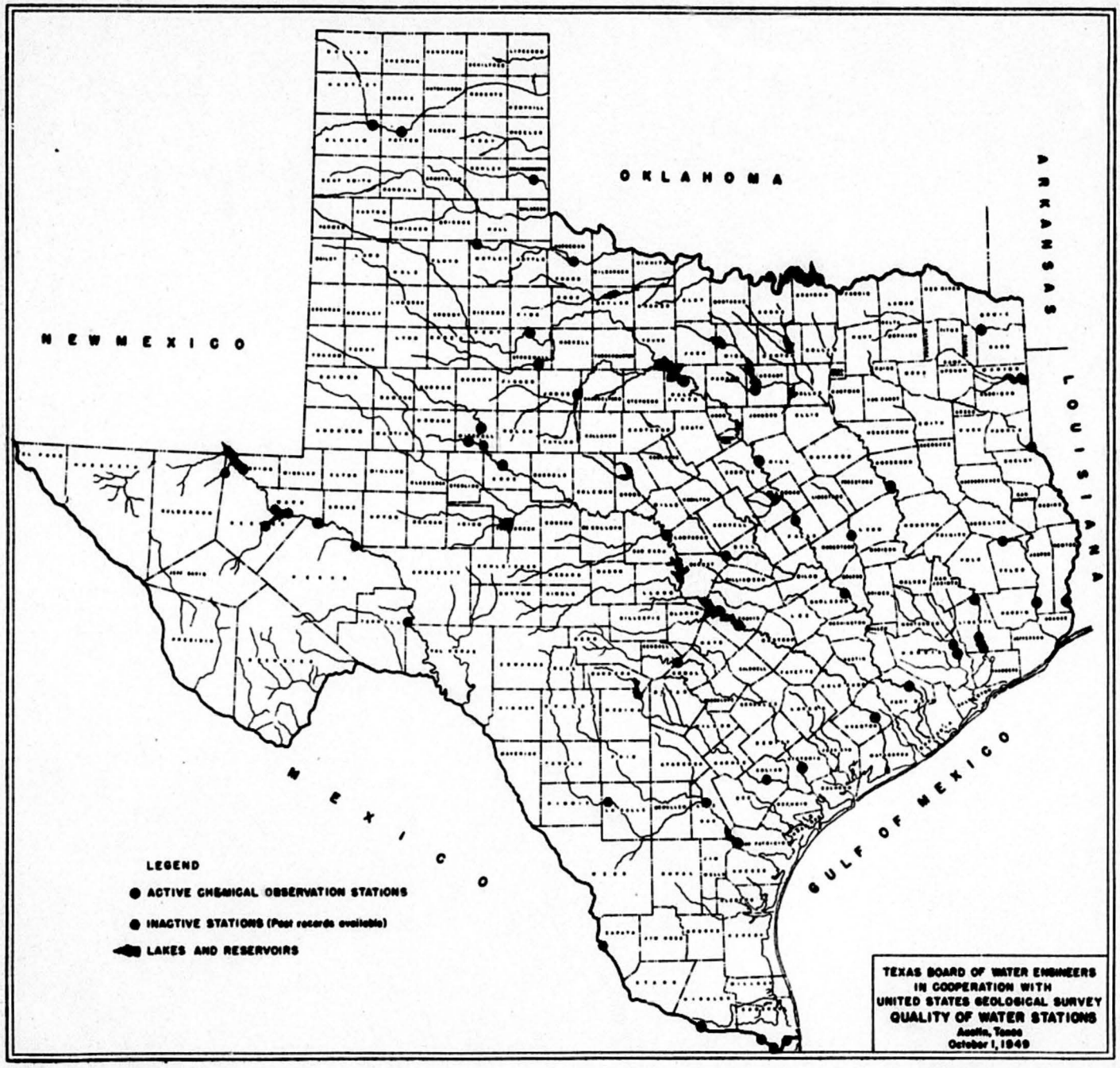
Texas State Board of Water Engineers
H. A. Beckwith, Chairman
A. P. Rollins, Member
James S. Guleke, Member

