
5	.04	5.3	3.8	2.9	3.0	65	343	7.4	6.0	3.9	2.6	.02
6	.04	6.3	3.4	3.2	18	51	93	7.1	5.9	12	2.4	.01
7	.04	182	3.2	4.2	27	44	63	7.0	5.6	6.9	46	.01
8	.04	23	3.1	6.1	8.9	43	49	7.2	5.6	4.9	8.3	.01
9	.04	8.8	3.1	4.1	5.6	39	42	137	5.7	4.4	4.6	.00
10	.04	7.4	3.1	3.0	4.8	32	32	62	6.4	3.9	3.8	.00
11	.04	7.0	3.4	2.5	4.4	26	76	15	5.7	3.6	4.2	.00
12	.04	6.6	3.3	1.9	1080	70	68	9.7	5.3	3.4	3.6	.00
13	.04	6.4	3.1	1.7	751	80	38	9.4	5.2	3.4	3.7	.00
14	.04	5.5	3.1	1.6	92	50	26	8.5	4.7	3.4	3.2	.00
15	.04	5.9	5.2	1.7	61	32	22	8.6	19	3.3	2.6	.00
16	.04	8.4	4.1	2.1	36	25	18	8.8	6.5	3.2	2.3	.00
17	.04	19	3.5	1.6	16	24	16	7.9	39	3.1	1.9	.00
18	.04	7.1	3.2	1.7	12	25	14	7.8	6.8	2.9	1.6	.00
19	.04	6.1	3.2	1.9	384	22	13	7.0	5.5	2.9	1.4	.00
20	.04	5.9	2.9	2.5	822	21	12	7.6	5.1	3.1	1.3	.00
21	30	5.2	2.8	2.6	252	19	22	7.6	4.7	3.3	1.3	.00
22	8.0	4.1	2.9	2.9	76	18	11	7.4	17	3.3	1.3	.00
23	2.0	4.2	2.3	2.9	54	18	10	7.6	64	3.1	1.1	.00
24	.29	341	2.2	2.9	75	17	9.6	9.7	12	3.1	.83	.00
25	.16	74	2.1	2.6	261	74	188	8.1	6.7	3.1	.87	.00
26	.11	25	2.1	2.8	392	40	314	7.1	5.6	3.1	.70	.00
27	137	10	2.1	2.9	115	18	114	6.8	4.9	2.9	.49	.00
28	385	8.8	2.0	2.9	69	14	51	6.4	4.9	2.8	.24	.00
29	20	78	2.1	2.9	---	12	20	6.5	4.6	2.8	.20	.00
30	6.7	34	2.1	2.8	---	11	11	9.1	4.4	2.7	.10	.00
31	5.5	---	2.4	2.7	---	10	---	9.1	---	2.8	.08	---
TOTAL	595.56	913.8	99.6	83.7	4630.3	2267	3615.6	438.2	291.7	117.4	111.61	0.17
MEAN	19.2	30.5	3.21	2.70	165	73.1	121	14.1	9.72	3.79	3.60	.006
MAX	385	341	7.2	6.1	1080	722	1910	137	64	12	46	.05
MIN	.04	4.1	2.0	1.6	2.3	10	9.6	6.4	4.4	2.7	.08	.00
AC-FT	1180	1810	198	166	9180	4500	7170	869	579	233	221	.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

	MEAN	44.7	18.9	58.5	24.6	66.5	50.5	72.8	92.6	34.0	5.08	5.00	4.81
MAX	240	52.1	367	117	165	147	233	339	141	14.3	21.7	14.3	
(WY)	1992	1995	1992	1992	1997	1995	1990	1990	1993	1993	1991	1995	
MIN	.68	.50	.72	.83	1.32	1.13	2.70	.59	.72	2.15	.31	.006	
(WY)	1990	1996	1991	1996	1996	1996	1996	1996	1996	1990	1994	1997	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1990 - 1997

ANNUAL TOTAL	2023.52	13164.64	
ANNUAL MEAN	5.53	36.1	39.7
HIGHEST ANNUAL MEAN			92.6
LOWEST ANNUAL MEAN			1.37
HIGHEST DAILY MEAN	385	Oct 28	5990
LOWEST DAILY MEAN	.00	Jul 7	.00
ANNUAL SEVEN-DAY MINIMUM	.01	Jul 4	.00
INSTANTANEOUS PEAK FLOW			6830
INSTANTANEOUS PEAK STAGE			18.25
ANNUAL RUNOFF (AC-FT)	4010	26110	28760
10 PERCENT EXCEEDS	5.8	62	54
50 PERCENT EXCEEDS	.58	4.7	4.0
90 PERCENT EXCEEDS	.04	.04	.03

08048970 VILLAGE CREEK AT EVERMAN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1989 to current year.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1989 to September 1990.

pH: October 1989 to September 1990.

WATER TEMPERATURE: October 1989 to September 1990.

DISSOLVED OXYGEN: October 1989 to September 1990.

INSTRUMENTATION.--From October 1989 to September 1990, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen at this station.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum, 1,000 microsiemens on several days during January and May 1990; minimum, 129 microsiemens May 3, 1990.

pH: Maximum, 9.1 units Jan. 13, 1990; minimum, 7.0 units Nov. 22, 1989.

WATER TEMPERATURE: Maximum, 34.5°C July 11, 1990; minimum, 0.5°C Dec. 22, 1989.

DISSOLVED OXYGEN: Maximum, 20.8 mg/L Feb. 25, 1990; minimum, 2.4 mg/L Nov. 8, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
NOV 21...	1317	5.3	494	8.0	17.0	7.9	83	1.2	170	29
FEB 04...	1047	2.7	804	8.2	18.0	8.9	95	2.0	210	0
APR 17...	1251	15	786	8.3	19.0	14.0	152	0.6	260	54
JUL 08...	1050	5.1	430	7.9	27.0	8.4	107	3.7	140	8
30...	0841	2.7	586	7.7	28.0	5.7	74	1.1	140	27
DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
NOV 21...	56	6.5	38	1	5.2	140	54	35	0.30	2.1
FEB 04...	64	11	89	3	4.1	210	100	65	0.50	1.6
APR 17...	83	13	59	2	3.7	210	110	54	0.38	5.9
JUL 08...	45	6.1	33	1	4.2	130	46	30	0.31	5.0
30...	42	8.0	57	2	3.2	110	79	52	0.33	13
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
NOV 21...	281	0.210	0.030	0.240	<0.015	--	0.40	0.050	0.030	0.09
FEB 04...	460	--	0.020	<0.050	<0.015	--	0.40	<0.010	<0.010	--
APR 17...	453	--	<0.010	0.161	0.017	0.27	0.29	0.054	0.046	0.14
JUL 08...	249	--	<0.010	<0.050	0.083	0.99	1.1	<0.010	<0.010	--
30...	321	--	<0.010	<0.050	0.041	0.37	0.42	0.023	0.018	0.05
DATE	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS Ba)	BERYL-LIUM, DIS-SOLVED (UG/L AS Be)	CADMIUM DIS-SOLVED (UG/L AS Cd)	CHRO-MIUM, DIS-SOLVED (UG/L AS Cr)	COBALT, DIS-SOLVED (UG/L AS Co)	COPPER, DIS-SOLVED (UG/L AS Cu)	IRON, DIS-SOLVED (UG/L AS Fe)	LEAD, DIS-SOLVED (UG/L AS Pb)	LITHIUM DIS-SOLVED (UG/L AS Li)
NOV 21...	--	--	--	--	--	--	--	--	--	--
FEB 04...	1	62	<0.50	<1.0	<5.0	<3.0	<10	36	<10	14
APR 17...	--	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--
30...	2	49	<0.50	<1.0	<5.0	<3.0	<10	9.5	<10	14

TRINITY RIVER BASIN

08048970 VILLAGE CREEK AT EVERMAN, TX--Continued

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 21...	--	--	--	--	--	--	--	--	--
FEB 04...	27	<0.1	<10	<10	<1	<1.0	660	<6	5.0
APR 17...	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--
30...	57	<0.1	<10	<10	<1	<1.0	466	<6	11

08049200 LAKE ARLINGTON AT ARLINGTON, TX

LOCATION.--Lat 32°42'58", long 97°11'32", Tarrant County, Hydrologic Unit 12030102, in pumphouse at right end of Arlington Dam on Village Creek near western boundary of Arlington, 1.5 mi upstream from the Texas and Pacific Railway Co. bridge and 7 mi upstream from mouth.

DRAINAGE AREA.--143 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--March 1957 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sept. 9, 1957, nonrecording gage at same site and datum.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 6,482 ft long. The service spillway is a 10-foot diameter uncontrolled circular drop inlet. The spillway is an 882-foot-wide cut through natural ground near the right end of dam. The dam was completed and storage began Mar. 31, 1957. Capacities are based on a 1994 survey. The dam was built by the city of Arlington to impound water for municipal and industrial uses. Water is diverted from Cedar Creek Reservoir (station 08063010) into Lake Arlington. Water is pumped from the lake to a generating plant of Texas Electric Service Company. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	572.0	-
Crest of Spillway	559.7	57,950
Crest of drop inlet (top of conservation pool)	550.0	38,800
Lowest gated outlet (invert)	505.0	45

COOPERATION.--Capacity table No. 2 provided by the city of Arlington. A new capacity table, Table No. 3, was provided by the Texas Water Development Board and put into effect October 1995.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 72,500 acre-ft May 17, 1989 (elevation, 562.42 ft); minimum since lake first filled in April 1957, 18,110 acre-ft Oct. 17, 1971 (elevation, 534.27) using capacity table No. 2.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 43,950 acre-ft Apr. 4 at 2345 hours (elevation, 553.28 ft); minimum, 20,280 acre-ft Sept. 30 (elevation, 539.45 ft).

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

534.0	13,200	546.0	31,350	557.0	51,760
538.0	18,200	550.0	38,800	560.0	58,680
542.0	24,380	554.0	45,460	563.0	67,100

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28500	28940	33220	33260	31440	39050	38270	39010	38780	38140	31480	26120
2	28330	28910	33240	33280	31350	40340	38230	39020	38480	37930	31140	25790
3	28200	28910	33240	33320	31190	40080	38190	38930	37910	38210	30870	25700
4	28120	28820	33280	33320	31100	39250	43950	38900	38190	37660	30600	25700
5	28010	28770	33300	33280	31050	39140	41820	38910	37810	37450	30280	25620
6	27940	28840	33320	33210	31350	39050	40180	38820	37410	37600	29990	25520
7	27800	30260	33300	33130	31570	38970	39250	38800	37280	37640	30460	25340
8	27650	30350	33300	33220	31590	38930	39110	38810	37220	37620	30810	25090
9	27600	30310	33260	33210	31570	38910	39030	38960	37110	37550	30870	24900
10	27490	30310	33260	33120	31510	38890	38960	39030	37390	37430	30940	24690
11	27320	30290	33220	33080	31510	38860	39040	39030	37640	37300	30990	24400
12	27210	30260	33210	33020	31410	38940	39000	39030	37580	37090	30940	24130
13	27020	30220	33190	32950	31090	38950	38940	38940	37450	36810	30830	23900
14	26830	30110	33190	32880	31060	38920	38910	38890	37360	36520	30690	23630
15	26730	30200	33330	32790	31000	38890	38870	38910	37660	36330	30440	23350
16	26640	30220	33330	32720	30950	38860	38840	38920	38460	36180	30220	23080
17	26490	30330	33320	32640	30900	38830	38810	38980	38870	35970	29950	22820
18	26320	30370	33280	32590	30870	38810	38830	38950	38880	35760	29650	22530
19	26220	30400	33280	32500	40040	38780	38900	38900	38840	35440	29380	22250
20	26130	30380	33280	32410	41840	38720	38910	38910	38970	34950	29380	22020
21	26630	30330	33300	32350	40230	38610	38970	38920	38820	34760	29300	21790
22	26760	30370	33300	32280	39380	38510	38940	38910	38740	34540	29400	21590
23	26800	30380	33240	32210	39140	38400	38910	38910	38860	34250	28890	21610
24	26660	31710	33220	32150	39110	38340	38900	38900	38870	33920	28640	21430
25	26540	31970	33240	32080	39220	38590	39130	38910	38860	33630	28400	21410
26	26390	32040	33260	32010	39870	38650	39870	38760	38830	33350	28170	21250
27	26800	32060	33280	31900	39250	38650	39850	38440	38810	32970	27480	21070
28	28870	32060	33280	31820	39140	38610	39360	38310	38740	32880	27260	20780
29	29010	32840	33260	31730	---	38550	39160	38170	38570	32510	26910	20510
30	29010	33190	33260	31680	---	38420	39030	38120	38400	32110	26680	20280
31	28960	---	33220	31550	---	38330	---	37640	---	31790	26360	---
MAX	29010	33190	33330	33320	41840	40340	43950	39030	38970	38210	31480	26120
MIN	26130	28770	33190	31550	31050	38330	38190	37640	37110	31790	26360	20280
(+)	544.66	547.01	547.03	546.11	550.74	549.75	550.51	549.39	549.79	546.24	543.15	539.45
(@)	+420	+4230	+30	-1670	+7590	-810	+700	-1390	+760	-6610	-5430	-6080

CAL YR 1996 MAX 34340 MIN 22780 (@) +10210
WTR YR 1997 MAX 43950 MIN 20280 (@) -8260

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

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1964 to current year.

324304097113601 - LAKE ARLINGTON SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD) UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN											
30...	1307	31700	1.00	327	8.1	10.5	0.79	10.3	93	120	10
30...	1311	--	10.0	327	8.1	10.0	--	10.2	91	--	--
30...	1316	--	20.0	326	8.0	9.5	--	10.1	89	--	--
30...	1321	--	30.0	327	8.0	9.5	--	9.9	88	--	--
30...	1327	--	39.0	327	7.9	9.5	--	9.5	84	120	10
APR											
15...	1304	39100	1.00	320	8.0	18.0	0.67	8.6	92	110	11
15...	1310	--	10.0	319	7.8	17.0	--	8.0	84	--	--
15...	1315	--	20.0	319	7.7	16.0	--	7.1	73	--	--
15...	1318	--	30.0	330	7.6	16.0	--	6.6	68	--	--
15...	1321	--	45.0	342	7.6	16.0	--	6.0	62	120	11
JUL											
17...	1230	36000	1.00	317	8.7	35.5	1.19	8.2	122	100	3
17...	1235	--	10.0	318	8.6	34.0	--	7.6	110	--	--
17...	1241	--	20.0	327	7.7	30.5	--	2.4	33	--	--
17...	1247	--	30.0	355	7.3	25.5	--	0.3	4	--	--
17...	1253	--	41.0	374	7.2	23.0	--	0.3	4	130	0

324304097113601 - LAKE ARLINGTON SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)
JAN											
30...	40	4.2	18	0.7	4.3	110	33	16	0.30	3.0	184
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	40	4.2	18	0.7	4.2	110	32	16	0.30	3.1	183
APR											
15...	39	4.3	16	0.6	4.7	100	31	15	0.21	5.5	179
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	41	4.7	17	0.7	4.6	110	34	16	0.21	6.9	194
JUL											
17...	33	4.6	21	0.9	4.4	98	33	18	0.27	3.0	176
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
17...	45	4.8	20	0.8	4.4	150	18	17	0.25	11	216

324304097113601 - LAKE ARLINGTON SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (MG/L AS FE)	MANGA- NESE, DIS- SOLVED (MG/L AS MN)
JAN											
30...	0.180	0.020	0.200	0.080	0.32	0.40	<0.010	<0.010	--	<3.0	67
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	0.180	0.020	0.200	0.090	0.31	0.40	<0.010	<0.010	--	<3.0	150
APR											
15...	0.547	0.077	0.624	<0.015	--	0.37	0.042	0.058	0.18	5.0	10
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	0.472	0.105	0.577	0.116	0.35	0.47	0.071	0.059	0.18	9.5	15
JUL											
17...	--	<0.010	<0.050	<0.015	--	0.35	<0.010	<0.010	--	4.3	5.8
17...	--	<0.010	<0.050	<0.015	--	0.37	<0.010	0.014	0.04	13	51
17...	--	<0.010	<0.050	<0.015	--	0.38	0.016	0.011	0.03	14	15
17...	--	<0.010	<0.050	0.605	0.35	0.95	0.125	0.133	0.41	410	2200
17...	--	<0.010	<0.050	1.48	0.32	1.8	0.430	0.459	1.4	540	1940

TRINITY RIVER BASIN

339

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

324320097121101 - LAKE ARLINGTON SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
30...	1339	1.00	330	8.1	10.5	10.3	93
30...	1342	10.0	329	8.1	10.5	10.3	93
30...	1345	20.0	328	8.0	9.5	10.0	88
30...	1348	30.0	328	8.0	9.5	9.9	88
APR							
15...	1330	1.00	320	8.0	19.0	8.8	97
15...	1333	10.0	318	8.0	18.5	8.6	93
15...	1336	20.0	318	7.8	17.0	7.5	79
15...	1339	30.0	325	7.6	16.0	6.2	64
15...	1342	35.0	341	7.6	16.0	5.6	58
JUL							
17...	1300	1.00	317	8.7	35.0	5.8	86
17...	1302	10.0	316	8.6	33.5	7.6	109
17...	1304	20.0	327	7.7	30.0	2.2	30
17...	1306	31.0	357	7.3	25.5	0.5	6

324253097121801 - LAKE ARLINGTON SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
30...	1356	1.00	330	8.1	11.0	0.70	10.2	93
30...	1359	10.0	329	8.0	9.5	--	9.8	87
30...	1402	20.0	329	8.0	9.5	--	9.7	86
30...	1404	30.0	329	8.0	9.5	--	9.7	86
30...	1406	37.0	330	7.9	9.5	--	9.6	85
APR								
15...	1352	1.00	319	7.9	18.0	0.64	8.1	87
15...	1354	10.0	318	7.8	17.0	--	8.0	84
15...	1356	20.0	318	7.8	16.5	--	7.5	78
15...	1359	30.0	326	7.7	16.0	--	7.0	72
15...	1402	42.0	358	7.6	16.0	--	5.4	56
JUL								
17...	1316	1.00	319	8.7	36.0	1.04	8.0	120
17...	1319	10.0	318	8.7	34.0	--	7.7	112
17...	1322	20.0	328	7.7	30.5	--	1.9	26
17...	1325	30.0	357	7.3	25.0	--	0.3	4
17...	1328	38.0	373	7.2	23.0	--	0.5	6

324301097123301 - LAKE ARLINGTON SITE BL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
30...	1413	1.00	330	8.1	10.5	10.3	93
30...	1415	10.0	329	8.0	9.5	9.8	87
30...	1417	20.0	329	8.0	9.0	9.7	85
30...	1419	28.0	330	8.0	9.5	9.6	85
APR							
15...	1409	1.00	319	7.9	18.0	8.2	88
15...	1411	10.0	318	7.9	17.5	8.0	85
15...	1414	20.0	318	7.8	16.5	7.7	80
15...	1416	33.0	347	7.6	16.0	5.2	54
JUL							
17...	1337	1.00	318	8.8	35.0	8.5	125
17...	1341	10.0	317	8.7	34.0	8.1	118
17...	1345	20.0	329	7.7	30.5	2.4	33
17...	1351	30.0	349	7.3	27.0	0.3	4

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

324257097130301 - LAKE ARLINGTON SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
30...	1429	1.00	331	8.0	12.5	0.55	10.0	95
30...	1431	10.0	332	8.0	12.0	--	10.1	95
30...	1434	18.0	332	8.0	12.0	--	10.0	94
APR								
15...	1428	1.00	323	7.9	21.0	0.55	8.3	95
15...	1430	10.0	323	7.9	21.0	--	8.3	95
15...	1432	17.0	323	7.9	21.0	--	8.3	95
JUL								
17...	1418	1.00	317	8.5	42.5	1.01	6.6	109
17...	1420	10.0	318	8.5	42.0	--	6.6	109
17...	1422	19.0	318	8.5	42.0	--	6.6	109

324228097130301 - LAKE ARLINGTON SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN								
30...	1443	1.00	331	8.0	11.5	0.70	9.8	91
30...	1446	10.0	330	8.0	9.5	--	9.9	88
30...	1448	18.0	331	8.0	9.5	--	9.7	86
APR								
15...	1442	1.00	322	7.8	18.5	0.55	7.7	84
15...	1444	10.0	320	7.8	16.5	--	7.5	78
15...	1446	21.0	320	7.7	16.5	--	7.4	77
JUL								
17...	1429	1.00	324	8.6	36.5	0.34	7.0	106
17...	1431	10.0	317	8.7	33.5	--	8.0	115
17...	1433	19.0	328	7.6	31.0	--	2.5	35

324143097132201 - LAKE ARLINGTON SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
JAN											
30...	1459	1.00	331	8.3	10.5	10.8	98	120	11	40	4.3
30...	1504	10.0	330	8.3	10.0	10.8	97	--	--	--	--
30...	1510	22.0	337	8.2	8.0	10.4	89	120	15	42	4.3
APR											
15...	1503	1.00	325	8.4	19.0	10.4	114	120	10	40	4.4
15...	1509	10.0	321	7.8	16.5	7.9	82	--	--	--	--
15...	1514	25.0	380	7.6	15.5	5.5	56	140	10	45	5.3
JUL											
17...	1447	1.00	317	8.8	35.0	9.2	136	100	6	34	4.7
17...	1452	10.0	316	8.7	33.5	9.1	131	--	--	--	--
17...	1458	23.0	314	7.4	30.5	0.4	5	110	3	36	4.3

TRINITY RIVER BASIN

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08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

324143097132201 - LAKE ARLINGTON SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
JAN										
30...	19	0.8	4.2	110	33	17	0.30	2.9	186	0.180
30...	--	--	--	--	--	--	--	--	--	--
30...	19	0.7	4.1	110	34	17	0.30	2.9	189	0.180
APR										
15...	16	0.7	4.6	110	32	15	0.22	5.7	185	0.492
15...	--	--	--	--	--	--	--	--	--	--
15...	20	0.7	4.7	120	38	18	0.22	7.4	217	0.470
JUL										
17...	21	0.9	4.3	98	32	18	0.26	3.0	176	--
17...	--	--	--	--	--	--	--	--	--	--
17...	18	0.8	4.2	100	28	15	0.25	4.8	173	--

324143097132201 - LAKE ARLINGTON SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
30...	0.020	0.200	0.030	0.27	0.30	<0.010	<0.010	--	<3.0	<1.0
30...	--	--	--	--	--	--	--	--	--	--
30...	0.010	0.190	0.020	0.28	0.30	<0.010	<0.010	--	<3.0	2.0
APR										
15...	0.076	0.568	<0.015	--	0.34	0.036	0.047	0.14	8.5	2.0
15...	--	--	--	--	--	--	--	--	--	--
15...	0.070	0.540	0.207	0.36	0.56	0.048	0.054	0.17	6.9	25
JUL										
17...	<0.010	<0.050	<0.015	--	0.40	<0.010	<0.010	--	<3.0	2.8
17...	<0.010	<0.050	<0.015	--	0.35	<0.010	<0.010	--	<3.0	7.3
17...	<0.010	0.080	<0.015	--	0.41	<0.010	<0.010	--	6.8	350

324133097130601 - LAKE ARLINGTON SITE EL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
30...	1517	1.00	331	8.3	10.5	10.8	98
30...	1520	10.0	330	8.3	10.5	10.8	98
30...	1523	16.0	338	8.1	8.5	10.2	88
APR							
15...	1523	1.00	318	8.4	19.0	10.5	115
15...	1525	10.0	320	7.8	16.5	7.4	77
15...	1527	20.0	331	7.7	16.0	7.3	75
JUL							
17...	1503	1.00	317	8.8	35.0	9.4	139
17...	1506	10.0	316	8.8	34.0	8.8	128
17...	1508	17.0	330	7.5	31.0	0.7	10

TRINITY RIVER BASIN

08049200 LAKE ARLINGTON AT ARLINGTON, TX--Continued

324041097134601 - LAKE ARLINGTON SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PERCENT SATURATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNESIUM, DIS- SOLVED (MG/L AS MG)
JAN											
30...	1541	1.00	335	8.3	9.0	10.7	93	120	13	41	4.4
30...	1547	12.0	349	8.0	7.5	10.2	86	130	16	43	4.6
APR											
15...	1543	1.00	324	8.2	18.5	9.6	104	120	11	39	4.4
15...	1549	10.0	326	7.8	16.5	7.4	77	--	--	--	--
15...	1555	15.0	397	7.7	15.5	6.6	67	130	9	44	5.1
JUL											
17...	1523	1.00	314	8.7	34.0	9.1	132	99	2	32	4.6
17...	1529	13.0	310	7.7	30.5	3.9	53	100	3	35	4.3

324041097134601 - LAKE ARLINGTON SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
JAN										
30...	18	0.7	4.3	110	33	17	0.30	2.9	187	0.180
30...	20	0.8	4.1	110	36	19	0.30	3.1	197	0.170
APR										
15...	16	0.6	4.8	100	31	15	0.21	5.7	182	0.501
15...	--	--	--	--	--	--	--	--	--	--
15...	19	0.7	4.8	120	39	18	0.22	6.9	213	0.499
JUL										
17...	21	0.9	4.4	97	33	18	0.27	3.2	174	--
17...	18	0.8	4.1	100	28	16	0.25	4.0	171	--

324041097134601 - LAKE ARLINGTON SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
30...	0.020	0.200	0.020	0.28	0.30	<0.010	<0.010	--	<3.0	<1.0
30...	0.020	0.190	0.030	0.27	0.30	<0.010	<0.010	--	<3.0	1.0
APR										
15...	0.077	0.578	<0.015	--	0.35	0.040	0.051	0.16	4.1	2.4
15...	--	--	--	--	--	--	--	--	--	--
15...	0.071	0.570	0.125	0.35	0.48	0.035	0.045	0.14	4.7	7.5
JUL										
17...	<0.010	<0.050	<0.015	--	0.34	<0.010	<0.010	--	5.3	5.3
17...	<0.010	0.087	0.015	0.38	0.39	<0.010	<0.010	--	4.7	24

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°45'46", long 96°59'42", Dallas County, Hydrologic Unit 12030102, on left bank at upstream side of bridge on Belt Line Road, 1.3 mi northeast of Grand Prairie, 3.7 mi upstream from Mountain Creek, and at mile 514.6.

DRAINAGE AREA.--3,065 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1925 to current year.

REVISED RECORDS.--WSP 628: 1925. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 405.42 ft above sea level. Prior to Dec. 6, 1933, nonrecording gage at bridge on old channel 2,500 ft southeast of present site at datum 7.56 ft higher. Dec. 6, 1933, to May 24, 1956, water-stage recorder at site 440 ft downstream from site of nonrecording gage at datum 7.56 ft higher than present datum. May 25, 1956, to Apr. 18, 1957, nonrecording gage at site 1.5 mi downstream at different datum. Apr. 19 to Aug. 13, 1957, nonrecording gage on bridge at present site and at datum 5.00 ft higher than present datum. Aug. 14, 1957, to Sept. 30, 1982, water-stage recorder at present site and at datum 5.00 ft higher than present datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in April 1925, at least 10% of contributing drainage area has been regulated by three upstream reservoirs with a combined capacity of 248,600 acre-ft, of which 76,550 acre-ft is for flood control. The city of Fort Worth discharges wastewater effluent into the river upstream from this station. There are many diversions upstream from station for municipal, industrial, and other uses. The river channel at this station was relocated and rectified in 1956. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900, 30.6 ft in May 1908 (former site and datum), from information by local resident. Flood in April 1922, reached a stage of 29.0 ft (former site and datum), from flood-marks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	327	3380	392	322	6120	1160	2660	3640	390	198	142
2	182	407	3140	395	319	5690	1010	2820	3600	316	198	155
3	179	318	3030	352	320	6190	842	2370	3180	262	183	345
4	179	281	2590	344	321	5010	4540	2000	2100	370	180	915
5	169	261	2260	333	316	4930	7580	1350	1630	e1890	184	261
6	170	244	2020	332	571	4700	6120	796	1610	e2110	176	185
7	174	4190	1690	340	1870	4420	5040	544	1440	2230	1860	171
8	173	1760	1520	463	1470	4380	4020	457	1090	e1490	1810	161
9	178	668	1480	597	1980	4520	3130	3260	686	e1450	417	153
10	173	826	1450	413	1580	4250	2680	4130	1470	e1120	313	152
11	162	771	1430	365	991	3820	3920	3190	730	e553	300	140
12	149	746	1090	351	4040	4050	4090	3220	682	e412	289	148
13	149	738	818	345	8600	4120	3040	3500	832	e361	323	194
14	149	727	630	348	5170	3280	2880	3610	1150	e370	337	180
15	152	759	1820	352	4060	3050	2390	4200	1930	336	329	182
16	157	711	1270	364	3190	2910	1980	4330	1540	343	321	162
17	154	812	727	356	2280	2840	1240	3160	5500	349	322	168
18	147	676	650	337	1760	2560	930	2960	4270	339	324	172
19	139	486	604	308	3390	2200	833	2880	3480	328	315	177
20	145	566	583	288	11000	2040	688	3100	3030	314	248	159
21	933	542	567	285	16700	1970	2330	2000	1860	308	202	169
22	2030	521	525	266	14700	1940	1120	1670	1740	313	189	167
23	545	450	498	259	10700	1880	937	1270	1930	303	161	173
24	298	4900	475	256	8090	1360	1110	1200	e973	293	170	182
25	234	7760	465	244	7240	2090	1810	1240	e806	299	169	179
26	205	6090	451	243	7510	2220	5280	1170	e984	286	166	185
27	1070	4730	418	241	7620	1790	4070	1180	849	295	156	164
28	6190	3890	413	232	6600	1930	2960	1160	705	292	163	156
29	1430	4510	393	286	---	1690	2300	1120	611	259	160	151
30	483	4520	386	322	---	1380	2540	1420	459	235	153	150
31	355	---	382	325	---	1140	---	3340	---	212	151	---
TOTAL	17044	54187	37155	10334	132710	100470	82570	71307	54507	18428	10467	5998
MEAN	550	1806	1199	333	4740	3241	2752	2300	1817	594	338	200
MAX	6190	7760	3380	597	16700	6190	7580	4330	5500	2230	1860	915
MIN	139	244	382	232	316	1140	688	457	459	212	151	140
AC-FT	33810	107500	73700	20500	263200	199300	163800	141400	108100	36550	20760	11900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1997#, BY WATER YEAR (WY)

	MEAN	505	458	478	437	660	763	851	1653	1105	397	245	329
MAX	5779	4472	8319	4504	4740	4521	7245	14030	11990	3475	1478	3094	
(WY)	1982	1982	1992	1992	1997	1945	1942	1990	1989	1941	1950	1962	
MIN	13.6	18.9	25.0	21.7	26.8	22.5	42.6	48.5	17.0	21.1	12.1	15.6	
(WY)	1940	1940	1940	1930	1930	1940	1936	1937	1925	1939	1925	1931	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1925 - 1997#
ANNUAL TOTAL	188742	595177	
ANNUAL MEAN	516	1631	660
HIGHEST ANNUAL MEAN			2629
LOWEST ANNUAL MEAN			79.3
HIGHEST DAILY MEAN	7760	Nov 25 16700	Feb 21 48900
LOWEST DAILY MEAN	124	May 6 139	Oct 19 4.5
ANNUAL SEVEN-DAY MINIMUM	140	May 3 149	Oct 14 7.3
INSTANTANEOUS PEAK FLOW		19600	Feb 21 64400
INSTANTANEOUS PEAK STAGE		30.65	Feb 21 33.88
ANNUAL RUNOFF (AC-FT)	374400	1181000	477800
10 PERCENT EXCEEDS	841	4220	1550
50 PERCENT EXCEEDS	257	711	175
90 PERCENT EXCEEDS	149	170	47

e Estimated

Period of regulated streamflow

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: January 1964 to current year. Chemical and biochemical analyses: January 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to September 1992, August 1993 to current year.

pH: October 1976 to September 1992, August 1993 to current year.

WATER TEMPERATURE: October 1966 to September 1992, August 1993 to current year.

DISSOLVED OXYGEN: October 1976 to September 1992, August 1993 to current year.

INSTRUMENTATION.--Since November 1976, a four-parameter water-quality monitor records water temperature, dissolved oxygen, pH, and specific conductance continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument, probe, or probeline. Where maximum or minimum specific conductance values are not shown, mean value is estimated. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance with the exception of the 1993 water year. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,320 microsiemens Dec. 12, 1978; minimum, 108 microsiemens May 1, 1986.

pH: Maximum, 8.6 units on several days during period of record; minimum, 6.6 units Jan. 6, 1979.

WATER TEMPERATURE: Maximum, 35.0°C Aug. 8, 1982; minimum, 3.0°C Jan. 9, 1973.

DISSOLVED OXYGEN: Maximum, 14.8 mg/L Dec. 14, 16, 1983; minimum, 0.0 mg/L on several days during period of record.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 916 microsiemens Oct. 19; minimum, 111 microsiemens Oct. 27.

pH: Maximum, 8.1 units on several days; minimum, 6.9 units on Apr. 22 and 23.

WATER TEMPERATURE: Maximum, 33.0°C on several days; minimum, 7.0°C Dec. 20, Jan. 13 and 14.

DISSOLVED OXYGEN: Maximum, 10.5 mg/L Nov. 27 and 28; minimum, 2.8 mg/L June 15.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
NOV 21...	0916	563	548	7.8	18.5	7.8	85	3.0	160	40
MAR 17...	1150	2830	412	7.9	13.0	9.9	95	1.8	160	12
APR 22...	1142	1040	509	7.2	20.0	6.9	77	2.3	180	56
JUN 04...	1151	2080	457	7.8	25.0	8.7	107	2.0	160	15
JUL 28...	1153	290	809	7.6	31.0	6.8	93	1.5	180	36
SEP 03...	1147	177	761	7.5	30.0	9.4	125	3.0	180	48
DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)
NOV 21...	54	7.2	46	2	6.9	120	48	47	0.50	6.9
MAR 17...	53	6.3	22	0.8	4.3	150	33	22	0.30	8.5
APR 22...	59	6.9	31	1	6.0	120	52	34	0.30	4.6
JUN 04...	48	8.5	32	1	6.1	140	34	37	0.27	3.6
JUL 28...	57	9.1	83	3	11	140	67	91	0.80	10
SEP 03...	56	9.3	79	3	15	130	62	80	0.91	9.9
DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)
NOV 21...	315	4.86	0.040	4.90	0.090	0.71	0.80	0.640	0.580	1.8
MAR 17...	245	1.58	0.020	1.60	0.110	0.39	0.50	0.090	0.120	0.37
APR 22...	280	2.89	0.019	2.91	0.073	0.55	0.62	0.212	0.218	0.67
JUN 04...	257	--	<0.010	0.951	0.022	0.67	0.70	0.122	0.129	0.40
JUL 28...	452	7.49	0.041	7.53	0.106	1.7	1.8	1.33	1.12	3.4
SEP 03...	455	13.2	0.061	13.3	0.101	1.5	1.6	1.86	1.55	4.8

TRINITY RIVER MAIN STEM

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08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	17044	448	251	11570	39	1790	43	1970	140
NOV. 1996	54187	417	233	34050	31	4470	39	5710	140
DEC. 1996	37155	451	252	25300	35	3500	42	4260	150
JAN. 1997	10334	706	398	11100	70	1970	69	1920	180
FEB. 1997	132710	397	221	79330	28	10110	37	13260	140
MAR. 1997	100470	436	243	66050	32	8740	41	11080	150
APR. 1997	82570	425	237	52890	31	6960	40	8870	150
MAY 1997	71307	463	259	49870	36	6850	44	8390	160
JUNE 1997	54507	455	255	37470	35	5150	43	6310	150
JULY 1997	18428	577	324	16120	52	2600	55	2760	170
AUG. 1997	10467	609	343	9680	57	1620	59	1660	170
SEPT 1997	5998	727	411	6650	76	1230	71	1150	180
TOTAL	595177	**	**	400100	**	54980	**	67330	**
WTD.AVG.	1630	445	249	**	34	**	42	**	150

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	764	741	756	683	623	651	437	372	391	708	680	695
2	742	730	735	704	570	651	397	378	388	714	683	698
3	770	727	750	664	571	608	395	378	387	717	667	692
4	782	738	770	703	662	684	403	391	397	715	683	700
5	782	770	777	720	668	701	406	396	403	740	701	720
6	786	771	778	717	671	696	410	390	402	749	640	709
7	---	---	e784	695	219	335	414	391	404	709	672	691
8	---	---	e786	400	250	324	413	390	404	707	648	678
9	---	---	e796	534	400	468	407	390	401	720	649	674
10	858	802	823	448	427	436	407	394	401	672	629	646
11	875	843	852	483	433	467	409	391	402	677	647	666
12	901	861	877	520	452	487	425	387	407	700	650	674
13	909	888	898	516	486	501	446	416	430	702	640	671
14	901	886	890	529	481	510	482	446	461	667	625	648
15	888	838	862	543	493	517	482	367	434	668	643	658
16	838	801	815	557	490	527	419	367	400	685	666	675
17	854	827	843	627	466	545	599	419	507	696	667	680
18	902	854	868	531	491	506	610	579	599	720	692	706
19	916	892	901	624	528	564	622	582	605	728	694	712
20	910	893	899	624	539	565	638	593	621	746	704	729
21	910	365	736	595	534	571	684	630	656	727	705	718
22	594	313	365	586	545	569	704	651	680	756	707	737
23	499	365	421	617	537	570	702	644	671	789	740	766
24	576	499	537	593	222	339	681	637	660	796	766	781
25	672	576	640	431	227	349	713	664	687	821	791	808
26	731	656	705	476	430	445	713	662	688	816	792	810
27	769	111	612	456	387	408	707	648	674	809	759	791
28	384	156	223	401	391	395	703	675	691	759	730	748
29	383	171	275	446	362	396	714	668	692	771	727	749
30	525	381	448	445	391	421	716	662	689	777	711	744
31	624	525	564	---	---	---	692	658	677	723	703	714
MONTH	916	111	709	720	219	507	716	367	526	821	625	713

e Estimated

TRINITY RIVER MAIN STEM

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	732	715	724	417	403	412	537	509	527	472	456	465
2	740	716	731	436	400	423	554	516	544	464	409	455
3	741	697	721	428	361	383	601	537	569	473	455	465
4	715	658	686	423	407	415	591	287	406	487	466	477
5	701	671	685	420	414	418	347	293	321	518	475	502
6	736	596	679	425	419	422	439	343	413	545	440	499
7	631	446	484	425	417	422	451	439	443	535	472	498
8	506	432	479	425	415	421	466	451	457	579	527	549
9	551	463	497	427	415	420	484	466	476	586	246	453
10	503	488	496	441	414	425	490	478	485	435	257	339
11	528	497	514	429	421	425	509	390	444	447	432	441
12	563	288	390	449	418	429	442	383	409	463	446	454
13	337	274	288	439	415	426	455	442	449	467	454	462
14	474	337	436	443	432	438	460	450	457	471	461	466
15	479	471	475	444	433	440	460	368	384	482	369	442
16	481	471	477	448	432	441	398	383	392	446	371	401
17	491	480	485	447	418	434	441	395	423	467	446	459
18	513	491	504	453	435	447	469	440	461	471	446	460
19	516	292	443	468	453	463	477	455	470	457	429	449
20	400	234	300	474	462	469	508	414	488	462	420	450
21	360	341	349	480	464	473	488	341	427	483	462	473
22	376	355	362	479	458	472	504	444	481	510	480	495
23	405	376	391	481	451	470	569	438	507	521	495	508
24	420	405	411	515	460	496	544	528	536	555	516	538
25	425	418	422	561	455	518	573	309	497	539	517	527
26	419	406	413	471	443	458	437	281	312	533	514	527
27	414	406	408	495	470	482	417	300	374	541	516	533
28	419	412	415	490	466	481	455	417	438	554	528	543
29	---	---	---	497	477	487	483	454	473	570	538	556
30	---	---	---	514	487	505	498	460	484	577	548	561
31	---	---	---	528	492	518	---	---	---	577	401	509
MONTH	741	234	488	561	361	449	601	281	452	586	246	482

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	562	546	554	---	---	e649	829	785	807	842	822	834
2	567	453	549	---	---	e685	828	785	813	840	799	813
3	460	446	451	---	---	e725	822	795	810	799	485	740
4	488	460	476	---	---	e780	824	777	796	663	150	457
5	505	486	496	---	---	e700	824	801	812	620	431	500
6	498	478	490	---	---	e550	808	773	785	712	620	684
7	504	484	496	---	---	e344	808	247	539	787	710	763
8	526	494	517	448	355	384	376	330	350	802	776	791
9	562	510	544	485	437	464	520	360	439	800	751	766
10	611	337	501	489	469	481	638	520	577	790	736	753
11	529	379	472	508	475	498	674	633	657	824	790	808
12	558	505	537	579	486	531	691	622	660	830	797	815
13	536	493	515	659	579	614	727	652	688	868	828	848
14	539	377	501	666	607	646	705	615	653	868	790	831
15	524	330	455	675	640	663	668	616	641	790	768	782
16	449	386	408	698	647	670	659	621	640	782	750	765
17	449	269	300	701	644	671	682	622	651	797	745	762
18	425	303	382	691	651	673	691	599	646	813	782	793
19	441	423	434	691	655	675	632	586	610	828	796	808
20	443	431	436	715	675	698	656	613	633	828	797	810
21	469	443	455	717	673	699	723	633	685	826	790	803
22	490	358	444	704	668	688	792	714	745	826	795	806
23	420	340	381	712	689	701	867	781	813	796	754	773
24	400	340	383	730	710	720	870	833	846	790	693	755
25	485	363	426	787	714	760	863	812	836	816	774	787
26	531	484	518	826	778	800	812	774	788	839	784	809
27	---	---	e530	816	796	806	804	750	765	838	810	824
28	---	---	e548	801	785	792	838	804	817	853	823	836
29	---	---	e593	792	750	779	840	798	817	859	832	847
30	---	---	e627	799	743	772	838	805	820	852	794	814
31	---	---	---	830	790	805	840	815	825	---	---	---
MONTH	611	269	481	830	355	659	870	247	709	868	150	773
YEAR	916	111	580									

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TRINITY RIVER MAIN STEM

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08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.5	7.4	7.4	7.6	7.5	7.5	7.8	7.6	7.7	7.7	7.4	7.5
2	7.5	7.4	7.4	7.5	7.5	7.5	7.8	7.7	7.7	7.7	7.4	7.5
3	7.5	7.4	7.4	7.6	7.5	7.5	7.8	7.7	7.8	7.7	7.4	7.5
4	7.5	7.4	7.4	7.7	7.5	7.5	7.8	7.7	7.7	7.8	7.4	7.6
5	7.5	7.4	7.5	7.5	7.4	7.5	7.8	7.7	7.7	7.7	7.4	7.5
6	7.6	7.5	7.5	7.5	7.4	7.4	7.8	7.7	7.7	7.6	7.4	7.5
7	7.5	7.5	7.5	7.8	7.4	7.6	7.8	7.7	7.7	7.6	7.4	7.5
8	7.5	7.5	7.5	7.6	7.4	7.5	7.8	7.7	7.7	7.6	7.4	7.5
9	7.5	7.4	7.5	7.5	7.5	7.5	7.8	7.7	7.7	7.6	7.4	7.6
10	7.5	7.3	7.4	7.6	7.5	7.5	7.8	7.7	7.8	7.6	7.5	7.6
11	7.5	7.3	7.4	7.6	7.6	7.6	7.8	7.8	7.8	7.6	7.5	7.5
12	7.4	7.3	7.3	7.6	7.4	7.5	7.8	7.7	7.8	7.6	7.5	7.5
13	7.4	7.3	7.3	7.5	7.5	7.5	7.8	7.7	7.8	7.6	7.4	7.5
14	7.4	7.2	7.3	7.7	7.5	7.6	7.8	7.7	7.8	7.5	7.4	7.5
15	7.3	7.2	7.3	7.7	7.6	7.7	7.8	7.6	7.7	---	---	---
16	7.4	7.2	7.3	7.7	7.6	7.7	7.7	7.6	7.6	---	---	---
17	7.3	7.2	7.3	7.6	7.4	7.5	7.7	7.6	7.7	7.7	7.5	7.6
18	7.4	7.2	7.3	7.6	7.4	7.5	7.7	7.6	7.7	7.7	7.5	7.6
19	7.4	7.2	7.3	7.5	7.4	7.5	7.7	7.6	7.7	7.8	7.5	7.6
20	7.4	7.3	7.4	7.6	7.4	7.5	7.7	7.6	7.7	7.7	7.4	7.6
21	7.5	7.2	7.4	7.6	7.5	7.5	7.7	7.6	7.7	7.7	7.5	7.6
22	7.5	7.2	7.5	7.6	7.5	7.6	7.7	7.6	7.7	7.6	7.4	7.5
23	7.5	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.7	7.6	7.5	7.5
24	7.5	7.4	7.4	7.9	7.4	7.6	7.7	7.6	7.6	7.6	7.5	7.5
25	7.4	7.3	7.4	8.0	7.6	7.7	7.7	7.6	7.6	7.7	7.5	7.6
26	7.4	7.4	7.4	7.8	7.5	7.7	7.6	7.4	7.5	7.8	7.5	7.7
27	7.6	7.4	7.4	7.7	7.6	7.6	7.7	7.4	7.5	7.8	7.5	7.7
28	7.8	7.5	7.7	7.6	7.6	7.6	7.7	7.4	7.5	---	---	---
29	7.6	7.4	7.5	7.7	7.5	7.6	7.7	7.4	7.5	---	---	---
30	7.5	7.4	7.4	7.7	7.6	7.6	7.7	7.4	7.5	---	---	---
31	7.5	7.4	7.4	---	---	---	7.6	7.4	7.5	---	---	---
MONTH	7.8	7.2	7.4	8.0	7.4	7.6	7.8	7.4	7.7	7.8	7.4	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	8.0	8.0	8.0	8.0	7.7	7.9	7.6	7.5	7.6
2	---	---	---	8.0	8.0	8.0	7.9	7.7	7.8	7.7	7.6	7.6
3	---	---	---	8.0	7.8	7.9	7.8	7.6	7.7	7.8	7.6	7.6
4	7.9	7.5	7.7	8.0	7.6	7.8	7.7	7.2	7.5	7.7	7.6	7.7
5	7.9	7.5	7.7	7.7	7.6	7.6	7.5	7.2	7.3	7.7	7.5	7.6
6	7.8	7.5	7.7	7.7	7.6	7.7	---	---	---	7.6	7.5	7.6
7	7.6	7.5	7.6	7.7	7.6	7.7	7.6	7.6	7.6	7.5	7.4	7.5
8	7.8	7.5	7.6	7.7	7.6	7.7	7.6	7.5	7.6	7.6	7.4	7.5
9	8.0	7.7	7.8	7.8	7.7	7.8	7.7	7.6	7.6	7.8	7.2	7.5
10	8.0	7.8	7.9	7.8	7.7	7.7	7.7	7.6	7.7	7.8	7.5	7.6
11	7.9	7.8	7.9	7.8	7.7	7.7	7.7	7.2	7.5	7.9	7.8	7.8
12	7.9	7.7	7.8	7.8	7.7	7.7	7.6	7.3	7.5	8.0	7.7	7.9
13	8.0	7.6	7.7	7.8	7.6	7.7	7.8	7.6	7.7	8.0	7.7	7.9
14	7.9	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.7	8.0	7.8	7.9
15	7.9	7.8	7.9	7.8	7.7	7.8	7.8	7.6	7.7	7.9	7.7	7.9
16	7.9	7.8	7.9	7.8	7.8	7.8	7.8	7.7	7.7	7.9	7.7	7.8
17	7.9	7.8	7.9	7.9	7.8	7.8	7.8	7.7	7.7	7.9	7.7	7.8
18	7.8	7.6	7.7	7.8	7.7	7.7	7.8	7.6	7.7	7.9	7.8	7.8
19	7.7	7.6	7.7	7.8	7.7	7.8	7.8	7.6	7.7	7.9	7.8	7.8
20	7.9	7.6	7.7	7.8	7.7	7.8	7.9	7.7	7.8	7.8	7.7	7.8
21	8.0	7.8	7.9	7.9	7.7	7.8	7.7	7.4	7.5	7.8	7.8	7.8
22	8.0	7.9	7.9	7.9	7.8	7.8	7.4	6.9	7.2	7.9	7.8	7.8
23	8.0	7.9	8.0	7.9	7.8	7.9	7.2	6.9	7.0	7.8	7.8	7.8
24	8.0	7.9	8.0	7.9	7.8	7.8	7.3	7.2	7.2	7.8	7.7	7.7
25	8.0	8.0	8.0	7.8	7.5	7.7	7.4	7.2	7.3	7.9	7.7	7.8
26	8.1	8.0	8.0	7.6	7.5	7.5	7.5	7.2	7.3	7.9	7.8	7.9
27	8.1	8.0	8.0	7.8	7.6	7.7	7.5	7.3	7.4	7.9	7.6	7.7
28	8.1	8.0	8.0	7.8	7.7	7.8	7.5	7.4	7.4	8.0	7.7	7.8
29	---	---	---	7.9	7.8	7.8	7.5	7.4	7.5	7.9	7.7	7.8
30	---	---	---	8.0	7.8	7.9	7.6	7.4	7.5	---	---	---
31	---	---	---	7.9	7.8	7.9	---	---	---	7.9	7.6	7.7
MONTH	8.1	7.5	7.8	8.0	7.5	7.8	8.0	6.9	7.5	8.0	7.2	7.7

TRINITY RIVER MAIN STEM

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.9	7.4	7.7	---	---	---	7.4	7.2	7.3	7.8	7.6	7.7
2	7.9	7.6	7.8	---	---	---	7.5	7.2	7.3	7.8	7.6	7.7
3	7.6	7.5	7.6	---	---	---	7.5	7.2	7.3	7.8	7.5	7.7
4	7.8	7.5	7.7	---	---	---	7.5	7.3	7.4	8.1	7.3	7.5
5	7.9	7.7	7.8	---	---	---	7.4	7.2	7.3	7.6	7.4	7.5
6	7.8	7.7	7.8	---	---	---	7.4	7.2	7.3	7.9	7.6	7.7
7	7.8	7.7	7.8	---	---	---	---	---	---	8.0	7.7	7.8
8	7.8	7.7	7.7	7.4	7.1	7.2	---	---	---	8.1	7.8	7.9
9	7.8	7.7	7.7	7.5	7.3	7.4	7.7	7.6	7.7	8.0	7.8	7.9
10	7.7	7.4	7.6	7.6	7.5	7.5	7.7	7.6	7.6	8.0	7.8	7.9
11	7.6	7.6	7.6	7.6	7.4	7.5	7.8	7.6	7.7	7.9	7.7	7.8
12	7.7	7.6	7.6	7.7	7.4	7.6	---	---	---	8.0	7.7	7.8
13	7.9	7.6	7.8	7.8	7.5	7.6	---	---	---	7.9	7.7	7.8
14	7.9	7.7	7.8	8.0	7.5	7.7	---	---	---	8.0	7.7	7.8
15	7.9	7.7	7.8	7.7	7.4	7.5	---	---	---	8.0	7.8	7.9
16	7.9	7.7	7.7	7.6	7.3	7.4	---	---	---	8.0	7.8	7.9
17	8.0	7.7	7.8	7.6	7.4	7.5	---	---	---	8.0	7.8	7.9
18	7.9	7.7	7.8	7.6	7.3	7.5	---	---	---	8.1	7.8	7.9
19	8.0	7.9	7.9	7.6	7.3	7.4	7.6	7.4	7.5	8.1	7.8	8.0
20	8.0	7.9	7.9	7.6	7.3	7.4	7.7	7.3	7.5	8.1	7.9	8.0
21	8.0	7.8	7.9	7.7	7.3	7.5	7.6	7.4	7.5	8.1	7.9	8.0
22	7.9	7.7	7.8	7.6	7.4	7.5	7.5	7.4	7.5	8.0	7.8	7.9
23	7.7	7.6	7.6	7.6	7.4	7.5	7.5	7.4	7.5	7.8	7.7	7.8
24	7.7	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4	7.8	7.7	7.8
25	7.9	7.6	7.7	7.6	7.4	7.5	8.0	7.4	7.7	7.9	7.7	7.8
26	7.9	7.8	7.8	7.5	7.4	7.4	8.0	7.7	7.8	7.9	7.8	7.8
27	---	---	---	7.5	7.4	7.4	8.0	7.6	7.8	8.0	7.8	7.9
28	---	---	---	7.4	7.2	7.3	7.9	7.6	7.7	8.1	7.9	8.0
29	---	---	---	7.3	7.1	7.2	8.0	7.6	7.8	8.0	7.8	7.9
30	---	---	---	7.4	7.1	7.2	7.9	7.6	7.8	7.9	7.8	7.8
31	---	---	---	7.5	7.2	7.3	7.9	7.6	7.7	---	---	---
MONTH	8.0	7.4	7.7	8.0	7.1	7.4	8.0	7.2	7.6	8.1	7.3	7.8
YEAR	8.1	6.9	7.6									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

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WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	25.5	25.0	25.0	---	---	---	31.5	29.5	30.5	31.0	29.5	30.

TRINITY RIVER MAIN STEM

08049500 WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	5.6	4.5	5.0	6.2	5.3	5.7	10.2	8.3	9.4	7.9	6.3	7.1
2	5.4	4.2	4.7	6.5	5.1	6.0	10.2	8.7	9.6	8.0	6.5	7.2
3	5.8	4.3	5.0	6.6	5.1	6.1	10.2	9.0	10.0	8.3	6.4	7.1
4	5.8	4.6	5.1	6.5	5.3	5.9	10.2	9.0	9.8	7.8	5.9	6.8
5	5.5	4.4	4.9	6.3	5.0	5.7	10.1	8.5	9.5	7.5	5.5	6.6
6	5.6	4.4	4.8	5.9	5.2	5.5	10.0	8.6	9.4	7.4	6.3	6.8
7	---	---	---	8.2	5.2	6.5	9.8	8.3	9.3	8.1	6.4	7.3
8	---	---	---	6.9	6.1	6.5	10.1	8.0	9.3	8.4	7.5	8.0
9	---	---	---	7.3	6.1	6.7	10.1	8.6	9.5	8.9	8.0	8.4
10	8.1	6.3	7.2	7.4	6.4	6.9	9.9	8.4	9.3	8.7	7.8	8.2
11	7.7	6.7	7.2	7.3	6.5	7.0	9.5	8.0	9.0	8.7	7.5	8.2
12	7.4	6.1	6.7	---	---	---	9.3	7.7	8.7	9.0	7.6	8.5
13	7.3	6.0	6.8	---	---	---	9.3	7.1	8.5	---	---	---
14	7.1	6.2	6.6	---	---	---	9.0	7.0	8.2	---	---	---
15	6.7	5.9	6.3	7.7	7.1	7.5	9.0	6.8	7.9	---	---	---
16	6.4	5.4	5.8	7.6	7.2	7.4	8.8	8.2	8.6	---	---	---
17	6.3	5.2	5.7	7.5	6.6	7.0	9.0	8.3	8.7	---	---	---
18	7.2	5.6	6.2	7.4	6.3	6.7	9.2	8.5	8.9	---	---	---
19	7.6	6.5	6.9	6.7	6.1	6.4	9.6	9.1	9.4	---	---	---
20	7.6	7.0	7.3	7.1	6.3	6.6	9.7	9.1	9.4	---	---	---
21	7.3	6.7	7.0	6.7	6.0	6.4	9.6	8.8	9.2	---	---	---
22	6.9	5.2	6.1	7.0	6.2	6.6	9.0	8.3	8.6	---	---	---
23	7.3	6.6	6.9	6.8	6.0	6.5	8.4	7.7	8.1	---	---	---
24	7.3	4.3	5.7	8.5	6.0	6.9	8.5	7.5	8.0	---	---	---
25	5.9	5.0	5.6	9.2	7.6	8.3	8.7	7.5	8.1	---	---	---
26	6.0	4.6	5.5	10.3	9.2	9.5	8.7	7.5	8.1	---	---	---
27	7.8	5.3	6.0	10.5	9.7	10.1	8.8	7.6	8.1	---	---	---
28	7.2	3.7	5.4	10.5	9.5	10.0	8.4	7.2	7.8	8.5	7.3	7.9
29	5.9	5.4	5.7	10.3	9.2	9.9	8.2	6.6	7.5	8.9	7.0	7.8
30	6.1	5.5	5.8	10.2	9.2	9.7	7.9	6.5	7.2	---	---	---
31	6.0	5.5	5.9	---	---	---	7.4	6.4	7.0	---	---	---
MONTH	8.1	3.7	6.0	10.5	5.0	7.2	10.2	6.4	8.7	9.0	5.5	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	8.7	8.3	8.5	8.0	7.1	7.5	8.5	7.9	8.2
2	---	---	---	8.4	8.0	8.2	7.5	7.1	7.3	8.5	7.7	8.0
3	---	---	---	9.6	8.3	8.9	8.9	6.9	7.8	8.4	7.5	7.9
4	---	---	---	9.6	9.4	9.5	8.4	6.4	7.5	8.5	8.0	8.3
5	---	---	---	9.6	9.2	9.3	7.5	6.7	7.1	---	---	---
6	9.2	8.1	8.6	9.8	9.5	9.7	---	---	---	---	---	---
7	---	---	---	9.9	9.5	9.6	8.2	7.8	8.1	---	---	---
8	---	---	---	9.9	9.4	9.6	8.2	7.7	7.9	---	---	---
9	---	---	---	9.9	9.5	9.6	7.9	7.7	7.8	---	---	---
10	---	---	---	9.7	9.1	9.5	7.8	7.6	7.7	7.7	6.2	6.7
11	---	---	---	9.7	9.3	9.6	7.7	6.9	7.3	---	---	---
12	---	---	---	9.6	9.3	9.5	8.0	7.0	7.4	---	---	---
13	---	---	---	9.4	8.6	8.9	8.1	7.7	7.9	7.5	7.1	7.3
14	---	---	---	9.7	8.8	9.1	8.0	7.6	7.8	7.5	7.1	7.2
15	---	---	---	10.1	9.6	9.8	7.9	7.5	7.7	7.5	6.4	7.0
16	---	---	---	10.1	9.6	9.9	7.8	7.4	7.6	7.2	6.3	6.6
17	---	---	---	10.0	8.8	9.5	7.5	7.1	7.3	7.2	6.7	6.9
18	---	---	---	9.0	8.0	8.7	8.0	6.8	7.4	6.9	6.6	6.8
19	---	---	---	9.5	8.6	8.9	8.0	6.6	7.3	6.8	6.3	6.5
20	8.4	7.0	7.7	9.2	8.9	9.1	8.8	6.9	7.7	6.7	6.3	6.4
21	8.0	7.6	7.8	9.1	8.6	8.8	7.2	5.2	6.0	6.7	6.3	6.5
22	8.4	7.9	8.2	8.7	8.3	8.5	7.2	5.5	6.6	6.9	6.3	6.5
23	8.8	8.4	8.5	8.7	8.0	8.4	7.8	7.0	7.3	6.7	6.2	6.4
24	8.8	8.7	8.8	8.5	7.8	8.2	8.1	7.5	7.7	6.4	6.0	6.2
25	8.9	8.7	8.8	7.8	6.4	7.2	8.7	8.0	8.3	6.5	5.5	6.0
26	8.8	8.7	8.7	7.8	6.4	7.3	9.1	7.9	8.5	7.2	5.7	6.4
27	8.8	8.7	8.8	7.9	7.5	7.7	9.1	8.9	8.9	7.0	5.8	6.4
28	8.8	8.6	8.7	7.8	7.5	7.6	9.0	8.8	8.9	7.8	6.1	6.8
29	---	---	---	7.7	7.1	7.5	8.9	8.2	8.6	7.5	5.9	6.6
30	---	---	---	7.6	6.8	7.1	8.6	7.8	8.1	6.5	5.7	6.1
31	---	---	---	7.6	7.0	7.3	---	---	---	6.8	5.3	5.9
MONTH	9.2	7.0	8.5	10.1	6.4	8.7	9.1	5.2	7.7	8.5	5.3	6.8

TRINITY RIVER BASIN

08049580 MOUNTAIN CREEK NEAR VENUS, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 32°29'27", long 97°07'22", Johnson County, Hydrologic Unit 12030102, on right bank on downstream side of highway embankment near right end of bridge on Farm Road 157, 3.0 mi upstream from Grassy Creek, 3.2 mi upstream from Reece Branch, and 3.9 mi north of Venus.

DRAINAGE AREA.--25.5 mi².

PERIOD OF RECORD.--November 1985 to September 1987. October 1987 to current year (peaks above base discharge).

Water-quality records.--Chemical analyses: December 1985 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 580.49 ft above sea level.

REMARKS.--Records good. Daily values and peak discharges less than 580 ft³/s are not published. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 580 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 28	0130	979	8.41	Apr. 4	1230	3,820	11.89
Feb. 12	1730	4,190	12.18	Apr. 25	1930	621	7.52
Mar. 2	1800	1,650	9.44	Apr. 26	1445	769	7.95

08049700 WALNUT CREEK NEAR MANSFIELD, TX

LOCATION.--Lat 32°34'51", long 97°06'06", Tarrant County, Hydrologic Unit 12030102, on right bank at downstream side of bridge on county road, 2.6 mi northeast of Mansfield, 3.3 mi downstream from Texas and New Orleans Railroad Co. bridge, and 10.2 mi upstream from mouth.

DRAINAGE AREA.--62.8 mi².

PERIOD OF RECORD.--October 1960 to current year.

Water-quality records.--Chemical and biochemical analyses: December 1985 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 531.08 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 21	1515	717	12.43	Feb. 20	2200	915	13.76
Oct. 27	2400	2,560	20.98	Mar. 3	0115	1,270	15.84
Nov. 24	0900	1,030	14.50	Apr. 4	1945	4,020	24.33
Feb. 13	0200	2,970	22.12	Apr. 25	1700	800	13.00
Feb. 19	2315	881	13.54	Apr. 26	1815	732	12.53

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	1.8	34	2.2	1.7	33	11	16	1.7	.03	.01	.01
2	.05	2.2	10	1.8	1.7	365	11	14	1.5	.03	.01	.00
3	.07	1.5	5.9	2.1	2.2	420	31	12	1.3	.03	.01	.34
4	.04	1.4	5.0	1.9	2.8	66	1820	11	1.1	.07	.01	.15
5	.11	1.3	4.9	1.5	2.7	40	546	11	1.1	.03	.01	.01
6	.10	1.5	3.8	2.2	27	27	70	11	.93	.40	.01	.01
7	.04	166	3.2	3.6	47	24	34	10	1.0	.07	.33	.01
8	.05	9.6	2.9	25	20	22	23	10	.83	.03	.74	.00
9	.04	2.8	2.8	8.5	8.6	23	25	49	1.0	.02	.03	.00
10	.03	1.7	2.9	4.2	5.3	21	18	25	73	.02	.02	.00
11	.11	2.2	2.9	2.9	5.7	19	78	12	3.3	.02	.01	.00
12	.11	1.5	2.7	2.2	1120	232	36	8.6	1.6	.02	.01	.01
13	.09	1.5	2.7	1.8	1200	113	18	7.4	1.1	.02	.02	.01
14	.04	1.7	2.6	1.7	78	35	14	6.5	1.1	.02	.01	.00
15	.03	2.3	11	1.9	32	22	12	6.0	26	.02	.01	.00
16	.06	1.9	6.2	1.8	21	19	11	5.5	3.0	.02	.01	.00
17	.05	6.6	3.3	1.7	17	18	10	4.7	100	.02	.01	.00
18	.04	2.1	2.5	1.7	14	18	9.6	4.3	2.7	.03	.01	.00
19	.03	1.5	2.1	1.9	273	16	8.5	29	.50	.02	.01	.00
20	.04	1.6	2.0	2.2	559	15	22	17	.16	.02	.03	.00
21	156	1.4	2.1	2.2	280	15	56	8.2	.10	.01	.02	.00
22	17	1.9	2.2	2.3	51	14	10	7.1	27	.02	.01	.00
23	4.0	1.8	2.2	2.4	29	13	7.4	5.4	13	.01	.01	.00
24	3.1	519	2.0	2.4	77	13	5.7	15	1.1	.01	.01	.00
25	1.3	152	1.9	2.3	341	41	287	6.7	.29	.01	.01	.00
26	1.1	32	1.9	2.3	469	23	454	3.8	.11	.02	.01	.01
27	290	11	1.7	1.8	104	15	131	2.6	.07	.01	.01	.01
28	668	7.4	1.8	1.2	42	14	41	2.0	.05	.01	.01	.00
29	22	205	1.9	1.1	---	12	27	1.7	.04	.01	.01	.00
30	7.4	116	1.8	1.2	---	11	20	6.2	.03	.01	.01	.00
31	2.8	---	2.7	1.3	---	11	---	2.7	---	.01	.01	---
TOTAL	1173.88	1260.2	135.6	93.3	4831.7	1730	3847.2	331.4	264.71	1.07	34.10	0.57
MEAN	37.9	42.0	4.37	3.01	173	55.8	128	10.7	8.82	.035	1.10	.019
MAX	668	519	34	25	1200	420	1820	49	100	.40	.33	.34
MIN	.03	1.3	1.7	1.1	1.7	11	5.7	1.7	.03	.01	.01	.00
AC-FT	2330	2500	269	185	9580	3430	7630	657	525	2.1	.68	1.1
CFSM	.60	.67	.07	.05	2.75	.89	2.04	.17	.14	.00	.02	.00
IN.	.70	.75	.08	.06	2.86	1.02	2.28	.20	.16	.00	.02	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997, BY WATER YEAR (WY)

	MEAN	18.8	6.00	16.1	6.97	23.2	27.0	40.9	53.3	29.0	3.93	2.44	6.12
MAX	272	50.1	326	64.5	173	184	174	378	300	57.1	21.8	67.4	
(WY)	1992	1995	1992	1992	1997	1977	1990	1989	1986	1975	1979	1973	
MIN	.000	.000	.000	.000	.014	.13	.40	.074	.030	.000	.000	.000	
(WY)	1964	1961	1964	1981	1981	1963	1978	1962	1963	1964	1961	1971	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1961 - 1997

ANNUAL TOTAL	3274.37	13703.73	
ANNUAL MEAN	8.95	37.5	19.4
HIGHEST ANNUAL MEAN			82.2
LOWEST ANNUAL MEAN			1.34
HIGHEST DAILY MEAN	668	1820	7900
LOWEST DAILY MEAN	.02	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.04	.00	.00
INSTANTANEOUS PEAK FLOW		4020	22800
INSTANTANEOUS PEAK STAGE		24.33	33.77
ANNUAL RUNOFF (AC-FT)	6490	27180	14090
ANNUAL RUNOFF (CFSM)	.14	.60	.31
ANNUAL RUNOFF (INCHES)	1.94	8.12	4.21
10 PERCENT EXCEEDS	6.3	44	13
50 PERCENT EXCEEDS	.38	2.2	.26
90 PERCENT EXCEEDS	.08	.01	.00

TRINITY RIVER BASIN

08049800 JOE POOL LAKE NEAR DUNCANVILLE, TX

LOCATION.--Lat 32°38'36", long 97°00'03", Dallas County, Hydrologic Unit 12030102, in control room of outlet works tower located 285 ft upstream from centerline of Joe Pool Dam on Mountain Creek, 0.7 mi downstream from Walnut Creek, 0.7 mi upstream from bridge over Mountain Creek on Camp Wisdom Road, 1.0 mi downstream from John Penn Branch, 5.5 mi west of water towers in downtown Duncanville, 7.1 mi upstream from Mountain Creek Dam on Mountain Creek, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--232 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--August 1985 to current year.

Water-quality records.--Chemical and biochemical analyses: January 1986 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers benchmark).

REMARKS.--The lake is formed by a rolled earthfill dam 22,360 ft long, including a 50-foot uncontrolled broad-crested concrete spillway. Impoundment of water began Jan. 7, 1986, after closure of the dam was completed in December 1985. The flood-control outlet works consist of a 10.5-foot-diameter conduit that is controlled by two 4.75- by 10.5-foot slide gates. Above an elevation of 541 ft, water will flow over a 50-foot-long uncontrolled broad-crested concrete spillway located 0.5 mi to left of the outlet works tower. The low-flow outlet works consist of four 3- by 5-foot slide gates having invert elevations at 486.0, 495.0, 504.0, and 513.0 ft that open to a wet-well. Discharge from the wet-well to the 10.5-foot-diameter conduit is controlled by a 2- by 4-foot gate with invert at elevation 483.0 ft. A low-flow bypass system consisting of a turbine pump and 10-inch-diameter piping is also available for use if needed. The capacity table was provided by the U.S. Army Corps of Engineers. The lake was built for water supply, conservation, and flood control. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	564.5	-
Crest of spillway	541.0	362,700
Top of conservation pool	522.0	176,900
Lowest gated outlet	466.0	1,095

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 274,600 acre-ft May 20, 1990 (elevation, 533.21 ft); minimum since initial filling began, 1,595 acre-ft Jan. 24, 1986 (elevation, 467.65 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 215,700 acre-ft Mar. 3 (elevation, 526.87 ft); minimum, 140,300 acre-ft Oct. 20 (elevation, 516.77 ft).

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

516.0	135,300	520.0	162,300	524.0	192,200
517.0	141,800	521.0	169,500	525.0	200,200
518.0	148,500	522.0	176,900	530.0	243,500
519.0	155,300	523.0	184,500		

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142800	151000	166600	167400	167100	208300	177800	179900	177300	177700	172800	169300
2	142700	150800	166800	167600	167100	213300	177900	178800	177200	177600	172600	169200
3	142500	150700	166900	167700	167100	215700	179100	178400	177100	177300	172400	169700
4	142400	150600	167200	167600	167000	214800	199600	178300	177000	177100	172200	169500
5	142300	150600	167300	167400	167000	212100	203400	178300	176900	177200	172000	169300
6	142200	150800	167300	167600	167500	210800	203800	178300	176700	177200	171800	169200
7	142100	151900	167300	167600	167900	210200	203100	178300	176700	177000	172800	169000
8	142100	151900	167400	168000	168100	209000	200800	178200	176600	176900	173000	168900
9	141900	151900	167500	168100	168100	208300	197700	179100	176800	176700	172900	168600
10	141800	151800	167600	167900	168100	208600	194300	179200	177500	176600	172800	168400
11	141600	151800	167600	167800	168100	208800	192800	179200	177400	176400	172700	168200
12	141400	151700	167600	167700	186100	211100	190600	179100	177300	176200	172700	167900
13	141200	151700	167600	167700	195700	211900	188300	178800	177300	176000	172500	167800
14	141100	151700	167600	167600	196700	211500	185500	178500	177300	175900	172400	167600
15	141000	151700	168000	167600	196500	209800	182100	178200	177400	175900	172100	167500
16	141000	151800	168100	167600	194600	207200	179500	178000	177500	175800	171900	167300
17	140700	151900	168100	167500	191900	203300	178200	178000	178200	175600	171600	167000
18	140600	151800	168000	167400	189300	199300	177900	177900	178100	175500	171500	166900
19	140400	151800	167800	167400	191500	195600	177900	178600	178000	175300	171300	166700
20	140300	151800	167800	167500	197700	191600	178200	179000	177900	175100	171400	166500
21	142300	151700	167800	167600	199600	188100	178500	179000	177600	175000	171300	166400
22	142300	151700	167800	167600	199900	185300	178500	178800	178200	174800	171100	166300
23	142200	152200	167700	167600	200200	182400	178400	178800	178300	174600	170900	166100
24	142200	159800	167700	167600	201300	180500	178200	178600	178200	174400	170800	165900
25	142200	161000	167600	167600	203700	179800	181100	178400	178200	174200	170500	165700
26	142100	161300	167600	167600	207000	178800	185500	178200	178400	174000	170400	165600
27	145900	161500	167600	167300	207700	178200	186700	177800	178300	173800	170200	165400
28	150800	161700	167500	167300	208100	177900	186100	177600	178200	173600	170000	165200
29	151100	164500	167500	167300	---	178000	183900	177400	178100	173400	169800	165100
30	151100	166400	167500	167200	---	177900	181600	177600	177900	173200	169600	165000
31	151000	---	167400	167200	---	177900	---	177400	---	173000	169400	---
MAX	151100	166400	168100	168100	208100	215700	203800	179900	178400	177700	173000	169700
MIN	140300	150600	166600	167200	167000	177900	177800	177400	176600	173000	169400	165000
(+)	518.37	520.57	520.71	520.68	525.96	522.13	522.62	522.07	522.13	521.48	520.98	520.38
(@)	+8100	+15400	+1000	-200	+40900	-30200	+3700	-4200	+500	-4900	-3600	-4400
CAL YR 1996	MAX	168100	MIN	140300	(@)	+6400						
WTR YR 1997	MAX	215700	MIN	140300	(@)	+22100						

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

TRINITY RIVER BASIN

355

08050050 MOUNTAIN CREEK LAKE NEAR GRAND PRAIRIE, TX

LOCATION.--Lat 32°43'55", long 96°56'35", Dallas County, Hydrologic Unit 12030102, at right end of spillway in Mountain Creek Dam on Mountain Creek, 2.5 mi upstream from Texas and Pacific Railway Co. bridge, and 3.7 mi southeast of Grand Prairie.

DRAINAGE AREA.--295 mi².

PERIOD OF RECORD.--October 1960 to current year.

Water-quality records.--Chemical analyses: October 1969 to September 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct. 21, 1960, non-recording gage at powerplant at same datum.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 5,800 ft long, including a controlled spillway with six 34 by 27 foot tainter gates. The dam was completed in December 1936 and deliberate impoundment began on Mar. 24, 1937. The lake was built and is operated by Dallas Power and Light Co. to supply cooling water for their generating plant. The capacity curve is based on a survey made in 1963. For statement regarding regulation by Joe Pool Dam see station 08049900. Satellite telemeter at station. Rain gage at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	467.0	--
Top of gates	458.0	25,720
Top of dry weather conservation pool	457.0	22,840
Top of wet weather conservation pool	456.0	20,260
Crest of spillway (sill of tainter gates)	431.0	0

COOPERATION.--The capacity curve was provided by the Dallas Power and Light Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 28,430 acre-ft Mar. 13, 1995 (elevation 458.82 ft); minimum, 14,120 acre-ft Oct. 18, 1972 (elevation, 453.25 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,300 acre-ft Apr. 4 at 1615 hours (elevation, 458.48 ft); minimum, 19,310 acre-ft Oct. 19 (elevation, 455.60 ft).

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

453.0	13,600	456.0	20,260	458.0	25,720
454.0	15,670	457.0	22,840	459.0	29,020
455.0	17,890				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20050	22140	22610	23070	22870	22480	24860	24220	24280	24220	22270	21060
2	20000	22120	22660	23360	22840	23240	24880	23850	24220	24160	22200	21010
3	19950	22090	22710	23160	22810	22200	25140	24280	24190	24080	22120	21320
4	19900	22090	22840	23100	22810	22870	25750	24340	24110	23910	22070	21400
5	19880	22090	22840	23040	22810	24080	24680	24340	24080	24740	21940	21340
6	19860	22120	22810	23040	23240	23240	24770	24310	24020	24280	21830	21290
7	19860	22790	22810	23100	22840	22790	25200	24340	23990	24280	22380	21270
8	19790	22760	22930	22740	22930	22840	24770	24310	23960	24220	22430	21240
9	19760	22810	22930	22840	22960	23070	24650	24400	23960	24190	22450	21090
10	19690	22760	23010	22760	22980	23330	24420	24450	24110	24110	22430	21010
11	19670	22740	22930	22760	23010	23360	24080	24450	24110	24050	22400	20930
12	19620	22740	22900	22710	23240	22170	24020	24420	24110	23960	22350	20830
13	19600	22810	22930	22710	22380	21580	24220	24630	23990	23880	22270	20780
14	19570	22740	22840	22760	22660	21730	24880	23730	24250	23820	22250	20720
15	19550	22760	22870	22760	23130	23100	24770	24080	24370	23760	22170	20700
16	19530	22840	22960	22760	23160	22980	23850	24280	24020	23760	22010	20570
17	19340	23130	22960	22790	22300	23010	24940	24310	24220	23700	21890	20470
18	19380	23160	22930	22810	21680	23500	24540	24310	24250	23590	21780	20410
19	19310	23190	22930	22810	22610	22400	24600	24400	24190	23500	21730	20310
20	19410	23210	23010	22960	23240	22690	24450	24220	24140	23420	21890	20210
21	21210	23160	23010	23010	22200	23130	24800	24280	23960	23360	21860	20170
22	21700	23190	23070	22900	22380	22740	24280	24340	24280	23270	21780	20140
23	21630	22200	22930	23010	22480	22610	24220	24510	24370	23160	21700	20090
24	21630	22040	22960	22930	22870	23360	24190	23960	24370	23040	21650	20000
25	21700	22790	22980	22900	22380	23160	25000	24310	24340	22930	21580	19980
26	21600	22930	22960	22980	21960	23590	23990	24450	24570	22810	21500	19950
27	25140	23040	23010	22810	22250	24650	23470	24510	24540	22740	21420	19930
28	21990	23070	23040	22810	22400	24860	23930	24250	24450	22690	21340	19830
29	22220	22710	23040	22810	---	24860	24630	24220	24400	22580	21270	19830
30	22200	22500	23040	22930	---	24860	24450	24340	24340	22450	21190	19790
31	22170	---	23040	22870	---	24860	---	24310	---	22380	21140	---
MAX	25140	23210	23070	23360	23240	24860	25750	24630	24570	24740	22450	21400
MIN	19310	22040	22610	22710	21680	21580	23470	23730	23960	22380	21140	19790
(+)	456.74	456.87	457.07	457.01	456.83	457.70	457.56	457.51	457.52	456.82	456.34	455.80
(@)	+2100	+330	+540	-170	-470	+2460	-410	-140	+30	-1960	-1240	-1350
CAL YR 1996	MAX	25140	MIN	19030	(@)	+350						
WTR YR 1997	MAX	25750	MIN	19310	(@)	-280						

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

TRINITY RIVER BASIN

08050100 MOUNTAIN CREEK AT GRAND PRAIRIE, TX

LOCATION.--Lat 32°44'51", long 96°55'32", Dallas County, Hydrologic Unit 12030102, on roadway embankment at upstream right end of downstream bridge on Jefferson Street, 1,000 ft upstream from bridge on U.S. Highway 80, 1.2 mi upstream from Texas and Pacific Railroad Co. bridge, 1.5 mi downstream from Mountain Creek Lake Dam, and 4.4 mi east of Grand Prairie.

DRAINAGE AREA.--298 mi².

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 404.31 ft above sea level. Prior to Dec. 19, 1984, at datum 3.0 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Since installation of gage in October 1960, at least 10% of contributing drainage area has been regulated by Mountain Creek Lake (station 08050050), 1.5 mi upstream. No known diversions. Several observations of water temperature were made during the year. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.1	12	.54	1.1	e4.1	5.0	780	5.5	7.7	3.1	2.0
2	1.8	2.3	6.8	.66	.90	e460	4.4	562	5.2	6.5	3.1	2.1
3	1.4	2.1	4.4	2.1	.94	e1440	e9.0	9.6	5.2	5.0	3.0	3.7
4	1.3	1.9	3.7	2.7	1.1	e27	e2920	6.2	4.9	e5.9	2.9	4.8
5	1.4	1.6	3.7	.66	1.1	e784	e1530	9.7	4.2	12	2.9	2.4
6	.97	1.2	3.5	.68	4.2	1670	e26	5.9	4.3	119	3.0	2.6
7	1.2	e725	2.5	1.1	374	e306	e17	7.3	4.4	7.3	7.7	2.7
8	1.1	e9.9	2.3	331	9.5	e722	902	6.4	4.4	5.8	5.3	2.5
9	1.4	3.7	1.7	4.2	3.5	e897	1400	180	4.6	6.2	3.9	2.1
10	1.4	2.9	1.7	1.8	3.1	e18	1370	149	6.4	10	3.5	2.5
11	1.6	2.5	1.8	1.3	3.0	e9.0	2120	6.7	4.6	5.6	3.4	2.8
12	1.5	2.4	.89	1.1	3320	e798	1280	6.3	5.1	4.9	3.2	2.5
13	1.3	2.0	.98	1.1	e2280	e680	719	7.3	5.2	4.6	3.0	2.3
14	1.4	2.1	.97	1.1	e59	e14	555	200	6.7	4.8	2.9	2.4
15	1.4	1.9	179	1.3	20	e127	1220	9.1	6.7	e3.6	3.8	2.3
16	1.4	2.3	5.2	1.0	577	1090	1440	18	12	e4.1	3.2	2.2
17	1.3	8.8	2.0	.85	1530	1830	228	5.6	656	3.5	2.9	2.1
18	1.5	3.5	1.4	.91	1450	1670	343	6.9	50	3.8	2.3	2.0
19	1.7	3.0	1.3	.87	2550	2340	16	8.1	4.5	4.0	2.1	2.1
20	1.5	2.3	1.2	.81	3490	1760	144	792	6.3	3.8	2.8	1.9
21	58	2.0	3.5	1.1	e1720	1590	22	16	6.4	3.7	3.7	2.1
22	7.5	2.6	2.4	1.1	e14	1480	160	8.1	276	3.6	2.2	1.9
23	2.7	599	3.2	.67	e8.8	1320	6.5	24	23	3.5	2.3	2.0
24	1.7	2990	1.2	.89	e6.4	791	6.4	171	7.0	3.4	2.3	2.1
25	2.1	e111	.81	.66	e1020	932	340	7.0	e6.3	3.5	2.3	2.3
26	1.8	e16	.80	2.0	e1490	466	1500	8.5	5.4	3.5	2.1	2.6
27	290	8.6	.75	1.3	e24	8.7	543	6.3	8.9	3.5	2.1	2.4
28	e3980	5.9	.80	.87	e5.4	17	16	114	6.1	3.4	2.1	2.2
29	e14	788	.68	.99	---	6.3	470	6.3	6.5	3.4	2.3	2.2
30	3.6	635	.61	1.0	---	7.1	766	6.3	8.0	3.6	2.2	2.1
31	1.9	---	.47	1.3	---	5.3	---	5.6	---	3.3	1.9	---
TOTAL	4391.47	5941.6	252.26	367.66	19967.04	23269.5	20078.3	3149.2	1159.8	266.5	93.5	71.9
MEAN	142	198	8.14	11.9	713	751	669	102	38.7	8.60	3.02	2.40
MAX	3980	2990	179	331	3490	2340	2920	792	656	119	7.7	4.8
MIN	.97	1.2	.47	.54	.90	4.1	4.4	5.6	4.2	3.3	1.9	1.9
AC-FT	8710	11790	500	729	39600	46160	39830	6250	2300	529	185	143

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997#, BY WATER YEAR (WY)

	MEAN	76.1	70.8	79.1	94.9	151	205	225	308	142	33.4	9.50	20.1
MAX	785	1286	1102	1483	714	1104	1170	1941	1028	511	88.6	188	
(WY)	1974	1992	1972	1992	1975	1977	1966	1969	1990	1989	1962	1973	
MIN	.22	.30	.26	.11	.17	.30	.91	.68	.50	.21	.16	.36	
(WY)	1989	1964	1976	1976	1964	1976	1987	1984	1971	1972	1972	1972	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1961 - 1997#

ANNUAL TOTAL	12726.65	79008.73	
ANNUAL MEAN	34.8	216	118
HIGHEST ANNUAL MEAN			506
LOWEST ANNUAL MEAN			4.39
HIGHEST DAILY MEAN	3980	3980	24700
LOWEST DAILY MEAN	.47	.47	.00
ANNUAL SEVEN-DAY MINIMUM	.70	.64	.02
INSTANTANEOUS PEAK FLOW		9470	38100
INSTANTANEOUS PEAK STAGE		21.22	25.12
ANNUAL RUNOFF (AC-FT)	25240	156700	85250
10 PERCENT EXCEEDS	4.1	789	52
50 PERCENT EXCEEDS	1.6	4.1	1.2
90 PERCENT EXCEEDS	1.0	1.1	.32

'e Estimated

Period of regulated streamflow

08050400 ELM FORK TRINITY RIVER AT GAINESVILLE, TX

LOCATION.--Lat 33°37'27", long 97°09'22", Cooke County, Hydrologic Unit 12030103, on downstream right bank at end of the bridge on Farm Road 51, 31 ft downstream from the centerline of the road, 0.6 mi west of Cooke County courthouse in Gainesville, 1.0 mi upstream from Interstate Highway 35, and 1.2 mi downstream from Dozier Creek.

DRAINAGE AREA.--174 mi².

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 700.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1981 reached a peak stage of 28.1 ft, from information furnished by an employee of the Gainesville Department of Public Works.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,100 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 20	0245	21,000	22.69	May 26	0115	13,200	19.62
May 20	0230	9,250	17.64				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	49	390	30	16	315	73	112	279	18	2.4	1.2
2	6.7	37	238	32	16	413	69	94	181	16	2.3	1.3
3	5.2	29	177	34	13	583	70	77	123	16	2.3	1.3
4	4.8	24	145	32	13	335	1060	68	99	14	2.4	1.3
5	4.6	21	129	25	13	270	684	64	86	14	2.1	1.3
6	4.6	23	109	23	229	237	271	58	74	14	4.0	1.3
7	4.3	750	91	20	516	224	176	54	67	15	2.3	1.3
8	3.5	194	80	22	297	203	137	52	58	15	2.4	1.2
9	3.1	101	75	26	175	227	118	68	55	14	2.4	1.1
10	2.8	72	70	28	127	312	107	59	145	15	2.3	1.3
11	2.7	56	60	25	105	203	1030	50	74	12	2.2	1.1
12	2.5	47	52	22	154	432	545	46	54	9.2	2.1	.91
13	2.4	41	45	19	702	452	282	44	47	8.8	2.1	1.2
14	2.3	37	46	20	345	231	204	43	42	7.5	2.0	1.3
15	2.4	32	81	24	197	172	154	43	41	7.5	1.9	1.3
16	2.4	30	68	23	139	150	123	39	53	8.1	1.8	1.1
17	2.2	135	56	21	112	138	105	35	45	7.3	1.6	1.2
18	2.0	93	48	21	96	132	92	33	40	5.7	1.6	1.2
19	2.2	73	42	22	609	115	85	99	34	4.9	1.5	1.1
20	2.3	61	39	22	7620	99	80	3050	30	4.4	1.6	1.0
21	3.0	52	42	23	1380	92	85	467	27	4.0	1.4	1.3
22	5.7	44	44	23	1040	83	126	257	52	3.7	1.6	1.0
23	5.0	43	42	21	895	71	104	168	68	3.4	1.6	1.3
24	5.3	2110	38	21	796	66	78	230	57	3.3	1.6	1.3
25	5.5	1070	35	20	665	684	476	524	40	3.1	1.5	1.2
26	5.3	822	33	20	870	317	712	3130	39	2.8	1.5	1.2
27	27	425	34	19	569	192	404	547	35	2.8	1.4	1.2
28	281	262	34	17	405	145	256	307	26	2.8	1.2	1.3
29	131	1710	32	17	---	112	182	206	23	2.7	1.3	1.3
30	69	820	30	18	---	92	142	1280	20	2.8	1.1	1.3
31	55	---	31	17	---	79	---	646	---	2.8	1.0	---
TOTAL	664.5	9263	2436	707	18114	7176	8030	11950	2014	260.6	58.5	36.41
MEAN	21.4	309	78.6	22.8	647	231	268	385	67.1	8.41	1.89	1.21
MAX	281	2110	390	34	7620	684	1060	3130	279	18	4.0	1.3
MIN	2.0	21	30	17	13	66	69	33	20	2.7	1.0	.91
AC-FT	1320	18370	4830	1400	35930	14230	15930	23700	3990	517	116	72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	70.6	79.1	157	78.3	173	178	182	367	170	19.2	4.93	41.4
MAX	310	353	743	316	647	565	1063	1359	659	91.1	13.2	123
(WY)	1994	1995	1992	1992	1997	1990	1990	1990	1989	1987	1996	1996
MIN	.72	2.54	2.61	5.72	3.80	6.54	6.25	5.31	2.61	1.02	.025	1.21
(WY)	1989	1996	1991	1986	1996	1986	1991	1996	1996	1988	1988	1997

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1986 - 1997

ANNUAL TOTAL	21201.12	60710.01	
ANNUAL MEAN	57.9	166	126
HIGHEST ANNUAL MEAN			277
LOWEST ANNUAL MEAN			24.9
HIGHEST DAILY MEAN	2110	7620	12500
LOWEST DAILY MEAN	.60	.91	.00
ANNUAL SEVEN-DAY MINIMUM	.67	1.1	.00
INSTANTANEOUS PEAK FLOW		21000	24000
INSTANTANEOUS PEAK STAGE		22.69	25.33
ANNUAL RUNOFF (AC-FT)	42050	120400	91560
10 PERCENT EXCEEDS	95	408	246
50 PERCENT EXCEEDS	5.0	39	16
90 PERCENT EXCEEDS	1.6	1.5	1.4

TRINITY RIVER BASIN

08050410 ELM FORK TRINITY RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°34'56", long 97°07'49", Cooke County, Hydrologic Unit 12030103, on Farm Road 2071 bridge, over center of channel at downstream side of bridge, 1.0 mi downstream from Atchison, Topeka, and Santa Fe Railroad Co. bridge, and 3.0 mi south of Cooke County Courthouse in Gainesville.