CHEMICAL COMPOSITION OF TEXAS SURFACE WATERS, 1949

Prepared in cooperation with the
United States Department of the Interior Geological Survey
and others under the direction of
Burdge Irelan, District Chemist

October 1950

50-78


OKLAHOMA
ARKANSAS
LOUISIANA
NEW MEXICO
MEXICO
GULF OF MEXICO
LEGEND
ACTIVE CHEMICAL OBSERVATION STATIONS
INACTIVE STATIONS (Past records available)
LAKES AND RESERVOIRS
TEXAS BOARD OF WATER ENGINEERS
IN COOPERATION WITH
UNITED STATES GEOLOGICAL SURVEY
QUALITY OF WATER STATIONS
Austin, Texas
October 1, 1949

CONTENTS

	Page
Introduction	I
Tables of chemical analyses	1
Arkansas River Basin	1
Canadian River at Tascosa, near Amarillo, Texas	1
Canadian River near Amarillo, Texas	3
Red River Basin	5
Red River at Denison Dam, near Denison, Texas	5
Sulphur River near Darden, Texas	6
Miscellaneous Analyses	9
Sabine River Basin	11
Sabine River near Ruliff, Texas	11
Neches River Basin	13
Neches River at Evadale, Texas	13
Miscellaneous Analyses	15
Trinity River Basin	16
Clear Fork Trinity River at Fort Worth, Texas	16
Trinity River near Oakwood, Texas	18
Trinity River at Romayor, Texas	20
Miscellaneous Analyses	22
San Jacinto River Basin	24
San Jacinto River near Huffman, Texas	24
Miscellaneous Analyses	26
Brazos River Basin	27
Brazos River at Possum Kingdom Dam, near Graford, Texas	27
Brazos River near Whitney, Texas	28
Brazos River at Richmond, Texas	30
Salt Fork Brazos River near Aspermont, Texas	32
Double Mountain Fork Brazos River near Aspermont, Texas	35
Clear Fork Brazos River at Nugent, Texas	37
Miscellaneous Analyses	40
San Bernard River Basin	42
Miscellaneous Analyses	42
Colorado River Basin	43
Colorado River at Colorado City, Texas	43
Colorado River at Robert Lee, Texas	46
Colorado River near San Saba, Texas	49
Colorado River at Austin, Texas	51
Colorado River at Wharton, Texas	52
Morgan Creek near Colorado City, Texas	53
Miscellaneous Analyses	55
Guadalupe River Basin	56
Guadalupe River at Victoria, Texas	56
Miscellaneous Analyses	58
Nueces River Basin	59
Nueces River near Mathis, Texas	59
Miscellaneous Analyses	60
Rio Grande River Basin	61
Rio Grande at Mission Pumping Plant, near Mission, Texas	61
Pecos River near Orla, Texas	63
Pecos River below Grandfalls, Texas	65
Miscellaneous Analyses	67

CHEMICAL COMPOSITION OF TEXAS SURFACE WATERS, 1949

This report is the fifth in a series of publications by the Texas Board of Water Engineers giving chemical analyses of the surface waters in the State of Texas. The samples for which data are given were collected between October 1, 1948 and September 30, 1949. During the water year 25 daily sampling stations were maintained by the Geological Survey. Samples were collected less frequently during the year at many other points. Quality of water records for previous years can be found in the following reports: "Chemical Composition of Texas Surface Waters, 1938-1945," by W. W. Hastings and J. H. Rowley; "Chemical Composition of Texas Surface Waters, 1946," by W. W. Hastings and B. Irelan; "Chemical Composition of Texas Surface Waters, 1947," by B. Irelan and J. R. Avrett; "Chemical Composition of Texas Surface Waters, 1948," by B. Irelan, D. E. Weaver, and J. R. Avrett. These reports may be obtained from the Texas Board of Water Engineers and Geological Survey at Austin, Texas.

Samples for chemical analysis were collected daily at or near points on streams where gaging stations are maintained for measurement of discharge. Most of the analyses were made of 10-day composites of daily samples collected for a year at each sampling point. Three composite samples were usually prepared each month by mixing together equal quantities of daily samples collected for the 1st to the 10th, from the 11th to the 20th, and during the remainder of the month. Monthly composites were made at a few stations where variation in daily conductance was small. For some streams that are subject to sudden large changes in chemical composition, composite samples were made for shorter periods on the basis of the concentration of dissolved solids as indicated by measurements of specific conductance of the daily samples.