DRAINAGE AREA.--1.79 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
OCT 08...	1300	3.5	785	8.1	20.0	30	6.9	8.2	93	2.8	130
DEC 16...	1345	70	651	7.9	9.0	25	5.0	11.3	101	0.7	230
JAN 10...	1130	29	701	8.1	5.5	12	1.5	12.4	102	0.5	220
MAR 06...	1230	278	484	7.9	11.5	40	20	10.5	97	1.2	200
JUN 03...	1400	131	513	7.8	23.0	50	13	8.8	104	1.6	200
JUL 09...	1345	14	711	8.0	27.5	20	10	9.9	128	1.6	190
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 08...	0	45	3.6	110	4	6.4	220	49	59	0.50	9.0
DEC 16...	9	85	5.0	43	1	3.7	220	43	40	0.30	8.9
JAN 10...	0	78	5.4	57	2	3.6	230	52	44	0.30	3.0
MAR 06...	15	72	3.6	24	0.7	3.1	180	26	22	0.20	10
JUN 03...	12	73	3.9	27	0.8	3.3	190	27	23	0.21	11
JUL 09...	0	68	5.1	69	2	3.7	230	45	47	0.42	12
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 08...	444	28	10	18	5.78	0.020	5.80	0.020	0.58	0.60	1.60
DEC 16...	372	<1	<1	--	1.65	0.050	1.70	0.250	0.35	0.60	0.190
JAN 10...	395	2	<1	--	2.48	0.020	2.50	<0.015	--	0.20	0.230
MAR 06...	276	26	5	21	1.38	0.020	1.40	0.030	0.37	0.40	0.050
JUN 03...	289	27	11	16	1.83	0.015	1.85	<0.015	--	0.34	0.117
JUL 09...	409	20	4	16	4.11	0.016	4.13	<0.015	--	0.33	0.565
DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 08...	1.40	4.3	7.0	--	--	--	--	--	--	--	--
DEC 16...	0.160	0.49	4.8	--	--	--	--	--	--	--	--
JAN 10...	0.240	0.74	4.4	1	80	<0.50	<1.0	<5.0	<3.0	<10	16
MAR 06...	0.070	0.21	3.9	<1	69	<0.50	<1.0	<5.0	<3.0	<10	5.0
JUN 03...	0.091	0.28	6.5	2	70	<0.50	<1.0	<5.0	<3.0	<10	4.2
JUL 09...	0.476	1.5	5.7	2	77	<0.50	<1.0	<5.0	<3.0	<10	5.2

TRINITY RIVER BASIN

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08050410 ELM FORK TRINITY RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 08...	--	--	--	--	--	--	--	--	--	--	--
DEC 16...	--	--	--	--	--	--	--	--	--	--	--
JAN 10...	<10	7	15	<0.1	<10	<10	<1	<1.0	430	<6	12
MAR 06...	<10	<4	9.0	<0.1	<10	<10	<1	<1.0	280	<6	<3.0
JUN 03...	<10	6	8.8	0.1	<10	<10	<1	<1.0	308	<6	5.4
JUL 09...	<10	9	8.9	<0.1	<10	<10	<1	<1.0	394	<6	15

TRINITY RIVER BASIN

08050800 TIMBER CREEK NEAR COLLINSVILLE, TX

LOCATION.--Lat 33°33'16", long 96°56'49", Cooke County, Hydrologic Unit 12030103, on left bank 13 ft to the left of bridge on Farm Road 902 and 19 ft downstream from the centerline of the road, 2.1 mi west of Collinsville, and 3.0 mi upstream from mouth.

DRAINAGE AREA.--38.8 mi².

PERIOD OF RECORD.--October 1985 to current year.

Water-quality records.--Chemical and biochemical analyses: April 1993 to September 1993

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 640.00 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1981 reached a peak stage of 15.0 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s:

	Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)				
No peak greater than base discharge.												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	2.1	33	2.4	1.9	16	3.1	7.6	18	e1.8	.00	.00
2	.00	2.8	20	2.4	2.0	14	2.9	6.9	13	1.3	.00	.00
3	.00	1.6	14	2.4	1.9	25	2.8	5.9	11	.88	.00	.00
4	.00	.53	11	2.4	1.8	14	345	5.3	11	.67	.00	.00
5	.00	.16	9.7	2.2	1.8	8.9	559	4.9	9.9	.56	.00	.00
6	.00	78	8.6	2.1	8.6	6.2	55	4.6	9.2	.44	.03	.00
7	.00	654	6.9	2.1	35	4.9	24	4.4	8.7	.50	.00	.00
8	.00	44	6.0	2.1	15	4.9	18	4.2	8.4	.53	.00	.00
9	.00	11	5.9	2.1	5.1	7.7	14	5.5	8.6	.33	.00	.00
10	.00	5.1	5.8	2.3	3.2	13	13	5.3	55	.30	.00	.00
11	.00	3.1	5.1	2.3	2.5	6.6	164	4.3	17	.76	.00	.00
12	.00	2.4	4.2	2.2	14	77	80	3.9	9.7	.43	.00	.00
13	.00	2.1	3.7	2.1	55	134	24	3.3	7.3	.18	.00	.00
14	.00	1.8	3.9	2.0	13	28	17	3.1	5.7	.10	.00	.00
15	.00	1.7	17	2.0	5.8	12	14	3.1	5.4	.09	.00	.00
16	.00	2.9	8.5	2.0	3.6	7.8	12	2.9	5.3	.04	.00	.00
17	.00	73	5.1	2.0	2.9	6.4	10	2.6	5.4	.02	.00	.00
18	.00	12	3.4	2.0	2.6	6.0	9.2	2.4	4.6	.01	.00	.00
19	.00	5.1	3.0	2.0	10	4.6	9.0	22	3.7	.00	.00	.00
20	.00	3.1	2.7	2.0	177	3.7	8.3	85	3.0	.00	.00	.00
21	.00	2.2	2.7	2.1	332	3.6	8.4	24	3.3	.00	.00	.00
22	.00	1.8	2.8	2.1	e48	3.0	8.4	8.9	27	.00	.00	.00
23	.00	3.5	2.8	2.1	e23	2.5	8.1	5.7	21	.00	.00	.00
24	.00	512	2.8	2.1	e14	2.7	7.0	129	6.7	.00	.00	.00
25	.00	134	2.4	2.1	11	240	47	24	4.8	.00	.00	.00
26	.00	62	2.4	2.0	142	88	129	542	3.7	.00	.00	.00
27	.00	27	2.4	1.8	65	18	79	154	e3.0	.00	.00	.00
28	253	13	2.4	1.8	23	10	25	36	e2.6	.00	.00	.00
29	33	216	2.4	1.7	---	7.3	17	20	e2.3	.00	.00	.00
30	6.0	111	2.4	1.7	---	6.0	11	77	e2.1	.00	.00	.00
31	2.5	---	2.4	1.8	---	3.8	---	35	---	.00	.00	---
TOTAL	294.52	1988.99	205.4	64.4	1020.7	785.6	1724.2	1242.8	296.4	8.94	0.03	0.00
MEAN	9.50	66.3	6.63	2.08	36.5	25.3	57.5	40.1	9.88	.29	.001	.000
MAX	253	654	33	2.4	332	240	559	542	55	1.8	.03	.00
MIN	.00	.16	2.4	1.7	1.8	2.5	2.8	2.4	2.1	.00	.00	.00
AC-FT	584	3950	407	128	2020	1560	3420	2470	588	18	.06	.00
CFSM	.24	1.71	.17	.05	.94	.65	1.48	1.03	.25	.01	.00	.00
IN.	.28	1.91	.20	.06	.98	.75	1.65	1.19	.28	.01	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

	MEAN	28.7	19.0	49.4	18.6	35.7	35.4	51.8	72.7	36.9	29.4	1.37	7.93
MAX	135	66.3	326	73.1	95.3	89.6	259	168	193	293	6.76	32.0	
(WY)	1992	1997	1992	1992	1993	1990	1990	1989	1989	1994	1996	1992	
MIN	.000	.000	.070	.60	.35	2.72	1.82	.059	.000	.000	.000	.000	
(WY)	1988	1990	1996	1986	1996	1986	1987	1996	1996	1988	1986	1995	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1986 - 1997

ANNUAL TOTAL	3392.15	7631.98	
ANNUAL MEAN	9.27	20.9	
HIGHEST ANNUAL MEAN			32.2
LOWEST ANNUAL MEAN			72.7
HIGHEST DAILY MEAN	654 Nov 7	654 Nov 7	5410 Jul 11 1994
LOWEST DAILY MEAN	.00 Jan 1	.00 Oct 2	.00 Oct 1 1985
ANNUAL SEVEN-DAY MINIMUM	.00 May 13	.00 Oct 2	.00 Oct 1 1985
INSTANTANEOUS PEAK FLOW		888 Apr 5	13300 Jul 10 1994
INSTANTANEOUS PEAK STAGE		12.47 Apr 5	14.94 Jul 10 1994
ANNUAL RUNOFF (AC-FT)	6730	15140	23360
ANNUAL RUNOFF (CFSM)	.24	.54	.83
ANNUAL RUNOFF (INCHES)	3.25	7.32	11.29
10 PERCENT EXCEEDS	11	35	31
50 PERCENT EXCEEDS	.22	2.7	2.1
90 PERCENT EXCEEDS	.00	.00	.00

e Estimated

TRINITY RIVER BASIN

361

08050815 JORDAN CREEK TRIBUTARY NEAR COLLINSVILLE, TX.

LOCATION.--Lat 33°32'15", long 96°55'22", Grayson County, Hydrologic Unit 12030103, at culvert on gravel road, 0.4 mi upstream from mouth of Jordan Creek, and 1.5 mi southwest of Collinsville.

DRAINAGE AREA.--1.65 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
OCT 09...	1030	0.01	899	7.7	14.5	120	31	5.6	56	1.4	73
DEC 11...	1100	0.44	843	7.8	13.5	27	3.6	9.7	96	1.3	140
JAN 09...	1445	0.37	887	8.1	6.5	24	3.4	15.3	129	0.2	130
MAR 06...	1500	0.82	748	7.8	13.0	32	15	12.2	117	1.1	160
JUN 03...	1200	0.56	636	7.6	20.5	50	4.6	6.3	71	2.0	150
JUL 09...	1200	0.14	781	7.8	25.0	60	9.6	5.4	67	1.6	110
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 09...	0	23	3.7	160	8	7.7	260	59	76	0.40	12
DEC 11...	0	44	7.7	120	4	6.4	260	60	64	0.40	11
JAN 09...	0	39	7.3	140	5	5.7	270	61	70	0.30	8.6
MAR 06...	0	50	9.1	92	3	6.2	230	60	53	0.40	8.9
JUN 03...	0	46	7.9	73	3	7.1	200	42	41	0.32	10
JUL 09...	0	35	6.4	121	5	7.4	260	39	60	0.34	9.8
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 09...	501	28	10	18	0.050	0.010	0.060	0.090	0.51	0.60	0.330
DEC 11...	484	3	2	1	2.43	0.170	2.60	0.500	0.40	0.90	0.210
JAN 09...	512	1	1	0	2.80	0.100	2.90	2.30	0.50	2.8	0.190
MAR 06...	429	12	5	7	1.63	0.170	1.80	0.790	0.61	1.4	0.230
JUN 03...	358	6	7	0	1.22	0.090	1.31	0.084	0.81	0.89	0.335
JUL 09...	448	13	5	8	2.18	0.053	2.23	0.035	0.71	0.74	0.926
DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 09...	0.320	0.98	8.6	--	--	--	--	--	--	--	--
DEC 11...	0.180	0.55	8.4	--	--	--	--	--	--	--	--
JAN 09...	0.190	0.58	5.0	<1	36	<0.50	<1.0	<5.0	<3.0	<10	140
MAR 06...	0.280	0.86	7.0	<1	58	<0.50	<1.0	<5.0	<3.0	<10	16
JUN 03...	0.319	0.98	9.4	2	58	<0.50	<1.0	<5.0	<3.0	<10	33
JUL 09...	0.847	2.6	9.0	2	50	<0.50	<1.0	<5.0	<3.0	<10	17

TRINITY RIVER BASIN

08050815 JORDAN CREEK TRIBUTARY NEAR COLLINSVILLE, TX.--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 09...	--	--	--	--	--	--	--	--	--	--	--
DEC 11...	--	--	--	--	--	--	--	--	--	--	--
JAN 09...	<10	9	180	<0.1	<10	<10	<1	<1.0	290	<6	16
MAR 06...	<10	5	380	<0.1	<10	<10	<1	<1.0	350	<6	6.0
JUN 03...	<10	7	128	0.1	<10	<10	<1	<1.0	305	<6	9.8
JUL 09...	<10	8	53	<0.1	<10	12	<1	<1.0	241	<6	<3.0

TRINITY RIVER BASIN

363

08050840 RANGE CREEK NEAR COLLINSVILLE, TX

LOCATION.--Lat 33°31'34", long 96°48'25", Delta County, Hydrologic Unit 12030103, on downstream left bank at bridge on Farm Road 902, 1.8 mi upstream from Case Creek, 2.5 mi downstream from Little Elm Creek, 6.5 mi east southeast from the Post Office in Collinsville.

DRAINAGE AREA.--29.2 mi².

PERIOD OF RECORD.--October 1992 to current year.

Water-quality records.--Chemical and biochemical analysis: October 1992 to September 1995.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 621.08 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversion. Rain gage at station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	18	40	.86	.51	4.0	.32	.88	1.1	.00	.00	.00
2	.04	13	11	.91	.54	51	.19	.61	.46	.00	.00	.00
3	.00	2.3	7.1	1.1	.59	124	.18	.37	.19	.00	.00	.00
4	.00	1.6	5.3	1.1	.55	9.4	629	.26	.08	.00	.00	.00
5	.00	1.6	4.9	1.4	.28	3.3	619	.19	.06	.00	.00	.00
6	.00	100	4.5	1.0	68	1.6	16	.14	.04	.00	.00	.00
7	.00	2360	3.7	.71	253	1.0	4.9	.11	.02	.00	.00	.00
8	.00	34	2.8	.91	49	.93	2.9	.09	.07	.00	.00	.00
9	.00	8.3	2.5	1.0	7.6	56	1.9	.12	.44	.00	.00	.00
10	.00	4.8	2.5	1.2	3.7	101	1.5	.09	239	.00	.00	.00
11	.00	3.3	2.5	.98	2.2	7.0	152	.06	8.6	.00	.00	.00
12	.00	2.6	2.5	.71	193	329	39	.06	1.5	.00	.00	.00
13	.00	2.7	2.3	.48	603	390	5.5	.05	.40	.00	.00	.00
14	.00	3.0	2.1	.33	38	30	2.8	.04	.17	.00	.00	.00
15	.00	3.7	70	.26	8.0	4.7	1.8	.04	1.3	.00	.00	.00
16	.00	5.0	12	.19	3.6	2.4	1.2	.03	.55	.00	.00	.00
17	.00	255	5.2	.19	2.2	1.8	.84	.03	.13	.00	.00	.00
18	.00	18	3.1	.31	1.5	1.8	.71	.03	.06	.00	.00	.00
19	.00	7.0	2.0	.28	128	1.3	.60	.09	.03	.00	.00	.00
20	.00	4.7	1.4	.23	1320	.82	.55	1.5	.02	.00	.00	.00
21	.00	3.5	1.5	.20	310	.71	.53	.97	.01	.00	.00	.00
22	.00	2.6	1.8	.22	15	.57	.48	.41	.07	.00	.00	.00
23	.00	4.1	1.8	.48	4.9	.38	1.4	.21	.39	.00	.00	.00
24	.00	1930	1.5	.56	2.7	.28	.75	189	.18	.00	.00	.00
25	.00	296	1.2	.57	2.2	153	66	20	.07	.00	.00	.00
26	.00	167	.85	.55	192	18	203	98	.26	.00	.00	.00
27	.00	87	.67	.51	35	3.0	48	118	11	.00	.00	.00
28	437	19	.74	.43	6.7	1.4	8.4	10	.23	.00	.00	.00
29	62	624	.78	.40	---	.77	3.3	1.8	.03	.00	.00	.00
30	5.3	127	.82	.39	---	1.4	1.7	4.7	.01	.00	.00	.00
31	1.5	---	.89	.50	---	.69	---	5.2	---	.00	.00	---
TOTAL	505.97	6108.8	199.95	18.96	3251.77	1301.25	1814.45	453.08	310.03	0.00	0.00	0.00
MEAN	16.3	204	6.45	.61	116	42.0	60.5	14.6	10.3	.000	.000	.000
MAX	437	2360	70	1.4	1320	390	629	189	239	.00	.00	.00
MIN	.00	1.6	.67	.19	.28	.28	.18	.03	.01	.00	.00	.00
AC-FT	1000	12120	397	38	6450	2580	3600	899	615	.00	.00	.00
CFSM	.56	6.97	.22	.02	3.98	1.44	2.07	.50	.35	.00	.00	.00
IN.	.64	7.78	.25	.02	4.14	1.66	2.31	.58	.39	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1997, BY WATER YEAR (WY)

	MEAN	30.9	65.2	23.3	3.96	34.0	27.6	28.1	34.3	9.09	7.34	1.23	3.75
MAX	107	204	57.7	10.4	116	65.9	60.5	86.5	28.3	36.7	4.72	9.54	
(WY)	1994	1997	1993	1995	1997	1995	1997	1995	1993	1994	1994	1994	
MIN	.000	.000	5.92	.61	.000	4.01	.46	.000	.000	.000	.000	.000	
(WY)	1993	1996	1996	1997	1996	1994	1996	1996	1996	1996	1993	1993	1997

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1993 - 1997

ANNUAL TOTAL	7318.07	13964.26	
ANNUAL MEAN	20.0	38.3	22.3
HIGHEST ANNUAL MEAN			38.3
LOWEST ANNUAL MEAN			1.88
HIGHEST DAILY MEAN	2360	Nov 7	2580
LOWEST DAILY MEAN	.00	Jan 1	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 9	.00
INSTANTANEOUS PEAK FLOW			6670
INSTANTANEOUS PEAK STAGE			22.89
ANNUAL RUNOFF (AC-FT)	14520	27700	16130
ANNUAL RUNOFF (CFSM)	.68	1.31	.76
ANNUAL RUNOFF (INCHES)	9.32	17.79	10.36
10 PERCENT EXCEEDS	5.7	50	14
50 PERCENT EXCEEDS	.00	.51	.07
90 PERCENT EXCEEDS	.00	.00	.00

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX

LOCATION.--Lat 32°21'19", long 97°02'59", Denton County, Hydrologic Unit 12030103, in control room of outlet works tower located 336 ft upstream from centerline of Ray Roberts Dam (and Farm Road 455 which is located on top of dam) on Elm Fork Trinity River, 3.7 mi upstream from Bray Branch, 5.7 mi southwest of Pilot Point, and at river mile 60.0.

DRAINAGE AREA.--692 mi².

WATER-CONTENT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Lake is formed by a rolled earthfill dam 15,250 ft long. There is an uncontrolled, broad-crested spillway excavated in natural ground about 5,000 ft right of right end of dam. A reinforced concrete tower houses the flood-control and low-flow gates and operating equipment. Construction started Sept. 16, 1980, and closure was made in May 1986. The dam was built and is owned by the U.S. Army Corps of Engineers. Deliberate impoundment started June 30, 1987. The lake was built for water supply, flood control, and recreation purposes. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	665.0	-
Spillway crest (uncontrolled)	645.5	1,262,000
Top of flood-control pool	640.5	1,065,000
Top of conservation pool	632.5	799,600
Invert, lowest gated outlet	551.0	990

COOPERATION.--Records of elevations and contents provided by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,219,000 acre-ft May 3, 1990 (elevation, 644.48 ft); minimum since initial filling began, 990 acre-ft July 1, 1987 (elevation, 551.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 928,500 acre-ft Mar. 3, 4 (elevation, 636.62 ft); minimum, 707,900 acre-ft Oct. 26 (elevation, 629.22 ft).

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

620.0	491,200	630.0	729,000	634.0	844,800
622.0	533,300	631.0	756,700	635.0	876,000
624.0	578,100	632.0	785,200	636.0	908,100
626.0	625,500	633.0	814,500	637.0	941,200
628.0	675,800				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	724100	736400	841400	800300	798600	924900	854000	863700	838700	802700	783700	768800
2	723800	736100	834700	800300	798600	926500	851900	861800	832900	802100	783200	768300
3	723300	735300	829200	800300	798600	928500	850900	859000	826500	801500	782600	768300
4	722700	735300	825300	801500	798600	928500	876000	855600	820800	800600	782300	767700
5	722500	734700	821100	801500	799500	924900	888400	852200	816600	798900	781700	766600
6	721900	748000	817200	801500	804500	920600	888100	848200	814800	799200	782000	766000
7	721400	787200	813300	801200	810400	915700	885900	843600	812700	798600	782600	765200
8	720800	789800	809200	801500	812200	909400	884900	840500	811600	797700	781700	765200
9	720300	790100	805300	801500	812200	903900	881700	837400	811900	797700	781400	764600
10	719700	790100	803900	801200	812200	898400	879200	832900	811300	797100	780600	763700
11	718700	789800	803900	801200	811600	892300	888100	828300	809800	796500	780600	762600
12	718700	789500	803300	800600	817500	895800	887800	823800	808900	795900	780000	761800
13	716800	789200	802700	800000	826800	899000	885900	820200	808900	795400	780000	761200
14	716000	788700	803900	799200	828900	895800	883600	818100	808900	794800	778800	760600
15	714900	789000	804500	799500	828900	891900	881700	816000	809200	794500	778000	760100
16	714300	791000	803900	799500	828300	888100	880100	813000	809200	793900	777100	759500
17	713500	794800	803600	799200	827400	884900	876900	810700	808600	793300	776800	758900
18	712200	795400	802700	798900	827100	882300	874400	808000	808000	792700	776300	757800
19	710600	795600	801800	798900	845100	878200	872500	815100	807100	792100	776000	757500
20	709800	796200	800300	798900	898400	874700	870600	832300	805900	791600	775400	757200
21	711900	796200	799700	799200	908500	871200	869000	832600	805000	791000	774800	756400
22	710600	795400	800000	799500	910400	867800	867800	832300	808600	790400	775400	755600
23	709800	803300	801200	799500	911700	864000	865600	831700	808900	789800	774500	755300
24	708700	840800	800300	799700	912700	861200	864000	840800	808900	789200	773700	754400
25	708200	848500	799700	799200	913700	867500	867800	842300	808600	788400	773100	753900
26	707900	850000	799700	799200	920600	867100	872200	857100	808000	787500	772500	753300
27	711100	846000	799700	800600	922600	864600	872200	858700	807100	786900	771700	752800
28	732800	840200	800300	798900	923600	863700	870600	854400	805900	786300	771100	752200
29	735600	850300	800000	798600	---	861800	868100	848800	804800	786300	770300	751400
30	736100	848500	800000	798300	---	859000	866800	848500	803900	785500	769700	751100
31	736700	---	800300	798600	---	856200	---	844200	---	784600	769100	---
MAX	736700	850300	841400	801500	923600	928500	888400	863700	838700	802700	783700	768800
MIN	707900	734700	799700	798300	798600	856200	850900	808000	803900	784600	769100	751100
(+)	630.28	634.12	632.52	632.46	636.47	634.37	634.71	633.98	632.64	631.98	631.44	630.80
(@)	+12100	+111800	-48200	-1700	+125000	-67400	+10600	-22600	-40300	-19300	-15500	-18000

CAL YR 1996 MAX 850300 MIN 706000 (@) +44500
WTR YR 1997 MAX 928500 MIN 707900 (@) +26500

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

TRINITY RIVER BASIN

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08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1989 to current year.

REVISED RECORDS.--TX-93-1 Phytoplankton.

332138097024101 - RAY ROBERTS LAKE SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	
MAR													
06...	1155	923000	1.00	282	8.1	11.5	0.40	10.1	94	K9	K13	110	
06...	1157	--	10.0	281	8.1	10.0	--	10.1	90	--	--	--	
06...	1200	--	20.0	282	8.1	10.0	--	10.1	90	--	--	--	
06...	1203	--	30.0	281	8.1	9.5	--	10.2	90	--	--	--	
06...	1206	--	40.0	282	8.1	9.5	--	10.2	90	--	--	--	
06...	1209	--	50.0	282	8.1	9.5	--	10.2	90	--	--	--	
06...	1212	--	60.0	281	8.1	9.5	--	10.3	91	--	--	--	
06...	1215	--	70.0	282	8.1	9.5	--	10.4	92	--	--	--	
06...	1218	--	80.0	282	8.1	9.5	--	10.3	91	--	--	100	
JUN													
03...	1359	829000	1.00	281	8.8	24.0	1.70	9.4	114	K1	K6	100	
03...	1402	--	10.0	282	8.8	24.0	--	9.2	112	--	--	--	
03...	1405	--	20.0	284	8.5	23.0	--	7.6	91	--	--	--	
03...	1408	--	30.0	282	8.2	22.5	--	6.3	75	--	--	--	
03...	1411	--	40.0	281	7.5	20.0	--	3.6	41	--	--	--	
03...	1414	--	50.0	281	7.4	19.5	--	2.9	32	--	--	--	
03...	1417	--	60.0	282	7.3	18.5	--	2.6	28	--	--	--	
03...	1420	--	70.0	286	7.3	18.0	--	2.1	23	--	--	--	
03...	1424	--	76.0	288	7.3	18.0	--	2.0	22	--	--	96	
JUL													
09...	1352	798000	1.00	277	8.6	28.5	1.74	7.4	98	K1	K1	97	
09...	1355	--	10.0	277	8.4	27.5	--	6.7	87	--	--	--	
09...	1359	--	20.0	284	7.8	26.5	--	3.3	42	--	--	--	
09...	1402	--	30.0	288	7.5	25.0	--	0.6	7	--	--	--	
09...	1405	--	40.0	288	7.4	21.5	--	0.4	5	--	--	--	
09...	1409	--	50.0	290	7.4	19.5	--	0.4	4	--	--	--	
09...	1412	--	60.0	292	7.4	19.0	--	0.4	4	--	--	--	
09...	1416	--	70.0	293	7.4	19.0	--	0.4	4	--	--	--	
09...	1420	--	75.0	293	7.4	19.0	--	0.4	4	--	--	110	
CONSTI-													
		HARD- NESS NONCARB	CALCIUM	MAGNE- SIUM,	SODIUM SODIUM,	POTAS- AD-	ALKA- LITY SIUM, WAT	DIS	CHLO- SULFATE	FLUO- RIDE,	SILICA, RIDE,	SOLIDS, SUM OF DIS-	
DATE		DISSOLV FLD. AS CACO3 (MG/L)	DIS- SOLVED (MG/L AS CA)	DIS- SOLVED (MG/L AS MG)	DIS- SOLVED (MG/L AS NA)	SORP- TION RATIO	DIS- SOLVED (MG/L AS K)	FIX END FIELD CACO3 (MG/L)	DIS- SOLVED (MG/L AS SO4)	DIS- SOLVED (MG/L AS CL)	DIS- SOLVED (MG/L AS F)	SOLVED (MG/L AS SIO2)	TUENTS, DIS- SOLVED (MG/L)
MAR													
06...	6	36	3.8	15	0.6	4.1	100	16	17	0.20	3.1	157	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	--	--	--	--	--	--	--	--	--	--	--	--	
06...	2	34	3.7	15	0.7	4.4	98	17	18	0.20	2.7	155	
JUN													
03...	0	35	3.5	15	0.7	4.1	100	16	16	0.16	1.1	152	
03...	--	--	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	--	--	
03...	--	--	--	--	--	--	--	--	--	--	--	--	
03...	0	33	3.6	15	0.7	4.1	100	16	16	0.17	2.5	153	
JUL													
09...	2	33	3.5	15	0.6	4.1	95	15	17	0.19	1.8	146	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	--	--	--	--	--	--	--	--	--	--	--	--	
09...	4	38	3.8	15	0.6	4.2	110	14	16	0.19	3.4	160	

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

332138097024101 - RAY ROBERTS LAKE SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTH- SOLVED (MG/L AS P)	PHOS- PHATE, ORTH- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR											
06...	0.430	0.040	0.470	0.030	0.27	0.30	<0.010	0.020	0.06	4.0	4.0
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	0.350	0.040	0.390	<0.015	--	0.50	<0.010	<0.010	--	<3.0	12
JUN											
03...	0.189	0.017	0.206	<0.015	--	0.31	<0.010	<0.010	--	5.2	<1.0
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	<0.010	0.520	<0.015	--	0.28	<0.010	<0.010	--	3.1	26
JUL											
09...	--	<0.010	0.073	<0.015	--	0.42	<0.010	<0.010	--	<3.0	<1.0
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	<0.010	0.138	0.042	0.31	0.35	<0.010	<0.010	--	<3.0	3.2
09...	--	<0.010	0.229	0.035	0.34	0.37	<0.010	<0.010	--	<3.0	31
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	0.178	0.014	0.192	0.201	0.36	0.56	<0.010	0.014	0.04	16	706

332200097010001 - RAY ROBERTS LAKE SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAR							
06...	1225	1.00	282	8.1	11.0	10.1	92
06...	1227	10.0	281	8.1	10.0	10.0	89
06...	1229	20.0	281	8.1	10.0	10.1	90
06...	1231	30.0	281	8.1	9.5	10.2	90
06...	1233	40.0	282	8.1	9.5	10.2	90
06...	1235	50.0	282	8.1	9.5	10.2	90
06...	1237	60.0	281	8.1	9.5	10.2	90
06...	1239	69.0	282	8.1	9.5	10.3	91
JUN							
03...	1427	1.00	283	8.7	24.5	9.1	112
03...	1429	10.0	283	8.7	24.0	8.9	108
03...	1431	20.0	284	8.4	23.0	7.3	87
03...	1433	30.0	283	8.2	22.5	6.5	77
03...	1435	40.0	280	7.5	20.0	3.4	38
03...	1437	50.0	280	7.3	19.0	2.6	29
03...	1439	60.0	288	7.3	18.0	1.9	21
03...	1441	66.0	291	7.4	18.0	2.3	25
JUL							
09...	1427	1.00	277	8.6	28.0	7.4	97
09...	1429	10.0	277	8.5	27.5	7.0	91
09...	1431	20.0	280	8.0	27.0	5.0	64
09...	1434	30.0	287	7.5	24.5	0.5	6
09...	1436	40.0	287	7.4	21.5	0.4	5
09...	1438	50.0	288	7.4	20.0	0.4	5
09...	1441	60.0	293	7.4	19.0	0.4	4
09...	1444	65.0	294	7.4	19.0	0.4	4

TRINITY RIVER BASIN

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08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

332301097050601 - RAY ROBERTS LAKE SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAR							
06...	0930	1.00	281	8.1	9.5	10.2	90
06...	0932	10.0	281	8.1	9.5	10.3	91
06...	0934	20.0	281	8.0	9.5	10.2	90
06...	0936	30.0	281	8.0	9.5	10.3	91
06...	0940	40.0	281	8.0	9.5	10.3	91
06...	0942	50.0	281	8.0	9.5	10.3	91
06...	0944	60.0	281	8.0	9.5	10.2	90
06...	0946	70.0	281	8.0	9.5	10.2	90
06...	0948	80.0	282	8.0	9.5	10.0	88
06...	0950	87.0	282	7.9	9.0	9.6	84
JUN							
03...	1143	1.00	279	8.8	25.0	9.5	118
03...	1145	10.0	278	8.7	24.0	9.4	114
03...	1147	20.0	279	8.6	23.5	8.9	107
03...	1149	30.0	282	8.3	22.5	7.3	86
03...	1151	40.0	286	7.4	20.0	2.4	27
03...	1153	50.0	286	7.2	19.0	1.5	17
03...	1155	60.0	291	7.2	18.0	0.9	10
03...	1157	70.0	291	7.2	18.0	0.9	10
03...	1159	78.0	295	7.1	17.5	0.7	7
JUL							
09...	1110	1.00	273	8.6	28.0	7.3	96
09...	1113	10.0	272	8.6	27.5	7.2	93
09...	1116	20.0	273	8.5	27.0	6.9	89
09...	1119	30.0	288	7.5	24.5	0.5	6
09...	1122	40.0	286	7.4	21.5	0.4	5
09...	1125	50.0	291	7.3	20.0	0.4	5
09...	1128	60.0	292	7.3	19.0	0.4	4
09...	1130	70.0	292	7.3	19.0	0.5	6
09...	1132	78.0	295	7.3	19.0	0.5	6

332353097020101 - RAY ROBERTS LAKE SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAR							
06...	1004	1.00	277	8.1	10.0	10.3	92
06...	1007	10.0	277	8.1	10.0	10.2	91
06...	1010	20.0	279	8.1	9.5	10.2	90
06...	1012	30.0	279	8.1	9.5	10.3	91
06...	1015	40.0	279	8.1	9.5	10.2	90
06...	1018	50.0	279	8.1	9.5	10.2	90
06...	1021	60.0	279	8.1	9.5	10.2	90
06...	1023	70.0	279	8.0	9.5	10.2	90
06...	1025	80.0	280	8.0	9.5	10.1	89
06...	1027	86.0	281	8.0	9.5	9.8	87
JUN							
03...	1214	1.00	271	8.8	24.5	9.5	117
03...	1216	10.0	272	8.8	24.0	9.3	113
03...	1218	20.0	279	8.6	23.0	8.4	100
03...	1220	30.0	282	7.7	21.0	4.9	56
03...	1222	40.0	281	7.3	19.5	2.7	30
03...	1224	50.0	282	7.3	18.5	2.7	30
03...	1226	60.0	285	7.2	18.0	2.0	22
03...	1228	70.0	287	7.2	18.0	1.9	21
03...	1230	84.0	292	7.2	17.5	1.2	13
JUL							
09...	1148	1.00	270	8.5	27.5	6.8	88
09...	1150	10.0	270	8.5	27.5	6.8	88
09...	1152	20.0	270	8.4	27.0	6.5	84
09...	1154	30.0	269	8.3	26.5	6.0	77
09...	1156	40.0	279	7.4	22.0	0.4	5
09...	1158	50.0	283	7.3	19.5	0.4	4
09...	1200	60.0	287	7.4	19.0	0.5	6
09...	1202	70.0	288	7.4	19.0	0.5	6
09...	1204	83.0	290	7.3	19.0	0.6	7

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

332459097063001 - RAY ROBERTS LAKE SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARANCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATURATION (%)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS./100 ML)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLVED (MG/L AS CaCO3)
MAR												
06...	1303	1.00	280	8.0	11.5	0.30	9.3	86	50	81	110	6
06...	1306	10.0	279	8.0	10.5	--	9.4	85	--	--	--	--
06...	1310	20.0	281	8.0	10.0	--	9.7	87	--	--	--	--
06...	1313	30.0	282	8.0	10.0	--	9.9	89	--	--	--	--
06...	1316	40.0	282	8.0	10.0	--	10.0	89	--	--	--	--
06...	1322	53.0	282	8.0	10.0	--	10.0	89	--	--	110	6
JUN												
03...	1459	1.00	261	9.2	25.5	0.55	14.9	187	K1	K7	93	0
03...	1502	10.0	284	8.2	23.5	--	6.7	81	--	--	--	--
03...	1506	20.0	285	8.4	23.0	--	7.2	86	--	--	--	--
03...	1510	30.0	288	8.0	22.0	--	5.2	61	--	--	--	--
03...	1513	40.0	296	7.4	20.5	--	0.2	2	--	--	--	--
03...	1516	53.0	301	7.4	20.5	--	0.4	5	--	--	100	0
JUL												
09...	1507	1.00	278	8.7	29.0	0.79	7.8	104	K1	K1	97	1
09...	1511	10.0	278	8.6	28.0	--	7.3	96	--	--	--	--
09...	1515	20.0	277	8.5	27.5	--	6.7	87	--	--	--	--
09...	1519	30.0	287	7.8	27.5	--	4.0	52	--	--	--	--
09...	1523	40.0	308	7.4	22.0	--	0.4	5	--	--	--	--
09...	1527	53.0	310	7.4	20.5	--	0.4	5	--	--	110	0

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WATER DIS FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)
MAR											
06...	37	3.3	13	0.5	4.3	100	16	16	0.20	5.3	159
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	36	3.7	15	0.6	4.1	99	16	17	0.20	3.1	157
JUN											
03...	32	3.1	14	0.6	4.0	94	14	15	0.15	2.7	142
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	36	3.5	15	0.6	4.1	110	15	16	0.17	3.4	161
JUL											
09...	33	3.5	16	0.7	4.1	96	15	16	0.19	2.2	148
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	39	3.7	14	0.6	4.1	110	13	16	0.19	4.2	166

DATE	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOSPHORUS, PHOSPHATE DIS-SOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	IRON, DIS-SOLVED (UG/L AS FE)	MANGANESE, DIS-SOLVED (UG/L AS MN)
MAR											
06...	0.690	0.050	0.740	0.130	0.37	0.50	0.050	0.060	0.18	4.0	7.0
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	0.430	0.050	0.480	0.030	0.37	0.40	<0.010	0.020	0.06	<3.0	14
JUN											
03...	0.078	0.032	0.110	<0.015	--	0.39	<0.010	<0.010	--	3.1	31
03...	0.303	0.030	0.333	<0.015	--	0.41	<0.010	<0.010	--	<60	<20
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	0.451	0.019	0.470	0.119	0.35	0.47	<0.010	0.022	0.07	54	551
JUL											
09...	--	<0.010	<0.050	<0.015	--	0.31	<0.010	0.014	0.04	<3.0	17
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	0.010	<0.050	0.071	0.32	0.40	<0.010	0.010	0.03	6.3	50
09...	--	<0.010	<0.050	0.441	0.34	0.78	0.022	0.054	0.17	610	997
09...	--	<0.010	<0.050	0.499	0.44	0.94	0.081	0.080	0.25	1100	1050

TRINITY RIVER BASIN

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08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

332509096595301 - RAY ROBERTS LAKE SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER AS CAC03)	HARD- NESS TOTAL (MG/L AS CAC03)	HARD- NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
MAR												
06...	1115	1.00	273	8.1	10.5	0.76	10.3	93	K3	K5	100	7
06...	1118	10.0	272	8.1	10.0	--	10.2	91	--	--	--	--
06...	1121	20.0	272	8.1	10.0	--	10.2	91	--	--	--	--
06...	1124	30.0	272	8.1	10.0	--	10.2	91	--	--	--	--
06...	1127	40.0	272	8.1	10.0	--	10.2	91	--	--	--	--
06...	1130	50.0	272	8.1	10.0	--	10.2	91	--	--	--	--
06...	1134	60.0	272	8.1	10.0	--	10.2	91	--	--	--	--
06...	1137	70.0	272	8.0	10.0	--	10.2	91	--	--	95	1
JUN												
03...	1323	1.00	262	8.9	24.5	1.46	9.7	119	K1	K1	92	2
03...	1325	10.0	269	8.7	23.0	--	8.9	106	--	--	--	--
03...	1328	20.0	275	8.4	22.5	--	7.4	88	--	--	--	--
03...	1331	30.0	279	7.6	21.0	--	4.4	51	--	--	--	--
03...	1334	40.0	269	7.1	19.0	--	0.8	9	--	--	--	--
03...	1337	50.0	265	7.1	18.5	--	0.2	2	--	--	--	--
03...	1340	60.0	264	7.1	18.5	--	0.2	2	--	--	--	--
03...	1343	68.0	264	7.1	18.5	--	0.3	3	--	--	91	0
JUL												
09...	1309	1.00	269	8.7	29.0	1.28	7.7	103	K1	K1	94	2
09...	1313	10.0	270	8.7	28.5	--	7.7	102	--	--	--	--
09...	1317	20.0	271	8.6	28.0	--	7.3	96	--	--	--	--
09...	1320	30.0	270	8.2	28.0	--	5.7	75	--	--	--	--
09...	1323	40.0	282	7.3	23.0	--	0.3	4	--	--	--	--
09...	1325	50.0	287	7.3	20.5	--	0.4	5	--	--	--	--
09...	1328	60.0	290	7.4	20.0	--	0.4	5	--	--	--	--
09...	1332	66.0	293	7.4	20.0	--	0.4	5	--	--	110	3

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
MAR											
06...	34	3.8	15	0.7	4.3	94	17	17	0.20	2.7	152
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	32	3.7	15	0.7	4.2	94	16	17	0.20	2.8	149
JUN											
03...	31	3.6	14	0.6	4.4	90	16	16	0.16	1.2	140
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	30	3.7	14	0.6	4.1	92	15	14	0.17	3.8	143
JUL											
09...	32	3.5	15	0.7	4.2	92	15	16	0.20	1.6	143
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	38	3.9	15	0.6	4.1	110	13	15	0.19	3.8	159

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

332509096595301 - RAY ROBERTS LAKE SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOS DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR											
06...	0.350	0.030	0.380	<0.015	--	0.30	<0.010	<0.010	--	<3.0	3.0
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--	--	--
06...	0.340	0.030	0.370	<0.015	--	0.30	<0.010	<0.010	--	4.0	6.0
JUN											
03...	--	<0.010	0.149	<0.015	--	0.32	<0.010	<0.010	--	6.0	2.4
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
03...	0.336	0.015	0.351	0.352	0.07	0.42	<0.010	<0.010	--	60	470
JUL											
09...	--	<0.010	<0.050	<0.015	--	0.32	<0.010	<0.010	--	<3.0	<1.0
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	5.1	6.0
09...	--	<0.010	<0.050	<0.015	--	0.31	<0.010	<0.010	--	5.1	6.0
09...	--	<0.010	<0.050	0.523	0.45	0.98	0.038	0.057	0.17	1500	806
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	1100	980

332758097063301 - RAY ROBERTS LAKE SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAR							
06...	1342	1.00	300	8.0	12.5	9.1	86
06...	1344	10.0	287	8.0	11.5	9.0	83
06...	1346	20.0	283	8.0	11.5	8.9	82
06...	1348	30.0	282	7.9	11.5	8.7	81
06...	1350	40.0	284	7.8	11.5	8.3	77
JUN							
03...	1530	1.00	285	8.0	24.5	6.6	81
03...	1532	10.0	284	7.7	23.0	4.8	57
03...	1534	20.0	294	7.4	22.0	1.0	12
03...	1536	30.0	300	7.4	21.5	0.3	3
03...	1538	36.0	306	7.4	21.5	0.5	6
JUL							
09...	1538	1.00	287	8.5	29.5	7.1	96
09...	1540	10.0	296	8.2	28.5	6.0	79
09...	1542	20.0	296	8.0	28.5	5.4	71
09...	1544	30.0	307	7.8	28.5	4.1	54
09...	1546	35.0	315	7.6	28.5	2.6	34

332642096561201 - RAY ROBERTS LAKE SITE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
MAR							
06...	1046	1.00	174	7.6	11.0	9.1	83
06...	1048	10.0	180	7.6	10.5	9.0	81
06...	1050	20.0	187	7.6	10.5	8.9	81
06...	1052	30.0	185	7.4	10.0	8.2	73
06...	1054	36.0	184	7.4	9.5	7.9	70
JUN							
03...	1255	1.00	228	9.0	25.0	10.4	129
03...	1257	10.0	250	8.3	23.5	7.2	87
03...	1259	20.0	240	7.2	21.0	2.6	30
03...	1301	30.0	239	7.0	19.0	0.2	2
03...	1305	36.0	244	7.0	19.0	0.3	3
JUL							
09...	1233	1.00	253	8.6	29.0	7.1	95
09...	1235	10.0	254	8.5	29.0	6.8	91
09...	1238	20.0	245	7.5	27.5	2.2	29
09...	1241	34.0	274	7.2	24.5	0.4	5

TRINITY RIVER BASIN

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08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site AC (332138097024101)

Phytoplankton Analyses October 1996 to September 1997

Date	3-6-97
Time	1155

TOTAL CELLS/mL	9,904
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	0.65

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

59

Order Pennales

Navicula sp.

30

Synedra ulna var. *ulna*

30

CHLOROPHYTA

Ankistrodesmus falcatus

149

Scenedesmus opoliensis

30

CYANOPHYTA

Aphanizomenon flos-aquae

9,517

EUGLENOPHYTA

Trachelomonas sp.

30

CRYPTOPHYTA

Cryptomonas erosa

59

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site DC (332459097063001)

Phytoplankton Analyses October 1996 to September 1997

Date	3-6-97
Time	1303

TOTAL CELLS/mL	3,004
NUMBER OF SPECIES	4
DEPTH COLLECTED (ft.)	0.50

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	119
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	119
CYANOPHYTA	
<i>Aphanizomenon flos-aquae</i>	2,677
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	89

TRINITY RIVER BASIN

373

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site AC (332138097024101)

Phytoplankton Analyses October 1996 to September 1997

Date	6-3-97
Time	1359

TOTAL CELLS/mL	58,170
NUMBER OF SPECIES	14
DEPTH COLLECTED (ft.)	2.80

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	89
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	89
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	119
<i>Pediastrum duplex</i>	59
<i>Scenedesmus bijuga</i>	119
<i>Scenedesmus opoliensis</i>	178
CYANOPHYTA	
<i>Anabaena spiroides</i>	1,636
<i>Aphanizomenon flos-aquae</i>	9,814
<i>Aphanocapsa delicatissima</i>	38,067
<i>Aphanocapsa elachista</i>	1,784
<i>Merismopedia tenuissima</i>	952
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	862
PYRRHOPHYTA	
<i>Ceratium hirundinella</i>	30
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	4,372

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site DC (332459097063001)

Phytoplankton Analyses October 1996 to September 1997

Date	6-3-97
Time	1,459

TOTAL CELLS/mL	72,388
NUMBER OF SPECIES	21
DEPTH COLLECTED (ft.)	0.90

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	268
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	89
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	238
<i>Chlamydomonas</i> sp.	297
<i>Coelastrum sphaericum</i>	30
<i>Micractinium pusillum</i>	89
<i>Oocystis</i> sp.	30
<i>Pediastrum duplex</i>	30
<i>Scenedesmus bijuga</i>	30
<i>Scenedesmus opoliensis</i>	208
CYANOPHYTA	
<i>Anabaena</i> sp.	1,190
<i>Anabaena spiroides</i>	5,353
<i>Aphanizomenon flos-aquae</i>	9,219
<i>Aphanocapsa delicatissima</i>	43,420
<i>Aphanocapsa elachista</i>	1,190
<i>Chroococcus limneticus</i>	238
<i>Merismopedia tenuissima</i>	2,379
<i>Oscillatoria</i> sp.	1,190
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	5264
PYRRHOPHYTA	
<i>Ceratium hirundinella</i>	149
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	1,487

TRINITY RIVER BASIN

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08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site AC (332138097024101)

Phytoplankton Analyses October 1996 to September 1997

Date	7-9-97
Time	1352

TOTAL CELLS/mL	44,847
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	2.25

OrganismsCells/mL

BACILLARIOPHYTA

Order Pennales

Fragilaria crotonensis var *crotonensis*

535

CHLOROPHYTA

Chlamydomonas sp.

208

Coelastrum microporum

208

Cosmarium sp.

89

Scenedesmus opoliensis

59

Staurastrum sp.

30

CYANOPHYTA

Anabaena spiroides

1,190

Aphanizomenon flos-aquae

8,030

Aphanocapsa delicatissima

23,197

Aphanocapsa elachista

1,784

Chroococcus limneticus

714

Oscillatoria sp.

8,625

EUGLENOPHYTA

Trachelomonas sp.

178

TRINITY RIVER BASIN

08051100 RAY ROBERTS LAKE NEAR PILOT POINT, TX--Continued

Ray Roberts Lake Site DC (332459097063001)

Phytoplankton Analyses October 1996 to September 1997

Date	7-9-97
Time	1507
<hr/>	
TOTAL CELLS/mL	65,309
NUMBER OF SPECIES	17
DEPTH COLLECTED (ft.)	1.30
<hr/>	

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	892
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	238
<i>Coelastrum microporum</i>	30
<i>Cosmarium</i> sp.	149
<i>Oocystis</i> sp.	30
<i>Scenedesmus opoliensis</i>	178
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Anabaena spiroides</i>	1,457
<i>Aphanizomenon flos-aquae</i>	16,654
<i>Aphanocapsa delicatissima</i>	29,145
<i>Aphanocapsa elachista</i>	6,543
<i>Aphanothece nidulans</i>	595
<i>Chroococcus limneticus</i>	1,665
<i>Lyngbya contorta</i>	1,190
<i>Merismopedia tenuissima</i>	952
<i>Oscillatoria</i> sp.	5,353
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	208

08051500 CLEAR CREEK NEAR SANGER, TX

LOCATION.--Lat 33°20'10", long 97°10'45", Denton County, Hydrologic Unit 12030103, at the downstream side near right end of bridge on county road, 1,350 ft downstream from Duck Creek, 1.1 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, and 1.8 mi south of Sanger.

DRAINAGE AREA.--295 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1949 to current year.

REVISED RECORDS.--WSP 1512: 1950, 1955. WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 582.23 ft above sea level. Prior to Apr. 18, 1975, water-stage recorder at datum 5.00 ft higher. Apr. 18, 1975, to June 9, 1988, at site 950 ft upstream at same datum.

REMARKS.--Records good including those for estimated daily discharges. Since water year 1980, at least 10% of contributing drainage area has been affected at times by discharge from the flood-detention pools of 51 floodwater-retarding structures with a combined detention capacity of 38,850 acre-ft. These structures control runoff from 149 mi² in the Clear Creek watershed. There are no appreciable diversions above station. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--31 years (water years 1950-80), 74.3 ft³/s (53,830 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1950-80).--Maximum discharge, 18,200 ft³/s Sept. 13, 1950 (gage height, 29.80 ft) at site and datum then in use; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1880, 36.5 ft in May 1908, from information by Gulf, Colorado, and Santa Fe Railway Co. Flood in May 1935 reached a stage of 34.0 ft, from information by Texas Department of Transportation. Both peaks now referenced to present site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	58	520	32	18	478	76	140	118	17	4.1	.64
2	4.3	41	259	32	18	358	75	121	68	15	3.9	.48
3	3.6	28	180	33	18	698	78	101	52	15	3.7	.61
4	3.5	24	140	33	17	331	2880	85	45	14	3.6	.91
5	3.6	22	122	30	17	223	1800	78	41	13	3.0	6.7
6	3.5	106	107	29	176	172	1010	73	38	19	3.3	4.3
7	3.4	1090	88	28	535	146	519	68	35	21	8.2	2.1
8	3.0	312	73	29	376	142	328	67	33	19	7.3	1.2
9	2.8	117	63	33	174	145	234	92	31	17	6.9	.68
10	2.8	66	60	34	117	146	156	104	34	16	6.3	.38
11	2.7	47	58	30	91	129	1020	76	45	16	5.7	.19
12	2.5	38	53	26	262	478	862	63	37	14	5.1	e.15
13	2.3	32	48	22	1050	691	310	57	33	13	10	e.12
14	2.6	29	47	26	521	286	210	55	28	12	5.9	e.11
15	4.3	27	54	27	250	177	168	56	33	11	4.2	e.10
16	5.3	28	52	28	161	143	143	64	63	12	3.4	e.09
17	5.7	354	47	25	123	133	126	53	42	10	2.7	e.09
18	3.2	145	41	23	100	131	112	47	30	9.7	2.2	e.08
19	3.1	76	36	27	851	122	107	115	25	9.2	2.0	e.08
20	4.4	57	35	26	8540	111	108	273	22	8.5	1.9	e.08
21	6.8	47	41	27	2850	105	128	224	20	8.0	1.8	e.07
22	9.6	38	40	27	1850	95	172	109	26	7.3	2.2	e.07
23	7.2	35	40	25	1450	83	187	79	44	6.9	3.0	e.07
24	6.3	2100	35	25	1230	80	119	671	50	6.6	2.9	e.06
25	5.7	1200	32	23	1100	288	471	325	34	6.2	2.6	e.06
26	5.2	858	32	22	1300	318	1230	128	26	5.7	2.1	e.05
27	9.2	502	31	22	1030	176	633	82	22	5.4	1.8	e.05
28	1450	292	32	20	774	135	315	61	21	5.2	1.5	e.05
29	410	1220	32	17	---	110	216	50	21	4.6	1.2	e.04
30	190	1060	31	18	---	99	172	78	19	7.1	.99	e.04
31	117	---	31	18	---	82	---	270	---	5.2	.79	---
TOTAL	2289.5	10049	2460	817	24999	6811	13965	3865	1136	349.6	114.28	19.65
MEAN	73.9	335	79.4	26.4	893	220	466	125	37.9	11.3	3.69	.65
MAX	1450	2100	520	34	8540	698	2880	671	118	21	10	6.7
MIN	2.3	22	31	17	17	80	75	47	19	4.6	.79	.04
AC-FT	4540	19930	4880	1620	49590	13510	27700	7670	2250	693	227	39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1997#, BY WATER YEAR (WY)

	MEAN	232	102	149	83.6	189	209	217	414	265	35.8	10.4	32.6
MAX	2739	526	1157	421	893	719	1811	1764	1307	174	68.5	155	
(WY)	1982	1995	1992	1992	1997	1990	1990	1990	1989	1982	1995	1986	
MIN	.70	1.09	5.83	6.62	9.22	19.1	27.7	8.51	3.12	.16	.000	.000	
(WY)	1989	1981	1984	1981	1981	1996	1981	1996	1996	1984	1988	1983	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1981 - 1997#
ANNUAL TOTAL	18322.24	66875.03	
ANNUAL MEAN	50.1	183	161
HIGHEST ANNUAL MEAN			476
LOWEST ANNUAL MEAN			12.4
HIGHEST DAILY MEAN	2100	8540	39700
LOWEST DAILY MEAN	.00	.04	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.05	.00
INSTANTANEOUS PEAK FLOW		12200	104000
INSTANTANEOUS PEAK STAGE		26.14	35.70
ANNUAL RUNOFF (AC-FT)	36340	132600	117000
10 PERCENT EXCEEDS	61	434	289
50 PERCENT EXCEEDS	12	33	28
90 PERCENT EXCEEDS	.00	2.1	1.4

e Estimated

Period of regulated streamflow

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: April 1959, January 1966, October 1984 to September 1996 and May 1997 to September 1997. Pesticide analyses: May 1997 to September 1997. Sediment analyses: February 1966 to May 1977.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to August 1977.

WATER TEMPERATURE: May 1968 to August 1977.

SUSPENDED SEDIMENT DISCHARGE: May 1968 to August 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE): Maximum daily, 1,920 microsiemens Oct. 12, 1976; minimum daily, 182 microsiemens July 29, 1973.

WATER TEMPERATURE: Maximum daily, 39.0°C June 8, 1969; minimum daily, 0.0°C Jan. 9, 1970.

SEDIMENT CONCENTRATION: Maximum daily mean, 7,370 mg/L May 12, 1972; minimum, no flow on many days.

SEDIMENT LOADS: Maximum daily, 79,000 tons May 7, 1969; minimum daily, 0 tons on many days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
MAY 15...	0900	56	270	90	10	35	0.9	1.8	46	41	0.27
JUN 10...	1035	33	240	77	11	39	1	1.7	49	48	0.25
JUL 08...	1040	20	230	70	13	50	1	1.8	55	59	0.28
AUG 12...	1000	5.1	220	68	11	54	2	1.9	56	63	0.26
SEP 09...	1015	0.70	250	82	12	82	2	2.3	62	130	0.30

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
MAY 15...	11	389	375	<0.010	0.163	<0.015	--	--	--	<0.20	<0.20
JUN 10...	12	355	359	<0.010	0.071	<0.015	--	--	--	<0.20	<0.20
JUL 08...	14	405	386	<0.010	0.063	0.021	--	--	--	<0.20	<0.20
AUG 12...	13	395	378	<0.010	0.080	0.043	0.35	0.22	0.19	0.24	0.27
SEP 09...	16	524	496	<0.010	0.083	0.022	0.29	0.19	0.19	0.21	0.21

DATE	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	2, 6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L)	ACETO-CHLOR, WATER FLTRD REC (UG/L)	ALA-CHLOR, WATER, DISS, REC, (UG/L)	ATRA-ZINE, WATER, DISS, REC (UG/L)	METHYL- AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L)	BEN-FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L)
MAY 15...	0.030	<0.010	<0.010	3.5	16	<0.003	<0.002	<0.002	0.282	<0.001	<0.002
JUN 10...	<0.010	<0.010	<0.010	<3.0	14	<0.003	<0.002	<0.002	0.087	<0.001	<0.002
JUL 08...	<0.010	<0.010	<0.010	<3.0	8.8	<0.003	<0.002	<0.002	0.026	<0.001	<0.002
AUG 12...	<0.010	<0.010	<0.010	3.1	6.1	<0.003	<0.002	<0.002	0.007	<0.001	<0.002
SEP 09...	<0.010	<0.010	<0.010	<3.0	39	--	--	--	--	--	--

[illegible]

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WATER-QUALITY DATA. WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

[illegible]

TRINITY RIVER BASIN

08052700 LITTLE ELM CREEK NEAR AUBREY, TX

LOCATION.--Lat 33°17'00", long 96°53'33", Denton County, Hydrologic Unit 12030103, on left bank at downstream side of bridge on Farm Road 1385, 1.5 mi upstream from Mustang Creek, 5.5 mi east of Aubrey, and 18 mi upstream from Lewisville Dam on the Elm Fork Trinity River.

DRAINAGE AREA.--75.5 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1956 to September 1976, October 1979 to current year.

REVISED RECORDS.--WRD TX-70-I: 1969.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 534.76 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are several small diversions above station for irrigation.

Flow affected at times by discharge from the flood-detention pools of 17 floodwater-retarding structures with a combined detention capacity of 10,460 acre-ft. These structures control runoff from 36.4 mi² above this station. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--10 years (water years 1956-65) 40.6 ft³/s (29,420 ac-ft/yr).

EXTREMES FOR PERIOD OF RECORD PRIOR TO REGULATION (WATER YEARS 1956-65).--Maximum discharge, 7,830 ft³/s Apr. 26, 1957 (gage height, 17.34 ft). No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1900, 18.2 ft in May 1941, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	260	401	.71	.85	62	2.2	16	e1.2	2.8	.00	.00
2	.07	176	216	.80	.86	94	2.6	8.5	e.67	1.4	.00	.00
3	.20	41	165	1.1	.94	294	2.8	4.7	e.43	.51	.00	.00
4	.19	19	128	1.5	.92	91	758	2.6	.23	.07	.00	.00
5	.10	12	85	1.2	.84	52	1520	2.1	.07	.05	.00	.00
6	.11	64	57	1.3	165	30	449	1.6	.02	.01	.00	.00
7	.02	4580	40	1.3	625	19	344	.76	.00	.00	24	.00
8	.02	896	25	1.4	322	14	223	.44	.00	.00	19	.00
9	.04	586	14	1.9	133	12	157	1.4	.00	.00	3.5	.00
10	.09	480	10	2.0	79	12	98	1.9	73	.00	1.3	.00
11	.07	444	8.1	1.6	54	9.7	182	1.6	83	.00	.71	.00
12	.05	406	6.2	1.5	441	278	182	1.2	48	.00	.31	.00
13	.03	358	4.4	1.2	1600	678	72	.74	36	.00	.16	.00
14	.04	266	3.5	.98	487	297	42	.28	28	.00	.02	.00
15	.08	194	6.4	.99	326	133	22	.12	22	.00	.00	.00
16	.13	171	7.7	1.0	212	68	12	.03	32	.00	.00	.00
17	.12	520	4.4	1.0	152	47	7.3	.01	26	.00	.00	.00
18	.07	241	3.3	1.2	90	33	4.9	.07	14	.00	.00	.00
19	.06	146	2.3	1.1	211	21	3.1	13	5.4	.00	.00	.00
20	.09	105	1.7	1.2	1310	14	1.9	26	2.4	.00	.00	.00
21	.52	72	1.7	1.6	806	9.3	1.4	7.4	1.2	.00	.00	.00
22	14	53	2.1	1.7	399	6.4	23	3.1	1.5	.00	.14	.00
23	8.8	34	2.0	1.5	342	4.2	17	1.4	2.5	.00	.29	.00
24	2.0	1790	1.8	1.6	228	2.7	6.3	23	1.4	.00	.23	.00
25	.62	1110	1.5	1.3	146	18	138	24	.97	.00	.18	.00
26	.45	596	1.2	1.1	283	16	558	10	.20	.00	.08	.00
27	.63	436	.91	1.1	210	7.8	236	5.5	.02	.00	.03	.00
28	168	371	.79	1.2	92	6.0	99	2.9	.92	.00	.00	.00
29	115	745	.87	1.1	---	3.8	54	3.8	7.3	.00	.00	.00
30	47	732	.83	1.0	---	2.1	30	e3.4	5.4	.00	.00	.00
31	19	---	.74	1.0	---	1.3	---	e1.9	---	.00	.00	---
TOTAL	377.63	15904	1203.44	39.18	8717.41	2336.3	5248.5	169.45	393.83	4.84	49.95	0.00
MEAN	12.2	530	38.8	1.26	311	75.4	175	5.47	13.1	.16	1.61	.000
MAX	168	4580	401	2.0	1600	678	1520	26	83	2.8	24	.00
MIN	.02	12	.74	.71	.84	1.3	1.4	.01	.00	.00	.00	.00
AC-FT	749	31550	2390	78	17290	4630	10410	336	781	9.6	99	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997#h, BY WATER YEAR (WY)

	MEAN	76.4	67.9	55.7	21.8	71.0	58.7	59.3	124	61.6	24.6	3.17	23.6
MAX	641	530	398	108	315	251	281	897	286	540	28.5	148	148
(WY)	1982	1997	1992	1992	1986	1990	1966	1982	1989	1994	1966	1973	1973
MIN	.000	.000	.000	.009	.066	.052	.12	.000	.000	.000	.000	.000	.000
(WY)	1976	1976	1976	1976	1976	1976	1980	1971	1988	1972	1966	1967	1969

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1966 - 1997#h

ANNUAL TOTAL	19314.63	34444.53	53.9	1982
ANNUAL MEAN	52.8	94.4	178	1971
HIGHEST ANNUAL MEAN			3.89	1971
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	4580 Nov 7	4580 Nov 7	11600 Jul 11	1994
LOWEST DAILY MEAN	.00 Jan 27	.00 Jun 7	.00 Oct 13	1965
ANNUAL SEVEN-DAY MINIMUM	.00 May 18	.00 Jul 7	.00 Oct 13	1965
INSTANTANEOUS PEAK FLOW		16200 Nov 7	36200 Jul 11	1994
INSTANTANEOUS PEAK STAGE		18.27 Nov 7	18.27 Jul 11	1994
ANNUAL RUNOFF (AC-FT)	38310	68320	39040	
10 PERCENT EXCEEDS	77	271	102	
50 PERCENT EXCEEDS	.30	1.6	1.0	
90 PERCENT EXCEEDS	.00	.00	.00	

e Estimated

Period of regulated streamflow

h See PERIOD OF RECORD paragraph

TRINITY RIVER BASIN

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08052700 LITTLE ELM CREEK NEAR AUBREY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: June 1962 to June 1963, June 1965 to January 1968. Chemical and biochemical analyses: October 1984 to current year. Sediment analyses: April 1966 to October 1974.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1966 to June 1975.

WATER TEMPERATURES: February 1966 to June 1975.

SUSPENDED SEDIMENT DISCHARGE: February 1966 to September 1975.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,380 microsiemens Jan. 24, Feb. 25, 1967; minimum daily, 195 microsiemens June 4, 1968.

WATER TEMPERATURE: Maximum daily, 33.0°C June 16, 1968; minimum daily, 0.0°C Feb. 22, 1968.

SEDIMENT CONCENTRATIONS: Maximum daily mean, 4,750 mg/L Aug. 13, 1966; minimum daily mean, no flow on many days.

SEDIMENT LOADS: Maximum daily, 17,900 tons May 31, 1967; minimum daily, 0 tons on many days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CACO3)
OCT 02...	1645	0.13	481	7.8	19.5	60	32	6.2	69	1.0	150
DEC 03...	1400	166	209	7.7	8.5	320	140	11.0	95	1.1	81
JAN 08...	1315	1.4	645	8.1	4.0	32	34	10.8	84	0.7	180
MAR 18...	1330	33	334	7.8	15.5	43	120	9.1	93	1.3	130
MAY 13...	1515	0.75	508	8.0	20.0	40	18	8.4	94	1.1	160
JUL 02...	1345	1.2	327	7.9	28.5	100	36	7.4	97	1.4	110
DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 02...	32	51	5.4	34	1	6.1	120	92	11	0.40	8.3
DEC 03...	15	29	2.1	7.5	0.4	3.8	66	24	3.8	0.20	8.3
JAN 08...	0	64	4.9	66	2	4.7	180	100	20	0.30	0.51
MAR 18...	21	45	3.3	16	0.6	4.2	100	45	5.4	0.20	9.1
MAY 13...	21	54	4.8	43	1	4.7	130	93	14	0.34	1.2
JUL 02...	3	38	3.1	23	1	5.3	100	38	7.5	0.42	5.0
DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L)	RESIDUE VOLA- TILE, SUS- PENDE (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
OCT 02...	279	40	4	36	--	<0.010	<0.050	<0.015	--	0.60	0.020
DEC 03...	122	200	50	150	0.640	0.030	0.670	0.130	0.37	0.50	0.220
JAN 08...	382	49	5	44	2.27	0.030	2.30	<0.015	--	0.40	0.130
MAR 18...	197	174	46	128	1.06	0.040	1.10	0.050	0.55	0.60	0.130
MAY 13...	297	26	18	8	--	<0.010	<0.050	0.019	0.39	0.40	<0.010
JUL 02...	185	58	10	48	0.147	0.010	0.157	<0.015	--	0.59	<0.010

TRINITY RIVER BASIN
08052700 LITTLE ELM CREEK NEAR AUBREY, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	CARBON, TOTAL ORGANIC (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 02...	0.020	0.06	9.9	--	--	--	--	--	--	--	--
DEC 03...	0.220	0.67	11	--	--	--	--	--	--	--	--
JAN 08...	0.130	0.40	6.5	2	48	<0.50	<1.0	<5.0	<3.0	<10	6.0
MAR 18...	0.100	0.31	12	2	33	<0.50	<1.0	<5.0	<3.0	<10	22
MAY 13...	<0.010	--	7.1	1	45	<0.50	<1.0	<5.0	<3.0	<10	20
JUL 02...	0.010	0.03	11	2	38	<0.50	<1.0	<5.0	<3.0	<10	15
DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 02...	--	--	--	--	--	--	--	--	--	--	--
DEC 03...	--	--	--	--	--	--	--	--	--	--	--
JAN 08...	<10	11	6.0	<0.1	<10	<10	<1	<1.0	560	<6	5.0
MAR 18...	<10	4	3.0	<0.1	<10	<10	<1	<1.0	340	<6	<3.0
MAY 13...	25	12	10	<0.1	<10	<10	<1	<1.0	513	<6	19
JUL 02...	<10	9	1.6	<0.1	<10	<10	<1	<1.0	303	<6	26

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX

LOCATION.--Lat 33°04'09", long 96°57'51", Denton County, Hydrologic Unit 12030103, in intake structure of Lewisville Dam on Elm Fork Trinity River, 2 mi upstream from bridge on State Highway 121, 2.4 mi northeast of Lewisville, 12 mi upstream from Denton Creek, and 30.0 mi upstream from mouth.

DRAINAGE AREA.--1,660 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--November 1954 to current year. Prior to October 1970, published as Garza-Little Elm Reservoir near Lewisville.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 17, 1955, nonrecording gage at site 4,000 ft upstream at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 32,888 ft long, including a 560-ft uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov. 1, 1954, and the dam was completed in August 1955. The controlled low-flow outlet works consist of a 16.0-ft-diameter conduit that is controlled by three 6.5- by 13.0-ft broome-type gates and two 60-in steel pipes with service valves. The lake was built for flood control and water conservation. The city of Dallas obtains most of its municipal water supply from this lake. The capacity table is based on a survey made in 1965. Inflow is affected at times by discharge from the flood-detention pools of 118 floodwater-retarding structures with a combined detention capacity of 81,670 acre-ft. These structures control runoff from 298 mi in the Elm Fork Trinity River, Clear, Little Elm, and Hickory Creeks watersheds. An unknown amount of water was diverted for municipal and industrial uses. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	560.0	-
Crest of spillway	532.0	981,800
Top of conservation pool	522.0	641,000
Lowest intakes to wet wells (invert)	481.0	42,560
Invert of three broome-type gates	448.0	0

COOPERATION.--Records furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,181,000 acre-ft May 4, 1990 (elevation, 536.73 ft); minimum since initial filling in 1957, 184,700 acre-ft Sept. 28, 1980 (elevation, 498.65 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 806,600 acre-ft Feb. 27 (elevation, 527.24 ft); minimum 358,400 acre-ft Oct. 20 (elevation, 510.36 ft).

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

510.0	351,900	518.0	530,800	528.0	833,100
513.0	412,400	520.0	583,500	529.0	868,900
516.0	481,200	524.0	701,600	530.0	905,500
526.0	765,100	531.0	943,100		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369100	389500	630100	640100	626000	801500	709000	711200	659800	646900	617900	588500
2	368900	390300	640100	639500	625400	798800	703800	708400	661000	646300	616400	587700
3	368100	389100	646000	638900	625100	797800	699700	702200	661900	645700	615600	589600
4	367300	389100	647800	639800	624500	793000	728800	696000	662800	645100	615000	588800
5	366800	388700	648700	640100	624300	787900	757600	691100	663400	646600	613800	587400
6	366200	397100	650200	639200	633000	781900	759500	687400	662200	649000	614100	586300
7	365800	465300	650800	638300	645700	777300	756900	683700	660700	648700	619600	584600
8	364800	476900	651400	638300	649000	774300	754700	682500	659500	647500	618700	583500
9	364300	480500	650800	637700	649300	772300	750200	684700	657700	646900	617600	582600
10	363300	482500	649300	638000	648700	769000	745000	683400	654100	646300	616400	580700
11	362200	483700	647800	637100	648100	766400	753700	681600	650200	644800	615300	579600
12	362200	484600	645400	636900	672800	772000	753100	679800	647200	643900	614100	577900
13	361600	484100	643900	635700	701000	780600	749500	676400	649300	642800	613000	576300
14	361200	484800	644800	634200	705000	776600	745000	673700	649900	641900	611200	575200
15	360900	482200	644800	634800	703100	770300	739900	670300	650200	641000	608900	574100
16	360500	483700	643900	633900	700000	764100	735800	666400	655000	640100	607500	572500
17	360900	487300	644200	633300	694800	758900	730400	662500	658300	639500	606900	570800
18	359700	488000	643100	632400	689600	755600	725600	658300	657100	638300	605500	570000
19	358600	488000	641900	632100	705600	749500	720900	664600	655300	637400	604600	568900
20	358400	487800	640100	631300	761500	745700	716500	668800	653200	636300	603500	568700
21	363900	487500	640400	631300	785900	743400	713100	667900	651400	635100	602400	566800
22	362900	486100	640700	631300	792000	741200	711200	664600	658900	633900	601200	565500
23	362900	489000	642800	630700	792300	738300	707800	660700	659200	632100	600100	565500
24	362600	535900	641300	630400	791700	734500	703100	660400	658300	630400	598700	564700
25	362800	554400	640400	629200	792300	738000	709300	658000	656200	628600	597300	563600
26	362800	561800	641000	628900	801800	736700	723100	654700	654700	626900	596100	562500
27	369700	567900	640400	631300	806600	731600	728500	652600	652900	625400	594700	561000
28	379800	576600	640700	627800	805600	729100	726900	651100	650500	624000	593300	560400
29	385100	599200	641000	627500	---	725600	721500	650800	649000	622800	592200	558900
30	386400	619000	640700	626600	---	720000	718100	656800	648100	621100	590800	557600
31	387600	---	640700	626300	---	714300	---	658900	---	619300	589900	---
MAX	387600	619000	651400	640100	806600	801500	759500	711200	663400	649000	619600	589600
MIN	358400	388700	630100	626300	624300	714300	699700	650800	647200	619300	589900	557600
(+)	511.84	521.25	521.99	521.50	527.21	524.41	524.53	522.60	522.24	521.26	520.23	519.04
(@)	+17700	+231400	+21700	-14400	+179300	-91300	+3800	-59200	-10800	-28800	-29400	-32300
CAL YR 1996	MAX	651400	MIN	358400	(@)	+134500						
WTR YR 1997	MAX	806600	MIN	358400	(@)	+187700						

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

TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: March 1962 to July 1964, December 1969 to September 1997(discontinued).

REVISED RECORDS.--WDR TX-93-1: Phytoplankton.

330419096575401 - LEWISVILLE LAKE SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
JAN												
23...	1240	631000	1.00	303	7.9	7.5	0.34	12.1	103	K15	K6	100
23...	1244	--	10.0	308	7.9	7.0	--	12.0	101	--	--	--
23...	1248	--	20.0	302	7.9	6.5	--	12.0	100	--	--	--
23...	1252	--	30.0	302	7.9	6.5	--	12.0	100	--	--	--
23...	1256	--	40.0	307	7.9	6.5	--	11.9	99	--	--	--
23...	1300	--	50.0	308	7.9	6.5	--	11.8	98	--	--	--
23...	1303	--	60.0	305	7.8	6.5	--	11.7	97	--	--	--
23...	1306	--	66.0	324	7.7	6.5	--	10.5	87	--	--	100
MAY												
13...	1427	678000	1.00	307	8.6	21.0	0.79	10.6	122	K2	K8	110
13...	1430	--	10.0	307	8.4	20.0	--	9.5	107	--	--	--
13...	1433	--	20.0	308	8.4	19.5	--	8.8	98	--	--	--
13...	1437	--	30.0	308	8.2	19.5	--	8.5	95	--	--	--
13...	1441	--	40.0	308	8.2	19.5	--	8.5	95	--	--	--
13...	1445	--	50.0	309	8.1	19.0	--	7.4	82	--	--	--
13...	1448	--	60.0	311	8.0	18.5	--	6.3	69	--	--	--
13...	1451	--	66.0	312	8.0	18.5	--	6.1	67	--	--	120
JUL												
02...	1210	647000	1.00	301	8.6	28.5	1.20	8.2	108	K1	K4	100
02...	1215	--	10.0	301	8.6	27.5	--	7.7	100	--	--	--
02...	1220	--	20.0	310	7.7	26.5	--	3.5	45	--	--	--
02...	1225	--	30.0	311	7.6	26.0	--	2.0	25	--	--	--
02...	1230	--	40.0	326	7.6	23.5	--	0	0	--	--	--
02...	1235	--	50.0	337	7.6	21.5	--	0	0	--	--	--
02...	1240	--	60.0	340	7.6	21.0	--	0	0	--	--	--
02...	1245	--	65.0	341	7.5	21.0	--	0	0	--	--	120
JAN												
23...	5	34	3.6	22	1	4.6	95	38	15	0.30	5.5	183
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
23...	7	36	3.6	23	1	4.4	98	44	16	0.30	5.7	195
MAY												
13...	9	39	3.5	17	0.7	3.9	100	27	13	0.25	2.0	171
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	9	41	3.5	18	0.7	3.9	110	29	13	0.24	4.1	179
JUL												
02...	6	36	3.7	18	0.8	4.2	98	29	14	0.23	2.1	166
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	0	43	3.7	18	0.7	4.1	120	27	14	0.23	5.9	193

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330419096575401 - LEWISVILLE LAKE SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
23...	0.580	0.050	0.630	0.020	--	<0.20	0.020	0.020	0.06	9.0	33
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	0.580	0.050	0.630	0.090	0.31	0.40	<0.010	0.020	0.06	14	140
MAY											
13...	--	<0.010	0.443	<0.015	--	0.24	<0.010	<0.010	--	<3.0	<1.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	<0.010	0.633	0.025	0.30	0.32	0.024	0.021	0.06	4.7	5.9
JUL											
02...	0.086	0.010	0.096	<0.015	--	0.44	<0.010	0.015	0.05	<3.0	2.0
02...	--	<0.010	0.110	<0.015	--	0.36	<0.010	0.010	0.03	<3.0	17
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	<0.010	0.237	0.018	0.26	0.28	<0.010	0.012	0.04	<3.0	133
02...	0.234	0.011	0.245	0.047	0.42	0.46	<0.010	0.012	0.04	3.5	71
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--
02...	0.099	0.017	0.116	0.359	0.30	0.66	0.096	0.094	0.29	6.0	726

330410096584501 - LEWISVILLE LAKE SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
23...	1319	1.00	303	7.9	7.0	12.1	102
23...	1321	10.0	304	7.9	7.0	12.0	101
23...	1323	20.0	303	7.9	6.5	12.0	100
23...	1325	30.0	305	7.9	6.5	12.0	100
23...	1327	40.0	296	7.9	6.5	11.9	99
23...	1330	50.0	308	7.9	6.5	11.8	98
23...	1332	55.0	313	7.9	6.5	11.7	97
MAY							
13...	1543	1.00	306	8.4	20.5	9.4	107
13...	1545	10.0	308	8.3	19.5	8.7	97
13...	1547	20.0	308	8.3	19.5	8.8	98
13...	1549	30.0	308	8.3	19.5	8.8	98
13...	1551	40.0	308	8.0	19.0	7.6	84
13...	1554	54.0	310	7.8	19.0	6.2	68
JUL							
02...	1253	1.00	301	8.6	28.5	8.2	108
02...	1255	10.0	301	8.6	27.5	7.8	101
02...	1257	20.0	310	7.8	26.5	4.0	51
02...	1259	30.0	312	7.6	25.5	1.9	24
02...	1302	40.0	328	7.6	21.0	0	0
02...	1305	54.0	341	7.6	21.0	0	0

330450096560501 - LEWISVILLE LAKE SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
23...	1210	1.00	303	7.9	7.5	12.2	104
23...	1213	10.0	315	8.0	7.0	12.3	104
23...	1216	20.0	324	8.0	7.0	12.4	105
23...	1219	30.0	387	8.1	6.5	12.6	105
23...	1221	35.0	397	8.1	6.5	12.6	105
MAY							
13...	1400	1.00	311	8.6	21.0	10.2	117
13...	1403	10.0	354	8.6	20.0	10.2	115
13...	1405	20.0	368	8.4	20.0	8.8	99
13...	1408	30.0	368	8.4	20.0	8.9	100
13...	1410	36.0	358	8.3	19.5	8.7	97
JUL							
02...	1141	1.00	323	8.6	28.5	8.0	106
02...	1143	10.0	329	8.2	27.5	6.2	81
02...	1145	20.0	352	7.5	24.5	0.1	1
02...	1147	34.0	357	7.5	24.5	0.1	1

TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330606097025601 - LEWISVILLE LAKE SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
23...	1355	1.00	290	7.9	7.0	12.2	103
23...	1357	10.0	281	7.9	7.0	12.0	101
23...	1359	20.0	284	7.8	7.0	11.8	99
23...	1402	27.0	287	7.8	7.0	11.8	99
MAY							
13...	1519	1.00	301	8.5	21.5	9.8	114
13...	1521	10.0	300	8.4	20.5	8.6	98
13...	1524	20.0	307	8.0	19.0	6.1	67
13...	1526	27.0	308	7.8	19.0	5.1	56
JUL							
02...	1333	1.00	295	8.5	29.5	7.6	102
02...	1335	10.0	291	8.4	29.0	7.1	95
02...	1337	20.0	310	7.4	27.5	0.6	8
02...	1340	25.0	317	7.4	27.0	0.2	3

330755096572001 - LEWISVILLE LAKE SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
JAN									
23...	1020	1.00	284	7.9	7.0	12.4	105	0.600	0.040
23...	1023	10.0	285	7.9	7.0	12.3	104	--	--
23...	1027	20.0	287	7.9	6.5	12.2	102	--	--
23...	1030	30.0	295	7.9	6.5	12.2	102	--	--
23...	1033	40.0	288	7.8	6.5	12.1	101	0.570	0.040
MAY									
13...	1159	1.00	310	8.6	20.5	9.7	110	0.531	0.017
13...	1202	10.0	311	8.3	20.0	8.4	95	--	--
13...	1205	20.0	313	8.2	19.5	8.0	89	--	--
13...	1209	30.0	316	7.8	18.5	6.2	68	--	--
13...	1212	39.0	319	7.7	18.5	5.2	57	0.621	0.010
JUL									
02...	0957	1.00	291	8.4	28.5	7.2	95	--	<0.010
02...	1000	10.0	291	8.3	28.5	7.2	95	--	--
02...	1003	20.0	292	8.3	28.5	7.0	93	--	--
02...	1006	30.0	294	8.3	28.0	7.0	92	--	--
02...	1009	36.0	293	8.2	28.0	6.6	86	--	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
23...	0.640	0.020	0.18	0.20	0.030	0.040	0.12	<3.0	2.0
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	0.610	0.020	0.18	0.20	0.020	0.040	0.12	<3.0	11
MAY									
13...	0.548	<0.015	--	0.26	<0.010	<0.010	--	<3.0	<1.0
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	0.631	0.064	0.16	0.23	0.022	0.022	0.07	5.2	13
JUL									
02...	0.074	0.017	0.27	0.28	<0.010	<0.010	--	<3.0	1.5
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	0.075	0.042	0.32	0.36	<0.010	<0.010	--	<3.0	41

TRINITY RIVER BASIN

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08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330959096565301 - LEWISVILLE LAKE SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN												
23...	1052	1.00	280	7.9	7.0	0.37	12.9	109	K12	K6	100	9
23...	1056	10.0	281	7.9	7.0	--	13.0	110	--	--	--	--
23...	1101	20.0	277	7.8	6.5	--	12.9	107	--	--	--	--
23...	1105	25.0	284	7.8	6.5	--	12.6	105	--	--	100	9
MAY												
13...	1229	1.00	309	8.5	21.0	0.49	8.9	102	K10	K5	120	12
13...	1234	10.0	310	8.4	20.5	--	7.6	86	--	--	--	--
13...	1238	20.0	310	8.2	20.0	--	7.1	80	--	--	--	--
13...	1243	26.0	315	8.0	19.0	--	6.1	67	--	--	120	9
JUL												
02...	1020	1.00	293	8.1	29.0	0.34	6.3	84	K2	K9	98	4
02...	1025	10.0	293	8.1	29.0	--	6.2	83	--	--	--	--
02...	1030	24.0	293	8.1	29.0	--	6.2	83	--	--	98	4

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
JAN											
23...	36	3.5	19	0.8	4.7	95	35	13	0.30	5.8	177
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	36	3.4	17	0.7	4.5	95	34	11	0.30	6.2	173
MAY											
13...	41	3.5	16	0.6	4.1	100	32	11	0.24	0.67	174
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	41	3.6	18	0.7	4.2	110	29	13	0.24	3.2	180
JUL											
02...	33	3.6	17	0.7	4.3	94	28	14	0.25	2.9	160
02...	--	--	--	--	--	--	--	--	--	--	--
02...	33	3.6	17	0.8	4.4	94	28	14	0.25	2.8	160

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
23...	0.600	0.040	0.640	0.020	--	<0.20	0.040	0.050	0.15	15	3.0
23...	--	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--
23...	0.640	0.040	0.680	0.050	0.25	0.30	0.050	0.060	0.18	8.0	6.0
MAY											
13...	0.852	0.027	0.879	0.016	0.27	0.28	<0.010	<0.010	--	10	<1.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.638	0.012	0.650	0.034	0.29	0.32	<0.010	0.018	0.05	3.2	4.6
JUL											
02...	--	<0.010	0.073	0.039	0.46	0.49	<0.010	<0.010	--	<3.0	<1.0
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	<0.010	0.073	0.038	0.31	0.35	<0.010	<0.010	--	<3.0	<1.0

TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330722096592201 - LEWISVILLE LAKE SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
JAN									
23...	0946	1.00	301	8.0	6.5	12.8	107	0.450	0.040
23...	0950	10.0	288	8.0	6.5	12.8	107	--	--
23...	0954	20.0	284	8.0	5.5	12.9	105	--	--
23...	0958	30.0	293	8.0	5.5	13.0	106	--	--
23...	1003	40.0	286	7.9	5.5	12.9	105	--	--
23...	1007	46.0	283	7.9	5.5	12.8	104	0.420	0.030
MAY									
13...	1132	1.00	320	8.3	21.0	8.6	99	0.106	0.013
13...	1135	10.0	316	8.1	20.0	7.9	89	--	--
13...	1138	20.0	314	8.0	19.5	7.4	83	--	--
13...	1141	30.0	315	7.7	19.0	6.3	70	--	--
13...	1145	41.0	316	7.7	19.0	6.0	66	--	<0.010
JUL									
02...	0930	1.00	292	8.4	28.5	7.7	102	--	<0.010
02...	0933	10.0	298	8.1	28.0	6.8	89	--	--
02...	0936	20.0	297	8.1	28.0	6.7	88	--	--
02...	0939	30.0	300	7.8	27.5	5.6	73	--	--
02...	0942	44.0	303	7.6	27.5	3.8	49	--	<0.010

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN									
23...	0.490	<0.015	--	<0.20	0.020	0.040	0.12	3.0	<1.0
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	0.450	0.020	0.18	0.20	0.030	0.030	0.09	<3.0	<1.0
MAY									
13...	0.119	0.049	0.25	0.30	<0.010	<0.010	--	<3.0	1.5
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	0.625	0.043	0.22	0.27	0.061	0.031	0.09	9.2	<1.0
JUL									
02...	0.071	<0.015	--	0.47	0.013	<0.010	--	<3.0	<1.0
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--
02...	0.081	0.049	0.44	0.49	0.020	0.032	0.10	<3.0	80

330944097003601 - LEWISVILLE LAKE SITE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN												
23...	1138	1.00	288	8.2	6.5	0.58	13.8	115	K8	K5	120	8
23...	1142	10.0	291	8.2	6.5	--	13.5	112	--	--	--	--
23...	1146	19.0	290	8.0	6.0	--	12.8	105	--	--	110	5
MAY												
13...	1316	1.00	312	8.3	22.0	0.43	11.3	132	20	K9	120	3
13...	1321	10.0	313	8.2	20.5	--	8.6	98	--	--	--	--
13...	1326	20.0	315	8.0	20.0	--	5.8	65	--	--	120	2
JUL												
02...	1059	1.00	299	8.4	29.0	0.61	7.4	99	K1	K6	100	1
02...	1104	10.0	299	8.3	29.0	--	7.4	99	--	--	--	--
02...	1109	19.0	300	8.2	28.5	--	6.3	83	--	--	100	0

TRINITY RIVER BASIN

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08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

330944097003601 - LEWISVILLE LAKE SITE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
JAN											
23...	40	4.0	17	0.7	4.7	110	24	17	0.30	3.6	177
23...	--	--	--	--	--	--	--	--	--	--	--
23...	39	3.9	17	0.7	3.7	110	24	16	0.20	3.7	174
MAY											
13...	42	3.9	17	0.7	4.0	120	19	17	0.22	0.70	175
13...	--	--	--	--	--	--	--	--	--	--	--
13...	41	3.8	16	0.6	4.0	120	18	16	0.22	2.0	173
JUL											
02...	35	3.9	17	0.7	4.4	100	18	17	0.23	3.6	162
02...	--	--	--	--	--	--	--	--	--	--	--
02...	34	3.8	17	0.7	4.3	100	18	18	0.24	3.7	162
DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
23...	0.360	0.030	0.390	<0.015	--	<0.20	0.020	0.030	0.09	<3.0	<1.0
23...	--	--	--	--	--	--	--	--	--	--	--
23...	0.380	0.020	0.400	<0.015	--	<0.20	0.020	0.030	0.09	4.0	1.0
MAY											
13...	--	<0.010	0.099	<0.015	--	0.26	<0.010	<0.010	--	<3.0	<1.0
13...	--	--	--	--	--	--	--	--	--	--	--
13...	0.195	0.020	0.215	0.113	0.27	0.38	0.029	0.024	0.07	5.0	1.7
JUL											
02...	--	<0.010	0.070	<0.015	--	0.45	0.010	0.022	0.07	<3.0	<1.0
02...	--	--	--	--	--	--	--	--	--	--	--
02...	--	<0.010	0.070	0.023	0.36	0.38	0.013	0.023	0.07	<3.0	4.0

TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

Lewisville Lake Site AC (330419096575401)

Phytoplankton Analyses October 1996 to September 1997

Date	1-23-97
Time	1244
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TOTAL CELLS/mL	3,419
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	0.55
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<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	59
Order Pennales	
<i>Synedra ulna</i> var. <i>ulna</i>	30
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	89
<i>Selenastrum Westii</i>	89
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,974
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	59
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	119
<hr/>	

TRINITY RIVER BASIN

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08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

Lewisville Lake Site GC (330944097003601)

Phytoplankton Analyses October 1996 to September 1997

Date	1-23-97
Time	1138

TOTAL CELLS/mL	3,568
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	0.95

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	119
Order Pennales	
<i>Fragilaria crotonensis</i> var. <i>crotonensis</i>	24
<i>Synedra ulna</i> var. <i>ulna</i>	36
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	178
<i>Selenastrum Westii</i>	59
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	2,974
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	119
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	59

TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

Lewisville Lake Site AC (330419096575401)

Phytoplankton Analyses October 1996 to September 1997

Date	5-13-97
Time	1427

TOTAL CELLS/mL	10,439
NUMBER OF SPECIES	12
DEPTH COLLECTED (ft.)	1.3

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	239
<i>Stephanodiscus astraea</i>	28
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	30
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	476
<i>Pediastrum duplex</i>	30
<i>Scenedesmus opoliensis</i>	149
<i>Selenastrum Westii</i>	89
<i>Staurastrum</i> sp.	30
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	7,138
<i>Oscillatoria</i> sp.	1,784
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	238
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	208

TRINITY RIVER BASIN

393

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

Lewisville Lake Site GC (330944097003601)

Phytoplankton Analyses October 1996 to September 1997

Date	5-13-97
Time	1316

TOTAL CELLS/mL	25,161
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	0.7

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

314

Stephanodiscus astraea

14

Order Pennales

Fragilaria crotonensis var *crotonensis*

119

CHLOROPHYTA

Chlamydomonas sp.