The mean discharge for the composite period is reported in second-feet. Specific conductance values are expressed as "micromhos, K x 10^6 at 25° C." Silica, calcium, magnesium, sodium, potassium, bicarbonate, sulfate, chloride, and nitrate are reported in parts per million. The quantity of dissolved solids is given in tons per acre-foot, tons per day (if discharge records are available), and parts per million. The total and non-carbonate hardness are reported as parts per million calcium carbonate ($CaCO_3$).

For those analyses where sodium and potassium are reported separately, "percent sodium" will include the equivalent quantity of sodium only. In analyses where sodium and potassium were calculated and reported as a combined value, the "percent sodium" will include the equivalent quantity of sodium and potassium.

Weighted average analyses are given for most daily sampling stations. The weighted average analysis represents approximately the composition of water that would be found in a reservoir containing all the water passing a given station during the year after thorough mixing in the reservoir.

Samples were analyzed according to methods regularly used by the Geological Survey. These methods are essentially the same or are modifications of methods described in recognized authoratative publications for mineral analysis of water samples. 1/

These quality of water records have been collected as part of the cooperative investigations of the water resources of Texas conducted by the Geological Survey and the Texas Board of Water Engineers. Much of the work would have been impossible without the support of the following Federal, State, and local agencies: The United States Bureau of Reclamation, U. S. Corps of Engineers, Brazos River Conservation and Reclamation District, Lower Colorado River Authority, Red Bluff Water Power Control District, City of Amarillo, City of Abilene, and City of Fort Worth.

The investigations were under the direction of Burdge Irelan, District Chemist, Austin, Texas. Analyses of water samples were made by Clara J. Carter, Lee J. Freeman, Homer D. Smith, Dorothy M. Suttle, DeForrest E. Weaver, and Clarence T. Welborn. Calculations of weighted averages were made by James R. Avrett, Burdge Irelan, Dorothy M. Suttle, and DeForrest E. Weaver.

1/ Collins, W. D., Notes on practical water analysis: U.S. Geological Survey Water-Supply Paper 596-H, pp. 235-261, 1928; American Public Health Association, Standard methods for the examination of water and sewage, 9th ed., 1946; Scott, W. W., Standard methods of chemical analysis, Volume II, 2049-2055, 5th ed., 1939.

CANADIAN RIVER AT TASCOSA, NEAR AMARILLO, TEX., October 1948 to September 1949

Analyses of samples collected at Boy's Ranch in Oldham County, approximately 20 miles west of gage at bridge on U. S. Highways 87 and 287, 19 miles north of Amarillo. Samples not collected at gage because of inflow of sewage from city of Amarillo a short distance above gage. Except in periods of heavy local rains no essential difference in flow at the two points.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	13.8	446	24	50	16	20	250	15	8.0	2.5	269	0.37	10	190	0	18
Oct.11-20	18.9	451	25	50	16	21	250	17	9.0	2.2	270	.37	14	191	0	20
Oct.21-31	45.8	455	24	49	17	23	250	14	12	2.5	266	.36	33	192	0	20
Nov. 1-10	216	415	26	47	17	16	236	17	7.0	.2	250	.34	146	187	0	15
Nov.11-20	27.7	417	27	50	17	12	236	17	6.0	.2	250	.34	19	195	1	11
Nov.21-30	9.89	407	26	46	17	15	234	17	5.0	.2	245	.33	6.5	185	0	15
Feb.15-18, 20	22.5	2,330	14	78	46	350	243	381	388	1.8	1,380	1.88	84	384	184	66
Feb. 19, 21-28	55.6	406	26	43	17	22	236	17	9.0	.8	251	.34	38	177	0	21
Mar. 1-10	89.9	508	26	50	19	34	280	23	15	2.5	312	.42	76	203	0	27
Apr.19-30	388	1,610	20	63	33	234	252	295	202	3.2	991	1.35	1,040	292	86	63
May 1-10	1,157	1,350	19	56	26	190	200	240	172	3.0	815	1.11	2,550	247	83	63
May 11, 13-14	811	1,400	18	55	26	204	221	256	170	2.2	852	1.16	1,870	244	64	64
May 12, 15-16	7,516	762	22	40	20	94	245	101	55	2.2	460	.63	9,330	182	0	53
May 17-20	2,305	984	22	50	23	125	236	152	96	4.1	588	.80	3,660	220	26	55
May 21-31	254	1,440	23	58	32	203	210	263	190	3.2	876	1.19	600	276	104	61
June 1-3	1,458	1,670	22	56	42	230	235	260	248	1.2	990	1.35	3,900	312	120	62
June 4-10	2,566	906	18	40	17	124	212	122	95	5.0	528	.72	3,660	170	0	61
June 11-13 19-20	3,754	788	15	36	14	111	189	121	73	6.3	474	.64	4,800	148	0	62
June 14-18	933	435	25	49	13	25	239	16	12	.2	260	.35	655	260	0	23

CANADIAN RIVER AT TASCOSA, NEAR AMARILLO, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second Feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 21-30	666	895	19	42	16	126	206	146	86	3.2	540	0.73	971	171	2	62
July 1-10	629	721	13	33	13	100	182	106	65	3.0	427	.58	725	136	0	62
July 11-20	2,912	708	13	30	13	101	178	106	63	3.2	419	.57	3,290	128	0	63
July 21-31	465	739	19	35	13	105	191	107	66	7.3	447	.61	562	141	0	62
Aug. 1-6	1,841	746	18	44	14	101	218	114	60	4.0	463	.63	2,301	168	0	57
Aug. 7-10	384	1,780	18	72	43	261	190	384	260	1.5	1,130	1.54	1,170	356	201	61
Aug.11-20	423	1,780	18	73	43	265	193	391	260	1.2	1,150	1.56	1,310	359	201	62
Aug.21-31	256	1,780	18	73	43	266	192	395	260	.8	1,150	1.56	796	359	202	62
Sept. 1-10	718	1,760	18	73	43	260	193	382	260	1.2	1,130	1.54	2,190	359	201	61
Sept.11-20	421	1,770	19	72	43	267	193	394	260	1.5	1,150	1.56	1,310	356	198	62
Sept.21-30	36.3	1,880	19	74	43	269	193	395	266	1.5	1,160	1.58	114	362	204	62
Weighted average	504	990	18	45	21	136	209	163	109	3.3	599	0.82	819	199	28	60

CANADIAN RIVER AT TASCOSA, NEAR AMARILLO, TEX., 1 June 1948 to 30 September 1948

Weighted average	691	1,240	15	73	31	150	175	322	108	1.9	814	1.11	1,520	310	166	51

CANADIAN RIVER NEAR AMARILLO, TEX., July 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highways 87 and 287, 2,000 feet downstream from Pitcher Creek, 2.0 miles downstream from Panhandle & Santa Fe Railway bridge, and 19 miles north of Amarillo, Potter County.