625

Coelastrum sphaericum

59

Pediastrum duplex

30

Scenedesmus bijuga

59

Scenedesmus opoliensis

416

CYANOPHYTA

Aphanizomenon flos-aquae

1,190

Aphanocapsa delicatissima

20,223

Merismopedia tenuissima

952

EUGLENOPHYTA

Trachelomonas sp.

1,041

CRYPTOPHYTA

Cryptomonas erosa

119

TRINITY RIVER BASIN

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

Lewisville Lake Site AC (330419096575401)

Phytoplankton Analyses October 1996 to September 1997

Date	7-2-97
Time	1210
<hr/>	
TOTAL CELLS/mL	46,393
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	2.0
<hr/>	

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	22
<i>Melosira varians</i>	67
Order Pennales	
<i>Fragilaria crotonensis</i> var <i>crotonensis</i>	803
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	119
<i>Cosmarium</i> sp.	59
<i>Micractinium pusillum</i>	30
<i>Scenedesmus opoliensis</i>	89
CYANOPHYTA	
<i>Anabaena spiroides</i>	595
<i>Aphanizomenon flos-aquae</i>	2,974
<i>Aphanocapsa delicatissima</i>	32,119
<i>Aphanocapsa elachista</i>	1,190
<i>Chroococcus limneticus</i>	654
<i>Merismopedia tenuissima</i>	1,903
<i>Oscillatoria</i> sp.	5,353
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	416

TRINITY RIVER BASIN

395

08052800 LEWISVILLE LAKE NEAR LEWISVILLE, TX--Continued

Lewisville Lake Site GC (330944097003601)

Phytoplankton Analyses October 1996 to September 1997

Date	7-2-97
Time	1059

TOTAL CELLS/mL	41,783
NUMBER OF SPECIES	19
DEPTH COLLECTED (ft.)	1.0

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Melosira varians

476

Order Pennales

Fragilaria crotonensis var *crotonensis*

238

CHLOROPHYTA

Chlamydomonas sp.

89

Coelastrum microporum

89

Cosmarium sp.

30

Micractinium pusillum

30

Pediastrum duplex

89

Scenedesmus acuminatus

59

Scenedesmus opoliensis

59

Staurastrum sp.

59

CYANOPHYTA

Anabaena spiroides

5,056

Aphanizomenon flos-aquae

297

Aphanocapsa delicatissima

26,171

Aphanocapsa elachista

1,190

Aphanothece nidulans

892

Chroococcus limneticus

714

Merismopedia tenuissima

4,283

Oscillatoria sp.

1,784

EUGLENOPHYTA

Trachelomonas sp.

178

TRINITY RIVER BASIN

08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX

LOCATION.--Lat 33°02'44", long 96°57'39", Denton County, Hydrologic Unit 12030103, on left bank at downstream edge of highway right-of-way, 90 ft to left of left end of bridge on State Highway 121, 1.8 mi east of Lewisville, 1.9 mi downstream from Lewisville Lake, 8.3 mi upstream from Denton Creek, and 28.2 mi upstream from mouth.

DRAINAGE AREA.--1,673 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 432.39 ft above sea level (U.S. Army Corps of Engineers benchmark). Prior to Jan. 6, 1950, nonrecording gage 0.6 mi upstream at datum 3.26 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since November 1954, at least 10% of contributing drainage area has been regulated by Lewisville Lake (station 08052800) 1.9 mi upstream since November 1954. Most of low flow is used by the city of Dallas for municipal supply (see station 08055500). Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1950-54) prior to regulation, 402 ft³/s (291,200 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1950-54).--Maximum discharge, 21,700 ft³/s Sept. 15, 1950 (gage height, 30.75 ft); no flow June 14, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 33.8 ft in 1908, present site and datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	352	84	229	237	3340	4000	3980	2610	467	400	353
2	272	396	320	228	231	4000	4020	4000	2620	331	401	353
3	253	420	1110	232	245	3140	4020	3990	2620	321	233	432
4	241	422	2030	223	243	4040	3820	3990	2620	326	107	315
5	250	279	2100	217	234	4740	1650	3980	2160	323	115	325
6	249	252	2070	216	390	5280	2510	3970	e1570	310	398	353
7	249	955	2060	216	368	5370	3570	3970	e1560	368	542	405
8	273	282	2040	216	434	5400	3670	3980	e1570	331	280	362
9	290	203	2160	212	606	5400	3550	3620	e1560	e220	368	360
10	285	216	2370	200	897	5370	3580	2730	2370	e213	446	281
11	248	218	2130	199	1120	5360	3630	3050	2570	e232	393	243
12	252	284	1630	203	1380	5120	2690	3080	2520	e411	399	454
13	260	572	1150	210	940	4370	3290	3080	968	e317	437	537
14	265	878	827	203	939	4770	3680	3080	e443	297	378	289
15	266	712	448	208	2190	5200	3840	3080	e379	283	357	369
16	268	679	404	202	2530	5280	3860	3080	e366	229	382	442
17	268	744	388	233	3290	5180	3860	3080	419	127	353	286
18	267	540	379	268	3650	4810	3850	3080	381	198	353	231
19	264	534	374	275	3430	4600	3860	2840	e364	302	339	367
20	269	546	364	273	1040	4320	3860	1820	e383	322	328	381
21	328	438	361	258	321	3540	3890	1200	e909	289	329	326
22	271	355	359	238	710	3200	3710	2200	e1060	371	331	269
23	232	322	249	235	2440	3150	3040	2570	e933	482	333	269
24	231	518	74	231	3100	3150	3700	2640	997	544	345	204
25	215	244	75	242	2630	2820	3260	2640	1220	518	359	83
26	206	383	68	245	492	2160	557	2640	1210	461	355	141
27	391	244	58	245	405	3240	893	2630	1100	452	355	341
28	805	68	56	240	1710	3400	2180	2620	1210	440	354	403
29	216	285	54	161	---	3560	3540	2620	1020	421	344	397
30	173	153	136	189	---	3690	3950	2630	928	435	331	422
31	198	---	227	266	---	3770	---	2620	---	409	342	---
TOTAL	8527	12494	26155	7013	36202	130770	99530	94490	40640	10750	10787	9993
MEAN	275	416	844	226	1293	4218	3318	3048	1355	347	348	333
MAX	805	955	2370	275	3650	5400	4020	4000	2620	544	542	537
MIN	173	68	54	161	231	2160	557	1200	364	127	107	83
AC-FT	16910	24780	51880	13910	71810	259400	197400	187400	80610	21320	21400	19820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1997#, BY WATER YEAR (WY)

	MEAN	422	670	688	515	636	855	765	1384	1421	854	484	335
MAX	3628	6300	4681	5267	4611	4218	3555	8391	5222	4479	4101	2480	
(WY)	1982	1982	1982	1992	1992	1997	1995	1990	1957	1989	1982	1962	
MIN	23.1	37.3	35.0	15.2	23.6	37.7	14.0	84.4	109	157	54.7	65.0	
(WY)	1959	1955	1955	1955	1955	1955	1989	1981	1955	1961	1963	1958	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1955 - 1997#

ANNUAL TOTAL	119458	487351	753
ANNUAL MEAN	326	1335	3062
HIGHEST ANNUAL MEAN			94.2
LOWEST ANNUAL MEAN			19000
HIGHEST DAILY MEAN	2370	Dec 10	5400
LOWEST DAILY MEAN	19	Jan 1	54
ANNUAL SEVEN-DAY MINIMUM	74	Dec 24	74
INSTANTANEOUS PEAK FLOW			5440
INSTANTANEOUS PEAK STAGE			22.40
ANNUAL RUNOFF (AC-FT)	236900	966700	545400
10 PERCENT EXCEEDS	376	3840	3160
50 PERCENT EXCEEDS	265	405	213
90 PERCENT EXCEEDS	203	216	77

e Estimated

Period of regulated streamflow

08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1981 to September 1997(discontinued).**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1981 to September 1990.

WATER TEMPERATURE: November 1976 to September 1990.

INSTRUMENTATION.--From November 1976 to October 1981, water temperature was measured daily at this station. From October 1981 to September 1990, specific conductance and water temperature were measured daily at this station.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: Maximum daily, 1,050 microsiemens Feb. 5, 8, 1989; minimum daily, 200 microsiemens May 13, 1982.

WATER TEMPERATURE: Maximum daily, 33.5°C July 16, Aug. 18, 1988, Sept. 14, 15, 1989; minimum, 0.0°C Jan. 31, Feb. 9, 1979.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)
OCT 07...	1500	251	391	8.1	24.0	15	4.0	8.9	108	1.5	100
DEC 18...	1045	378	356	7.8	10.0	43	26	10.6	95	0.6	110
JAN 23...	1215	236	366	7.9	8.0	42	17	12.3	106	0.6	110
MAY 13...	1225	3080	323	8.0	19.5	25	12	9.8	109	1.0	110
JUL 02...	1500	330	337	7.7	26.5	15	4.9	5.4	68	0.1	120

DATE	HARDNESS NONCARB DISSOLVED (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 07...	13	34	4.2	33	1	5.4	89	50	25	0.40	4.3
DEC 18...	16	36	4.0	27	1	4.6	90	46	19	0.30	5.5
JAN 23...	15	38	3.8	27	1	4.1	96	46	20	0.30	5.0
MAY 13...	11	39	3.5	18	0.7	4.2	100	29	14	0.23	1.9
JUL 02...	14	41	3.7	20	0.8	4.3	100	33	16	0.27	2.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	RESIDUE VOLATILE, SUSPENDED (MG/L)	RESIDUE FIXED NON FILTERABLE (MG/L)	NITRATE DIS-SOLVED (MG/L AS N)	NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOSPHORUS DIS-SOLVED (MG/L AS P)
OCT 07...	212	13	6	7	--	<0.010	0.490	0.040	0.36	0.40	0.120
DEC 18...	201	21	3	18	0.980	0.020	1.00	0.090	0.41	0.50	0.140
JAN 23...	208	13	8	5	1.15	0.050	1.20	0.080	0.32	0.40	0.180
MAY 13...	174	11	7	4	--	<0.010	0.561	0.016	0.26	0.27	0.025
JUL 02...	186	<1	<1	--	--	<0.010	0.339	0.049	0.28	0.33	0.030

DATE	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC, DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYLLIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM, DIS-SOLVED (UG/L AS CD)	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 07...	0.070	0.21	5.0	--	--	--	--	--	--	--	--
DEC 18...	0.130	0.40	5.2	--	--	--	--	--	--	--	--
JAN 23...	0.180	0.55	5.2	2	38	<0.50	<1.0	<5.0	<3.0	<10	6.0
MAY 13...	0.018	0.05	5.5	2	43	<0.50	<1.0	<5.0	<3.0	<10	6.9
JUL 02...	0.041	0.13	5.4	2	43	<0.50	<1.0	<5.0	<3.0	<10	4.6

TRINITY RIVER BASIN

08053000 ELM FORK TRINITY RIVER NEAR LEWISVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--
DEC 18...	--	--	--	--	--	--	--	--	--	--	--
JAN 23...	<10	<4	13	<0.1	<10	<10	<1	<1.0	240	<6	13
MAY 13...	<10	<4	<1.0	<0.1	<10	<10	<1	<1.0	230	<6	5.7
JUL 02...	<10	5	81	<0.1	<10	<10	<1	<1.0	245	<6	10

08053500 DENTON CREEK NEAR JUSTIN, TX

LOCATION.--Lat 33°07'08", long 97°17'25", Denton County, Hydrologic Unit 12030104, on right bank at downstream side of bridge on Farm Road 156, 100 ft upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.2 mi north of Justin, 3.0 mi upstream from Olivers Creek, 12.9 mi upstream from Harriet Creek, and 32.9 mi upstream from Grapevine Dam.

DRAINAGE AREA.--400 mi².

PERIOD OF RECORD.--October 1949 to current year.

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

REVISED RECORDS.--WSP 1732: 1950(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 606.66 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. There are several small diversions above station. Flow is affected at times by discharge from the flood-detention pools of 84 floodwater-retarding structures with a combined detention capacity of 52,750 acre-ft. These structures control runoff from 197 mi² in the Denton Creek watershed. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--15 years (water years 1950-64), 75.2 ft³/s (54,440 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1950-64).--Maximum discharge, 29,800 ft³/s May 24, 1957 (gage height, 17.64 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1935 was the highest since 1908 and reached a stage of 20.6 ft at site about 1,500 ft upstream, from information by local resident. Flood in May 1908 reached a stage about 1.0 ft higher than flood in May 1935, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	152	411	43	31	454	103	240	576	47	16	3.5
2	4.4	124	267	44	31	556	100	214	383	40	16	3.2
3	3.8	66	215	45	30	1080	99	192	276	35	16	3.0
4	3.8	41	205	45	30	532	1840	168	221	33	15	3.0
5	3.8	32	220	41	28	424	2580	160	190	32	15	3.6
6	4.5	114	220	38	245	351	639	151	164	76	15	14
7	5.7	2190	195	41	835	304	422	142	142	317	21	7.3
8	6.3	352	171	41	464	275	342	128	118	144	37	4.1
9	5.9	189	158	47	256	264	301	3580	106	91	26	3.0
10	5.5	112	149	52	182	243	268	818	100	77	23	2.8
11	5.0	85	140	46	140	221	869	373	99	63	20	2.5
12	4.1	68	128	38	695	283	972	268	89	51	17	2.4
13	3.2	57	113	27	1610	411	462	225	85	43	15	2.4
14	2.3	50	105	34	642	291	340	201	81	39	13	2.4
15	1.4	46	106	42	371	224	282	187	91	36	11	2.2
16	.90	50	94	44	268	194	249	209	149	37	8.9	2.2
17	.55	278	82	38	214	189	220	168	307	35	7.7	2.2
18	.25	142	69	34	179	187	190	141	120	31	6.9	2.2
19	.08	71	56	34	1230	184	175	403	80	28	6.2	2.2
20	.02	56	50	37	8600	165	168	840	67	25	5.9	2.2
21	.01	47	54	38	4840	159	222	309	57	22	5.8	1.9
22	2.4	37	60	39	2090	149	205	213	107	20	5.6	1.6
23	8.8	44	59	37	1500	131	244	169	193	19	5.9	1.4
24	11	3310	53	36	1080	122	189	268	164	19	6.7	1.1
25	11	831	46	35	875	207	416	274	116	19	6.2	.97
26	9.5	569	45	33	960	262	1170	188	78	18	5.1	.68
27	9.7	382	45	33	699	190	684	151	78	18	4.5	.55
28	1470	255	45	31	524	160	449	119	64	17	3.9	.46
29	717	781	45	28	---	137	338	99	77	17	3.8	.41
30	274	807	43	27	---	122	277	1990	65	16	3.7	.33
31	200	---	42	30	---	115	---	1950	---	16	3.5	---
TOTAL	2781.21	11338	3691	1178	28649	8586	14815	14538	4443	1481	366.3	112.20
MEAN	89.7	378	119	38.0	1023	277	494	469	148	47.8	11.8	3.74
MAX	1470	3310	411	52	8600	1080	2580	3580	576	317	37	36
MIN	.01	32	42	27	28	115	99	99	57	16	3.5	.33
AC-FT	5520	22490	7320	2340	56830	17030	29390	28840	8810	2940	727	223

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1997#, BY WATER YEAR (WY)

	MEAN	160	116	103	56.7	138	171	185	347	198	36.3	11.6	31.5
MAX	2828	817	1321	437	1023	522	2095	2036	1815	260	91.5	242	
(WY)	1982	1965	1992	1992	1997	1990	1990	1982	1989	1982	1973	1986	
MIN	.000	.000	.000	1.62	5.61	5.55	3.99	3.45	.000	.000	.000	.000	
(WY)	1978	1978	1978	1979	1979	1978	1980	1980	1980	1978	1967	1967	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1965 - 1997#
ANNUAL TOTAL	22397.57	91978.71	
ANNUAL MEAN	61.2	252	129
HIGHEST ANNUAL MEAN			577
LOWEST ANNUAL MEAN			4.93
HIGHEST DAILY MEAN	3310	8600	18600
LOWEST DAILY MEAN	.00	.01	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.46	.00
INSTANTANEOUS PEAK FLOW		11500	34700
INSTANTANEOUS PEAK STAGE		15.93	18.68
ANNUAL RUNOFF (AC-FT)	44430	182400	93810
10 PERCENT EXCEEDS	117	542	199
50 PERCENT EXCEEDS	15	77	19
90 PERCENT EXCEEDS	.00	3.5	.00

Period of regulated streamflow

TRINITY RIVER BASIN

08054500 GRAPEVINE LAKE NEAR GRAPEVINE, TX

LOCATION.--Lat 32°58'21", long 97°03'22", Tarrant County, Hydrologic Unit 12030104, in intake structure of Grapevine Dam on Denton Creek, 2.7 mi northeast of Grapevine, 4.3 mi upstream from bridge on State Highway 121, and 11.7 mi upstream from mouth.

DRAINAGE AREA.--695 mi².

PERIOD OF RECORD.--July 1952 to current year. Prior to October 1970, published as Grapevine Reservoir.

Water-quality records.--Chemical and biochemical analyses: October 1969 to August 1986.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 16, 1953, nonrecording gage at site 1,000 ft upstream at present datum.

REMARKS.--The lake is formed by a rolled earthfill dam 12,850 ft long, including a 500-foot uncontrolled off-channel concrete-gravity spillway with an ogee weir section. The dam was completed in June 1952, and deliberate impoundment began July 3, 1952. The controlled outlet works consist of a 13.0-ft-diameter concrete conduit that is controlled by two 6.5- by 13.0-ft broome-type gates and two 30-in steel pipes with service valves. The capacity table, used since April 1972, is based on a survey made in October 1966. The lake was built for flood control, navigation, and water conservation. The city of Dallas uses part of this water for their municipal supply. An unknown amount of water is diverted for industrial and municipal uses. Inflow is affected at times by discharge from the flood-detention pools of 87 floodwater-retarding structures with a combined detention capacity of 57,850 acre-ft. These structures control runoff from 217 mi in the Denton Creek watershed. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	588.0	
Crest of spillway	560.0	425,500
Top of conservation pool	535.0	181,100
Lowest intake to wet wells (invert)	500.5	22,140
Invert of two broome-type gates	475.0	100

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 471,200 acre-ft Nov. 1, 1981 (elevation, 563.29 ft); minimum since lake first filled in 1957, 94,480 acre-ft Feb. 26, 1979 (elevation, 520.67 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 283,000 acre-ft Mar. 3 (elevation, 547.07 ft); minimum, 121,400 acre-ft Oct. 20 (elevation, 525.77 ft).

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

525.0	117,200	539.0	211,500	549.0	302,000
526.0	122,700	542.0	236,500	551.0	322,400
531.0	153,300	545.0	263,300	553.0	343,800
535.0	181,100	547.0	282,300		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124800	135000	214200	182400	180900	279900	212800	220400	195700	185200	179900	170300
2	124700	135800	212500	182500	180800	280800	211400	219400	193700	184800	179600	170100
3	124500	136100	209700	182600	180800	283000	210400	218000	191400	184600	179100	171000
4	124300	136300	206600	182700	180700	282100	217700	216600	188900	184800	178000	171000
5	124200	136400	203200	182700	180600	280500	229700	215100	186800	184800	176800	170700
6	124000	138000	200000	182600	183700	278500	230100	213700	185500	187000	176500	170400
7	123900	160600	197000	182400	188300	275900	228600	212400	184400	188000	177300	170200
8	123700	162800	194800	182600	187900	273100	226900	211400	183700	187800	177100	170000
9	123500	163500	194100	182600	187000	270400	224800	229700	182900	187400	176900	169800
10	123300	163800	194400	182600	186000	267400	222800	231700	182300	186800	176700	169400
11	123000	164100	194000	182500	184800	264300	226800	230700	182100	186300	176500	169000
12	122900	164300	192500	182400	192600	263000	228500	229000	182000	186200	176300	168700
13	122700	164300	191400	182200	206100	262000	227900	226800	182000	185900	176000	168400
14	122500	164300	191000	182100	207800	259200	226500	224300	182000	185600	175800	168200
15	122400	164500	190500	182200	207100	256000	225000	222200	182100	185500	175300	167900
16	122200	165000	189700	182100	206100	253000	223300	219800	184700	185000	175000	167600
17	122100	166600	189000	182000	204200	249800	221600	217300	196800	184200	174700	167300
18	121800	166900	188100	181900	202300	246500	219800	214500	196800	183600	174400	167000
19	121500	167100	187000	181900	208600	242700	218000	212100	195700	183400	174100	166700
20	121400	167300	186400	181900	247700	239400	216400	214600	194400	183100	173800	166400
21	122500	167300	186300	181900	264800	236300	215000	214300	193000	182800	173500	166100
22	122300	167300	186200	181900	270100	233000	214100	212000	193300	182600	173300	165800
23	122100	168100	186100	181900	271900	229800	213000	209600	193500	182300	173000	165700
24	122000	202600	185300	181900	271800	226900	211700	207700	192700	182000	172700	165400
25	121800	208900	184600	181800	272600	226800	214700	205600	191700	181800	172300	164400
26	121800	210900	184300	181800	277700	225100	220600	203200	190400	181500	172000	163700
27	123400	210500	183600	182100	279900	222900	223100	200700	189200	181300	171700	163400
28	126200	208900	183100	181600	280700	220700	223300	197900	187900	181000	171400	163200
29	131000	213100	182600	181300	---	218500	222500	195100	186500	180700	171100	162800
30	132400	215400	182300	181000	---	216000	221600	194700	185700	180500	170800	162600
31	133800	---	182300	181000	---	214200	---	197000	---	180200	170600	---
MAX	133800	215400	214200	182700	280700	283000	230100	231700	196800	188000	179900	171000
MIN	121400	135000	182300	181000	180600	214200	210400	194700	182000	180200	170600	162600
(+)	527.92	539.48	535.16	534.98	546.83	539.33	540.24	537.14	535.63	534.87	533.54	532.39
(@)	+8800	+81600	-33100	-1300	+99700	-66500	+7400	-24600	-11300	-5500	-9600	-8000

CAL YR 1996 MAX 215400 MIN 121400 (@) +31700
WTR YR 1997 MAX 283000 MIN 121400 (@) +37600

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

TRINITY RIVER BASIN

401

08055500 ELM FORK TRINITY RIVER NEAR CARROLLTON, TX

LOCATION.--Lat 32°57'57", long 96°56'39", Dallas County, Hydrologic Unit 12030103, near left bank at downstream side of bridge on Sandy Lake Road, 40 ft upstream from Carrollton Dam, 0.3 mi downstream from Denton Creek, 1.0 mi upstream from St. Louis Southwestern Railway Lines bridge, 2.3 mi northwest of Carrollton, and 18.2 mi upstream from mouth.

DRAINAGE AREA.--2,459 mi²

PERIOD OF RECORD.--January 1907 to current year. Monthly discharge only for some periods, published in WSP 1312. Prior to November 1923, published as "near Dallas".

REVISED RECORDS.--WSP 788: 1924. WSP 1148: Drainage area at former site. WSP 1632: 1908(M). WSP 1922: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 431.40 ft above sea level. Prior to November 1923, nonrecording gage at site 15.5 mi downstream at different datum. Nov. 1, 1923, to Nov. 13, 1934, nonrecording gage, and Nov. 14, 1934, to July 6, 1938, water-stage recorder at present site and datum. July 7, 1938, to Apr. 14, 1939, nonrecording gage at site 9.3 mi downstream at datum 22.94 ft lower. Apr. 15, 1939, to Sept. 30, 1955, water-stage recorder at site 8.5 mi downstream at datum 22.94 ft lower. Oct. 1, 1955, to Sept. 30, 1987, water-stage recorder at present site and at datum 2.00 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since November 1954, at least 10% of contributing drainage area has been regulated by Lewisville Lake (station 08052800) since November 1954. Additional regulation by Grapevine Lake (station 08054500) since July 1952. The city of Dallas diverts water from the pool at gage and from the river 14 mi downstream for municipal use. A wastewater treatment plant returns water to the river below the station. In addition, Dallas Power and Light Co. diverts water from the pool at gage into North Lake for cooling water at their electric generating plant. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--47 years (water years 1908-54), 818 ft³/s (592,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1908-54).--Maximum gage height, about 19 ft May 25, 1908, present site and datum, from information by local resident; estimated discharge, 145,000 ft³/s, at site 8.5 mi downstream, from information by U.S. Army Corps of Engineers; maximum gage height subsequent to 1908, 16.5 ft Apr. 26, 1942, present site and datum, from observation by National Weather Service; discharge at site 8.5 mi downstream, 90,700 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1866 reached about the same stage as flood of May 25, 1908.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	394	997	136	157	3930	4770	4760	3910	313	182	142
2	129	245	1230	103	181	5590	4720	4740	3930	184	219	147
3	131	168	1900	117	215	4830	4660	4700	3930	122	115	328
4	92	188	3480	104	201	5030	6130	4730	3920	173	191	668
5	111	13	3700	99	220	5870	2980	4710	3890	287	312	112
6	111	.23	3660	125	813	6220	2830	4710	e3690	433	232	118
7	116	2650	3460	125	779	6410	4580	4730	e3450	319	905	210
8	131	274	3290	163	1340	6650	4880	4720	e3180	310	193	157
9	172	16	2530	141	1310	6680	4750	4790	e2890	322	144	156
10	153	9.2	2000	135	1300	6700	4700	3050	2650	288	205	122
11	93	.00	1980	112	1510	6690	5130	3830	2440	298	158	31
12	56	.00	2040	129	3630	6820	3500	4160	2280	195	143	197
13	61	168	1410	121	3170	6030	3860	4280	1060	167	218	318
14	34	446	1010	52	867	6090	4580	4310	433	156	193	138
15	35	340	836	56	2940	6550	4800	4470	311	169	119	127
16	26	317	634	53	3270	6690	4840	4480	304	176	195	275
17	13	575	606	89	4100	6750	4780	4430	1850	164	128	121
18	6.3	297	567	149	4810	6720	4800	4450	412	195	144	85
19	4.9	e266	540	139	5450	6580	4810	4890	1110	115	128	137
20	26	270	513	125	3430	6430	4800	4340	1110	132	132	174
21	262	257	306	102	896	5540	4870	1280	1130	81	157	182
22	231	180	269	90	516	5020	5060	3250	2470	115	130	105
23	23	170	222	94	2810	4940	3870	3840	1630	193	139	118
24	39	1300	183	122	4640	4880	4350	4070	1310	267	172	86
25	21	513	193	164	4480	4880	4840	4010	1460	249	177	46
26	6.7	350	185	140	1150	3370	1490	3950	1320	228	152	245
27	908	786	184	146	396	4360	746	3920	1380	293	153	126
28	2690	1010	169	163	1510	4560	2080	3920	1440	193	141	159
29	187	1960	152	108	---	4690	4100	3890	1100	207	130	136
30	70	1440	174	116	---	4940	4620	3990	909	198	131	178
31	85	---	122	195	---	4870	---	3950	---	216	125	---
TOTAL	6156.9	14602.43	38542	3713	56091	175310	126926	129350	60899	6758	5863	5144
MEAN	199	487	1243	120	2003	5655	4231	4173	2030	218	189	171
MAX	2690	2650	3700	195	5450	6820	6130	4890	3930	433	905	668
MIN	4.9	.00	122	52	157	3370	746	1280	304	81	115	31
AC-FT	12210	28960	76450	7360	111300	347700	251800	256600	120800	13400	11630	10200

TRINITY RIVER BASIN

08055500 ELM FORK TRINITY RIVER NEAR CARROLLTON, TX

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 1997#, BY WATER YEAR (WY)

MEAN	435	782	862	612	766	1021	996	1643	1720	977	543	301
MAX	3554	8830	6785	6614	5868	5655	4782	10920	6757	6224	6003	3406
(WY)	1982	1982	1982	1992	1992	1997	1995	1990	1990	1989	1982	1962
MIN	27.8	4.21	.78	.80	2.06	3.30	43.5	38.4	80.0	94.9	58.2	14.8
(WY)	1981	1957	1978	1957	1957	1957	1955	1980	1959	1979	1979	1985

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1955 - 1997#	
ANNUAL TOTAL	94783.33		629355.33			
ANNUAL MEAN	259		1724		888	
HIGHEST ANNUAL MEAN					4289	
LOWEST ANNUAL MEAN					76.0	
HIGHEST DAILY MEAN	3700	Dec 5	6820	Mar 12	25300	May 5 1990
LOWEST DAILY MEAN	.00	Nov 11	.00	Nov 11	.00	Dec 2 1954
ANNUAL SEVEN-DAY MINIMUM	21	Oct 14	21	Oct 14	.00	Jan 7 1959
INSTANTANEOUS PEAK FLOW			7240	Feb 19	33000	Sep 21 1964
INSTANTANEOUS PEAK STAGE			8.29	Feb 19	13.48	May 5 1990
ANNUAL RUNOFF (AC-FT)	188000		1248000		643500	
10 PERCENT EXCEEDS	387		4810		3920	
50 PERCENT EXCEEDS	127		319		147	
90 PERCENT EXCEEDS	56		103		36	

e Estimated

Period of regulated streamflow

08057000 TRINITY RIVER AT DALLAS, TX

LOCATION.--Lat 32°46'29", long 96°49'18", Dallas County, Hydrologic Unit 12030105, on right bank (levee) 90 ft downstream from Commerce Street viaduct in Dallas, 5.2 mi downstream from confluence of West and Elm Forks, and at mile 500.3.

DRAINAGE AREA.--6,106 mi².

PERIOD OF RECORD.--October 1898 to December 1899 (gage heights only published in WSP 28 and 37), July 1903 to current year. Daily discharges are not available for all periods prior to 1931.

REVISED RECORDS.--WSP 850: 1903-06 (monthly and annual means). WSP 1732: 1937(M). WSP 1922: Drainage area. WRD TX-73-1: 1972.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 368.02 ft above sea level. Oct. 1, 1898, to Dec. 31, 1899, nonrecording gage at site 2 mi upstream at different datum. July 1, 1903, to July 20, 1930, non-recording gage at present site and datum. July 21, 1930, to Sept. 30, 1932, nonrecording gage at site 6 mi downstream at datum 3.08 ft lower.

REMARKS.--No estimated daily discharges. Records fair. At times since June 1914, flow is affected by storage in seven major upstream reservoirs, with a combined capacity of 1,703,000 acre-ft of which 846,200 acre-ft is for flood control. The city of Dallas diverts water for municipal use from the Elm Fork, Lake Ray Hubbard (on the East Fork), and from Lake Tawakoni (on the Sabine River), and purchases water from North Texas Municipal Water District (from the East Fork). Wastewater effluent from the City of Dallas is returned to the river downstream from this station. The Trinity River Authority and the City of Fort Worth discharge wastewater effluent into the river upstream from this station. There are many other diversions upstream from this station for municipal, industrial and other uses. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1903-30).--Maximum discharge, 184,000 ft³/s May 25, 1908 (gage height, 52.6 ft), from rating curve extended above 109,000 ft³/s. Maximum stage since at least 1840, that of May 25, 1908.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1866 reached about the same stage as that of May 25, 1908.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	901	6770	625	552	11200	5510	8290	8520	1200	457	359
2	399	1350	4840	605	524	12300	5360	8410	8440	767	454	379
3	399	901	4660	599	528	16000	5230	7630	8360	622	446	571
4	396	730	5000	597	548	14200	12900	6560	6670	600	408	2550
5	392	665	5590	572	535	12800	23600	5840	5610	2510	436	801
6	394	607	5600	566	1200	13700	17000	5180	4940	3640	488	427
7	398	7080	5310	588	4800	13500	12000	4790	3850	3430	3560	413
8	395	8340	5010	1180	3310	13200	11000	4680	3190	2210	5110	436
9	396	2510	4750	1170	3720	14100	10800	6570	2680	2110	1080	403
10	397	1200	4090	741	3280	13400	10200	10900	3610	2070	669	388
11	382	1070	3670	628	2640	12600	11600	7660	3870	1440	602	356
12	370	1020	3420	590	7690	12600	13900	7360	3210	1010	530	355
13	375	943	2920	579	25200	15000	10300	7710	2930	684	613	412
14	382	953	2060	586	17700	12300	8720	8580	2920	609	654	483
15	387	1180	3130	587	9690	10700	8770	9130	2600	602	581	397
16	388	1240	2700	587	8460	11200	8830	10600	2540	684	510	416
17	395	1740	1530	571	8210	12000	7280	8940	8720	630	537	440
18	383	1630	1340	569	8130	12300	5820	8070	9390	601	497	385
19	376	855	1250	588	9860	12000	5470	7930	5620	592	487	375
20	383	867	1180	555	22000	11700	5280	12300	5100	540	449	369
21	2380	851	1060	560	24500	10800	6650	9930	3650	526	442	389
22	4530	810	905	545	19900	9900	6670	5460	4550	512	433	404
23	1700	975	861	562	16500	8980	5700	5090	7660	504	395	402
24	662	8750	737	523	15500	7840	4970	5440	4570	504	397	420
25	560	15800	717	490	15700	8090	6200	5410	2960	547	414	383
26	521	10900	690	507	17500	8810	13400	5060	3140	527	409	409
27	1700	7460	681	501	14800	6030	11600	4970	3330	539	387	469
28	14700	5850	681	479	11700	5990	6510	5000	2250	513	379	433
29	11800	7110	665	505	---	6130	5990	4850	1930	479	386	420
30	4450	10700	641	529	---	5810	7310	5090	1630	465	386	394
31	1320	---	653	532	---	5640	---	7150	---	455	371	---
TOTAL	52110	104988	83111	18816	274677	340820	274570	220580	138440	32122	22967	14838
MEAN	1681	3500	2681	607	9810	10990	9152	7115	4615	1036	741	495
MAX	14700	15800	6770	1180	25200	16000	23600	12300	9390	3640	5110	2550
MIN	370	607	641	479	524	5640	4970	4680	1630	455	371	355
AC-FT	103400	208200	164900	37320	544800	676000	544600	437500	274600	63710	45560	29430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1997#, BY WATER YEAR (WY)

	MEAN	1198	1341	1450	1308	2019	2222	2538	3996	3101	1276	717	803
MAX	10050	14150	12860	13350	10410	14910	27050	28050	17390	8629	6075	7107	
(WY)	1982	1982	1992	1992	1992	1992	1945	1942	1990	1941	1989	1982	1962
MIN	68.2	58.2	53.0	62.4	76.9	68.2	91.5	213	68.0	51.9	50.2	52.4	
(WY)	1935	1956	1939	1940	1940	1956	1955	1937	1953	1956	1956	1956	

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1931 - 1997#

	ANNUAL TOTAL	420456	1578039	1828	
	ANNUAL MEAN	1149	4323	7154	1982
	HIGHEST ANNUAL MEAN			115	1956
	LOWEST ANNUAL MEAN			115	1956
	HIGHEST DAILY MEAN	15800	25200	103000	Apr 26 1942
	LOWEST DAILY MEAN	303	355	10	Oct 1 1953
	ANNUAL SEVEN-DAY MINIMUM	313	378	26	Apr 12 1935
	INSTANTANEOUS PEAK FLOW		27600	111000	Apr 26 1942
	INSTANTANEOUS PEAK STAGE		37.78	47.10	May 3 1990
	ANNUAL RUNOFF (AC-FT)	834000	3130000	1324000	
	10 PERCENT EXCEEDS	2180	11700	5260	
	50 PERCENT EXCEEDS	519	1930	406	
	90 PERCENT EXCEEDS	383	399	108	

Period of regulated streamflow

TRINITY RIVER MAIN STEM

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX

LOCATION.--Lat 32°45'04", long 96°47'07", Dallas County, Hydrologic Unit 12030105, on right bank at abandoned bridge abutment, 0.2 mi upstream from Cedar Crest Blvd. Bridge, 1.8 mi southeast of Dallas City Hall, 2.1 mi downstream from Coombs Creek, and 2.7 mi downstream from Commerce Street Bridge (station 08057000).

PERIOD OF RECORD.--Chemical and biochemical analyses: February 1984 to September 1993.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1984 to current year.

pH: February 1984 to current year.

WATER TEMPERATURES: February 1984 to current year.

DISSOLVED OXYGEN: February 1984 to current year.

INSTRUMENTATION.--Since February 1984, a four-parameter water-quality monitor records temperature, DO, pH, and specific conductance continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. Records of discharge are given for gaging station 08057000. No appreciable inflow between the two stations.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,030 microsiemens Feb. 12, 1988; minimum, 93 microsiemens Oct. 20, 1984.

pH: Maximum, 8.7 units Mar. 13, 1995; minimum, 6.8 units Sept. 6, 1988.

WATER TEMPERATURE: Maximum, 33.5°C Aug. 12, 1987; minimum, 5.0°C Feb. 7, 8, 1989.

DISSOLVED OXYGEN: Maximum, 13.7 mg/L Feb. 8, 1989; minimum, 0.0 mg/L July 21, 1985.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 849 microsiemens Oct. 20; minimum, 209 microsiemens Nov. 24.

pH: Maximum, 8.3 units Nov. 24; minimum, 7.1 units on May 16.

WATER TEMPERATURE: Maximum, 32.5°C on July 23; minimum, 7.0°C Feb. 14.

DISSOLVED OXYGEN: Maximum, 11.0 mg/L Dec. 20 and 21; minimum, 2.4 mg/L June 16.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	52110	427	243	34180	31	4370	52	7280	130
NOV.	1996	104988	404	232	65710	26	7360	49	13990	140
DEC.	1996	83111	448	256	57470	30	6790	55	12240	150
JAN.	1997	18816	731	405	20560	69	3480	86	4390	180
FEB.	1997	274677	344	199	147700	20	14550	42	31410	120
MAR.	1997	340820	393	227	208800	24	22070	48	44420	140
APR.	1997	274570	398	229	170000	24	18110	49	36170	140
MAY	1997	220580	405	233	138900	25	14980	50	29550	140
JUNE	1997	138440	409	235	87980	26	9600	50	18730	140
JULY	1997	32122	555	313	27100	44	3840	67	5780	160
AUG.	1997	22967	581	325	20180	48	3000	69	4310	160
SEPT	1997	14838	691	383	15340	64	2550	82	3280	170
TOTAL		1578039.00	**	**	993800	**	110700	**	211500	**
WTD. AVG.		4320	406	233	**	26	**	50	**	140

TRINITY RIVER MAIN STEM

405

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	811	787	797	610	549	578	426	389	407	742	710	726
2	798	776	784	587	518	540	443	426	437	736	725	730
3	784	770	776	607	555	584	432	427	429	757	736	742
4	831	769	803	655	590	633	433	405	419	758	738	749
5	831	816	825	723	626	670	405	397	400	769	751	761
6	834	820	827	767	720	746	401	389	393	776	755	766
7	821	793	808	760	263	310	394	385	388	775	754	765
8	809	788	797	348	274	302	395	391	393	757	545	673
9	818	797	808	545	348	434	406	389	396	684	543	642
10	815	788	800	623	509	558	427	401	411	696	679	688
11	818	792	801	571	525	542	430	414	425	708	682	694
12	827	818	822	588	551	573	431	418	422	728	708	720
13	829	818	825	609	574	594	443	419	429	747	726	732
14	834	817	827	611	585	601	465	441	455	748	715	728
15	836	808	815	591	546	563	563	463	508	731	710	721
16	843	824	833	576	544	564	486	411	437	747	727	737
17	824	801	809	566	453	497	511	486	498	752	744	747
18	815	804	810	561	486	518	542	511	532	753	734	743
19	825	804	814	586	519	553	552	530	544	740	728	735
20	849	824	840	649	586	615	546	537	542	741	722	730
21	847	256	609	628	595	610	581	537	561	756	723	739
22	453	355	397	641	597	624	640	579	620	782	737	764
23	464	404	433	658	495	624	656	625	641	799	699	771
24	563	464	520	495	209	324	679	631	655	790	744	773
25	609	563	589	387	266	303	693	673	683	783	767	775
26	662	603	632	418	387	411	689	662	676	798	780	789
27	680	318	617	441	413	428	696	671	681	786	769	777
28	---	---	e370	456	441	449	695	677	684	769	743	756
29	---	---	e220	452	372	415	711	693	705	762	728	740
30	---	---	e300	389	352	363	717	706	711	750	721	735
31	---	---	e420	---	---	---	717	693	701	747	700	728
MONTH	849	256	688	767	209	518	717	385	522	799	543	738

e Estimated

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	703	685	695	378	358	369	400	383	392	424	413	415
2	717	688	703	360	350	357	386	380	383	418	406	411
3	707	695	699	377	355	368	---	---	e384	415	400	404
4	697	679	689	396	375	390	---	---	e391	403	396	400
5	684	654	673	402	390	394	---	---	e399	396	390	393
6	665	494	609	397	393	395	---	---	e405	393	383	386
7	518	435	468	393	385	388	---	---	e411	389	383	386
8	455	440	449	390	383	386	411	404	407	393	384	389
9	460	424	439	390	379	387	410	406	408	514	334	419
10	436	431	433	392	380	387	412	407	409	376	309	339
11	434	424	427	382	380	382	411	375	398	413	376	405
12	430	309	367	397	379	386	402	379	387	416	405	411
13	312	266	283	394	383	389	418	400	414	418	409	414
14	371	267	312	395	388	392	419	409	416	427	410	419
15	395	371	389	388	381	384	415	405	408	428	379	412
16	398	377	387	390	381	386	413	404	409	411	374	388
17	378	362	370	397	385	391	410	393	400	419	396	412
18	364	358	361	397	390	394	416	393	401	425	417	422
19	370	310	350	414	395	407	405	392	397	422	367	417
20	318	240	281	414	405	408	398	379	392	390	312	363
21	302	246	291	415	404	409	398	361	389	---	---	e400
22	319	300	311	420	413	417	393	369	383	---	---	e442
23	349	319	334	420	415	418	405	382	392	---	---	e424
24	353	349	351	417	401	410	420	399	409	432	414	424
25	366	351	357	458	410	423	404	331	378	441	417	427
26	359	354	356	455	424	432	389	325	346	420	414	416
27	365	355	358	425	405	416	401	339	366	418	414	416
28	377	365	372	408	404	406	447	401	430	437	413	419
29	---	---	---	408	400	403	443	420	431	420	415	418
30	---	---	---	402	396	400	427	416	422	440	412	421
31	---	---	---	399	394	397	---	---	---	456	393	425
MONTH	717	240	433	458	350	396	447	325	399	514	309	408

e Estimated

TRINITY RIVER MAIN STEM

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	426	410	423	547	473	515	786	752	769	821	797	806
2	428	422	425	651	547	605	789	754	778	835	814	823
3	422	416	420	710	650	681	767	733	749	837	383	761
4	416	413	415	801	710	769	796	766	781	678	332	448
5	417	411	414	762	258	524	794	768	783	534	443	500
6	445	413	426	422	289	368	768	678	696	664	534	610
7	452	442	446	436	355	392	709	351	474	775	664	737
8	466	448	455	427	374	409	413	348	362	734	684	711
9	470	431	457	513	415	470	473	365	424	774	734	750
10	479	426	444	521	507	516	557	381	504	776	764	772
11	440	373	393	552	519	531	617	551	588	826	760	778
12	425	401	414	582	549	559	661	617	647	841	820	827
13	451	425	436	661	582	631	665	562	647	846	752	831
14	478	392	444	715	661	691	652	559	617	752	701	715
15	498	414	472	717	694	708	652	589	618	803	726	763
16	468	371	422	728	671	697	684	652	670	808	751	783
17	468	277	335	719	677	706	658	631	644	751	659	694
18	399	290	341	731	719	726	725	636	680	803	737	764
19	434	399	426	727	702	718	728	685	704	817	803	811
20	436	428	432	758	725	745	700	655	687	820	812	816
21	442	429	436	768	731	751	749	675	716	836	799	822
22	445	332	399	760	714	744	744	710	727	799	721	753
23	374	337	351	746	720	736	784	739	756	796	764	780
24	394	350	367	764	734	749	840	784	816	794	719	742
25	419	387	397	734	662	686	812	782	794	775	730	749
26	449	356	420	744	662	710	788	774	782	798	771	788
27	436	358	406	753	682	719	815	774	794	771	664	696
28	455	436	446	745	686	712	808	789	797	752	706	735
29	466	442	457	789	743	765	834	799	812	735	691	708
30	504	457	482	787	759	775	804	768	785	779	734	758
31	---	---	---	784	746	765	818	796	811	---	---	---
MONTH	504	277	420	801	258	648	840	348	691	846	332	741
YEAR	849	209	551									

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.0	7.9	7.9	7.7	7.6	7.6	8.0	7.9	7.9	7.6	7.5	7.6
2	7.9	7.9	7.9	7.7	7.6	7.7	8.0	7.9	8.0	7.7	7.5	7.6
3	7.9	7.8	7.9	---	---	---	8.0	8.0	8.0	7.7	7.5	7.6
4	8.0	7.8	7.9	---	---	---	8.0	8.0	8.0	7.8	7.6	7.7
5	7.9	7.8	7.9	7.7	7.6	7.6	8.0	8.0	8.0	7.8	7.7	7.7
6	8.0	7.8	7.9	7.6	7.6	7.6	8.0	7.7	7.9	7.7	7.5	7.6
7	8.0	7.9	7.9	8.0	7.5	7.7	7.9	7.8	7.8	7.6	7.4	7.5
8	8.0	7.9	7.9	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.4	7.5
9	7.9	7.9	7.9	7.7	7.6	7.6	7.8	7.7	7.7	7.7	7.4	7.5
10	7.9	7.8	7.8	7.7	7.7	7.7	7.8	7.7	7.8	7.6	7.5	7.6
11	7.9	7.8	7.8	7.8	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.5
12	7.8	7.7	7.8	7.9	7.8	7.8	7.7	7.6	7.7	7.6	7.4	7.5
13	7.7	7.7	7.7	7.9	7.8	7.8	7.7	7.6	7.7	7.5	7.4	7.5
14	7.7	7.6	7.7	7.9	7.8	7.8	7.7	7.6	7.7	7.5	7.5	7.5
15	7.7	7.6	7.7	7.9	7.9	7.9	7.6	7.4	7.5	7.6	7.5	7.5
16	7.7	7.6	7.6	7.9	7.8	7.8	7.5	7.3	7.4	7.6	7.5	7.6
17	7.6	7.6	7.6	7.9	7.7	7.8	7.5	7.4	7.4	7.7	7.6	7.6
18	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.5	7.5	7.7	7.7	7.7
19	7.7	7.6	7.6	7.8	7.7	7.7	7.6	7.5	7.6	7.7	7.6	7.7
20	7.6	7.5	7.6	7.8	7.7	7.8	7.8	7.6	7.6	7.7	7.6	7.7
21	7.8	7.5	7.6	7.9	7.8	7.8	7.8	7.7	7.7	7.7	7.6	7.6
22	7.7	7.6	7.7	7.9	7.9	7.9	7.8	7.8	7.8	7.6	7.5	7.6
23	7.7	7.6	7.6	8.0	7.8	7.9	7.8	7.7	7.8	7.5	7.3	7.5
24	7.6	7.5	7.5	8.3	7.9	8.0	7.7	7.6	7.6	7.5	7.3	7.4
25	7.6	7.5	7.6	7.9	7.8	7.9	7.6	7.6	7.6	7.5	7.4	7.5
26	7.6	7.5	7.5	7.9	7.8	7.9	7.6	7.6	7.6	7.5	7.5	7.5
27	7.8	7.5	7.5	8.0	7.9	7.9	7.7	7.6	7.6	7.5	7.5	7.5
28	---	---	---	8.0	7.9	7.9	7.7	7.6	7.6	7.7	7.5	7.6
29	---	---	---	8.0	7.9	7.9	7.7	7.6	7.6	7.6	7.5	7.6
30	---	---	---	7.9	7.8	7.8	7.7	7.6	7.6	7.5	7.4	7.5
31	---	---	---	---	---	---	7.6	7.6	7.6	7.7	7.4	7.5
MONTH	8.0	7.5	7.7	8.3	7.5	7.8	8.0	7.3	7.7	7.8	7.3	7.6

TRINITY RIVER MAIN STEM

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	14.5	13.0	13.5	12.0	11.0	11.5	16.0	15.5	15.5	19.0	18.0	18.5
2	16.0	14.0	15.0	11.5	10.5	11.5	16.0	15.5	16.0	20.0	18.5	19.0
3	16.5	15.0	16.0	11.5	10.0	11.0	---	---	---	20.0	18.5	19.0
4	16.5	15.5	16.0	13.0	11.5	12.0	---	---	---	19.5	18.5	19.0
5	15.5	14.5	15.0	13.0	12.5	13.0	---	---	---	19.5	19.0	19.0
6	14.5	11.5	13.0	13.0	12.0	12.5	---	---	---	20.0	19.0	19.5
7	11.5	9.5	10.0	12.5	11.5	12.0	---	---	---	19.5	19.5	19.5
8	9.5	8.5	9.0	13.0	11.5	12.0	17.0	16.5	17.0	19.5	19.0	19.5
9	9.0	8.0	8.5	14.0	13.0	13.5	17.0	16.5	17.0	20.5	19.0	19.5
10	9.0	8.0	8.5	13.5	13.0	13.5	17.5	16.5	17.0	20.0	18.5	19.0
11	9.5	8.5	9.0	13.0	12.5	13.0	17.0	16.0	16.5	21.0	19.5	20.0
12	10.0	8.5	9.0	13.5	13.0	13.0	16.0	14.5	15.0	20.5	20.0	20.0
13	8.5	7.5	8.0	14.5	13.5	14.0	15.0	14.0	14.5	20.0	19.5	19.5
14	8.5	7.0	8.0	14.0	13.0	13.5	16.0	14.5	15.0	21.5	19.5	20.5
15	9.0	8.0	8.5	13.0	12.0	12.5	16.0	15.0	15.5	21.0	20.5	21.0
16	9.5	8.5	9.0	12.5	12.5	12.5	16.5	15.5	16.0	21.5	20.0	21.0
17	10.5	9.0	9.5	13.0	12.0	12.5	17.0	13.0	16.5	22.0	21.0	21.5
18	10.5	9.5	10.0	14.0	13.0	13.5	17.0	16.5	16.5	22.5	21.5	22.0
19	13.0	10.0	11.0	13.5	13.0	13.0	17.5	16.5	16.5	22.5	22.0	22.0
20	14.0	13.0	13.5	13.5	12.5	13.0	18.0	17.0	17.5	22.0	21.0	21.5
21	14.0	12.5	13.0	15.0	13.5	14.0	19.0	17.0	18.0	21.5	21.0	21.0
22	13.0	12.0	12.5	15.0	14.5	15.0	18.0	17.0	18.0	21.5	20.0	21.0
23	12.5	11.5	12.0	15.0	14.5	14.5	18.5	17.5	18.0	21.5	20.0	21.0
24	11.5	10.5	11.0	15.5	14.5	15.0	18.5	18.0	18.5	22.0	21.0	21.5
25	10.5	10.5	10.5	15.5	15.5	15.5	18.0	15.5	17.0	22.5	21.5	22.0
26	10.5	10.5	10.5	15.5	15.0	15.0	15.5	15.0	15.0	23.5	22.5	22.5
27	11.0	10.0	10.5	15.5	14.5	15.0	15.5	15.0	15.0	23.5	23.0	23.5
28	11.0	10.5	11.0	16.0	15.0	15.5	17.0	15.5	16.0	23.5	22.0	23.0
29	---	---	---	16.5	15.5	16.0	18.5	17.0	17.5	23.0	22.5	23.0
30	---	---	---	16.0	15.5	16.0	19.5	18.0	18.5	23.0	22.5	23.0
31	---	---	---	15.5	15.0	15.5	---	---	---	23.5	23.0	23.5
MONTH	16.5	7.0	11.0	16.5	10.0	13.5	19.5	10.0	16.5	23.5	18.0	21.0

TRINITY RIVER MAIN STEM

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08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	24.5	23.5	24.0	29.5	27.0	28.0	31.0	30.0	30.5	31.0	29.5	30.0
2	24.5	23.5	24.0	30.0	28.0	29.0	30.5	29.5	30.0	31.0	29.5	30.5
3	24.0	23.5	24.0	31.0	29.0	30.0	31.0	29.5	30.0	31.0	27.5	30.0
4	24.0	23.0	23.5	30.5	29.0	29.5	31.0	29.5	30.5	29.0	27.5	28.0
5	24.0	23.5	24.0	29.0	23.5	26.0	31.5	30.0	30.5	28.0	26.5	27.5
6	24.5	23.5	24.0	26.5	24.5	25.5	30.5	29.5	30.0	28.5	27.0	27.5
7	24.5	23.5	24.0	26.5	25.0	25.5	30.0	24.0	26.5	29.0	27.5	28.0
8	24.5	23.5	24.0	28.5	26.0	27.0	25.0	24.5	24.5	29.5	28.0	29.0
9	24.5	23.5	24.0	29.0	27.5	28.0	26.0	24.5	25.0	30.5	28.5	29.5
10	24.5	23.0	24.0	29.5	27.5	28.5	28.0	26.0	27.0	29.0	28.0	28.5
11	24.5	23.0	24.0	29.5	28.0	29.0	28.0	27.5	28.0	28.5	27.0	28.0
12	25.0	23.5	24.5	30.0	28.5	29.5	30.0	28.0	29.0	28.5	27.0	27.5
13	26.5	24.5	25.5	30.5	28.5	29.5	30.5	29.0	29.5	29.0	27.5	28.0
14	27.5	25.5	26.5	31.5	29.0	30.0	31.0	29.0	30.0	29.0	27.5	28.0
15	29.0	27.0	28.0	31.5	30.0	30.5	31.0	29.0	30.0	30.0	28.5	29.0
16	28.5	26.5	27.5	31.0	29.0	30.0	30.5	29.0	30.0	30.0	29.0	29.5
17	28.5	24.5	25.5	31.5	29.5	30.5	31.0	29.0	30.0	30.0	28.5	29.0
18	27.5	24.5	26.0	32.0	30.0	31.0	31.0	29.5	30.0	30.0	28.5	29.5
19	28.5	27.0	27.5	31.5	29.5	30.5	30.5	29.5	30.0	30.0	28.5	29.5
20	28.0	27.5	28.0	31.5	30.0	31.0	31.0	29.0	30.0	30.0	28.5	29.0
21	28.0	27.0	27.5	32.0	30.5	31.0	31.5	29.5	30.5	29.0	28.0	28.5
22	27.5	25.0	26.0	32.0	30.5	31.5	31.0	30.0	30.5	28.0	27.5	27.5
23	26.0	25.0	25.5	32.5	30.5	31.5	30.5	29.5	30.0	27.5	27.0	27.5
24	26.5	25.0	25.5	32.0	31.0	31.5	30.5	28.5	29.5	27.0	25.0	26.0
25	27.0	26.0	26.5	32.0	30.5	31.5	30.0	28.5	29.0	25.0	24.5	25.0
26	27.0	26.0	26.5	31.5	31.0	31.0	30.0	28.5	29.0	26.0	24.0	25.0
27	27.5	26.0	26.5	31.5	30.5	31.0	30.0	28.5	29.0	26.0	24.5	25.5
28	27.5	26.5	27.0	32.0	30.5	31.0	30.5	28.5	29.5	27.0	25.5	26.0
29	28.0	26.5	27.0	32.0	31.0	31.5	30.5	29.0	29.5	27.5	26.0	26.5
30	28.5	27.0	27.5	31.5	30.5	31.0	30.5	29.0	30.0	28.0	26.5	27.0
31	---	---	---	31.5	30.0	30.5	31.0	29.5	30.0	---	---	---
MONTH	29.0	23.0	25.5	32.5	23.5	30.0	31.5	24.0	29.5	31.0	24.0	28.0
YEAR	32.5	7.0	20.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	4.9	4.4	4.6	6.7	6.3	6.4	---	---	---	9.4	6.4	8.8
2	4.7	4.2	4.4	7.1	6.7	7.0	---	---	---	9.4	8.2	8.8
3	4.7	3.8	4.2	7.0	6.8	6.9	---	---	---	9.3	7.9	8.6
4	4.8	3.8	4.4	6.9	6.5	6.7	---	---	---	9.2	7.8	8.3
5	4.6	4.1	4.4	6.9	6.1	6.5	---	---	---	8.9	7.9	8.3
6	4.3	3.9	4.2	6.2	5.4	5.8	---	---	---	8.5	7.8	8.1
7	4.5	3.7	4.1	7.1	5.4	6.5	9.6	9.5	9.6	8.8	7.9	8.3
8	4.3	3.7	4.0	6.2	5.8	6.0	9.7	9.5	9.6	9.8	8.5	8.9
9	5.1	4.2	4.6	6.8	5.8	6.1	9.6	9.3	9.5	9.6	8.8	9.1
10	5.2	4.5	4.8	6.9	6.0	6.3	9.4	9.0	9.3	9.3	8.7	9.0
11	5.3	4.6	4.9	6.6	6.2	6.4	9.1	8.9	9.0	---	---	---
12	5.3	4.6	4.9	6.7	6.4	6.6	9.1	8.8	8.9	---	---	---
13	---	---	---	6.6	6.2	6.4	9.1	8.9	9.0	---	---	---
14	---	---	---	6.5	6.1	6.3	8.9	8.5	8.7	10.0	9.4	9.8
15	---	---	---	6.4	6.1	6.2	8.8	8.2	8.4	9.8	8.9	9.4
16	---	---	---	6.1	5.8	5.9	9.7	8.7	9.1	9.8	9.2	9.5
17	7.2	6.6	6.9	5.8	5.5	5.6	10.2	9.7	9.9	10.0	9.3	9.7
18	7.3	6.6	6.9	5.8	5.4	5.6	10.6	10.2	10.4	10.2	9.4	9.8
19	---	---	---	5.5	5.0	5.2	10.9	10.4	10.7	10.0	9.4	9.7
20	6.9	5.3	6.3	5.2	5.0	5.1	11.0	10.8	10.9	9.6	8.9	9.3
21	---	---	---	5.2	4.9	5.0	11.0	10.5	10.7	9.2	8.1	8.5
22	---	---	---	5.3	5.0	5.2	10.5	9.7	10.1	8.6	7.9	8.2
23	---	---	---	5.4	4.7	5.0	9.7	9.3	9.4	8.1	7.0	7.7
24	---	---	---	6.3	4.7	5.4	9.6	9.1	9.4	7.6	6.3	7.1
25	---	---	---	---	---	---	9.9	9.1	9.5	8.2	7.3	7.7
26	---	---	---	---	---	---	9.8	9.3	9.6	8.3	7.5	7.8
27	---	---	---	---	---	---	9.9	9.1	9.5	7.9	7.1	7.4
28	---	---	---	---	---	---	9.8	9.2	9.5	8.7	7.5	8.0
29	---	---	---	---	---	---	9.6	8.8	9.3	9.1	8.1	8.5
30	---	---	---	---	---	---	9.5	8.8	9.2	8.8	8.0	8.4
31	---	---	---	---	---	---	9.3	8.7	9.0	9.3	8.0	8.6
MONTH	7.3	3.7	4.9	7.1	4.7	6.0	11.0	8.2	9.5	10.2	6.3	8.6

TRINITY RIVER MAIN STEM

08057055 TRINITY RIVER AT CEDAR CREST BOULEVARD, DALLAS, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.8	6.7	8.0	9.0	8.8	8.9	9.8	9.4	9.6	7.3	7.1	7.2
2	8.6	6.2	7.6	9.1	8.8	9.0	9.4	9.2	9.3	7.1	6.9	7.1
3	8.1	6.0	7.1	9.4	8.9	9.1	---	---	---	7.3	6.9	7.1
4	8.6	5.9	7.2	9.1	8.9	9.0	---	---	---	7.4	7.1	7.2
5	8.3	6.0	7.2	9.2	9.0	9.1	---	---	---	7.3	7.0	7.2
6	8.1	5.6	7.1	9.4	9.1	9.2	---	---	---	7.1	7.0	7.1
7	8.7	8.0	8.3	9.3	9.2	9.3	---	---	---	---	---	---
8	8.9	8.4	8.6	9.4	9.1	9.3	9.5	9.2	9.4	---	---	---
9	9.4	8.9	9.1	9.2	8.9	9.0	9.4	9.2	9.3	---	---	---
10	9.6	9.3	9.4	9.0	8.9	8.9	9.3	8.9	9.2	---	---	---
11	9.5	9.2	9.4	9.1	8.8	9.0	9.1	8.4	8.8	---	---	---
12	9.3	8.9	9.1	9.1	8.8	8.9	9.0	8.3	8.6	---	---	---
13	8.9	8.7	8.8	8.9	8.4	8.6	9.8	9.0	9.4	8.4	8.2	8.3
14	8.9	8.7	8.8	9.3	8.7	9.0	10.4	9.4	9.6	8.3	8.1	8.2
15	9.6	8.7	9.2	9.7	9.3	9.5	10.2	9.3	9.8	8.1	7.5	7.9
16	9.8	9.6	9.7	9.9	9.5	9.7	10.0	9.8	9.9	7.6	7.2	7.3
17	9.8	9.6	9.7	10.0	9.5	9.9	10.0	9.7	9.9	7.7	7.6	7.6
18	9.8	9.6	9.7	10.1	9.6	9.9	9.9	9.6	9.7	7.6	7.5	7.6
19	9.7	8.1	9.2	10.1	9.7	9.9	9.8	9.6	9.7	7.5	6.8	7.3
20	8.1	6.9	7.4	9.9	9.2	9.8	9.6	8.9	9.4	7.3	6.3	6.6
21	7.3	6.9	7.2	9.9	9.3	9.6	9.2	7.6	8.4	6.5	6.1	6.3
22	7.6	7.2	7.3	9.5	9.2	9.4	8.3	7.6	8.0	7.4	6.5	6.8
23	8.3	7.6	7.9	9.5	9.3	9.4	8.1	7.9	8.0	7.4	7.0	7.2
24	8.9	8.3	8.7	9.4	9.1	9.3	7.9	7.7	7.8	7.2	6.9	7.0
25	9.1	8.9	9.0	9.3	8.6	8.9	8.1	7.6	7.8	7.1	6.9	7.0
26	9.1	8.6	8.9	8.7	8.4	8.6	7.7	7.0	7.2	7.4	6.9	7.1
27	8.8	8.3	8.6	9.2	8.7	9.0	7.1	7.0	7.1	7.4	6.9	7.2
28	8.9	8.5	8.7	9.3	9.1	9.2	7.3	7.0	7.2	7.7	7.0	7.3
29	---	---	---	9.5	9.2	9.3	7.5	7.3	7.4	7.6	6.8	7.1
30	---	---	---	9.7	9.2	9.4	7.4	7.1	7.3	6.8	5.6	5.9
31	---	---	---	9.8	9.6	9.7	---	---	---	5.8	5.0	5.3
MONTH	9.8	5.6	8.5	10.1	8.4	9.3	10.4	7.0	8.6	8.4	5.0	7.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.4	5.8	7.0	9.6	8.0	8.5	---	---	e6.2	---	---	---
2	7.4	7.1	7.2	8.5	6.9	7.6	---	---	e6.1	---	---	e6.8
3	7.2	7.0	7.1	8.7	7.2	7.7	---	---	---	---	---	e6.2
4	7.3	7.0	7.1	8.0	6.8	7.4	---	---	---	---	---	---
5	7.3	7.0	7.2	---	---	e6.4	---	---	e7.4	---	---	---
6	7.1	6.8	7.0	---	---	---	7.3	5.9	6.3	---	---	---
7	6.8	6.6	6.8	---	---	---	---	---	---	4.5	3.7	4.1
8	6.8	6.5	6.7	---	---	---	---	---	---	4.9	4.1	4.4
9	6.6	5.7	6.5	---	---	---	---	---	---	5.0	3.6	4.2
10	6.7	5.6	6.4	---	---	---	---	---	---	4.6	3.6	3.9
11	6.5	5.9	6.2	---	---	---	---	---	---	---	---	e3.9
12	6.5	6.2	6.3	---	---	---	---	---	---	---	---	e4.0
13	6.2	4.6	5.0	---	---	---	---	---	---	---	---	e3.9
14	4.9	3.8	4.1	---	---	e6.4	---	---	---	---	---	---
15	4.0	2.9	3.6	---	---	e6.3	---	---	---	---	---	---
16	3.6	2.4	3.0	---	---	---	---	---	---	---	---	---
17	3.9	3.1	3.5	---	---	---	---	---	---	---	---	---
18	3.5	3.1	3.2	---	---	---	---	---	e4.0	---	---	---
19	4.4	3.5	4.0	---	---	---	---	---	---	---	---	---
20	5.4	4.4	4.9	---	---	---	---	---	---	---	---	---
21	6.4	5.0	5.6	---	---	---	---	---	---	---	---	---
22	7.5	6.4	6.9	---	---	---	---	---	---	---	---	e3.7
23	7.3	5.6	6.5	---	---	---	---	---	---	---	---	---
24	6.0	5.7	5.8	---	---	---	---	---	---	---	---	---
25	6.0	5.4	5.7	---	---	---	---	---	---	---	---	---
26	5.5	5.0	5.3	---	---	---	---	---	e7.6	---	---	---
27	6.9	4.9	5.5	---	---	---	7.4	5.6	6.4	---	---	---
28	---	---	---	---	---	e6.4	---	---	---	---	---	---
29	---	---	---	7.4	5.7	6.4	---	---	---	---	---	---
30	---	---	---	7.4	5.7	6.4	---	---	---	---	---	---
31	---	---	---	7.1	5.6	6.3	---	---	---	---	---	---
MONTH	7.5	2.4	5.7	9.6	5.6	6.9	7.4	5.6	6.3	5.0	3.6	4.5
YEAR	11.0	2.4	7.5									

e Estimated

TRINITY RIVER BASIN

411

08057200 WHITE ROCK CREEK AT GREENVILLE AVENUE, DALLAS, TX

LOCATION.--Lat 32°53'21", long 96°45'23", Dallas County, Hydrologic Unit 12030105, on left bank 20 ft upstream from bridge on Greenville Avenue in Dallas, 1.1 mi downstream from Texas and New Orleans Railroad Co. bridge, 1.2 mi downstream from Cottonwood Creek, 2.9 mi upstream from White Rock Lake, and 8.2 mi northeast of Dallas County Courthouse.

DRAINAGE AREA.--66.4 mi².

PERIOD OF RECORD.--August 1961 to September 1980, April 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level. Prior to Oct. 24, 1961, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. No known regulation. Low flow is affected by diversions from small dams upstream from station. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges above base discharge of 2,900 ft³/s:

Date	Time	Discharge (ft ³ /s)	Elevation (ft)	Date	Time	Discharge (ft ³ /s)	Elevation (ft)
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No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	151	103	45	30	87	77	109	86	27	11	12
2	12	63	89	44	30	348	79	104	80	21	11	12
3	12	48	83	43	29	148	116	97	75	19	12	27
4	11	45	82	44	30	101	1220	94	77	30	9.9	39
5	12	43	78	43	31	122	318	91	79	66	10	19
6	11	52	71	44	202	88	145	89	71	64	8.7	15
7	14	635	67	43	103	85	123	88	68	43	546	14
8	14	76	65	80	56	87	112	87	79	30	57	15
9	14	62	63	56	50	88	106	234	142	35	35	13
10	14	55	62	47	48	84	101	113	164	28	38	12
11	14	52	60	44	46	75	369	96	87	22	27	11
12	13	51	59	42	981	151	139	90	75	19	24	11
13	13	49	56	40	501	299	113	86	107	16	21	11
14	13	49	52	40	93	103	107	84	113	14	21	12
15	12	57	148	40	78	91	102	139	272	27	17	11
16	14	57	67	40	69	87	99	96	125	37	15	11
17	14	130	59	37	65	86	96	84	337	21	14	12
18	12	66	55	36	62	84	94	80	98	17	13	11
19	12	64	51	36	573	81	93	429	87	14	12	12
20	12	62	49	35	435	80	112	424	78	13	14	13
21	216	56	50	35	162	79	140	225	71	12	14	12
22	86	55	50	37	95	75	255	130	210	11	15	13
23	30	60	52	47	85	74	117	112	115	11	14	32
24	24	829	49	38	107	75	102	149	63	11	16	23
25	27	174	49	35	132	200	516	107	50	10	14	20
26	26	106	48	34	252	93	397	98	159	9.8	12	18
27	439	92	46	33	108	83	190	91	66	11	12	17
28	833	83	46	32	93	80	152	88	46	11	12	17
29	99	388	46	32	---	76	135	84	37	10	13	16
30	70	204	45	31	---	97	120	162	32	10	12	17
31	66	---	44	30	---	82	---	99	---	10	11	---
MEAN	70.1	130	62.7	40.7	162	109	195	131	105	21.9	34.2	15.9
MAX	833	829	148	80	981	348	1220	429	337	66	546	39
MIN	11	43	44	30	29	74	77	80	32	9.8	8.7	11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997h, BY WATER YEAR (WY)

	MEAN	85.2	59.2	76.1	43.5	83.2	105	126	156	86.8	38.5	26.1	59.6
MAX	450	362	627	131	330	480	690	460	800	252	108	624	
(WY)	1995	1995	1992	1992	1990	1995	1966	1990	1989	1962	1994	1964	
MIN	.83	2.96	4.35	5.85	6.19	12.0	16.6	15.8	7.25	.78	1.26	.92	
(WY)	1964	1964	1964	1976	1967	1971	1971	1972	1980	1964	1963	1963	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1961 - 1997h

ANNUAL MEAN	43.5	89.0	79.7
HIGHEST ANNUAL MEAN			196
LOWEST ANNUAL MEAN			20.8
HIGHEST DAILY MEAN	833	Oct 28	14700
LOWEST DAILY MEAN	6.1	Jul 8	.01
ANNUAL SEVEN-DAY MINIMUM	6.7	May 21	.21
INSTANTANEOUS PEAK FLOW			39200
INSTANTANEOUS PEAK STAGE			490.59
10 PERCENT EXCEEDS	77	80.75	109
50 PERCENT EXCEEDS	21	57	19
90 PERCENT EXCEEDS	10	12	3.8

h See PERIOD OF RECORD paragraph.

08057200 WHITE ROCK CREEK AT GREENVILLE AVENUE, DALLAS TX--Continued
(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1997 to September 1997. Pesticide analyses: May 1997 to September 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
MAY 14...	1100	84	240	92	2.7	21	0.6	3.0	68	28	0.47	3.5
JUN 13...	0730	94	200	78	2.5	19	0.6	3.4	55	26	0.43	6.0
26...	0730	43	--	--	--	--	--	--	--	--	--	--
JUL 10...	0730	27	150	59	1.7	12	0.4	3.1	34	17	0.31	5.4
30...	0900	11	--	--	--	--	--	--	--	--	--	--
AUG 13...	0715	21	200	76	2.4	18	0.6	3.7	49	23	0.44	7.6
29...	0710	13	--	--	--	--	--	--	--	--	--	--
SEP 11...	0720	11	200	75	2.9	25	0.8	5.1	54	32	0.60	7.3

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)
MAY 14...	360	334	1.23	0.037	1.27	<0.015	1.7	0.43	--	0.56	0.43	0.191
JUN 13...	307	284	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 10...	258	208	0.955	0.030	0.985	0.038	1.7	0.70	0.38	0.42	0.74	0.105
30...	--	--	--	--	--	--	--	--	--	--	--	--
AUG 13...	293	270	1.32	0.033	1.35	0.031	1.8	0.46	0.33	0.36	0.49	0.141
29...	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	310	302	2.31	0.064	2.37	0.106	3.0	0.56	0.42	0.53	0.67	0.365

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	2, 6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L)	ACETO- CHLOR, WATER, FLT RD REC (UG/L)	ALA- CHLOR, WATER, DISS, REC, (UG/L)	ATRA- ZINE, WATER, DISS, REC (UG/L)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (UG/L)
MAY 14...	0.095	0.077	0.24	<15	7.5	<0.003	0.010	0.063	0.631	<0.001	<0.002
JUN 13...	--	--	--	<3.0	7.4	<0.003	<0.007	0.020	0.542	<0.001	<0.002
26...	--	--	--	--	--	<0.003	<0.002	0.015	0.417	<0.001	<0.002
JUL 10...	0.012	0.037	0.11	<3.0	7.5	<0.003	<0.002	0.010	0.225	<0.001	<0.002
30...	--	--	--	--	--	<0.003	<0.002	0.008	0.697	<0.001	<0.002
AUG 13...	0.090	0.067	0.21	5.7	1.0	<0.003	<0.002	0.006	0.378	<0.001	<0.002
29...	--	--	--	--	--	<0.003	<0.002	<0.002	0.640	<0.001	<0.002
SEP 11...	0.352	0.310	0.95	<3.0	19	--	--	--	--	--	--

[illegible]

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WATER-QUALITY DATA. WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	EPTC WATER FLTRD 0.7 U	ETHAL- FLUR- ALIN WAT FLT 0.7 U	ETHO- PROP WATER FLTRD 0.7 U	FONOFOS WATER DISS REC	LINDANE DIS- SOLVED	LIN- URON WATER FLTRD 0.7 U	MALA- THION, DIS- SOLVED	METO- LACHLOR WATER DISSOLV	METRI- BUZIN SENCOR WATER DISSOLV	MOL- INATE WATER FLTRD 0.7 U	NAPROP- AMIDE WATER FLTRD 0.7 U
	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	(UG/L)	(UG/L)	GF, REC (UG/L)	(UG/L)	(UG/L)	(UG/L)	GF, REC (UG/L)	GF, REC (UG/L)
MAY 14...	0.008	<0.004	<0.003	<0.003	0.008	<0.002	0.005	0.399	<0.004	<0.004	<0.003
JUN 13...	<0.002	<0.004	0.005	<0.003	<0.004	<0.002	E0.003	0.259	<0.004	<0.004	<0.003
26...	E0.003	<0.004	<0.003	<0.003	<0.004	<0.002	<0.005	0.193	<0.004	<0.004	<0.003
JUL 10...	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002	0.076	0.051	<0.004	<0.004	<0.003
30...	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002	<0.005	0.086	<0.004	<0.004	<0.003
AUG 13...	<0.002	<0.004	<0.003	0.010	<0.004	<0.002	<0.005	0.044	<0.004	<0.004	<0.003
29...	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002	<0.005	0.054	<0.004	<0.004	<0.003
SEP 11...	--	--	--	--	--	--	--	--	--	--	--
DATE	PARA- THION, DIS- SOLVED	METHYL PARA- THION WAT FLT 0.7 U	PEB- ULATE WATER FLTRD 0.7 U	PENDI- METH- ALIN WAT FLT 0.7 U	PHORATE WATER FLTRD 0.7 U	PRO- METON, WATER, DISS, REC	PROP- CHLOR, WATER, DISS, REC	PRO- PANIL WATER FLTRD 0.7 U	PRO- PARGITE WATER FLTRD 0.7 U	PRON- AMIDE WATER FLTRD 0.7 U	SI- MAZINE, WATER, DISS, REC
	(UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	(UG/L)	(UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	(UG/L)
MAY 14...	<0.004	<0.006	<0.004	0.024	<0.002	0.042	<0.007	<0.004	<0.013	0.006	0.148
JUN 13...	<0.004	<0.006	<0.004	0.010	<0.002	0.043	<0.007	<0.004	<0.013	<0.003	0.078
26...	<0.004	<0.006	<0.004	0.009	<0.002	0.072	<0.007	<0.004	<0.013	<0.003	0.055
JUL 10...	<0.004	<0.006	<0.004	0.015	<0.002	0.069	<0.007	<0.004	<0.013	<0.003	0.042
30...	<0.004	<0.006	<0.004	<0.004	<0.002	0.031	<0.007	<0.004	<0.013	<0.003	0.047
AUG 13...	<0.004	<0.006	<0.004	<0.004	<0.002	0.025	<0.007	<0.004	<0.013	<0.003	0.041
29...	<0.004	<0.006	<0.004	<0.004	<0.002	0.023	<0.007	<0.004	<0.013	<0.003	0.040
SEP 11...	--	--	--	--	--	--	--	--	--	--	--
DATE	TEBU- THIURON WATER FLTRD 0.7 U	TER- BACIL WATER FLTRD 0.7 U	TER- BUFOS WATER FLTRD 0.7 U	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U	THIO- BENCARB WATER FLTRD 0.7 U	TRIAL- LATE WATER FLTRD 0.7 U	TRI- FLUR- ALIN WAT FLT 0.7 U	ALPHA BHC DIS- SOLVED	HCH ALPHA D6 SRG WAT FLT 0.7 U	PER- METHRIN CIS WAT FLT 0.7 U	P,P' DDE DTSSOLV (UG/L)
	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC PERCENT	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC (UG/L)	GF, REC PERCENT	GF, REC (UG/L)	
MAY 14...	0.024	<0.007	<0.013	100	<0.002	<0.001	<0.002	<0.002	115	<0.005	<0.006
JUN 13...	E0.009	<0.007	<0.013	118	<0.002	<0.001	<0.002	<0.002	102	<0.005	<0.006
26...	0.016	<0.007	<0.013	122	<0.002	<0.001	<0.002	<0.002	98.1	<0.005	E0.003
JUL 10...	<0.010	<0.007	<0.013	115	<0.002	<0.001	<0.002	<0.002	105	<0.005	<0.006
30...	<0.010	<0.007	<0.013	142	<0.002	<0.001	<0.002	<0.002	97.1	<0.005	0.006
AUG 13...	<0.010	<0.007	<0.013	129	<0.002	<0.001	<0.002	<0.002	110	<0.005	<0.006
29...	<0.010	<0.007	<0.013	107	<0.002	<0.001	<0.002	<0.002	97.1	<0.005	<0.006
SEP 11...	--	--	--	--	--	--	--	--	--	--	--

08057410 TRINITY RIVER BELOW DALLAS, TX

LOCATION.--Lat 32°42'26", long 96°44'08", Dallas County, Hydrologic Unit 12030105, on right bank at downstream side of bridge on South Loop Highway 12, 1.0 mi downstream from White Rock Creek, 1.5 mi upstream from Fivemile Creek, 6.4 mi southeast of Dallas County Courthouse in Dallas, and at mile 491.8.

DRAINAGE AREA.--6,278 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1956 to current year.

REVISED RECORDS.--WDR TX-94-1: 1989.

GAGE.--Water-stage recorder. Datum of gage is 365.89 ft above sea level.

REMARKS.--Records good. Since installation of gage in November 1956, at least 10% of contributing drainage area has been regulated by eight upstream reservoirs with a combined capacity of 1,714,400 acre-ft, of which 846,200 acre-ft is for flood control. Several cities within the Dallas-Fort Worth metroplex divert water for municipal use and return it to the river as wastewater effluents above this station. Low flows are sustained by wastewater effluents. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 25, 1908, reached a stage of 41.1 ft, from information by U.S. Army Corps of Engineers, and is the highest since that date. Floods in 1866 and 1908 reached about the same stage at Dallas.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	541	1310	9950	1150	850	12200	5340	7330	7020	1640	709	551
2	506	1720	6310	1110	821	11800	5250	7650	7150	1150	673	608
3	505	1400	5190	1110	825	14000	5090	7470	7130	957	704	703
4	528	1040	5200	1110	846	15200	9260	6600	6460	838	597	2610
5	556	989	5660	1090	837	13900	20900	5970	5440	2700	641	1400
6	560	895	5760	1090	1180	13400	20500	5280	4820	3700	767	777
7	576	5540	5460	1160	4220	13400	15500	4820	3780	3460	2940	689
8	566	10500	5010	e1600	3700	13300	12800	4660	3160	2680	5950	750
9	573	4530	4690	e1750	3490	13300	11700	5370	2730	2380	2320	696
10	577	1730	4110	1130	3350	13600	10800	8720	3250	2440	1180	669
11	539	1430	3710	1010	2870	13400	10700	8130	3980	1960	1070	588
12	489	1340	3530	952	5570	12700	13500	7070	3180	1480	949	555
13	482	1250	3200	914	19500	14300	12900	6950	2990	1050	929	606
14	496	1220	2520	914	21700	14500	9920	7360	3100	943	1010	806
15	513	1420	3060	919	14700	12400	8570	7870	2890	925	975	662
16	512	1540	3480	923	10500	11200	8290	9030	3070	985	862	644
17	527	2020	2200	907	8470	11100	7600	8940	6340	987	921	750
18	516	2240	1930	886	7800	11500	5970	7850	9090	946	871	622
19	480	1340	1830	900	8300	11600	5570	7200	6400	933	834	595
20	477	1220	1720	862	16100	11600	5190	10900	5080	859	819	581
21	2200	1210	1650	861	22600	11100	5950	12600	3850	834	817	565
22	5170	1190	1470	853	21100	10100	6680	7540	3810	797	767	639
23	2800	1210	1390	873	17500	8810	6070	5510	6820	782	692	650
24	1090	8380	1310	903	15500	7780	5130	5230	5460	725	669	653
25	828	17100	1230	824	15300	7210	5440	5380	3240	873	703	580
26	751	16400	1190	808	16100	8200	10800	5020	3170	813	704	592
27	1240	12300	1190	802	16400	6660	13900	4870	3860	825	654	754
28	13200	8090	1190	805	14200	5830	9440	4810	2680	825	601	671
29	18500	7190	1180	801	---	5910	6580	4750	2310	748	623	681
30	9370	11300	1150	829	---	5720	6650	4720	1990	737	620	602
31	2970	---	1170	828	---	5520	---	5990	---	705	581	---
TOTAL	68638	129044	98640	30674	274329	341240	281990	211590	134250	41677	33152	22249
MEAN	2214	4301	3182	989	9797	11010	9400	6825	4475	1344	1069	742
MAX	18500	17100	9950	1750	22600	15200	20900	12600	9090	3700	5950	2610
MIN	477	895	1150	801	821	5520	5090	4660	1990	705	581	551
AC-FT	136100	256000	195700	60840	544100	676800	559300	419700	266300	82670	65760	44130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1997#, BY WATER YEAR (WY)

MEAN	1725	2000	1990	1611	2198	2714	2850	5054	3875	1746	1080	1085
MAX	10220	14350	14010	15370	11750	11010	10010	29980	17720	9145	5963	7521
(WY)	1982	1982	1992	1992	1992	1997	1990	1990	1989	1989	1982	1962
MIN	268	231	228	178	265	316	373	432	317	330	228	259
(WY)	1964	1957	1957	1957	1957	1959	1959	1961	1960	1964	1959	1959

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1957 - 1997#
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ANNUAL TOTAL	552033		1667473						
ANNUAL MEAN	1508		4568			2328			
HIGHEST ANNUAL MEAN						7319		1982	
LOWEST ANNUAL MEAN						383		1959	
HIGHEST DAILY MEAN	18500	Oct 29	22600	Feb 21		79200	May	4	1990
LOWEST DAILY MEAN	428	Mar 10	477	Oct 20		131	Dec	9	1956
ANNUAL SEVEN-DAY MINIMUM	440	Mar 10	503	Oct 14		147	Dec	7	1956
INSTANTANEOUS PEAK FLOW			23600	Feb 14		87000	May	4	1990
INSTANTANEOUS PEAK STAGE			27.53	Feb 14		34.79	May	4	1990
ANNUAL RUNOFF (AC-FT)	1095000		3307000			1687000			
10 PERCENT EXCEEDS	2980		12500			6430			
50 PERCENT EXCEEDS			2380			721			
90 PERCENT EXCEEDS	534		623			350			

e Estimated
Period of regulated streamflow.