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
July 12	161	1,130	--	--	--	--	--	240	138	--	--	--	--	--	--
July 20	700	1,230	--	--	--	--	--	271	130	--	--	--	--	--	--
July 26	60.4	1,450	--	--	--	--	--	325	178	--	--	--	--	--	--
Aug. 3	448	801	--	--	--	--	--	147	70	--	--	--	--	--	--
Aug. 10	212	1,060	--	--	--	--	--	216	176	--	--	--	--	--	--
Aug. 18	737	868	--	--	--	--	--	161	84	--	--	--	--	--	--
Sept. 14	5.57	1,650	--	--	--	--	--	172	230	--	--	--	--	--	--
Sept. 21	152	709	--	--	--	--	--	147	44	--	--	--	--	--	--
Sept. 27	11.6	2,190	--	--	--	--	--	408	328	--	--	--	--	--	--
Oct. 6	21.2	2,510	--	--	--	--	--	660	318	--	--	--	--	--	--
Oct. 12	14.7	2,510	--	--	--	--	--	557	365	--	--	--	--	--	--
Oct. 19	17.6	2,550	101	150	63	339	338	525	380	15	1,740	2.37	634	356	53
Nov. 7	96.3	1,650	53	75	35	239	182	384	212	3.8	1,090	1.48	331	182	61
Dec. 2	8.2	2,240	90	142	50	285	312	384	340	56	1,500	2.04	560	304	53
Feb. 8	87.7	1,970	29	78	36	313	244	365	310	6.3	1,260	1.71	342	142	66
Mar. 22	9.5	2,260	78	122	48	312	324	331	370	59	1,480	2.01	502	236	57
Apr. 19 /	195	1,270	30	42	19	209	218	196	170	19	802	1.09	183	4	71
Apr. 21	890	2,760	27	101	48	436	212	528	475	4.5	1,720	2.34	450	276	68
Apr. 25	158	1,640	25	62	28	255	198	319	231	4.5	1,020	1.39	270	107	67
Apr. 30	126	1,730	26	81	28	270	226	367	233	9.3	1,130	1.54	317	132	65
May 3	57	2,190	30	102	45	322	223	449	345	2.5	1,410	1.92	440	256	61
May 11	340	1,280	23	56	25	179	212	204	170	7.2	769	1.05	243	70	62
May 19	--	799	25	38	16	114	180	133	83	7.2	505	.69	161	14	61
May 30	228	863	23	--	--	--	--	130	106	2.8	--	--	--	--	--
June 2	56.3	1,900	32	--	--	--	--	321	299	6.5	--	--	--	--	--
June 7	9,110	903	21	--	--	--	--	120	100	3.8	--	--	--	--	--
June 20	1,290	556	18	--	--	--	--	86	49	2.5	--	--	--	--	--
June 22	514	720	24	--	--	--	--	115	79	6.0	--	--	--	--	--
June 27	215	788	22	--	--	--	--	126	88	3.8	--	--	--	--	--
July 5	129	1,070	22	--	--	--	--	179	132	6.9	--	--	--	--	--
July 7	56.8	1,400	29	--	--	--	--	228	202	5.5	--	--	--	--	--

/ Mean discharge (second-feet).

CANADIAN RIVER NEAR AMARILLO, TEX., July 1948 to September 1949
Continued

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
July 12	9,440	458	20	--	--	--	--	57	34	4.2	--	--	--	--	--
July 13	2,690	517	18	--	--	--	--	82	39	4.0	--	--	--	--	--
July 25	49.4	1,760	30	--	--	--	--	303	267	5.5	--	--	--	--	--
July 27	1,700	484	18	--	--	--	--	74	42	3.2	--	--	--	--	--
Aug. 8	278	789	--	--	--	--	--	143	81	--	--	--	--	--	--
Aug. 31	136	1,140	--	--	--	--	--	222	126	--	--	--	--	--	--
Sept. 7	66.3	1,330	--	--	--	--	--	263	172	--	--	--	--	--	--
Sept. 12	2,010	965	--	--	--	--	--	205	88	--	--	--	--	--	--
Sept. 17	138	1,160	--	--	--	--	--	240	137	--	--	--	--	--	--
Sept. 23	55.9	1,700	--	--	--	--	--	379	222	--	--	--	--	--	--
Sept. 30	14.4	2,210	--	--	--	--	--	395	358	--	--	--	--	--	--

RED RIVER AT DENISON DAM, NEAR DENISON, TEXAS, October 1945 to September 1949

Analyses of samples collected immediately below dam on Red River, 1.7 miles upstream from Sand Creek and 5 miles north of Denison. Discharge records reported are for gaging station at old highway toll bridge 1.3 miles downstream from Sand Creek, 2 miles south of Colbert, Oklahoma. No appreciable inflow between dam and gaging station except during periods of heavy local rains.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent Sodium
Oct. 1-31	1,839	1,340	9.0	85	25	147	134	173	242	0.8	809	1.10	4,020	312	202	51
Nov. 1-30	2,166	1,340	7.8	85	24	150	131	175	246	.8	774	1.05	4,530	310	203	51
Dec. 1-31	1,984	1,350	6.6	86	24	153	132	178	250	.2	790	1.07	4,230	313	205	52
Jan. 1-31	2,570	1,350	8.1	87	26	153	138	178	254	1.5	805	1.09	5,590	324	211	51
Feb. 1-28	2,410	1,540	7.0	92	26	184	139	190	300	2.5	896	1.22	5,830	336	222	54
Mar. 1-31	2,934	1,470	7.8	89	25	171	138	182	278	3.2	881	1.20	6,980	325	212	53
Apr. 1-30	2,349	1,380	6.1	88	24	156	143	175	252	2.8	830	1.13	5,260	318	201	52
May 1-31	9,088	1,440	7.4	88	26	166	141	182	270	1.2	858	1.17	21,100	326	211	52
June 1-30	14,040	1,660	8.6	96	29	200	138	208	328	2.5	973	1.32	36,900	358	246	55
July 1-31	2,307	1,710	12	100	25	209	135	217	332	2.8	1,040	1.41	6,480	352	242	56
Aug. 1-31	2,457	1,590	12	96	24	196	135	209	308	1.8	993	1.35	6,590	338	228	56
Sept. 1-30	2,452	1,480	13	92	28	170	129	203	280	1.8	902	1.23	5,970	344	239	52
Weighted average	3,880	1,520	8.6	91	26	178	137	193	290	1.9	901	1.23	9,440	334	222	54

SULPHUR RIVER NEAR DARDEN, TEX. October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 67, 0.6 mile upstream from St. Louis Southwestern Railway bridge and 1 mile southwest of Darden, Bowie County.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	0.69	554	17	36	7.2	62	125	29	84	4.5	315	0.43	0.6	120	17	53
Oct. 11-16	2.33	563	10	34	8.5	68	138	30	86	1.8	325	.44	2.0	120	7	55
Oct. 17-19	13.7	1,080	4.7	37	10	152	87	60	232	2.2	561	.76	21	134	62	71
Oct. 20	11.0	1,720	9.2	44	19	267	57	102	435	2.8	983	1.34	29	188	142	76
Oct. 21-23, 25	13.9	2,650	9.9	84	21	420	102	201	650	1.2	1,440	1.96	54	296	212	76
Oct. 26	54.	6,850	7.5	151	37	1,360	140	520	2,010	--	4,150	5.64	605	529	414	85
Oct. 24, 27-31	23.7	10,000	7.5	194	52	1,970	158	733	2,900	--	5,930	8.06	379	698	568	86
Nov. 1-10	8.62	8,560	7.5	150	45	1,700	161	635	2,450	--	5,070	6.90	118	560	428	87
Nov. 11-15	6.72	5,290	6.2	100	26	993	150	374	1,420	.5	2,990	4.07	54	356	234	86
Nov. 16-20	35.8	3,700	5.1	68	17	677	104	260	962	.0	2,040	2.77	197	240	154	86
Nov. 21-23, 28-30	35.7	4,440	8.4	78	25	820	88	331	1,180	.0	2,490	3.39	240	298	226	86
Nov. 24-27	67.5	8,910	11	149	45	1,760	103	668	2,560	--	5,240	7.13	955	557	472	87
Dec. 1-10	17.3	2,900	8.8	56	17	512	99	220	718	.5	1,580	2.15	74	210	129	84
Dec. 11-18	12.0	2,180	9.4	45	11	380	105	157	518	3.2	1,180	1.60	38	158	72	84
Dec. 19-25	211	939	5.2	58	6.4	122	134	99	159	.0	538	.73	306	171	61	61
Dec. 26	76	2,350	5.5	60	12	415	118	175	582	2.8	1,310	1.78	269	199	102	82
Dec. 27-31	55.0	3,740	6.0	78	16	684	108	272	975	2.2	2,090	2.84	310	260	172	85
Jan. 1-10	19.6	4,100	8.0	82	19	758	115	300	1,080	.0	2,300	3.13	122	282	189	85
Jan. 11-15	16.4	3,250	6.6	74	19	581	114	257	825	2.2	1,820	2.48	81	262	169	83
Jan. 16, 19	304	1,680	6.0	42	10	284	85	130	395	2.0	917	1.25	753	146	76	81
Jan. 17-18, 20	538	698	6.4	20	5.9	104	49	51	147	.2	400	.54	581	74	34	75
Jan. 21-22	1,770	515	9.4	4.0	2.2	97	68	19	110	.2	319	.43	1,520	19	0	92
Jan. 23-25	1,437	242	5.3	8.0	1.1	37	30	18	44	.0	158	.21	613	24	0	77
Jan. 26-31	28,750	150	5.8	17	1.5	14	66	10	10	1.0	122	.17	9,470	49	0	39
Feb. 1-7	14,600	173	6.7	23	2.1	9.5	80	13	5.0	.8	130	.18	5,120	66	0	24
Feb. 8-10	3,143	281	7.7	23	3.0	28	68	26	34	.2	192	.26	1,630	70	14	47
Feb. 11-19	2,301	338	8.2	31	5.1	31	90	33	40	1.2	212	.29	1,320	98	25	41
Feb. 20-27	7,390	207	7.4	22	4.6	13	68	20	18	1.0	173	.24	3,450	74	18	28