TRINITY RIVER MAIN STEM

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08057410 TRINITY RIVER BELOW DALLAS, TX--Continued
(National water-quality assessment program)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1967 to current year. Pesticide analyses: October 1970 to July 1981, October 1994 to current year. Sediment analyses: April 1972 to April 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1992, April 1993 to current year.

pH: January 1977 to September 1992, April 1993 to current year.

WATER TEMPERATURE: October 1967 to September 1992, April 1993 to current year.

DISSOLVED OXYGEN: January 1977 to September 1992, April 1993 to current year.

INSTRUMENTATION.--A four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument and pump, plugged intake, and pump failures. 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 with the exception of the 1993 water year. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. National water-quality assessment program data are included in this report.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,130 microsiemens Dec. 17, 1977; minimum, 112 microsiemens Oct. 20, 1984.

pH: Maximum, 8.8 units Jan. 23, 1980; minimum, 6.5 units Jan. 1, 2, 4, and 5, 1997.

WATER TEMPERATURES: Maximum, 35.0°C Aug. 20, 25, 28, 31, 1972; minimum, 1.0°C Jan. 29, 1968.

DISSOLVED OXYGEN: Maximum, 12.8 mg/L Mar. 19, 1990; minimum, 0.0 mg/L on many days during spring and summer of 1977- 1981.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 825 microsiemens Jan. 31; minimum, 169 microsiemens Oct. 28.

pH: Maximum, 8.1 units May 7 and 8; minimum, 6.5 units Jan. 1, 2, 4, and 5.

WATER TEMPERATURE: Maximum, 33.0°C July 24; 7.5°C Feb. 14.

DISSOLVED OXYGEN: Maximum, 11.2 mg/L Jan. 18; minimum, 4.1 mg/L Aug. 21.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)
NOV 21...	1059	1190	589	7.6	19.5	7.3	80	2.6	170	50	57
MAR 17...	1354	11100	368	7.4	13.0	10.8	104	2.1	130	11	45
APR 21...	1220	5870	439	8.0	18.0	9.3	100	2.1	140	33	49
MAY 14...	0920	7230	443	8.1	20.0	8.7	97	--	150	11	49
JUN 09...	1045	2740	458	7.7	24.0	7.0	84	--	150	20	50
JUN 24...	1154	5510	364	7.1	26.0	6.8	84	3.5	120	29	43
JUL 07...	0915	3390	400	7.3	25.5	5.8	72	--	130	33	46
JUL 29...	1146	733	702	7.5	31.0	6.8	93	0.9	160	49	52
AUG 14...	0925	999	590	7.2	29.5	5.7	76	--	160	41	56
SEP 02...	1341	624	779	7.3	30.0	6.5	87	3.7	170	62	57
SEP 10...	0905	608	705	7.3	28.5	6.0	79	--	170	50	56
DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
NOV 21...	6.3	51	2	8.8	120	74	48	0.80	7.3	--	352
MAR 17...	4.5	22	0.8	4.7	120	42	18	0.30	6.5	--	222
APR 21...	5.0	26	1	5.9	110	50	26	0.33	5.1	--	244
MAY 14...	5.9	24	0.9	4.6	140	34	23	0.35	4.2	253	232
JUN 09...	5.8	31	1	5.3	130	46	30	0.41	4.8	277	262
JUN 24...	4.1	19	0.8	4.9	95	39	19	0.35	5.9	--	199
JUL 07...	4.8	27	1	5.2	100	42	25	0.42	6.6	256	231
JUL 29...	6.5	71	2	10	110	78	70	1.0	8.9	--	401
AUG 14...	5.5	53	2	8.9	120	69	50	0.92	8.0	355	351
SEP 02...	7.1	83	3	13	110	82	79	1.4	8.1	--	451
SEP 10...	6.3	71	2	11	120	79	68	1.3	9.0	427	399

TRINITY RIVER MAIN STEM

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
NOV 21...	5.56	0.040	5.60	0.020	--	--	0.68	0.70	--	--	1.10
MAR 17...	1.37	0.030	1.40	0.070	--	--	0.43	0.50	--	--	0.110
APR 21...	2.22	0.015	2.23	0.072	--	--	0.47	0.54	--	--	0.227
MAY 14...	1.13	0.018	1.15	0.033	2.0	0.79	0.30	0.33	0.82	0.308	0.188
JUN 09...	2.30	0.015	2.32	0.045	3.0	0.59	0.34	0.39	0.64	0.446	0.361
JUN 24...	1.35	0.023	1.37	0.092	--	--	0.59	0.68	--	--	0.186
JUL 07...	2.68	0.025	2.71	0.079	3.2	0.44	0.52	0.60	0.51	0.411	0.399
JUL 29...	7.08	0.083	7.16	0.476	--	--	1.0	1.5	--	--	1.70
AUG 14...	7.05	0.030	7.08	0.041	8.2	1.1	0.63	0.67	1.1	1.34	1.22
SEP 02...	11.2	0.056	11.3	0.103	--	--	1.3	1.4	--	--	1.86
SEP 10...	5.55	0.037	5.59	0.233	7.0	1.2	0.82	1.1	1.4	1.73	1.67
DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L)	ACETO- CHLOR, WATER FLTRD REC (UG/L)	ALA- CHLOR, WATER, DISS, REC, (UG/L)	ATRA- ZINE, WATER, DISS, REC (UG/L)	METHYL AZIN- PHOS WAT FLT 0.7 U GF, REC (UG/L)	BEN- FLUR- ALIN WAT FLD GF, REC (UG/L)	BUTYL- ATE, WATER, DISS, REC (UG/L)
NOV 21...	1.10	3.4	--	--	--	--	--	--	--	--	--
MAR 17...	0.140	0.43	--	--	--	--	--	--	--	--	--
APR 21...	0.243	0.75	--	--	--	--	--	--	--	--	--
MAY 14...	0.178	0.55	17	2.6	<0.003	0.008	0.033	0.653	<0.001	<0.002	<0.002
JUN 09...	0.341	1.0	<3.0	5.6	<0.003	<0.002	0.027	0.814	<0.001	<0.002	<0.002
JUN 24...	0.198	0.61	--	--	--	--	--	--	--	--	--
JUL 07...	0.339	1.0	4.6	2.3	<0.003	<0.002	<0.002	0.284	<0.001	<0.002	<0.002
JUL 29...	1.43	4.4	--	--	--	--	--	--	--	--	--
AUG 14...	1.12	3.4	21	4.8	<0.003	<0.002	<0.002	0.394	<0.001	<0.002	<0.002
SEP 02...	1.72	5.3	--	--	--	--	--	--	--	--	--
SEP 10...	1.39	4.3	25	10	<0.003	<0.002	<0.002	0.477	<0.001	<0.002	<0.002
DATE	CAR- BARYL WATER FLTRD 0.7 U GF, REC (UG/L)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (UG/L)	CHLOR- PYRIFOS DIS- SOLVED (UG/L)	CYANA- ZINE, WATER, DISS, REC (UG/L)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L)	DI- AZINON, DIS- SOLVED (UG/L)	DIAZ- INON D10 SRG WAT FLT 0.7 U GF, REC PERCENT	DI- ELDRIN DIS- SOLVED (UG/L)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (UG/L)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L)
NOV 21...	--	--	--	--	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	<0.015	<0.003	<0.004	0.010	<0.002	E0.043	0.023	103	<0.001	<0.017	<0.002
JUN 09...	E0.014	<0.003	<0.004	<0.004	<0.002	E0.046	0.035	108	<0.001	<0.017	<0.002
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 07...	E0.183	<0.003	0.007	<0.004	E0.001	E0.014	0.162	116	<0.001	<0.017	<0.002
JUL 29...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	<0.040	<0.003	0.011	<0.004	E0.002	E0.061	0.083	150	<0.001	<0.017	<0.002
SEP 02...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	<0.003	<0.003	<0.004	<0.004	<0.002	E0.066	0.041	99.1	<0.001	<0.017	<0.002

TRINITY RIVER MAIN STEM

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08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ETHAL- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (UG/L)	FONOFOS WATER DISS REC (UG/L)	LINDANE DIS- SOLVED (UG/L)	LIN- URON WATER FLTRD 0.7 U GF, REC (UG/L)	MALA- THION, DIS- SOLVED (UG/L)	METO- LACHLOR WATER DISSOLV (UG/L)	METRI- BUZIN SENCOR WATER DISSOLV (UG/L)	MOL- INATE WATER FLTRD 0.7 U GF, REC (UG/L)	NAPROP- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	PARA- THION, DIS- SOLVED (UG/L)
NOV 21...	--	--	--	--	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	<0.004	<0.003	<0.003	<0.004	<0.002	<0.005	0.296	<0.004	<0.004	<0.003	<0.004
JUN 09...	<0.004	<0.003	<0.003	<0.004	<0.002	<0.005	0.354	<0.004	<0.004	<0.003	<0.004
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 07...	<0.004	<0.003	<0.003	<0.004	<0.002	0.018	0.153	<0.004	<0.004	<0.003	<0.004
JUL 29...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	<0.004	<0.003	<0.003	0.030	<0.002	0.023	0.067	<0.004	<0.004	<0.003	<0.004
SEP 02...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	<0.004	<0.003	<0.003	<0.030	<0.002	<0.005	0.047	<0.004	<0.004	<0.003	<0.004

DATE	METHYL PARA- THION WAT FLT 0.7 U GF, REC (UG/L)	PEB- ULATE WATER FILTRD 0.7 U GF, REC (UG/L)	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L)	PRO- METON, WATER, DISS, REC (UG/L)	PROP- CHLOR, WATER, DISS, REC (UG/L)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L)	SI- MAZINE, WATER, DISS, REC (UG/L)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L)
NOV 21...	--	--	--	--	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	<0.006	<0.004	<0.004	<0.002	E0.009	<0.007	<0.004	<0.013	<0.003	0.088	0.025
JUN 09...	<0.006	<0.004	<0.004	<0.002	E0.018	<0.007	<0.004	<0.013	<0.003	0.104	0.023
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 07...	<0.006	<0.004	<0.004	<0.002	0.029	<0.007	<0.004	<0.013	<0.003	0.043	0.035
JUL 29...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	<0.006	<0.004	<0.004	<0.002	0.031	<0.007	<0.004	<0.013	<0.003	0.045	E0.061
SEP 02...	--	--	--	--	--	--	--	--	--	--	--
SEP 10...	<0.006	<0.004	<0.004	<0.002	E0.013	<0.007	<0.004	<0.013	<0.003	0.057	0.030

DATE	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L)	TERBUTH YLAZINE SURROGT WAT FLT 0.7 U GF, REC PERCENT	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L)	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L)	ALPHA BHC DIS- SOLVED (UG/L)	HCH ALPHA D6 SRG WAT FLT 0.7 U GF, REC PERCENT	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L)	P, P' DDE DISSOLV (UG/L)
NOV 21...	--	--	--	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--
MAY 14...	<0.007	<0.013	97.5	<0.002	<0.001	<0.002	<0.002	114	<0.005	<0.006
JUN 09...	<0.007	<0.013	122	<0.002	<0.001	<0.002	<0.002	120	<0.005	<0.006
JUN 24...	--	--	--	--	--	--	--	--	--	--
JUL 07...	<0.007	<0.013	117	<0.002	<0.001	<0.002	<0.002	117	<0.005	<0.006
JUL 29...	--	--	--	--	--	--	--	--	--	--
AUG 14...	<0.007	<0.013	165	<0.002	<0.001	<0.002	<0.002	113	<0.005	<0.006
SEP 02...	--	--	--	--	--	--	--	--	--	--
SEP 10...	<0.007	<0.013	163	<0.002	<0.001	<0.002	<0.002	94.4	<0.005	<0.006

TRINITY RIVER MAIN STEM
08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	68638	393	221	40890	27	5060	44	8140	130
NOV.	1996	129044	381	215	75060	24	8270	41	14430	130
DEC.	1996	98640	461	258	68740	33	8780	52	13820	150
JAN.	1997	30674	724	394	32610	71	5910	90	7420	160
FEB.	1997	274329	388	220	162800	24	18080	42	31370	130
MAR.	1997	341240	383	217	200000	23	21540	41	38210	130
APR.	1997	281990	391	221	168600	24	18430	42	32350	140
MAY	1997	211590	425	240	137000	28	15930	47	26760	140
JUNE	1997	134250	413	233	84530	27	9660	45	16430	140
JULY	1997	41677	559	309	34820	46	5230	66	7390	160
AUG.	1997	33152	593	326	29200	52	4660	71	6330	160
SEPT	1997	22249	638	350	21020	57	3450	77	4610	160
TOTAL		1667473.00	**	**	1055300	**	125000	**	207300	**
WTD.AVG.		4570	416	234	**	28	**	46	**	140

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	680	648	663	504	458	481	379	345	359	734	696	713
2	683	667	674	505	445	465	411	321	382	735	720	724
3	674	664	669	512	464	490	414	401	406	737	721	731
4	696	663	676	552	502	524	415	395	404	747	730	741
5	724	696	713	581	534	551	396	377	387	748	729	739
6	727	709	717	614	581	602	418	380	400	748	734	740
7	722	696	712	622	263	379	418	408	413	755	732	746
8	714	694	701	309	273	285	420	414	417	749	574	691
9	730	698	713	419	309	357	429	413	419	637	542	602
10	744	709	723	523	419	480	447	425	433	643	626	633
11	742	711	726	490	472	481	453	443	449	658	627	637
12	762	723	744	519	490	508	454	441	448	678	658	669
13	770	740	754	541	502	524	467	444	453	711	677	692
14	780	743	758	547	523	538	495	466	479	721	699	711
15	766	741	753	536	502	516	555	490	513	723	700	712
16	785	757	768	522	504	514	535	436	459	735	708	725
17	770	750	762	519	436	468	530	488	515	747	730	738
18	760	743	752	488	441	464	570	530	553	750	737	743
19	767	748	755	530	461	495	584	560	573	741	733	738
20	782	756	773	579	530	550	577	568	572	740	725	733
21	775	300	573	572	546	553	606	570	584	759	725	737
22	463	349	388	580	539	558	653	604	627	775	742	753
23	444	376	408	594	549	578	665	638	651	783	733	770
24	536	444	497	549	203	334	679	633	652	789	732	755
25	584	536	563	328	277	289	697	679	687	777	757	764
26	627	584	599	375	328	363	688	664	675	805	777	792
27	644	274	586	390	371	379	683	671	676	805	782	793
28	306	169	274	406	390	400	693	679	685	782	749	759
29	296	270	278	407	353	389	701	685	695	789	767	782
30	337	280	302	369	334	343	702	697	700	805	779	786
31	458	337	391	---	---	---	706	694	699	825	799	812
MONTH	785	169	625	622	203	462	706	321	528	825	542	731

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SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	801	779	789	395	381	391	409	392	402	439	421	429
2	795	775	784	381	367	375	398	390	395	429	419	423
3	787	774	778	381	352	368	398	393	395	431	414	418
4	776	763	772	366	352	360	420	321	363	416	413	415
5	766	751	763	372	365	367	355	321	343	424	405	417
6	751	601	717	369	366	368	379	329	346	426	417	421
7	628	475	533	369	361	364	404	379	397	424	417	420
8	513	478	498	363	358	360	416	400	405	427	419	423
9	523	464	494	361	353	359	412	405	408	559	417	453
10	495	482	488	362	353	357	413	408	410	417	351	371
11	495	480	488	358	354	355	413	389	401	433	393	422
12	487	351	412	366	351	356	397	371	386	494	429	461
13	355	316	333	366	356	360	409	391	404	456	438	446
14	386	314	334	365	360	363	413	408	410	449	436	443
15	430	386	413	364	358	360	411	396	404	474	411	442
16	437	424	431	363	358	361	407	399	403	430	400	412
17	424	412	419	406	358	376	406	390	396	432	409	425
18	413	409	411	408	401	405	412	390	398	440	432	437
19	431	380	405	418	404	410	403	391	396	439	431	437
20	380	297	341	418	409	413	417	380	393	431	357	385
21	337	291	316	421	409	413	479	382	425	413	399	404
22	356	337	346	428	419	423	405	379	395	450	413	433
23	382	355	368	429	422	425	410	394	403	449	429	443
24	389	382	388	427	413	420	431	410	424	448	433	441
25	400	388	392	452	413	427	417	342	395	456	436	444
26	399	392	395	468	432	444	401	340	365	438	431	435
27	398	391	395	437	419	432	385	342	363	438	431	435
28	403	391	397	420	413	417	443	385	416	452	428	435
29	---	---	---	419	410	414	453	426	441	438	410	429
30	---	---	---	415	405	411	439	430	435	447	420	428
31	---	---	---	410	402	406	---	---	---	463	377	430
MONTH	801	291	486	468	351	389	479	321	397	559	351	428
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	430	383	424	553	488	515	756	730	744	795	747	771
2	431	426	429	628	553	583	763	728	746	778	738	755
3	428	423	425	676	628	654	752	714	732	765	519	745
4	426	420	422	754	674	712	757	722	742	645	358	462
5	426	418	422	754	276	575	768	747	757	519	359	476
6	451	419	432	416	280	357	783	695	732	620	519	562
7	461	446	454	422	363	396	701	305	517	706	620	655
8	472	456	464	436	385	413	412	348	366	709	643	671
9	474	461	467	492	429	464	468	359	413	684	674	680
10	499	427	447	502	477	492	541	426	482	697	683	692
11	499	380	411	540	498	514	570	502	545	704	690	699
12	431	409	422	567	536	555	627	570	602	744	702	733
13	449	427	441	619	557	589	644	622	634	768	742	756
14	459	369	420	663	605	640	636	614	625	775	665	697
15	465	398	418	678	663	672	628	599	617	700	670	680
16	466	372	413	698	652	676	682	628	662	716	686	706
17	440	286	346	675	648	662	672	651	663	727	627	663
18	368	305	333	690	675	682	676	647	661	689	643	668
19	429	368	406	688	675	682	701	670	689	728	675	701
20	435	426	431	704	676	691	684	671	680	726	700	711
21	453	431	442	701	671	693	713	624	674	716	694	701
22	460	338	418	710	685	698	716	694	702	702	619	660
23	366	338	357	707	689	699	727	706	717	664	634	650
24	400	323	366	729	691	709	769	726	747	670	614	648
25	421	386	404	718	653	683	776	741	760	646	619	628
26	459	376	438	704	656	672	766	743	756	683	628	649
27	435	363	398	712	664	689	784	760	769	671	583	625
28	464	435	455	705	653	674	794	773	783	641	599	621
29	487	457	474	740	684	710	784	761	773	633	598	610
30	515	481	498	745	733	737	792	750	771	646	615	629
31	---	---	---	745	718	729	790	732	762	---	---	---
MONTH	515	286	423	754	276	620	794	305	672	795	358	663
YEAR	825	169	536									

TRINITY RIVER MAIN STEM

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	7.3	7.1	7.2	---	---	---	6.7	6.5	6.6
2	---	---	---	7.5	7.3	7.4	---	---	---	6.7	6.5	6.6
3	---	---	---	7.4	7.1	7.3	---	---	---	6.8	6.6	6.7
4	---	---	---	7.2	7.0	7.2	---	---	---	6.8	6.5	6.7
5	---	---	---	7.3	7.2	7.3	---	---	---	6.7	6.5	6.6
6	---	---	---	7.4	7.3	7.4	---	---	---	6.8	6.6	6.7
7	---	---	---	7.7	7.2	7.4	7.4	7.2	7.2	6.8	6.7	6.7
8	6.8	6.6	6.7	7.8	7.4	7.5	7.4	7.3	7.4	6.9	6.7	6.8
9	6.8	6.7	6.7	7.4	7.2	7.3	7.4	7.4	7.4	6.9	6.6	6.7
10	6.9	6.7	6.8	7.5	7.3	7.4	7.5	7.3	7.4	6.9	6.6	6.8
11	6.9	6.7	6.8	7.4	7.3	7.3	7.4	7.3	7.4	6.7	6.6	6.7
12	7.1	6.8	6.9	7.5	7.4	7.4	7.5	7.4	7.4	6.7	6.6	6.6
13	7.1	6.9	7.0	7.5	7.4	7.4	---	---	---	6.8	6.6	6.7
14	7.1	6.9	7.0	7.6	7.4	7.5	---	---	---	6.7	6.6	6.6
15	7.1	6.9	7.0	7.8	7.6	7.7	---	---	---	---	---	---
16	7.0	6.9	6.9	7.8	7.6	7.7	---	---	---	---	---	---
17	7.0	6.9	6.9	7.8	7.7	7.8	6.9	6.6	6.7	6.8	6.7	6.7
18	7.1	6.9	7.0	7.9	7.8	7.8	6.8	6.7	6.7	6.8	6.6	6.7
19	7.0	6.8	6.9	7.8	7.7	7.8	6.9	6.6	6.7	6.8	6.6	6.7
20	7.1	6.9	7.0	7.9	7.8	7.9	7.2	6.7	6.9	6.8	6.6	6.6
21	7.8	7.0	7.3	8.0	7.8	7.9	7.2	6.9	7.0	6.8	6.6	6.7
22	7.5	7.2	7.4	7.9	7.7	7.8	7.1	6.9	7.0	6.8	6.7	6.7
23	7.5	7.4	7.4	7.9	7.7	7.8	7.0	6.8	6.9	6.8	6.7	6.7
24	7.4	7.0	7.2	8.0	7.8	7.9	6.9	6.8	6.8	6.8	6.6	6.7
25	7.2	7.1	7.1	8.0	7.7	7.9	6.9	6.8	6.8	6.8	6.6	6.7
26	7.2	7.0	7.1	8.0	7.7	7.8	6.9	6.8	6.9	6.9	6.7	6.8
27	7.5	7.0	7.1	---	---	---	6.9	6.7	6.8	6.8	6.7	6.8
28	7.7	7.4	7.5	---	---	---	6.9	6.7	6.8	7.0	6.8	6.9
29	7.6	7.4	7.5	---	---	---	6.9	6.7	6.8	6.9	6.8	6.8
30	7.5	7.2	7.3	---	---	---	6.8	6.7	6.7	6.8	6.7	6.8
31	7.2	7.0	7.1	---	---	---	6.8	6.6	6.7	7.0	6.7	6.8
MONTH	7.8	6.6	7.1	8.0	7.0	7.6	7.5	6.6	7.0	7.0	6.5	6.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.9	6.8	6.9	6.9	6.8	6.9	7.6	7.1	7.4	---	---	---
2	7.0	6.8	6.9	7.0	6.7	6.9	7.1	7.1	7.1	---	---	---
3	7.0	6.8	6.9	7.0	6.7	6.9	7.6	7.1	7.4	---	---	---
4	7.0	6.9	6.9	7.0	6.9	7.0	7.9	7.0	7.5	---	---	---
5	7.0	6.9	6.9	7.0	6.9	6.9	7.8	7.0	7.7	---	---	---
6	7.0	6.8	6.9	7.0	7.0	7.0	---	---	---	8.0	7.7	7.8
7	7.2	7.0	7.1	7.0	7.0	7.0	---	---	---	8.1	8.0	8.0
8	7.1	6.9	7.1	7.0	7.0	7.0	---	---	---	8.1	8.0	8.0
9	7.3	7.0	7.2	7.0	7.0	7.0	---	---	---	8.0	7.6	7.9
10	7.4	7.3	7.3	7.0	7.0	7.0	---	---	---	7.8	7.6	7.7
11	7.4	7.3	7.3	7.0	7.0	7.0	---	---	---	8.0	7.7	7.8
12	7.7	7.2	7.4	7.0	6.9	7.0	---	---	---	---	---	---
13	---	---	---	7.0	6.9	6.9	---	---	---	---	---	---
14	---	---	---	7.1	6.9	7.0	---	---	---	---	---	---
15	---	---	---	7.2	7.0	7.1	---	---	---	---	---	---
16	---	---	---	7.1	7.0	7.1	---	---	---	---	---	---
17	---	---	---	7.3	7.1	7.2	---	---	---	---	---	---
18	---	---	---	7.3	7.0	7.2	---	---	---	---	---	---
19	---	---	---	7.4	7.2	7.3	---	---	---	---	---	---
20	---	---	---	7.4	7.3	7.4	---	---	---	---	---	---
21	---	---	---	7.4	7.3	7.4	---	---	---	---	---	---
22	---	---	---	7.4	7.3	7.4	7.6	7.1	7.2	---	---	---
23	---	---	---	7.4	7.3	7.3	7.2	7.1	7.1	---	---	---
24	---	---	---	7.5	7.3	7.3	7.3	7.1	7.1	---	---	---
25	---	---	---	7.5	7.4	7.4	7.2	7.1	7.2	---	---	---
26	---	---	e7.8	7.5	7.4	7.4	7.3	7.0	7.1	---	---	---
27	---	---	---	7.5	7.4	7.4	7.2	7.0	7.1	---	---	---
28	---	---	---	7.5	7.4	7.5	---	---	---	---	---	---
29	---	---	---	7.6	7.5	7.6	---	---	---	---	---	---
30	---	---	---	7.6	7.5	7.6	---	---	---	7.3	7.1	7.2
31	---	---	---	7.6	7.6	7.6	---	---	---	7.2	7.1	7.2
MONTH	7.7	6.8	7.1	7.6	6.7	7.2	7.9	7.0	7.3	8.1	7.1	7.7

e Estimated

TRINITY RIVER MAIN STEM

421

08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	7.1	6.9	7.0	---	---	---	7.6	7.4	7.5
2	---	---	---	7.0	6.8	6.9	---	---	---	7.6	7.2	7.4
3	---	---	---	7.0	6.8	6.9	---	---	---	7.5	7.0	7.2
4	---	---	---	7.1	6.9	7.0	---	---	---	7.5	7.2	7.4
5	---	---	---	7.3	6.8	7.0	---	---	---	7.5	7.2	7.4
6	---	---	---	7.1	6.9	7.0	---	---	---	7.4	7.2	7.2
7	---	---	---	7.3	7.0	7.1	---	---	---	7.5	7.2	7.3
8	---	---	---	7.3	7.0	7.1	7.4	7.2	7.3	7.5	7.3	7.4
9	---	---	---	7.3	7.1	7.2	7.3	7.1	7.2	7.5	7.2	7.3
10	---	---	---	7.4	7.2	7.3	7.3	7.1	7.1	7.5	7.0	7.3
11	---	---	---	7.3	7.2	7.2	7.3	7.1	7.2	7.1	6.9	7.0
12	---	---	---	7.3	7.2	7.2	7.2	7.1	7.1	7.0	6.9	6.9
13	---	---	---	7.4	7.2	7.2	7.3	7.1	7.2	7.1	6.9	7.0
14	---	---	---	7.4	7.1	7.2	7.3	7.1	7.2	7.1	6.9	7.0
15	---	---	---	7.3	7.2	7.2	7.6	7.3	7.4	7.0	6.8	6.9
16	---	---	---	7.4	7.2	7.3	7.6	7.2	7.4	7.1	6.8	6.9
17	---	---	---	7.3	7.2	7.2	7.7	7.4	7.5	7.2	7.0	7.1
18	---	---	---	7.3	7.2	7.2	7.6	7.3	7.4	7.2	7.0	7.1
19	---	---	---	7.4	7.2	7.3	7.5	7.3	7.4	7.2	7.1	7.1
20	---	---	---	7.4	7.2	7.3	7.4	7.2	7.3	7.2	7.1	7.1
21	---	---	---	7.4	7.2	7.3	7.4	7.1	7.3	7.5	7.1	7.2
22	---	---	---	7.7	7.2	7.4	7.5	7.3	7.4	7.3	7.1	7.2
23	---	---	---	7.5	7.3	7.4	7.6	7.4	7.5	7.3	7.1	7.2
24	---	---	---	7.5	7.3	7.4	7.6	7.4	7.5	7.3	7.1	7.2
25	6.9	6.8	6.8	7.4	7.3	7.3	7.7	7.4	7.5	7.3	7.1	7.2
26	7.0	6.9	6.9	7.6	7.3	7.4	7.7	7.4	7.6	7.3	7.2	7.2
27	6.9	6.8	6.9	7.6	7.4	7.5	7.7	7.5	7.6	7.6	7.2	7.3
28	7.0	6.9	7.0	7.6	7.4	7.5	7.7	7.5	7.6	7.5	7.2	7.3
29	7.1	7.0	7.0	---	---	---	7.6	7.4	7.5	7.4	7.1	7.2
30	7.0	7.0	7.0	---	---	---	7.7	7.4	7.5	7.4	7.1	7.2
31	---	---	---	---	---	---	7.6	7.4	7.5	---	---	---
MONTH	7.1	6.8	6.9	7.7	6.8	7.2	7.7	7.1	7.4	7.6	6.8	7.2
YEAR	8.1	6.5	7.2									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	15.5	13.5	14.5	12.5	11.5	12.0	15.5	15.5	15.5	19.5	18.5	19.0
2	16.5	14.5	15.5	12.0	11.0	11.5	16.0	15.5	15.5	20.0	19.0	19.5
3	17.0	15.5	16.5	11.5	10.5	11.0	16.0	15.5	16.0	20.0	19.0	19.5
4	17.0	16.0	16.5	13.0	11.5	12.0	18.0	16.0	17.0	20.0	19.0	19.5
5	16.5	15.0	15.5	13.5	12.5	13.0	18.0	17.5	17.5	20.0	19.0	19.5
6	15.5	12.0	14.0	13.0	12.0	12.5	17.5	17.0	17.5	20.0	19.5	19.5
7	12.0	9.5	10.5	12.5	12.0	12.0	17.5	16.5	17.0	20.0	19.5	20.0
8	9.5	9.0	9.5	13.0	12.0	12.5	17.0	16.5	17.0	20.0	19.5	19.5
9	9.0	8.5	9.0	14.0	13.0	13.5	17.0	16.0	16.5	20.5	19.5	19.5
10	9.5	8.5	9.0	14.0	13.0	13.5	17.0	16.0	16.5	20.0	18.5	19.5
11	10.5	9.0	9.5	13.5	13.0	13.5	17.0	15.5	16.5	---	---	---
12	10.5	9.5	10.0	13.5	13.0	13.0	15.5	14.0	14.5	---	---	---
13	9.5	8.0	8.5	14.5	13.5	14.0	14.5	13.5	14.0	---	---	---
14	8.5	7.5	8.0	14.5	13.0	14.0	15.5	14.0	14.5	21.0	19.5	20.5
15	9.5	8.5	8.5	13.0	12.0	12.5	16.5	15.0	15.5	21.0	20.5	20.5
16	10.0	8.5	9.5	13.0	12.5	12.5	17.0	16.0	16.5	21.5	20.5	21.0
17	10.5	9.5	10.0	13.0	12.0	12.5	17.5	16.5	17.0	22.5	21.0	22.0
18	10.5	10.0	10.5	14.0	13.0	13.5	17.0	16.5	17.0	23.0	22.0	22.5
19	13.0	10.0	11.0	13.5	12.5	13.0	17.5	16.5	17.0	23.0	22.5	22.5
20	14.0	13.0	13.5	13.5	12.5	13.0	18.5	17.0	17.5	22.5	21.5	22.0
21	14.0	12.5	13.5	15.0	13.0	14.0	19.5	18.0	18.5	22.0	21.0	21.0
22	13.0	12.0	12.5	15.0	14.5	15.0	18.5	17.5	18.0	22.0	21.0	21.5
23	12.5	12.5	12.5	15.0	14.5	15.0	19.0	18.0	18.5	22.0	21.5	21.5
24	12.5	11.0	11.5	15.5	14.5	15.0	19.0	18.0	18.5	22.5	21.5	22.0
25	11.0	10.5	11.0	16.0	15.5	15.5	18.0	15.5	17.0	23.0	22.0	22.5
26	11.0	10.5	10.5	15.5	15.0	15.0	16.0	15.0	15.5	24.0	22.5	23.0
27	11.5	10.5	11.0	15.5	15.0	15.0	15.0	15.0	15.0	24.0	23.5	24.0
28	11.5	11.0	11.5	16.0	15.0	15.5	17.0	15.0	16.0	24.0	22.5	23.0
29	---	---	---	16.5	15.5	16.0	18.5	17.0	17.5	23.5	23.0	23.5
30	---	---	---	16.5	15.5	16.0	19.5	18.0	18.5	23.5	23.0	23.5
31	---	---	---	15.5	15.0	15.5	---	---	---	24.0	23.0	23.5
MONTH	17.0	7.5	11.5	16.5	10.5	13.5	19.5	13.5	16.5	24.0	18.5	21.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	24.5	23.5	24.0	29.0	27.5	28.0	31.0	29.5	30.0	30.5	29.0	30.0
2	25.0											

TRINITY RIVER MAIN STEM
08057410 TRINITY RIVER BELOW DALLAS, TX--Continued

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OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.0	5.4	6.5	7.3	6.4	6.9	---	---	---	8.9	8.4	8.5
2	7.0	6.3	6.6	8.0	7.3	7.8	---	---	---	8.7	8.2	8.4
3	---	---	---	7.9	7.8	7.9	---	---	---	8.7	8.1	8.4
4	---	---	---	7.9	7.4	7.7	---	---	---	8.5	7.8	8.1
5	---	---	---	7.6	6.9	7.3	---	---	---	8.6	7.8	8.2
6	---	---	---	6.9	6.1	6.5	---	---	---	8.5	8.2	8.4
7	---	---	---	7.8	6.0	7.1	9.9	9.7	9.8	8.8	8.4	8.6
8	---	---	---	7.0	6.2	6.7	9.9	9.7	9.8	10.0	8.8	9.2
9	---	---	---	6.6	6.0	6.3	9.8	9.5	9.7	10.0	9.2	9.6
10	---	---	---	6.8	6.4	6.6	9.6	9.3	9.5	9.5	9.2	9.3
11	---	---	---	6.7	6.3	6.5	9.3	9.1	9.2	9.5	9.2	9.4
12	---	---	---	6.6	6.3	6.5	9.1	8.9	9.0	9.6	9.1	9.3
13	---	---	---	6.4	6.1	6.2	9.4	8.9	9.1	9.8	9.5	9.7
14	---	---	---	6.4	6.0	6.2	9.8	9.2	9.4	9.7	9.1	9.5
15	---	---	---	6.7	6.0	6.5	9.7	8.8	9.5	---	---	---
16	6.5	6.2	6.3	6.7	6.3	6.5	10.2	9.5	9.8	---	---	---
17	---	---	---	6.5	5.9	6.3	10.3	9.9	10.0	11.0	10.7	10.9
18	---	---	---	6.5	5.7	6.0	10.8	10.3	10.6	11.2	10.6	10.9
19	---	---	---	5.7	4.9	5.3	10.9	10.7	10.8	10.9	10.3	10.6
20	---	---	---	4.9	4.7	4.8	11.1	10.8	11.0	10.6	9.8	10.3
21	---	---	---	5.2	4.6	4.9	11.0	10.5	10.8	10.0	9.3	9.8
22	---	---	---	5.4	5.2	5.3	10.5	9.7	10.1	9.5	8.9	9.2
23	---	---	---	5.3	5.0	5.2	9.7	9.1	9.3	9.1	8.0	8.7
24	---	---	---	6.5	5.0	5.8	9.7	9.1	9.4	8.5	7.6	8.1
25	6.9	6.8	6.8	---	---	---	9.8	9.5	9.7	8.9	7.8	8.3
26	6.8	6.3	6.7	---	---	---	9.8	9.6	9.7	8.9	7.9	8.4
27	6.5	5.3	6.1	---	---	---	9.8	9.4	9.6	8.4	7.8	8.1
28	7.1	5.0	5.7	---	---	---	9.7	9.3	9.5	9.1	7.8	8.3
29	5.2	4.8	5.0	---	---	---	9.4	9.0	9.2	9.1	8.2	8.6
30	5.6	5.1	5.3	---	---	---	9.2	8.9	9.0	8.9	8.1	8.5
31	6.4	5.5	5.9	---	---	---	8.9	8.6	8.7	9.7	7.7	8.7
MONTH	7.1	4.8	6.1	8.0	4.6	6.4	11.1	8.6	9.7	11.2	7.6	9.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	9.3	8.7	9.0	8.7	8.7	8.7	10.0	9.8	9.9	8.0	7.8	7.9
2	9.0	8.4	8.7	8.7	8.6	8.7	9.9	9.7	9.8	---	---	---
3	8.5	6.4	8.1	8.7	8.4	8.5	9.8	9.6	9.7	---	---	---
4	8.6	7.6	8.1	8.4	8.2	8.3	9.6	7.3	8.5	---	---	---
5	8.6	8.0	8.4	8.4	8.2	8.3	7.3	6.9	7.0	---	---	---
6	9.0	7.8	8.2	8.6	8.4	8.5	---	---	---	8.5	8.4	8.5
7	9.8	9.0	9.5	8.6	8.5	8.6	8.2	7.3	7.8	8.5	8.1	8.2
8	10.2	9.7	9.9	8.6	8.5	8.6	8.7	8.2	8.4	8.1	8.0	8.1
9	10.5	10.2	10.4	8.5	8.1	8.3	9.0	8.6	8.8	---	---	---
10	10.6	10.4	10.5	8.4	8.1	8.2	9.1	8.8	8.9	---	---	---
11	10.5	10.2	10.4	8.6	8.2	8.4	8.9	8.3	8.7	---	---	---
12	10.5	9.9	10.2	8.4	8.1	8.3	8.6	8.2	8.3	---	---	---
13	10.2	9.9	10.0	---	---	---	9.3	8.5	8.9	---	---	---
14	10.1	9.8	10.0	---	---	---	9.6	9.1	9.3	---	---	---
15	10.3	9.8	10.0	---	---	---	9.5	9.3	9.4	---	---	---
16	10.5	10.3	10.5	---	---	---	9.4	9.1	9.2	---	---	---
17	10.7	10.4	10.6	---	---	---	9.4	9.0	9.2	---	---	---
18	10.6	10.4	10.5	9.8	9.6	9.7	9.3	9.1	9.2	---	---	---
19	10.5	9.4	10.2	9.9	9.4	9.7	9.2	9.0	9.1	---	---	---
20	9.4	7.8	8.4	10.2	9.7	9.9	9.2	8.9	9.1	---	---	---
21	8.2	7.7	8.0	10.1	9.6	9.9	9.2	7.6	8.4	---	---	---
22	8.4	8.2	8.2	9.9	9.5	9.7	8.0	7.6	7.8	---	---	---
23	8.8	8.3	8.5	9.8	9.6	9.7	7.8	7.6	7.7	---	---	---
24	9.5	8.8	9.1	9.8	9.5	9.6	7.7	7.6	7.7	---	---	---
25	9.6	9.4	9.5	9.6	9.0	9.2	8.1	7.7	7.8	---	---	---
26	9.6	9.2	9.4	9.0	8.6	8.8	7.8	7.2	7.4	---	---	---
27	---	---	---	9.4	8.7	9.0	7.2	6.9	7.1	---	---	---
28	---	---	---	9.5	9.4	9.5	7.1	6.8	6.9	---	---	---
29	---	---	---	9.6	9.4	9.5	7.8	7.1	7.5	---	---	---
30	---	---	---	9.8	9.5	9.6	7.9	7.8	7.8	8.7	8.1	8.4
31	---	---	---	10.0	9.8	9.9	---	---	---	8.1	7.4	7.7
MONTH	10.7	6.4	9.4	10.2	8.1	9.0	10.0	6.8	8.5	8.7	7.4	8.1

[illegible]

TRINITY RIVER BASIN

425

08057445 PRAIRIE CREEK AT U.S. HIGHWAY 175, DALLAS, TX

LOCATION.--Lat 32°42'17", long 96°40'11", Dallas County, Hydrologic Unit 12030105, on left bank at downstream side of the downstream access road bridge on U.S. Highway 175, 3.4 mi upstream from mouth, and 9.0 mi southeast of Dallas City Hall.

DRAINAGE AREA.--9.03 mi².

PERIOD OF RECORD.--October 1975 to September 1980, April 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 390.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Several observations of water temperature were made during the year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 27	2400	1,780	21.68	Apr. 4	1200	1,040	5.68
Feb. 19	1545	1,240	19.61				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	1.8	6.6	6.2	.99	4.5	2.6	3.7	3.1	1.1	.46	.03
2	.03	1.6	2.9	6.3	1.1	35	3.2	3.4	2.6	.97	.47	.03
3	.06	1.5	2.8	6.1	1.0	19	8.8	3.3	2.4	.79	.47	.01
4	.07	1.5	2.6	5.4	1.0	5.8	511	3.1	2.0	.70	.47	.02
5	.01	2.2	7.3	5.7	.94	3.4	69	3.1	1.8	29	.45	.03
6	.01	2.5	2.7	4.7	12	2.0	11	3.0	1.7	8.5	.87	.03
7	.07	104	2.1	3.1	39	1.7	5.9	3.2	1.5	2.2	114	.03
8	.12	4.6	1.6	2.6	6.1	1.9	4.9	3.2	1.4	1.3	43	.03
9	.17	2.0	1.5	3.8	3.1	24	4.0	10	1.5	2.7	3.1	.18
10	.18	1.5	1.7	1.6	2.3	18	3.4	5.7	9.3	11	.96	.30
11	.18	1.3	3.7	.69	2.0	3.0	13	3.2	3.3	1.8	.56	.14
12	.19	1.9	4.7	.43	320	20	1.0	3.0	2.2	.98	.40	.08
13	.24	.88	4.7	.51	87	113	1.9	2.9	1.9	.68	.27	.07
14	.27	1.2	5.2	.86	9.2	8.1	2.2	2.8	8.4	.50	.20	.05
15	.19	1.3	15	1.6	3.4	3.4	2.3	34	36	3.0	.21	.03
16	.18	1.5	8.7	1.2	1.8	2.0	2.7	8.5	4.5	10	.23	.02
17	.15	41	1.1	.70	1.2	2.3	2.8	3.1	70	1.7	.22	.01
18	.13	2.4	.67	1.2	.95	2.4	2.6	2.6	6.5	.75	.21	.01
19	.13	1.2	.71	1.5	249	1.9	2.6	36	2.5	.53	.20	.00
20	.12	1.4	1.7	2.0	252	2.0	3.1	120	1.6	.45	.19	.00
21	128	2.3	3.2	2.1	32	2.1	20	8.6	1.3	.39	.18	.01
22	24	2.7	5.3	2.2	5.5	2.0	15	5.4	7.4	.36	.16	.02
23	2.7	3.1	5.4	17	3.0	1.8	4.4	4.3	54	.36	.16	.10
24	.84	44	5.0	9.6	8.5	1.7	2.6	6.0	13	.35	.16	.05
25	.54	1.9	4.0	2.4	30	73	6.1	5.5	2.7	.40	.12	.05
26	.74	2.8	4.8	1.8	74	8.5	7.8	3.9	13	.46	.11	.05
27	171	1.6	5.1	1.3	12	4.1	7.9	3.4	10	.47	.10	.03
28	243	1.7	5.3	.47	5.8	3.9	7.7	2.9	2.2	.47	.08	.02
29	7.6	49	5.7	.49	---	3.2	4.8	2.5	1.4	.47	.07	.01
30	3.5	70	5.8	.58	---	3.3	4.2	3.5	1.2	.47	.07	.01
31	1.7	---	5.9	.96	---	3.0	---	8.4	---	.47	.04	---
MEAN	18.9	11.9	4.31	3.07	41.6	12.3	24.6	10.1	9.01	2.69	5.43	.048
MAX	243	104	15	17	320	113	511	120	70	29	114	.30
MIN	.01	.88	.67	.43	.94	1.7	1.0	2.5	1.2	.35	.04	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1997h, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	12.6	8.42	9.72	6.33	12.3	10.7	13.3	17.6	8.04	3.54	1.90	3.04										
MAX	46.3	43.1	37.2	19.8	41.6	26.6	42.2	72.4	35.5	24.9	11.0	8.30										
(WY)	1995	1995	1992	1990	1997	1977	1990	1989	1989	1994	1996	1980										
MIN	.000	.33	.42	.12	.34	1.28	.66	.64	.32	.000	.000	.005										
(WY)	1976	1990	1978	1976	1976	1996	1978	1977	1978	1980	1980	1984										

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1976 - 1997h

ANNUAL MEAN	5.49	11.8	9.12
HIGHEST ANNUAL MEAN			17.4
LOWEST ANNUAL MEAN			1.61
HIGHEST DAILY MEAN	243	Oct 28	511
LOWEST DAILY MEAN	.01	Oct 5	.00
ANNUAL SEVEN-DAY MINIMUM	.04	Sep 30	.01
INSTANTANEOUS PEAK FLOW			1780
INSTANTANEOUS PEAK STAGE			21.68
10 PERCENT EXCEEDS	5.8		17
50 PERCENT EXCEEDS	.73		2.2
90 PERCENT EXCEEDS	.11		.08
			5660
			29.21
			11
			.92
			.02

h See PERIOD OF RECORD paragraph.

TRINITY RIVER BASIN

08058900 EAST FORK TRINITY RIVER AT MCKINNEY, TX

LOCATION.--Lat 33°14'38", long 96°36'31", Collin County, Hydrologic Unit 12030106, at downstream side of highway embankment near left end of main channel bridge on State Highways 5 and 121, 750 ft downstream from Honey Creek, 1.2 mi upstream from Southern Pacific Railway Co. bridge, 1.7 mi upstream from Clemons Creek, 3.3 mi north of McKinney, 26.1 mi upstream from Lavon Dam, and 86.5 mi upstream from mouth.

DRAINAGE AREA.--164 mi².

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

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982, October 1985 to July 1987, April 1993 to September 1995.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 528.74 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow from 89.1 mi² above this station is affected at times by discharge from the flood-detention pools of 49 floodwater-retarding structures with a combined detention capacity of 26,000 acre-ft. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1913, about 28 ft in April 1942 (discharge not determined), from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	351	1080	57	35	363	82	95	29	18	1.6	.01
2	9.5	345	722	52	34	660	78	79	26	16	.77	.01
3	8.0	151	537	51	34	1150	75	65	24	15	.46	.02
4	6.2	99	419	51	34	481	2320	58	22	13	.31	.02
5	5.2	77	369	47	33	389	4650	53	22	13	.17	.01
6	4.4	66	323	45	306	292	1260	49	21	13	.14	.01
7	3.8	6070	275	44	959	243	903	47	20	14	19	.01
8	3.4	2060	230	46	569	221	633	46	19	13	22	.01
9	2.5	1170	192	54	310	210	486	48	796	12	15	.01
10	1.7	1040	158	50	219	206	387	48	885	23	12	.00
11	1.3	875	142	45	161	170	633	43	354	17	10	.00
12	.99	685	120	42	1310	441	586	41	158	14	8.5	.00
13	.65	557	106	40	4460	1090	341	38	111	11	7.4	.00
14	.41	429	103	40	1220	634	242	35	80	9.9	6.3	.00
15	.24	339	181	42	771	372	168	36	74	8.8	4.8	.01
16	.18	258	154	42	567	273	129	35	66	8.0	3.1	.03
17	.15	859	121	39	444	234	103	32	50	7.3	1.7	.01
18	.09	380	103	38	369	214	88	30	42	6.4	.88	.00
19	.07	251	91	39	851	185	78	60	34	5.7	.31	.00
20	.07	205	85	39	4900	159	72	43	28	4.9	.15	.00
21	1.3	160	87	40	3210	149	65	34	24	4.0	.10	.00
22	19	113	89	40	1130	135	128	32	22	3.2	.07	.00
23	21	94	87	39	870	121	126	29	25	2.5	.04	.00
24	19	3690	78	38	613	116	78	33	22	1.9	.02	.00
25	16	3250	71	37	508	139	255	e37	19	1.4	.01	.00
26	14	1340	70	42	919	151	1010	e33	19	1.3	.01	.00
27	88	1100	69	38	664	125	490	34	47	.83	.01	.00
28	913	822	68	36	438	115	280	e28	42	.51	.01	.00
29	461	1920	63	35	---	103	182	e27	25	.39	.01	.00
30	206	2150	59	34	---	96	130	e41	21	1.9	.01	.00
31	119	---	56	35	---	86	---	30	---	3.0	.01	---
TOTAL	1937.15	30906	6308	1317	25938	9323	16058	1339	3127	263.93	114.89	0.16
MEAN	62.5	1030	203	42.5	926	301	535	43.2	104	8.51	3.71	.005
MAX	913	6070	1080	57	4900	1150	4650	95	885	23	22	.03
MIN	.07	66	56	34	33	86	65	27	19	.39	.01	.00
AC-FT	3840	61300	12510	2610	51450	18490	31850	2660	6200	524	228	.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1997, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MEAN	98.1	151	133	69.4	188	214	156	283	143	24.6	3.91	8.15										
MAX	1022	1120	1160	369	926	644	804	1704	737	213	19.0	64.0										
(WY)	1982	1995	1992	1992	1997	1995	1990	1982	1989	1994	1990	1994										
MIN	.000	.000	.000	.000	1.37	2.30	4.08	2.52	.81	.000	.000	.000										
(WY)	1978	1978	1978	1978	1976	1976	1980	1996	1996	1984	1980	1977										

SUMMARY STATISTICS

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1976 - 1997
ANNUAL TOTAL	41116.14	96632.13	
ANNUAL MEAN	112	265	122
HIGHEST ANNUAL MEAN			373
LOWEST ANNUAL MEAN			4.65
HIGHEST DAILY MEAN	6070 Nov 7	6070 Nov 7	26800 May 13 1982
LOWEST DAILY MEAN	.00 Jun 24	.00 Sep 10	.00 Aug 18 1976
ANNUAL SEVEN-DAY MINIMUM	.00 Jun 24	.00 Sep 18	.00 Aug 18 1976
INSTANTANEOUS PEAK FLOW		12200 Nov 7	61800 May 13 1982
INSTANTANEOUS PEAK STAGE		20.14 Nov 7	22.17 May 13 1982
ANNUAL RUNOFF (AC-FT)	81550	191700	88620
10 PERCENT EXCEEDS	180	700	244
50 PERCENT EXCEEDS	3.3	43	14
90 PERCENT EXCEEDS	.00	.02	.00

e Estimated

TRINITY RIVER BASIN

427

08059300 PILOT GROVE CREEK NEAR BLUE RIDGE, TX

LOCATION.--Lat 33°15'13", long 96°24'44"; Collin County, Hydrologic Unit 12030106, on county road bridge, over center of channel at downstream side of bridge, 3.1 mi downstream from Desert Creek, and 3.2 mi south of Blue Ridge.

DRAINAGE AREA.--80.2 mi².

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1985 to June 1987, October 1995 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
OCT 10...	1345	2.1	516	7.9	18.5	15	3.6	8.5	92	1.1	210
DEC 17...	1315	76	542	8.0	7.5	17	5.9	10.8	92	0.8	250
JAN 22...	1430	27	554	8.0	11.5	8	1.2	12.3	115	0.1	260
APR 09...	1430	131	456	7.8	15.5	15	33	8.9	90	1.8	210
MAY 07...	1500	35	553	7.9	20.0	8	13	7.4	83	0.5	270
JUL 01...	1200	4.1	471	7.8	27.0	14	22	5.4	69	0.8	230

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 10...	0	80	2.3	20	0.6	3.1	230	22	8.9	0.40	9.5
DEC 17...	0	96	2.4	10	0.3	1.8	270	20	6.7	0.30	10
JAN 22...	3	100	2.7	14	0.4	1.2	260	26	8.1	0.40	4.1
APR 09...	5	82	1.9	7.7	0.2	1.6	210	15	4.4	0.27	8.2
MAY 07...	19	100	2.4	12	0.3	1.3	250	22	6.9	0.36	8.0
JUL 01...	1	86	2.5	14	0.4	2.3	220	12	6.4	0.43	9.8

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 10...	283	8	6	2	--	<0.010	0.330	0.020	0.28	0.30	0.060
DEC 17...	309	2	1	1	0.350	0.010	0.360	<0.015	--	<0.20	<0.010
JAN 22...	315	4	<1	--	0.160	0.020	0.180	<0.015	--	<0.20	<0.010
APR 09...	253	53	13	40	1.08	0.020	1.10	0.050	0.15	0.20	0.020
MAY 07...	309	7	12	0	--	<0.010	0.439	<0.015	--	<0.20	<0.010
JUL 01...	271	35	7	28	--	<0.010	0.245	0.023	--	<0.20	0.017

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)
OCT 10...	0.040	0.12	3.2	--	--	--	--	--	--	--	--
DEC 17...	0.020	0.06	3.4	--	--	--	--	--	--	--	--
JAN 22...	<0.010	--	2.6	<1	74	<0.50	1.0	<5.0	<3.0	<10	24
APR 09...	0.020	0.06	4.5	<1	57	<0.50	<1.0	<5.0	<3.0	<10	9.3
MAY 07...	0.011	0.03	4.4	<1	76	<0.50	<1.0	<5.0	<3.0	<10	<3.0
JUL 01...	0.027	0.08	6.0	2	84	<0.50	<1.0	<5.0	<3.0	<10	<3.0

TRINITY RIVER BASIN

08059300 PILOT GROVE CREEK NEAR BLUE RIDGE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 10...	--	--	--	--	--	--	--	--	--	--	--
DEC 17...	--	--	--	--	--	--	--	--	--	--	--
JAN 22...	<10	5	41	<0.1	<10	<10	<1	<1.0	1400	<6	<3.0
APR 09...	<10	<4	2.0	0.1	11	<10	<1	<1.0	899	<6	<3.0
MAY 07...	15	7	15	<0.1	<10	<10	<1	<1.0	1280	<6	7.9
JUL 01...	12	7	6.5	<0.1	<10	<10	<1	<1.0	1200	<6	11

08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX

LOCATION.--Lat 33°17'40", long 96°28'58", Collin County, Hydrologic Unit 12030106, on left bank at upstream side of highway embankment of bridge on Farm Road 545, 3.5 mi upstream from Hatler Branch, 4.8 mi west of Blue Ridge, 7.4 mi upstream from Stiff Creek, 14.7 mi upstream from mouth, and 24.7 mi upstream from Lavon Dam.

DRAINAGE AREA.--83.1 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 526.29 ft above sea level. Prior to June 29, 1988, at datum 10.00 ft higher at same site.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in July 1975, at least 10% of contributing drainage area has been affected at times by discharge from the flood-detention pools of 34 floodwater-retarding structures with a combined detention capacity of 12,710 acre-ft. These structures control runoff from 47.4 mi². Discharge may contain flow released from Lake Texoma and placed into channel 40 miles upstream from site. Several observations of water temperature were made during the year. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 30.7 ft, present datum, probably occurred in July 1913, from information by the Texas Department of Transportation. The probable date is from published records for discontinued station 08059500, located 9.7 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	216	206	46	18	241	40	85	25	15	.98	2.1
2	52	215	218	46	18	276	41	75	20	12	.58	1.9
3	83	220	213	46	17	492	40	64	18	10	.46	2.0
4	93	205	214	46	18	281	176	58	16	8.9	.38	1.8
5	94	186	218	40	16	231	221	55	15	8.3	.38	1.7
6	94	178	215	37	74	175	222	51	15	8.0	.34	1.5
7	93	241	187	36	280	143	221	49	14	8.9	10	1.3
8	92	210	145	38	225	135	236	47	14	10	18	1.0
9	92	223	127	48	121	140	242	48	139	12	8.9	.89
10	91	223	116	44	93	155	231	48	299	17	5.4	.65
11	90	227	105	38	78	126	221	42	146	21	3.1	.51
12	90	220	91	34	210	242	206	39	63	14	1.7	.43
13	91	227	78	31	328	552	e164	36	48	11	1.2	.33
14	91	241	74	31	320	304	122	34	39	8.0	11	.26
15	41	240	116	34	329	166	96	32	35	11	8.1	.24
16	58	244	94	36	302	e121	83	31	34	6.2	2.3	1.2
17	89	226	81	31	303	e103	70	29	30	14	1.1	.76
18	91	224	104	29	e284	e91	64	27	28	17	.59	.10
19	87	238	65	31	291	e85	58	27	26	10	.38	.07
20	88	241	60	31	715	e78	54	35	23	4.9	.41	.04
21	96	224	62	32	621	e73	51	40	21	3.2	.41	.04
22	123	194	63	33	561	e69	72	39	20	2.5	.32	.05
23	108	174	62	35	460	e65	73	31	24	4.8	.38	.06
24	100	217	56	34	365	e62	53	31	20	.99	.32	.09
25	97	196	51	26	308	e87	120	42	20	.76	1.6	.11
26	98	199	52	24	484	60	336	43	37	.63	3.1	.06
27	99	203	51	24	384	54	304	35	65	.54	3.1	.02
28	237	206	50	21	280	52	188	32	37	.47	3.0	.00
29	242	222	49	19	---	47	125	25	28	1.3	2.8	.00
30	234	214	47	18	---	45	102	24	19	.89	2.5	.00
31	233	---	47	19	---	42	---	29	---	1.6	2.3	---
TOTAL	3302	6494	3317	1038	7503	4793	4232	1283	1338	244.88	95.13	19.21
MEAN	107	216	107	33.5	268	155	141	41.4	44.6	7.90	3.07	.64
MAX	242	244	218	48	715	552	336	85	299	21	18	2.1
MIN	35	174	47	18	16	42	40	24	14	.47	.32	.00
AC-FT	6550	12880	6580	2060	14880	9510	8390	2540	2650	486	189	38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1997#, BY WATER YEAR (WY)

	MEAN	49.6	56.7	70.7	48.6	103	126	95.3	133	77.5	13.3	4.86	6.22
MAX	451	316	493	178	268	368	477	714	348	54.4	41.2	61.9	
(WY)	1982	1995	1992	1992	1997	1995	1990	1982	1989	1982	1996	1996	
MIN	.000	.000	.000	1.55	1.81	2.92	3.46	6.99	1.22	.000	.000	.000	
(WY)	1978	1978	1978	1976	1976	1976	1980	1988	1980	1978	1978	1978	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1975 - 1997#
ANNUAL TOTAL	31538.02	33659.22	
ANNUAL MEAN	86.2	92.2	65.2
HIGHEST ANNUAL MEAN			169
LOWEST ANNUAL MEAN			4.22
HIGHEST DAILY MEAN	244 Nov 16	715 Feb 20	8560 May 13 1982
LOWEST DAILY MEAN	.34 Aug 9	.00 Sep 28	.00 Oct 14 1975
ANNUAL SEVEN-DAY MINIMUM	3.5 Jan 20	.04 Sep 24	.00 Oct 14 1975
INSTANTANEOUS PEAK FLOW		779 Feb 20	13300 May 13 1982
INSTANTANEOUS PEAK STAGE		19.74 Feb 20	32.50 May 13 1982
ANNUAL RUNOFF (AC-FT)	62560	66760	47210
10 PERCENT EXCEEDS	197	236	149
50 PERCENT EXCEEDS	91	47	12
90 PERCENT EXCEEDS	3.3	.84	.00

e Estimated

Period of regulated streamflow

TRINITY RIVER BASIN

08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: November 1985 to June 1987, October 1995 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
OCT 09...	1315	93	1980	7.9	20.5	60	33	8.3	94	0.9	430
DEC 17...	1100	79	531	7.8	8.5	17	6.5	10.8	94	0.5	250
JAN 22...	1000	35	571	7.9	11.0	18	2.2	10.2	94	0.5	260
APR 09...	1115	243	371	7.7	15.5	20	30	8.9	90	0.9	170
MAY 07...	1100	50	510	7.8	19.5	12	7.7	7.6	84	0.7	240
JUL 01...	1430	14	415	7.8	27.0	13	14	5.8	74	0.2	190

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 09...	320	110	37	220	5	5.5	110	320	350	0.40	7.7
DEC 17...	5	94	3.3	15	0.4	2.0	240	24	14	0.30	10
JAN 22...	3	97	3.4	19	0.5	1.7	250	27	14	0.40	3.0
APR 09...	8	63	1.8	7.5	0.3	3.1	160	13	5.2	0.24	7.7
MAY 07...	18	92	2.6	12	0.3	1.8	220	19	8.5	0.33	7.2
JUL 01...	3	73	2.4	12	0.4	2.5	190	12	7.1	0.34	8.2

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
OCT 09...	1110	71	12	59	--	<0.010	0.150	<0.020	--	0.30	0.020
DEC 17...	312	1	1	0	0.830	0.020	0.850	0.020	0.18	0.20	0.010
JAN 22...	322	9	5	4	0.540	0.030	0.570	<0.015	--	<0.20	<0.010
APR 09...	205	39	14	25	1.82	0.055	1.88	0.091	0.85	0.94	0.013
MAY 07...	283	11	15	0	--	<0.010	1.04	<0.015	--	0.20	<0.010
JUL 01...	234	19	5	14	--	<0.010	0.259	0.032	0.18	0.21	<0.010

TRINITY RIVER BASIN

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08059400 SISTER GROVE CREEK NEAR BLUE RIDGE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	CARBON, TOTAL ORGANIC (MG/L AS C)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 09...	<0.010	--	4.4	--	--	--	--	--	--	--	--
DEC 17...	0.010	0.03	3.3	--	--	--	--	--	--	--	--
JAN 22...	<0.010	--	6.7	<1	73	<0.50	<1.0	<5.0	<3.0	<10	22
APR 09...	0.018	0.05	5.3	1	46	<0.50	<1.0	<5.0	<3.0	<10	5.7
MAY 07...	0.015	0.05	5.4	1	67	<0.50	<1.0	<5.0	<3.0	<10	7.4
JUL 01...	0.016	0.05	6.7	2	64	<0.50	<1.0	<5.0	<3.0	<10	<3.0
DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 09...	--	--	--	--	--	--	--	--	--	--	--
DEC 17...	--	--	--	--	--	--	--	--	--	--	--
JAN 22...	<10	4	51	<0.1	<10	<10	<1	<1.0	1100	<6	15
APR 09...	<10	<4	2.1	<0.1	<10	<10	<1	<1.0	592	<6	<3.0
MAY 07...	<10	6	22	<0.1	<10	<10	<1	<1.0	938	<6	23
JUL 01...	<10	6	6.2	<0.1	<10	<10	<1	<1.0	795	<6	12

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX

LOCATION.--Lat 33°01'54", long 96°28'56", Collin County, Hydrologic Unit 12030106, in right abutment of spillway in dam on East Fork Trinity River, 3,850 ft upstream from St. Louis Southwestern Railway Lines bridge, 4,000 ft upstream from bridge on State Highway 78, 2.9 mi west of Lavon, and 55.9 mi upstream from mouth.

DRAINAGE AREA.--770 mi².

WATER-CONTENT RECORDS

PERIOD OF RECORD.--September 1953 to current year. Prior to October 1970, published as Lavon Reservoir.

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Jan. 20, 1954, non-recording gage in the approach channel at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 18,860 ft long, including a 568-foot gated spillway with twelve 40.0- by 28.0-foot tainter gates. The original dam was 9,499 ft long, but conservation capacity was increased to present size in December 1975. Deliberate impoundment began Sept. 14, 1953, and the dam was completed in October 1953. Low-flow outlets consist of five 36-inch-diameter controlled sluice gates. Capacity Table No. 9, is based on a sedimentation survey completed in 1970. Lake was designed for flood control and water conservation. Water for municipal supply can be released down to elevation 453.0 ft. Flow is affected at times by discharge from the flood-detention pools of 149 floodwater-retarding structures with a combined detention capacity of 69,170 acre-ft. These structures control runoff from 242 mi² in the East Fork Trinity River, Pilot Grove, and Sister Grove Creek drainage basins. Satellite telemeter at station. Figures given herein represent total contents. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	514.0	-
Design flood	509.0	921,200
Top of tainter gates	503.5	748,200
Top of conservation pool	492.0	456,500
Crest of spillway (sill of tainter gates)	475.5	178,300
Lowest gated outlet (invert)	453.0	12,700

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 791,000 acre-ft May 3, 1990 (elevation, 504.93 ft); minimum since lake first filled in 1957, 80,150 acre-ft Apr. 17, 1976 (elevation, 465.96 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 648,800 acre-ft Apr. 7 (elevation, 499.98 ft); minimum, 237,000 acre-ft Oct. 20 (elevation, 479.77 ft).

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

479.0	225,700	487.0	357,500	498.0	597,000
480.0	240,400	490.0	376,200	500.0	649,400
482.0	271,300	492.0	415,200	502.0	704,700
484.0	304,300	494.0	456,500		
486.0	339,200	496.0	547,400		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248300	275000	484400	460200	458000	634100	585600	603100	463000	458700	429300	403900
2	247800	278400	484400	459500	458000	634900	581800	599300	460000	457800	428100	402900
3	247200	280700	482400	458700	458000	640500	578800	593400	459100	457000	426700	402500
4	246800	281800	480200	459700	458000	643200	600600	587400	458700	456500	425500	401300
5	246200	282600	472300	459700	457600	645100	633100	581600	457800	455900	424500	400100
6	245900	285900	470600	459700	460200	643700	646400	575600	457200	455700	423800	399000
7	245300	301900	469700	459100	465600	640500	648800	569400	456500	454800	427100	397800
8	244600	327600	468800	459700	467500	636000	647500	564000	456100	454000	426500	396800
9	244200	337800	466900	459700	462100	632800	644000	560500	458200	454000	425700	396200
10	243700	343400	464300	460200	463600	628900	639500	556600	462300	453300	425100	394900
11	242700	347200	463000	460000	462700	626500	643500	552500	463600	452700	424500	393300
12	242100	350100	460000	459700	479300	630200	645300	547200	464000	451800	423600	392000
13	241500	352100	465100	459100	509800	640800	644800	540500	466600	450800	423400	390800
14	241000	354000	467100	458200	525600	645600	639500	534500	468200	449900	422200	390000
15	240400	355100	468200	458700	530000	644000	633900	528600	467500	449100	420800	389000
16	239800	356900	467900	458700	530700	640300	628600	522800	466900	448300	419600	387700
17	240000	361000	465800	458000	530300	637600	622800	517400	465100	447200	419000	386700
18	238600	364900	464300	457800	528900	636000	616800	511400	463400	446400	418000	385400
19	237600	367000	462700	457800	549400	632800	614000	507900	462300	445100	417000	384400
20	237000	368700	461000	457600	578600	630200	611100	507700	461200	444300	416800	384000
21	239700	369800	460600	457800	603900	626700	606000	507200	460200	443000	415600	382300
22	238500	370000	460600	458500	612900	622600	603900	505000	459700	442000	415000	381200
23	238400	372800	461900	459300	615000	617600	599300	500600	459100	440700	413800	381200
24	238100	403700	461000	459500	614700	612400	593900	496800	458500	440100	412600	380400
25	238100	433200	460800	459300	615000	612700	596200	492300	457800	438800	411400	378900
26	238100	447200	461000	459100	623600	611600	609000	488200	461700	437600	410400	377900
27	244500	454600	461000	460800	630200	606500	617100	484700	461700	436300	409200	376800
28	254400	460000	461200	459100	633100	601900	617100	479800	461500	435100	408200	376200
29	264200	469000	461700	458700	---	597500	612400	475400	460600	434300	407000	374700
30	269300	480400	461200	458200	---	593700	608800	472100	459700	433200	406100	373900
31	271800	---	460800	458000	---	589400	---	467500	---	433500	404900	---
MAX	271800	480400	484400	460800	633100	645600	648800	603100	468200	458700	429300	403900
MIN	237000	275000	460000	457600	457600	589400	578800	467500	456100	433200	404900	373900
(+)	482.03	493.10	492.20	492.07	499.39	497.70	498.46	492.51	492.15	490.90	489.48	487.88
(@)	+23100	+208600	-19600	-2800	+175100	-43700	+19400	-141300	-7800	-26200	-28600	-31000
CAL YR 1996	MAX	484400	MIN	237000	(@)	+107000						
WTR YR 1997	MAX	648800	MIN	237000	(@)	+125200						

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

TRINITY RIVER BASIN

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08060500 LAVON LAKE NEAR LAVON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1969 to September 1974, October 1975 to September 1982, October 1995 to current year.

REVISED RECORDS.--WDR-TX-93-1 Phytoplankton.

330203096284901 - LAVON LAKE SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	
JAN													
22...	1156	467000	1.00	385	7.8	6.5	0.85	10.5	87	22	K12	140	
22...	1200	--	10.0	372	7.8	6.5	--	10.5	87	--	--	--	
22...	1204	--	20.0	380	7.8	6.5	--	10.5	87	--	--	--	
22...	1208	--	30.0	387	7.8	6.5	--	10.5	87	--	--	--	
22...	1212	--	41.0	368	7.8	6.5	--	10.4	86	--	--	130	
MAY													
07...	1003	559000	1.00	350	8.3	18.5	0.73	8.0	87	K1	K2	120	
07...	1008	--	10.0	350	8.2	18.0	--	7.7	83	--	--	--	
07...	1014	--	20.0	350	8.2	18.5	--	7.7	84	--	--	--	
07...	1020	--	30.0	351	8.2	18.0	--	7.4	80	--	--	--	
07...	1025	--	42.0	352	8.0	18.0	--	6.6	71	--	--	130	
JUL													
01...	0839	467000	1.00	335	7.7	27.0	1.43	5.2	67	K1	K7	130	
01...	0844	--	10.0	335	7.7	27.0	--	5.2	67	--	--	--	
01...	0849	--	20.0	339	7.5	26.5	--	3.3	42	--	--	--	
01...	0855	--	30.0	344	7.2	25.5	--	0.4	5	--	--	--	
01...	0902	--	38.0	350	7.1	25.0	--	0	0	--	--	130	
CONSTI-		HARD- NESS NONCARB	CALCIUM	MAGNE- SIUM,	SODIUM,	POTAS- SIUM,	AD-	ALKA- LITY WAT	DIS	CHLO- SULFATE	FLUO- RIDE,	SILICA, RIDE,	SOLIDS, SUM OF DIS-
	DATE	DISSOLV FLD. AS CACO3 (MG/L)	DIS- SOLVED (MG/L AS CA)	DIS- SOLVED (MG/L AS MG)	DIS- SOLVED (MG/L AS NA)	SORP- TION RATIO	DIS- SOLVED (MG/L AS K)	FIX END FIELD CACO3 (MG/L)	DIS- SOLVED (MG/L AS SO4)	DIS- SOLVED (MG/L AS CL)	DIS- SOLVED (MG/L AS F)	SOLVED (MG/L AS SIO2)	TUENTS, DIS- SOLVED (MG/L)
JAN													
22...		31	48	3.8	26	1	4.1	100	40	32	0.30	9.1	228
22...		--	--	--	--	--	--	--	--	--	--	--	--
22...		--	--	--	--	--	--	--	--	--	--	--	--
22...		--	--	--	--	--	--	--	--	--	--	--	--
22...		28	47	3.8	26	1	4.4	100	40	32	0.30	9.1	228
MAY													
07...		1	45	2.9	15	0.6	3.8	120	28	18	0.24	0.98	189
07...		--	--	--	--	--	--	--	--	--	--	--	--
07...		--	--	--	--	--	--	--	--	--	--	--	--
07...		--	--	--	--	--	--	--	--	--	--	--	--
07...		3	46	2.9	15	0.6	3.7	120	28	17	0.25	1.5	190
JUL													
01...		18	47	3.1	15	0.6	3.6	110	24	16	0.26	4.5	181
01...		--	--	--	--	--	--	--	--	--	--	--	--
01...		--	--	--	--	--	--	--	--	--	--	--	--
01...		--	--	--	--	--	--	--	--	--	--	--	--
01...		16	49	3.0	15	0.6	3.6	120	24	16	0.26	5.4	188
		NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
JAN													
22...		0.440	0.020	0.460	0.040	0.26	0.30	0.030	0.040	0.12	3.0	2.0	
22...		--	--	--	--	--	--	--	--	--	--	--	
22...		--	--	--	--	--	--	--	--	--	--	--	
22...		--	--	--	--	--	--	--	--	--	--	--	
22...		0.410	0.030	0.440	0.060	--	<0.20	0.030	0.040	0.12	4.0	4.0	
MAY													
07...		0.376	0.018	0.394	0.048	0.28	0.33	<0.010	0.018	0.05	<3.0	<1.0	
07...		--	--	--	--	--	--	--	--	--	--	--	
07...		--	--	--	--	--	--	--	--	--	--	--	
07...		--	--	--	--	--	--	--	--	--	--	--	
07...		0.391	0.023	0.414	0.090	0.28	0.37	0.014	0.024	0.07	<3.0	3.4	
JUL													
01...		--	<0.010	0.124	<0.015	--	0.26	<0.010	<0.010	--	7.0	1.5	
01...		--	--	--	--	--	--	--	--	--	--	--	
01...		--	<0.010	0.145	0.018	--	<0.20	<0.010	<0.010	--	4.4	2.5	
01...		--	<0.010	0.172	0.032	0.36	0.39	<0.010	<0.010	--	4.1	45	
01...		--	<0.010	0.079	0.138	0.41	0.55	<0.010	0.012	0.04	54	409	

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

330205096280001 - LAVON LAKE SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
JAN							
22...	1225	1.00	378	7.9	7.0	10.6	89
22...	1227	10.0	383	7.9	6.5	10.7	89
22...	1229	20.0	369	7.9	6.5	10.6	88
22...	1231	31.0	376	7.9	6.5	10.6	88
MAY							
07...	1039	1.00	350	8.2	18.5	7.7	84
07...	1041	10.0	350	8.2	18.5	7.6	83
07...	1043	20.0	351	8.2	18.0	7.6	82
07...	1046	33.0	351	8.2	18.0	7.2	77
JUL							
01...	0909	1.00	331	8.0	27.5	6.9	90
01...	0911	10.0	331	8.0	27.0	6.6	85
01...	0913	20.0	333	7.8	27.0	5.9	76
01...	0915	28.0	342	7.4	26.5	1.7	22

330654096273201 - LAVON LAKE SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN												
22...	1253	1.00	386	8.0	6.5	0.61	11.1	92	K4	K6	140	26
22...	1257	10.0	383	8.0	6.0	--	11.1	91	--	--	--	--
22...	1302	20.0	377	8.0	6.0	--	11.0	90	--	--	--	--
22...	1307	27.0	376	8.0	6.0	--	11.0	90	--	--	140	29
MAY												
07...	1105	1.00	350	8.3	18.5	0.73	8.0	87	K1	K2	130	6
07...	1110	10.0	347	8.4	20.0	--	8.6	96	--	--	--	--
07...	1115	20.0	346	8.4	20.0	--	8.5	95	--	--	--	--
07...	1121	31.0	342	8.3	19.0	--	7.8	--	--	--	130	4
JUL												
01...	0939	1.00	315	8.0	28.5	0.61	7.1	94	K1	K1	120	16
01...	0945	10.0	316	8.0	28.5	--	7.0	93	--	--	--	--
01...	0950	20.0	317	8.1	28.5	--	7.2	95	--	--	--	--
01...	0955	26.0	318	8.1	28.5	--	7.3	96	--	--	120	18

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
JAN											
22...	49	3.9	25	0.9	3.9	110	38	30	0.30	8.5	227
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	50	4.0	25	0.9	4.5	110	39	30	0.30	8.5	230
MAY											
07...	47	3.0	14	0.5	3.8	120	26	17	0.24	0.89	187
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	46	2.9	13	0.5	3.6	120	24	15	0.23	1.2	181
JUL											
01...	42	3.1	15	0.6	3.7	100	24	15	0.25	5.0	169
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	43	3.1	14	0.6	3.5	100	24	15	0.25	4.9	171

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
22...	0.320	0.030	0.350	0.020	--	<0.20	0.020	0.020	0.06	4.0	1.0
22...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
22...	0.340	0.020	0.360	0.020	0.28	0.30	<0.010	0.020	0.06	<3.0	2.0
MAY											
07...	0.314	0.015	0.329	<0.015	--	0.27	0.019	<0.010	--	<3.0	3.4
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.286	0.013	0.299	0.021	0.29	0.31	<0.010	0.012	0.04	5.2	3.4
JUL											
01...	--	<0.010	0.075	<0.015	--	<0.20	<0.010	<0.010	--	<3.0	<1.0
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	--	<0.010	0.075	<0.015	--	0.41	<0.010	<0.010	--	<3.0	<1.0

TRINITY RIVER BASIN

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08060500 LAVON LAKE NEAR LAVON, TX--Continued

331023096250101 - LAVON LAKE SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
JAN												
22...	1639	1.00	435	8.1	9.0	0.45	11.1	98	20	K1	190	0
22...	1646	9.00	460	7.9	8.0	--	10.0	86	--	--	210	33
MAY												
07...	1430	1.00	323	8.0	20.5	0.15	7.2	82	K8	K6	130	0
07...	1437	10.0	323	8.0	20.5	--	7.1	81	--	--	--	--
07...	1443	14.0	322	7.9	20.5	--	6.1	69	--	--	130	0
JUL												
01...	1316	1.00	348	7.8	29.5	0.17	6.0	81	K1	27	140	8
01...	1322	8.00	352	7.7	30.0	--	5.4	73	--	--	140	7

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
JAN											
22...	71	3.8	19	0.6	3.4	200	33	17	0.30	3.9	271
22...	78	3.7	17	0.5	3.2	180	33	13	0.30	2.5	257
MAY											
07...	48	2.6	8.5	0.3	3.7	140	17	6.1	0.21	3.9	177
07...	--	--	--	--	--	--	--	--	--	--	--
07...	48	2.6	8.4	0.3	3.5	150	16	5.3	0.21	4.7	179
JUL											
01...	50	3.3	14	0.5	3.7	130	19	12	0.28	7.9	189
01...	52	3.3	14	0.5	3.7	140	19	12	0.28	8.0	194

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS.FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN											
22...	0.070	0.020	0.090	<0.015	--	<0.20	<0.010	<0.010	--	<3.0	1.0
22...	0.040	0.030	0.070	<0.015	--	<0.20	<0.010	<0.010	--	<3.0	5.0
MAY											
07...	0.504	0.022	0.526	<0.015	--	0.38	<0.010	<0.010	--	5.2	17
07...	--	--	--	--	--	--	--	--	--	--	--
07...	0.496	0.024	0.520	0.032	0.39	0.42	0.026	<0.010	--	5.8	23
JUL											
01...	--	<0.010	0.076	0.017	0.44	0.46	<0.010	0.011	0.03	<3.0	15
01...	--	<0.010	0.076	0.033	0.44	0.47	<0.010	0.010	0.03	<3.0	24

330448096315601 - LAVON LAKE SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)
JAN											
22...	1413	1.00	409	8.2	7.0	0.67	11.5	96	160	31	59
22...	1419	10.0	407	8.2	6.5	--	11.6	96	--	--	--
22...	1425	20.0	406	8.2	6.5	--	11.5	95	170	29	62
MAY											
07...	1215	1.00	359	8.3	20.5	0.52	8.6	97	130	2	49
07...	1220	10.0	359	8.3	20.5	--	8.5	96	--	--	--
07...	1225	22.0	364	8.2	20.0	--	7.6	85	130	0	50
JUL											
01...	1038	1.00	307	8.1	29.0	0.18	7.3	97	110	15	40
01...	1043	10.0	306	8.0	28.5	--	6.6	87	--	--	--
01...	1048	17.0	307	7.9	28.5	--	6.2	82	110	13	39

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

330448096315601 - LAVON LAKE SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
JAN											
22...	3.2	22	0.8	4.1	130	40	26	0.30	7.6	244	0.820
22...	--	--	--	--	--	--	--	--	--	--	--
22...	3.1	22	0.7	4.1	140	41	25	0.40	7.1	252	0.940
MAY											
07...	2.5	13	0.5	3.7	130	28	14	0.26	1.3	194	0.736
07...	--	--	--	--	--	--	--	--	--	--	--
07...	2.5	13	0.5	3.5	130	27	14	0.27	1.8	197	0.792
JUL											
01...	2.7	15	0.6	3.7	97	25	16	0.34	6.2	167	--
01...	--	--	--	--	--	--	--	--	--	--	--
01...	2.7	15	0.6	3.7	96	25	16	0.30	6.3	166	--

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN										
22...	0.030	0.850	<0.015	--	<0.20	0.010	0.020	0.06	<3.0	1.0
22...	--	--	--	--	--	--	--	--	--	--
22...	0.030	0.970	<0.015	--	<0.20	0.020	0.010	0.03	<3.0	2.0
MAY										
07...	0.030	0.766	<0.015	--	0.27	<0.010	<0.010	--	<3.0	<1.0
07...	--	--	--	--	--	--	--	--	--	--
07...	0.035	0.827	0.039	0.32	0.36	<0.010	<0.010	--	<3.0	3.4
JUL										
01...	<0.010	0.071	<0.015	--	0.38	<0.010	<0.010	--	<3.0	<1.0
01...	--	--	--	--	--	--	--	--	--	--
01...	<0.010	0.070	<0.015	--	0.40	<0.010	<0.010	--	<3.0	1.5

TRINITY RIVER BASIN

437

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site AC (330203096284901)

Phytoplankton Analyses October 1996 to September 1997

Date	1-22-97
Time	1156

TOTAL CELLS/mL	7,078
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	1.40

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

59

Order Pennales

Fragilaria crotonensis var. *crotonensis*

238

CHLOROPHYTA

Ankistrodesmus falcatus

89

Chlamydomonas sp.

208

CYANOPHYTA

Aphanocapsa delicatissima

4,164

Aphanocapsa elachista

2,082

EUGLENOPHYTA

Trachelomonas sp.

30

CRYPTOPHYTA

Cryptomonas erosa

208

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site EC (330448096315601)

Phytoplankton Analyses October 1996 to September 1997

Date	1-22-97
Time	1413
<hr/>	
TOTAL CELLS/mL	6,275
NUMBER OF SPECIES	10
DEPTH COLLECTED (ft.)	1.10
<hr/>	

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	625
Order Pennales	
<i>Synedra ulna</i> var. <i>ulna</i>	327
CHLOROPHYTA	
<i>Ankistrodesmus falcatus</i>	238
<i>Chlamydomonas</i> sp.	238
<i>Oocystis</i> sp.	30
<i>Selenastrum Westii</i>	59
CYANOPHYTA	
<i>Aphanocapsa delicatissima</i>	1,190
CHRYSTOPHYTA	
<i>Dinobryon sociale</i>	59
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	2,825
CRYPTOPHYTA	
<i>Cryptomonas erosa</i>	684

TRINITY RIVER BASIN

439

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site AC (330203096284901)

Phytoplankton Analyses October 1996 to September 1997

Date	5-7-97
Time	1003

TOTAL CELLS/mL	3,301
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	1.2

OrganismsCells/mL

BACILLARIOPHYTA

Order Pennales

Fragilaria crotonensis var *crotonensis*

30

CHLOROPHYTA

Chlamydomonas sp.

30

Micractinium pusillum

59

CYANOPHYTA

Aphanocapsa delicatissima

2,974

Chroococcus limneticus

119

EUGLENOPHYTA

Trachelomonas sp.

30

CRYPTOPHYTA

Cryptomonas erosa

59

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site EC (330448096315601)

Phytoplankton Analyses October 1996 to September 1997

Date	5-7-97
Time	1215

TOTAL CELLS/mL	4,372
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	0.85

<u>Organisms</u>	<u>Cells/mL</u>
BACILLARIOPHYTA	
Order Centrales	
<i>Cyclotella ocellata</i>	89
<i>Stephanodiscus astraea</i>	89
CHLOROPHYTA	
<i>Chlamydomonas</i> sp.	208
<i>Micractinium pusillum</i>	39
<i>Scenedesmus opoliensis</i>	59
CYANOPHYTA	
<i>Aphanizomenon flos-aquae</i>	595
<i>Aphanocapsa delicatissima</i>	2,677
EUGLENOPHYTA	
<i>Trachelomonas</i> sp.	625

TRINITY RIVER BASIN

441

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site AC (330203096284901)

Phytoplankton Analyses October 1996 to September 1997

Date	7-1-97
Time	839

TOTAL CELLS/mL	55,109
NUMBER OF SPECIES	18
DEPTH COLLECTED (ft.)	2.35

OrganismsCells/mL

BACILLARIOPHYTA

Order Centrales

Cyclotella ocellata

149

Order Pennales

Fragilaria crotonensis var *crotonensis*

744

CHLOROPHYTA

Chlamydomonas sp.

268

Coelastrum microporum

119

Cosmarium sp.

30

Micractinium pusillum

30

Pediastrum duplex

30

Scenedesmus bijuga

30

Scenedesmus opoliensis

59

CYANOPHYTA

Anabaena spiroides

2,379

Aphanizomenon flos-aquae

892

Aphanocapsa delicatissima

42,231

Aphanocapsa elachista

2,974

Chroococcus limneticus

119

Merismopedia tenuissima

4,520

Oscillatoria sp.

297

EUGLENOPHYTA

Phacus sp.

30

Trachelomonas sp.

208

TRINITY RIVER BASIN

08060500 LAVON LAKE NEAR LAVON, TX--Continued

Lavon Lake Site EC (330448096315601)

Phytoplankton Analyses October 1996 to September 1997

Date	7-1-97
Time	1038

TOTAL CELLS/mL	13,770
NUMBER OF SPECIES	13
DEPTH COLLECTED (ft.)	0.5

OrganismsCells/mL

BACILLARIOPHYTA

Order Pennales

Fragilaria crotonensis var *crotonensis*

268

CHLOROPHYTA

Chlamydomonas sp.

119

Oocystis sp.

30

Pediastrum duplex

30

Scenedesmus opoliensis

89

CYANOPHYTA

Anabaena spiroides

327

Aphanizomenon flos-aquae

297

Aphanocapsa delicatissima

10,112

Chroococcus limneticus

119

Merismopedia tenuissima

1,903

Oscillatoria sp.

297

EUGLENOPHYTA

Euglena sp.

30

Trachelomonas sp.

149

08061540 ROWLETT CREEK NEAR SACHSE, TX

LOCATION.--Lat 32°57'35", long 96°36'51", Dallas County, Hydrologic Unit 12030106, on right bank at downstream side of railroad embankment of Gulf, Colorado, and Santa Fe Railway Co., 100 ft downstream from Spring Creek, 150 ft upstream from State Highway 78, and 1.5 mi southwest of Sachse. Prior to Aug. 25, 1993, at site on left bank 150 ft downstream.

DRAINAGE AREA.--120 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 450.00 ft above sea level.

REMARKS.--Records fair. No known regulation or diversions. The North Texas Municipal Water District returns wastewater effluent into a tributary above this station. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1942, 35.4 ft in 1942, from information by Texas Department of Transportation.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 28	0230	9,140	24.83	Apr. 4	1515	6,550	23.07
Nov. 7	0600	6,500	23.01	May 19	2400	15,600	26.54
Nov. 24	0415	6,210	22.62	June 10	0145	4,530	19.42
Feb. 13	0330	5,550	21.55	Aug. 7	0815	5,890	22.11
Feb. 19	2015	6,070	22.38				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	528	196	75	50	188	118	135	63	92	33	25
2	25	143	154	71	47	636	115	131	55	84	32	34
3	26	94	134	71	49	431	122	125	52	78	33	52
4	25	83	127	69	52	188	3810	122	50	76	25	78
5	22	76	133	64	47	224	2300	118	52	174	22	26
6	23	77	125	67	408	162	246	115	47	120	18	22
7	23	3010	116	66	238	157	191	116	42	102	1690	18
8	27	194	109	130	126	154	172	114	43	79	138	15
9	31	137	106	96	106	151	159	169	128	240	93	16
10	32	114	104	75	102	150	153	126	1630	109	86	12
11	23	98	101	63	98	138	646	111	188	57	77	9.9
12	24	86	102	60	2650	496	179	105	164	51	71	12
13	24	81	103	59	2770	627	148	102	485	42	75	17
14	24	81	117	63	300	187	140	101	433	35	105	28
15	21	75	1470	68	222	166	134	132	197	37	68	33
16	20	83	221	66	195	157	130	110	129	51	63	55
17	17	445	106	62	178	154	125	101	630	37	59	39
18	19	103	99	60	173	150	123	100	140	36	55	38
19	24	87	92	60	1860	141	e124	1310	114	32	51	33
20	23	78	91	61	3220	137	e122	2600	105	31	50	52
21	539	66	92	63	1050	136	e150	155	97	30	52	46
22	212	58	88	63	318	133	e141	119	190	30	55	43
23	88	58	83	89	279	130	e129	104	174	26	51	65
24	68	4100	86	69	277	129	e118	134	122	25	41	39
25	66	674	85	55	320	277	1030	94	118	26	38	31
26	64	245	87	52	866	168	1090	87	691	28	41	34
27	1130	175	82	53	256	171	271	80	143	30	33	27
28	4080	154	79	47	204	179	181	72	114	33	23	23
29	214	1430	79	48	---	155	160	65	103	30	27	20
30	132	606	77	48	---	197	145	161	97	35	31	14
31	97	---	76	50	---	122	---	85	---	34	25	---
TOTAL	7168	13239	4720	2043	16461	6591	12672	7199	6596	1890	3261	956.9
MEAN	231	441	152	65.9	588	213	422	232	220	61.0	105	31.9
MAX	4080	4100	1470	130	3220	636	3810	2600	1630	240	1690	78
MIN	17	58	76	47	47	122	115	65	42	25	18	9.9
AC-FT	14220	26260	9360	4050	32650	13070	25130	14280	13080	3750	6470	1900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

	MEAN	126	111	141	88.8	152	178	165	229	139	48.5	34.0	51.1
MAX	610	586	898	343	588	476	573	1039	566	241	105	180	
(WY)	1982	1995	1992	1992	1997	1995	1990	1982	1981	1994	1997	1974	
MIN	4.88	7.63	7.52	6.72	7.83	11.9	23.8	18.8	4.60	1.91	1.78	3.75	
(WY)	1979	1976	1978	1976	1976	1971	1972	1972	1971	1972	1972	1969	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1968 - 1997

ANNUAL TOTAL	40446.6	82796.9	
ANNUAL MEAN	111	227	
HIGHEST ANNUAL MEAN			122
LOWEST ANNUAL MEAN			265
HIGHEST DAILY MEAN	4100	Nov 24	14900
LOWEST DAILY MEAN	4.1	Mar 14	9.9
ANNUAL SEVEN-DAY MINIMUM	6.8	Mar 11	14
INSTANTANEOUS PEAK FLOW			15600
INSTANTANEOUS PEAK STAGE			26.54
ANNUAL RUNOFF (AC-FT)	80230	164200	88040
10 PERCENT EXCEEDS	154	319	190
50 PERCENT EXCEEDS	42	94	43
90 PERCENT EXCEEDS	14	26	7.7

e Estimated

TRINITY RIVER BASIN

08061550 LAKE RAY HUBBARD NEAR FORNEY, TX

LOCATION.--Lat 32°48'00", long 96°29'45", Kaufman County, Hydrologic Unit 12030106, near right end of spillway on Forney Dam on East Fork Trinity River, 0.5 mi upstream from Duck Creek, 1.8 mi upstream from bridge on U.S. Highway 80, 3.8 mi northwest of Forney, 24 mi downstream from Lavon Dam, and 31.8 mi upstream from mouth.

DRAINAGE AREA.--1,071 mi²

PERIOD OF RECORD.--January 1968 to December 1993. September 30, 1996 to September 30, 1997.

Water-quality records.--Chemical analyses: October 1969 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is above mean sea level.

REMARKS.--The lake is formed by a rolled earthfill dam 12,500 ft long, including a 664-foot gated spillway with fourteen 40- by 28-foot tainter gates. Closure was made in September 1967, but the gates were not closed until Mar. 22, 1978. Low-flow releases are made through three 4.5- by 6.75-ft sluiceways. The lake was built by the city of Dallas for municipal water supply. Flow is affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 12,530 acre-ft. These structures control runoff from 44.5 square miles above this station and below Lavon Lake station (08060500). Satellite telemeter at station. Area and capacity tables are based on surveys made in 1953 and 1959. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-ft)
Top of dam	450.0	--
Design flood	440.5	611,500
Top of tainter gates	437.5	536,700
Top of conservation pool	435.5	489,900
Crest of spillway (sill of tainter gates)	409.5	83,130
Lowest gates outlet (invert)	388.0	80

COOPERATION.--The area and capacity tables were provided by Forrest and Cotton, Consulting Engineers, for the city of Dallas.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 544,100 acre-ft May 4, 1990 (elevation, 437.81 ft); minimum since first appreciable filling following closure of gates on Mar. 22, 1970, 326,400 acre-ft Sept. 29, 30, 1978 (elevation, 427.48 ft). Station discontinued Dec. 31, 1993 and reactivated Sept. 30, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 508,800 acre-ft May 19 at 2000 hours (elevation, 436.32 ft); minimum, 366,300 acre-ft Oct. 1 (elevation, 429.61 ft).

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

427.0	317,500	433.0	435,000	436.0	501,400
429.0	354,700	434.0	456,500	437.0	524,700
432.0	414,000	435.0	478,600	438.0	548,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368700	399800	475700	489000	486500	489200	490200	487400	493800	490400	471500	459600
2	369800	399400	482500	488300	486500	491300	490200	488800	494300	490200	470800	459600
3	369600	398400	488100	487000	487000	491100	491300	487200	493600	489700	469700	459600
4	369000	399000	490200	489700	487000	489200	506700	486100	493600	490200	468800	457400
5	368700	401600	490600	489500	486300	487700	498200	486500	492400	490400	468400	456100
6	368100	405100	492700	489500	488300	484900	488100	487200	492200	490200	467000	455400
7	367500	411000	492200	488800	490600	485800	485400	487200	491500	489700	476800	454300
8	367900	414200	489700	489700	490400	487900	488100	489200	491100	489000	476800	453400
9	368300	415500	488300	489700	491100	491700	488800	489900	492200	489700	476200	453700
10	368500	415500	489700	491100	490400	491700	489500	486100	493800	489500	475700	451700
11	368100	414400	492900	490400	489200	491100	493600	487400	492200	488800	475500	450200
12	367900	414800	492400	489700	505800	492700	489200	488100	491500	488100	475500	448900
13	368100	414200	491100	488800	502300	494500	486700	488600	495900	487400	475000	448200
14	367700	412800	493100	488100	490400	487900	486700	489900	493600	486700	473700	447600
15	367500	412000	490800	489500	489200	485800	488800	492000	492200	487000	472800	446500
16	367500	416300	491500	488300	489900	487900	489900	491300	495600	486300	471000	445900
17	367900	419000	491700	487400	488600	488600	490600	490800	494500	485200	471300	445200
18	367900	417500	491100	487000	487700	491100	492200	491100	493800	484500	470100	443900
19	367700	416900	489500	487700	497500	490200	492900	501400	492900	483600	469500	443300
20	367500	419800	488600	487000	498600	489900	490200	497000	492200	482900	469900	443700
21	368100	421700	488300	487900	491700	489900	490800	489500	492200	481800	468200	442200
22	368700	419000	489500	488300	486300	491300	488600	489000	492900	480900	469000	441100
23	369000	427600	492900	489000	486500	491300	486700	489700	492900	480400	467900	442200
24	368300	440300	489700	489900	488600	490600	486500	490800	491100	479100	466600	441100
25	367900	446300	489000	488600	489200	493300	490800	490800	491100	478400	465900	439200
26	368100	447600	489700	488300	488600	488100	488800	492400	492400	477700	464200	437900
27	379200	448700	488800	491700	486500	487200	484500	493800	492400	477100	462400	437100
28	390500	451100	489500	488600	487200	490600	487200	493100	492200	475700	461300	437100
29	396100	458900	489700	487900	---	492700	487200	492400	491700	475700	460200	435400
30	399000	469300	489700	487000	---	492000	488800	494500	491100	474200	460700	434700
31	400400	---	489500	487200	---	491300	---	493800	---	472800	460000	---
MAX	400400	469300	493100	491700	505800	494500	506700	501400	495900	490400	476800	459600
MIN	367500	398400	475700	487000	486300	484900	484500	486100	491100	472800	460000	434700
(+)	431.33	434.58	435.48	435.38	435.38	435.56	435.45	435.67	435.55	434.74	434.16	432.99
(@)	+34500	+68900	+20200	-2300	0	+4100	-2500	+5000	-2700	-18300	-12800	-25300

WTR YR 1997 MAX 506700 MIN 367500 (@) +68800

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

08061750 EAST FORK TRINITY RIVER NEAR FORNEY, TX

LOCATION.--Lat 32°46'27", long 96°30'12", Kaufman County, Hydrologic Unit 12030106, on right bank 25 ft downstream from bridge on U.S. Highway 80, 0.2 mi downstream from Duck Creek, 1.9 mi downstream from Lake Ray Hubbard Dam, 2.5 mi upstream from Texas and Pacific Railroad Co. bridge, 2.6 mi northwest of Forney, and 30.8 mi upstream from mouth.

DRAINAGE AREA.--1,118 mi², of which 1,071 mi² is above Lake Ray Hubbard.

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

Chemical and biochemical analyses: November 1981 to January 1993.

SPECIFIC CONDUCTANCE: October 1981 to January 1993.

pH: August 1986 to January 1993.

WATER TEMPERATURE: October 1981 to January 1993.

DISSOLVED OXYGEN: August 1986 to January 1993.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 374.86 ft above sea level. Prior to Aug. 26, 1975, recording gage at 3 ft higher datum located at site 126 ft upstream and 868 ft to left. From Aug. 26, 1975, to May 12, 1977, recording gage at 3 ft higher datum located at site 105 ft downstream. From May 13, 1977, to Sept. 30, 1984, recording gage at 3 ft higher datum at current site.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in January 1973, at least 10% of contributing drainage area has been regulated by Lake Ray Hubbard (489,900 acre-ft), 1.9 mi upstream. Low flow is sustained by wastewater effluent discharge from the city of Garland into Duck Creek, which enters the East Fork Trinity River 0.2 mi upstream from this station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	122	464	800	49	1700	2140	2670	1940	68	46	51
2	54	121	211	692	49	2410	2140	2990	1130	61	47	54
3	52	88	174	687	49	2630	2140	2990	445	61	47	56
4	40	82	1790	411	48	2440	8060	2770	254	58	45	159
5	43	75	1920	57	45	2430	12400	2610	55	94	42	72
6	52	66	1880	57	95	2370	7670	2610	44	314	42	52
7	59	924	2080	77	842	2260	3130	2640	39	213	673	46
8	55	427	2180	184	1480	2160	2260	2660	44	78	474	52
9	49	170	1230	223	1650	2170	2210	2690	80	63	163	57
10	44	e112	1380	94	2100	2470	2170	2650	1220	218	133	57
11	43	e100	1600	75	1730	2410	4320	1260	944	73	140	50
12	45	e90	1940	66	4120	2440	2020	2230	98	62	81	48
13	48	78	1970	55	10500	5030	922	2300	56	61	75	47
14	52	87	1080	56	7910	4610	3040	2420	2310	56	71	56
15	58	91	2090	58	2230	1870	2100	2450	1740	52	63	57
16	53	79	520	72	2240	1760	3050	2930	390	49	62	54
17	46	349	1550	51	2440	1740	2270	2700	2920	51	63	53
18	48	174	1780	46	2430	1740	2040	2150	1320	49	61	50
19	48	102	952	50	4010	1740	1750	2910	795	49	67	50
20	51	99	624	68	8620	1730	2640	10600	588	46	66	49
21	406	96	276	63	7990	1930	3300	5250	98	46	73	50
22	882	84	76	48	4690	2150	3840	1630	288	51	63	53
23	262	62	89	61	2630	2140	3050	1890	984	48	58	60
24	111	2850	478	227	2790	2140	3020	1880	1290	40	55	60
25	77	1050	71	399	2900	2870	3390	1870	175	47	60	58
26	76	422	54	132	3130	2910	5920	1850	114	51	61	54
27	142	249	52	158	2270	2150	3730	1960	164	53	59	49
28	2730	184	55	165	577	2140	489	2000	86	48	55	51
29	628	850	57	46	---	2140	2210	1920	70	43	53	51
30	322	820	203	41	---	2150	2630	1950	70	49	52	50
31	164	---	679	45	---	2140	---	1950	---	44	52	---
TOTAL	6796	10103	29505	5264	79614	72970	100051	83380	19751	2296	3102	1706
MEAN	219	337	952	170	2843	2354	3335	2690	658	74.1	100	56.9
MAX	2730	2850	2180	800	10500	5030	12400	10600	2920	314	673	159
MIN	40	62	52	41	45	1700	489	1260	39	40	42	46
AC-FT	13480	20040	58520	10440	157900	144700	198500	165400	39180	4550	6150	3380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1997#, BY WATER YEAR (WY)

	MEAN	418	587	637	463	828	1035	1085	1660	1153	446	137	203
MAX	3975	3076	3276	2421	2843	2510	3335	8008	5436	2207	1246	1583	
(WY)	1974	1995	1992	1992	1997	1992	1997	1990	1989	1982	1989	1974	
MIN	15.8	26.4	22.3	24.7	33.2	34.5	35.7	42.5	28.2	19.7	23.1	22.6	
(WY)	1978	1977	1978	1981	1981	1980	1978	1988	1978	1978	1980	1977	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1973 - 1997#

ANNUAL TOTAL	72240											
ANNUAL MEAN	197											
HIGHEST ANNUAL MEAN												
LOWEST ANNUAL MEAN												
HIGHEST DAILY MEAN	2850											
LOWEST DAILY MEAN	35											
ANNUAL SEVEN-DAY MINIMUM	40											
INSTANTANEOUS PEAK FLOW												
INSTANTANEOUS PEAK STAGE												
ANNUAL RUNOFF (AC-FT)	143300											
10 PERCENT EXCEEDS	423											
50 PERCENT EXCEEDS	57											
90 PERCENT EXCEEDS	43											

e Estimated

Period of regulated streamflow

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX

LOCATION.--Lat 32°38'19", long 96°29'06", Kaufman County, Hydrologic Unit 12030106, on right bank 15 ft downstream from downstream eastbound bridge on U.S. Highway 175, 0.7 mi downstream from Mustang Creek, 1.8 mi northwest of Crandall, 4.0 mi upstream from Buffalo Creek, and 11.0 mi upstream from mouth.

DRAINAGE AREA.--1,256 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1949 to current year.

REVISED RECORDS.--WSP 1922: Drainage area. WDR TX-75-1: 1974.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 338.69 ft above sea level. Prior to Feb. 21, 1983, at datum 5.00 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since September 1953, at least 10% of contributing drainage area has been regulated by Lavon Lake (station 08060500). Additional regulation by Lake Ray Hubbard since Mar. 22, 1970. The city of Forney discharges wastewater effluent into a tributary below Lake Ray Hubbard and above this station. The North Texas Municipal Water District discharges wastewater effluent into tributaries above this station from their Mesquite and Changler's Landing wastewater treatment plants. Flow is also affected at times by discharge from the flood-detention pools of 20 floodwater-retarding structures with a combined detention capacity of 11,760 acre-ft. These structures control runoff from a 39.2 mi² area above this station. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--4 years (water years 1950-53) prior to regulation by Lavon Lake, 652 ft³/s (472,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1950-53).--Maximum discharge, 16,400 ft³/s May 2, 1953 (gage height, 19.87 ft); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	170	1470	633	76	1400	1960	2600	1710	77	51	76
2	83	140	505	509	77	2390	1960	2650	1550	69	52	77
3	85	125	339	492	e86	3170	1980	2840	327	68	53	77
4	79	115	893	443	e86	3060	4040	2890	137	67	54	94
5	70	110	1850	127	e80	2600	13700	2700	91	91	53	107
6	71	108	1840	80	e95	e2350	12700	2520	75	148	51	81
7	76	790	1820	116	e950	e2210	7340	2490	68	188	531	95
8	73	779	2040	290	1380	2110	3910	2500	67	92	811	103
9	72	250	1740	364	1380	2050	2750	2570	81	71	209	99
10	66	157	1230	189	1860	2270	2600	2600	446	105	132	82
11	64	128	e1460	133	1960	2420	2880	2170	1170	93	129	81
12	65	122	e1690	113	2570	2350	e4600	1540	288	64	111	78
13	65	112	1850	97	9240	3250	e2200	1980	84	61	97	90
14	69	121	1520	92	10800	5140	e1100	2060	940	61	95	101
15	71	116	1270	94	7550	4190	e3800	2130	2240	58	90	93
16	73	110	1630	95	3470	2130	e2300	2350	1050	57	89	82
17	70	292	995	94	2860	1700	2680	2560	1700	57	87	79
18	68	311	1910	76	2450	1640	2160	2390	2540	58	87	79
19	65	151	1230	77	3310	1610	1830	2020	903	59	87	78
20	67	128	554	84	9620	1580	1530	4910	554	57	89	77
21	210	119	328	98	10400	1570	2490	8540	207	56	88	78
22	1070	114	138	88	8420	1820	3040	4660	142	55	89	80
23	349	106	112	118	4790	1940	3330	2060	467	55	81	84
24	138	1560	275	308	3050	1930	2960	e1770	1340	51	79	90
25	104	3760	166	220	3230	2040	3040	e1650	362	52	82	84
26	95	1480	92	229	3500	2680	4670	e1610	167	54	82	83
27	112	398	89	114	3760	2700	5860	1620	147	56	82	82
28	2400	280	92	166	2030	2020	e6100	1740	107	58	80	80
29	2570	1200	90	101	---	1920	e800	1730	82	54	77	80
30	564	2320	91	77	---	1880	2350	1700	75	54	76	79
31	262	---	297	77	---	1880	---	1750	---	56	74	---
TOTAL	9317	15672	29606	5794	99080	72000	112660	79300	19117	2202	3848	2549
MEAN	301	522	955	187	3539	2323	3755	2558	637	71.0	124	85.0
MAX	2570	3760	2040	633	10800	5140	13700	8540	2540	188	811	107
MIN	64	106	89	76	76	1400	800	1540	67	51	51	76
AC-FT	18480	31090	58720	11490	196500	142800	223500	157300	37920	4370	7630	5060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1997#, BY WATER YEAR (WY)

MEAN	395	497	675	521	799	883	1066	1772	1062	445	163	206
MAX	4116	3293	4401	3083	3539	2714	3755	9586	5718	2026	1459	1560
(WY)	1974	1995	1972	1972	1997	1992	1997	1957	1989	1982	1989	1974
MIN	1.58	3.78	3.57	7.77	23.1	10.6	7.47	42.1	17.8	3.84	.000	.000
(WY)	1957	1956	1955	1957	1957	1956	1956	1959	1954	1956	1956	1954

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1954 - 1997#

ANNUAL TOTAL	101661		451145						
ANNUAL MEAN	278		1236			706			
HIGHEST ANNUAL MEAN						2209			1995
LOWEST ANNUAL MEAN						38.4			1955
HIGHEST DAILY MEAN	3760	Nov 25	13700	Apr 5		48800		May 5	1990
LOWEST DAILY MEAN	57	May 22	51	Jul 24		.00		Oct 1	1953
ANNUAL SEVEN-DAY MINIMUM	64	May 22	53	Jul 31		.00		Oct 1	1953
INSTANTANEOUS PEAK FLOW			15700	Apr 4		59900		May 5	1990
INSTANTANEOUS PEAK STAGE			17.37	Apr 4		27.17		May 5	1990
ANNUAL RUNOFF (AC-FT)	201600		894800			511700			
10 PERCENT EXCEEDS	580		2920			2130			
50 PERCENT EXCEEDS	115		210			93			
90 PERCENT EXCEEDS	82		68			18			

e Estimated

Period of regulated streamflow

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January to April 1964, May 1966 to September 1981, June 1986 to current year. Pesticide analyses: March 1977 to July 1981. Sediment analyses: April to September 1964.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to September 1981, May 1986 to current year.

pH: March to September 1977, May 1986 to current year.

WATER TEMPERATURE: October 1967 to September 1981, May 1986 to current year.

DISSOLVED OXYGEN: March to September 1977, May 1986 to current year.

INSTRUMENTATION.--From March to November 1977, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen at this station. Since May 1986, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 1,010 microsiemens Nov. 23, 1968; minimum, 100 microsiemens May 17, 1989.

pH: Maximum, 9.5 units Oct. 30, 1989; minimum, 6.7 units on several days during 1988 and 1991.

WATER TEMPERATURE: Maximum, 34.0°C June 26, July 1, Aug. 16, 17, 1980; minimum, 1.0°C Jan. 3, 1979.

DISSOLVED OXYGEN: Maximum, 16.4 mg/L Mar. 13, 1996; minimum, 0.0 mg/L on many days during 1977 and 1991.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 902 microsiemens Sept. 27; minimum, 164 microsiemens Nov. 24.

pH: Maximum, 8.6 units Oct. 28 and Mar. 11; minimum, 7.0 units Nov. 7 and 8.

WATER TEMPERATURE: Maximum, 33.0°C July 29; minimum, 5.0°C Jan. 8, 13, and 14.

DISSOLVED OXYGEN: Maximum, 12.5 mg/L Jan. 13; minimum, 2.4 mg/L Aug. 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CAC03)	HARD-NESS NONCARB DISSOLV FLD. AS CAC03 (MG/L)
OCT 23...	0945	357	386	7.5	16.0	6.6	68	4.4	120	31
JAN 29...	0905	101	525	7.8	7.0	11.2	94	2.2	160	33
FEB 27...	0845	3840	317	7.9	8.5	9.5	83	1.8	120	0
MAY 07...	1425	2500	364	7.7	19.0	8.2	89	1.0	130	15
JUN 12...	1010	248	364	7.8	26.0	6.6	84	2.0	130	21
JUL 16...	0910	63	680	7.6	29.0	3.7	48	1.2	150	35
DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 23...	43	2.7	27	1	6.1	88	39	29	0.50	7.5
JAN 29...	59	3.8	43	1	6.6	130	56	42	0.60	8.3
FEB 27...	44	2.5	14	0.5	4.1	120	24	12	0.34	7.5
MAY 07...	47	2.8	16	0.6	4.1	110	28	18	0.31	1.5
JUN 12...	48	3.0	22	0.8	4.6	110	32	22	0.35	3.6
JUL 16...	54	3.8	68	2	9.6	120	63	72	0.79	9.4
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 23...	224	3.13	0.070	3.20	0.120	0.58	0.70	0.580	0.560	1.7
JAN 29...	318	3.88	0.120	4.00	0.240	0.66	0.90	1.10	0.960	2.9
FEB 27...	186	0.760	0.020	0.780	0.060	0.44	0.50	0.130	0.130	0.40
MAY 07...	190	0.725	0.026	0.751	0.030	0.29	0.32	0.117	0.113	0.35
JUN 12...	204	--	<0.010	0.697	<0.015	--	0.41	0.194	0.207	0.63
JUL 16...	405	10.6	0.406	11.0	0.107	0.97	1.1	2.00	1.90	5.8

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	9317	383	217	5470	29	738	37	926	110
NOV.	1996	15672	368	208	8820	24	1030	33	1420	120
DEC.	1996	29606	328	185	14820	17	1370	28	2210	120
JAN.	1997	5794	520	295	4620	44	689	52	813	140
FEB.	1997	99080	289	163	43680	13	3500	23	6250	110
MAR.	1997	72000	325	184	35740	16	3120	27	5240	120
APR.	1997	112660	329	186	56610	17	5050	27	8350	120
MAY	1997	79300	346	196	41880	18	3900	29	6250	120
JUNE	1997	19117	366	207	10680	21	1090	32	1640	130
JULY	1997	2202	624	355	2110	60	358	66	392	160
AUG.	1997	3848	522	297	3080	45	471	53	548	140
SEPT	1997	2549	683	389	2680	71	489	75	514	160
TOTAL		451145	**	**	230200	**	21810	**	34550	**
WTD.AVG.		1240	334	189	**	18	**	28	**	120

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	791	769	783	572	511	533	322	239	274	397	338	358
2	789	774	784	632	560	591	389	322	353	382	361	372
3	789	776	783	671	630	652	---	---	e430	382	358	370
4	812	786	796	664	628	637	---	---	e340	389	353	367
5	818	786	807	641	632	637	---	---	e300	488	389	427
6	819	781	803	649	639	643	---	---	e290	662	488	558
7	827	818	822	658	265	501	289	282	285	773	662	727
8	836	819	828	457	309	379	286	279	283	755	427	634
9	819	794	806	567	457	510	326	285	311	521	434	486
10	795	743	775	656	567	621	323	305	312	510	446	485
11	836	795	819	719	656	702	314	295	309	583	502	549
12	842	826	834	753	708	726	310	291	303	659	582	626
13	831	783	814	757	732	744	300	291	296	698	659	680
14	831	821	826	791	753	775	338	300	322	699	679	692
15	834	806	821	753	718	726	429	302	352	711	678	701
16	806	778	797	787	730	759	399	310	339	731	706	716
17	810	794	800	775	402	633	444	302	367	741	724	731
18	832	810	825	646	407	474	308	299	302	749	732	739
19	835	805	825	550	490	528	347	308	334	750	702	730
20	844	826	836	636	548	591	388	347	375	756	721	747
21	844	200	779	677	636	660	459	386	404	758	748	751
22	468	175	284	710	677	695	542	459	493	758	749	753
23	431	321	379	731	703	722	694	542	622	753	742	749
24	560	431	503	731	164	386	718	392	639	750	521	630
25	658	560	614	231	189	200	485	390	425	572	490	513
26	691	658	678	371	231	306	646	485	558	597	419	464
27	778	679	728	439	371	399	698	646	685	596	424	521
28	685	168	235	515	439	479	717	698	711	696	480	628
29	301	217	247	536	197	387	730	712	723	589	478	531
30	401	301	365	265	219	246	744	728	735	704	589	645
31	511	400	456	---	---	---	749	364	598	735	704	726
MONTH	844	168	692	791	164	561	749	239	422	773	338	600

e Estimated

TRINITY RIVER BASIN

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08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	761	734	748	487	337	407	337	331	335	371	367	369
2	772	758	764	345	330	334	344	334	339	370	365	367
3	772	753	760	339	313	324	343	339	342	369	365	367
4	757	744	748	329	323	326	410	233	295	368	365	367
5	758	734	742	333	329	331	284	226	257	368	365	367
6	752	735	741	335	329	333	316	284	302	369	363	366
7	759	347	544	332	329	330	331	316	324	368	360	364
8	433	306	338	334	331	332	342	331	336	362	359	361
9	319	309	315	334	327	332	352	330	347	374	356	364
10	309	301	305	368	324	339	355	352	353	364	356	361
11	311	301	308	327	323	325	369	318	347	418	352	364
12	339	188	267	339	324	329	341	323	337	441	344	370
13	233	188	212	342	288	307	425	339	372	353	351	352
14	275	230	257	297	287	291	450	346	370	354	349	350
15	293	275	282	318	297	306	360	357	359	382	308	348
16	307	272	298	329	318	325	359	354	356	364	322	342
17	307	303	304	330	326	328	364	357	360	341	336	339
18	315	307	311	332	328	330	376	353	361	347	341	345
19	357	276	311	330	326	328	426	349	370	361	323	344
20	276	244	263	329	325	328	454	354	381	332	267	288
21	279	253	270	331	319	327	380	355	367	328	302	315
22	300	279	291	324	319	322	371	357	361	342	323	332
23	322	300	314	325	321	322	363	358	360	342	337	340
24	322	316	320	325	320	322	365	359	363	---	---	e340
25	344	316	331	337	316	324	366	321	353	---	---	e340
26	328	319	324	337	317	321	321	296	303	---	---	e350
27	320	316	318	332	317	326	335	304	320	350	347	349
28	430	320	367	334	330	332	392	335	355	348	345	347
29	---	---	---	335	331	334	449	362	391	349	346	348
30	---	---	---	336	331	334	370	363	368	363	348	351
31	---	---	---	337	331	334	---	---	---	370	348	358
MONTH	772	188	405	487	287	328	454	226	346	441	267	350

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	349	327	345	668	642	656	669	662	666	---	---	e640
2	367	342	348	668	646	653	682	667	676	---	---	e640
3	446	367	420	661	638	648	694	680	687	---	---	e640
4	---	---	e460	692	661	675	692	683	687	645	631	636
5	---	---	e520	709	691	703	687	663	677	687	630	658
6	619	508	550	691	483	566	663	647	657	684	598	631
7	705	619	677	639	312	495	649	172	455	631	603	611
8	720	699	713	466	315	404	399	209	271	668	631	656
9	719	707	714	529	465	490	423	313	365	700	668	689
10	711	342	623	620	529	578	497	423	466	689	664	673
11	349	327	338	656	513	613	570	497	541	680	655	662
12	413	339	371	524	481	503	600	570	582	717	680	703
13	529	413	478	608	524	567	599	533	558	726	709	719
14	574	303	441	672	608	644	620	539	582	727	705	715
15	329	302	317	689	672	682	666	620	642	721	706	714
16	373	322	341	708	660	674	678	666	673	712	691	703
17	374	220	298	663	648	654	679	673	676	693	665	681
18	331	301	317	676	654	669	773	679	745	673	659	664
19	375	328	353	705	672	692	762	673	714	690	673	680
20	385	374	379	699	693	696	674	660	668	692	680	685
21	414	385	403	711	692	703	669	654	659	700	691	694
22	572	414	481	725	700	713	687	669	680	700	687	695
23	608	407	481	713	699	705	707	684	696	703	682	697
24	411	326	342	707	690	699	690	676	683	682	639	659
25	397	347	374	696	684	690	684	668	677	689	637	656
26	499	349	441	708	685	694	689	665	680	842	688	730
27	537	376	470	706	698	701	665	658	661	902	776	852
28	643	537	591	714	698	707	---	---	e650	776	698	724
29	643	607	621	717	697	703	---	---	e650	711	682	698
30	644	624	635	698	667	684	---	---	e640	711	698	706
31	---	---	---	667	656	660	---	---	e640	---	---	---
MONTH	720	220	461	725	312	643	773	172	623	902	598	684
YEAR	902	164	511									

e Estimated

TRINITY RIVER BASIN

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.5	7.4	7.5	8.0	7.9	8.0	---	---	---	7.8	7.7	7.7
2	7.5	7.3	7.4	8.0	7.9	7.9	---	---	---	7.8	7.7	7.7
3	7.5	7.3	7.4	7.9	7.9	7.9	---	---	---	7.7	7.5	7.7
4	7.5	7.4	7.4	7.9	7.8	7.8	---	---	---	7.8	7.7	7.7
5	7.5	7.4	7.4	7.8	7.7	7.8	---	---	---	7.7	7.7	7.7
6	7.6	7.5	7.5	7.7	7.1	7.3	---	---	---	7.7	7.6	7.6
7	7.5	7.4	7.5	7.4	7.0	7.2	---	---	---	7.7	7.5	7.5
8	7.5	7.3	7.4	7.1	7.0	7.1	---	---	---	7.6	7.5	7.6
9	7.6	7.4	7.5	7.2	7.1	7.2	---	---	---	7.6	7.5	7.6
10	7.5	7.4	7.4	7.4	7.2	7.2	---	---	---	7.8	7.6	7.7
11	7.4	7.3	7.4	7.4	7.3	7.4	---	---	---	7.9	7.8	7.9
12	7.4	7.3	7.4	7.4	7.4	7.4	---	---	---	7.9	7.9	7.9
13	7.4	7.3	7.3	7.4	7.3	7.4	---	---	---	7.9	7.8	7.9
14	7.4	7.3	7.4	7.5	7.4	7.4	---	---	---	7.9	7.8	7.8
15	7.4	7.4	7.4	7.5	7.4	7.5	---	---	---	7.9	7.7	7.8
16	7.4	7.4	7.4	7.5	7.4	7.4	---	---	---	7.8	7.7	7.8
17	7.4	7.3	7.4	7.6	7.5	7.5	7.7	7.5	7.6	7.7	7.6	7.7
18	7.3	7.2	7.3	7.6	7.5	7.5	7.7	7.6	7.7	7.7	7.6	7.7
19	7.5	7.3	7.4	7.8	7.6	7.6	7.8	7.6	7.7	7.7	7.6	7.6
20	7.5	7.5	7.5	7.8	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.7
21	8.0	7.3	7.5	---	---	---	7.7	7.7	7.7	7.7	7.6	7.7
22	8.0	7.4	7.6	---	---	---	7.7	7.6	7.6	7.7	7.6	7.6
23	7.9	7.5	7.8	---	---	---	7.6	7.6	7.6	7.7	7.6	7.6
24	7.9	7.8	7.8	---	---	---	7.7	7.6	7.6	7.7	7.4	7.6
25	7.8	7.7	7.8	---	---	---	7.8	7.7	7.7	7.7	7.5	7.6
26	7.7	7.7	7.7	---	---	---	7.7	7.6	7.7	7.9	7.7	7.8
27	7.7	7.6	7.6	---	---	---	7.7	7.6	7.6	7.9	7.7	7.8
28	8.6	7.5	8.3	---	---	---	7.7	7.6	7.6	7.8	7.7	7.7
29	8.3	8.0	8.2	---	---	---	7.7	7.6	7.6	8.0	7.8	7.9
30	8.1	7.9	8.0	---	---	---	7.7	7.5	7.6	7.9	7.8	7.8
31	8.1	8.0	8.0	---	---	---	7.7	7.5	7.6	7.9	7.8	7.8
MONTH	8.6	7.2	7.6	8.0	7.0	7.5	7.8	7.5	7.6	8.0	7.4	7.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.9	7.8	7.8	8.0	7.8	7.9	8.1	7.6	7.8	7.7	7.5	7.6
2	7.8	7.7	7.7	7.9	7.8	7.9	8.0	7.6	7.7	7.7	7.5	7.6
3	7.7	7.7	7.7	7.9	7.9	7.9	7.8	7.5	7.7	7.7	7.4	7.5
4	7.8	7.6	7.7	8.0	7.9	7.9	7.8	7.1	7.4	7.7	7.5	7.6
5	7.8	7.7	7.7	8.0	7.8	7.9	7.6	7.1	7.3	7.8	7.5	7.6
6	7.7	7.6	7.7	8.1	7.9	8.0	7.8	7.4	7.6	7.8	7.5	7.7
7	7.8	7.6	7.7	8.0	7.9	8.0	8.0	7.7	7.8	8.0	7.6	7.7
8	8.1	7.8	7.9	8.1	7.8	7.9	8.0	7.7	7.8	8.0	7.3	7.8
9	8.1	8.0	8.1	8.5	7.8	8.0	8.1	7.7	7.9	7.9	7.2	7.7
10	8.1	8.0	8.1	8.5	8.1	8.3	8.2	7.8	8.0	8.2	7.5	7.8
11	8.1	8.0	8.0	8.6	8.1	8.3	8.2	7.7	7.9	8.1	7.6	7.9
12	8.1	7.5	7.9	8.5	8.1	8.2	8.0	7.7	7.8	8.2	7.8	8.0
13	7.9	7.7	7.8	8.3	7.8	8.0	7.9	7.6	7.7	---	---	---
14	8.0	7.8	7.9	8.4	7.9	8.1	8.1	7.5	7.9	8.3	8.2	8.2
15	7.9	7.8	7.9	8.5	8.1	8.3	8.0	7.8	7.8	---	---	---
16	8.1	7.8	7.9	8.4	8.1	8.2	7.9	7.8	7.9	---	---	---
17	8.1	8.0	8.1	8.3	8.1	8.2	7.9	7.7	7.7	---	---	---
18	8.1	8.0	8.0	8.2	8.0	8.1	7.9	7.6	7.8	---	---	---
19	8.0	7.9	8.0	8.2	8.0	8.1	8.0	7.7	7.8	---	---	---
20	7.9	7.8	7.9	8.3	8.0	8.1	7.9	7.6	7.8	---	---	---
21	7.9	7.8	7.9	8.3	8.0	8.1	7.9	7.6	7.7	---	---	---
22	8.0	7.9	7.9	8.2	7.8	8.0	7.6	7.5	7.5	---	---	---
23	8.0	7.9	7.9	8.3	7.8	8.0	7.6	7.4	7.5	---	---	---
24	8.0	7.9	7.9	8.3	7.8	8.0	7.6	7.5	7.6	---	---	---
25	7.9	7.9	7.9	8.2	7.6	7.8	7.6	7.4	7.5	---	---	---
26	7.9	7.8	7.9	7.9	7.5	7.7	7.4	7.3	7.4	---	---	---
27	7.9	7.8	7.9	8.0	7.6	7.8	7.5	7.3	7.4	7.8	7.7	7.7
28	7.9	7.7	7.8	8.2	7.6	7.8	7.5	7.3	7.4	8.0	7.7	7.9
29	---	---	---	8.3	7.7	7.9	7.7	7.4	7.5	8.1	7.9	8.0
30	---	---	---	8.2	7.7	7.9	7.7	7.6	7.6	8.1	7.8	7.9
31	---	---	---	8.2	7.6	7.9	---	---	---	8.0	7.7	7.9
MONTH	8.1	7.5	7.9	8.6	7.5	8.0	8.2	7.1	7.7	8.3	7.2	7.8

TRINITY RIVER BASIN

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08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.1	7.9	8.0	7.7	7.6	7.6	7.6	7.5	7.6	7.9	7.6	7.7
2	8.1	7.9	8.0	7.7	7.6	7.6	7.5	7.5	7.5	7.9	7.6	7.7
3	7.9	7.7	7.8	7.8	7.6	7.7	7.5	7.5	7.5	---	---	---
4	---	---	---	7.7	7.5	7.6	7.5	7.4	7.5	7.9	7.7	7.8
5	---	---	---	7.7	7.6	7.6	7.5	7.4	7.5	7.9	7.6	7.7
6	---	---	---	7.6	7.5	7.6	7.6	7.4	7.5	7.8	7.5	7.6
7	7.9	7.6	7.8	7.7	7.6	7.6	8.1	7.4	7.7	7.8	7.6	7.7
8	7.9	7.7	7.8	7.8	7.6	7.7	7.9	7.7	7.8	7.9	7.6	7.7
9	8.0	7.7	7.8	7.7	7.6	7.7	7.7	7.6	7.6	7.8	7.6	7.7
10	7.9	7.6	7.7	7.6	7.6	7.6	7.6	7.5	7.5	7.6	7.5	7.6
11	7.9	7.7	7.8	7.6	7.5	7.6	7.5	7.4	7.5	7.5	7.4	7.4
12	8.0	7.8	7.9	7.8	7.5	7.6	7.5	7.4	7.5	7.5	7.4	7.4
13	8.1	7.7	7.9	7.8	7.7	7.7	7.5	7.4	7.5	7.5	7.4	7.4
14	8.0	7.5	7.6	7.7	7.6	7.7	7.6	7.5	7.5	7.6	7.4	7.5
15	7.8	7.5	7.6	7.7	7.6	7.6	7.7	7.5	7.6	7.5	7.3	7.4
16	7.7	7.5	7.6	7.6	7.4	7.6	7.6	7.5	7.6	7.5	7.3	7.4
17	7.7	7.4	7.6	7.8	7.6	7.6	7.6	7.6	7.6	7.8	7.4	7.6
18	7.9	7.5	7.6	8.1	7.8	7.9	7.6	7.5	7.6	7.9	7.8	7.8
19	7.8	7.7	7.7	7.8	7.7	7.8	7.7	7.6	7.6	8.0	7.8	7.9
20	7.7	7.7	7.7	7.8	7.6	7.7	7.7	7.6	7.6	7.9	7.8	7.8
21	7.8	7.7	7.7	7.7	7.6	7.6	7.7	7.6	7.6	7.8	7.8	7.8
22	7.8	7.7	7.7	7.6	7.5	7.6	7.7	7.4	7.6	7.8	7.7	7.7
23	7.8	7.6	7.7	7.6	7.5	7.5	7.7	7.5	7.5	7.8	7.7	7.7
24	7.7	7.5	7.6	7.5	7.5	7.5	7.8	7.6	7.7	7.8	7.7	7.7
25	7.8	7.6	7.7	7.5	7.4	7.4	7.8	7.6	7.7	7.8	7.7	7.7
26	7.8	7.6	7.7	7.6	7.4	7.5	7.8	7.6	7.7	7.7	7.7	7.7
27	7.7	7.5	7.6	7.6	7.5	7.5	7.6	7.5	7.6	7.7	7.6	7.7
28	7.6	7.5	7.6	7.5	7.4	7.5	7.8	7.5	7.6	7.7	7.7	7.7
29	7.6	7.5	7.5	7.4	7.4	7.4	7.7	7.6	7.6	7.7	7.6	7.7
30	7.6	7.5	7.5	7.5	7.4	7.4	7.8	7.5	7.6	7.6	7.5	7.6
31	---	---	---	7.7	7.5	7.6	7.9	7.6	7.7	---	---	---
MONTH	8.1	7.4	7.7	8.1	7.4	7.6	8.1	7.4	7.6	8.0	7.3	7.6
YEAR	8.6	7.0	7.7									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	12.5	10.5	11.5	13.0	12.0	12.5	16.5	14.5	15.5	19.5	17.5	18.5
2	14.0	12.5	13.5	12.5	10.0	11.0	16.0	15.0	15.5	20.5	18.0	19.5
3	15.5	14.0	14.5	12.5	9.0	10.5	16.5	15.5	16.0	20.0	17.5	18.5
4	16.0	15.0	15.5	14.0	11.0	12.5	18.0	16.0	17.0	19.5	17.5	18.5
5	15.5	14.0	14.5	14.0	12.0	13.0	17.5	16.5	17.0	20.0	18.0	19.0
6	14.0	12.5	13.5	12.5	10.0	11.5	---	---	---	20.5	18.5	19.5
7	12.5	9.0	10.5	12.0	10.5	11.0	17.0	15.5	16.5	20.5	19.0	19.5
8	9.0	7.5	8.0	13.0	11.5	12.0	17.5	16.5	17.0	20.5	19.0	19.5
9	7.5	7.0	7.5	13.5	12.0	12.5	17.5	15.5	16.5	20.0	18.5	19.0
10	8.0	7.0	7.5	14.0	12.5	13.5	18.0	16.0	17.0	20.0	17.5	18.5
11	9.0	7.0	8.0	14.0	12.5	13.0	18.0	15.0	16.5	21.0	18.5	19.5
12	9.0	8.0	8.5	13.5	13.0	13.0	15.0	12.5	13.5	21.0	18.5	19.5
13	8.0	7.5	7.5	16.5	13.5	15.0	14.5	12.0	13.5	20.5	19.0	20.0
14	8.5	7.0	7.5	16.0	12.5	14.5	16.0	14.0	14.5	21.0	19.0	20.0
15	9.0	8.0	8.5	13.0	11.0	12.0	16.0	14.0	15.0	21.0	19.5	20.0
16	10.5	8.5	9.5	13.0	12.0	12.5	17.0	14.5	15.5	22.0	19.0	20.0
17	10.5	9.0	10.0	13.5	12.0	12.5	17.5	15.5	16.5	22.0	20.0	21.0
18	11.0	9.0	10.0	14.0	13.5	14.0	17.0	15.0	16.0	22.0	20.5	21.5
19	12.5	10.0	10.5	14.0	12.5	13.0	18.5	16.0	17.0	22.0	20.5	21.0
20	13.0	12.5	13.0	14.5	11.5	13.0	18.5	16.5	18.0	21.5	20.5	21.0
21	12.5	10.5	11.5	15.5	13.0	14.0	19.0	16.5	17.5	21.0	20.5	20.5
22	10.5	9.0	10.0	16.0	13.0	14.5	19.0	17.5	18.5	22.0	20.0	21.0
23	11.5	10.0	11.0	16.0	13.5	15.0	19.0	17.0	18.0	22.0	21.0	21.5
24	11.0	10.0	10.5	16.5	14.0	15.0	19.0	17.0	17.5	---	---	---
25	10.0	9.5	9.5	16.0	14.0	15.0	17.5	15.0	16.0	---	---	---
26	10.0	9.5	10.0	16.0	13.0	14.5	15.0	14.5	14.5	---	---	---
27	11.0	8.5	10.0	16.0	14.5	15.5	15.0	15.0	15.0	23.5	22.5	23.0
28	12.0	10.5	11.0	17.0	14.5	15.5	17.0	15.0	16.0	23.5	22.5	23.0
29	---	---	---	18.0	15.0	16.0	19.0	16.5	17.5	24.0	22.5	23.5
30	---	---	---	17.5	14.5	15.5	19.5	17.5	18.5	24.0	22.5	23.0
31	---	---	---	16.0	14.0	15.0	---	---	---	24.0	22.5	23.0
MONTH	16.0	7.0	10.5	18.0	9.0	13.5	19.5	12.0	16.5	24.0	17.5	20.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	24.5	22.5	23.5	31.0	29.0	30.0	31.0	29.5	30.5	30.5	28.5	29.5
2	24.5	23.0	24.0	31.5	29.0	30.0	30.5	29.0	29.5	30.5	29.0	30.0
3	25.5	24.0	25.0	31.5	29.5	30.5	30.5	28.5	29.5	30.5	29.0	30.0
4	---	---	---	31.0	29.5	30.5	31.0	29.0	30.0	30.0	29.0	29.5
5	---	---	---	30.0	27.0	28.5	31.0	29.5	30.0	29.0	27.0	28.0
6	26.0	25.0	25.5	27.0	25.0	25.5	31.5	29.5	30.5	28.0	26.0	27.0
7	26.0	24.5	25.5	27.0	25.0	26.0	30.5	21.5	25.5	28.0	26.0	27.0
8	26.5	25.0	25.5	29.0	26.0	27.0	23.0	21.5	22.5	29.0	26.5	27.5
9	26.5	25.5	26.0	30.0	28.0	29.0	25.5	23.0	24.0	29.0	27.5	28.5
10	26.0	25.0	25.5	30.0	28.5	29.5	27.5	25.5	26.5	28.5	27.0	28.0
11	26.5	25.0	25.5	30.5	28.5	29.5	29.0	27.0	28.0	27.5	26.0	27.0
12	28.0	26.0	27.0	31.0	29.0	30.0	30.0	28.5	29.0	27.0	25.5	26.5
13	28.5	27.0	28.0	31.5	29.5	30.5	31.0	29.0	30.0	27.5	25.5	26.5
14	28.0	25.5	26.5	32.0	29.5	30.5	31.5	30.0	30.5	28.5	26.5	27.5
15	27.0	25.5	26.0	31.5	30.0	30.5	31.0	29.5	30.5	29.0	27.5	28.5
16	27.5	26.0	27.0	31.0	29.0	30.0	31.0	29.0	30.0	29.5	28.0	29.0
17	27.0	23.5	25.0	32.0	29.5	30.5	31.0	29.0	30.0	29.5	28.0	29.0
18	27.0	24.5	25.5	32.0	30.0	31.0	31.5	29.5	30.5	29.5	28.0	29.0
19	28.0	26.5	27.0	32.0	30.0	31.0	30.5	29.5	30.0	29.5	28.0	29.0
20	27.5	27.0	27.0	32.0	30.0	31.0	31.0	29.0	30.0	29.5	28.0	29.0
21	28.5	26.5	27.5	32.5	30.0	31.0	31.0	29.5	30.0	29.0	27.0	28.0
22	28.0	27.0	27.5	32.5	30.5	31.5	31.0	30.0	30.5	28.0	27.0	27.5
23	27.5	26.0	26.5	32.5	30.5	31.5	30.5	29.0	29.5	27.0	26.5	27.0
24	27.0	25.5	26.0	32.5	30.5	31.5	29.5	28.0	29.0	27.0	25.0	26.0
25	28.5	26.5	27.5	32.5	30.5	31.5	29.0	27.5	28.5	25.0	23.5	24.0
26	28.5	27.0	28.0	32.0	30.5	31.5	29.0	27.0	28.0	24.5	22.5	23.5
27	29.0	26.5	27.5	32.5	30.5	31.5	29.0	27.0	28.0	24.5	23.0	24.0
28	29.5	28.0	29.0	32.5	30.5	31.5	29.5	27.5	28.5	25.5	23.5	24.5
29	30.0	28.5	29.0	33.0	31.0	32.0	30.0	28.0	29.0	26.5	24.5	25.5
30	30.5	28.5	29.5	32.0	30.5	31.5	30.0	28.0	29.0	27.0	25.5	26.0
31	---	---	---	31.5	30.0	30.5	30.5	28.5	29.5	---	---	---
MONTH	30.5	22.5	26.5	33.0	25.0	30.0	31.5	21.5	29.0	30.5	22.5	27.5

YEAR	33.0	5.0	19.5
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TRINITY RIVER BASIN

453

08062000 EAST FORK TRINITY RIVER NEAR CRANDALL, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	6.2	5.6	5.9	9.1	7.8	8.5	10.4	9.6	10.0
2	---	---	---	7.0	5.8	6.4	9.2	8.1	8.8	10.1	9.7	9.9
3	7.2	5.8	6.7	7.2	6.4	6.8	---	---	---	10.0	9.6	9.8
4	6.9	5.3	6.4	7.2	6.0	6.8	---	---	---	9.8	9.4	9.6
5	7.0	5.5	6.4	7.1	6.6	6.9	---	---	---	9.5	9.0	9.3
6	7.4	6.2	6.9	6.7	6.4	6.6	---	---	---	9.1	8.0	8.7
7	7.6	6.1	7.0	7.3	6.1	6.6	10.8	10.1	10.4	9.4	7.9	8.5
8	7.3	5.4	6.6	6.6	5.4	6.0	10.6	9.7	10.4	10.4	8.9	9.6
9	7.2	5.9	6.6	6.8	5.0	6.2	10.4	9.4	9.9	10.2	9.2	9.9
10	6.8	4.8	6.1	7.0	5.3	6.5	10.3	9.7	10.1	11.5	9.6	10.2
11	6.2	4.3	5.7	6.9	5.1	6.5	10.1	9.5	9.8	11.2	9.3	10.4
12	6.1	3.7	5.6	6.9	5.5	6.4	10.1	9.4	9.7	12.3	9.0	10.5
13	5.9	4.9	5.6	6.7	5.5	6.2	9.9	9.5	9.7	12.5	10.2	11.1
14	6.0	4.4	5.6	6.8	5.2	6.0	9.5	9.0	9.2	12.4	10.7	11.7
15	6.5	4.9	5.8	6.7	4.9	6.2	9.7	8.7	9.2	---	---	---
16	6.4	5.5	6.1	6.5	5.7	6.2	9.6	8.7	9.2	---	---	---
17	6.1	5.0	5.6	6.6	5.5	6.1	10.4	8.9	9.7	---	---	---
18	6.2	4.0	5.5	6.6	5.5	6.0	11.1	9.7	10.4	11.0	10.2	10.6
19	7.0	4.6	6.0	7.2	6.2	6.7	10.9	9.8	10.4	10.9	10.4	10.6
20	7.1	5.1	6.6	7.1	6.4	6.8	10.5	8.5	10.0	10.7	9.8	10.2
21	7.1	5.6	6.5	7.1	5.8	6.6	10.2	9.4	9.9	9.8	8.8	9.4
22	6.6	5.0	5.8	7.7	6.1	7.0	9.6	8.7	9.1	8.8	8.2	8.5
23	7.1	5.3	6.6	7.2	6.4	6.7	8.7	7.4	8.0	8.4	7.7	8.0
24	7.3	6.5	6.8	9.2	6.5	8.1	9.7	6.6	7.8	8.8	8.2	8.5
25	6.9	6.4	6.6	9.2	8.2	8.7	9.7	8.5	9.3	9.5	8.8	9.1
26	6.5	5.8	6.1	9.7	8.6	9.2	9.1	8.4	8.7	11.3	9.3	10.6
27	6.4	5.7	6.1	9.5	8.8	9.2	8.5	7.9	8.3	10.7	9.2	9.8
28	6.2	3.5	4.9	9.6	8.8	9.2	8.6	7.9	8.3	11.0	9.0	9.7
29	3.8	3.2	3.4	10.0	9.3	9.6	8.2	7.8	8.0	11.2	10.5	10.9
30	5.9	3.8	5.2	9.6	8.6	8.9	8.2	7.8	8.0	10.9	10.4	10.7
31	6.0	5.5	5.8	---	---	---	10.0	8.0	8.8	11.1	10.3	10.7
MONTH	7.6	3.2	6.0	10.0	4.9	7.0	11.1	6.6	9.2	12.5	7.7	9.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	11.3	10.4	10.9	9.7	8.3	8.9	11.0	8.8	9.8	8.7	8.1	8.4
2	10.8	10.1	10.4	9.9	9.3	9.6	10.3	8.8	9.4	8.6	8.1	8.3
3	10.3	9.7	9.9	9.9	9.1	9.6	9.8	8.6	9.2	9.0	8.0	8.4
4	10.6	9.1	9.9	9.9	9.2	9.6	9.0	6.9	7.5	9.2	8.1	8.6
5	10.4	8.6	9.3	10.3	8.9	9.5	7.7	6.8	7.4	9.1	8.1	8.5
6	8.6	8.1	8.3	11.0	9.6	10.2	8.6	7.5	8.0	9.0	7.8	8.4
7	9.5	8.2	9.0	11.0	9.7	10.3	9.1	7.9	8.4	8.6	6.9	8.1
8	10.7	9.3	10.1	11.0	9.2	10.2	8.9	7.5	8.2	8.5	7.4	7.9
9	10.9	10.6	10.7	11.0	9.4	10.1	9.8	8.1	8.9	7.8	7.2	7.5
10	10.9	10.6	10.8	10.9	8.8	9.9	10.1	8.6	9.3	8.7	7.6	8.1
11	10.8	10.5	10.6	11.3	8.5	9.9	9.2	8.4	8.6	8.2	7.3	7.8
12	10.6	9.5	10.0	10.4	8.7	9.6	9.8	8.5	9.1	8.5	6.7	7.9
13	10.2	9.6	9.8	9.7	8.3	8.9	9.5	8.7	9.0	8.9	8.4	8.6
14	10.3	10.0	10.1	10.1	8.4	9.1	9.9	8.8	9.6	8.6	7.9	8.2
15	10.2	9.7	10.0	11.9	9.5	10.6	9.4	8.9	9.2	8.3	7.6	7.9
16	10.2	9.5	9.9	11.5	9.8	10.6	9.5	8.8	9.3	8.4	7.5	7.9
17	10.4	10.0	10.2	11.5	10.6	11.0	9.1	8.4	8.8	8.2	7.3	7.7
18	10.3	9.8	10.1	11.3	10.3	10.7	9.3	8.6	9.0	8.2	7.2	7.7
19	10.0	8.9	9.7	11.5	10.0	10.7	9.2	8.3	8.9	8.0	7.4	7.7
20	8.9	8.2	8.6	11.5	10.4	10.9	9.1	8.1	8.8	7.6	6.1	6.4
21	9.2	8.4	8.8	11.4	9.9	10.6	8.7	7.8	8.3	7.0	6.4	6.6
22	10.0	9.2	9.6	10.7	9.1	9.9	8.3	7.5	7.9	7.1	6.6	6.7
23	9.7	9.1	9.4	10.6	8.4	9.4	8.5	7.6	7.9	7.4	7.1	7.3
24	10.1	9.6	9.9	10.8	8.7	9.6	8.4	7.7	8.1	---	---	---
25	10.0	9.5	9.8	9.9	8.3	8.9	8.8	8.1	8.5	---	---	---
26	9.7	9.5	9.6	10.1	8.2	9.1	8.7	8.5	8.5	---	---	---
27	10.0	8.9	9.4	10.3	8.1	9.2	8.6	8.4	8.5	7.6	7.1	7.3
28	9.7	7.6	8.6	11.0	8.7	9.7	8.6	7.7	8.1	8.2	7.2	7.7
29	---	---	---	11.1	8.7	9.7	8.8	7.4	8.2	8.3	7.3	7.8
30	---	---	---	11.2	8.6	9.7	8.7	8.3	8.6	8.0	7.4	7.5
31	---	---	---	11.3	8.9	10.0	---	---	---	8.0	7.4	7.7
MONTH	11.3	7.6	9.8	11.9	8.1	9.9	11.0	6.8	8.6	9.2	6.1	7.8

08062500 TRINITY RIVER NEAR ROSSER, TX

LOCATION.--Lat 32°25'35", long 96°27'46", Ellis County, Hydrologic Unit 12030105, on right bank at downstream side of right pier of bridge on State Highway 34, 2.5 mi south of Rosser, 8.5 mi downstream from East Fork Trinity River, and at mile 451.4.

DRAINAGE AREA.--8,147 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to September 1925, October 1938 to current year. Monthly discharge only for some periods, are published in WSP 1312.

REVISED RECORDS.--WRD TX-77-1: 1942(M), drainage area. WDR TX-89-1: 1988. WDR TX-92-1: 1991.

GAGE.--Water-stage recorder. Datum of gage is 297.65 ft above sea level. Oct. 1938 to Sept. 1994 at present site and datum 5.00 ft higher. July 25, 1924, to Sept. 30, 1925, nonrecording gage at abandoned lock and dam No. 7, 1.7 mi upstream from present site at datum 11.94 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in July 1924, at least 10% of contributing drainage area has been regulated by 15 upstream reservoirs having a combined capacity of 3,572,000 acre-ft, of which 1,138,000 acre-ft is for flood control. A levee system, constructed in 1916, extends several miles upstream and downstream from the station. The cities of Fort Worth, Dallas, and several smaller cities divert considerable water for their municipal use, of which about 60 percent is returned as wastewater effluent that sustains low flows at this site. Flow may also be affected at times by discharge from the flood-detention pools of 38 floodwater-retarding structures with a combined detention capacity of 22,600 acre-ft in the drainage basin above this station. These structures control runoff from 76.7 mi² above this station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 reached a stage of about 38 ft (present site and datum), from information by U.S. Army Corps of Engineers (discharge believed to have been about the same as that of Apr. 23, 1942).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	847	2850	13300	1750	1010	15000	8180	10000	8220	e2190	872	756
2	811	2130	9580	1720	1030	14500	7990	10500	8850	1810	863	755
3	792	2200	6380	1650	983	16300	7860	10700	7930	e1440	865	806
4	805	1670	5670	1640	989	15800	10500	10300	7350	e1290	834	1470
5	784	1440	6980	1390	1000	15800	25100	9450	6340	1540	780	2580
6	767	1280	7170	1180	996	15000	31300	8490	5540	4250	854	1230
7	764	2950	6920	1290	3130	14300	30700	7770	4820	3780	1760	909
8	804	8470	6590	1920	5670	14100	24700	7400	3990	3780	6210	874
9	813	8630	6250	3360	4860	13700	17700	7420	3500	2800	5090	901
10	802	3630	5320	2310	5090	14000	e15300	9280	3470	2820	1960	870
11	796	2080	4850	1650	4950	14300	e14600	10900	5280	2720	1590	833
12	761	1900	4770	1380	7080	14100	15200	9360	4420	2120	1330	771
13	764	1770	4790	1240	25200	16400	15100	9130	3640	1650	1160	760
14	761	1670	4300	1200	30100	17600	13100	9310	e4870	e1240	1230	861
15	779	1740	3780	1180	30400	17400	12500	9830	e5940	e1180	1230	943
16	778	1940	5640	1200	23300	14700	11200	10400	e6360	e1250	1090	848
17	785	2300	3920	1180	15000	12600	10700	11300	e7640	e1400	1050	877
18	776	3010	3560	1130	12000	12200	9940	11100	11200	e1250	1050	889
19	763	2320	3270	1100	11000	12200	8290	9910	e14400	e1180	1020	809
20	752	1690	2530	1100	16900	12200	7390	11800	e10900	e1170	980	784
21	844	1660	2250	1080	25700	12100	8030	17200	e5590	e1080	1030	778
22	5740	1610	1910	1080	29800	11800	9580	16500	e4340	e1040	979	812
23	5600	1500	1700	1040	28300	11400	9980	10300	e6110	1010	918	853
24	2330	5650	1670	1470	23000	10800	9110	7860	8200	975	854	868
25	1290	16100	1660	1310	20400	9980	8420	7600	5460	936	852	865
26	1070	15700	1390	1230	19000	10600	15100	7230	3620	1050	866	812
27	996	14000	1360	1080	19600	11100	19200	6800	5130	988	859	858
28	7530	11400	1360	1050	18000	9410	17300	6730	3920	1020	816	917
29	13600	9500	1340	1030	---	8810	11700	6750	3070	967	788	887
30	14300	13100	1290	991	---	8720	9570	6520	e2580	910	800	858
31	9460	---	1400	1000	---	8400	---	7040	---	892	782	---
TOTAL	78464	145890	132900	42931	384488	405320	415340	294880	182680	51728	41362	28034
MEAN	2531	4863	4287	1385	13730	13070	13840	9512	6089	1669	1334	934
MAX	14300	16100	13300	3360	30400	17600	31300	17200	14400	4250	6210	2580
MIN	752	1280	1290	991	983	8400	7390	6520	2580	892	780	755
AC-FT	155600	289400	263600	85150	762600	804000	823800	584900	362300	102600	82040	55610

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1997h#, BY WATER YEAR (WY)

	MEAN	1862	2357	2661	2099	3324	3706	4524	6723	5296	2056	1113	1182
MAX	11140	16860	22340	17140	14680	20120	38610	40400	24600	10650	6912	8322	
(WY)	1982	1982	1992	1992	1992	1992	1945	1942	1990	1941	1989	1982	1962
MIN	32.8	49.5	50.4	61.0	72.7	54.6	213	614	154	62.6	37.1	89.1	
(WY)	1925	1925	1925	1925	1925	1925	1925	1956	1964	1925	1925	1925	1925

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1925 - 1997h#
ANNUAL TOTAL	681301	2204017	
ANNUAL MEAN	1861	6038	3073
HIGHEST ANNUAL MEAN			9702
LOWEST ANNUAL MEAN			280
HIGHEST DAILY MEAN	16100	31300	133000
LOWEST DAILY MEAN	627	752	32
ANNUAL SEVEN-DAY MINIMUM	649	771	32
INSTANTANEOUS PEAK FLOW		31700	150000
INSTANTANEOUS PEAK STAGE		34.44	41.55
ANNUAL RUNOFF (AC-FT)	1351000	4372000	2226000
10 PERCENT EXCEEDS	4030	15000	8620
50 PERCENT EXCEEDS	967	3130	886
90 PERCENT EXCEEDS	739	840	209

e Estimated

h See PERIOD OF RECORD paragraph.

Period of regulated streamflow.

TRINITY RIVER MAIN STEM

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1954 to current year. Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: January 1968 to July 1981. Sediment analyses: October 1963 to September 1964, April 1972 to April 1975.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1954 to current year.

pH: March 1977 to current year.

WATER TEMPERATURE: October 1954 to current year.

DISSOLVED OXYGEN: March 1977 to current year.

INSTRUMENTATION.--Since March 1977, a four-parameter water-quality monitor records water temperature, DO, pH, and specific conductance continuously at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,990 microsiemens Oct. 13, 1956; minimum, 122 microsiemens Sept. 30, 1981.

pH: Maximum, 9.9 units July 12, 1982; minimum, 6.8 units Oct. 3, 19, 20, Nov. 19, 1980.

WATER TEMPERATURE: Maximum, 36.0°C July 1, 1955; minimum, 1.0°C on many days during winter months.

DISSOLVED OXYGEN: Maximum, 13.6 mg/L Feb. 18, 1996; minimum, 0.0 mg/L on several days during 1979-81.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 776 microsiemens Sept. 5; minimum, 204 microsiemens Oct. 30.

pH: Maximum, 8.7 units Aug. 28; minimum, 7.0 units Nov. 27, Feb. 7, and Aug. 8.

WATER TEMPERATURE: Maximum, 32.5°C on several days; minimum, 6.0°C Jan. 13 and 14.

DISSOLVED OXYGEN: Maximum, 11.8 mg/L Jan. 30; minimum, 3.2 mg/L Aug. 8.

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATURATION)	OXYGEN DEMAND, BIO-CHEMICAL, 5 DAY (MG/L)	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
OCT 23...	0830	6220	389	7.4	17.5	5.2	55	4.5	120	22
JAN 29...	0805	1190	736	7.5	10.5	9.9	90	2.3	200	56
FEB 27...	0730	19900	382	7.8	10.5	9.1	83	2.1	140	19
MAY 08...	0800	7410	406	7.7	20.0	7.8	87	3.0	130	10
JUL 16...	0800	1210	631	7.8	30.0	6.1	81	1.5	170	47

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
OCT 23...	40	3.8	28	1	5.6	94	46	26	0.50	5.2
JAN 29...	69	6.0	70	2	10	140	96	65	1.1	6.8
FEB 27...	48	4.7	21	0.8	4.5	120	38	21	0.30	7.4
MAY 08...	45	3.8	22	0.8	5.0	120	38	21	0.35	3.7
JUL 16...	60	5.9	55	2	8.0	130	71	54	0.95	8.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOSPHORUS, PHOSPHORUS DIS-SOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 23...	223	2.35	0.050	2.40	0.130	0.47	0.60	0.290	0.290	0.89
JAN 29...	440	5.82	0.180	6.00	0.690	1.0	1.7	1.60	1.40	4.3
FEB 27...	222	1.07	0.030	1.10	0.090	0.41	0.50	0.070	0.110	0.34
MAY 08...	216	1.57	0.027	1.60	0.035	0.45	0.49	0.161	0.182	0.56
JUL 16...	372	6.78	0.065	6.84	0.065	0.73	0.79	1.17	1.01	3.1

TRINITY RIVER MAIN STEM

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08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT.	1996	78464	450	252	53330	33	7070	49	10290	140
NOV.	1996	145890	434	243	95720	28	11210	45	17760	140
DEC.	1996	132900	430	241	86380	28	10020	45	15980	140
JAN.	1997	42931	643	358	41540	59	6790	74	8620	160
FEB.	1997	384488	340	191	197900	18	18980	33	34720	120
MAR.	1997	405320	389	218	238600	23	24660	39	42700	130
APR.	1997	415340	354	198	222500	19	21730	35	39220	130
MAY	1997	294880	412	231	183900	25	20000	42	33380	140
JUNE	1997	182680	418	234	115400	26	12780	43	21060	140
JULY	1997	51728	549	306	42800	44	6160	61	8490	150
AUG.	1997	41362	567	316	35330	48	5350	64	7130	150
SEPT	1997	28034	664	370	28030	63	4760	78	5900	160
TOTAL		2204017.00	**	**	1341500	**	149500	**	245200	**
WTD.AVG.		6040	403	225	**	25	**	41	**	130

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	704	685	692	479	376	416	365	322	341	682	546	614
2	718	704	712	515	476	498	408	365	386	571	539	555
3	731	713	721	558	515	536	439	408	429	586	569	575
4	740	731	736	560	520	539	446	436	438	587	577	583
5	741	727	733	599	557	579	446	392	408	649	583	608
6	730	722	726	622	580	602	393	388	392	674	649	667
7	747	723	734	625	412	596	391	386	389	683	668	673
8	751	745	748	412	323	357	387	383	385	683	516	641
9	760	743	751	376	323	342	398	382	388	565	517	545
10	748	733	741	457	376	411	406	398	402	578	506	533
11	741	732	736	575	457	510	417	403	408	600	553	584
12	746	736	740	577	532	548	419	406	412	633	600	619
13	752	741	746	582	544	560	411	394	402	661	633	644
14	750	739	745	591	543	578	418	393	402	680	661	671
15	759	741	752	611	591	603	455	418	434	683	679	681
16	762	751	756	611	571	594	474	420	445	689	677	684
17	753	741	749	575	555	568	447	418	430	692	683	688
18	751	740	747	575	468	515	430	416	422	703	690	696
19	765	749	760	521	473	499	481	418	446	713	702	706
20	767	759	764	525	496	507	530	481	505	713	710	712
21	759	742	750	585	525	560	543	530	537	710	700	703
22	---	---	e580	628	585	609	568	543	554	703	694	698
23	---	---	e480	620	602	611	593	568	583	703	694	698
24	403	361	384	---	---	e520	635	593	619	708	697	701
25	465	403	433	---	---	e380	647	591	620	700	665	676
26	546	462	504	---	---	e400	632	603	611	682	655	666
27	589	546	571	---	---	e405	654	632	644	685	664	675
28	595	211	412	423	397	410	654	647	650	721	685	707
29	311	206	302	440	363	424	657	652	655	751	721	742
30	307	204	289	363	325	346	663	655	658	740	715	724
31	376	307	336	---	---	---	679	658	665	745	716	734
MONTH	767	204	640	628	323	501	679	322	486	751	506	658

e Estimated

TRINITY RIVER MAIN STEM

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08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.6	7.5	7.5	---	---	---	7.5	7.3	7.4	7.6	7.5	7.6
2	7.6	7.5	7.5	---	---	---	7.4	7.3	7.4	7.7	7.6	7.6
3	7.7	7.5	7.6	---	---	---	7.5	7.4	7.4	7.7	7.6	7.6
4	7.7	7.6	7.7	---	---	---	7.5	7.4	7.5	7.7	7.6	7.6
5	7.7	7.5	7.6	---	---	---	7.5	7.5	7.5	7.7	7.6	7.7
6	7.6	7.5	7.6	7.8	7.7	7.8	7.6	7.5	7.5	7.6	7.6	7.6
7	7.6	7.5	7.6	7.9	7.4	7.8	7.5	7.5	7.5	7.7	7.6	7.6
8	7.6	7.5	7.6	7.9	7.4	7.8	7.5	7.3	7.4	7.7	7.6	7.6
9	7.6	7.5	7.6	7.8	7.7	7.7	7.3	7.3	7.3	7.6	7.5	7.5
10	7.7	7.5	7.6	7.7	7.7	7.7	7.4	7.3	7.3	7.6	7.4	7.5
11	7.6	7.4	7.5	7.7	7.6	7.7	7.3	7.3	7.3	7.5	7.5	7.5
12	7.6	7.4	7.5	7.6	7.6	7.6	7.5	7.3	7.3	7.6	7.5	7.6
13	7.6	7.4	7.5	7.6	7.6	7.6	7.4	7.3	7.3	7.6	7.5	7.6
14	7.5	7.4	7.5	7.6	7.6	7.6	7.5	7.3	7.3	7.5	7.5	7.5
15	7.5	7.3	7.4	7.7	7.5	7.6	7.5	7.1	7.3	7.6	7.5	7.5
16	7.4	7.3	7.3	7.6	7.5	7.5	7.1	7.1	7.1	7.6	7.5	7.6
17	7.4	7.3	7.4	7.7	7.5	7.6	7.2	7.1	7.1	7.6	7.5	7.5
18	7.5	7.3	7.4	7.5	7.3	7.4	7.3	7.2	7.2	7.6	7.5	7.6
19	7.5	7.3	7.4	7.6	7.5	7.5	8.0	7.2	7.5	7.6	7.5	7.5
20	7.4	7.3	7.4	7.5	7.4	7.5	7.8	7.6	7.6	7.5	7.4	7.4
21	7.3	7.2	7.3	7.5	7.3	7.4	7.7	7.6	7.6	7.5	7.3	7.4
22	7.7	7.1	7.4	7.6	7.3	7.5	7.7	7.6	7.7	7.5	7.4	7.4
23	7.5	7.3	7.4	7.7	7.5	7.5	7.8	7.6	7.7	7.5	7.4	7.4
24	7.4	7.4	7.4	---	---	---	7.8	7.7	7.7	7.5	7.4	7.4
25	7.4	7.4	7.4	---	---	---	7.8	7.7	7.7	7.4	7.3	7.4
26	7.4	7.4	7.4	---	---	---	7.8	7.7	7.7	7.5	7.3	7.4
27	7.5	7.4	7.4	7.4	7.0	7.3	7.7	7.7	7.7	7.5	7.4	7.5
28	8.1	7.4	7.7	7.3	7.2	7.3	7.7	7.7	7.7	7.6	7.4	7.5
29	---	---	---	7.3	7.2	7.3	7.7	7.6	7.7	7.7	7.5	7.6
30	---	---	---	7.5	7.3	7.4	7.7	7.6	7.6	7.6	7.3	7.4
31	---	---	---	---	---	---	7.6	7.6	7.6	7.4	7.2	7.3
MONTH	8.1	7.1	7.5	7.9	7.0	7.6	8.0	7.1	7.5	7.7	7.2	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.4	7.2	7.3	---	---	---	---	---	---	7.6	7.5	7.5
2	7.5	7.3	7.4	---	---	---	---	---	---	7.7	7.5	7.6
3	7.5	7.3	7.4	---	---	---	---	---	---	7.8	7.6	7.6
4	7.5	7.3	7.4	---	---	---	---	---	---	7.7	7.6	7.6
5	7.6	7.4	7.5	---	---	---	---	---	---	7.7	7.6	7.7
6	7.4	7.3	7.4	---	---	---	---	---	---	7.7	7.6	7.7
7	---	---	---	---	---	---	---	---	---	7.7	7.6	7.6
8	7.5	7.0	7.3	---	---	---	---	---	---	7.9	7.4	7.7
9	7.7	7.4	7.6	---	---	---	---	---	---	---	---	---
10	7.7	7.6	7.7	---	---	---	---	---	---	---	---	---
11	7.8	7.7	7.8	---	---	---	---	---	---	---	---	---
12	7.9	7.7	7.8	---	---	---	---	---	---	---	---	---
13	7.8	7.6	7.7	---	---	---	---	---	---	---	---	---
14	7.8	7.6	7.7	7.6	7.4	7.5	---	---	---	---	---	---
15	7.9	7.6	7.7	7.7	7.5	7.6	---	---	---	---	---	---
16	7.9	7.7	7.8	7.8	7.6	7.7	---	---	---	---	---	---
17	7.9	7.7	7.9	7.8	7.7	7.7	---	---	---	---	---	---
18	7.9	7.8	7.9	7.8	7.7	7.7	---	---	---	---	---	---
19	8.0	7.8	7.9	7.8	7.7	7.8	7.6	7.4	7.5	---	---	---
20	8.0	7.8	7.8	7.9	7.7	7.8	7.7	7.5	7.6	---	---	---
21	7.8	7.6	7.8	7.9	7.4	7.8	7.8	7.6	7.6	---	---	---
22	7.9	7.6	7.8	7.9	7.6	7.8	7.6	7.4	7.5	---	---	---
23	8.0	7.7	7.8	8.0	7.6	7.8	7.6	7.5	7.5	---	---	---
24	7.9	7.8	7.8	8.0	7.7	7.8	7.6	7.5	7.5	8.0	7.9	7.9
25	7.9	7.8	7.9	7.8	7.6	7.7	7.6	7.5	7.5	8.1	7.9	8.0
26	8.0	7.9	7.9	7.8	7.5	7.6	7.5	7.2	7.4	8.0	8.0	8.0
27	8.0	7.5	7.7	---	---	---	7.4	7.2	7.3	8.1	7.9	8.0
28	---	---	---	---	---	---	7.4	7.2	7.3	8.2	8.0	8.0
29	---	---	---	---	---	---	7.5	7.3	7.3	8.2	8.0	8.1
30	---	---	---	---	---	---	7.5	7.4	7.5	8.3	8.1	8.2
31	---	---	---	---	---	---	---	---	---	8.1	8.0	8.1
MONTH	8.0	7.0	7.7	8.0	7.4	7.7	7.8	7.2	7.5	8.3	7.4	7.8

TRINITY RIVER MAIN STEM

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.1	8.0	8.0	7.5	7.4	7.5	8.2	8.1	8.1	8.2	7.9	8.0
2	8.1	8.0	8.1	7.6	7.4	7.5	8.1	8.0	8.0	7.9	7.6	7.7
3	8.1	8.0	8.1	7.6	7.4	7.5	8.0	7.9	8.0	7.7	7.6	7.6
4	8.1	8.0	8.1	7.5	7.4	7.4	7.9	7.8	7.9	7.7	7.2	7.5
5	8.1	8.0	8.1	7.6	7.4	7.5	7.9	7.7	7.8	7.3	7.1	7.2
6	8.1	8.0	8.1	7.6	7.4	7.5	7.7	7.5	7.6	7.4	7.3	7.4
7	8.1	8.0	8.1	7.6	7.4	7.5	7.6	7.2	7.5	7.5	7.4	7.5
8	8.1	7.8	7.9	7.5	7.4	7.5	7.4	7.0	7.2	7.6	7.5	7.5
9	7.8	7.7	7.8	7.5	7.4	7.5	7.3	7.2	7.2	7.7	7.5	7.6
10	7.8	7.6	7.7	7.6	7.5	7.5	7.4	7.3	7.3	8.0	7.7	7.8
11	8.1	7.6	7.9	7.6	7.5	7.6	7.4	7.3	7.4	8.0	7.7	7.9
12	8.4	7.9	8.0	7.8	7.6	7.7	7.4	7.4	7.4	8.1	7.8	7.9
13	8.1	7.9	8.0	7.8	7.7	7.8	7.5	7.4	7.5	8.1	7.8	7.9
14	8.1	7.9	8.0	7.8	7.7	7.8	7.6	7.5	7.5	8.1	7.8	7.9
15	7.9	7.7	7.7	7.9	7.7	7.8	7.7	7.5	7.6	7.8	7.6	7.7
16	7.9	7.7	7.8	8.2	7.7	8.0	7.8	7.6	7.7	8.0	7.6	7.8
17	7.9	7.7	7.8	8.2	8.1	8.1	8.1	7.8	7.9	8.0	7.6	7.8
18	7.8	7.7	7.8	8.1	8.1	8.1	8.1	7.9	8.0	8.0	7.7	7.8
19	7.9	7.7	7.8	8.1	8.0	8.1	8.3	7.9	8.1	8.0	7.7	7.8
20	7.9	7.8	7.9	8.2	8.1	8.1	8.2	7.9	8.0	8.0	7.7	7.9
21	8.0	7.9	8.0	8.3	8.1	8.2	8.1	7.9	8.0	7.9	7.6	7.7
22	8.0	7.9	8.0	8.3	8.2	8.2	7.9	7.8	7.9	7.8	7.6	7.7
23	7.9	7.8	7.8	8.2	8.2	8.2	7.9	7.8	7.8	7.7	7.5	7.6
24	7.8	7.7	7.8	8.2	8.0	8.1	8.2	7.8	8.0	7.7	7.6	7.6
25	7.7	7.7	7.7	8.0	8.0	8.0	8.3	7.9	8.1	7.6	7.6	7.6
26	7.8	7.7	7.7	8.0	8.0	8.0	8.3	8.0	8.1	7.6	7.5	7.6
27	7.8	7.6	7.7	8.1	8.0	8.0	8.5	8.0	8.2	7.6	7.5	7.6
28	7.7	7.6	7.6	8.0	8.0	8.0	8.7	8.1	8.4	7.6	7.5	7.5
29	7.7	7.5	7.6	8.1	8.0	8.0	8.5	8.0	8.3	7.7	7.5	7.6
30	7.5	7.5	7.5	8.1	8.1	8.1	8.4	8.0	8.2	7.7	7.6	7.6
31	---	---	---	8.2	8.1	8.1	8.4	8.0	8.2	---	---	---
MONTH	8.4	7.5	7.9	8.3	7.4	7.8	8.7	7.0	7.8	8.2	7.1	7.7
YEAR	8.7	7.0	7.7									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

TRINITY RIVER MAIN STEM

08062500 TRINITY RIVER NEAR ROSSER, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.8	7.2	7.5	---	---	---	8.9	8.7	8.8	8.7	8.3	8.5
2	7.7	7.2	7.4	---	---	---	8.9	8.8	8.9	8.7	8.5	8.6
3	9.2	7.6	8.5	8.0	7.6	7.7	9.2	8.9	9.1	8.5	8.1	8.3
4	9.2	8.4	8.9	8.1	7.9	8.0	9.5	9.2	9.4	8.1	7.9	8.0
5	8.5	8.1	8.3	8.1	7.9	8.0	9.6	9.5	9.6	8.3	7.9	8.1
6	8.4	7.9	8.1	8.1	7.8	7.9	9.6	9.4	9.5	8.4	8.1	8.2
7	8.3	7.8	8.0	8.0	6.2	7.6	9.7	9.4	9.6	9.2	8.4	8.9
8	7.9	7.4	7.7	7.2	6.2	6.9	9.8	9.7	9.8	10.6	9.2	9.7
9	8.2	7.5	7.8	7.2	7.0	7.0	9.8	9.6	9.7	10.5	9.6	10.0
10	8.2	7.6	7.8	8.1	7.2	7.8	9.7	9.5	9.7	10.7	9.6	10.3
11	7.6	6.8	7.1	8.4	8.0	8.3	9.5	9.2	9.4	10.4	10.1	10.2
12	7.5	6.5	7.0	8.6	8.3	8.4	9.3	9.1	9.2	10.8	10.4	10.7
13	7.3	6.8	7.0	8.6	8.3	8.5	9.4	9.3	9.3	10.9	10.7	10.8
14	7.2	6.8	6.9	8.6	8.3	8.5	9.4	9.2	9.3	11.0	10.8	10.9
15	7.4	6.8	7.1	8.5	8.3	8.4	9.3	9.1	9.2	11.1	10.7	10.9
16	7.2	6.8	7.0	8.4	8.2	8.3	9.3	8.9	9.1	11.0	10.7	10.9
17	8.4	6.9	7.4	8.5	8.2	8.4	9.5	9.0	9.2	10.8	10.3	10.4
18	---	---	---	8.2	7.4	7.9	10.4	9.5	10.1	11.0	10.3	10.7
19	---	---	---	8.5	8.1	8.3	11.0	10.4	10.7	11.1	10.5	10.8
20	---	---	---	8.5	8.2	8.4	10.9	10.7	10.8	10.8	10.3	10.5
21	---	---	---	8.5	8.0	8.3	10.8	10.3	10.6	10.5	10.0	10.2
22	---	---	---	8.5	8.3	8.4	10.3	9.6	9.9	10.3	9.6	9.9
23	---	---	---	8.5	8.3	8.4	9.6	8.8	9.1	10.0	9.3	9.6
24	7.2	6.2	6.8	---	---	---	9.3	8.7	9.0	9.3	9.0	9.2
25	7.8	7.2	7.5	---	---	---	9.5	9.1	9.3	9.3	7.7	8.9
26	7.8	7.7	7.7	---	---	---	9.6	9.4	9.5	9.6	9.1	9.4
27	7.7	7.5	7.6	---	---	---	9.5	9.4	9.5	9.9	9.3	9.5
28	---	---	---	9.1	8.8	8.9	9.4	9.2	9.3	10.4	9.4	9.9
29	---	---	---	9.4	9.1	9.2	9.3	9.0	9.2	11.4	9.8	10.7
30	---	---	---	9.4	8.8	9.2	9.2	8.8	9.0	11.8	10.5	11.1
31	---	---	---	---	---	---	8.9	8.5	8.7	11.7	10.5	11.0
MONTH	9.2	6.2	7.6	9.4	6.2	8.2	11.0	8.5	9.5	11.8	7.7	9.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	11.2	10.0	10.5	8.8	8.3	8.5	8.9	8.6	8.7	8.2	8.1	8.2
2	10.6	9.6	10.0	8.9	8.6	8.8	9.0	8.8	8.9	8.2	8.2	8.2
3	10.4	9.4	9.8	9.1	8.7	8.9	---	---	---	8.2	8.1	8.1
4	10.6	9.1	9.8	8.9	8.3	8.6	---	---	---	8.3	8.1	8.2
5	10.7	9.3	9.9	8.6	8.3	8.5	---	---	---	8.3	8.1	8.2
6	9.8	8.9	9.4	9.0	8.4	8.8	---	---	---	8.2	7.9	8.1
7	9.0	7.9	8.5	9.2	8.9	9.0	---	---	---	8.1	7.9	7.9
8	9.5	8.4	9.0	9.3	8.9	9.0	---	---	---	9.3	7.8	8.8
9	10.0	9.5	9.7	9.1	8.6	8.9	---	---	---	9.4	9.2	9.3
10	10.5	10.0	10.2	8.8	8.4	8.6	---	---	---	9.3	8.1	8.8
11	10.5	10.2	10.3	9.0	8.5	8.7	---	---	---	8.5	8.3	8.4
12	10.3	9.5	10.1	9.3	8.5	8.9	---	---	---	9.0	8.5	8.6
13	10.2	9.8	10.0	9.2	8.6	8.9	---	---	---	9.2	8.9	9.1
14	9.8	9.6	9.6	8.9	8.4	8.6	---	---	---	9.1	8.7	9.0
15	9.6	9.5	9.5	9.5	8.6	9.1	---	---	---	8.9	8.5	8.6
16	9.5	9.3	9.4	9.7	9.2	9.4	---	---	---	8.5	8.0	8.2
17	---	---	---	9.3	9.1	9.3	---	---	---	8.0	7.6	7.7
18	10.0	9.8	9.9	9.4	8.9	9.2	---	---	---	7.8	7.5	7.7
19	10.0	9.8	9.9	9.1	8.8	9.0	8.9	8.6	8.7	7.8	7.5	7.6
20	9.8	8.4	8.8	9.3	8.8	9.1	8.7	8.5	8.6	7.8	6.5	7.3
21	8.4	7.7	7.9	9.4	8.6	9.1	8.6	8.1	8.4	6.7	6.5	6.5
22	8.4	7.9	8.1	9.1	8.6	8.9	8.3	7.5	7.8	6.6	6.3	6.5
23	8.4	8.2	8.3	9.0	8.6	8.8	8.1	7.9	8.0	7.1	6.3	6.7
24	8.5	8.2	8.3	8.8	8.6	8.7	8.2	8.0	8.1	7.3	7.1	7.2
25	9.1	8.5	8.9	8.7	7.9	8.4	8.5	8.2	8.3	7.4	7.2	7.3
26	9.1	9.0	9.0	8.1	7.8	8.0	8.5	8.3	8.4	7.4	7.2	7.3
27	9.2	8.9	9.1	8.1	6.8	7.7	8.3	8.0	8.1	7.5	7.2	7.4
28	9.3	8.4	8.9	7.8	7.4	7.6	8.0	7.7	7.9	7.8	7.3	7.5
29	---	---	---	8.1	7.8	7.9	7.8	7.7	7.8	7.9	7.6	7.7
30	---	---	---	8.2	8.0	8.1	8.2	7.8	8.1	7.9	7.5	7.6
31	---	---	---	8.7	8.0	8.3	---	---	---	7.6	7.3	7.4
MONTH	11.2	7.7	9.4	9.7	6.8	8.7	9.0	7.5	8.3	9.4	6.3	7.9

TRINITY RIVER MAIN STEM
08062700 TRINITY RIVER AT TRINIDAD, TX

LOCATION.--Lat 32°08'05", long 96°06'20". Henderson County, Hydrologic Unit 12030105, on left bank at pumping station of Texas Power and Light Co., near southwest boundary of Trinidad, 0.5 mi downstream from St. Louis Southwestern Railway Lines bridge, 0.9 mi downstream from bridge on State Highway 31, 8 mi upstream from Cedar Creek, and at mile 391.2.