SULPHUR RIVER AT DARDEN, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Feb. 28, Mar. 1-10	11,560	211	8.1	26	4.3	10	88	17	10	0.5	.131	0.18	4,090	83	10	21
Mar. 11-20	2,402	355	8.4	20	6.0	42	60	35	56	.8	201	.27	1,300	75	25	55
Mar. 21-31	6,488	247	7.0	28	3.3	19	91	20	20	.8	154	.21	2,700	83	9	33
Apr. 1-5	7,184	259	9.2	30	3.6	17	102	22	14	1.0	166	.23	3,220	90	6	29
Apr. 6-10	1,090	399	8.2	37	4.9	36	109	36	43	3.2	232	.32	683	112	23	41
Apr. 11-20	1,914	372	8.8	25	7.9	36	77	35	52	1.2	246	.33	1,270	95	32	45
Apr. 21-25	209	581	10	35	7.8	69	105	49	94	.8	336	.46	190	120	34	56
Apr. 26-30	2,916	301	7.2	28	3.8	27	88	23	33	1.2	207	.28	1,630	86	13	40
May 1-2, 10-14	2,185	320	9.2	33	3.8	27	100	27	32	2.2	198	.27	1,170	98	16	38
May 3-9	8,846	219	7.8	26	3.5	12	82	16	15	1.8	154	.21	3,680	79	12	26
May 15-19	150	619	12	46	4.8	72	130	50	94	.7	346	.47	140	134	28	54
May 20-23, 25-29	1,231	358	9.0	30	4.3	34	95	30	40	2.0	207	.28	688	93	15	45
May 24, 30-31	671	676	12	36	5.1	91	101	51	122	2.0	386	.52	699	111	28	64
June 1-7	225	691	10	45	5.5	85	117	70	105	2.2	398	.54	242	135	39	58
June 8-10	94.0	1,310	12	52	9.2	198	133	93	276	2.8	733	1.00	186	168	59	72
June 11	146	1,300	11	36	11	219	98	108	295	3.2	731	.99	288	135	60	78
June 13, 17	1,259	512	7.0	32	4.4	66	96	40	85	2.8	288	.39	979	98	19	60
June 12, 14-16, 18-23	1,848	304	7.2	30	4.6	27	103	25	29	1.5	192	.26	958	94	9	39
June 24-26	820	477	7.8	44	3.3	47	120	38	59	5.6	280	.38	620	123	25	45
June 27-30	1,026	308	7.5	29	3.9	27	98	31	23	2.2	185	.25	512	88	8	40
July 1-10	122	444	9.0	38	5.4	40	122	33	49	1.2	254	.35	84	117	17	43
July 11-12, 17-19, 24-26, 29	177	562	10	32	4.8	66	77	38	86	25	326	.44	156	100	36	59
July 13-16, 27-28, 30-31	572	317	8.6	33	3.3	27	111	22	28	1.5	186	.25	287	96	5	38
July 20-21, 23	116	1,550	9.2	40	10	257	91	98	370	.8	838	1.14	262	141	66	80
July 22	118	5,260	13	97	30	986	72	362	1,470	1.5	3,000	4.08	956	366	306	85
Aug. 1-11	91.2	463	11	30	4.5	51	97	28	68	.8	268	.36	66	93	14	55
Aug. 12, 14, 17-18	339	342	8.2	37	3.6	29	123	29	27	1.0	204	.28	187	107	6	37