DRAINAGE AREA.--8,538 mi², not including 1,007 mi² upstream from Cedar Creek Reservoir.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. Records of gage height collected in this vicinity for period October 1913 to September 1915 are contained in reports of U.S. Army Corps of Engineers, and records collected since October 1915 are contained in reports of the National Weather Service.

REVISED RECORDS.--WDR TX-89-1: 1988. WDR TX-90-1: 1989.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 239.21 ft above sea level. Prior to May 3, 1967, at site 0.9 mi upstream at datum 1.28 ft higher.

REMARKS.--Records fair. Since installation of gage in October 1964, at least 10% of contributing drainage area has been regulated by 15 upstream reservoirs having a combined capacity of 3,572,000 acre-ft, of which 1,138,000 acre-ft is for flood control. The cities of Fort Worth, Dallas, and several smaller cities divert considerable water for their municipal use, of which about 60 percent is returned as wastewater effluent that sustains low flows at this site. There are 62 floodwater-retarding structures with a combined detention capacity of 38,690 acre-ft in the drainage basin above this station. These structures control runoff from 126 mi² above this station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1908, 49.8 ft Apr. 25, 1942 and 48.3 ft date unknown, 1908 (present site and datum), from records of the National Weather Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	806	12000	14600	1380	1010	30900	10200	28300	13700	2800	995	821
2	813	4790	14800	1720	1020	28900	9750	23100	12200	2460	980	802
3	787	2270	14300	1700	1040	27500	9410	19300	10700	1940	968	804
4	777	2160	10700	1630	992	26500	11800	17200	9380	1540	945	829
5	775	1610	7660	1610	988	26200	21500	15100	8340	1330	913	1740
6	767	1390	8070	1390	1010	25800	27000	13400	7050	1940	859	2570
7	754	1290	8200	1220	1240	24800	32600	11600	6010	4460	1130	1360
8	749	3970	7920	1690	4260	23100	36000	10000	5140	4190	3010	958
9	761	8760	7540	3820	5950	21800	36300	9060	4290	3930	e6590	902
10	761	8970	6940	4200	5420	21200	34200	8920	4040	3080	e3700	923
11	750	4260	5910	2820	5520	20200	30400	10400	4220	3080	2330	890
12	744	2090	5310	1970	5960	19600	26300	11700	5610	2850	1870	859
13	e761	1830	5190	1590	12100	22100	22900	11500	4820	2200	1550	809
14	e770	1700	5190	1390	15100	24700	20600	10900	5640	1700	1310	802
15	e765	1610	4910	1310	18600	27700	19500	10700	7690	1380	1340	880
16	e780	1680	5270	1270	26200	28700	18400	11000	7920	1280	1330	963
17	e785	1920	6220	1280	30500	27700	17100	11500	8390	1270	1180	870
18	e790	2440	4420	1260	30200	25900	15900	12200	9490	1350	1120	888
19	e780	3090	3940	1190	26300	22800	14600	12500	12600	1300	1130	907
20	e770	2260	3420	1150	22300	20400	12500	12100	13300	1260	1080	834
21	e760	1650	2630	1140	20600	18100	10900	12700	10800	1220	1040	812
22	1390	1590	2290	1120	19000	16600	10700	14500	6560	1140	1090	809
23	5610	1550	1920	1160	25600	15800	11700	15400	4830	1110	1040	849
24	5330	1570	1690	1250	32100	15400	12200	17200	7140	1100	962	874
25	2370	7310	1660	1620	35100	14900	12200	17100	8440	1070	895	886
26	1290	12600	1620	1440	35200	14900	17600	13200	5980	1040	885	885
27	1040	14000	1400	1300	34100	14800	21700	9740	4370	1150	898	840
28	1190	14800	1360	1130	32300	14300	27800	10400	5350	1100	891	879
29	7980	15300	1350	1070	---	13100	32900	10900	4190	1120	854	942
30	11800	14900	1330	1070	---	12000	31900	9870	3300	1090	827	910
31	13200	---	1280	1010	---	11100	---	14700	---	1020	832	---
TOTAL	67405	155360	169040	48900	449710	657500	616560	416190	221490	57500	44544	29097
MEAN	2174	5179	5453	1577	16060	21210	20550	13430	7383	1855	1437	970
MAX	13200	15300	14800	4200	35200	30900	36300	28300	13700	4460	6590	2570
MIN	744	1290	1280	1010	988	11100	9410	8920	3300	1020	827	802
AC-FT	133700	308200	335300	96990	892000	1304000	1223000	825500	439300	114100	88350	57710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1997#, BY WATER YEAR (WY)

MEAN	2663	3927	4471	3318	5121	6211	5939	9706	6657	2584	1401	1224
MAX	11390	20160	24320	20490	20550	21210	20550	47120	26790	11800	6886	3347
(WY)	1974	1975	1992	1992	1992	1997	1997	1990	1989	1982	1982	1974
MIN	417	403	460	415	424	542	798	693	526	394	394	448
(WY)	1976	1967	1967	1967	1967	1967	1978	1971	1972	1972	1967	1972

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1965 - 1997#
ANNUAL TOTAL	712403	2933296	
ANNUAL MEAN	1946	8036	4430
HIGHEST ANNUAL MEAN			11400
LOWEST ANNUAL MEAN			854
HIGHEST DAILY MEAN	15300	Nov 29	36300
LOWEST DAILY MEAN	634	Jul 7	744
ANNUAL SEVEN-DAY MINIMUM	651	Jul 3	754
INSTANTANEOUS PEAK FLOW			36800
INSTANTANEOUS PEAK STAGE			37.06
ANNUAL RUNOFF (AC-FT)	1413000	5818000	3209000
10 PERCENT EXCEEDS	4840	22800	12200
50 PERCENT EXCEEDS	949	3930	1260
90 PERCENT EXCEEDS	725	859	502

e Estimated

Period of regulated streamflow.

TRINITY RIVER MAIN STEM

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: May 1966 to June 1994. Pesticide analyses: November 1977 to June 1982. Sediment analyses: November 1977 to June 1994.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1967 to September 1981, May 1986 to current year.

pH: September 1967 to October 1969, May 1986 to current year.

WATER TEMPERATURE: September 1967 to September 1981, May 1986 to current year.

DISSOLVED OXYGEN: September 1967 to October 1969, May 1986 to current year.

INSTRUMENTATION.--From April 1967 to October 1969, a four-parameter water-quality monitor continuously recorded specific conductance, pH, water temperature, and dissolved oxygen. Since May 1986, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,000 micromhos/cm Dec. 28, 1977; minimum daily, 170 micromhos/cm May 4, 1990.

pH: Maximum, 8.9 units Mar. 17, Apr. 20 and 21, 1996; minimum, 5.7 units Aug. 13, 1988.

WATER TEMPERATURE: Maximum daily, 34.0°C July 17, 1979, July 9, 13, 1980; minimum daily, 2.5°C Dec. 24, 1989.

DISSOLVED OXYGEN: Maximum, 16.8 mg/L Mar. 11, 1986; minimum, 0.0 mg/L May 3, 1987.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 890 micromhos/cm Sept. 19; minimum, 232 micromhos/cm Nov. 26.

pH: Maximum, 8.7 units Aug. 29-31; minimum, 7.4 units on several days.

WATER TEMPERATURE: Maximum, 33.5°C on several days; minimum, 5.0°C Jan. 13-15.

DISSOLVED OXYGEN: Maximum, 11.9 mg/L Feb. 2; minimum, 2.1 mg/L Oct. 23.

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	67405	470	264	48120	35	6350	51	9350	140
NOV. 1996	155360	411	231	97100	27	11270	43	18010	140
DEC. 1996	169040	417	235	107200	27	12350	43	19830	140
JAN. 1997	48900	640	360	47470	57	7570	75	9950	170
FEB. 1997	449710	358	202	245300	21	25580	36	43880	120
MAR. 1997	657500	367	207	368000	21	38100	37	65670	130
APR. 1997	616560	339	191	318400	19	31640	34	56080	120
MAY 1997	416190	383	216	242800	23	25910	39	43760	130
JUNE 1997	221490	407	230	137300	26	15400	42	25160	140
JULY 1997	57500	546	307	47690	44	6800	61	9540	160
AUG. 1997	44544	539	303	36450	44	5250	61	7320	150
SEPT 1997	29097	717	403	31630	71	5580	88	6930	170
TOTAL	2933296	**	**	1727400	**	191800	**	315500	**
WTD. AVG.	8040	387	218	**	24	**	40	**	130

TRINITY RIVER MAIN STEM

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	703	684	700	373	335	350	377	329	346	690	682	685
2	694	675	679	426	373	401	358	325	337	703	686	690
3	710	694	705	498	426	456	390	358	374	710	590	654
4	706	686	691	557	498	524	435	390	414	593	565	576
5	705	693	701	578	544	565	444	434	438	610	593	598
6	705	697	701	564	542	549	449	400	419	614	606	610
7	708	699	704	593	559	574	400	394	396	621	611	614
8	705	692	700	627	528	602	397	391	394	665	621	647
9	692	683	689	528	343	380	395	387	390	643	513	582
10	691	679	683	379	343	356	401	387	391	549	482	513
11	695	690	693	415	379	402	414	401	408	560	527	543
12	692	684	690	460	414	436	420	412	415	558	512	524
13	684	668	677	546	460	500	428	415	422	611	558	590
14	668	659	662	552	535	542	422	406	415	646	611	629
15	659	654	655	565	545	553	408	383	398	668	646	658
16	656	650	653	578	565	574	444	385	417	697	668	686
17	654	643	646	598	576	587	472	437	451	710	696	706
18	650	641	644	600	571	589	478	430	448	718	709	712
19	651	644	647	581	502	564	455	430	442	719	713	716
20	648	633	639	522	486	505	440	427	430	721	716	719
21	718	617	641	537	486	517	493	440	473	727	721	725
22	734	718	726	537	515	523	533	493	514	735	727	733
23	729	278	531	603	537	570	542	533	536	736	700	724
24	452	387	413	629	601	614	562	542	552	712	696	708
25	407	387	397	620	233	511	593	562	579	712	692	703
26	---	---	e500	299	232	277	633	593	614	723	712	719
27	---	---	e480	332	286	300	---	---	e620	719	686	703
28	---	---	e470	381	332	362	---	---	e640	698	682	691
29	629	260	434	403	381	392	---	---	e660	697	678	687
30	348	305	336	423	377	410	---	---	e670	724	688	706
31	348	332	336	---	---	---	685	676	680	752	724	740
MONTH	734	260	607	629	232	483	685	325	474	752	482	661

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	762	740	755	367	354	358	395	390	393	356	316	338
2	740	724	730	378	367	374	392	387	390	382	356	369
3	756	731	749	372	361	367	398	390	394	383	379	381
4	765	756	759	361	349	354	397	295	370	408	378	384
5	776	765	773	351	349	350	295	255	263	406	402	404
6	769	753	758	352	349	350	256	246	249	404	400	402
7	753	717	733	371	352	363	280	250	263	402	397	399
8	724	634	698	373	371	372	310	280	295	402	398	400
9	634	464	525	373	372	372	347	310	328	405	399	402
10	481	457	467	378	368	372	367	347	357	406	400	403
11	483	452	468	392	378	387	374	367	372	486	360	419
12	454	410	441	390	362	385	376	372	374	388	353	368
13	410	306	371	362	331	341	379	364	374	425	388	412
14	306	278	285	331	310	320	387	378	380	419	412	415
15	303	282	293	319	311	314	405	387	398	420	412	416
16	323	303	313	339	319	329	406	403	405	423	412	419
17	359	323	340	347	339	343	415	402	408	418	402	410
18	390	359	375	362	347	350	412	409	410	404	386	393
19	399	390	395	372	362	369	412	403	408	412	397	407
20	399	375	393	396	372	379	421	402	409	419	411	416
21	381	344	356	409	396	403	426	392	407	415	319	382
22	345	317	335	408	407	407	414	389	404	360	323	339
23	317	310	312	411	407	409	441	386	414	378	359	368
24	327	312	320	415	411	413	395	389	391	379	361	369
25	335	326	329	414	397	411	396	324	390	396	372	375
26	342	335	339	397	387	390	324	290	308	420	396	412
27	346	341	343	415	382	394	290	254	266	424	415	419
28	354	346	350	415	401	406	260	243	252	417	321	360
29	---	---	---	408	400	406	293	254	274	364	326	357
30	---	---	---	400	375	390	316	293	305	413	318	371
31	---	---	---	396	374	392	---	---	---	342	277	299
MONTH	776	278	475	415	310	373	441	243	355	486	277	387

TRINITY RIVER MAIN STEM

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	367	326	349	488	471	484	664	633	647	706	701	703
2	395	363	381	511	486	498	---	---	e620	707	703	705
3	412	395	406	530	509	516	---	---	e610	717	706	713
4	418	406	413	---	---	e580	---	---	e640	717	712	715
5	419	410	416	---	---	e600	669	658	663	726	713	720
6	423	415	418	---	---	e610	665	623	653	730	500	672
7	427	420	424	715	450	615	642	560	602	607	488	552
8	443	422	429	450	348	377	---	---	e520	501	475	486
9	460	427	454	443	408	431	553	352	402	496	462	477
10	469	408	447	429	397	406	361	341	347	580	479	541
11	---	---	e430	454	412	440	352	345	348	617	580	594
12	---	---	e420	513	453	490	387	352	367	695	617	652
13	---	---	e440	527	513	518	445	387	413	763	695	726
14	---	---	e470	540	527	534	519	445	483	767	735	753
15	---	---	e500	---	---	e550	566	501	527	760	738	753
16	---	---	e510	---	---	e570	624	566	597	779	760	770
17	---	---	e460	---	---	e590	655	624	647	802	779	792
18	---	---	e360	626	581	605	659	648	656	873	802	841
19	---	---	e340	659	626	642	663	636	651	890	837	857
20	---	---	e350	669	659	665	654	646	651	838	802	817
21	---	---	e390	673	650	664	685	646	669	820	804	812
22	---	---	e430	664	647	654	685	680	682	838	820	831
23	---	---	e440	670	664	667	680	669	674	828	760	799
24	468	358	413	670	668	669	691	678	685	802	760	780
25	378	362	369	675	666	668	688	669	676	812	794	803
26	385	364	370	682	675	679	679	663	670	822	809	815
27	432	385	414	683	677	680	698	663	680	813	798	807
28	459	348	410	685	676	680	698	689	692	798	749	772
29	418	379	402	682	673	677	699	691	693	751	746	748
30	471	418	449	688	657	679	715	699	706	751	719	737
31	---	---	---	657	645	649	723	706	717	---	---	---
MONTH	471	326	417	715	348	583	723	341	600	890	462	725
YEAR	890	232	512									

e Estimated

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.9	7.8	7.8	7.4	7.4	7.4	7.8	7.8	7.8	8.2	8.1	8.1
2	7.9	7.8	7.8	7.5	7.4	7.5	7.8	7.8	7.8	8.0	7.9	8.0
3	8.1	7.8	8.0	7.6	7.5	7.6	7.8	7.7	7.7	7.9	7.9	7.9
4	8.0	7.9	8.0	7.7	7.6	7.6	7.7	7.7	7.7	8.0	7.9	7.9
5	8.0	7.9	7.9	7.7	7.7	7.7	7.8	7.7	7.8	8.0	7.9	8.0
6	8.0	7.9	7.9	7.7	7.7	7.7	7.8	7.6	7.7	8.0	7.9	8.0
7	8.0	7.9	7.9	7.8	7.7	7.7	7.6	7.6	7.6	8.0	8.0	8.0
8	7.9	7.8	7.9	7.8	7.5	7.7	7.6	7.6	7.6	8.1	8.0	8.0
9	7.9	7.8	7.8	7.6	7.5	7.6	7.6	7.6	7.6	8.0	7.9	8.0
10	7.9	7.7	7.8	7.6	7.6	7.6	7.6	7.6	7.6	8.0	7.9	8.0
11	8.0	7.8	7.9	7.7	7.6	7.6	7.6	7.5	7.6	8.0	7.9	7.9
12	8.0	7.8	7.9	7.7	7.7	7.7	7.6	7.4	7.4	8.1	8.0	8.0
13	8.0	7.8	7.9	7.8	7.7	7.8	7.4	7.4	7.4	8.1	8.0	8.1
14	8.0	7.8	7.9	7.8	7.8	7.8	7.4	7.4	7.4	8.2	8.1	8.2
15	7.9	7.8	7.9	7.8	7.8	7.8	7.4	7.4	7.4	8.2	8.2	8.2
16	7.9	7.8	7.8	7.9	7.8	7.8	7.9	7.4	7.5	8.2	8.1	8.1
17	7.9	7.7	7.8	7.9	7.8	7.8	7.6	7.6	7.6	8.2	8.1	8.2
18	7.9	7.8	7.8	7.9	7.8	7.8	7.6	7.5	7.6	8.2	8.2	8.2
19	7.9	7.8	7.8	7.8	7.7	7.8	7.7	7.5	7.6	8.2	8.0	8.1
20	7.8	7.7	7.8	7.8	7.7	7.8	7.7	7.6	7.7	8.0	8.0	8.0
21	7.8	7.7	7.7	7.9	7.8	7.9	7.7	7.7	7.7	8.1	8.0	8.0
22	7.8	7.6	7.7	7.9	7.8	7.9	7.7	7.7	7.7	8.1	8.0	8.0
23	7.7	7.4	7.5	7.9	7.8	7.8	7.8	7.7	7.8	8.0	8.0	8.0
24	7.5	7.4	7.5	7.9	7.8	7.8	7.8	7.8	7.8	8.0	7.9	8.0
25	7.5	7.4	7.5	7.9	7.6	7.8	7.9	7.8	7.8	8.0	7.9	8.0
26	7.6	7.5	7.6	7.9	7.8	7.8	7.9	7.9	7.9	8.0	7.9	8.0
27	7.6	7.6	7.6	7.8	7.7	7.8	8.2	7.9	8.0	7.9	7.9	7.9
28	7.8	7.5	7.6	7.7	7.6	7.6	8.3	7.9	8.0	8.0	7.9	7.9
29	7.6	7.4	7.5	7.7	7.6	7.7	8.2	7.6	7.9	8.1	8.0	8.0
30	7.4	7.4	7.4	7.8	7.8	7.8	8.1	7.5	8.0	8.3	8.0	8.1
31	7.4	7.4	7.4	---	---	---	8.1	8.1	8.1	8.3	8.1	8.2
MONTH	8.1	7.4	7.8	7.9	7.4	7.7	8.3	7.4	7.7	8.3	7.9	8.0

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	8.3	8.1	8.2	7.8	7.8	7.8	8.2	8.1	8.2	7.7	7.5	7.6
2	8.3	8.2	8.2	7.8	7.8	7.8	8.2	8.2	8.2	7.7	7.6	7.7
3	8.2	8.1	8.2	7.8	7.8	7.8	8.2	7.7	7.9	7.8	7.7	7.7
4	8.2	8.0	8.1	7.8	7.8	7.8	7.7	7.5	7.7	7.8	7.8	7.8
5	8.2	8.0	8.1	7.8	7.8	7.8	7.6	7.6	7.6	7.8	7.8	7.8
6	8.2	8.1	8.1	7.9	7.8	7.8	7.6	7.6	7.6	7.8	7.8	7.8
7	8.1	8.0	8.0	7.9	7.8	7.8	7.6	7.5	7.5	7.8	7.8	7.8
8	8.0	7.6	7.8	7.9	7.9	7.9	7.5	7.5	7.5	7.8	7.8	7.8
9	7.8	7.6	7.8	7.9	7.9	7.9	7.6	7.5	7.5	7.8	7.8	7.8
10	7.9	7.8	7.8	7.9	7.9	7.9	7.7	7.6	7.6	7.8	7.8	7.8
11	7.9	7.8	7.9	7.9	7.9	7.9	7.7	7.6	7.6	7.8	7.6	7.7
12	8.0	7.9	7.9	7.9	7.9	7.9	7.8	7.7	7.7	7.7	7.6	7.6
13	7.9	7.8	7.8	7.9	7.9	7.9	7.8	7.7	7.7	7.8	7.7	7.7
14	7.9	7.8	7.9	7.9	7.9	7.9	7.7	7.6	7.6	7.9	7.8	7.8
15	7.9	7.8	7.8	7.9	7.9	7.9	7.6	7.6	7.6	7.9	7.9	7.9
16	7.8	7.7	7.8	7.9	7.9	7.9	7.7	7.6	7.7	7.9	7.9	7.9
17	7.8	7.6	7.7	8.0	7.9	7.9	7.7	7.7	7.7	7.9	7.8	7.8
18	7.7	7.7	7.7	8.0	7.9	7.9	7.7	7.7	7.7	7.8	7.7	7.8
19	7.7	7.7	7.7	8.0	8.0	8.0	7.7	7.7	7.7	7.9	7.8	7.8
20	7.8	7.7	7.8	8.0	8.0	8.0	7.7	7.7	7.7	7.9	7.9	7.9
21	7.8	7.7	7.7	8.0	8.0	8.0	7.7	7.7	7.7	7.9	7.6	7.8
22	7.7	7.7	7.7	8.0	8.0	8.0	7.7	7.6	7.7	7.7	7.7	7.7
23	7.7	7.7	7.7	8.0	8.0	8.0	7.7	7.5	7.6	7.8	7.7	7.7
24	7.7	7.7	7.7	8.1	8.0	8.0	7.6	7.6	7.6	7.8	7.7	7.7
25	7.8	7.7	7.7	8.1	8.0	8.1	7.7	7.6	7.7	7.8	7.7	7.8
26	7.8	7.7	7.8	8.1	8.0	8.1	7.6	7.6	7.6	7.9	7.8	7.8
27	7.8	7.8	7.8	8.0	7.9	7.9	7.6	7.6	7.6	7.9	7.9	7.9
28	7.8	7.8	7.8	8.0	7.9	7.9	7.6	7.6	7.6	7.9	7.7	7.8
29	---	---	---	8.0	7.9	8.0	7.6	7.5	7.6	7.8	7.7	7.8
30	---	---	---	8.1	8.0	8.1	7.6	7.5	7.5	7.8	7.7	7.8
31	---	---	---	8.2	8.1	8.1	---	---	---	7.8	7.7	7.7
MONTH	8.3	7.6	7.9	8.2	7.8	7.9	8.2	7.5	7.7	7.9	7.5	7.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.8	7.8	7.8	7.7	7.7	7.7	8.1	7.6	7.9	8.6	8.3	8.5
2	7.8	7.7	7.8	7.8	7.7	7.8	---	---	---	8.5	8.2	8.4
3	7.9	7.8	7.8	7.9	7.8	7.9	---	---	---	8.4	8.1	8.2
4	7.9	7.8	7.8	---	---	---	---	---	---	8.3	8.1	8.2
5	7.8	7.8	7.8	---	---	---	8.2	8.0	8.1	8.3	7.9	8.1
6	7.8	7.7	7.7	---	---	---	8.1	8.0	8.0	7.9	7.6	7.8
7	7.8	7.7	7.7	8.0	7.8	7.9	8.0	7.8	7.9	7.7	7.6	7.7
8	7.8	7.7	7.7	7.9	7.8	7.8	7.9	7.8	7.9	7.7	7.6	7.6
9	7.8	7.7	7.7	8.0	7.9	8.0	7.9	7.9	7.9	7.6	7.6	7.6
10	7.7	7.7	7.7	8.0	8.0	8.0	7.9	7.9	7.9	7.8	7.6	7.7
11	---	---	---	8.1	8.0	8.0	8.0	7.9	7.9	7.8	7.7	7.7
12	---	---	---	8.1	8.1	8.1	8.0	8.0	8.0	8.0	7.8	7.9
13	---	---	---	8.2	8.1	8.2	8.1	8.0	8.1	8.1	7.5	7.9
14	---	---	---	8.3	8.2	8.2	8.1	8.1	8.1	8.3	8.0	8.1
15	---	---	---	---	---	---	8.1	7.9	8.0	8.3	8.1	8.2
16	---	---	---	---	---	---	7.9	7.9	7.9	8.3	8.0	8.2
17	---	---	---	---	---	---	7.9	7.9	7.9	8.3	8.0	8.2
18	---	---	---	7.7	7.7	7.7	8.2	7.9	8.0	8.4	8.0	8.2
19	---	---	---	7.7	7.7	7.7	8.3	8.2	8.2	8.2	8.0	8.1
20	---	---	---	7.7	7.7	7.7	8.4	8.2	8.3	8.2	8.0	8.1
21	---	---	---	7.7	7.6	7.7	8.5	8.3	8.4	8.2	8.0	8.1
22	---	---	---	7.7	7.6	7.7	8.5	8.4	8.4	8.1	8.0	8.1
23	---	---	---	7.8	7.7	7.7	8.4	8.3	8.3	8.1	7.9	8.0
24	7.8	7.7	7.8	7.8	7.7	7.7	8.4	8.2	8.3	8.0	7.9	8.0
25	7.7	7.7	7.7	7.7	7.6	7.7	8.3	8.3	8.3	8.0	7.9	7.9
26	7.8	7.7	7.8	7.7	7.6	7.6	8.3	8.1	8.2	8.0	7.9	7.9
27	7.7	7.7	7.7	7.7	7.6	7.7	8.5	8.1	8.3	8.1	7.9	8.0
28	7.8	7.7	7.7	7.7	7.6	7.6	8.6	8.4	8.5	8.1	8.0	8.1
29	7.7	7.6	7.6	7.7	7.6	7.6	8.7	8.5	8.6	8.0	7.9	8.0
30	7.7	7.6	7.7	7.7	7.6	7.6	8.7	8.3	8.5	8.0	7.8	7.9
31	---	---	---	7.7	7.6	7.6	8.7	8.4	8.5	---	---	---
MONTH	7.9	7.6	7.7	8.3	7.6	7.8	8.7	7.6	8.2	8.6	7.5	8.0
YEAR	8.7	7.4	7.8									

TRINITY RIVER MAIN STEM

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08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

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

TRINITY RIVER MAIN STEM

08062700 TRINITY RIVER AT TRINIDAD, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	24.5	23.5	24.0	30.0	28.5	29.5	---	---	---	31.5	29.5	30.5
2	24.5	24.0	24.5	30.5	29.0	29.5	---	---	---	31.5	30.0	30.5
3	25.5	24.5	25.0	31.0	29.5	30.5	---	---	---	31.5	30.0	31.0
4	25.5	24.5	25.0	---	---	---	---	---	---	31.0	29.5	30.0
5	25.5	25.0	25.0	---	---	---	---	---	---	29.5	28.5	29.0
6	25.5	24.5	25.0	---	---	---	32.0	30.5	31.5	29.0	27.5	28.0
7	25.0	24.5	25.0	29.0	27.0	28.0	31.0	27.5	29.0	28.5	27.0	27.5
8	25.5	24.5	25.0	28.0	26.0	27.0	---	---	---	28.5	27.0	27.5
9	26.0	25.0	25.5	29.5	27.5	28.5	26.0	24.5	25.0	28.0	24.5	26.5
10	26.0	25.5	25.5	30.0	28.5	29.0	26.0	25.0	25.5	28.5	27.5	28.0
11	---	---	---	31.0	29.0	30.0	27.5	26.0	26.5	28.0	26.5	27.5
12	---	---	---	31.5	29.5	30.5	29.0	27.5	28.0	28.0	26.5	27.5
13	---	---	---	31.5	30.5	31.0	30.5	28.5	29.5	28.5	27.0	27.5
14	---	---	---	---	---	---	31.5	29.5	30.5	29.0	27.5	28.0
15	---	---	---	---	---	---	31.5	29.5	30.5	29.0	28.0	28.5
16	---	---	---	---	---	---	31.5	29.5	30.5	29.5	28.0	28.5
17	---	---	---	---	---	---	31.5	30.0	30.5	29.5	28.0	29.0
18	---	---	---	32.5	31.0	32.0	31.5	30.0	31.0	30.5	28.5	29.5
19	---	---	---	33.0	31.0	32.0	31.5	30.5	31.0	30.0	29.0	29.5
20	---	---	---	33.0	31.5	32.0	32.0	30.5	31.0	30.5	29.0	29.5
21	---	---	---	33.0	31.5	32.0	32.5	31.0	31.5	30.0	28.5	29.5
22	---	---	---	33.0	31.5	32.5	32.0	31.0	31.5	29.5	28.5	29.0
23	---	---	---	33.5	32.0	32.5	31.5	30.5	31.0	29.0	28.0	28.5
24	27.5	26.5	27.0	33.5	32.0	33.0	31.0	29.5	30.5	28.5	26.5	27.5
25	27.0	26.0	26.5	33.5	32.0	33.0	30.5	29.0	30.0	26.5	25.0	25.5
26	27.5	26.5	27.0	33.5	32.0	33.0	30.5	29.0	29.5	26.0	24.0	25.0
27	28.5	27.5	28.0	33.5	32.0	32.5	30.5	28.5	29.5	26.0	24.0	25.0
28	28.0	27.5	28.0	33.5	32.0	33.0	31.0	29.0	30.0	26.0	24.5	25.0
29	29.0	27.5	28.0	33.5	32.0	33.0	31.0	29.5	30.0	26.5	25.0	26.0
30	29.5	28.5	29.0	33.5	32.5	32.5	31.0	29.5	30.0	27.0	25.5	26.5
31	---	---	---	33.0	31.5	32.0	31.0	29.5	30.5	---	---	---
MONTH	29.5	23.5	26.0	33.5	26.0	31.0	32.5	24.5	30.0	31.5	24.0	28.0
YEAR	33.5	5.0	19.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.4	6.4	6.9	6.8	6.5	6.6	9.7	9.3	9.6	10.0	9.4	9.7
2	8.2	6.9	7.5	8.4	6.8	7.5	9.5	9.2	9.3	9.5	9.0	9.3
3	8.3	7.2	7.8	9.5	8.4	9.2	9.5	9.4	9.4	9.0	8.6	8.8
4	7.6	6.6	7.0	9.8	9.5	9.7	9.8	9.3	9.6	8.9	8.5	8.7
5	7.1	6.2	6.6	9.9	9.7	9.8	10.2	9.7	10.0	8.6	8.3	8.4
6	7.0	6.2	6.5	9.7	9.4	9.6	10.3	10.1	10.2	8.5	8.2	8.4
7	6.5	5.9	6.2	9.6	9.3	9.4	10.2	10.1	10.2	9.2	8.5	8.9
8	6.8	5.9	6.3	9.6	7.6	9.2	10.3	10.1	10.2	9.8	9.2	9.5
9	6.4	5.3	5.7	8.5	7.4	8.3	10.3	10.1	10.3	10.4	9.8	10.1
10	6.0	5.1	5.7	8.8	8.5	8.7	10.3	9.9	10.2	11.0	10.3	10.6
11	5.4	4.0	4.8	9.5	8.8	9.1	---	---	---	10.5	10.1	10.3
12	6.9	4.9	5.9	9.8	9.5	9.7	---	---	---	11.0	10.5	10.8
13	6.7	6.1	6.3	9.8	9.6	9.7	---	---	---	11.1	10.8	10.9
14	6.2	5.7	6.0	9.6	9.1	9.3	---	---	---	11.6	11.1	11.4
15	6.5	5.5	5.9	9.1	8.8	8.9	---	---	---	11.7	11.5	11.6
16	5.5	3.7	4.7	8.9	8.6	8.7	---	---	---	11.6	11.4	11.5
17	4.5	3.7	4.1	9.0	8.6	8.8	9.3	9.0	9.1	11.7	11.5	11.6
18	5.2	4.0	4.6	8.8	8.3	8.6	9.7	9.1	9.4	11.7	11.5	11.6
19	5.7	4.8	5.2	8.3	7.2	7.8	10.7	9.7	10.2	11.7	11.3	11.5
20	5.4	4.9	5.1	8.1	7.2	7.9	11.3	10.7	11.0	11.3	11.0	11.1
21	5.5	4.7	5.0	8.3	8.1	8.2	11.4	11.2	11.3	11.1	10.7	10.9
22	5.6	4.6	5.0	8.4	8.2	8.3	11.4	11.0	11.2	11.0	10.2	10.6
23	5.1	2.1	3.4	8.4	8.1	8.3	11.0	10.3	10.7	10.2	9.5	9.8
24	4.0	3.1	3.6	8.7	8.0	8.2	10.4	10.2	10.3	9.5	8.9	9.2
25	---	---	---	8.7	7.0	8.0	10.5	10.2	10.3	9.3	8.8	9.1
26	---	---	---	8.6	8.3	8.5	10.5	10.1	10.3	9.2	8.8	9.0
27	---	---	---	9.0	8.5	8.7	10.5	9.9	10.1	8.8	8.1	8.4
28	---	---	---	9.3	9.0	9.1	10.3	10.1	10.2	9.5	8.6	8.9
29	9.7	4.3	6.4	9.5	9.3	9.4	10.3	9.9	10.1	10.3	9.0	9.7
30	6.0	5.5	5.8	9.8	9.5	9.6	10.2	9.6	9.9	11.1	9.9	10.5
31	6.5	6.0	6.3	---	---	---	9.9	9.6	9.7	11.5	10.4	10.9
MONTH	9.7	2.1	5.7	9.9	6.5	8.8	11.4	9.0	10.1	11.7	8.1	10.1

08063010 CEDAR CREEK RESERVOIR NEAR TRINIDAD, TX

LOCATION.--Lat 32°14'35", long 96°08'26", Henderson County, Hydrologic Unit 12030107, inside pumphouse on lower level, 1,000 ft north of spillway, 5.5 mi upstream from Joe B. Hogsett Dam on Cedar Creek, and 8.0 mi northwest of Trinidad.

DRAINAGE AREA.--1,007 mi².

PERIOD OF RECORD.--January 1965 to current year.

Water-quality records.--Chemical and biochemical analyses: October 1969 to September 1985.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1972, at unfinished pumphouse at same site and datum. May 16, 1972 to Sept. 8, 1975, at site 0.25 mi north and upstream from pumphouse at same datum.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 17,539 ft long. The spillway is located on the right bank 5.5 mi upstream from the dam and discharges into the Trinity River through a cut channel 2 mi long. Deliberate impoundment began July 2, 1965, and the dam was completed in February 1966. The spillway is 474 ft long and has eight 40- by 24-ft radial gates and two automatically operated 40- by 8.5-ft hinged gates. Low-flow releases may be made downstream through a 5.0 foot diameter conduit through the dam. The dam is the property of Tarrant Regional Water District and was built for municipal and industrial supply and for recreational purposes. The capacity table was based on a survey during 1995. Water is diverted from the reservoir for municipal and industrial uses by lakeside developments and by the cities of Arlington, Fort Worth, Mansfield, Kemp, Trinidad, and Mabank. Figures given herein represent total contents based on the March 1995 survey. Satellite telemeter at station. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	340.0	-
Top of radial gates	325.0	745,000
Top of automatic gates	322.5	653,600
Top of conservation pool	322.0	637,200
Crest of spillway (automatic gates)	314.0	410,200
Crest of spillway (radial gates)	302.0	182,800
Lowest gated outlet (invert)	263.5	132

COOPERATION.--Records of diversions provided by the Tarrant Regional Water District. The original capacity table, 1-C, was provided by Freese and Nichols, Consulting Engineers, for Tarrant Regional Water District. A new capacity table, 2-C, was provided by the Texas Water Development Board, and put into effect Oct. 1, 1995.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 722,000 acre-ft June 4, 1973 (elevation, 323.24 ft); minimum since first appreciable storage in 1966, 332,900 acre-ft Mar. 19, 1967 (elevation, 309.42 ft) based on capacity table then in use (1-C).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 661,500 acre-ft Apr. 28 at 0500 hours (elevation, 322.74 ft); minimum contents, 454,900 acre-ft Nov. 6 (elevation, 315.75 ft).

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

309.0	299,000	322.0	637,200
315.0	435,300	323.0	670,000
320.0	575,700	324.0	706,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	465500	458600	479400	497600	509700	646400	634100	641400	636200	632800	613000	623200
2	465000	457800	482600	497600	509200	650300	634400	641800	635900	632500	611400	622600
3	466100	456200	483200	497100	509200	652900	632800	637200	636200	631900	610500	622600
4	465500	456200	483700	498800	508900	653300	652900	634700	636200	632200	610200	620700
5	465300	455700	483700	499000	508900	649000	652300	634700	635300	631300	609300	619800
6	465000	454900	485100	500200	508600	645100	651600	635000	635900	631000	609600	618900
7	464400	457500	484800	499600	511700	642800	648300	634400	635000	630400	618600	618000
8	463600	457800	484300	503000	512300	639800	644100	634700	635000	629100	628200	617000
9	463600	457300	484300	507200	512000	638200	641100	635600	636200	629400	633500	616700
10	463400	457300	484000	511700	511700	635300	637200	634700	635300	628500	637200	615800
11	461500	457000	484500	512300	511700	636200	640100	634100	635000	627600	638500	614900
12	461200	457300	485100	512300	525200	644400	636200	634400	634100	627600	638500	613000
13	460700	456500	484800	511200	543900	652900	635300	633500	643400	626900	638200	612400
14	460400	456200	484300	510300	568000	656900	635300	633500	640100	626300	637200	612100
15	460100	454900	491700	510900	582100	655900	635600	633100	640100	626300	635600	611100
16	459400	454900	493700	510600	587300	650300	635600	632800	638200	626300	634700	610200
17	461200	459100	496200	510000	588800	644100	635600	632500	641400	625400	633800	609600
18	458300	458300	496800	509500	590300	641800	635000	631600	642100	624800	633800	608700
19	457000	458600	496800	509700	591900	636900	635300	632500	641100	623800	633500	608300
20	456000	458600	496200	508900	611400	635600	635600	637500	637500	623200	631900	608300
21	461500	459400	496200	508900	632200	635300	636200	636900	635900	622600	631900	607400
22	458100	457500	495700	509200	642800	635900	635000	635600	635000	622300	631000	605600
23	457800	458300	499000	511200	643400	635600	635000	637800	635300	620400	630000	607400
24	457800	465000	497900	511700	645100	634700	635000	636900	635600	619500	629100	606800
25	457300	465300	496200	511200	646400	638200	641100	635300	635000	618900	628200	605000
26	457500	468000	497600	510300	648700	637200	650300	636200	635000	618000	627900	604000
27	457800	469100	497100	515400	650300	635300	658200	637500	634700	617600	626900	603100
28	457500	469600	497400	511700	648300	636600	657200	640100	634400	617000	625400	603100
29	458600	471800	497400	510000	---	636200	654200	636900	634100	615200	625100	601900
30	458100	476700	497600	510600	---	635900	648700	640100	633800	615200	624500	601300
31	457800	---	497600	509700	---	634400	---	638800	---	613900	623500	---
MAX	466100	476700	499000	515400	650300	656900	658200	641800	643400	632800	638500	623200
MIN	456000	454900	479400	497100	508600	634400	632800	631600	633800	613900	609300	601300
(+)	315.86	316.56	317.32	317.75	322.34	321.91	322.35	322.05	321.89	321.25	321.56	320.84
(@)	-8300	+18900	+20900	+12100	+138600	-13900	+14300	-9900	-5000	-19900	+9600	-22200

CAL YR 1996 MAX 563200 MIN 454900 (@) -62600
WTR YR 1997 MAX 658200 MIN 454900 (@) +135200

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

08063050 NAVARRO MILLS LAKE NEAR DAWSON, TX

LOCATION.--Lat 31°57'27", long 96°41'21", Navarro County, Hydrologic Unit 12030108, in left abutment of spillway of Navarro Mills Dam on Richland Creek, 1.7 mi upstream from bridge on State Highway 31, 3.0 mi upstream from St. Louis Southwestern Railway Lines bridge, 4.2 mi upstream from Post Oak Creek, 4.6 mi north of Dawson, and 63.9 mi upstream from mouth.

DRAINAGE AREA.--320 mi².

PERIOD OF RECORD.--August 1962 to current year. Prior to October 1970, published as Navarro Mills Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Oct. 8, 1962, nonrecording gage in low-water channel at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 7,570 ft long, including a 240-foot off-channel gated spillway with six 40.0- by 29.0-foot tainter gates. From Aug. 27, 1962, to Mar. 14, 1963, lake was operated as a detention basin only. Deliberate impoundment began Mar. 15, 1963, and dam was completed in September 1963. Low-flow outlet works consist of two 36-inch-diameter gate-controlled conduits. Lake was built for flood control and water conservation. Capacity table prior to September 1976 is based on survey made in February 1956 by U.S. Army Corps of Engineers. Capacity table after Aug. 31, 1976, is based on a sedimentation survey made in September 1972. Flow is affected at times by discharge from the flood-detention pools of 51 floodwater-retarding structures with a combined detention capacity of 26,160 acre-ft. These structures control runoff from 86.9 mi² in the Richland Creek drainage basin. An unknown amount of water is diverted for municipal and industrial uses. Satellite telemeter at station. Figures given herein represent total contents. Data regarding dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	457.0	-
Design flood	451.9	329,500
Top of gates (top of flood-control storage pool)	443.0	206,200
Top of conservation pool	424.5	56,960
Crest of spillway	414.0	18,840
Lowest gated outlet (invert)	400.0	1,150

COOPERATION.--Records of elevations and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 183,300 acre-ft May 18, 1968 (elevation, 440.36 ft); minimum since initial filling in May 1965, 32,490 acre-ft Dec. 28, 1978 (elevation, 418.89 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 136,400 acre-ft Mar. 20 (elevation, 436.02 ft); minimum, 35,220 acre-ft Nov. 22, 23 (elevation, 419.62 ft).

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

419.0	32,950	429.0	82,620	436.0	136,300
420.0	36,660	432.0	103,800	438.0	154,300
423.0	49,590	434.0	119,500	439.0	163,700
426.0	64,810				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37050	35790	38800	46170	56410	108700	90380	81070	57470	58700	54360	52390
2	36970	35670	39040	46260	56460	116100	86610	81330	57270	58540	54260	52340
3	37090	35560	39170	46440	56610	119500	83150	81390	57170	58340	54110	52200
4	37010	35560	39580	46440	56610	120800	89200	81460	57060	58130	53960	52050
5	36970	35520	39790	46400	56610	121600	94680	79860	57010	57980	53960	51910
6	36940	35600	39910	46710	56910	122100	95970	77230	56910	57880	53770	51810
7	36900	35790	40040	46850	59570	121900	96690	74670	56910	57830	54110	51710
8	36860	35670	40120	49640	59780	119900	97350	72120	57120	57780	54810	51610
9	36780	35640	40160	51520	59620	118100	97710	69930	59620	57670	54960	51470
10	36660	35520	40330	52390	59260	125000	98000	67560	60450	57470	55010	51280
11	36550	35520	40370	52780	58950	125800	99100	65140	60710	57320	54960	51130
12	36550	35490	40460	53080	64110	130200	99320	62770	60610	57170	54860	51030
13	36430	35450	40460	53270	79040	135700	99540	60710	60510	57060	54860	50890
14	36360	35370	40540	53570	81980	135600	99760	59160	60400	56960	54710	50790
15	36360	35300	43410	53770	83740	134900	99910	58490	60250	56860	54560	50700
16	36320	35370	44330	53910	84660	135100	97490	58130	60090	56660	54410	50500
17	36240	35450	44760	54160	85260	135600	93400	57780	60820	56560	54260	50410
18	36130	35370	44940	54260	84330	136100	89340	57420	60710	56410	54110	50310
19	35980	35370	44980	54410	82500	136200	85330	57320	60560	56260	53960	50170
20	35980	35370	45110	54610	86610	136400	81200	57320	60250	56160	53910	50070
21	36360	35300	45240	54810	92900	134600	77660	57270	59990	56010	53820	49930
22	36130	35220	45420	54910	94110	130900	73890	57320	59880	55910	53620	49780
23	36020	35220	45590	55200	94890	126700	70040	57780	59830	55700	53520	49830
24	35940	36360	45590	55450	96840	122700	66230	58030	59780	55550	53370	49590
25	35940	36700	45590	55600	101600	118900	66180	58080	59620	55350	53270	49450
26	35900	36780	45730	55800	105500	114500	74610	58130	59880	55250	53130	49310
27	35940	36900	45770	56160	107000	110100	78600	58180	59680	55150	52980	49210
28	35900	36940	45860	56010	108000	105900	79670	58440	59470	55010	52830	49170
29	35940	37480	45990	56110	---	102100	80370	58290	59210	54810	52780	49070
30	35860	38600	45990	56160	---	98150	80820	58180	58950	54710	52640	48930
31	35830	---	46080	56310	---	94180	---	57780	---	54510	52490	---
MAX	37090	38600	46080	56310	108000	136400	99910	81460	60820	58700	55010	52390
MIN	35830	35220	38800	46170	56410	94180	66180	57270	56910	54510	52490	48930
(+)	419.78	420.49	422.24	424.37	432.56	430.69	428.72	424.66	424.89	424.01	423.60	422.86
(@)	-1300	+2770	+7480	+10230	+51690	-13820	-13360	-23040	+1170	-4440	-2020	-3560
CAL YR 1996	MAX	49740	MIN	35220	(@)	-3420						
WTR YR 1997	MAX	136400	MIN	35220	(@)	+11800						

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

(@) Change in contents, in acre feet.

TRINITY RIVER BASIN

08063100 RICHLAND CREEK NEAR DAWSON, TX

LOCATION.--Lat 31°56'18", long 96°40'52", Navarro County, Hydrologic Unit 12030108, at downstream side of bridge on State Highway 31, 1.3 mi upstream from St. Louis Southwestern Railway Lines bridge, 1.7 mi downstream from Navarro Mills Dam, 2.5 mi upstream from Post Oak Creek, and 3.6 mi northeast of Dawson.

DRAINAGE AREA.--333 mi².

PERIOD OF RECORD.--October 1960 to current year.

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 367.52 ft above sea level. Nov. 21, 1960, to Sept. 30, 1982, water-stage recorder at same site and at 3.00 ft higher datum. Prior to Nov. 21, 1960, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair. Since Mar. 15, 1963, at least 10% of contributing drainage area has been regulated by Navarro Mills Lake (station 08063050), 1.7 mi upstream. Flow may be slightly affected at times by discharge from the flood-detention pool of one floodwater-retarding structure with a conservation capacity of 297 acre-ft. This structure controls runoff from a 1.28 mi² area below Navarro Mills Lake and above this station. Several observations of water temperature were made during the year. Satellite telemeter at station.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1961-63).--Maximum discharge, 25,500 ft³/s July 3, 1961 (gage height, 25.50 ft), from rating curve extended above 14,000 ft³/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1895, about 31 ft June 19, 1929, from information by local residents. Floods in 1946 and 1957 reached a stage of about 26 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.94	.21	.19	.25	.06	4.0	1500	11	162	98	.21	.01
2	.91	.47	.11	.23	.06	28	1480	9.8	92	45	.22	.01
3	.82	.69	.14	.25	.05	25	1450	8.8	33	48	.21	.01
4	.71	.88	.24	.25	.05	5.9	1540	8.4	21	51	.18	.03
5	.51	.40	.33	.25	.06	2.9	377	580	3.1	52	.17	.04
6	.42	.19	.23	.33	.08	1.6	24	1140	2.4	54	.19	.01
7	.37	.35	.19	.65	.94	198	19	1120	2.2	54	.27	.01
8	.39	.35	.14	24	309	1010	16	1100	2.2	55	.75	.01
9	.26	.15	.12	9.7	291	1310	8.1	1090	8.2	56	.42	.01
10	.40	.18	.16	2.0	286	1440	6.6	1080	4.1	58	.30	.00
11	.39	.14	.16	.89	286	1160	7.9	1050	43	32	.27	.00
12	.53	.08	.14	.61	430	917	8.7	1030	166	1.5	.22	.00
13	.53	.08	.08	.42	497	751	6.3	900	168	.67	.17	.00
14	.53	.09	.10	.27	19	652	5.2	717	173	.39	.16	.00
15	.42	.08	12	.24	7.1	642	4.8	365	177	.37	.12	.00
16	.39	.08	5.8	.19	2.1	396	862	182	175	.37	.12	.00
17	.47	.14	2.2	.16	.35	5.5	1710	183	193	1.1	.09	.00
18	.39	.13	.83	.19	511	4.2	1670	182	178	.95	.07	.00
19	.59	.10	.58	.17	971	3.3	1630	90	174	.39	.06	.00
20	.66	.11	.55	.14	690	2.9	1590	7.4	145	.32	.06	.00
21	.55	.09	.51	.19	86	741	1550	6.9	105	.28	.07	.00
22	.61	.07	.43	.16	8.0	1580	1530	6.1	106	.28	.05	.00
23	.40	.05	.43	.20	5.5	1730	1500	7.1	105	.28	.05	.00
24	.38	.38	.45	.29	5.3	1700	1460	9.4	52	.30	.07	.00
25	.50	.53	.55	.28	70	1690	1270	5.4	46	.32	.05	.00
26	.51	.32	.55	.28	15	1810	1000	4.3	116	.29	.04	.00
27	.21	.12	.52	.26	11	1900	126	3.7	115	.30	.04	.00
28	.18	.10	.43	.18	6.3	1730	21	13	116	.28	.03	.00
29	.32	.20	.38	.08	---	1580	13	63	116	.24	.02	.00
30	.19	.25	.34	.07	---	1560	11	161	117	.20	.02	.00
31	.14	---	.30	.06	---	1530	---	162	---	.19	.01	---
TOTAL	14.62	7.01	29.18	43.24	4601.01	26110.3	22396.6	11296.3	2916.2	612.02	4.71	0.14
MEAN	.47	.23	.94	1.39	164	842	747	364	97.2	19.7	.15	.005
MAX	.94	.88	12	24	971	1900	1710	1140	193	98	.75	.04
MIN	.14	.05	.08	.06	.05	1.6	4.8	3.7	2.2	.19	.01	.00
AC-FT	29	14	58	86	9130	51790	44420	22410	5780	1210	9.3	.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997#, BY WATER YEAR (WY)

	MEAN	43.6	138	144	153	169	213	227	299	347	107	29.5	22.1
MAX	400	1366	1050	1054	1090	971	992	980	1356	773	541	269	
(WY)	1974	1968	1975	1992	1992	1970	1992	1980	1975	1968	1995	1974	
MIN	.000	.000	.000	.058	.066	.22	.023	.019	.000	.000	.068	.005	
(WY)	1964	1964	1964	1964	1964	1971	1964	1964	1964	1970	1981	1997	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1964 - 1997#

ANNUAL TOTAL	184.99	68031.33	
ANNUAL MEAN	.51	186	157
HIGHEST ANNUAL MEAN			561
LOWEST ANNUAL MEAN			.20
HIGHEST DAILY MEAN	12	Aug 29	2620
LOWEST DAILY MEAN	.01	Apr 4	.00
ANNUAL SEVEN-DAY MINIMUM	.04	May 14	.00
INSTANTANEOUS PEAK FLOW			1930
INSTANTANEOUS PEAK STAGE			19.61
ANNUAL RUNOFF (AC-FT)	367	134900	113900
10 PERCENT EXCEEDS	1.1	939	663
50 PERCENT EXCEEDS	.19	.55	2.0
90 PERCENT EXCEEDS	.06	.05	.03

Period of regulated streamflow.

08063700 BARDWELL LAKE NEAR ENNIS, TX

LOCATION.--Lat 32°15'00", long 96°38'49", Ellis County, Hydrologic Unit 12030109, in intake structure of Bardwell Dam on Waxahachie Creek, 5 mi south of Ennis, and 5.6 mi upstream from mouth.

DRAINAGE AREA.--178 mi².

PERIOD OF RECORD.--November 1965 to current year. Prior to October 1970, published as Bardwell Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level (U.S. Army Corps of Engineers benchmark). Prior to Apr. 25, 1966, nonrecording gage on intake structure at same datum.

REMARKS.--The lake is formed by a rolled earthfill dam 15,400 ft long, including a 350-foot uncontrolled off-channel concrete-gravity spillway with ogee weir section. Deliberate impoundment began Nov. 20, 1965, and dam was completed Mar. 27, 1966. Controlled low-flow outlet works consists of a 10.0-foot-diameter concrete conduit with two 5.0- by 10.0-foot sluice gates. Lake was built for flood control and water conservation. Capacity table beginning October 1976 is based on a survey completed in 1972. Runoff from 81.4 mi above Bardwell Lake is modified by Lake Waxahachie, with a capacity of 13,500 acre-ft at spillway elevation. The city of Waxahachie diverts water from Lake Waxahachie and returns an unknown amount of effluent to Waxahachie Creek. Inflow is affected at times by discharge from flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 15,370 acre-ft. These structures control runoff from 52.4 mi² in the Chambers Creek watershed. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	460.0	-
Design flood	455.9	-
Crest of spillway (top of flood-control pool)	439.0	137,600
Top of conservation pool	421.0	52,300
Lowest gated outlet (invert)	391.0	690

COOPERATION.--Records of elevation and contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 112,100 acre-ft May 22, 1990 (elevation, 434.54 ft); minimum since initial filling, 39,720 acre-ft Nov. 10, 1978 (elevation, 417.21 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 98,770 acre-ft Mar. 7 (elevation, 431.95 ft); minimum, 42,580 acre-ft Oct. 20 (elevation, 418.13 ft).

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

417.0	39,080	422.0	55,920	426.0	71,630
419.0	45,390	423.0	59,680	427.0	75,900
420.0	48,780	424.0	63,550	428.0	80,300
421.0	52,290	425.0	67,530	432.0	99,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43630	44180	53910	53370	52540	92430	62180	63390	52650	52900	50880	50700
2	43600	44120	53910	53330	52610	94790	60140	63860	52610	52860	50810	50730
3	43630	44050	53470	53260	52760	96450	58430	63860	52540	52790	50700	50730
4	43570	44020	53290	53290	52830	97380	61640	63940	52470	52790	50630	50520
5	43500	44020	53080	53190	52860	98180	66960	62960	52360	52680	50590	50420
6	43470	44150	53080	53370	53040	98570	68420	61210	52290	52860	50520	50350
7	43440	44510	53150	53330	53400	98770	69230	59380	52220	52830	51400	50280
8	43440	44540	53190	54710	53150	98030	70050	57530	52220	52760	51720	50210
9	43310	44540	53150	55300	52970	96150	70590	56220	52290	52720	51940	50170
10	43280	44540	53150	55440	52830	94690	71000	54960	52720	52650	52110	50030
11	43180	44540	53110	55410	52760	92480	72680	53730	52720	52580	52180	49930
12	43180	44570	52930	55260	57710	92670	73100	53190	52650	52510	52150	49790
13	43060	44540	52860	55000	65640	93820	73360	52930	52650	52430	52150	49720
14	43020	44540	53190	54780	67650	94740	73610	52760	52610	52400	52040	49650
15	42960	44540	53980	54670	69070	95230	73820	52610	52610	52360	51900	49610
16	42930	44670	53980	54450	70090	95660	72510	52470	52680	52260	51830	49510
17	42900	44770	53650	54200	70750	96100	69310	52470	53190	52180	51760	49440
18	42860	44770	53190	53980	70840	96590	66280	52470	53190	52110	51690	49370
19	42710	44800	52900	53800	71170	96740	63190	52680	53150	52040	51620	49300
20	42580	44870	52790	53580	75510	96940	60410	52760	53080	51970	51620	49300
21	42740	44930	53040	53470	79280	95660	57860	52760	53010	51870	51550	49160
22	42960	44830	53220	53260	80610	92770	55590	52720	53040	51790	51480	49090
23	42800	44870	53620	53220	81540	89320	53840	52970	53110	51720	51370	49090
24	42740	47580	53620	53110	83690	85950	52830	52970	53190	51620	51300	48990
25	42710	49160	53690	52860	86320	83240	54670	52970	53190	51550	51230	48850
26	42710	49540	53760	52650	88860	80030	59000	53010	53190	51440	51160	48740
27	42990	49720	53690	52930	90210	76780	61060	53040	53150	51370	51050	48680
28	43890	49930	53650	52400	91200	73650	62020	52760	53110	51300	50980	48640
29	44120	51580	53580	52330	---	70800	62610	52580	53040	51260	50910	48540
30	44150	53440	53550	52360	---	67440	63150	52830	53010	51120	50840	48500
31	44280	---	53470	52430	---	64690	---	52720	---	51020	50770	---
MAX	44280	53440	53980	55440	91200	98770	73820	63940	53190	52900	52180	50730
MIN	42580	44020	52790	52330	52540	64690	52830	52470	52220	51020	50520	48500
(+)	418.66	421.32	421.33	421.04	430.39	424.29	423.90	421.12	421.20	420.64	420.57	419.92
(@)	+620	+9160	+30	-1040	+38770	-26510	-1540	-10430	+290	-1990	-250	-2270
CAL YR 1996	MAX	53980	MIN	40520	(@)	+4860						
WTR YR 1997	MAX	98770	MIN	42580	(@)	+4840						

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

TRINITY RIVER BASIN

08063800 WAXAHACHIE CREEK NEAR BARDWELL, TX

LOCATION.--Lat 32°14'36", long 96°38'24", Ellis County, Hydrologic Unit 12030109, on left bank at downstream side of highway embankment near left end of bridge on county road, 0.8 mi downstream from Bardwell Dam, 3.6 mi southeast of Bardwell, 3.8 mi downstream from bridge on State Highway 34, and 4.1 mi upstream from mouth.

DRAINAGE AREA.--178 mi².

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

Water-quality records.--Chemical and biochemical analyses: October 1980 to September 1982.

GAGE.--Water-stage recorder. Datum of gage is 370.18 ft above sea level (U.S. Army Corps of Engineers benchmark).

REMARKS.--No estimated daily discharges. Records good. Since November 1965, at least 10% of contributing drainage area has been regulated by Bardwell Lake (station 08063700) 0.8 mi upstream. Several observations of water temperature were made during the year. Satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--2 years (water years 1964-65), 32.8 ft³/s (23,720 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1964-65).--Maximum discharge 2,960 ft³/s Feb. 9, 1965 (gage height, 17.55 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1944, about 23 ft in 1944 and 1945, from information by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	3.0	97	4.7	45	1080	19	15	.28	.13	.81
2	.00	.00	215	98	4.3	47	934	19	16	.28	.10	.81
3	.00	.00	332	99	3.8	57	794	19	16	.28	.10	.80
4	.00	.00	326	99	3.6	48	599	19	16	.28	.10	.70
5	.00	.00	323	100	2.9	45	214	417	16	.26	.13	.54
6	.00	.00	182	101	3.0	45	115	800	16	.35	.12	.54
7	.00	.35	99	101	98	106	22	792	17	.29	.62	.52
8	.00	.15	100	102	168	634	22	783	17	.21	.95	.51
9	.00	.02	101	145	166	1230	22	625	17	.19	.30	.47
10	.00	.00	104	173	147	1270	22	509	18	.22	.20	.48
11	.00	.00	139	173	114	1190	23	505	16	.23	.17	.47
12	.00	.00	170	172	118	1410	22	270	16	.23	.09	.41
13	.00	.00	94	172	216	815	22	100	16	.23	.07	.41
14	.00	.00	2.0	172	208	29	22	101	15	.23	.08	.42
15	.00	.00	1.9	173	22	28	22	100	16	.20	.09	.40
16	.00	.00	172	173	98	28	593	68	16	.16	.07	.39
17	.00	.33	329	173	178	28	1390	16	16	.19	.06	.39
18	.00	.19	268	174	353	28	1370	15	16	.19	.05	.37
19	.00	.07	208	175	482	28	1350	14	16	.19	.06	.34
20	.00	.01	121	176	272	28	1340	14	8.4	.22	.06	.28
21	.10	.00	2.1	176	136	592	1190	14	.43	.23	.07	.27
22	.32	.00	1.2	177	74	1400	1030	14	.34	.23	.08	.29
23	.08	.00	.82	178	45	1520	751	15	1.6	.24	.07	.31
24	.00	.68	.59	178	46	1500	399	15	.31	.25	.07	.31
25	.00	1.0	.53	178	48	1480	125	15	.32	.25	.05	.31
26	.00	.89	49	179	47	1460	48	15	.28	.25	.04	.30
27	.02	.82	95	152	46	1440	63	41	.26	.25	.03	.30
28	.38	1.6	95	114	46	1430	18	79	.23	.25	1.6	.28
29	.25	2.8	95	52	---	1410	18	54	.23	.21	1.0	.25
30	.10	3.3	96	4.5	---	1390	19	16	.24	.21	.88	.23
31	.02	---	97	4.5	---	1240	---	15	---	.17	.84	---
TOTAL	1.27	12.21	3822.14	4241.0	3150.3	22001	13639	5498	319.64	7.25	8.28	12.91
MEAN	.041	.41	123	137	113	710	455	177	10.7	.23	.27	.43
MAX	.38	3.3	332	179	482	1520	1390	800	18	.35	1.6	.81
MIN	.00	.00	.53	4.5	2.9	28	18	14	.23	.16	.03	.23
AC-FT	2.5	24	7580	8410	6250	43640	27050	10910	634	14	16	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997#, BY WATER YEAR (WY)

	MEAN	22.9	81.8	81.8	106	107	166	127	181	194	28.3	5.23	6.89
MAX	299	723	394	892	605	710	590	827	773	370	71.8	178	178
(WY)	1974	1992	1986	1992	1992	1997	1977	1973	1989	1981	1973	1976	1976
MIN	.000	.014	.018	.022	.022	.024	.11	.11	.001	.000	.000	.000	.000
(WY)	1967	1970	1990	1967	1967	1967	1996	1996	1996	1966	1966	1966	1966

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1966 - 1997#

ANNUAL TOTAL	3854.74	52713.00	92.0
ANNUAL MEAN	10.5	144	318
HIGHEST ANNUAL MEAN			1992
LOWEST ANNUAL MEAN			1967
HIGHEST DAILY MEAN	332 Dec 3	1520 Mar 23	1880 Jun 25 1981
LOWEST DAILY MEAN	.00 May 28	.00 Oct 1	.00 Oct 4 1965
ANNUAL SEVEN-DAY MINIMUM	.00 Jun 3	.00 Oct 1	.00 Oct 7 1965
INSTANTANEOUS PEAK FLOW		1530 Mar 22	1960 Jun 25 1981
INSTANTANEOUS PEAK STAGE		14.12 Mar 22	18.13 Jun 25 1981
ANNUAL RUNOFF (AC-FT)	7650	104600	66680
10 PERCENT EXCEEDS	.82	443	317
50 PERCENT EXCEEDS	.03	14	1.2
90 PERCENT EXCEEDS	.00	.00	.00

Period of regulated streamflow

08064100 CHAMBERS CREEK NEAR RICE, TEX.

LOCATION.--Lat 32°11'54", long 96°31'12", Navarro County, Hydrologic Unit 12030109, on downstream side of highway embankment 20 ft to left of left end of bridge on Farm Road 1126, 3.6 mi downstream from Oak Branch, 3.9 mi upstream from Cummins Creek, 4.2 mi upstream from bridge on Interstate Highway 45, 5.0 miles downstream from Waxahachie Creek, and 3.4 mi southwest of Rice.

DRAINAGE AREA.--807 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 340.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good, except those daily discharges less than 5 ft³/s, which are fair. Since installation of gage in October 1984, at least 10% of contributing drainage area has been regulated by Bardwell Lake (station 08063700) on Waxahachie Creek. Flood releases from Bardwell Lake will sustain flows at this site from time to time. In addition, flow is affected at times by discharge from the flood-detention pools of numerous floodwater-retarding structures in the drainage basin above this station. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood information for the next downstream station, Chambers Creek near Corsicana, (08064500, discontinued) indicates that the maximum stage since at least 1870 occurred in August 1887, and that other significant floods occurred in December 1913, May 1944, and May 1958. Stages for these floods are unknown, but over the years a levee system has been developed along the main channel to limit cropland flooding.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	64	2180	213	110	996	1300	561	156	15	4.1	1.5
2	2.6	33	959	212	104	1570	1210	466	137	12	3.9	1.4
3	2.2	20	789	212	100	5660	1010	399	117	11	3.6	1.3
4	1.9	13	644	211	93	4340	1860	341	106	13	3.5	1.2
5	1.9	9.6	661	206	87	1260	7740	521	96	8.5	3.1	1.1
6	1.9	7.8	605	203	80	825	9270	1170	83	7.7	2.9	.91
7	1.8	7.3	388	219	254	627	3480	1170	77	11	4.4	.81
8	1.5	106	337	834	637	877	1400	1140	73	12	937	.73
9	1.4	124	307	1950	417	1430	1010	1040	120	11	981	.65
10	1.1	51	291	1130	343	3880	754	864	562	7.6	250	.55
11	.92	23	295	756	268	3170	836	865	330	7.0	286	.47
12	.85	14	334	546	958	2360	1310	691	184	6.6	111	.42
13	.78	10	297	451	8100	6260	709	362	137	6.6	47	.36
14	.73	8.9	158	400	11400	1970	509	361	102	6.2	28	.32
15	.67	9.3	314	376	6240	814	433	347	83	6.9	19	.30
16	.69	8.5	716	381	2290	590	636	323	71	7.4	13	.29
17	.78	7.7	816	358	1560	509	1690	209	720	6.9	9.3	.28
18	.79	16	624	338	1260	477	1690	193	409	6.7	7.1	.27
19	.75	12	450	330	1190	432	1650	183	178	6.6	5.8	.25
20	.71	15	385	324	2780	390	1620	183	110	6.4	5.0	.22
21	.81	11	203	320	7580	622	1580	179	43	6.3	4.4	.36
22	1.3	9.6	192	319	6290	1610	1320	174	24	6.3	3.8	.47
23	1.5	8.9	182	321	1670	1810	1140	173	30	6.2	3.3	.50
24	1.5	390	170	579	1010	1780	720	183	59	6.2	2.9	.48
25	1.7	3380	153	418	4110	1760	759	188	37	6.0	2.7	.46
26	2.8	1930	152	339	3910	1760	5590	173	31	5.8	2.4	.43
27	2.5	716	228	309	4160	1740	7230	173	26	5.7	2.0	.44
28	58	438	225	240	1590	1690	3440	270	28	5.5	1.7	.44
29	524	537	222	200	---	1650	1120	256	19	5.3	1.6	.43
30	287	2860	218	118	---	1620	748	145	17	4.9	1.7	.43
31	131	---	215	113	---	1520	---	146	---	4.6	1.7	---
TOTAL	1038.98	10840.6	13710	12926	68591	55999	63764	13449	4165	238.9	2752.9	17.77
MEAN	33.5	361	442	417	2450	1806	2125	434	139	7.71	88.8	.59
MAX	524	3380	2180	1950	11400	6260	9270	1170	720	15	981	1.5
MIN	.67	7.3	152	113	80	390	433	145	17	4.6	1.6	.22
AC-FT	2060	21500	27190	25640	136100	111100	126500	26680	8260	474	5460	35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997#, BY WATER YEAR (WY)

	MEAN	355	324	780	475	877	819	601	904	692	50.1	43.3	25.5
MAX	1499	1811	3579	1984	2450	1819	2218	2932	2560	194	185	149	
(WY)	1986	1992	1992	1992	1997	1992	1995	1989	1986	1989	1995	1991	
MIN	.000	1.72	1.45	4.66	5.16	6.35	12.2	1.34	.051	.081	.000	.000	
(WY)	1989	1989	1989	1989	1996	1996	1996	1996	1996	1988	1988	1985	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1984 - 1997#

ANNUAL TOTAL	30086.49	247493.15	
ANNUAL MEAN	82.2	678	
HIGHEST ANNUAL MEAN			494
LOWEST ANNUAL MEAN			1263
HIGHEST DAILY MEAN	3380	Nov 25	11400
LOWEST DAILY MEAN	.00	Jun 8	.22
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 8	.28
INSTANTANEOUS PEAK FLOW			13500
INSTANTANEOUS PEAK STAGE			29.66
ANNUAL RUNOFF (AC-FT)	59680	490900	357600
10 PERCENT EXCEEDS	219	1690	1210
50 PERCENT EXCEEDS	4.2	178	43
90 PERCENT EXCEEDS	.00	1.0	.13

Period of regulated streamflow.

TRINITY RIVER BASIN

08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: October 1983 to current year.**PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE: October 1983 to current year.

WATER TEMPERATURE: October 1983 to current year.

INSTRUMENTATION.--Since January 1994, a two-parameter water-quality monitor records water temperature and specific conductance continuously at this station.**REMARKS.**--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. National water-quality assessment program data are included in this record. Prior to January 1994, period of daily record consists of daily observer measurements.**EXTREMES FOR PERIOD OF DAILY RECORD.**--

SPECIFIC CONDUCTANCE (1983-90): Maximum daily, 2,510 microsiemens Nov. 21, 1988; minimum daily, 161 microsiemens June 11, 1995.

WATER TEMPERATURE (1983-89): Maximum daily, 38.0°C Aug. 16, 1987; minimum daily, 0.0°C Feb. 7, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum 1,320 microsiemens Aug. 5-7; minimum, 239 microsiemens Feb. 13.

WATER TEMPERATURE: Maximum, 32.5°C on several days: minimum, 2.0°C Jan. 13 and 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	HARD- NESS TOTAL (MG/L AS CaCO3)
JAN 09...	0942	2160	368	8.5	3.5	60	300	12.4	94	2.0	140
MAR 11...	0943	3360	351	8.4	15.0	45	280	9.3	93	2.3	150
APR 29...	1554	1020	398	8.5	17.0	50	220	9.2	96	2.8	160
JUN 25...	1418	35	580	7.8	28.0	50	30	7.1	91	1.4	190
JUL 15...	1337	6.9	928	7.6	30.0	13	12	4.9	65	1.3	250
AUG 13...	1302	46	365	7.8	30.0	55	85	6.3	84	1.6	130

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CaCO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
JAN 09...	38	53	2.8	16	0.6	6.3	110	50	13	0.30	7.4
MAR 11...	24	55	2.5	15	0.5	3.8	120	39	9.6	0.30	8.8
APR 29...	26	61	3.2	15	0.5	4.0	140	45	12	0.31	8.0
JUN 25...	33	67	4.7	41	1	4.6	150	84	33	0.43	7.0
JUL 15...	81	88	6.5	87	2	4.2	170	170	87	0.47	6.6
AUG 13...	4	46	2.7	21	0.8	4.2	120	33	15	0.37	11

DATE	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L)	RESIDUE VOLATILE, SUS- PENDED (MG/L)	RESIDUE FIXED NON FILTER- ABLE (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)
JAN 09...	222	670	68	602	1.94	0.060	2.00	0.090	0.61	0.70	0.100
MAR 11...	213	434	52	382	0.850	0.050	0.900	0.050	0.55	0.60	0.040
APR 29...	240	410	60	350	2.01	0.087	2.10	0.053	0.69	0.74	0.013
JUN 25...	339	56	9	47	--	<0.010	0.821	0.040	0.38	0.43	<0.010
JUL 15...	550	15	18	0	--	<0.010	<0.050	0.021	0.41	0.43	<0.010
AUG 13...	207	158	24	134	0.355	0.019	0.374	0.038	0.74	0.78	0.030

TRINITY RIVER BASIN

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08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	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)
JAN 09...	0.080	0.25	17	7	42	<0.50	<1.0	<5.0	<3.0	<10	12
MAR 11...	0.040	0.12	13	4	42	<0.50	<1.0	<5.0	<3.0	<10	14
APR 29...	<0.010	--	13	--	--	--	--	--	--	--	--
JUN 25...	<0.010	--	10	--	--	--	--	--	--	--	--
JUL 15...	<0.010	--	7.7	2	98	<0.50	<1.0	<5.0	<3.0	<10	<3.0
AUG 13...	0.021	0.06	9.9	7	45	<0.50	<1.0	<5.0	<3.0	<10	11

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 09...	<10	5	14	<0.1	<10	<10	<1	<1.0	460	<6	7.0
MAR 11...	<10	4	1.0	<0.1	<10	<10	<1	<1.0	430	<6	4.0
APR 29...	--	--	--	--	--	--	--	--	--	--	--
JUN 25...	--	--	--	--	--	--	--	--	--	--	--
JUL 15...	11	21	40	<0.1	<10	<10	<1	<1.0	1040	<6	<3.0
AUG 13...	<10	7	7.4	<0.1	<10	<10	<1	<1.0	432	<6	6.9

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	1038.98	470	275	770	24	67.7	66	185	160
NOV. 1996	10840.6	396	230	6730	19	545	54	1580	140
DEC. 1996	13710	411	239	8830	19	719	56	2080	150
JAN. 1997	12926	433	252	8780	21	727	60	2080	150
FEB. 1997	68591	310	179	33060	13	2330	41	7530	110
MAR. 1997	55999	378	219	33040	17	2550	51	7690	140
APR. 1997	63764	349	201	34670	15	2590	46	8000	130
MAY 1997	13449	468	273	9930	24	876	66	2390	160
JUNE 1997	4165	555	326	3660	31	351	80	904	190
JULY 1997	238.9	842	506	327	64	41.2	140	88.0	270
AUG. 1997	2752.9	445	259	1930	22	167	62	462	160
SEPT 1997	17.77	837	503	24.1	63	3.0	130	6.5	270
TOTAL	247493.16	**	**	141800	**	10970	**	33000	**
WTD.AVG.	678	366	212	**	16	**	49	**	130

TRINITY RIVER BASIN

08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	591	576	585	456	444	449	336	308	318	483	481	482
2	598	591	595	466	456	462	558	336	355	487	479	482
3	610	591	604	482	466	474	355	347	351	487	479	481
4	629	610	622	496	482	489	360	355	357	481	476	478
5	638	625	632	512	496	503	382	359	372	478	474	476
6	648	630	638	528	512	521	424	376	400	475	470	472
7	668	640	651	538	523	531	421	417	419	496	472	487
8	684	665	670	583	462	531	423	421	423	---	---	450
9	706	684	695	558	418	484	427	423	425	---	---	393
10	720	706	714	558	496	522	431	427	429	414	404	410
11	733	719	725	551	495	525	434	411	425	427	414	424
12	753	733	745	579	551	560	419	411	417	431	426	429
13	779	751	768	600	579	594	474	418	431	432	430	431
14	795	779	790	595	572	583	531	474	519	435	429	431
15	813	795	807	575	569	571	523	361	448	438	433	436
16	834	813	826	592	575	585	493	399	433	442	438	440
17	850	834	844	589	580	586	439	420	432	441	434	437
18	867	840	858	580	537	560	447	425	435	443	435	438
19	882	867	876	583	535	545	446	441	443	443	441	442
20	905	882	893	612	577	592	529	441	458	442	440	441
21	917	686	870	---	---	596	552	529	546	443	441	442
22	894	853	874	---	---	862	559	552	556	443	438	440
23	945	894	926	---	---	723	566	558	563	457	431	437
24	993	945	976	---	---	e628	564	558	561	458	374	399
25	1070	993	1030	---	---	e480	561	555	557	419	387	408
26	---	---	858	---	---	344	663	485	562	433	419	426
27	---	---	888	359	353	355	485	480	482	465	433	444
28	---	---	e660	374	359	368	485	481	482	464	456	460
29	---	---	461	379	275	345	485	479	482	526	450	466
30	---	---	424	---	---	299	483	479	481	548	526	543
31	445	436	441	---	---	---	484	481	483	556	545	552
MONTH	1070	436	740	612	275	522	663	308	453	556	374	451

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	559	552	555	451	425	439	378	373	376	443	435	439
2	559	546	551	450	279	364	380	375	378	438	433	437
3	549	536	543	346	292	319	---	---	392	440	431	435
4	549	535	541	394	317	356	---	---	e340	435	430	433
5	540	526	533	425	394	409	---	---	e300	436	431	434
6	543	532	536	456	425	440	---	---	e270	435	431	433
7	543	385	484	472	445	460	---	---	e310	435	431	433
8	454	384	411	451	390	418	---	---	e360	436	430	433
9	503	454	484	394	377	386	---	---	405	446	432	437
10	519	493	501	407	275	326	---	---	410	533	388	455
11	517	498	508	363	358	360	---	---	e430	434	384	405
12	498	259	380	358	352	357	---	---	e350	469	434	457
13	265	239	250	390	349	373	---	---	e410	462	455	460
14	297	240	263	382	377	379	---	---	e450	466	458	463
15	325	297	315	392	382	388	---	---	e480	474	461	469
16	334	323	327	402	391	396	---	---	e380	477	456	465
17	353	333	342	407	402	405	---	---	e350	457	438	446
18	361	351	354	411	404	408	---	---	421	474	455	466
19	382	361	366	411	407	409	437	414	423	1290	474	528
20	385	241	315	420	407	416	441	416	426	1180	785	976
21	294	243	267	418	412	414	426	409	416	849	792	831
22	348	294	316	417	412	415	456	391	423	883	834	857
23	386	348	370	420	416	418	404	396	399	907	475	632
24	397	279	371	419	415	417	419	401	407	492	482	489
25	353	262	298	440	409	415	423	376	414	505	492	499
26	356	328	339	440	411	423	379	306	340	508	497	501
27	377	343	353	429	386	402	345	322	332	502	496	499
28	425	377	403	395	384	391	395	345	368	503	498	500
29	---	---	---	384	381	383	452	395	426	515	497	503
30	---	---	---	382	379	380	452	435	441	509	503	507
31	---	---	---	380	374	378	---	---	---	528	507	514
MONTH	559	239	403	472	275	395	456	306	388	1290	384	511

e Estimated

TRINITY RIVER BASIN

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08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	539	477	513	740	700	713	1020	992	1010	719	704	711
2	520	511	518	751	731	738	1030	1020	1030	724	713	719
3	533	518	528	809	751	783	1050	1030	1040	732	719	725
4	535	531	533	864	809	830	1060	1040	1050	747	732	739
5	542	533	537	912	864	888	1070	1050	1060	769	747	755
6	543	537	540	982	493	753	1070	1060	1070	782	769	776
7	576	540	556	666	516	589	1070	845	995	792	782	789
8	594	576	584	657	583	621	985	253	519	805	791	799
9	615	592	600	681	600	633	569	253	333	825	805	816
10	619	610	615	757	678	711	595	507	552	840	823	834
11	631	543	584	791	737	772	563	343	451	856	838	849
12	633	519	554	815	791	803	369	340	354	868	852	861
13	670	552	596	864	815	842	408	369	389	880	866	872
14	748	592	648	884	864	875	435	408	422	893	877	884
15	748	530	598	949	884	920	476	435	457	905	887	894
16	620	532	566	961	931	948	503	476	490	916	902	909
17	616	439	534	979	959	972	531	502	518	926	913	919
18	486	441	466	985	964	976	563	531	547	934	922	928
19	546	450	498	970	954	960	583	563	574	940	930	935
20	590	546	574	981	970	975	600	583	591	950	938	943
21	606	590	600	981	978	980	610	600	606	955	920	948
22	630	602	616	985	974	977	627	609	621	962	910	951
23	638	509	565	992	984	988	637	623	632	992	958	967
24	547	524	536	993	985	990	643	631	636	971	963	966
25	587	522	547	996	986	991	662	643	654	975	961	971
26	614	583	601	997	985	990	682	658	668	1020	975	991
27	651	502	576	1010	970	995	692	680	685	1010	988	997
28	638	561	605	970	958	963	695	690	692	1040	991	1000
29	679	638	663	994	964	982	697	676	689	1060	1000	1030
30	707	673	685	991	964	980	689	676	683	1070	1020	1040
31	---	---	---	992	961	974	705	689	696	---	---	---
MONTH	748	439	571	1010	493	875	1070	253	668	1070	704	884
YEAR	1290	239	573									

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	20.0	18.0	19.0	19.5	17.0	18.0	10.0	9.0	9.5	12.0	11.0	11.5
2	19.5	18.0	19.0	17.0	14.5	16.0	10.0	8.0	9.0	13.0	11.5	12.5
3	20.5	19.0	19.5	14.5	13.0	14.0	10.0	9.0	9.5	14.5	12.5	13.5
4	20.5	19.5	20.0	13.5	13.0	13.5	10.0	9.5	9.5	15.0	14.0	14.5
5	21.0	19.5	20.0	15.5	13.5	14.5	10.5	10.0	10.0	14.0	12.0	13.0
6	21.0	19.5	20.5	16.5	15.5	16.0	11.5	10.0	10.5	12.0	8.0	10.0
7	21.0	19.5	20.0	16.5	15.5	16.0	11.5	10.5	10.5	8.0	6.0	7.0
8	20.0	18.5	19.5	15.5	13.0	14.5	10.5	10.0	10.0	---	---	---
9	20.0	18.5	19.0	14.0	12.5	13.0	11.0	10.0	10.5	---	---	---
10	20.5	18.0	19.0	13.0	12.0	12.5	13.0	11.0	12.5	6.0	4.5	5.0
11	20.0	17.5	18.5	14.0	12.0	13.5	14.0	13.0	14.0	5.5	4.0	4.5
12	20.5	17.5	19.0	15.0	13.0	14.0	13.5	13.0	13.5	4.5	3.0	3.5
13	20.5	18.0	19.0	16.0	15.0	15.5	14.0	13.0	13.5	3.0	2.0	2.5
14	21.0	18.0	19.5	17.0	16.0	16.5	15.5	14.0	15.0	2.5	2.0	2.5
15	21.0	18.5	20.0	17.5	17.0	17.0	15.0	9.5	12.5	4.5	2.5	3.5
16	21.5	19.5	20.5	18.0	17.0	18.0	10.0	9.0	9.5	4.5	3.5	4.0
17	23.5	19.0	21.5	18.0	15.5	17.0	9.5	7.0	8.5	4.0	3.0	3.5
18	19.5	17.0	18.5	16.0	15.0	15.5	7.0	6.0	6.5	4.0	3.0	3.5
19	18.5	16.0	17.5	15.5	14.5	15.5	6.0	5.0	5.5	5.0	3.5	4.5
20	19.5	17.0	18.5	17.0	15.5	16.0	5.5	2.5	5.0	6.5	4.5	5.5
21	22.0	18.0	20.0	---	---	---	5.5	2.5	4.0	8.5	6.5	8.0
22	18.5	15.5	17.0	---	---	---	11.0	5.5	9.0	9.5	8.5	9.0
23	17.0	15.0	15.5	---	---	---	14.0	11.0	13.0	10.0	9.0	9.5
24	15.0	14.5	15.0	---	---	---	12.5	8.0	11.0	10.5	9.5	10.5
25	16.0	15.0	15.5	---	---	---	8.0	7.0	7.5	10.5	9.0	9.5
26	17.0	15.5	16.5	---	---	---	8.5	7.0	8.0	9.5	9.0	9.5
27	---	---	---	7.0	6.0	6.5	9.0	8.5	8.5	10.5	9.5	10.0
28	---	---	---	7.0	6.5	6.5	10.0	8.5	9.5	9.5	5.5	7.5
29	---	---	---	8.5	7.0	8.0	10.5	9.5	10.5	6.0	5.0	5.5
30	---	---	---	10.0	8.5	9.5	11.0	10.0	10.5	6.5	4.5	5.5
31	19.5	17.5	19.0	---	---	---	11.0	10.5	11.0	7.5	5.0	6.5
MONTH	23.5	14.5	19.0	19.5	6.0	14.0	15.5	2.5	10.0	15.0	2.0	7.5

08064100 CHAMBERS CREEK NEAR RICE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS. WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997--Continued

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	10.0	7.0	8.5	15.0	11.5	13.0	16.0	15.5	16.0	19.5	18.5	19.0
2	12.0	9.5	11.0	15.0	10.0	12.5	16.5	16.0	16.0	20.0	19.0	19.5
3	12.5	11.5	12.0	11.0	9.5	10.0	---	---	---	20.0	19.0	19.5
4	13.5	12.5	13.0	14.0	11.0	12.5	---	---	---	19.5	19.0	19.0
5	12.5	11.5	12.0	15.0	14.0	14.5	---	---	---	20.0	19.0	19.5
6	11.5	10.0	11.0	14.5	13.0	13.5	---	---	---	20.5	19.5	20.0
7	10.0	8.0	9.0	14.0	12.0	12.5	---	---	---	20.5	20.0	20.0
8	8.0	7.0	7.5	13.0	12.5	13.0	---	---	---	20.5	20.0	20.0
9	7.5	7.0	7.0	14.0	12.5	13.0	---	---	---	20.5	19.5	20.0
10	8.0	7.0	7.5	15.5	14.0	14.5	---	---	---	20.0	19.0	19.5
11	8.5	7.5	8.0	15.0	14.0	14.5	---	---	---	20.0	19.0	19.5
12	9.0	7.5	8.5	14.0	13.5	14.0	---	---	---	20.5	20.0	20.5
13	7.5	6.5	7.0	15.0	13.5	14.5	---	---	---	20.5	19.5	20.0
14	7.5	6.5	7.0	15.5	14.0	15.0	---	---	---	21.0	20.0	20.5
15	8.5	7.5	8.0	14.0	12.5	13.0	---	---	---	21.5	20.5	21.0
16	9.5	7.5	8.5	13.0	12.5	12.5	---	---	---	21.5	20.5	21.0
17	10.5	8.5	9.5	13.0	12.5	12.5	---	---	---	22.0	21.0	21.5
18	11.0	9.5	10.0	14.0	13.0	13.5	---	---	---	22.5	22.0	22.0
19	12.0	10.5	11.0	14.0	13.0	13.5	17.5	16.5	17.0	23.0	22.5	22.5
20	15.0	12.0	14.0	13.5	12.5	13.0	18.5	17.0	18.0	22.5	21.5	22.0
21	14.5	13.0	14.0	14.5	13.0	14.0	19.0	18.0	18.5	21.5	21.0	21.0
22	13.0	12.0	12.5	15.5	14.5	15.0	19.0	18.5	19.0	21.5	20.5	21.0
23	12.5	11.5	12.0	15.5	15.0	15.5	18.5	18.0	18.5	22.0	21.5	22.0
24	12.0	9.5	11.5	16.0	15.5	15.5	18.5	18.0	18.5	22.0	21.5	22.0
25	9.5	9.0	9.5	16.0	15.5	16.0	18.0	16.0	17.0	23.0	22.0	22.5
26	10.0	9.5	9.5	15.5	15.0	15.5	16.0	14.5	15.0	24.0	22.5	23.0
27	10.0	9.0	9.5	16.0	15.5	15.5	15.0	14.5	14.5	24.5	23.5	24.0
28	11.5	9.5	10.5	16.5	15.5	16.0	15.5	14.5	15.0	24.5	23.5	24.0
29	---	---	---	17.0	16.0	16.5	18.0	15.5	17.0	24.0	23.0	23.5
30	---	---	---	16.5	16.0	16.5	19.0	18.0	18.5	24.0	23.5	23.5
31	---	---	---	16.0	15.5	16.0	---	---	---	24.0	23.0	23.5
MONTH	15.0	6.5	10.0	17.0	9.5	14.0	19.0	14.5	17.0	24.5	18.5	21.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	24.5	23.0	24.0	29.5	28.5	29.0	31.5	29.0	30.5	28.5	26.5	27.5
2	25.0	24.0	24.5	29.5	28.5	29.0	30.0	27.5	28.5	29.0	27.0	27.5
3	25.0	24.0	24.5	30.5	29.5	29.5	31.0	27.0	28.5	29.0	26.5	27.5
4	25.0	24.0	24.5	30.5	30.0	30.0	30.5	27.5	28.5	28.0	26.5	27.0
5	25.0	24.0	24.5	30.0	28.5	29.5	30.0	27.5	28.5	27.5	25.0	26.0
6	25.0	24.0	24.5	28.5	24.5	26.5	30.5	27.0	28.5	26.5	23.5	25.0
7	25.0	24.0	24.5	27.0	24.5	25.5	28.0	25.0	26.0	26.5	23.5	25.0
8	25.0	24.0	24.5	27.5	26.5	27.0	25.0	20.5	22.0	27.0	24.5	25.5
9	25.5	24.5	25.0	28.5	27.5	28.0	23.5	21.0	22.5	28.0	25.0	26.0
10	25.5	24.5	25.0	29.0	28.5	28.5	25.5	23.5	24.5	28.0	25.0	26.0
11	26.0	24.5	25.0	29.5	29.0	29.0	27.0	25.0	26.5	27.0	23.5	25.0
12	26.5	24.5	25.5	30.0	29.5	29.5	29.0	26.5	27.5	27.5	23.5	25.0
13	26.5	25.5	26.0	30.5	29.5	30.0	29.0	28.5	29.0	28.0	24.0	25.5
14	27.5	26.0	26.5	31.0	30.0	30.5	30.0	28.5	29.5	29.0	25.0	26.5
15	27.5	26.5	27.0	31.5	30.5	31.0	30.0	29.0	29.5	29.5	25.5	27.0
16	29.0	27.0	28.0	31.0	29.5	30.5	30.0	29.0	29.5	29.5	26.0	27.5
17	29.0	26.0	27.5	31.5	30.5	31.0	30.0	29.0	29.5	30.0	26.0	28.0
18	26.5	25.5	26.0	31.5	31.0	31.0	30.5	29.0	30.0	30.0	26.5	28.0
19	28.0	26.0	27.0	31.5	31.0	31.5	30.0	29.0	29.5	29.5	26.5	28.0
20	29.0	27.5	28.0	32.0	31.0	31.5	30.0	28.5	29.5	29.5	26.0	27.5
21	28.5	28.0	28.0	32.0	31.0	31.5	30.0	28.5	29.5	28.5	25.0	27.0
22	28.0	27.5	27.5	32.5	31.0	31.5	29.5	28.5	29.0	27.0	25.5	26.0
23	27.5	26.0	26.5	32.5	31.0	32.0	29.0	28.0	28.5	27.5	25.5	26.0
24	27.0	25.5	26.0	32.5	31.5	32.0	28.5	27.0	27.5	25.5	23.0	24.0
25	27.5	26.0	26.5	32.5	31.5	32.0	27.5	26.0	27.0	23.5	21.5	22.5
26	27.5	27.0	27.5	32.5	31.5	32.0	27.5	25.5	26.5	25.0	20.0	22.5
27	27.5	26.0	27.0	32.5	31.5	32.0	27.5	25.5	26.5	25.0	19.5	22.5
28	28.5	27.0	27.5	32.5	31.5	32.0	28.0	25.5	26.5	26.0	20.5	23.0
29	28.5	27.5	28.0	32.5	31.5	32.0	28.5	26.0	27.0	26.5	22.5	24.5
30	29.0	28.0	28.5	32.0	31.0	31.5	28.5	26.0	27.0	26.5	23.0	25.0
31	---	---	---	32.0	30.5	31.0	28.5	26.5	27.5	---	---	---
MONTH	29.0	23.0	26.0	32.5	24.5	30.5	31.5	20.5	28.0	30.0	19.5	26.0
YEAR	32.5	2.0	19.0									

08064550 RICHLAND-CHAMBERS RESERVOIR NEAR KERENS, TX

LOCATION.--Lat 32°02'25", long 96°12'23", Navarro County, Hydrologic Units 12030108 and 12030109, on upper floor of pumphouse, on left bank of Chambers Creek arm of Richland-Chambers Reservoir, 7.0 mi south of intersection of State Highway 31 and Farm Road 309 in Kerens, and 14.4 mi upstream from dam on Richland Creek.

DRAINAGE AREA.--1,957 mi².

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 31,000 ft long. Deliberate impoundment of water began July 14, 1987, and the dam was completed in December 1988. A gated concrete spillway is located near the left end of dam. The spillway is 1,155 ft long and contains twenty-four 40- x 29.4-ft radial gates. The low flow outlet works consist of two 3- x 5-ft outlets at elevation 266.0 ft, one 1.5 x 2.5 ft outlet, and one 1 x 1 ft outlet at elevation 285.0 ft. Each of the low flow outlets is controlled by sluice gates. The dam is owned by Tarrant Regional Water District, and was built for municipal and industrial water supply and for recreation. The area and capacity table was prepared by the Texas Water Development Board. Flow from 464 mi² above the dam is controlled by Bardwell and Navarro Mills Lakes. Figures given herein represent total contents. Satellite telemeter at station. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	330.0	--
Top of gates	317.34	1,234,000
Top of conservation pool	315.0	1,137,000
Crest of spillway	290.0	346,800
Lowest gated outlet	266.0	32,780

COOPERATION.--Capacity table No. 1-C was prepared by Freese and Nichols, consulting engineers for Tarrant Regional Water District. A new capacity, Table No. 2-C, was prepared by the Texas Water Development Board and put into use Oct. 1, 1995.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,267,000 acre-ft Dec. 22, 1991 (elevation 316.85 ft); minimum contents, 233,600 acre-ft Dec. 8, 1988 (elevation, 283.02 ft), using Capacity Table No. 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,196,000 acre-ft Apr. 6 at 1500 hrs (elevation 316.43 ft); minimum contents, 861,600 acre-ft Nov. 22 (elevation, 308.04 ft).

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

283.0	217,000	312.0	1,014,000	315.0	1,137,000
293.0	413,300	313.0	1,055,000	316.0	1,178,000
303.0	688,600	314.0	1,096,000	317.0	1,220,000

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	893300	869800	887300	915000	952900	1159000	1154000	1156000	1142000	1130000	1100000	1117000
2	892900	868300	890300	915800	952900	1162000	1151000	1150000	1140000	1128000	1101000	1118000
3	891400	869100	891400	917300	953700	1166000	1149000	1145000	1138000	1128000	1102000	1098000
4	889200	866800	893700	916500	953700	1171000	1170000	1140000	1137000	1126000	1101000	1089000
5	889200	867600	895500	915000	953700	1168000	1189000	1138000	1137000	1124000	1102000	1090000
6	888400	867200	894800	915000	955200	1163000	1195000	1139000	1135000	1125000	1102000	1091000
7	888100	868300	894800	916900	958700	1159000	1185000	1140000	1136000	1125000	1102000	1092000
8	887300	866800	895500	923000	962300	1156000	1174000	1141000	1137000	1124000	1098000	1093000
9	886200	866400	896600	931100	965000	1157000	1170000	1141000	1140000	1124000	1095000	1094000
10	885100	866100	896300	935300	966600	1164000	1167000	1141000	1153000	1123000	1094000	1096000
11	884000	865700	897000	938000	967700	1169000	1166000	1140000	1154000	1122000	1095000	1097000
12	882800	865300	895900	940400	981500	1179000	1164000	1140000	1152000	1121000	1095000	1099000
13	882500	864200	896600	941500	1004000	1185000	1161000	1140000	1146000	1121000	1096000	1100000
14	881700	863800	897400	942700	1040000	1185000	1157000	1140000	1150000	1120000	1096000	1100000
15	881400	863800	903100	943100	1067000	1176000	1154000	1140000	1148000	1119000	1098000	1101000
16	881000	864600	910800	942700	1080000	1171000	1152000	1140000	1146000	1118000	1099000	1080000
17	878700	863500	912300	944300	1087000	1166000	1154000	1140000	1140000	1118000	1100000	1070000
18	878000	863500	914200	945800	1091000	1162000	1154000	1140000	1141000	1116000	1101000	1069000
19	876900	863100	914600	945800	1095000	1158000	1154000	1139000	1137000	1115000	1102000	1069000
20	875800	863500	915400	946200	1114000	1156000	1153000	1137000	1135000	1115000	1104000	1067000
21	875000	862300	915800	947800	1132000	1154000	1152000	1137000	1132000	1114000	1104000	1066000
22	875000	862300	916900	947800	1146000	1155000	1150000	1137000	1130000	1113000	1106000	1063000
23	873200	862000	915400	950100	1155000	1158000	1146000	1142000	1130000	1112000	1107000	1060000
24	872400	865300	915000	950500	1158000	1161000	1142000	1142000	1130000	1110000	1108000	1058000
25	872000	867200	914600	952500	1164000	1164000	1149000	1140000	1130000	1109000	1109000	1057000
26	872000	872000	914200	953700	1170000	1164000	1171000	1138000	1130000	1108000	1110000	1056000
27	871700	874300	915000	952500	1166000	1164000	1182000	1137000	1130000	1106000	1111000	1055000
28	870900	875000	915000	952500	1163000	1162000	1180000	1143000	1131000	1105000	1113000	1054000
29	871300	877600	915000	952900	---	1158000	1165000	1144000	1131000	1103000	1114000	1054000
30	871300	883600	914200	952900	---	1157000	1157000	1147000	1130000	1102000	1115000	1053000
31	871300	---	915000	953700	---	1156000	---	1144000	---	1100000	1116000	---
MAX	893300	883600	916900	953700	1170000	1185000	1195000	1156000	1154000	1130000	1116000	1118000
MIN	870900	862000	887300	915000	952900	1154000	1142000	1137000	1130000	1100000	1094000	1053000
(+)	308.30	308.63	309.46	310.46	315.63	315.47	315.49	315.18	314.85	314.12	314.50	312.96
(@)	-23100	+12300	+31400	+38700	+209300	-7000	+1000	-13000	-14000	-30000	+16000	-63000
CAL YR 1996	MAX	1035000	MIN	862000	(@)	-118000						
WTR YR 1997	MAX	1195000	MIN	862000	(@)	+158600						

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

TRINITY RIVER BASIN

08064700 TEHUACANA CREEK NEAR STREETMAN, TX

LOCATION.--Lat 31°50'46", long 96°17'37", Freestone County, Hydrologic Unit 12030201, at left end of upstream bridge on Interstate Highway 45, 2.8 mi southeast of Streetman, 2.9 mi downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 4.0 mi upstream from Caney Creek, and 24.8 mi upstream from mouth.

DRAINAGE AREA.--142 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 280.13 ft above sea level. Prior to Dec. 14, 1993, at site 0.2 mi downstream at datum 7.45 ft higher.

REMARKS.--No estimated daily discharges. Records good except those for daily discharges below 15 ft³/s, which are poor. No known regulation or diversions. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1932 reached a stage of about 24 ft. at site and datum 0.2 mi downstream from information by Texas Department of Transportation.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 12	2345	10,800	32.63	Apr. 5	0445	14,800	33.21
Feb. 21	0145	6,030	31.76	Apr. 26	2245	6,710	31.89
Feb. 25	0700	2,800	29.65	Jun. 10	1415	3,150	30.34
Mar. 13	0815	11,600	32.75				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	.00	37	2.8	.72	29	8.2	61	101	3.5	.37	.00
2	.21	.00	19	2.5	.56	125	6.5	40	35	2.9	.34	.00
3	3.1	.00	12	2.4	.40	295	5.9	29	20	2.6	.30	.00
4	36	.00	8.9	2.3	.28	61	3960	23	11	2.4	.24	.00
5	3.0	.00	8.3	2.2	.17	29	8280	19	8.8	2.2	.20	.00
6	1.3	.00	7.2	2.2	.13	25	768	16	6.8	2.2	.18	.00
7	.86	.00	6.5	2.4	.31	8.2	151	14	5.8	2.2	.22	.00
8	.55	.00	5.9	12	7.7	4.6	96	12	40	2.2	.61	.00
9	.39	.00	5.8	25	4.3	3.4	67	11	210	2.2	.60	.00
10	.22	.00	5.6	20	1.6	1340	49	11	1780	2.1	.74	.00
11	.09	.00	5.2	12	.74	214	63	13	676	2.1	.85	.00
12	.06	.00	4.9	5.1	1980	631	133	12	89	1.9	.62	.00
13	.06	.00	4.3	3.3	6420	6650	65	10	38	1.8	.45	.00
14	.07	.00	3.9	2.5	591	633	38	8.8	1260	1.8	.22	.00
15	.03	.00	22	2.1	55	76	27	8.0	337	1.7	.13	.00
16	.00	.00	36	1.9	19	39	22	7.1	82	1.6	.13	.00
17	.00	.00	29	1.6	9.5	27	18	6.6	75	1.5	.13	.00
18	.00	.00	21	1.5	6.7	22	15	6.1	69	1.4	.11	.00
19	.00	.00	12	1.4	5.0	17	13	5.7	30	1.3	.10	.00
20	.00	.00	7.6	1.3	610	13	12	5.8	17	1.3	.10	.00
21	.00	.00	5.9	1.2	2860	11	11	5.7	11	1.2	.10	.00
22	.00	.00	5.2	1.2	172	9.7	9.9	5.6	8.9	1.1	.06	.00
23	.00	.00	4.7	1.2	32	8.3	9.2	7.2	7.4	.91	.03	.00
24	.00	.00	4.2	1.1	21	7.5	7.8	25	16	.78	.02	.00
25	.00	.02	3.7	3.2	1670	392	104	24	15	.72	.00	.00
26	.00	3.6	3.4	1.9	785	419	3190	19	10	.67	.00	.00
27	.00	2.6	3.3	1.3	424	63	3320	12	9.7	.63	.00	.00
28	.00	2.3	3.1	1.0	74	28	1880	37	12	.57	.00	.00
29	.00	4.6	3.3	.75	---	17	417	36	6.2	.49	.00	.00
30	.00	96	3.1	.72	---	13	113	19	4.4	.43	.00	.00
31	.00	---	3.0	.66	---	9.7	---	566	---	.40	.00	---
TOTAL	46.18	109.12	305.0	120.73	15751.11	11220.4	22859.5	1075.6	4992.0	48.80	6.85	0.00
MEAN	1.49	3.64	9.84	3.89	563	362	762	34.7	166	1.57	.22	.000
MAX	36	96	37	25	6420	6650	8280	566	1780	3.5	.85	.00
MIN	.00	.00	3.0	.66	.13	3.4	5.9	5.6	4.4	.40	.00	.00
AC-FT	92	216	605	239	31240	22260	45340	2130	9900	97	14	.00
CFSM	.01	.03	.07	.03	3.96	2.55	5.37	.24	1.17	.01	.00	.00
IN.	.01	.03	.08	.03	4.13	2.94	5.99	.28	1.31	.01	.00	.00

TRINITY RIVER BASIN

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08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

MEAN	55.3	48.0	136	60.9	166	129	108	218	74.8	4.02	16.6	27.9
MAX	379	371	1013	289	930	1048	762	2927	388	35.1	234	547
(WY)	1974	1975	1992	1992	1986	1990	1997	1989	1981	1976	1983	1974
MIN	.000	.000	.077	.12	.45	.25	.000	.020	.040	.000	.000	.000
(WY)	1981	1981	1990	1971	1996	1996	1971	1971	1996	1978	1969	1980

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR			FOR 1997 WATER YEAR			WATER YEARS 1968 - 1997		
ANNUAL TOTAL	1728.64			56535.29					
ANNUAL MEAN	4.72			155			85.0		
HIGHEST ANNUAL MEAN							274 1989		
LOWEST ANNUAL MEAN							3.52 1996		
HIGHEST DAILY MEAN	546	Sep	4	8280	Apr	5	42000	May	4 1989
LOWEST DAILY MEAN	.00	Apr	19	.00	Oct	16	.00	Sep	30 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Jun	19	.00	Oct	16	.00	Sep	30 1968
INSTANTANEOUS PEAK FLOW				14800 Apr 5			g85700 May 17 1989		
INSTANTANEOUS PEAK STAGE				33.21 Apr 5			g33.21 Apr 5 1997		
ANNUAL RUNOFF (AC-FT)	3430			112100			61600		
ANNUAL RUNOFF (CFSM)	.033			1.09			.60		
ANNUAL RUNOFF (INCHES)	.45			14.81			8.14		
10 PERCENT EXCEEDS	4.6			98			53		
50 PERCENT EXCEEDS	.22			3.1			1.7		
90 PERCENT EXCEEDS	.00			.00			.00		

g At site and datum then in use

TRINITY RIVER BASIN

08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 31°50'54", long 96°17'23", Freestone County, Hydrologic Unit 12030201, at downstream side of bridge on U.S. Highway 75, 2.8 mi southeast of Streetman, 3.1 mi downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 3.8 mi upstream from Caney Creek, and 25 mi upstream from mouth.

PERIOD OF RECORD.--Chemical analyses: February 1968 to September 1985, October 1990 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)
JAN 09...	1202	25	179	7.5	4.5	130	85	12.4	96	3.0	52
MAR 11...	1134	165	145	7.7	17.0	160	57	8.8	91	3.1	53
APR 29...	1023	350	134	7.5	12.0	120	82	8.4	79	1.9	47
JUN 25...	1033	12	608	7.6	29.0	50	7.1	6.9	90	1.5	170
JUL 15...	0957	1.7	1540	7.7	30.0	40	4.6	6.2	82	1.3	390
AUG 13...	0928	0.53	1910	7.3	30.0	21	3.3	7.3	97	0.6	440
DATE	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS FIX END FIELD CaCO3 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
JAN 09...	9	14	4.2	11	0.7	5.3	43	21	12	0.10	8.9
MAR 11...	7	15	3.8	7.6	0.5	4.5	46	13	7.2	0.10	8.9
APR 29...	3	13	3.7	6.8	0.4	4.0	44	12	6.9	<0.10	8.5
JUN 25...	45	45	14	50	2	6.2	130	77	54	0.31	9.9
JUL 15...	110	94	36	167	4	6.8	280	220	200	0.48	14
AUG 13...	180	100	46	226	5	5.2	270	320	270	0.52	11
DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L)	RESIDUE FIXED NON FILTER-ABLE (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)
JAN 09...	105	110	10	100	0.430	0.020	0.450	0.060	0.94	1.0	0.150
MAR 11...	89	110	22	88	--	<0.010	0.090	0.030	0.97	1.0	0.060
APR 29...	82	112	22	90	--	<0.010	0.085	<0.015	--	1.0	0.040
JUN 25...	333	16	4	12	--	<0.010	<0.050	0.034	0.50	0.53	0.029
JUL 15...	913	23	14	9	--	<0.010	<0.050	0.036	0.59	0.63	<0.010
AUG 13...	1140	<1	5	--	--	<0.010	0.059	0.023	0.52	0.54	0.013
DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)	CARBON, ORGANIC TOTAL (MG/L AS C)	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)
JAN 09...	0.140	0.43	19	<1	19	<0.50	1.0	<5.0	<3.0	<10	110
MAR 11...	0.070	0.21	19	<1	29	<0.50	<1.0	<5.0	<3.0	<10	92
APR 29...	0.017	0.05	12	--	--	--	--	--	--	--	--
JUN 25...	0.027	0.08	16	--	--	--	--	--	--	--	--
JUL 15...	0.010	0.03	8.2	<1	134	<0.50	1.1	<5.0	<3.0	<10	<3.0
AUG 13...	<0.010	--	6.4	<1	125	<0.50	<1.0	<5.0	<3.0	<10	<3.0

TRINITY RIVER BASIN

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08064700 TEHUACANA CREEK NEAR STREETMAN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 09...	<10	<4	46	<0.1	<10	<10	<1	<1.0	160	<6	8.0
MAR 11...	20	<4	16	<0.1	<10	<10	<1	1.0	150	<6	20
APR 29...	--	--	--	--	--	--	--	--	--	--	--
JUN 25...	--	--	--	--	--	--	--	--	--	--	--
JUL 15...	<10	31	323	<0.1	<10	<10	<1	<1.0	1170	<6	7.9
AUG 13...	<10	39	92	<0.1	<10	13	<1	<1.0	1340	<6	6.3

TRINITY RIVER MAIN STEM

08065000 TRINITY RIVER NEAR OAKWOOD, TX

LOCATION.--Lat 31°38'54", long 95°47'21", Anderson County, Hydrologic Unit 12030201, on left bank at downstream side of bridge on U.S. Highways 79 and 84, 1.5 mi upstream from Missouri Pacific Railroad Co. bridge, 6 mi northeast of Oakwood, and at mile 313.4.

DRAINAGE AREA.--12,833 mi².

PERIOD OF RECORD.--October 1923 to September 1924 (monthly discharge only), October 1924 to current year. Records of January 1905 to September 1923, published in WSP 850 and 878, have been found unreliable and should not be used. Gage-height records collected in this vicinity since 1904 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1442: 1934. See also PERIOD OF RECORD. WSP 1922: Drainage area. WDR TX-81-1: 1980 (M,m).

GAGE.--Water-stage recorder. Datum of gage is 175.06 ft above sea level. Prior to July 1932, nonrecording gage at site 1.5 mi downstream at datum 1.06 ft lower. July 15, 1932, to Oct. 7, 1934, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1924, at least 10% of contributing drainage area has been regulated by Lake Worth and twenty additional upstream reservoirs with a capacity of 4,200,000 acre-ft, of which 1,362,000 acre-ft is for flood control, partly regulate the flow. Streamflow is affected at times by discharge from the flood-detention pools of 252 floodwater-retarding structures with a combined detention capacity of 183,300 acre-ft. These structures control runoff from 614 mi² in the Richland, Chambers and Tehuacana Creeks drainage basins. The Industrial Generating Co. at Fairfield makes a minor diversion from the river at a site about 34 mi upstream. The diversion to Big Brown Lake is used to maintain the normal pool elevation for that lake. Rain gage at station. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1890 reached a stage of 53 ft (discharge about 180,000 ft³/s) and was the highest since that date, from information in local newspapers. Flood of June 4, 1908, reached a stage of 52.2 ft, present site and datum, from information by the National Weather Service (discharge, about 164,000 ft³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	853	10300	13400	1410	1340	45500	17000	38800	14000	3960	1060	957
2	815	10700	13400	1400	1310	44700	16200	42200	15000	3230	1010	956
3	810	8410	13400	1600	1310	41200	15400	39600	15100	2770	985	937
4	796	4160	13400	1770	1320	38300	15000	35600	14100	2300	970	935
5	775	2460	12600	1710	1300	36000	16000	31900	12700	1810	955	930
6	777	1910	10300	1680	1280	34300	17200	28400	11100	1520	962	1110
7	775	1620	8820	1640	1480	33000	19300	25000	9720	1530	2740	2320
8	753	1530	8560	1620	1660	31900	22700	21600	8530	3710	4050	2030
9	737	2570	8400	2020	3630	30600	30400	17900	7550	4640	6380	1330
10	734	6720	8080	4200	6330	29500	39700	14800	8050	4510	9710	1070
11	742	8560	7680	5210	6610	28500	42300	12900	9100	3730	8570	1030
12	732	6870	6930	4130	7970	27500	42100	12300	9620	3280	5550	1020
13	725	3560	6140	2830	11200	27500	40200	12700	10500	3150	3140	992
14	713	2150	5720	2100	13300	27700	37400	12900	11000	2610	2220	953
15	704	1810	5880	1770	14700	28300	34200	12600	10200	2010	1770	909
16	689	1660	6340	1610	15700	30300	31100	12500	11400	1580	1560	911
17	687	1640	7070	1540	16500	33700	27900	12000	11900	1370	1540	1020
18	696	1820	7350	1510	16900	35300	25200	12000	12000	1300	1450	1040
19	710	2130	6190	1490	17400	35700	22700	12300	12400	1320	1310	975
20	709	2800	4910	1440	18700	32700	20600	12700	13300	1340	1290	1010
21	709	2680	4240	1370	21200	30100	19200	12700	14100	1280	1250	989
22	747	1990	3360	1380	23400	28100	17900	12700	14100	1250	1200	934
23	888	1730	2720	1440	25100	26000	16600	13100	12400	1200	1170	1120
24	3620	1750	2290	1940	26300	23800	15600	13700	8910	1140	1200	1160
25	5370	1850	1910	1780	27600	22300	15300	14300	7830	1120	1130	1050
26	4000	4750	1750	1900	28600	21700	15900	14900	8590	1090	1060	1050
27	2040	9220	1750	1920	32100	20300	16700	15200	7730	1040	1010	1050
28	1290	11100	1600	1690	39900	19300	19100	14200	5750	1080	1000	1020
29	1050	12200	1490	1550	---	18300	21700	12700	5600	1110	1010	985
30	4440	13000	1450	1420	---	17900	27500	12700	5080	1100	1010	1040
31	8540	---	1440	1390	---	17500	---	12900	---	1120	978	---
TOTAL	47626	143650	198570	60460	384140	917500	718100	569800	317360	64200	69240	32833
MEAN	1536	4788	6405	1950	13720	29600	23940	18380	10580	2071	2234	1094
MAX	8540	13000	13400	5210	39900	45500	42300	42200	15100	4640	9710	2320
MIN	687	1530	1440	1370	1280	17500	15000	12000	5080	1040	955	909
AC-FT	94470	284900	393900	119900	761900	1820000	1424000	1130000	629500	127300	137300	65120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1997#, BY WATER YEAR (WY)

	MEAN	2438	3527	4911	4843	6179	7403	7672	11830	8008	2785	1275	1447
MAX	14250	25900	33280	30140	35060	40450	45710	56050	33550	15240	7050	7361	
(WY)	1974	1975	1992	1992	1932	1945	1945	1990	1957	1941	1982	1962	
MIN	85.0	100	146	166	222	242	278	812	151	74.2	62.7	62.8	
(WY)	1925	1925	1926	1940	1925	1925	1925	1971	1925	1925	1925	1930	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1925 - 1997#

ANNUAL TOTAL	748058	3523479	
ANNUAL MEAN	2044	9653	5186
HIGHEST ANNUAL MEAN			15240
LOWEST ANNUAL MEAN			657
HIGHEST DAILY MEAN	13400	Dec 1	45500
LOWEST DAILY MEAN	687	Oct 17	687
ANNUAL SEVEN-DAY MINIMUM	701	Oct 15	701
INSTANTANEOUS PEAK FLOW			46600
INSTANTANEOUS PEAK STAGE			43.68
ANNUAL RUNOFF (AC-FT)	1484000	6989000	3757000
10 PERCENT EXCEEDS	4650	28000	14800
50 PERCENT EXCEEDS	1100	4240	1450
90 PERCENT EXCEEDS	793	977	295

Period of regulated streamflow.

08065200 UPPER KEECHI CREEK NEAR OAKWOOD, TX

LOCATION.--Lat 31°34'11", long 95°53'17", Leon County, Hydrologic Unit 12030201, at right bank at downstream side of bridge on U.S. Highway 79, 1.9 mi upstream from Missouri Pacific Railroad Co. bridge, 2 mi southwest of Oakwood, 11 mi upstream from Buffalo Creek, and 21 mi upstream from mouth.

DRAINAGE AREA.--150 mi².

PERIOD OF RECORD.--April 1962 to current year.

Water-quality records.--Chemical analyses: June 1962 to April 1964, November 1967 to September 1975.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 240.11 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, about 21 ft in 1932, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	1415	3,260	13.53	Apr. 5	0745	2,550	13.26
Feb. 21	1515	3,820	13.71				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.74	.23	8.9	5.2	15	236	44	269	240	8.2	1.5	1.1
2	.54	.24	7.2	4.8	14	125	40	86	101	7.1	1.6	1.1
3	.52	.24	5.4	4.7	12	137	38	57	33	6.1	1.4	.99
4	.43	.27	3.7	4.4	12	154	115	45	22	5.3	1.3	1.0
5	.27	.29	2.9	3.8	10	91	1400	38	18	4.5	1.2	.94
6	.18	.38	2.5	4.1	9.9	66	1000	31	15	3.9	1.1	.90
7	.12	1.7	2.0	8.7	59	55	521	27	15	3.7	1.1	.87
8	.10	2.0	1.4	45	112	49	127	23	14	3.6	8.2	.80
9	.10	1.6	1.7	89	122	46	68	21	25	3.2	52	.74
10	.09	.85	1.5	84	84	132	53	20	119	2.8	100	.68
11	.08	.52	1.4	30	37	230	49	19	261	2.6	59	.58
12	.08	.32	1.3	17	259	352	60	17	284	2.4	23	.62
13	.07	.33	1.8	13	1760	305	77	15	152	2.4	15	.67
14	.06	.44	2.0	11	1320	636	47	13	37	2.0	10	.70
15	.06	.59	24	10	651	419	36	13	136	1.8	7.3	.72
16	.04	1.0	79	10	194	103	31	60	317	2.1	5.5	.73
17	.03	1.3	81	9.2	86	72	28	43	303	1.9	4.1	.68
18	.02	1.6	26	7.7	64	67	25	23	63	1.8	3.1	.68
19	.01	1.9	12	7.5	54	57	23	15	40	1.6	2.8	.72
20	.02	1.8	7.1	9.1	366	49	24	95	24	1.7	2.4	.72
21	.03	1.6	5.3	12	1900	44	25	101	18	1.7	2.1	.62
22	.14	1.8	4.7	19	1110	39	23	39	25	1.5	1.9	.50
23	.08	1.8	4.4	36	480	36	20	26	37	1.4	1.8	1.6
24	.04	20	4.6	112	166	34	17	43	31	1.3	1.7	2.6
25	.14	25	5.2	180	456	153	37	88	22	1.2	1.6	5.0
26	.12	22	6.7	111	1250	391	159	66	19	1.2	1.6	2.7
27	.17	13	7.2	36	781	561	316	34	18	1.2	1.4	1.9
28	.25	5.9	6.2	28	517	312	959	24	14	1.1	1.4	1.5
29	.25	7.6	5.5	22	---	106	1090	19	13	1.0	1.3	1.3
30	.25	12	5.2	18	---	68	792	22	10	1.0	1.2	1.3
31	.25	---	4.8	15	---	52	---	238	---	1.6	1.1	---
TOTAL	5.28	128.30	332.6	967.2	11900.9	5177	7244	1630	2426	82.9	318.7	34.96
MEAN	.17	4.28	10.7	31.2	425	167	241	52.6	80.9	2.67	10.3	1.17
MAX	.74	25	81	180	1900	636	1400	269	317	8.2	100	5.0
MIN	.01	.23	1.3	3.8	9.9	34	17	13	10	1.0	1.1	.50
AC-FT	10	254	660	1920	23610	10270	14370	3230	4810	164	632	69
CFSM	.00	.03	.07	.21	2.83	1.11	1.61	.35	.54	.02	.07	.01
IN.	.00	.03	.08	.24	2.95	1.28	1.80	.40	.60	.02	.08	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1997, BY WATER YEAR (WY)

	MEAN	43.0	48.5	104	91.3	125	128	123	139	70.9	13.4	6.09	15.1
	MAX	371	513	878	403	425	461	574	1413	517	128	54.5	246
	(WY)	1974	1975	1992	1991	1997	1973	1966	1965	1976	1981	1979	1974
	MIN	.000	.000	.36	4.03	8.28	8.79	8.41	1.82	.48	.000	.000	.000
	(WY)	1964	1964	1964	1964	1964	1996	1971	1972	1963	1964	1963	1963

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1962 - 1997

ANNUAL TOTAL	1932.36	30247.84	75.8
ANNUAL MEAN	5.28	82.9	168
HIGHEST ANNUAL MEAN			4.52
LOWEST ANNUAL MEAN			1963
HIGHEST DAILY MEAN	81 Dec 17	1900 Feb 21	9530 Apr 25 1966
LOWEST DAILY MEAN	.01 Oct 19	.01 Oct 19	.00 Aug 5 1962
ANNUAL SEVEN-DAY MINIMUM	.03 Oct 15	.03 Oct 15	.00 Aug 5 1962
INSTANTANEOUS PEAK FLOW		3820 Feb 21	24000 May 16 1965
INSTANTANEOUS PEAK STAGE		13.71 Feb 21	15.58 Dec 21 1991
ANNUAL RUNOFF (AC-FT)	3830	60000	54920
ANNUAL RUNOFF (CFSM)	.035	.55	.51
ANNUAL RUNOFF (INCHES)	.48	7.50	6.87
10 PERCENT EXCEEDS	11	186	129
50 PERCENT EXCEEDS	1.8	10	11
90 PERCENT EXCEEDS	.08	.44	.09

TRINITY RIVER MAIN STEM

08065350 TRINITY RIVER NEAR CROCKETT, TX

LOCATION.--Lat 31°20'18", long 95°39'22", Houston-Leon County line, Hydrologic Unit 12030201, on left bank at an abandoned bridge abutment near left end of an abandoned lock and dam, 1,000 ft upstream from State Highway 7, 6.9 mi downstream from Upper Keechi Creek, 11.9 mi west of Crockett, and at mile 265.4.

DRAINAGE AREA.--13,911 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 141.15 ft above sea level. Prior to Oct. 13, 1983, water-stage recorder at site 1,000 ft downstream at datum 4.56 ft lower.

REMARKS.--Records fair. Since installation of gage in water year 1964, at least 10% of contributing drainage area has been regulated by Lake Worth and other major reservoirs. Flow from 44 mi² in the Elkhart Creek basin is affected by storage in Houston County Lake near Crockett (capacity 19,500 acre-ft). There are many diversions above station for irrigation, municipal, and industrial uses. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1900, 56.1 ft Apr. 30 or May 1, 1942, at former site and datum, from information by Texas Department of Highways and Public Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1160	9460	13800	1500	1680	36000	19700	28000	14200	5090	1520	1220
2	1070	11100	14100	1490	1760	40500	18600	32100	15400	4150	1430	1220
3	1020	11000	14100	1480	1780	45300	17800	36500	16200	3550	1360	1220
4	1010	7560	14100	1590	1750	46000	17400	38500	15800	3160	1330	1200
5	989	3990	13900	1640	1750	45200	e18100	38200	14300	2720	1320	1180
6	964	2820	12700	1600	1720	42800	e19200	36200	12400	2270	1300	1180
7	963	2390	10400	1590	1780	40400	20600	32500	10500	1970	1430	1580
8	e945	2140	9060	1740	2270	37900	22700	28700	8950	2270	3620	2730
9	911	2040	8680	2210	2270	35600	25100	25100	7830	4090	4370	2210
10	897	4010	8380	2530	4240	33200	27900	20300	8640	4530	8100	1630
11	894	7390	8030	4150	6060	31300	31200	16100	10900	4260	9500	1410
12	894	8330	7400	4300	9030	30000	35400	13800	10100	3610	7680	1370
13	897	5890	6440	3140	18100	29900	38000	13400	9960	3340	4640	1350
14	889	3400	5620	2280	20200	29800	39000	13600	11500	3150	3010	1310
15	872	2510	5560	1820	20900	29200	38700	13700	12100	2730	2380	1260
16	850	2250	6400	1620	21200	28900	37000	13600	11300	2290	2030	1210
17	845	2150	6710	1510	21400	29300	34500	13500	12200	1940	1850	1230
18	841	2150	7250	1470	21500	30300	30900	12900	12800	1760	1810	1360
19	841	2360	7030	1460	21700	31100	28100	12900	12800	1690	1720	1360
20	859	2780	5400	1460	22700	31600	25600	13200	13000	1710	1600	1280
21	874	3280	4260	1470	25200	31200	23200	13600	13800	1700	1580	1320
22	937	2940	3540	1540	25800	30300	21200	13800	14600	1650	1540	1280
23	962	2370	2780	1550	27600	29100	19600	13800	14200	1610	1490	1910
24	1430	2280	2360	2000	28300	27700	18200	15700	11400	1550	1470	2170
25	3970	2540	2060	2020	28700	26200	17200	20100	8380	1500	1480	1390
26	4750	2910	1840	1920	29300	25800	18300	18500	8660	1480	1400	1090
27	3070	6630	1770	2010	30700	24900	19200	17300	9060	1440	1310	1040
28	1840	10300	1740	1980	33200	23400	20900	16900	7630	1370	1250	1010
29	1420	12100	1620	1890	---	22300	23000	15100	6190	1420	1240	958
30	1620	13200	1540	1700	---	21300	24900	13600	5950	1460	1250	913
31	5550	---	1510	1650	---	20400	---	13800	---	1500	1250	---
TOTAL	45034	154270	210080	60310	432590	986900	751200	625000	340750	76960	77260	41591
MEAN	1453	5142	6777	1945	15450	31840	25040	20160	11360	2483	2492	1386
MAX	5550	13200	14100	4300	33200	46000	39000	38500	16200	5090	9500	2730
MIN	841	2040	1510	1460	1680	20400	17200	12900	5950	1370	1240	913
AC-FT	89320	306000	416700	119600	858000	1958000	1490000	1240000	675900	152700	153200	82500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997#, BY WATER YEAR (WY)

	MEAN	3173	5439	7139	5758	7752	9867	8879	13970	9865	3510	1889	1795
MAX	16840	26110	35440	33620	30490	33670	33670	25960	62100	29570	15030	7188	6932
(WY)	1974	1975	1992	1992	1992	1992	1992	1977	1990	1989	1989	1982	1974
MIN	548	619	719	514	670	730	931	939	822	374	413	513	
(WY)	1979	1967	1967	1964	1967	1967	1972	1971	1971	1964	1967	1972	

SUMMARY STATISTICS

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1964 - 1997#
ANNUAL TOTAL	825532	3801945	
ANNUAL MEAN	2256	10420	6578
HIGHEST ANNUAL MEAN			16810
LOWEST ANNUAL MEAN			1084
HIGHEST DAILY MEAN	14100	Dec 2	46000
LOWEST DAILY MEAN	784	Aug 9	841
ANNUAL SEVEN-DAY MINIMUM	855	Oct 15	855
INSTANTANEOUS PEAK FLOW			46200
INSTANTANEOUS PEAK STAGE			39.33
ANNUAL RUNOFF (AC-FT)	1637000	7541000	4766000
10 PERCENT EXCEEDS	4580	29300	18800
50 PERCENT EXCEEDS	1430	4260	2360
90 PERCENT EXCEEDS	951	1240	706

e Estimated

Period of regulated streamflow.

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: February 1964 to current year. Chemical and biochemical analyses: February 1968 to current year. Pesticide analyses: November 1971 to July 1981. Sediment records: November 1972 to September 1977.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1964 to current year.

pH: March 1975 to current year.

WATER TEMPERATURE: February 1964 to September 1971, March 1975 to current year.

DISSOLVED OXYGEN: March 1975 to current year.

SUSPENDED-SEDIMENT DISCHARGE: July 1972 to September 1977.

INSTRUMENTATION.--Beginning March 1975, a four-parameter water-quality monitor continuously records specific conductance, pH, water temperature, and dissolved oxygen at this station.

REMARKS.--Interruptions in the record were due to malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,370 microsiemens Sept. 22, 1964; minimum, 96 microsiemens Mar. 29, 1989.

pH: Maximum, 9.6 units Aug. 11-12, 1981; minimum, 5.9 units Aug. 12, 1977.

WATER TEMPERATURE: Maximum, 37.0°C July 4, 1970, Sept. 4, 1978; minimum, 1.0°C Jan. 17, 1978, Nov. 24, 1984.

DISSOLVED OXYGEN: Maximum, 19.3 mg/L Feb. 10, 1981; minimum, 0.0 mg/L Apr. 20, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 773 microsiemens Oct. 21; minimum, 237 microsiemens Feb. 13.

pH: Maximum, 8.5 units July 25, 26; minimum 7.1 units June 10-12.

WATER TEMPERATURE: Maximum, 34.5°C July 29; minimum, 5.5°C Jan. 14, 15.

DISSOLVED OXYGEN: Maximum 11.4 mg/L Jan. 20; minimum, 3.1 mg/L Aug. 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)
MAR 05...	1640	45000	342	7.2	14.0	8.0	78	1.8	120	14
APR 25...	0945	17100	380	7.9	18.0	7.0	74	1.2	130	11
MAY 27...	0908	17400	360	7.4	24.0	7.0	84	1.6	130	19
JUN 27...	1135	9150	365	7.5	28.5	5.0	65	0.8	120	17
JUL 31...	0850	1470	694	8.1	31.0	6.0	81	1.5	180	46
AUG 28...	1145	1250	640	8.3	30.0	7.8	103	2.0	160	40

DATE	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS-FIX END FIELD CAC03 (MG/L)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)
MAR 05...	42	3.8	16	0.6	4.6	110	32	16	0.30	6.9
APR 25...	47	3.9	20	0.8	4.7	120	38	20	0.30	4.6
MAY 27...	44	3.9	19	0.7	4.3	110	34	20	0.34	5.3
JUN 27...	41	4.3	21	0.9	4.5	100	36	22	0.38	6.5
JUL 31...	63	6.0	62	2	8.7	140	75	64	0.92	8.7
AUG 28...	55	5.5	59	2	8.2	120	63	54	0.85	8.3

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
MAR 05...	189	0.600	0.010	0.610	<0.015	--	0.40	0.070	0.060	0.18
APR 25...	216	1.05	0.018	1.07	<0.015	--	0.43	0.096	0.089	0.27
MAY 27...	200	0.919	0.023	0.942	<0.015	--	0.40	0.088	0.092	0.28
JUN 27...	204	1.57	0.013	1.59	0.026	0.27	0.29	0.150	0.143	0.44
JUL 31...	397	5.60	0.025	5.63	0.056	0.60	0.66	0.709	0.680	2.1
AUG 28...	354	5.60	0.021	5.62	<0.015	--	0.73	0.656	0.642	2.0

TRINITY RIVER MAIN STEM

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
MAR 05...	2	44	<0.50	<1.0	<5.0	<3.0	<10	10	<10	<4
APR 25...	--	--	--	--	--	--	--	--	--	--
MAY 27...	--	--	--	--	--	--	--	--	--	--
JUN 27...	--	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--	--
AUG 28...	3	61	<0.50	<1.0	<5.0	<3.0	<10	<3.0	24	11

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAR 05...	13	<0.1	<10	<10	<1	<1.0	310	<6	<3.0
APR 25...	--	--	--	--	--	--	--	--	--
MAY 27...	--	--	--	--	--	--	--	--	--
JUN 27...	--	--	--	--	--	--	--	--	--
JUL 31...	--	--	--	--	--	--	--	--	--
AUG 28...	16	<0.1	11	<10	<1	<1.0	451	7	16

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1996 TO SEPTEMBER 1997

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1996	45034	609	338	41100	63	7610	69	8410	150
NOV. 1996	154270	413	237	98560	30	12570	44	18300	130
DEC. 1996	210080	403	232	131500	28	15850	42	24100	130
JAN. 1997	60310	500	283	46060	42	6860	54	8870	150
FEB. 1997	432590	326	189	220900	20	23270	34	39390	120
MAR. 1997	986900	344	200	531800	21	55780	36	94730	120
APR. 1997	751200	375	216	439000	25	50100	39	79530	130
MAY 1997	625000	371	214	361900	24	40760	39	65380	130
JUNE 1997	340750	366	211	194400	24	21630	38	35040	130
JULY 1997	76960	517	292	60660	45	9430	57	11820	150
AUG. 1997	77260	641	355	74120	67	14040	73	15270	160
SEPT 1997	41591	639	354	39790	67	7520	73	8190	160
TOTAL	3801945.00	**	**	2239800	**	265400	**	409000	**
WTD.AVG.	10420	379	218	**	26	**	40	**	130

TRINITY RIVER MAIN STEM

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	564	558	560	576	312	372	416	388	402	447	441	444
2	597	564	576	366	354	359	432	416	422	449	433	444
3	611	597	602	357	353	354	435	372	403	433	428	430
4	651	611	631	365	357	363	384	364	373	438	430	435
5	685	651	671	---	---	e368	395	367	382	440	438	439
6	694	684	687	---	---	e392	407	395	401	442	440	441
7	698	694	696	---	---	e425	437	407	422	442	438	440
8	---	---	e705	496	465	471	451	437	445	440	406	428
9	713	701	710	515	496	506	441	400	417	---	---	e436
10	721	696	702	554	515	534	400	394	396	---	---	e443
11	732	718	724	605	383	530	397	391	394	---	---	e448
12	718	704	710	388	325	348	393	390	392	---	---	e455
13	729	713	721	348	325	333	402	391	394	---	---	e462
14	733	728	730	379	348	365	413	402	408	---	---	e468
15	743	733	738	401	379	390	413	400	407	---	---	e476
16	745	742	744	426	401	412	411	382	400	---	---	e484
17	744	735	739	472	426	448	395	378	386	497	489	491
18	744	739	740	558	472	509	398	337	370	547	492	522
19	764	744	752	568	548	557	418	337	384	571	547	560
20	772	764	766	587	554	566	430	416	422	595	570	585
21	773	762	767	594	579	588	447	420	436	598	580	593
22	763	750	755	597	565	582	433	417	424	606	572	586
23	751	743	747	582	565	575	422	381	403	600	568	584
24	760	739	745	579	483	527	384	379	381	622	594	609
25	766	685	739	503	445	479	411	384	399	594	478	513
26	737	311	529	521	446	492	426	411	419	535	449	495
27	436	394	418	591	498	542	434	424	431	594	535	564
28	418	407	412	590	286	370	435	433	434	602	580	595
29	409	406	407	331	322	326	434	432	433	595	571	586
30	424	409	414	388	329	360	437	434	435	615	595	602
31	596	424	480	---	---	---	441	437	438	630	615	623
MONTH	773	311	655	605	286	448	451	337	408	630	406	506

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	632	627	630	304	295	299	387	386	387	336	325	329
2	630	610	620	313	304	308	390	380	383	343	327	335
3	619	608	614	323	311	316	390	387	388	367	343	355
4	614	604	607	336	323	330	390	386	388	400	367	381
5	628	613	619	340	336	338	386	379	382	400	324	356
6	659	628	646	340	338	339	383	336	351	372	342	351
7	667	646	657	341	338	340	341	271	305	383	352	357
8	646	601	627	342	341	341	274	269	270	357	352	353
9	601	541	574	347	342	345	297	274	287	369	357	364
10	686	546	631	348	345	347	317	297	308	374	368	372
11	672	572	626	354	348	350	333	317	326	376	373	375
12	586	297	436	357	354	356	356	333	344	384	376	380
13	297	237	257	360	346	354	381	356	368	404	384	391
14	354	260	312	352	346	347	404	381	393	443	358	391
15	354	277	301	356	349	353	417	404	411	409	365	383
16	284	246	264	349	330	340	426	417	421	421	408	416
17	271	246	255	330	322	325	426	404	408	415	398	404
18	300	271	288	330	322	326	407	392	402	427	415	421
19	327	300	313	342	330	336	403	400	401	431	424	429
20	352	327	340	350	342	346	401	393	397	424	399	414
21	352	285	307	352	348	350	394	387	390	417	398	405
22	337	307	330	---	---	e354	387	378	383	424	408	416
23	328	318	321	---	---	e357	378	373	377	435	418	430
24	321	306	316	---	---	e361	380	373	377	418	290	346
25	320	303	311	---	---	e365	484	377	432	316	239	270
26	321	313	317	---	---	e369	490	442	461	369	316	348
27	328	286	308	---	---	e373	450	432	438	392	369	384
28	295	287	290	376	367	374	454	360	401	420	392	407
29	---	---	---	370	367	368	360	338	348	425	420	423
30	---	---	---	382	368	376	339	334	337	435	391	427
31	---	---	---	386	380	384	---	---	---	391	344	359
MONTH	686	237	433	386	295	347	490	269	375	443	239	380

e Estimated

TRINITY RIVER MAIN STEM

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	402	378	386	459	433	444	701	696	698	693	686	691
2	407	307	344	435	382	401	720	700	711	689	680	684
3	356	309	333	435	414	427	731	720	725	685	670	675
4	380	356	369	469	435	455	747	729	735	698	673	688
5	407	379	389	493	469	481	751	747	748	702	694	699
6	418	407	414	497	493	496	762	750	754	709	699	704
7	433	418	428	515	496	505	763	761	761	721	706	714
8	434	430	432	530	515	522	---	---	e729	737	698	717
9	437	432	434	558	530	543	---	---	e697	752	737	749
10	441	339	416	691	558	614	---	---	e665	---	---	e734
11	340	292	310	691	388	506	---	---	e663	751	715	719
12	380	302	350	458	389	415	---	---	e695	758	712	715
13	376	337	361	465	454	459	---	---	e599	750	545	628
14	390	336	371	456	429	435	---	---	e567	636	545	583
15	375	318	342	473	432	454	---	---	e535	621	513	545
16	374	339	365	505	465	477	---	---	e503	537	498	512
17	339	289	306	523	505	516	---	---	e471	518	476	484
18	355	298	332	538	523	533	439	426	439	578	491	532
19	351	319	333	543	531	535	482	439	461	606	561	574
20	373	307	332	551	543	548	527	482	504	658	590	614
21	367	326	342	559	551	554	542	524	529	700	643	669
22	335	321	327	575	559	568	590	542	567	700	673	679
23	346	333	339	587	575	583	636	590	613	688	331	583
24	394	346	362	615	587	598	652	636	647	575	333	467
25	422	394	411	650	615	633	657	647	653	587	565	574
26	457	414	431	677	650	664	660	646	654	610	550	584
27	459	372	400	691	677	687	659	655	658	636	556	610
28	385	377	380	698	691	696	676	658	663	654	636	645
29	390	381	386	696	678	687	684	676	681	689	654	669
30	433	386	408	700	687	694	685	678	681	762	689	692
31	---	---	---	703	695	699	686	678	681	---	---	---
MONTH	459	289	371	703	382	543	763	426	635	762	331	638
YEAR	773	237	479									

e Estimated

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.8	7.7	7.8	7.4	7.3	7.4	7.8	7.7	7.7	7.5	7.4	7.4
2	7.8	7.7	7.8	7.4	7.4	7.4	7.8	7.8	7.8	7.4	7.3	7.4
3	7.8	7.7	7.8	7.4	7.4	7.4	7.8	7.8	7.8	7.4	7.3	7.3
4	7.8	7.7	7.8	7.4	7.4	7.4	7.8	7.7	7.8	7.4	7.3	7.3
5	7.8	7.7	7.7	---	---	---	7.7	7.7	7.7	7.8	7.4	7.6
6	7.9	7.7	7.8	---	---	---	7.7	7.6	7.6	8.1	7.8	8.0
7	7.9	7.7	7.8	---	---	---	7.7	7.6	7.6	8.3	8.1	8.2
8	---	---	---	7.4	7.3	7.4	7.9	7.7	7.9	8.4	8.3	8.3
9	7.9	7.6	7.8	7.5	7.4	7.4	8.0	7.9	8.0	---	---	---
10	7.8	7.6	7.7	7.6	7.5	7.5	7.9	7.8	7.9	---	---	---
11	7.8	7.6	7.7	7.5	7.3	7.4	7.8	7.6	7.7	---	---	---
12	7.8	7.7	7.7	7.4	7.3	7.4	7.6	7.5	7.6	---	---	---
13	7.8	7.7	7.7	7.4	7.3	7.3	7.6	7.6	7.6	---	---	---
14	7.8	7.6	7.7	7.3	7.3	7.3	7.6	7.5	7.6	---	---	---
15	7.7	7.6	7.6	7.4	7.3	7.4	7.8	7.5	7.6	---	---	---
16	7.6	7.5	7.6	7.4	7.4	7.4	7.8	7.8	7.8	---	---	---
17	7.7	7.5	7.6	7.5	7.4	7.4	8.1	7.8	8.0	7.7	7.4	7.6
18	7.7	7.5	7.6	7.7	7.5	7.6	8.2	8.1	8.1	7.4	7.4	7.4
19	7.7	7.5	7.6	7.7	7.6	7.7	8.2	8.1	8.2	7.5	7.4	7.5
20	7.6	7.5	7.5	7.7	7.6	7.6	8.3	8.2	8.3	7.6	7.5	7.5
21	7.6	7.5	7.5	7.6	7.6	7.6	8.3	8.0	8.2	7.6	7.5	7.6
22	7.7	7.5	7.6	7.7	7.6	7.7	8.0	7.4	7.7	7.5	7.4	7.5
23	7.7	7.6	7.6	7.7	7.6	7.7	7.4	7.2	7.3	7.7	7.4	7.6
24	7.6	7.5	7.5	7.7	7.6	7.6	7.8	7.2	7.6	7.8	7.5	7.6
25	7.5	7.4	7.5	7.9	7.7	7.8	8.0	7.8	7.9	7.5	7.2	7.2
26	7.5	7.3	7.4	8.1	7.9	8.0	7.9	7.7	7.8	7.3	7.2	7.3
27	7.4	7.4	7.4	8.1	8.0	8.1	7.7	7.6	7.7	7.5	7.3	7.4
28	7.4	7.4	7.4	8.1	8.0	8.0	7.6	7.4	7.5	7.5	7.4	7.5
29	7.4	7.4	7.3	8.0	7.8	7.9	7.4	7.3	7.3	7.4	7.4	7.4
30	7.4	7.4	7.4	7.8	7.7	7.7	7.4	7.3	7.4	7.5	7.4	7.4
31	7.4	7.3	7.4	---	---	---	7.4	7.3	7.4	7.5	7.5	7.5
MONTH	7.9	7.3	7.6	8.1	7.3	7.6	8.3	7.2	7.7	8.4	7.2	7.5

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PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.5	7.5	7.5	7.5	7.4	7.5	7.9	7.9	7.9	8.1	8.0	8.0
2	7.5	7.4	7.5	7.4	7.4	7.4	7.9	7.9	7.9	8.0	7.9	8.0
3	7.5	7.4	7.5	7.4	7.3	7.3	7.9	7.9	7.9	8.1	8.0	8.0
4	7.6	7.4	7.5	7.3	7.2	7.3	7.9	7.8	7.9	8.1	8.0	8.1
5	7.7	7.5	7.6	7.2	7.2	7.2	7.9	7.8	7.8	8.2	8.0	8.2
6	7.8	7.6	7.7	7.2	7.2	7.2	7.8	7.8	7.8	8.2	8.1	8.1
7	7.8	7.6	7.7	7.2	7.2	7.2	7.9	7.8	7.9	8.1	8.1	8.1
8	7.6	7.4	7.5	7.3	7.2	7.3	7.9	7.8	7.9	8.1	8.0	8.1
9	7.4	7.3	7.4	7.3	7.3	7.3	7.9	7.8	7.8	8.1	8.0	8.1
10	7.5	7.3	7.4	7.3	7.3	7.3	7.8	7.8	7.8	8.2	8.1	8.1
11	7.4	7.3	7.3	7.3	7.3	7.3	7.8	7.8	7.8	8.2	8.0	8.1
12	7.4	7.3	7.3	7.3	7.3	7.3	7.9	7.8	7.9	8.1	8.0	8.1
13	7.4	7.4	7.4	7.3	7.2	7.3	8.0	7.9	8.0	8.2	8.1	8.2
14	7.4	7.4	7.4	7.3	7.2	7.3	8.0	7.9	8.0	8.1	7.9	8.0
15	7.6	7.4	7.5	7.3	7.3	7.3	8.0	7.9	8.0	7.9	7.8	7.8
16	7.6	7.6	7.6	7.4	7.3	7.4	8.0	7.9	7.9	7.9	7.8	7.9
17	7.6	7.5	7.6	7.4	7.3	7.3	7.9	7.9	7.9	7.9	7.8	7.9
18	7.5	7.4	7.5	7.3	7.3	7.3	7.9	7.9	7.9	8.0	7.9	7.9
19	7.4	7.4	7.4	7.4	7.3	7.3	7.9	7.9	7.9	7.9	7.7	7.8
20	7.4	7.4	7.4	7.4	7.4	7.4	7.9	7.9	7.9	7.8	7.7	7.7
21	7.4	7.3	7.3	7.4	7.4	7.4	7.9	7.8	7.9	7.9	7.8	7.8
22	7.3	7.3	7.3	---	---	---	7.9	7.8	7.8	7.9	7.9	7.9
23	7.4	7.3	7.3	---	---	---	7.9	7.9	7.9	7.9	7.7	7.7
24	7.4	7.4	7.4	---	---	---	7.9	7.9	7.9	7.7	7.7	7.7
25	7.4	7.4	7.4	---	---	---	8.1	7.9	8.0	7.8	7.6	7.7
26	7.4	7.4	7.4	---	---	---	8.1	8.0	8.1	7.6	7.4	7.5
27	7.6	7.4	7.5	---	---	---	8.1	8.0	8.1	7.5	7.4	7.4
28	7.6	7.5	7.5	7.7	7.7	7.7	8.1	8.0	8.1	7.5	7.4	7.5
29	---	---	---	7.8	7.7	7.8	8.2	8.1	8.1	7.6	7.5	7.6
30	---	---	---	7.8	7.7	7.8	8.1	8.0	8.0	7.6	7.4	7.6
31	---	---	---	7.9	7.8	7.9	---	---	---	7.6	7.4	7.5
MONTH	7.8	7.3	7.5	7.9	7.2	7.4	8.2	7.8	7.9	8.2	7.4	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	7.7	7.5	7.6	7.6	7.5	7.6	8.3	8.1	8.2	8.3	8.1	8.2
2	7.7	7.5	7.6	7.6	7.6	7.6	8.2	8.1	8.1	8.3	8.1	8.2
3	7.7	7.4	7.6	7.6	7.6	7.6	8.2	8.0	8.1	8.3	8.1	8.1
4	7.5	7.4	7.4	7.7	7.6	7.6	8.3	8.1	8.1	8.3	8.1	8.1
5	7.5	7.3	7.4	7.7	7.7	7.7	8.3	8.0	8.2	8.4	8.1	8.2
6	7.3	7.3	7.3	7.8	7.7	7.7	8.3	8.1	8.1	8.4	8.2	8.3
7	7.3	7.3	7.3	7.8	7.8	7.8	8.1	8.1	8.1	8.3	8.0	8.2
8	7.3	7.3	7.3	7.8	7.8	7.8	---	---	---	8.1	7.9	8.0
9	7.3	7.3	7.3	7.8	7.8	7.8	---	---	---	7.9	7.8	7.8
10	7.3	7.1	7.2	7.8	7.8	7.8	---	---	---	---	---	---
11	7.2	7.1	7.2	7.8	7.7	7.7	---	---	---	7.5	7.4	7.4
12	7.2	7.1	7.1	7.7	7.7	7.7	---	---	---	7.6	7.4	7.5
13	7.2	7.2	7.2	7.8	7.7	7.7	---	---	---	7.7	7.5	7.6
14	7.2	7.2	7.2	7.8	7.7	7.8	---	---	---	7.7	7.5	7.6
15	7.2	7.2	7.2	7.8	7.8	7.8	---	---	---	7.8	7.6	7.6
16	7.3	7.2	7.2	7.8	7.7	7.8	---	---	---	7.8	7.6	7.7
17	7.3	7.2	7.3	7.8	7.8	7.8	---	---	---	7.9	7.6	7.7
18	7.3	7.2	7.3	7.9	7.8	7.9	7.9	7.8	7.8	7.9	7.7	7.8
19	7.3	7.3	7.3	8.1	7.9	8.0	7.8	7.6	7.7	7.9	7.8	7.8
20	7.3	7.3	7.3	8.2	8.1	8.1	7.8	7.6	7.7	8.0	7.8	7.8
21	7.3	7.3	7.3	8.2	8.1	8.2	7.8	7.7	7.7	7.9	7.8	7.9
22	7.3	7.3	7.3	8.3	8.1	8.2	8.0	7.7	7.8	7.9	7.8	7.9
23	7.3	7.3	7.3	8.4	8.2	8.3	7.9	7.8	7.9	7.9	7.5	7.7
24	7.5	7.3	7.4	8.4	8.3	8.3	8.1	7.8	7.9	7.5	7.4	7.4
25	7.6	7.5	7.5	8.5	8.3	8.4	8.1	8.0	8.0	7.5	7.4	7.5
26	7.6	7.5	7.6	8.5	8.3	8.4	8.2	8.0	8.1	7.6	7.5	7.5
27	7.6	7.5	7.6	8.3	8.2	8.3	8.3	8.0	8.1	7.7	7.5	7.7
28	7.5	7.5	7.5	8.3	8.2	8.3	8.4	8.1	8.2	7.9	7.7	7.8
29	7.5	7.5	7.5	8.4	8.2	8.3	8.4	8.1	8.2	7.9	7.7	7.8
30	7.6	7.5	7.6	8.2	8.1	8.2	8.4	8.2	8.3	7.8	7.7	7.7
31	---	---	---	8.3	8.0	8.2	8.3	8.1	8.2	---	---	---
MONTH	7.7	7.1	7.4	8.5	7.5	7.9	8.4	7.6	8.0	8.4	7.4	7.8
YEAR	8.5	7.1	7.7									

TRINITY RIVER MAIN STEM

08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

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

TRINITY RIVER MAIN STEM

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08065350 TRINITY RIVER NEAR CROCKETT, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	25.0	24.5	25.0	30.0	29.5	30.0	33.0	31.5	32.0	32.0	30.5	31.5
2	25.0	24.0	24.5	30.5	29.0	30.0	32.5	31.5	32.0	31.5	31.0	31.5
3	25.5	24.5	25.0	31.0	30.0	30.5	32.5	31.0	32.0	31.5	30.5	31.0
4	25.5	25.0	25.5	31.5	30.5	31.0	32.5	31.0	32.0	31.0	30.5	31.0
5	26.0	25.5	25.5	31.5	30.5	31.0	33.0	31.5	32.0	32.0	30.0	31.0
6	26.5	26.0	26.0	31.5	30.5	30.5	33.0	31.5	32.0	31.5	30.0	30.5
7	26.5	26.0	26.0	31.0	30.0	30.5	32.5	32.0	32.5	31.5	30.0	31.0
8	26.5	25.5	26.0	31.0	29.5	30.5	---	---	---	32.0	30.5	31.0
9	26.5	25.5	26.0	31.0	30.0	30.5	---	---	---	32.5	31.5	32.0
10	26.5	25.0	26.0	30.5	30.0	30.0	---	---	---	---	---	---
11	26.5	24.5	25.5	30.0	29.0	29.5	---	---	---	31.0	30.0	30.5
12	27.0	26.0	26.5	30.5	29.0	30.0	---	---	---	30.5	29.0	30.0
13	27.5	26.5	27.0	31.0	30.0	30.5	---	---	---	30.5	29.0	30.0
14	28.0	27.0	27.5	32.0	30.5	31.0	---	---	---	30.5	29.5	30.0
15	27.5	27.0	27.0	32.0	31.0	31.5	---	---	---	31.5	30.0	30.5
16	28.0	27.5	27.5	32.0	30.5	31.0	---	---	---	31.5	30.5	31.0
17	28.0	27.0	27.5	32.5	31.0	31.5	---	---	---	31.0	30.5	30.5
18	28.0	27.5	27.5	33.0	31.5	32.0	32.0	31.0	31.5	31.5	30.5	31.0
19	28.0	27.5	28.0	33.0	31.5	32.0	32.0	30.5	31.5	31.5	30.5	31.0
20	29.0	27.5	28.0	33.5	31.5	32.5	32.5	31.0	31.5	32.0	30.5	31.0
21	28.5	27.5	28.0	33.5	32.0	32.5	33.0	31.0	32.0	31.5	30.5	31.0
22	27.5	27.0	27.5	33.5	32.0	33.0	32.5	31.0	32.0	31.0	30.0	30.5
23	28.0	27.5	28.0	34.0	32.0	33.0	31.5	30.5	31.0	30.0	27.5	29.0
24	28.5	28.0	28.0	34.0	32.5	33.0	31.0	29.5	30.5	28.0	27.0	27.5
25	28.5	28.5	28.5	34.0	32.5	33.0	30.5	29.0	30.0	27.5	26.5	27.0
26	29.0	28.0	28.5	34.0	32.5	33.5	30.5	29.0	29.5	27.5	26.0	26.5
27	28.5	28.0	28.5	34.0	32.5	33.5	30.5	29.0	29.5	27.5	26.0	27.0
28	28.5	28.0	28.5	34.0	33.0	33.5	31.5	29.0	30.0	28.0	26.0	27.0
29	29.0	28.0	28.5	34.5	33.0	33.5	31.5	30.0	31.0	28.5	27.5	28.0
30	30.0	28.5	29.5	34.0	33.0	33.5	31.5	30.0	31.0	28.5	28.0	28.5
31	---	---	---	33.0	32.0	32.5	31.5	30.5	31.0	---	---	---
MONTH	30.0	24.0	27.0	34.5	29.0	31.5	33.0	29.0	31.5	32.5	26.0	30.0
YEAR	34.5	5.5	21.0									

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.2	6.7	7.1	4.4	3.5	3.7	8.2	7.7	8.0	7.8	7.6	7.7
2	7.3	6.7	7.0	4.6	3.8	4.2	8.4	8.2	8.4	7.6	7.4	7.4
3	7.4	6.8	7.0	5.0	4.6	4.9	8.5	8.4	8.4	7.4	7.1	7.3
4	7.7	6.8	7.1	5.2	5.0	5.2	8.5	8.4	8.4	7.1	6.9	7.0
5	7.3	6.8	7.0	---	---	---	8.7	8.4	8.6	6.9	6.8	6.8
6	7.7	6.8	7.1	---	---	---	8.7	8.5	8.6	6.8	6.6	6.7
7	7.7	6.7	7.2	---	---	---	8.8	8.6	8.7	6.9	6.7	6.8
8	---	---	---	7.5	7.4	7.5	9.0	8.8	8.9	7.3	6.8	7.0
9	8.7	7.5	8.4	7.6	7.5	7.5	9.1	8.9	9.0	---	---	---
10	8.9	7.5	8.0	7.9	7.6	7.8	9.1	8.8	8.9	---	---	---
11	9.0	7.7	8.1	7.7	6.2	6.9	8.9	8.6	8.8	---	---	---
12	9.1	7.9	8.3	7.1	6.6	6.8	8.8	8.7	8.8	---	---	---
13	9.3	7.9	8.4	7.3	7.1	7.2	8.7	8.6	8.6	---	---	---
14	9.2	7.9	8.3	7.4	7.3	7.4	8.6	8.4	8.5	---	---	---
15	9.0	7.7	8.2	7.5	7.4	7.5	8.4	8.4	8.4	---	---	---
16	8.5	7.5	7.9	7.5	7.5	7.5	8.5	8.4	8.4	---	---	---
17	8.5	7.1	7.7	7.5	7.4	7.5	8.8	8.4	8.6	11.0	10.9	10.9
18	8.5	7.0	7.6	7.5	7.4	7.4	8.8	8.5	8.7	11.0	10.9	11.0
19	8.4	7.1	7.6	7.5	7.4	7.5	9.2	8.6	9.0	11.3	10.9	11.1
20	8.6	7.4	7.8	7.5	7.4	7.5	9.4	9.2	9.3	11.4	11.1	11.2
21	8.4	7.6	7.9	7.4	7.2	7.3	9.7	9.4	9.6	11.2	10.6	11.0
22	8.6	7.6	8.0	7.2	7.1	7.2	9.8	9.6	9.7	10.6	10.1	10.3
23	8.6	7.6	8.0	7.2	6.9	7.0	9.8	9.5	9.7	10.8	10.0	10.4
24	8.1	7.8	7.9	6.9	6.8	6.8	9.6	9.3	9.4	10.7	9.3	10.1
25	8.1	7.0	7.7	7.3	6.8	7.0	9.4	9.2	9.3	9.3	7.8	8.2
26	7.0	5.2	5.8	7.5	7.3	7.4	9.3	8.9	9.1	8.7	7.7	8.3
27	6.1	5.4	5.8	7.7	6.8	7.4	8.9	8.7	8.8	8.9	8.5	8.8
28	6.3	6.1	6.2	7.2	6.2	6.8	8.7	8.6	8.6	9.0	8.7	8.8
29	6.4	6.3	6.4	7.4	7.2	7.3	8.6	8.3	8.4	8.9	8.7	8.8
30	6.7	6.4	6.5	7.7	7.4	7.6	8.3	8.0	8.2	9.2	8.8	9.0
31	6.8	4.4	6.3	---	---	---	8.0	7.8	7.9	9.6	9.2	9.4
MONTH	9.3	4.4	7.4	7.9	3.5	6.9	9.8	7.7	8.8	11.4	6.6	8.9

08065800 BEDIAS CREEK NEAR MADISONVILLE, TX

LOCATION.--Lat 30°53'03", long 95°46'39", Madison-Walker County line, Hydrologic Unit 12030202, on right bank at downstream side of bridge on U.S. Highways 75 and 190, 0.5 mi upstream from Interstate Highway 45, 1.5 mi downstream from Caney Creek, and 9.5 mi southeast of Madisonville.

DRAINAGE AREA.--321 mi².

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

Water-quality records.--Chemical analyses: July 1962 to April 1964, January 1968 to September 1974. Chemical and biochemical analyses:

September 1970 to September 1974, April 1985 to June 1988, April 1993 to September 1995. Pesticide analyses: April 1985 to April 1988.

Specific conductance: October 1984 to September 1987. Water temperature: October 1984 to September 1987. Suspended sediment discharge: October 1984 to September 1986.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 150.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Flow may be slightly affected at times by discharge from the flood-detention pools of three floodwater-retarding structures with a combined detention capacity of 1,290 acre-ft. These structures control runoff from 2.71 mi² in the upper Caney Creek and Town Branch drainage basins. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1910, 34 ft in May 1922 (discharge unknown), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,400 ft³/s:

	Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)				
	Feb. 14	0100	4,660	18.73	Feb. 21	2200	5,600	19.18				
	DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES											
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	2.8	27	3.1	5.1	891	15	62	151	10	3.5	1.3
2	10	3.2	53	2.1	4.4	779	13	37	159	7.4	3.2	1.3
3	5.1	3.1	40	1.7	3.8	1790	11	26	46	5.8	3.0	1.4
4	3.0	2.8	18	1.4	3.9	2050	23	20	24	4.6	3.1	1.5
5	2.2	3.0	8.2	1.2	4.7	750	230	15	15	4.1	3.1	2.9
6	1.7	3.2	4.3	.90	3.6	409	240	13	10	3.5	2.9	3.2
7	1.5	4.2	2.3	.99	3.6	470	192	12	17	12	3.0	3.4
8	1.9	3.9	1.3	.48	.28	155	66	11	34	3.8	4.0	2.8
9	3.5	5.4	.81	.512	107	85	36	10	346	2.9	2.6	2.5
10	4.0	6.1	.78	.732	66	63	23	10	619	2.5	4.1	2.4
11	4.5	4.3	1.1	.423	.31	.53	18	9.1	859	2.2	2.4	2.3
12	4.1	3.4	1.3	.80	.382	105	29	8.6	1340	2.2	1.6	1.8
13	3.3	2.9	1.8	.39	2490	517	97	8.1	1350	2.1	1.1	1.5
14	2.9	2.7	2.1	.24	3480	697	57	8.0	224	1.9	.96	1.4
15	2.5	2.6	11	.16	1760	439	28	7.6	56	1.7	.90	1.6
16	2.2	2.7	432	.12	509	120	18	12	36	1.6	.89	1.6
17	1.9	2.5	868	8.9	111	71	12	221	155	1.6	.85	1.6
18	1.6	2.6	953	6.2	64	57	9.1	214	294	1.5	.93	1.6
19	1.2	2.9	252	4.5	46	51	7.4	43	469	1.6	.97	1.6
20	.99	2.9	54	3.8	235	44	6.5	20	333	1.9	1.0	1.6
21	.82	3.0	27	131	3100	37	5.6	66	58	2.3	1.1	1.4
22	.62	2.7	16	840	3300	32	4.8	526	100	2.2	1.1	1.4
23	.70	2.8	10	1260	1500	27	4.4	370	147	2.0	1.7	4.1
24	1.1	.45	7.9	841	348	23	4.1	80	134	2.2	1.4	3.9
25	2.0	378	24	137	122	20	9.6	103	82	2.2	1.2	4.9
26	2.7	592	54	58	252	17	253	83	54	2.0	1.3	3.5
27	2.7	208	25	34	787	83	625	42	35	2.1	1.4	3.9
28	3.2	41	12	21	1390	78	552	151	42	2.3	1.7	3.5
29	2.8	21	26	13	---	40	301	172	26	2.5	1.7	3.6
30	2.5	22	9.7	8.9	---	27	128	71	15	2.8	1.5	2.3
31	2.5	---	4.7	6.6	---	20	---	71	---	3.1	1.4	---
TOTAL	103.73	1382.7	2948.29	5271.29	20137.1	10000	3018.5	2502.4	7230	100.6	59.60	71.8
MEAN	3.35	46.1	95.1	170	719	323	101	80.7	241	3.25	1.92	2.39
MAX	24	592	953	1260	3480	2050	625	526	1350	12	4.1	4.9
MIN	.62	2.5	.78	.90	3.6	17	4.1	7.6	10	1.5	.85	1.3
AC-FT	206	2740	5850	10460	39940	19840	5990	4960	14340	200	118	142
CFSM	.01	.14	.30	.53	2.24	1.00	.31	.25	.75	.01	.01	.01
IN.	.01	.16	.34	.61	2.33	1.16	.35	.29	.84	.01	.01	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1997, BY WATER YEAR (WY)

	MEAN	214	120	215	311	313	280	260	329	268	21.9	28.0	92.9
MAX	3021	688	983	2015	1580	909	1333	1046	1745	260	266	1551	
(WY)	1985	1986	1995	1991	1992	1973	1969	1969	1968	1979	1995	1974	
MIN	.000	.025	.22	1.99	5.41	3.13	2.30	4.47	.82	.013	.000	.000	
(WY)	1979	1989	1968	1971	1971	1971	1981	1996	1988	1977	1969	1969	

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1968 - 1997

	ANNUAL TOTAL	8529.28	52826.01	
ANNUAL MEAN	23.3		145	
HIGHEST ANNUAL MEAN				204
LOWEST ANNUAL MEAN				423
HIGHEST DAILY MEAN	953	Dec 18	3480	Feb 14
LOWEST DAILY MEAN	.04	Jul 14	.62	Oct 22
ANNUAL SEVEN-DAY MINIMUM	.06	Jul 12	.93	Aug 14
INSTANTANEOUS PEAK FLOW			5600	Feb 21
INSTANTANEOUS PEAK STAGE			19.18	Feb 21
ANNUAL RUNOFF (AC-FT)	16920		104800	
ANNUAL RUNOFF (CFSM)	.073		.45	
ANNUAL RUNOFF (INCHES)	.99		6.12	
10 PERCENT EXCEEDS	17		415	
50 PERCENT EXCEEDS	5.5		8.9	
90 PERCENT EXCEEDS	.61		1.5	

TRINITY RIVER BASIN

08066170 KICKAPOO CREEK NEAR ONALASKA, TX

LOCATION.--Lat 30°54'25", long 95°05'18", Polk County, Hydrologic Unit 12030202, on right bank 114 ft upstream from old bridge site, 1.2 mi downstream from Magnolia Creek, 6.2 mi upstream from Rocky Creek, 7.3 mi northeast of Onalaska, and 15.9 mi upstream from mouth.

DRAINAGE AREA.--57.0 mi².

PERIOD OF RECORD.--December 1965 to current year.

Water-quality records.--Chemical analyses: December 1963 to September 1969. Chemical and biochemical analyses: October 1969 to September 1974.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 139.85 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. Low flow is sustained by wastewater effluent that enters the creek upstream from this station. Satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s:

	Date	Time	Discharge (ft ³ /s)	Gage height (ft)		Date	Time	Discharge (ft ³ /s)	Gage height (ft)			
	Feb. 12	1600	4,000	14.77								
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	1.7	27	13	5.1	26	4.2	17	3.6	3.9	1.6	.54
2	2.6	1.4	11	9.6	4.6	157	3.7	12	2.8	2.7	.98	.66
3	2.1	1.3	5.9	8.8	4.7	48	4.1	24	2.1	2.0	.78	.79
4	1.8	1.3	4.1	7.4	7.0	17	410	15	1.9	1.6	.63	.69
5	1.6	1.4	3.4	5.5	5.8	13	703	8.6	1.7	1.3	.54	.61
6	1.6	1.4	3.0	4.2	4.5	9.6	117	6.6	1.7	8.8	.49	.56
7	1.4	3.2	2.6	4.7	73	7.7	54	5.6	23	57	8.6	.56
8	1.4	8.1	2.3	238	74	7.8	33	4.8	13	275	7.2	.56
9	1.3	3.8	2.2	196	22	8.5	24	4.3	5.0	15	8.8	1.3
10	1.3	2.5	2.2	38	14	9.0	18	4.0	111	4.5	2.8	4.4
11	1.2	2.0	2.2	19	10	11	15	3.4	36	2.1	1.5	1.6
12	1.2	1.7	2.2	13	1540	351	17	3.1	13	1.3	.99	1.0
13	1.2	1.6	2.1	13	747	602	12	3.1	8.8	.90	.76	.80
14	1.2	1.6	2.1	11	117	85	9.8	2.9	6.3	.82	.62	.68
15	1.2	1.5	92	12	54	34	8.3	31	4.3	e.70	.54	.62
16	1.4	1.5	318	12	32	21	7.4	200	3.4	e.65	.53	.58
17	1.5	1.5	96	8.4	21	27	6.7	31	38	e.65	.46	.54
18	1.4	1.5	26	6.3	16	266	5.9	18	28	e.65	.44	.52
19	1.2	1.6	13	5.4	14	177	5.5	11	8.8	e.65	.43	.51
20	1.2	1.6	7.8	5.4	405	43	5.5	8.9	4.8	.67	.40	.51
21	1.3	1.7	6.1	e78	510	23	9.4	19	3.9	.68	.40	.47
22	1.8	1.8	5.3	e102	50	15	7.3	9.5	26	.66	.39	.52
23	1.7	1.9	4.9	e29	24	11	5.2	6.6	14	.63	.80	176
24	1.5	40	4.5	e18	16	8.6	4.3	20	6.0	.61	1.2	22
25	21	53	3.7	11	85	43	6.1	32	82	.59	1.3	4.4
26	93	16	4.2	7.5	251	162	38	13	118	.71	.90	2.5
27	16	6.8	7.4	6.6	165	31	194	7.3	44	.87	.68	1.6
28	6.1	4.2	7.0	21	41	17	259	5.0	18	.73	.58	1.2
29	3.3	6.0	365	12	---	10	55	4.3	11	.61	.59	1.0
30	2.3	30	63	7.4	---	6.6	27	3.9	6.2	13	.56	.91
31	1.9	---	23	5.8	---	4.9	---	4.1	---	7.6	.54	---
TOTAL	180.9	203.6	1119.2	929.0	4312.7	2252.7	2069.4	539.0	646.3	407.58	47.03	228.63
MEAN	5.84	6.79	36.1	30.0	154	72.7	69.0	17.4	21.5	13.1	1.52	7.62
MAX	93	53	365	238	1540	602	703	200	118	275	8.8	176
MIN	1.2	1.3	2.1	4.2	4.5	4.9	3.7	2.9	1.7	.59	.39	.47
AC-FT	359	404	2220	1840	8550	4470	4100	1070	1280	808	93	453
CFSM	.10	.12	.63	.53	2.70	1.27	1.21	.31	.38	.23	.03	.13
IN.	.12	.13	.73	.61	2.81	1.47	1.35	.35	.42	.27	.03	.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

	MEAN	75.1	24.9	51.1	72.1	73.9	66.3	59.7	64.6	56.3	11.3	7.30	11.5
MAX	1891	163	177	320	288	236	270	202	365	100	51.4	107	
(WY)	1995	1975	1966	1974	1992	1990	1979	1982	1973	1989	1975	1973	
MIN	.31	.82	1.72	1.49	1.54	.76	1.13	.86	.31	.083	.32	.37	
(WY)	1988	1991	1981	1971	1971	1971	1971	1988	1971	1971	1988	1989	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1966 - 1997

ANNUAL TOTAL	2447.03	12936.04	
ANNUAL MEAN	6.69	35.4	47.6
HIGHEST ANNUAL MEAN			223
LOWEST ANNUAL MEAN			4.63
HIGHEST DAILY MEAN	365	Dec 29	1540
LOWEST DAILY MEAN	.41	Jul 8	.39
ANNUAL SEVEN-DAY MINIMUM	.43	Jul 7	.44
INSTANTANEOUS PEAK FLOW			4000
INSTANTANEOUS PEAK STAGE			14.77
ANNUAL RUNOFF (AC-FT)	4850	25660	84600
ANNUAL RUNOFF (CFSM)	.12	.62	a41.85
ANNUAL RUNOFF (INCHES)	1.60	8.44	11.35
10 PERCENT EXCEEDS	6.1	73	60
50 PERCENT EXCEEDS	1.5	5.4	3.4
90 PERCENT EXCEEDS	.50	.65	.49

e Estimated

a From floodmark.

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX

LOCATION.--Lat 30°38'00", long 95°00'36", Polk-San Jacinto County line, Hydrologic Unit 12030202, at left end of gated spillway at Livingston Dam on Trinity River, 4.4 mi northwest of Goodrich, 7 mi southwest of Livingston, 11.7 mi upstream from Long King Creek, and at mile 129.2.

DRAINAGE AREA.--16,583 mi².

WATER-CONTENT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Trinity River Authority). Prior to Feb. 26, 1969, temporary nonrecording gages at site about 200 ft upstream and at same datum.

REMARKS.--Records good. The reservoir is formed by an earthfill dam 14,400 ft long. The dam was completed Sept. 29, 1968, and deliberate impoundment began June 26, 1969. The reservoir is operated for industrial water supply in the Houston metropolitan area. The spillway has twelve 40 x 35 ft tainter gates located near the left end of dam. Low-flow releases may be made through multi-gated inlet tower. There are five gated openings at various elevations located in the tower, and all discharge into a 10-foot-diameter concrete conduit through the dam. Flow is affected at times by discharge from the flood-detention pools of 255 floodwater-retarding structures with a combined detention capacity of 184,600 acre-ft. These structures control runoff from an 617 mi² area in the Richland, Chambers, Tehuacana, and Bédias Creek drainage basins above this station. Satellite telemeter at station. Figures given herein represent total contents. Data regarding the dam and reservoir are given in the following table:

	Elevation (feet)	Capacity (acre-feet)
Top of dam	145.0	-
Design flood	135.0	2,098,000
Top of tainter gates	134.0	2,004,000
Top of conservation pool	131.0	1,742,000
Crest of spillway (sill of tainter gates)	99.0	143,800
Lowest gated outlet (invert)	58.0	0

COOPERATION.--The capacity table, furnished by the Trinity River Authority, is based on a survey by the Bureau of Reclamation dated Dec. 1991.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,081,000 acre-ft Oct. 17, 1994 (elevation, 134.39 ft); minimum since conservation pool capacity was reached on Nov. 2, 1971, 1,345,000 acre-ft Oct. 25, 1988 (elevation, 125.22 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,888,000 acre-ft Mar. 5 at 1200 (elevation, 132.70 ft); minimum, 1,552,000 acre-ft Oct. 21 (elevation, 128.63 ft).

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

125.0	1,283,000	129.0	1,581,000	133.0	1,914,000
126.0	1,355,000	130.0	1,660,000	134.0	2,004,000
127.0	1,428,000	131.0	1,742,000	135.0	2,098,000
128.0	1,504,000	132.0	1,827,000		

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1580000	1617000	1799000	1764000	1748000	1851000	1749000	1764000	1793000	1748000	1728000	1736000
2	1584000	1627000	1802000	1760000	1749000	1868000	1752000	1778000	1788000	1746000	1728000	1738000
3	1582000	1638000	1805000	1750000	1749000	1875000	1745000	1787000	1783000	1744000	1724000	1736000
4	1582000	1656000	1797000	1758000	1754000	1881000	1770000	1797000	1780000	1746000	1723000	1733000
5	1581000	1671000	1796000	1756000	1749000	1884000	1811000	1815000	1777000	1741000	1722000	1730000
6	1579000	1673000	1799000	1756000	1745000	1876000	1827000	1832000	1769000	1746000	1715000	1728000
7	1581000	1694000	1796000	1750000	1759000	1868000	1815000	1841000	1768000	1745000	1721000	1722000
8	1581000	1694000	1783000	1766000	1755000	1862000	1812000	1850000	1757000	1746000	1722000	1721000
9	1578000	1691000	1772000	1776000	1755000	1849000	1806000	1855000	1753000	1746000	1728000	1734000
10	1578000	1693000	1766000	1779000	1757000	1839000	1799000	1849000	1768000	1750000	1735000	1735000
11	1569000	1698000	1766000	1775000	1761000	1822000	1818000	1832000	1773000	1753000	1746000	1729000
12	1568000	1711000	1765000	1776000	1819000	1827000	1825000	1813000	1772000	1757000	1757000	1725000
13	1568000	1724000	1762000	1773000	1850000	1834000	1832000	1787000	1772000	1759000	1759000	1724000
14	1566000	1735000	1755000	1767000	1858000	1825000	1845000	1775000	1777000	1761000	1755000	1723000
15	1566000	1736000	1773000	1771000	1850000	1809000	1855000	1768000	1781000	1761000	1751000	1721000
16	1568000	1741000	1782000	1766000	1836000	1796000	1861000	1765000	1787000	1760000	1746000	1720000
17	1581000	1749000	1800000	1761000	1811000	1791000	1862000	1757000	1799000	1758000	1745000	1717000
18	1567000	1749000	1789000	1755000	1797000	1788000	1855000	1755000	1808000	1751000	1743000	1717000
19	1556000	1749000	1787000	1755000	1791000	1779000	1858000	1755000	1805000	1751000	1742000	1717000
20	1558000	1750000	1776000	1756000	1805000	1773000	1848000	1765000	1799000	1749000	1741000	1717000
21	1556000	1756000	1777000	1764000	1844000	1771000	1834000	1761000	1804000	1744000	1739000	1717000
22	1562000	1753000	1766000	1774000	1857000	1771000	1821000	1761000	1805000	1740000	1737000	1712000
23	1558000	1751000	1783000	1774000	1862000	1767000	1801000	1762000	1810000	1738000	1751000	1737000
24	1559000	1777000	1763000	1777000	1867000	1763000	1777000	1774000	1805000	1736000	1747000	1744000
25	1571000	1777000	1752000	1766000	1860000	1778000	1768000	1781000	1798000	1733000	1746000	1740000
26	1581000	1772000	1759000	1759000	1861000	1772000	1766000	1794000	1783000	1731000	1744000	1733000
27	1592000	1772000	1757000	1767000	1855000	1768000	1769000	1803000	1772000	1730000	1742000	1734000
28	1596000	1775000	1755000	1763000	1852000	1771000	1765000	1805000	1763000	1728000	1739000	1732000
29	1600000	1789000	1762000	1755000	---	1766000	1760000	1803000	1755000	1726000	1738000	1727000
30	1604000	1803000	1762000	1750000	---	1763000	1766000	1803000	1752000	1734000	1737000	1728000
31	1600000	---	1764000	1747000	---	1752000	---	1800000	---	1733000	1735000	---
MAX	1604000	1803000	1805000	1779000	1867000	1884000	1862000	1855000	1810000	1761000	1759000	1744000
MIN	1556000	1617000	1752000	1747000	1745000	1752000	1745000	1755000	1752000	1726000	1715000	1712000
(+)	129.25	131.72	131.26	131.06	132.29	131.12	131.28	131.69	131.12	130.89	130.91	130.83
(@)	+22000	+203000	-39000	-17000	+105000	-100000	+14000	+34000	-48000	-19000	+2000	-7000

CAL YR 1996 MAX 1805000 MIN 1396000 (@) +25000
WTR YR 1997 MAX 1884000 MIN 1556000 (@) +150000

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

TRINITY RIVER MAIN STEM

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

WATER-QUALITY RECORDS

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

303807095011101 - LIVINGSTON RES SITE AC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)
FEB											
19...	1310	1790000	1.00	440	7.9	12.5	1.18	10.6	99	130	14
19...	1312	--	10.0	440	7.8	12.0	--	10.6	98	--	--
19...	1314	--	20.0	440	7.8	12.0	--	10.6	98	--	--
19...	1316	--	30.0	440	7.8	11.5	--	10.6	97	--	--
19...	1318	--	40.0	440	7.8	11.5	--	10.6	97	--	--
19...	1320	--	50.0	440	7.6	11.5	--	10.6	97	--	--
19...	1322	--	60.0	440	7.4	11.5	--	10.6	97	--	--
19...	1324	--	70.0	440	7.4	11.5	--	10.6	97	--	--
19...	1326	--	77.0	440	7.4	11.5	--	10.6	97	130	11
AUG											
27...	1122	1740000	1.00	325	8.7	30.0	1.00	9.2	122	110	11
27...	1124	--	10.0	330	8.5	29.5	--	7.1	93	--	--
27...	1126	--	20.0	335	7.9	29.0	--	4.0	52	--	--
27...	1128	--	30.0	335	7.6	29.0	--	2.5	32	--	--
27...	1130	--	40.0	335	7.3	28.5	--	0.4	5	--	--
27...	1132	--	50.0	345	7.2	26.5	--	0.1	1	--	--
27...	1134	--	60.0	365	7.0	23.5	--	0.1	1	--	--
27...	1136	--	70.0	405	7.0	22.0	--	0.1	1	140	0

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
FEB											
19...	44	4.4	34	1	5.5	110	48	36	0.50	5.1	250
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	43	4.4	33	1	5.4	110	48	36	0.50	5.3	248
AUG											
27...	37	3.9	20	0.8	4.8	98	30	21	0.31	5.8	182
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	49	4.4	18	0.7	4.8	160	7.9	17	0.29	14	225

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
19...	0.770	0.020	0.790	0.020	0.28	0.30	0.070	0.060	0.18	<3.0	7.0
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	0.760	0.040	0.800	0.030	0.27	0.30	0.040	0.050	0.15	3.0	13
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	0.780	0.030	0.810	0.060	0.24	0.30	0.030	0.050	0.15	5.0	23
AUG											
27...	--	<0.010	0.053	<0.015	--	0.33	0.047	0.058	0.18	4.8	25
27...	--	--	--	--	--	--	--	--	--	--	--
27...	0.051	0.031	0.082	0.017	0.30	0.31	0.079	0.083	0.25	15	194
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	<0.010	0.053	0.986	0.49	1.5	0.710	0.656	2.0	270	1640
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	<0.010	<0.050	3.30	1.0	4.3	1.99	2.27	7.0	1200	1480

TRINITY RIVER MAIN STEM

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08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

303821095005001 - LIVINGSTON RES SITE AL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
19...	1350	1.00	440	7.9	11.5	0.40	10.8	99
19...	1352	10.0	440	7.9	11.5	--	10.8	99
19...	1354	20.0	440	7.8	11.0	--	10.7	97
19...	1356	30.0	440	7.8	11.0	--	10.7	97
19...	1358	40.0	440	7.8	11.0	--	10.5	95
19...	1400	50.0	440	7.7	10.5	--	10.6	95
19...	1402	57.0	440	7.7	10.5	--	10.6	95
AUG								
27...	1211	1.00	325	8.8	30.5	1.00	10.2	136
27...	1213	10.0	330	8.2	29.5	--	5.9	77
27...	1215	20.0	335	7.8	29.5	--	3.2	42
27...	1217	30.0	335	7.7	29.5	--	2.5	33
27...	1219	40.0	335	7.5	29.0	--	0.9	12
27...	1221	50.0	345	7.6	29.0	--	0.3	4

303935095055401 - LIVINGSTON RES SITE BC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
19...	1230	1.00	445	7.4	12.0	0.80	10.4	96
19...	1232	10.0	445	7.4	11.5	--	10.4	95
19...	1234	20.0	445	7.4	11.5	--	10.4	95
19...	1236	30.0	445	7.4	11.5	--	10.4	95
19...	1238	40.0	450	7.4	11.5	--	10.4	95
19...	1240	50.0	450	7.4	11.5	--	10.4	95
19...	1242	60.0	450	7.4	11.5	--	10.4	95
AUG								
27...	1044	1.00	330	8.2	30.0	1.00	7.1	94
27...	1046	10.0	335	8.2	29.5	--	5.3	69
27...	1048	20.0	335	8.0	29.5	--	4.1	54
27...	1050	30.0	340	7.7	29.0	--	2.4	31
27...	1052	40.0	340	7.6	29.0	--	1.8	23
27...	1054	55.0	375	7.2	27.0	--	0.3	4

304144095073001 - LIVINGSTON RES SITE CC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
19...	1030	1.00	370	7.5	10.5	0.50	10.6	95
19...	1032	10.0	370	7.4	10.5	--	10.6	95
19...	1034	20.0	370	7.4	10.5	--	10.6	95
19...	1036	30.0	370	7.4	10.5	--	10.6	95
19...	1038	40.0	370	7.2	10.5	--	10.2	91
19...	1040	54.0	345	7.0	11.0	--	9.8	89
AUG								
27...	1013	1.00	335	8.6	29.5	0.80	7.4	97
27...	1015	10.0	340	8.4	29.5	--	6.1	80
27...	1017	20.0	340	8.0	29.0	--	3.8	49
27...	1019	30.0	340	7.9	29.0	--	3.5	45
27...	1021	40.0	350	7.9	29.0	--	2.7	35
27...	1023	52.0	350	7.9	29.0	--	2.0	26

TRINITY RIVER MAIN STEM

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

304521095075501 - LIVINGSTON RES SITE DC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
FEB										
19...	1045	1.00	435	7.5	10.5	0.48	10.6	95	1.28	0.020
19...	1047	10.0	405	7.2	10.5	--	10.2	91	--	--
19...	1049	20.0	315	7.2	10.5	--	10.2	91	--	--
19...	1051	30.0	315	7.2	10.5	--	10.2	91	--	--
19...	1053	40.0	315	7.2	10.5	--	10.2	91	--	--
19...	1055	54.0	315	7.2	10.5	--	10.2	91	1.08	0.020
AUG										
27...	0914	1.00	340	8.6	29.0	0.80	7.1	92	--	<0.010
27...	0916	10.0	340	8.5	29.0	--	6.4	83	--	--
27...	0918	20.0	345	8.4	29.0	--	5.5	71	--	--
27...	0920	30.0	355	8.1	29.0	--	3.2	42	--	--
27...	0922	40.0	380	8.0	29.0	--	1.8	23	--	--
27...	0924	51.0	380	8.1	29.0	--	1.8	23	0.254	0.052

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
19...	1.30	0.120	0.38	0.50	0.080	0.090	0.28	18	120
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	1.10	0.210	0.49	0.70	0.070	0.090	0.28	390	420
AUG									
27...	<0.050	<0.015	--	0.29	0.054	0.070	0.21	<3.0	<1.0
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	0.306	0.018	0.32	0.34	0.099	0.099	0.30	<3.0	8.2

304453095064901 - LIVINGSTON RES SITE DL

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
19...	1010	1.00	450	7.4	12.0	0.47	10.2	94
19...	1012	10.0	450	7.5	12.0	--	10.1	93
19...	1014	20.0	445	7.4	11.5	--	10.0	91
AUG								
27...	0853	1.00	340	8.6	29.0	0.80	7.0	91
27...	0855	10.0	340	8.6	29.0	--	6.8	88
27...	0857	17.0	340	8.6	29.0	--	6.8	88

304659095052001 - LIVINGSTON RES SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
FEB										
19...	0930	1.00	420	7.5	11.5	0.35	10.8	99	1.08	0.020
19...	0932	10.0	400	7.4	11.5	--	10.6	97	--	--
19...	0934	20.0	390	7.4	11.0	--	9.6	87	--	--
19...	0936	30.0	370	7.4	11.0	--	9.6	87	1.28	0.020
AUG										
27...	0825	1.00	360	8.9	29.5	0.80	10.0	131	--	<0.010
27...	0827	10.0	365	8.5	29.5	--	5.4	71	--	--
27...	0829	20.0	370	7.8	29.0	--	1.8	23	--	--
27...	0831	26.0	370	7.8	29.0	--	1.3	17	0.146	0.067

TRINITY RIVER MAIN STEM

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08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

304659095052001 - LIVINGSTON RES SITE EC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
19...	1.10	<0.015	--	0.40	0.070	0.090	0.28	8.0	4.0
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	1.30	0.070	0.63	0.70	0.150	0.150	0.46	62	15
AUG									
27...	0.051	<0.015	--	0.34	0.055	0.062	0.19	<3.0	4.0
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	0.213	<0.015	--	0.35	0.091	0.095	0.29	<3.0	39

304843095104001 - LIVINGSTON RES SITE FC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB									
19...	1425	1.00	270	7.5	13.0	0.15	9.8	93	
19...	1427	10.0	270	7.5	12.5	--	9.8	92	
19...	1429	20.0	270	7.5	12.5	--	9.8	92	
19...	1431	30.0	270	7.5	12.0	--	9.8	91	
19...	1433	40.0	270	7.5	12.0	--	9.8	91	
19...	1435	50.0	270	7.5	11.5	--	9.8	90	
19...	1437	56.0	270	7.5	11.5	--	9.8	90	
AUG									
27...	1341	1.00	390	9.0	31.0	0.45	10.0	134	
27...	1343	10.0	415	8.1	29.0	--	4.7	61	
27...	1345	20.0	415	8.1	29.0	--	3.0	39	
27...	1347	30.0	415	8.1	29.0	--	3.0	39	
27...	1349	40.0	435	7.6	29.0	--	0.2	3	
27...	1351	54.0	435	7.7	29.0	--	0.2	3	

305411095144901 - LIVINGSTON RES SITE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)
FEB												
19...	1452	1.00	235	7.4	12.0	0.10	10.4	97	84	17	29	
19...	1454	10.0	235	7.6	12.0	--	10.4	97	--	--	--	
19...	1456	20.0	240	7.6	11.5	--	10.4	96	--	--	--	
19...	1458	30.0	240	7.6	11.5	--	10.4	96	--	--	--	
19...	1500	40.0	240	7.6	11.5	--	10.4	96	--	--	--	
19...	1502	46.0	240	7.7	12.0	--	10.6	99	86	17	30	
AUG												
27...	1428	1.00	365	9.4	32.0	0.40	13.0	178	84	4	27	
27...	1430	10.0	400	8.4	29.0	--	6.4	83	--	--	--	
27...	1432	20.0	415	7.8	28.5	--	3.4	44	--	--	--	
27...	1434	30.0	415	7.8	28.5	--	2.2	28	--	--	--	
27...	1436	42.0	420	7.8	28.5	--	1.4	18	120	15	40	

TRINITY RIVER MAIN STEM

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305411095144901 - LIVINGSTON RES SITE GC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS FIX END FIELD CAC03 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
FEB											
19...	2.7	11	0.5	3.8	67	22	12	0.30	6.7	132	0.750
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	0.790
19...	--	--	--	--	--	--	--	--	--	--	--
19...	2.8	11	0.5	3.9	69	23	12	0.20	6.8	135	0.790
AUG											
27...	4.2	36	2	5.7	80	46	38	0.55	7.2	213	0.066
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	0.762
27...	--	--	--	--	100	--	--	--	--	--	--
27...	4.2	34	1	5.8	100	44	34	0.52	7.6	236	0.715

DATE	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
19...	0.030	0.780	0.100	0.50	0.60	0.070	0.090	0.28	26	5.0
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	0.030	0.820	0.090	0.51	0.60	0.080	0.100	0.31	25	3.0
19...	--	--	--	--	--	--	--	--	--	--
19...	0.040	0.830	0.090	0.41	0.50	0.080	0.100	0.31	23	2.0
AUG										
27...	0.078	0.144	<0.015	--	0.51	0.038	0.029	0.09	3.9	1.9
27...	--	--	--	--	--	--	--	--	--	--
27...	0.117	0.879	0.157	0.39	0.55	0.110	0.114	0.35	<3.0	17
27...	--	--	--	--	--	--	--	--	--	--
27...	0.100	0.815	0.254	0.51	0.76	0.130	0.117	0.36	<3.0	58

305447095161401 - LIVINGSTON RES SITE HC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)
FEB										
19...	1536	1.00	235	7.6	11.5	0.12	10.6	98	0.300	0.090
19...	1538	10.0	240	7.8	11.5	--	10.6	98	--	--
19...	1540	20.0	240	7.8	11.5	--	10.6	98	--	--
19...	1542	30.0	240	7.8	11.5	--	10.6	98	--	--
19...	1544	38.0	240	7.6	11.5	--	10.6	98	0.780	0.030
AUG										
27...	1508	1.00	380	9.4	31.5	0.35	14.3	194	0.046	0.021
27...	1510	10.0	385	8.4	29.0	--	5.6	73	--	--
27...	1512	20.0	410	8.2	29.0	--	4.0	52	--	--
27...	1514	36.0	415	8.2	29.0	--	1.9	25	0.728	0.136

DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB									
19...	0.390	0.090	0.51	0.60	0.040	0.050	0.15	180	75
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	0.810	0.100	0.50	0.60	0.110	0.100	0.31	31	8.0
AUG									
27...	0.067	0.025	0.39	0.41	0.028	0.039	0.12	170	3.0
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	0.864	0.215	0.46	0.68	0.115	0.111	0.34	<3.0	11

TRINITY RIVER MAIN STEM

507

08066190 LIVINGSTON RESERVOIR NEAR GOODRICH, TX--Continued

305135095193601 - LIVINGSTON RES SITE IC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
FEB								
20...	0810	1.00	270	7.5	13.5	0.10	10.8	105
20...	0812	10.0	270	7.4	13.5	--	10.4	101
20...	0815	20.0	270	7.2	13.5	--	10.0	97
20...	0817	30.0	270	7.1	13.5	--	10.0	97
20...	0819	38.0	270	7.1	13.5	--	10.0	97
AUG								
28...	0755	1.00	400	7.7	29.0	0.60	4.1	53
28...	0757	10.0	400	7.8	29.0	--	4.1	53
28...	0759	20.0	400	7.6	29.0	--	3.8	50
28...	0801	30.0	400	7.6	29.0	--	3.2	42
28...	0803	37.0	400	7.5	29.0	--	3.1	40

305135095235401 - LIVINGSTON RES SITE JC

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TRANS- PAR- ENCY (SECCHI DISK) (M)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS TOTAL (MG/L CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED AS CA
FEB											
20...	0850	1.00	280	7.4	14.0	0.10	10.8	106	100	23	35
20...	0852	10.0	285	7.3	14.0	--	10.6	104	--	--	--
20...	0854	20.0	285	7.3	14.0	--	10.6	104	--	--	--
20...	0856	30.0	285	7.2	13.5	--	10.4	101	--	--	--
20...	0858	44.0	285	7.2	13.0	--	10.4	100	100	20	35
AUG											
28...	0835	1.00	390	7.7	30.5	0.60	9.2	123	120	23	43
28...	0837	10.0	400	7.5	30.0	--	4.9	65	--	--	--
28...	0839	20.0	400	7.7	29.5	--	4.1	54	--	--	--
28...	0841	30.0	415	7.7	29.5	--	4.1	54	--	--	--
28...	0843	37.0	420	7.7	29.0	--	2.8	37	120	18	42

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
FEB											
20...	3.1	12	0.5	4.0	77	30	12	0.30	6.6	153	0.770
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	0.760
20...	--	--	--	--	--	--	--	--	--	--	--
20...	3.1	12	0.5	4.1	80	27	12	0.20	6.3	152	0.760
AUG											
28...	4.2	26	1	5.2	100	43	29	0.42	9.0	225	0.948
28...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	1.32
28...	--	--	--	--	--	--	--	--	--	--	--
28...	4.1	31	1	5.5	100	42	34	0.44	9.9	236	0.741

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB										
20...	0.030	0.800	0.090	0.41	0.50	0.070	0.090	0.28	86	8.0
20...	--	--	--	--	--	--	--	--	--	--
20...	0.030	0.790	0.080	0.32	0.40	0.080	0.090	0.28	21	3.0
20...	--	--	--	--	--	--	--	--	--	--
20...	0.030	0.790	0.070	0.43	0.50	0.070	0.090	0.28	14	5.0
AUG										
28...	0.029	0.977	<0.015	--	0.37	0.142	0.120	0.37	3.8	2.6
28...	--	--	--	--	--	--	--	--	--	--
28...	0.026	1.35	0.027	0.28	0.30	0.138	0.137	0.42	<3.0	5.6
28...	--	--	--	--	--	--	--	--	--	--
28...	0.075	0.816	0.141	0.39	0.53	0.163	0.143	0.44	<3.0	31

TRINITY RIVER BASIN

08066200 LONG KING CREEK AT LIVINGSTON, TX

LOCATION.--Lat 30°42'58", long 94°57'31", Polk County, Hydrologic Unit 12030202, on right bank at upstream side of bridge on U.S. Highway 190, 2 mi west of Livingston, 2 mi upstream from Choates Creek, and 14.8 mi upstream from mouth.

DRAINAGE AREA.--141 mi².

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

Water-quality records.--Chemical analyses: January 1963 to September 1974.

GAGE.--Water-stage recorder. Datum of gage is 100.12 ft above sea level.

REMARKS.--Records good. No known regulation or diversions. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, about 41 ft in May 1929.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,600 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 13	0415	7,780	18.34	Apr. 4	0700	3,980	13.11
Feb. 21	0045	5,090	14.91	June 7	1915	3,470	12.18
Mar. 13	0700	5,850	15.98				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	7.1	53	57	56	158	41	42	41	23	27	7.0
2	25	5.9	32	44	50	366	39	35	31	23	18	7.9
3	22	5.0	25	39	48	353	40	37	27	21	14	18
4	18	5.0	23	36	50	132	410	38	25	19	12	17
5	17	5.3	23	33	47	105	2580	29	23	18	11	12
6	16	5.7	23	30	39	105	441	27	22	18	10	9.2
7	14	16	22	28	214	80	115	25	1260	18	31	8.1
8	14	17	21	40	441	71	77	23	703	22	42	8.0
9	12	15	20	265	122	64	70	22	104	19	22	12
10	11	11	19	88	96	59	61	22	341	18	22	48
11	9.0	8.8	19	53	78	70	58	22	385	16	17	23
12	8.1	8.1	19	40	2360	1340	61	22	78	15	14	13
13	7.5	7.3	19	46	4880	3960	47	21	46	14	11	9.9
14	6.8	5.3	19	52	571	580	42	19	35	13	10	8.1
15	6.4	6.0	78	124	237	193	40	24	30	13	9.4	7.4
16	6.9	7.4	1080	180	140	115	36	216	28	12	8.8	6.8
17	8.5	8.3	572	76	106	102	35	50	175	11	8.3	6.3
18	8.5	7.8	106	51	90	245	33	30	143	11	8.0	6.1
19	6.4	7.9	57	43	79	353	32	25	47	12	7.7	6.1
20	5.2	8.4	42	40	733	121	33	34	34	12	7.4	6.2
21	5.3	7.7	37	118	3290	89	32	46	30	11	7.1	6.7
22	7.5	6.9	34	918	409	74	32	232	172	10	7.1	7.0
23	7.5	6.9	32	191	156	66	29	235	78	10	13	174
24	8.7	232	30	106	114	64	29	132	41	9.4	13	254
25	13	499	27	81	754	e60	38	374	215	12	11	43
26	22	56	27	56	808	e150	121	99	314	11	9.7	24
27	24	26	37	92	843	e200	94	53	60	9.6	8.0	19
28	15	19	41	1050	267	80	252	82	42	9.4	7.8	15
29	10	23	335	200	---	64	92	63	30	9.7	7.2	13
30	8.0	81	375	94	---	52	55	37	26	64	6.9	12
31	6.6	---	83	70	---	44	---	39	---	79	6.7	---
TOTAL	381.9	1125.8	3330	4341	17078	9515	5065	2155	4586	563.1	408.1	807.8
MEAN	12.3	37.5	107	140	610	307	169	69.5	153	18.2	13.2	26.9
MAX	32	499	1080	1050	4880	3960	2580	374	1260	79	42	254
MIN	5.2	5.0	19	28	39	44	29	19	22	9.4	6.7	6.1
AC-FT	757	2230	6610	8610	33870	18870	10050	4270	9100	1120	809	1600
CFSM	.09	.27	.76	.99	4.33	2.18	1.20	.49	1.08	.13	.09	.19
IN.	.10	.30	.88	1.15	4.51	2.51	1.34	.57	1.21	.15	.11	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1997, BY WATER YEAR (WY)

	MEAN	68.1	69.0	146	174	180	152	137	140	137	35.6	17.7	29.1
	MAX	1342	689	626	966	629	640	844	662	869	493	191	288
	(WY)	1995	1974	1995	1974	1992	1990	1979	1969	1989	1989	1983	1996
	MIN	.18	.92	2.83	2.79	5.53	3.75	4.06	2.58	.72	.000	.000	.15
	(WY)	1966	1989	1971	1971	1971	1971	1971	1963	1971	1971	1971	1967

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1963 - 1997

ANNUAL TOTAL	18760.24	49356.7	108
ANNUAL MEAN	51.3	135	318
HIGHEST ANNUAL MEAN			12.3
LOWEST ANNUAL MEAN			1995
HIGHEST DAILY MEAN	7620	Sep 27	30100
LOWEST DAILY MEAN	.00	Aug 4	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 5	.00
INSTANTANEOUS PEAK FLOW			50900
INSTANTANEOUS PEAK STAGE			30.49
ANNUAL RUNOFF (AC-FT)	37210	97900	78460
ANNUAL RUNOFF (CFSM)	.36	.96	.77
ANNUAL RUNOFF (INCHES)	4.95	13.02	10.44
10 PERCENT EXCEEDS	42	248	149
50 PERCENT EXCEEDS	12	31	13
90 PERCENT EXCEEDS	.99	7.5	.90

e Estimated

TRINITY RIVER MAIN STEM

509

08066250 TRINITY RIVER NEAR GOODRICH, TX

LOCATION.--Lat 30°34'19", long 94°56'55", Polk-San Jacinto County line, Hydrologic Unit 12030202, on left bank at downstream bridge on U.S. Highway 59, 0.2 mi downstream from Long King Creek, 3.0 mi southeast of Goodrich, 11.9 mile downstream from Livingston Dam, and at mile 117.3.

DRAINAGE AREA.--16,844 mi².

PERIOD OF RECORD.--December 1965 to current year.

Water-quality records.--March 1966 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 40.00 ft above sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in December 1965, at least 10% of contributing drainage area has been regulated by Lake Worth, Livingston Reservoir, and twenty-one additional upstream reservoirs with a capacity of 6,246,000 acre-ft, of which 1,362,000 acre-ft is for flood control, partly regulate the flow. Streamflow is affected at times by discharge from the flood-detention pools of 252 floodwater-retarding structures with a combined detention capacity of 183,300 acre-ft. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1929, 52.0 ft in May 1942, from information by Texas Department of Transportation and by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1350	e620	10400	3370	2380	33700	21900	23300	16600	7400	1310	1140
2	e1150	e610	11300	3340	2290	e34000	20100	23300	16600	6040	1280	1150
3	e1040	e615	12900	3260	2260	e35000	19700	23300	16500	5000	1260	1170
4	e1000	e620	14100	2620	2250	e37500	20100	23400	16500	3460	1250	1150
5	e980	e630	14200	2500	2230	40100	25000	23400	16500	3290	1240	1130
6	e960	664	14200	2470	2210	40000	26000	24200	16500	3010	1240	1120
7	e920	699	14200	2330	2270	40100	25300	26500	16900	2550	1250	1120
8	e930	689	14200	2080	2810	40200	24700	28800	17600	2510	1300	1110
9	e940	672	13300	3050	2490	40400	24500	29000	13500	2500	1280	e1120
10	e940	664	11400	5010	2330	40300	24400	29000	12000	2480	1270	e1120
11	e940	659	10300	6270	2280	40400	24300	29000	12200	2460	1650	e1150
12	e920	659	9960	6410	7950	41400	24300	28300	11800	2450	3160	e1100
13	e920	659	8760	6450	30000	45500	24300	25200	11700	2440	4630	1040
14	e920	664	8630	5810	31400	42500	24800	20300	11700	2420	5210	1030
15	e920	669	7490	e5200	31000	40600	27500	17000	11700	2410	4130	935
16	e920	672	8460	e4900	30700	37200	30000	16800	11700	2400	3420	714
17	e910	675	9690	e4600	30500	35000	31400	16600	12500	2390	e2700	697
18	e850	1000	9130	e3400	29100	34600	32400	14800	13800	2380	e2000	695
19	e720	1120	8860	e3000	24300	34400	32500	12900	14500	2370	e1750	696
20	e660	1130	8770	e2950	24100	32600	32400	12700	15500	2360	e1600	694
21	e680	1140	8750	e3000	29700	31200	32400	12800	15600	2350	1450	693
22	e650	2070	8700	e5500	30500	31000	32400	12700	15900	2170	1160	699
23	e650	2340	7360	e7000	31200	30800	31400	13100	16000	1850	1180	1190
24	e690	2670	6350	e6950	31800	30600	28300	12900	16500	1830	1150	2220
25	e740	3650	5730	e6800	34900	29200	26600	13100	16500	1810	1140	1220
26	e760	3400	4290	e6500	e35900	29300	24000	13600	16400	1650	1110	1000
27	e740	3250	3490	e5500	e35400	28600	23500	15600	14400	1350	1120	980
28	e700	3420	3370	6900	34500	27400	23600	16700	12600	1330	1140	973
29	e675	6200	3420	5500	---	25800	23500	16700	11700	1320	1140	949
30	e650	10200	3860	4650	---	25600	23400	16700	8950	1320	1140	710
31	e640	---	3490	3470	---	24500	---	16700	---	1420	1130	---
TOTAL	26465	52730	279060	140790	528750	1079500	784700	608400	430850	80720	55790	30715
MEAN	854	1758	9002	4542	18880	34820	26160	19630	14360	2604	1800	1024
MAX	1350	10200	14200	7000	35900	45500	32500	29000	17600	7400	5210	2220
MIN	640	610	3370	2080	2210	24500	19700	12700	8950	1320	1110	693
AC-FT	52490	104600	553500	279300	1049000	2141000	1556000	1207000	854600	160100	110700	60920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997#, BY WATER YEAR (WY)

	MEAN	3561	6139	8637	8598	9545	11980	11430	15710	12550	4708	2287	2144
MAX	25630	30260	30270	45550	38660	40490	30750	57850	32120	24310	6819	15230	
(WY)	1974	1975	1992	1992	1992	1992	1977	1990	1973	1989	1982	1974	
MIN	283	449	317	321	472	724	1262	1294	907	1043	355	455	
(WY)	1973	1971	1971	1971	1971	1981	1971	1971	1972	1971	1972	1971	

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1966 - 1997#
ANNUAL TOTAL	865165	4098470	
ANNUAL MEAN	2364	11230	8043
HIGHEST ANNUAL MEAN			18310
LOWEST ANNUAL MEAN			746
HIGHEST DAILY MEAN	14200	Dec 5	45500
LOWEST DAILY MEAN	610	Nov 2	610
ANNUAL SEVEN-DAY MINIMUM	626	Oct 30	626
INSTANTANEOUS PEAK FLOW			46500
INSTANTANEOUS PEAK STAGE			34.35
ANNUAL RUNOFF (AC-FT)	1716000	8129000	5827000
10 PERCENT EXCEEDS	3540	31000	23500
50 PERCENT EXCEEDS	1640	5010	2750
90 PERCENT EXCEEDS	704	740	735

e Estimated

Period of regulated streamflow.

TRINITY RIVER BASIN

08066300 MENARD CREEK NEAR RYE, TX

LOCATION.--Lat 30°28'52", long 94°46'46", Liberty County, Hydrologic Unit 12030202, on left bank 20 ft downstream from bridge on State Highway 146, 2.3 mi northwest of Rye, and about 6 mi upstream from mouth.

DRAINAGE AREA.--152 mi².

PERIOD OF RECORD.--December 1965 to current year.

Water quality records.--Chemical analyses: August 1950 to August 1994.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 62.32 ft above sea level. September 1974 to August 1976, wire-weight gage read twice daily.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1966, at least 10% contributing drainage area has been regulated by Bear Foot Lake on Mill Creek, located 0.5 mi upstream from station. No known diversions. A section of the dam on this lake washed out on June 26-27, 1986, and was repaired in 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1929 reached a stage of about 39.4 ft, from information by the Texas Department of Transportation. Flood in September 1961 reached a stage of about 34.0 ft, from information by local resident. Flood of May 1929 may have been equaled or exceeded by other floods during the period 1929-65.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 15	0500	1,580	20.21	Mar. 14	1315	2,360	22.18
Feb. 27	0730	1,850	21.02	Apr. 6	1845	3,390	23.65
Mar. 13	0430	2,640	22.64				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	344	37	91	160	162	789	121	197	68	52	32	21
2	141	35	92	118	121	588	116	123	64	42	67	21
3	105	34	70	95	103	439	113	104	58	38	42	23
4	85	33	56	82	92	374	206	95	54	36	32	23
5	73	32	49	72	84	357	772	91	49	34	28	23
6	63	32	45	62	80	263	1820	80	46	33	25	30
7	53	36	43	57	88	219	1770	72	48	32	35	26
8	48	35	40	55	126	183	948	67	95	31	36	24
9	45	38	38	55	171	158	504	57	125	31	30	23
10	45	40	38	60	242	145	254	55	155	31	33	24
11	41	37	37	75	160	194	201	53	126	31	33	25
12	38	36	36	66	300	460	183	54	128	29	36	24
13	36	33	34	65	864	2060	161	51	112	27	35	28
14	34	31	34	71	743	2050	134	51	79	28	29	28
15	33	28	53	93	1340	1460	117	47	64	30	27	25
16	33	26	293	115	800	880	110	44	55	29	25	23
17	32	27	342	154	392	505	100	49	55	29	24	22
18	30	29	364	160	213	352	95	77	57	34	23	21
19	28	30	350	115	165	519	90	61	63	32	23	21
20	29	28	177	88	182	693	89	50	74	26	22	21
21	28	28	108	81	699	1150	91	59	59	24	22	20
22	31	28	89	153	560	657	91	69	70	24	21	21
23	29	28	81	227	1080	340	91	108	71	24	24	39
24	32	40	75	337	771	239	83	133	118	30	23	39
25	38	85	70	328	933	195	92	227	81	26	22	37
26	62	111	68	182	1230	210	235	191	60	24	23	57
27	66	107	65	136	1660	199	235	311	58	23	22	50
28	63	68	113	181	1170	217	399	187	63	22	22	36
29	55	53	195	205	---	180	396	98	48	22	22	31
30	45	63	142	321	---	151	315	77	43	25	21	28
31	38	---	167	313	---	135	---	76	---	31	21	---
TOTAL	1823	1268	3455	4282	14531	16361	9932	3014	2246	930	880	834
MEAN	58.8	42.3	111	138	519	528	331	97.2	74.9	30.0	28.4	27.8
MAX	344	111	364	337	1660	2060	1820	311	155	52	67	57
MIN	28	26	34	55	80	135	83	44	43	22	21	20
AC-FT	3620	2520	6850	8490	28820	32450	19700	5980	4450	1840	1750	1650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

	MEAN	76.5	78.3	148	203	228	184	175	196	149	65.5	47.0	47.9
MAX	1092	514	457	777	727	528	977	757	788	464	354	192	192
(WY)	1995	1975	1975	1974	1992	1997	1979	1983	1986	1989	1983	1983	1983
MIN	3.42	3.55	8.05	14.6	14.0	13.5	9.77	21.8	8.72	4.52	5.47	4.43	4.43
(WY)	1968	1968	1968	1971	1971	1971	1971	1996	1971	1971	1967	1967	1967

SUMMARY STATISTICS

	FOR 1996 CALENDAR YEAR	FOR 1997 WATER YEAR	WATER YEARS 1966 - 1997
ANNUAL TOTAL	23021	59556	134
ANNUAL MEAN	62.9	163	279
HIGHEST ANNUAL MEAN			14.7
LOWEST ANNUAL MEAN			1971
HIGHEST DAILY MEAN	1800	2060	12000
LOWEST DAILY MEAN	12	20	2.6
ANNUAL SEVEN-DAY MINIMUM	13	21	2.9
INSTANTANEOUS PEAK FLOW		3390	13700
INSTANTANEOUS PEAK STAGE		23.65	31.12
ANNUAL RUNOFF (AC-FT)	45660	118100	97310
10 PERCENT EXCEEDS	85	354	280
50 PERCENT EXCEEDS	34	63	49
90 PERCENT EXCEEDS	17	24	14

08066500 TRINITY RIVER AT ROMAYOR, TX

LOCATION.--Lat 30°25'30", long 94°51'02", Liberty County, Hydrologic Unit 12030202, near right bank at downstream side of bridge on State Highway 787, 1.9 mi south of Romayor, 1.9 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.7 mi downstream from Big Creek, and at mile 94.3.

DRAINAGE AREA.--17,186 mi².

PERIOD OF RECORD.--May 1924 to current year. Monthly discharge only for some periods, published in WSP 1312.

Water-quality records.--Chemical analyses: October 1941 to November 1949, February 1950 to September 1951, October 1953 to September 1995.

Chemical and biochemical analyses: February 1968 to September 1995. Pesticide analyses: February 1968 to July 1981, August 1983 to September 1995. Sediment records: March 1959 to September 1995. Specific conductance: October 1941 to September 1942, January 1944 to September 1951, October 1953 to September 1994. Water temperature: October 1941 to September 1950, October 1953 to September 1994.

Suspended-sediment discharge: October 1954 to September 1955, October 1968 to September 1971.

REVISED RECORDS.--WSP 1392: 1932, 1935. WSP 1922: Drainage area. WDR TX-81-1: 1980 (M, m).

GAGE.--Water-stage recorder. Datum of gage is 25.92 ft above sea level. Prior to Oct. 1, 1943, nonrecording gage at datum 63.57 ft higher at railroad bridge 1.9 mi upstream. Oct. 1, 1943 to Dec. 31, 1988, water-stage recorder and nonrecording gage (Sept. 15, 1975 to June 16, 1977) at present site and at datum 10.00 ft higher than current datum.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1924, at least 10% of contributing drainage area has been regulated by Lake Worth. Additional regulation since Sept. 28, 1968, by Livingston Reservoir, capacity 1,788,000 acre-ft, 35 mi upstream. There are no known large diversions between Livingston Reservoir and this station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	712	10600	3590	2900	37700	23400	23000	16700	8040	1700	1270
2	1330	691	11200	3480	2480	37400	21600	22900	16600	6700	1640	1310
3	1220	684	12700	3420	2380	37900	20800	22800	16600	5790	1610	1330
4	1140	687	14400	2980	2340	40600	21200	22800	16500	4280	1570	1290
5	1120	699	14700	2600	2290	43300	26200	22800	16500	3750	1550	1280
6	1100	708	14700	2530	2260	43600	29800	23200	16500	3580	1530	1320
7	1080	762	14700	2480	2290	43400	29800	25200	16600	3000	1540	1300
8	1070	788	14700	2190	2720	43400	27800	28300	18100	2900	1590	1270
9	1070	769	14300	2320	2760	43600	26800	28800	14700	2890	1560	1260
10	1090	755	12400	4540	2560	43600	26300	28800	12300	2870	1550	1300
11	1090	757	10800	5950	2450	43600	26000	28800	12200	2860	1570	1280
12	1080	753	10500	6520	4380	44400	25900	28500	11900	2850	2750	1220
13	1070	747	9360	6630	14500	50900	25900	26000	11700	2820	4290	1170
14	1070	753	8960	6430	26500	50500	25800	21200	11600	2820	5280	1150
15	1070	744	8250	5220	32100	47800	27500	17400	11600	2800	4750	1100
16	1070	748	8710	5120	32500	43000	30200	16400	11600	2770	3790	882
17	1070	760	10200	4890	31900	39500	31400	16300	12100	2780	2780	793
18	1060	835	10000	3560	30900	38100	32700	15100	13800	2770	2100	778
19	944	1150	9600	3220	26000	38400	32800	13000	14300	2750	1830	770
20	760	1200	9310	3140	24300	36200	32800	12400	15900	2670	1790	765
21	723	1200	9140	3150	30100	34700	32800	12500	16100	2620	1740	754
22	754	1530	9080	4700	32300	33900	32800	12500	16500	2560	1430	753
23	736	2230	8300	7330	33100	33400	32300	12800	16600	2220	1380	928
24	750	2420	6940	7260	33400	33100	29300	12800	17200	2160	1350	2090
25	826	3430	6210	7110	36500	31700	27000	13100	17300	2120	1320	1780
26	850	3620	5070	6650	39700	31400	24600	13400	17300	2080	1300	1190
27	846	3350	3810	5210	39600	30900	23300	15100	15700	1750	1270	1120
28	822	3240	3500	5790	38800	29300	23500	16700	13300	1660	1280	1090
29	769	4550	3580	6100	---	27700	23400	16700	12400	1640	1290	1070
30	758	9530	3940	5360	---	27000	23200	16600	9890	1640	1280	925
31	724	---	3820	4420	---	26400	---	16700	---	1720	1270	---
TOTAL	30852	50802	293480	143890	534010	1186400	816900	602600	440090	93860	61680	34538
MEAN	995	1693	9467	4642	19070	38270	27230	19440	14670	3028	1990	1151
MAX	1790	9530	14700	7330	39700	50900	32800	28800	18100	8040	5280	2090
MIN	723	684	3500	2190	2260	26400	20800	12400	9890	1640	1270	753
AC-FT	61190	100800	582100	285400	1059000	2353000	1620000	1195000	872900	186200	122300	68510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1997#, BY WATER YEAR (WY)

	MEAN	3346	5220	7693	8982	9691	11400	10810	15760	11640	4557	1904	2064
MAX	25380	30780	43240	51740	44510	46100	65710	62000	45120	28480	10140	14850	
(WY)	1974	1975	1941	1992	1992	1992	1945	1957	1957	1941	1957	1974	
MIN	181	274	351	347	450	528	415	1285	455	201	128	165	
(WY)	1957	1956	1971	1971	1971	1925	1925	1937	1925	1956	1956	1956	

SUMMARY STATISTICS FOR 1996 CALENDAR YEAR FOR 1997 WATER YEAR WATER YEARS 1924 - 1997#

ANNUAL TOTAL	897513	4289102											
ANNUAL MEAN	2452	11750											
HIGHEST ANNUAL MEAN													
LOWEST ANNUAL MEAN													
HIGHEST DAILY MEAN	14700	Dec 5	50900	Mar 13	117000	Oct 19	1994						
LOWEST DAILY MEAN	684	Nov 3	684	Nov 3	104	Aug 23	1956						
ANNUAL SEVEN-DAY MINIMUM	701	Oct 31	701	Oct 31	106	Aug 20	1956						
INSTANTANEOUS PEAK FLOW			52700	Mar 13	122000	Oct 19	1994						
INSTANTANEOUS PEAK STAGE			34.74	Mar 13	a45.80	May 9	1942						
ANNUAL RUNOFF (AC-FT)	1780000	8507000											
10 PERCENT EXCEEDS	3640	32400											
50 PERCENT EXCEEDS	1720	5070											
90 PERCENT EXCEEDS	828	869											

a From floodmark.

Period of regulated streamflow.

TRINITY RIVER MAIN STEM

08067000 TRINITY RIVER AT LIBERTY, TX

LOCATION.--Lat 30°03'27", long 94°49'05", Liberty County, Hydrologic Unit 12030203, at downstream side of downstream bridge on U.S. Highway 90 in Liberty, 450 ft downstream from Texas and New Orleans Railroad Co. bridge, and at mile 40.3.

DRAINAGE AREA.--17,468 mi².

PERIOD OF RECORD.--October 1938 to September 1940 (gage heights, discharge measurements, and some records of daily discharge), October 1940 to current year (high-water records only). Gage-height records collected in this vicinity since 1903 are contained in reports of the National Weather Service.

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

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2.22 ft below sea level; unadjusted land-surface subsidence. Prior to Mar. 13, 1973, nonrecording gage at site at same datum.

REMARKS.--No estimated daily discharges. Records good. Discharges for current year were computed using stage discharge relationship. During years with predominantly low releases from Livingston Reservoir, discharges are estimated using records for Trinity River near Romayor (station 08066500), intervening area computation, and discharge measurements. Estimated discharges below 10,000 ft³/s are not published. Since installation of gage in water year 1941, at least 10% of contributing drainage area has been regulated by Lake Worth, Livingston Reservoir, and other major reservoirs. Many diversions above station for municipal supplies, industrial uses, and irrigation. Gage-height telemeter at station. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 135,000 ft³/s Oct. 12, 1994 (gage height, 31.00 ft); minimum not determined (affected by tides); minimum gage height observed, 2.32 ft Nov. 24, 1970. Maximum gage height since at least 1903, 31.00 ft, Oct. 21, 1994 (at 0500 hours).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 8-11, 1922, reached a stage of 28.6 ft, present datum, from observations by the National Weather Service at nonrecording gage on railroad bridge upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 42,500 ft³/s Mar. 16 at 1730 hours (gage height, 27.65 ft); minimum discharge not determined (affected by tides); minimum gage height, 3.67 ft, Nov. 9..

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	34400	27200	25800	16600	10300	---	---
2	---	---	---	---	---	34400	25300	25300	16500	---	---	---
3	---	---	10000	---	---	34300	23500	24800	16400	---	---	---
4	---	---	11300	---	---	34300	23100	24500	16300	---	---	---
5	---	---	12400	---	---	34800	25000	24200	16200	---	---	---
6	---	---	12800	---	---	35700	27800	24000	16100	---	---	---
7	---	---	12900	---	---	36400	29400	24300	16100	---	---	---
8	---	---	13000	---	---	36800	29400	25600	16500	---	---	---
9	---	---	13100	---	---	36900	28700	27200	16800	---	---	---
10	---	---	12700	---	---	37100	27900	28100	14500	---	---	---
11	---	---	11700	---	---	37100	27400	28500	13100	---	---	---
12	---	---	10700	---	---	37900	26900	28700	12700	---	---	---
13	---	---	10200	---	---	39000	26600	28600	12300	---	---	---
14	---	---	---	---	25200	40300	26100	27100	12000	---	---	---
15	---	---	---	---	28500	41300	25700	23700	11900	---	---	---
16	---	---	---	---	29500	41500	26800	20500	11700	---	---	---
17	---	---	---	---	29800	40500	28500	18900	11700	---	---	---
18	---	---	10400	---	29900	39000	29600	17900	12200	---	---	---
19	---	---	10100	---	29200	37900	30500	16200	13000	---	---	---
20	---	---	---	---	27100	36800	30900	14400	13600	---	---	---
21	---	---	---	---	27300	35500	31300	13600	14500	---	---	---
22	---	---	---	---	29300	34400	31400	13400	15000	---	---	---
23	---	---	---	---	30300	33500	31600	13300	15400	---	---	---
24	---	---	---	---	31000	32800	31400	13700	15700	---	---	---
25	---	---	---	---	31800	32200	30800	14500	16000	---	---	---
26	---	---	---	---	32900	31900	30500	14600	16100	---	---	---
27	---	---	---	---	33800	32600	29100	14600	15900	---	---	---
28	---	---	---	---	34300	31700	28000	15700	14500	---	---	---
29	---	---	---	---	---	30800	27200	16500	13200	---	---	---
30	---	---	---	---	---	29900	26400	16500	12200	---	---	---
31	---	---	---	---	---	29100	---	16600	---	---	---	---

TRINITY RIVER BASIN

513

08067070 CWA CANAL NEAR DAYTON, TX

LOCATION.--Lat 29°57'40", long 94°48'36", Liberty County, Hydrologic Unit 12030203, at flume on left bank of Coastal Water Authority canal, 1,000 ft west of the Trinity River, 2 mi east of Farm Road 1409, and 7.4 mi southeast of Dayton.

PERIOD OF RECORD.--April 1981 to current year. Prior to October 1990, published as CIWA Canal near Dayton, TX.

GAGE.--Water-stage recorder. Mean sea level of gage not determined.

REMARKS.--No estimated daily discharges. Records good. There are no known diversions between pumping plant and the gage. Water is pumped from the Trinity River for industrial and municipal use in the area.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	604	582	634	645	614	687	666	720	712	742	705	732
2	606	591	618	646	615	676	671	679	710	753	681	736
3	628	607	617	657	623	668	660	690	708	765	683	772
4	630	615	634	660	655	679	650	688	713	784	680	783
5	645	612	639	654	661	683	650	685	712	786	682	780
6	647	648	621	644	662	639	654	683	713	804	710	780
7	634	660	621	644	645	635	654	723	713	802	756	787
8	632	647	621	681	658	632	657	706	713	769	774	791
9	656	643	621	689	659	632	668	680	713	728	806	749
10	662	645	607	683	663	631	678	681	711	756	827	783
11	660	603	619	692	652	634	678	679	699	758	807	801
12	662	600	616	701	607	634	678	682	690	758	808	802
13	661	607	616	699	552	623	677	638	751	758	813	714
14	663	606	639	689	599	616	674	621	784	757	817	789
15	663	626	654	687	607	610	679	637	804	765	815	804
16	658	656	620	695	607	565	712	704	782	796	810	804
17	629	658	621	679	617	584	722	709	755	807	806	803
18	610	648	630	641	649	620	696	720	737	808	798	816
19	602	649	630	613	664	626	728	715	700	805	794	832
20	606	652	696	617	664	670	730	711	691	788	791	835
21	587	664	733	607	664	668	723	707	693	768	786	819
22	568	654	713	677	664	659	723	703	693	751	781	795
23	562	660	668	698	618	659	723	691	693	734	781	709
24	568	664	651	676	602	659	723	614	695	738	763	718
25	575	655	651	688	602	659	598	599	752	743	743	756
26	571	653	629	673	602	659	521	593	753	764	740	793
27	570	661	597	665	612	659	563	652	753	764	737	807
28	568	638	581	650	646	659	624	691	753	763	736	821
29	567	622	547	637	---	659	723	684	751	763	735	821
30	566	620	593	624	---	659	729	698	748	762	736	761
31	567	---	635	618	---	657	---	713	---	752	733	---
TOTAL	19027	19046	19572	20529	17683	20000	20232	21096	21795	23791	23634	23493
MEAN	614	635	631	662	632	645	674	681	727	767	762	783
MAX	663	664	733	701	664	687	730	723	804	808	827	835
MIN	562	582	547	607	552	565	521	593	690	728	680	709
AC-FT	37740	37780	38820	40720	35070	39670	40130	41840	43230	47190	46880	46600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1997, BY WATER YEAR (WY)

	MEAN	424	405	389	390	399	416	448	472	494	519	488	465
MAX	658	635	631	662	636	652	677	715	731	772	762	783	
(WY)	1996	1997	1997	1997	1996	1996	1996	1996	1996	1996	1997	1997	
MIN	226	236	219	233	226	235	275	273	303	293	237	251	
(WY)	1985	1985	1983	1983	1983	1985	1982	1986	1983	1983	1983	1983	

SUMMARY STATISTICS

FOR 1996 CALENDAR YEAR

FOR 1997 WATER YEAR

WATER YEARS 1981 - 1997

ANNUAL TOTAL	245436	249898	
ANNUAL MEAN	671	685	447
HIGHEST ANNUAL MEAN			685
LOWEST ANNUAL MEAN			259
HIGHEST DAILY MEAN	859	Jul 9	859
LOWEST DAILY MEAN	480	May 6	52
ANNUAL SEVEN-DAY MINIMUM	559	Jan 11	167
INSTANTANEOUS PEAK FLOW			918
INSTANTANEOUS PEAK STAGE			2.69
ANNUAL RUNOFF (AC-FT)	486800	495700	323800
10 PERCENT EXCEEDS	761	787	681
50 PERCENT EXCEEDS	655	676	404
90 PERCENT EXCEEDS	593	607	246

TRINITY RIVER BASIN

08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX

LOCATION.--Lat 29°52'02", long 94°42'53", Chambers County, Hydrologic Unit 12030203, on east side of Lake Charlotte, which is connected to the Trinity River by a small channel, 1.0 mi west of State Highway 563, 1.9 mi north of Interstate Highway 10, and 2.7 mi northeast of Wallisville.

DRAINAGE AREA.--55 mi².

WATER-STAGE RECORDS

PERIOD OF RECORD.--December 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5.81 ft below sea level.

REMARKS.--Records fair. Lake Charlotte is a shallow natural lake within the Trinity River delta. December 1991 to Nov. 9, 1992, the lowest stilling well intake was at gage height of 7.3 ft. Thereafter it was at gage height of 6.7 ft. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 15.9 ft Oct. 22, 1994 at 1345 hours.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 12.6 ft March 13 at 1645 hours and March 18 at 1645 hours.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	7.1	7.8	7.1	8.0	12.4	12.2	12.2	11.6	10.7	<6.7	<6.7
2	8.9	<6.7	8.3	7.1	7.7	12.4	12.1	12.1	11.6	10.1	<6.7	<6.7
3	8.4	<6.7	8.8	7.1	7.5	12.4	12.1	12.1	11.6	9.5	<6.7	<6.7
4	8.1	6.9	9.4	7.2	7.1	12.4	12.1	12.1	11.6	8.9	<6.7	<6.7
5	8.1	6.9	10.0	6.9	6.7	12.4	12.1	12.1	11.6	8.3	<6.7	<6.7
6	8.4	7.1	10.4	<6.7	6.7	12.4	12.1	12.1	11.5	7.9	<6.7	<6.7
7	8.5	7.1	10.6	<6.7	7.1	12.4	12.1	12.1	11.6	7.6	<6.7	6.9
8	8.5	<6.7	10.9	6.8	<6.7	12.4	12.1	12.1	11.6	7.3	<6.7	7.0
9	8.1	<6.7	10.9	6.7	<6.7	12.4	12.1	12.2	11.6	7.1	6.8	7.2
10	7.6	<6.7	10.9	<6.7	<6.7	12.5	12.1	12.1	11.6	6.9	6.8	6.9
11	7.3	<6.7	10.8	<6.7	<6.7	12.5	12.1	12.1	11.4	6.9	6.7	6.9
12	7.3	<6.7	10.6	<6.7	7.2	12.6	12.1	12.2	11.3	6.7	<6.7	7.1
13	7.2	6.8	10.3	7.1	7.9	12.6	12.1	12.2	11.2	<6.7	<6.7	7.1
14	7.4	6.9	10.0	7.5	9.6	12.6	12.1	12.2	11.1	<6.7	6.8	7.1
15	7.4	7.2	9.9	7.8	11.4	12.5	12.1	12.1	10.9	<6.7	7.2	6.9
16	7.5	7.7	9.6	7.7	11.9	12.5	12.1	12.0	10.9	6.8	7.4	6.9
17	7.5	8.0	9.5	7.4	12.1	12.5	12.1	12.0	10.8	6.9	7.3	6.9
18	7.1	7.7	9.5	7.3	12.1	12.6	12.1	11.9	10.7	6.9	7.1	6.9
19	7.2	7.6	9.6	7.0	12.1	12.6	12.1	11.8	10.8	6.8	7.0	6.9
20	7.5	7.6	9.6	<6.7	12.3	12.5	12.1	11.6	10.9	6.8	6.8	7.2
21	7.6	7.5	9.6	6.7	12.2	12.5	12.2	11.5	11.2	<6.7	<6.7	7.3
22	7.3	7.2	9.7	6.9	12.2	12.4	12.2	11.4	11.3	<6.7	<6.7	7.6
23	6.9	7.5	9.6	7.0	12.2	12.4	12.2	11.4	11.4	<6.7	<6.7	8.0
24	7.1	7.8	9.4	7.6	12.2	12.4	12.2	11.5	11.4	<6.7	<6.7	7.6
25	7.6	7.3	8.9	7.8	12.2	12.4	12.4	11.6	11.5	<6.7	<6.7	7.1
26	7.7	<6.7	8.8	8.1	12.3	12.4	12.4	11.5	11.5	<6.7	<6.7	6.7
27	7.6	<6.7	8.5	8.4	12.3	12.3	12.3	11.5	11.5	<6.7	6.8	<6.7
28	7.6	6.8	8.0	8.3	12.3	12.3	12.2	11.5	11.5	<6.7	6.8	<6.7
29	7.5	7.3	7.7	8.3	---	12.2	12.2	11.6	11.3	<6.7	6.7	<6.7
30	7.3	7.6	7.4	8.3	---	12.2	12.2	11.6	11.1	<6.7	<6.7	<6.7
31	7.1	---	7.2	8.3	---	12.2	---	11.7	---	<6.7	<6.7	---
MAX	9.5	8.0	10.9	8.4	12.3	12.6	12.4	12.2	11.6	10.7	7.4	8.0

< Actual value is known to be less than the value shown

TRINITY RIVER BASIN

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08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 1991 to current year.

SPECIFIC CONDUCTANCE: October 1994 to current year.

INSTRUMENTATION.-- Since June 1995, a water-quality monitoring system continuously records water temperature and specific conductance at this station.

REMARKS.-- Interruption in the record was due to malfunctions of the instrumentation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum recorded, 36.5°C July 31, Aug. 1, 1992, July 12, 1997; minimum recorded, 5.0°C Nov. 28, 1992.

SPECIFIC CONDUCTANCE: Maximum recorded, 4,560 microsiemens Nov. 17, 1997; minimum recorded, 46 microsiemens Oct. 20, 1994.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 36.5°C July 12; minimum recorded, 6.0°C on several days in Jan.

SPECIFIC CONDUCTANCE: Maximum recorded, 4,560 microsiemens Nov. 17; minimum recorded, 279 microsiemens Mar. 20.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	373	337	355	475	460	467	2850	2010	2490	667	618	643
2	382	310	352	501	469	485	2490	2270	2410	656	614	641
3	401	346	378	506	487	497	2270	1340	1940	614	548	589
4	375	334	352	504	491	498	1340	861	1010	569	552	560
5	342	291	308	517	493	500	1360	1010	1160	567	527	555
6	317	293	303	517	490	499	1010	904	934	572	531	552
7	375	302	330	515	494	500	934	771	863	631	572	591
8	353	280	307	883	512	658	771	645	680	610	578	594
9	343	292	317	790	638	725	731	674	712	612	590	604
10	386	310	332	957	723	797	741	571	653	624	561	584
11	398	345	378	813	606	725	622	561	593	643	580	610
12	417	357	385	782	572	635	605	576	587	611	587	597
13	408	364	383	765	627	698	587	573	579	596	576	586
14	395	332	360	756	647	711	592	570	581	604	573	596
15	374	340	355	1090	695	912	585	562	575	573	537	548
16	365	351	357	1450	901	1130	572	558	564	552	534	542
17	375	351	360	4560	1210	3020	572	561	567	555	541	547
18	381	359	369	3790	3380	3580	576	561	566	626	534	553
19	441	381	414	3800	3060	3530	585	545	565	635	582	609
20	432	380	402	3660	3100	3500	553	545	549	658	610	629
21	417	380	395	3980	3660	3840	556	536	547	679	586	627
22	442	396	424	3710	2930	3270	545	533	542	616	558	586
23	440	426	432	3450	3130	3340	536	513	523	603	539	582
24	460	427	440	3640	2670	3500	523	509	515	576	528	547
25	444	420	431	3350	2790	3210	567	522	548	542	515	531
26	450	416	429	3120	2850	3030	576	546	559	534	508	523
27	463	417	443	3170	2780	2990	576	548	561	524	491	513
28	495	448	466	3140	2880	3020	574	539	556	528	483	505
29	468	439	450	2880	2720	2810	610	538	564	535	497	514
30	456	445	449	2910	2800	2850	643	610	628	529	509	519
31	501	453	475	---	---	---	678	640	660	523	504	514
MONTH	501	280	385	4560	460	1860	2850	509	799	679	483	571

08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	521	479	498	380	376	378	322	316	318	337	324	331
2	514	488	500	386	380	382	321	317	319	328	317	318
3	559	498	520	391	386	388	322	319	320	331	318	321
4	531	490	506	393	387	390	320	315	318	324	318	321
5	578	504	537	393	389	391	317	314	315	326	320	324
6	598	519	538	393	390	391	320	315	318	331	326	327
7	598	417	471	394	391	392	319	310	313	340	327	333
8	434	382	418	393	386	390	315	299	307	334	329	331
9	446	404	423	389	378	382	314	305	309	340	329	335
10	465	393	421	383	370	378	314	306	309	336	328	330
11	533	417	452	382	365	377	307	292	298	339	328	332
12	540	374	444	370	342	356	304	295	298	344	329	333
13	459	388	418	345	331	338	309	301	305	341	329	335
14	450	377	417	335	299	317	310	302	306	345	330	337
15	395	348	368	318	306	313	320	303	312	341	336	339
16	386	363	373	321	311	316	328	320	324	342	337	339
17	402	361	383	315	297	305	338	324	332	344	340	342
18	405	382	396	306	285	295	347	337	341	343	334	339
19	408	362	387	296	284	289	352	343	348	341	330	336
20	406	348	372	293	279	285	350	343	346	339	330	335
21	372	354	367	294	281	286	357	345	352	336	329	333
22	404	368	396	295	290	293	365	351	358	335	329	333
23	396	388	393	299	294	297	360	345	352	340	330	335
24	399	389	396	303	296	299	359	348	351	341	326	333
25	404	389	396	305	297	300	353	337	348	330	318	327
26	399	380	387	309	298	303	339	332	336	326	317	321
27	396	386	389	312	308	310	346	324	335	323	314	318
28	395	376	387	318	308	311	340	320	327	330	321	325
29	---	---	---	318	309	312	340	320	330	336	321	327
30	---	---	---	323	311	315	335	316	323	338	330	334
31	---	---	---	321	315	316	---	---	---	336	317	325
MONTH	598	348	427	394	279	335	365	292	326	345	314	331

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	337	332	334	477	469	474	---	---	---	385	370	374
2	339	329	335	473	446	457	---	---	---	395	385	392
3	344	332	337	456	436	443	---	---	---	---	---	---
4	357	343	352	442	430	436	---	---	---	---	---	---
5	355	350	353	438	421	431	---	---	---	---	---	---
6	355	347	350	434	420	426	---	---	---	---	---	---
7	355	345	350	429	410	420	---	---	---	411	405	408
8	351	345	348	434	429	432	420	393	402	415	396	406
9	354	348	351	447	423	432	447	382	425	419	392	403
10	358	352	355	459	438	448	476	382	431	408	397	404
11	356	343	349	452	438	446	415	376	402	420	390	407
12	356	332	344	470	451	461	---	---	---	417	391	403
13	340	333	337	467	458	463	---	---	---	413	389	403
14	352	340	348	466	456	459	433	401	411	412	381	399
15	351	342	347	---	---	---	417	377	396	407	371	392
16	359	346	351	457	436	450	421	359	386	396	364	382
17	367	344	360	440	427	434	410	352	374	389	368	378
18	378	364	369	443	388	426	414	372	383	386	369	379
19	393	371	382	388	354	363	401	358	379	391	381	385
20	381	370	375	364	333	355	410	376	395	392	378	383
21	382	363	372	339	328	336	394	380	390	449	376	389
22	390	368	376	---	---	---	---	---	---	513	379	422
23	393	380	385	---	---	---	---	---	---	381	341	353
24	403	393	397	---	---	---	---	---	---	---	---	---
25	415	403	408	---	---	---	---	---	---	472	352	378
26	418	402	406	---	---	---	---	---	---	741	405	536
27	426	415	419	---	---	---	379	373	375	761	557	672
28	493	426	455	---	---	---	389	376	381	993	692	840
29	515	481	494	---	---	---	399	387	392	993	915	957
30	490	443	457	---	---	---	396	391	395	957	894	927
31	---	---	---	---	---	---	379	367	378	---	---	---
MONTH	515	329	373	477	328	430	476	352	394	993	341	471
YEAR	4560	279	570									

TRINITY RIVER BASIN

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08067118 LAKE CHARLOTTE NEAR ANAHUAC, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	22.0	21.0	21.5	27.5	21.5	25.0	16.0	11.5	14.0	18.0	17.5	18.0
2	23.5	21.0	22.0	21.5	17.0	19.0	15.0	12.0	13.5	20.5	18.0	19.0
3	25.0	23.0	24.0	19.5	14.0	17.0	16.0	13.5	14.5	23.0	19.5	21.0
4	24.5	23.5	24.0	18.5	15.0	17.0	15.0	14.5	14.5	22.0	20.0	21.0
5	23.5	21.5	22.5	21.0	18.0	19.5	16.0	14.5	15.0	21.0	17.5	19.5
6	23.5	20.5	22.0	24.0	19.5	22.0	17.0	15.5	16.0	17.5	10.5	13.5
7	24.0	21.0	22.5	23.0	18.5	21.5	17.5	16.5	17.0	10.5	7.0	8.5
8	25.5	22.0	23.5	18.5	13.5	16.5	16.5	15.5	15.5	7.5	6.0	6.5
9	25.0	21.0	23.5	19.5	10.5	15.0	16.5	15.5	16.0	8.5	6.5	7.0
10	25.5	22.5	23.5	20.0	13.0	16.5	17.0	16.0	16.5	11.5	6.0	8.5
11	23.5	20.0	21.5	22.5	15.0	18.5	18.5	17.0	17.5	10.0	6.5	8.0
12	22.5	20.0	21.0	24.5	17.0	20.5	19.5	18.5	18.5	---	---	---
13	23.5	19.5	21.5	23.0	18.0	20.5	19.0	19.0	19.0	---	---	---
14	23.5	21.5	22.5	21.5	18.0	20.0	20.0	19.0	19.0	---	---	---
15	24.5	22.0	23.0	22.0	18.5	20.0	19.5	16.5	18.5	6.5	6.0	6.0
16	24.5	23.0	23.5	21.5	20.0	21.0	16.5	13.0	14.5	8.0	6.0	7.0
17	27.5	23.5	25.0	25.0	21.0	22.5	13.0	11.5	12.0	7.5	6.0	6.5
18	26.0	19.5	22.5	22.5	20.5	21.0	11.5	8.0	9.5	8.0	6.5	7.0
19	21.5	17.5	19.0	23.5	20.5	22.0	8.5	7.0	8.0	8.5	6.0	7.5
20	22.5	19.0	20.5	24.5	21.5	22.5	8.0	6.5	7.0	12.0	8.0	10.0
21	24.5	21.5	23.0	24.0	22.5	23.0	9.5	6.5	7.5	16.0	11.5	14.0
22	23.5	18.0	20.5	23.0	20.0	21.0	12.5	9.5	10.5	19.0	15.5	17.0
23	21.0	15.5	18.0	22.5	19.5	21.0	15.0	12.5	14.0	19.0	17.5	18.0
24	19.0	16.5	17.5	21.5	15.5	20.0	15.0	12.5	14.0	20.5	17.5	19.0
25	18.5	16.5	17.5	15.5	9.5	11.5	12.5	10.5	11.0	18.5	16.0	17.0
26	23.0	18.5	20.0	12.0	8.5	10.0	13.0	11.0	11.5	16.5	14.0	15.5
27	25.5	21.0	23.0	11.5	8.5	10.0	13.0	13.0	13.0	18.5	15.5	17.5
28	26.5	24.0	25.0	12.5	9.0	10.5	17.5	13.0	15.0	17.0	10.0	12.0
29	26.5	24.0	25.0	15.0	11.5	13.0	17.5	17.0	17.5	11.0	9.0	10.0
30	26.0	24.5	25.0	17.5	14.5	16.0	19.5	17.5	18.0	12.5	9.0	10.5
31	27.0	24.0	25.5	---	---	---	18.5	17.5	18.0	14.0	11.5	12.5
MONTH	27.5	15.5	22.5	27.5	8.5	18.5	20.0	6.5	14.5	23.0	6.0	13.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	16.0	12.5	14.0	16.0	15.0	15.5	20.0	19.5	19.5	21.0	20.0	20.5
2	19.0	15.5	17.0	16.5	15.5	16.5	19.5	19.0	19.0	22.5	20.0	21.5
3	20.5	18.5	19.0	16.5	15.0	15.5	19.5	19.0	19.0	23.0	21.5	22.5
4	21.0	18.0	19.5	16.5	15.0	15.5	20.0	19.0	19.5	22.5	21.0	21.5
5	18.0	14.5	16.0	17.5	16.0	16.5	20.5	19.0	20.0	22.5	21.0	22.0
6	14.5	12.0	13.0	16.5	15.5	16.0	21.5	19.5	20.5	23.0	21.0	22.0
7	12.0	10.0	11.5	16.0	15.0	15.5	21.0	19.0	19.5	23.0	21.5	22.5
8	10.5	8.5	9.5	15.5	15.0	15.0	19.5	19.0	19.5	23.5	21.5	22.5
9	12.5	8.0	10.0	17.0	15.0	16.0	19.0	18.5	19.0	23.5	21.5	22.5
10	14.0	9.5	11.5	18.5	16.0	16.5	19.0	18.5	19.0	21.5	21.0	21.5
11	17.0	9.5	13.0	18.0	16.5	17.0	19.5	19.0	19.0	21.5	20.5	21.0
12	13.0	10.0	11.0	18.0	17.0	17.5	19.5	18.0	18.5	21.5	20.5	21.0
13	10.5	9.5	10.0	18.5	17.5	18.0	18.5	16.5	17.0	22.0	21.5	21.5
14	10.0	9.0	9.5	18.5	17.0	17.5	17.0	16.5	16.5	24.5	21.5	23.0
15	10.5	9.5	10.0	17.0	16.5	16.5	16.5	16.0	16.5	25.5	22.5	23.5
16	11.0	10.0	10.5	16.5	15.0	16.0	17.5	16.5	16.5	24.0	23.0	23.5
17	12.0	10.5	11.0	16.0	15.0	15.5	18.5	17.0	17.5	23.0	22.5	23.0
18	13.0	11.0	11.5	17.5	15.5	17.0	18.0	17.5	18.0	25.5	23.0	24.0
19	13.0	11.5	12.5	17.5	16.5	17.0	18.0	17.5	18.0	26.5	24.5	25.0
20	15.5	12.5	14.0	17.5	16.0	16.5	19.5	17.5	18.0	26.0	25.0	25.5
21	17.0	15.0	16.0	18.5	16.5	17.5	21.5	19.5	20.5	25.5	25.0	25.0
22	15.5	14.0	14.5	19.5	17.5	18.5	22.0	20.5	21.0	25.5	24.5	24.5
23	15.0	14.0	14.5	19.0	18.0	18.5	21.5	20.0	21.0	24.5	24.0	24.0
24	14.0	13.0	13.5	20.5	18.0	19.5	21.5	20.0	20.5	25.0	24.0	24.0
25	13.0	12.5	12.5	20.5	19.5	20.0	21.0	19.0	20.0	26.0	24.0	25.0
26	14.0	12.5	13.5	20.5	19.0	19.5	19.0	18.0	18.5	27.0	25.0	26.0
27	14.0	13.0	13.5	19.5	18.5	19.0	19.0	18.0	18.5	28.5	25.5	27.0
28	15.0	13.0	13.5	21.0	19.5	20.0	19.0	17.5	18.0	28.0	26.0	26.5
29	---	---	---	22.0	20.0	21.0	20.5	18.5	19.0	26.0	24.5	25.0
30	---	---	---	21.5	20.0	21.0	21.5	19.5	20.0	26.5	24.5	25.0
31	---	---	---	20.0	19.5	19.5	---	---	---	26.5	25.5	26.0
MONTH	21.0	8.0	13.0	22.0	15.0	17.5	22.0	16.0	19.0	28.5	20.0	23.5

TRINITY RIVER BASIN

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08067252 TRINITY RIVER AT WALLISVILLE, TX

LOCATION.--Lat 29°50'10", long 94°44'57", Chambers County, Hydrologic Unit 12030203, on the left bank at the Corps of Engineers boat ramp which is located 3.2 miles west along Interstate 10 highway from the the Interstate overpass over Farm Road 563 and .25 miles south of the Corp of Engineers office and .50 miles west of Wallisville, TX.

DRAINAGE AREA.--17,796 mi².

WATER-STAGE RECORDS

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Records fair. Mostly tidal. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 7.7 ft Oct. 22, 1994 at 0300 hours; minimum, less than -.1 ft at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.6 ft March 17 at 0545 hours; minimum, less than -.1 ft at times during the year.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	3.8	2.9	1.8	.2	2.4	2.1	1.4	.9	1.9	1.4	5.5	5.4
2	3.0	2.0	.2	<-.1	3.3	2.3	1.4	.9	1.8	.9	5.5	5.4
3	2.3	1.6	.9	.1	3.5	3.3	1.6	.9	1.5	.7	5.4	5.4
4	2.1	1.7	1.5	.7	4.2	3.4	1.6	.9	1.4	.4	5.4	5.4
5	2.9	1.8	1.5	.6	4.5	4.2	1.4	.3	.9	<-.1	5.4	5.4
6	3.0	2.2	1.6	.6	4.8	4.5	.7	<-.1	1.4	.3	5.4	5.3
7	3.1	2.5	2.2	.1	5.2	4.6	1.2	<-.1	1.9	.2	5.5	5.4
8	3.1	2.0	.1	<-.1	5.3	4.8	1.6	.6	.2	<-.1	5.5	5.4
9	2.0	1.4	1.1	<-.1	4.9	4.8	1.4	<-.1	.7	-.1	5.5	5.4
10	1.6	.7	1.2	.0	5.0	4.8	.3	<-.1	.7	.1	5.5	5.4
11	1.7	.6	.9	-.1	4.9	4.6	.5	<-.1	1.0	.1	5.5	5.4
12	1.7	1.0	1.1	.1	4.7	4.3	.7	.4	1.8	.6	5.6	5.4
13	1.8	.9	1.8	.6	4.4	4.0	1.3	.7	3.2	1.5	5.6	5.5
14	2.1	1.2	1.6	.4	4.1	3.7	1.9	1.3	4.3	3.2	5.6	5.5
15	2.2	1.1	2.0	1.2	3.9	3.5	2.1	1.7	5.0	4.3	5.5	5.4
16	2.2	1.0	3.0	1.8	3.5	3.2	1.7	.8	5.2	4.9	5.6	5.5
17	2.1	1.2	3.3	1.3	3.3	3.2	1.3	.5	5.3	5.2	5.6	5.5
18	1.8	<-.1	1.9	1.1	3.2	3.2	1.3	.7	5.3	5.3	5.6	5.5
19	1.6	.2	2.0	1.3	3.2	3.2	1.1	.3	5.4	5.3	5.6	5.5
20	2.2	1.4	2.0	1.3	3.4	3.1	.8	.0	5.5	5.3	5.5	5.4
21	2.3	1.5	1.9	1.1	3.6	3.3	1.3	.4	5.5	5.3	5.5	5.4
22	1.9	<-.1	1.7	.3	3.6	3.3	1.4	.5	5.3	5.2	5.4	5.4
23	1.3	<-.1	2.4	1.3	3.6	3.2	1.7	.6	5.3	5.2	5.4	5.3
24	1.9	.8	2.6	1.4	3.4	2.7	1.9	1.6	5.4	5.3	5.4	5.3
25	2.5	1.6	1.4	<-.1	2.7	2.3	2.0	1.5	5.4	5.3	5.4	5.3
26	2.4	1.4	.2	<-.1	2.9	2.5	2.3	1.9	5.4	5.3	5.4	5.3
27	2.2	1.1	1.1	.2	2.7	1.7	2.5	1.9	5.4	5.3	5.3	5.3
28	2.0	.8	1.4	.6	2.0	1.2	2.2	1.6	5.4	5.4	5.4	5.3
29	2.0	1.0	2.3	1.3	1.8	1.0	2.0	1.7	---	---	5.3	5.3
30	1.9	.4	2.5	1.8	1.6	.8	2.1	1.8	---	---	5.3	5.2
31	1.5	.7	---	---	1.4	1.0	2.1	1.7	---	---	5.3	5.2
MONTH	3.8	-.1	3.3	-.1	5.3	.8	2.5	-.1	5.5	-.1	5.6	5.2

< Actual value is known to be less than the value shown

TRINITY RIVER BASIN

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	5.3	5.2	5.3	5.2	4.8	4.7	4.1	3.6	.6	<-.1	1.5	.2
2	5.3	5.2	5.3	5.2	4.8	4.7	3.6	2.9	1.3	<-.1	.8	.1
3	5.3	5.2	5.2	5.1	4.7	4.7	2.9	2.2	1.2	.2	.9	.1
4	5.5	5.3	5.2	5.1	4.7	4.6	2.2	1.5	.9	.0	.9	.2
5	5.4	5.3	5.2	5.1	4.7	4.6	1.5	.9	.6	.0	1.0	.3
6	5.3	5.2	5.2	5.1	4.7	4.6	1.7	.6	.6	-.1	1.1	.6
7	5.3	5.2	5.2	5.1	4.8	4.6	1.6	.7	.9	.2	1.4	.9
8	5.3	5.2	5.2	5.1	4.7	4.6	1.4	.7	.9	.2	1.7	.9
9	5.3	5.2	5.3	5.1	4.8	4.7	1.2	.6	1.6	.5	1.9	.8
10	5.3	5.2	5.3	5.2	4.8	4.6	1.2	.6	1.2	.3	1.5	.1
11	5.4	5.3	5.3	5.2	4.7	4.5	1.1	.6	.9	.1	1.5	.1
12	5.3	5.2	5.3	5.2	4.5	4.4	.9	.4	.9	.0	1.6	.5
13	5.2	5.1	5.3	5.2	4.5	4.3	.9	.4	.9	.0	1.1	.2
14	5.2	5.1	5.3	5.2	4.3	4.1	.9	.2	1.3	.2	.9	.0
15	5.2	5.1	5.2	5.1	4.1	4.0	.9	.1	1.7	.7	1.0	-.1
16	5.2	5.1	5.2	5.1	4.1	4.0	1.2	.3	1.9	1.0	1.1	.1
17	5.2	5.1	5.1	5.0	4.0	3.8	1.3	.2	1.6	1.0	1.1	.4
18	5.2	5.1	5.1	5.0	3.8	3.7	1.2	.2	1.3	.7	1.0	.3
19	5.3	5.2	5.0	4.9	4.0	3.7	1.2	.1	1.5	.5	1.1	.4
20	5.3	5.2	4.9	4.7	4.2	3.8	1.2	.1	1.3	.6	1.3	.6
21	5.3	5.2	4.8	4.5	4.4	4.0	1.0	.0	1.1	.2	1.5	.7
22	5.3	5.2	4.5	4.4	4.7	4.3	.8	.0	.7	.1	2.2	1.0
23	5.3	5.2	4.6	4.4	4.6	4.5	.7	.0	1.0	<-.1	2.6	1.0
24	5.3	5.2	4.8	4.4	4.6	4.5	.7	.1	1.0	.2	1.2	<-.1
25	5.6	5.3	4.9	4.7	4.6	4.4	.8	.2	1.2	.0	<-.1	<-.1
26	5.5	5.4	4.8	4.7	4.6	4.5	.9	.2	1.0	.0	.3	<-.1
27	5.4	5.3	4.8	4.6	4.7	4.5	.9	<-.1	1.3	.1	.6	<-.1
28	5.3	5.2	4.7	4.6	4.6	4.4	.6	<-.1	1.3	.3	.6	.0
29	5.3	5.2	4.9	4.6	4.5	4.3	.7	<-.1	1.1	.2	.5	<-.1
30	5.3	5.2	4.9	4.8	4.4	4.1	1.1	<-.1	1.0	.1	.4	.0
31	---	---	4.9	4.8	---	---	.7	<-.1	.9	.2	---	---
MONTH	5.6	5.1	5.3	4.4	4.8	3.7	4.1	<-.1	1.9	<-.1	2.6	<-.1
YEAR	5.6	<-.1										

< Actual value is known to be less than the value shown

TRINITY RIVER BASIN

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08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1995 to current year.

SPECIFIC CONDUCTANCE: October 1995 to current year.

INSTRUMENTATION.-- Since July 1995, a Hydrolab Recorder water-quality monitoring system continuously records water temperature and specific conductance at this station.

REMARKS.-- Interruption in the record was due to malfunctions of the instrumentation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 34.0°C July 28, 1997; minimum, 7.0°C Feb. 4-7, 1996, Jan. 15, 1997.

SPECIFIC CONDUCTANCE: Maximum, 15,900 microsiemens Nov. 17, 1996; minimum, 285 microsiemens Oct. 11, 1995.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 34.0°C July 28; minimum, 7.0°C Jan. 15.

SPECIFIC CONDUCTANCE: Maximum, 15,900 microsiemens Nov. 17; minimum, 309 microsiemens May 19, 21, and 25.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	787	467	603	479	454	465	479	468	476
2	---	---	---	477	466	472	492	478	489	472	464	468
3	---	---	---	490	476	483	491	485	488	469	437	448
4	---	---	---	3530	484	1360	491	488	489	464	440	452
5	---	---	---	6230	799	2870	518	490	496	482	461	471
6	---	---	---	5930	818	4010	579	518	553	500	482	492
7	---	---	---	6540	1610	4750	590	572	582	504	498	502
8	---	---	---	1610	601	885	600	548	574	505	496	500
9	---	---	---	1230	567	702	598	542	578	510	495	500
10	---	---	---	2950	1150	1970	548	527	538	514	508	510
11	---	---	---	2260	802	1500	536	520	529	513	508	510
12	---	---	---	3870	1380	2340	529	520	524	509	496	503
13	---	---	---	5250	1980	3550	527	511	519	504	493	497
14	---	---	---	5730	1500	3580	514	509	512	509	504	506
15	---	---	---	6810	2650	5120	530	508	514	507	504	505
16	---	---	---	13200	4630	9640	533	507	515	522	507	515
17	---	---	---	15900	5420	13000	512	478	491	531	522	527
18	---	---	---	10400	4310	7480	478	425	455	533	529	531
19	400	390	393	8650	4310	6950	446	420	428	533	531	532
20	518	393	441	7680	5050	6160	468	446	458	536	529	532
21	3030	399	1130	7300	3090	4890	473	468	470	536	529	532
22	678	426	519	3320	2010	2620	484	471	477	531	524	527
23	435	426	430	4180	2900	3440	486	479	482	529	526	527
24	462	431	434	4600	734	3050	496	481	489	528	513	524
25	5390	462	2150	1030	641	896	499	494	497	513	483	493
26	5850	1480	4230	1050	934	1010	497	492	494	513	498	506
27	3470	844	1700	935	601	758	505	494	500	517	513	515
28	1790	773	1130	621	492	562	505	501	502	520	498	510
29	2130	775	1370	575	483	533	502	495	497	498	467	479
30	1580	466	984	483	449	458	495	477	490	485	468	479
31	834	468	608	---	---	---	479	466	472	483	449	457
MONTH	5850	390	1190	15900	449	3190	600	420	502	536	437	501

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	474	450	464	405	393	398	397	394	395	390	388	389
2	484	474	480	421	405	413	394	394	394	390	389	389
3	486	481	484	426	420	424	394	392	393	390	388	390
4	490	480	485	428	425	426	393	392	392	390	388	389
5	500	489	495	453	428	442	392	388	389	391	388	390
6	493	483	488	459	453	457	388	379	385	393	390	391
7	497	490	493	459	456	457	379	374	376	394	391	393
8	519	497	502	457	454	456	375	372	374	396	394	395
9	519	502	511	454	448	451	376	373	374	397	395	396
10	525	511	520	448	443	446	380	376	378	399	395	397
11	530	508	520	443	437	441	383	380	381	398	383	391
12	521	477	500	437	428	433	383	383	383	390	381	384
13	477	402	446	428	421	424	385	383	384	385	380	382
14	469	409	444	421	412	417	388	384	385	383	379	381
15	499	385	464	412	402	407	392	387	390	384	368	379
16	398	389	395	403	396	399	396	392	393	369	363	367
17	406	396	400	396	391	393	400	396	398	363	357	361
18	411	405	408	393	385	389	402	400	401	357	310	328
19	415	410	413	385	380	382	403	400	402	329	309	315
20	414	409	412	380	378	379	400	399	399	325	311	316
21	415	409	412	379	376	378	401	399	400	340	309	332
22	410	378	400	383	377	380	401	399	400	342	337	339
23	408	380	394	388	382	385	403	400	401	346	333	338
24	415	407	412	408	388	395	404	402	403	344	326	334
25	407	399	403	441	408	424	403	400	402	339	309	322
26	400	395	398	479	441	461	400	398	399	321	310	313
27	396	391	394	501	479	491	399	394	397	326	312	318
28	399	395	397	509	423	472	395	392	393	329	315	323
29	---	---	---	423	416	418	393	389	391	338	324	328
30	---	---	---	418	402	413	390	389	389	338	326	331
31	---	---	---	402	397	399	---	---	---	337	324	329
MONTH	530	378	448	509	376	421	404	372	391	399	309	359

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	346	324	333	426	412	420	376	368	373	403	388	396
2	344	328	334	429	425	427	377	367	374	407	388	393
3	342	327	332	425	419	423	382	375	379	405	389	396
4	348	331	339	424	419	422	396	382	391	403	394	399
5	349	336	343	424	421	422	407	393	403	408	398	402
6	358	335	343	437	420	430	419	406	414	408	387	398
7	348	337	341	436	390	431	420	406	414	403	387	397
8	359	338	342	395	349	361	416	405	411	405	396	399
9	346	332	340	355	338	343	416	397	409	605	396	486
10	334	321	328	368	340	348	414	397	407	408	397	403
11	336	331	333	368	344	352	426	410	417	406	399	403
12	344	336	340	379	346	357	431	409	423	403	396	400
13	343	335	338	382	353	363	439	418	427	404	397	401
14	351	337	341	380	355	360	452	432	445	398	392	395
15	346	334	340	385	358	369	454	432	448	396	390	393
16	356	336	345	387	359	368	448	429	442	396	391	394
17	367	343	360	386	358	368	455	436	447	400	394	398
18	350	341	344	383	357	364	449	437	444	424	393	398
19	365	346	353	385	356	365	439	417	427	580	408	456
20	348	336	342	381	357	365	418	404	409	1490	499	964
21	354	340	345	367	358	361	412	405	409	2320	1150	1620
22	351	339	344	360	351	356	411	402	406	3720	1480	2930
23	354	343	346	355	350	353	403	391	398	4470	1400	3450
24	361	338	347	357	351	354	395	385	390	1400	682	803
25	346	341	343	360	355	357	394	384	389	682	456	564
26	349	344	347	361	358	360	396	389	392	460	383	419
27	355	347	353	361	358	360	399	392	395	441	356	381
28	362	353	358	366	361	363	403	395	400	405	354	361
29	368	357	364	371	363	366	403	394	399	378	346	366
30	412	367	382	370	366	368	401	394	398	398	365	379
31	---	---	---	374	366	372	400	386	396	---	---	---
MONTH	412	321	345	437	338	375	455	367	409	4470	346	665
YEAR	15900	309	707									

TRINITY RIVER BASIN

523

08067252 TRINITY RIVER AT WALLISVILLE, TX--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

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

CEDAR BAYOU MAIN STEM

525

08067500 CEDAR BAYOU NEAR CROSBY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 29°58'21", long 94°59'08", Liberty County, Hydrologic Unit 12040203, on right bank at downstream side of bridge on U.S. Highway 90 and 6.6 mi northeast of Crosby.

DRAINAGE AREA.--64.9 mi².

PERIOD OF RECORD.--March to August 1946, March 1963 to February 1964, May to August 1971 (discharge measurements only). October 1971 to September 1991 (daily mean discharge). October 1991 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical, biochemical, and pesticide analyses: May 1971 to September 1979.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 31.31 ft above sea level.

REMARKS.--Records poor. Stage-discharge relationship is affected by seasonal vegetation during most years. No known regulation. Low flow is sustained by drainage from irrigated lands. There are diversions upstream from station for irrigation. Radio telemeter at station. Rain gage at station. Satellite telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1972-91), 78.7 ft³/s (57,020 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,800 ft³/s Oct. 18, 1994 (gage height, 28.33 ft); no flow occasionally during pumping season of some years.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 28	0500	2,200	20.49	Mar. 19	0100	1,600	18.44
Feb. 13	0400	2,520	21.36	Apr. 5	1000	2,430	21.11
Feb. 21	0600	1,440	17.77	Apr. 26	Unknown	Unknown	Unknown
Mar. 13	0600	1,840	19.29	May 24	Unknown	Unknown	Unknown

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

527

use the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, J.S. Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Year of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 1997

Station number	Station name	Location	Drainage area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
Neches River Basin						
08041550	Village Creek at State Hwy. 327 near Silsbee, Tex.	Lat 30°20'48", long 94°16'44", Hardin County, at bridge on State Highway 327, about 1.6 mi upstream from Mill Creek, and 2.7 mi west of Silsbee.	1,043	1979-97	07-22-97	152
08041720	Pine Island Bayou at State Highway 105 near Sour Lake, Tex.	Lat 30°08'08", long 94°16'44", Hardin-Jefferson County line, at bridge on State Highway 105, about 2.0 mi upstream from mouth of Little Pine Island Bayou, and 7.90 mi east of Sour Lake.	--	1979-97	--	--

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Crest-stage partial-record stations

The following table contains annual maximum stage and (or) discharge at partial-record stations operated primarily for the purpose of defining the flooding characteristics of the streams. At stations where discharge is given, or is footnoted "to be determined", a stage-discharge relation has been, or will be, defined by discharge measurements obtained by current meter or by indirect procedures. Water-stage recorders are located at these flood-hydrograph stations to facilitate complete hydrograph definition. At stations where only the maximum stage is given (discharge column is dashed), the data are generally collected for use in stage-frequency studies of flood profile definition. gages at these stations usually consist of a device that will register the peak stage occurring between inspection of the gage. The years used in the column "Period of record" identify the years in which the annual maximum has been determined.

Annual maximum stage and (or) discharge during water year 1997

Station name and number	Location	Period of record	Water Year 1997 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis-charge (ft ³ /s)	Date	Gage height (ft)	Dis-charge (ft ³ /s)
Sabine River Basin								
Long Branch at Greenville, Tex. 08017210	Lat 33°07'20", long 96°05'54", Hunt County, on left edge of low-water channel 80 ft upstream from culvert under Moulton St. (Business Rte. U.S.Highway 69), 0.5 mi upstream from IH-30, and 1.3 mi southeast of Hunt County Court- house in Greenville. Drainage area is 5.37 mi ² .	1986-97	06-14-97	8.39	--	03-31-95	12.40	
Trinity River Basin								
Big Fossil Creek Haltom City, Tex. 08048800	Lat 32°48'26", long 97°14'54", Tarrant County, at center of channel at downstream side of downstream bridge on State Highway 183, 2.0 mi upstream from Little Fossil Creek, 3.5 mi upstream from mouth, and 6.0 mi northeast of Tarrant County Courthouse in Fort Worth. Drainage area is 52.8 mi ² .	1960-73† 1974-84φ 1985-97	11-07-97	12.82	--	09-07-62	26.90	27.00
Cedar Bayou Basin								
Cedar Bayou near Baytown, Tex. 08067510	Lat 29°46'12", long 94°54'59", Chambers-Harris County Line, at bridge on State Highway 146, 0.2 mi downstream from Cary Bayou, 0.2 mi upstream from Saw Pit Gully, and 4.3 mi northeast of Baytown. Drainage area is 169 mi ² .	1984-97	04-25-97	*4.34	--	10-19-94	*10.87	

* Elevation, in feet.

† Operated as a continuous-record station.

φ Operated as an unpublished stage-only station.

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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