SULPHUR RIVER AT DARDEN, TEX., October 1948 to September 1949
Continued-2

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Aug. 13, 15-16, 19-20	223	804	8.0	40	5.1	77	109	57	99	0.8	354	0.48	213	121	32	58
Aug. 21-31	96.3	508	7.4	38	4.3	54	120	33	68	.5	286	.39	74	113	14	51
Sept. 1-10	12.6	594	10	40	4.7	73	142	34	89	1.2	338	.46	11	120	3	57
Sept. 11, 16-17,	87.3	380	9.8	29	5.9	29	86	22	46	1.0	196	.27	46	97	26	39
Sept. 12-13, 15, 18-19	100	969	14	36	7.2	144	112	58	199	.0	534	.73	14	120	28	72
Sept. 14, 20	57.5	2,950	9.8	64	16	522	92	190	770	.0	1,620	2.20	252	226	150	83
Sept. 21, 23	192	4,330	8.1	79	20	805	89	295	1,170	.0	2,420	3.29	1,250	279	206	86
Sept. 22, 24	272	1,960	8.6	44	11	331	91	130	470	1.0	1,040	1.41	764	155	80	82
Sept. 25-30	139	803	7.5	24	8.3	116	63	59	165	1.5	447	.61	168	94	42	73
Weighted average	2,225	252	7.3	24	3.5	22	81	20	25	1.1	168	0.23	1,010	74	8	39

MISCELLANEOUS ANALYSES OF STREAMS IN RED RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Specific conductance (Micromhos at 25° C.)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
1949			Prairie Dog Town Fork Red River near Brice												
Aug. 10-12	5,130	7.7	25	382	53	709	89	1,140	1,030	1.2	3,380	4.60	1,170	1,100	57
Aug. 13-14	8,660	7.7	24	444	88	1,400	87	1,280	2,210	--	5,490	7.47	1,470	1,400	67
Aug. 27	3,350	7.6	23	494	49	270	72	1,390	365	1.2	2,630	3.58	1,430	1,380	29
Sept. 4	6,850	8.0	27	364	66	1,100	175	1,160	1,570	1.0	4,370	5.94	1,180	1,040	67
Sept. 5	3,130	7.9	22	217	37	413	120	667	565	3.0	1,980	2.69	694	595	56
Sept. 6-10	5,100	7.8	20	333	50	739	98	983	1,090	1.5	3,260	4.43	1,040	956	61
Sept. 11-14	12,700	7.7	22	529	117	2,270	114	1,520	3,590	--	8,100	11.02	1,800	1,710	73
Sept. 15-19	16,800	7.9	26	639	153	3,150	118	1,840	5,000	--	10,900	14.82	2,220	2,130	75
1949			Prairie Dog Town Fork Red River near Estelline												
July 29	4,940	--	--	--	--	--	--	1,520	820	--	--	--	--	--	--
1949			Mulberry Creek near Brice												
Sept. 6,8-9	1,450	7.7	24	214	33	67	96	586	88	2.2	1,060	1.44	670	591	18
Sept. 7, 10	2,300	8.0	25	320	65	142	104	984	188	1.0	1,780	2.42	1,070	981	23
Sept. 11,12, 15,19	2,880	7.9	31	392	100	184	129	1,300	235	.2	2,310	3.14	1,390	1,280	22
1949			Lake Childress near Childress												
Aug. 19	963	8.0	18	179	28	11	83	488	7.	.2	765	1.04	562	494	4
1949			Wonder Creek near Quanah												
Apr. 13	3,020	7.4	16	572	129	77	224	1,680	137	.2	2,720	3.70	1,960	1,770	8
1949			Wichita River near Crowell												
July 29	20,400	--	--	--	--	--	--	--	6,100	--	--	--	--	--	--
			South Wichita River near Crowell												
July 29	20,100	--	--	--	--	--	--	--	6,080	--	--	--	--	--	--

MISCELLANEOUS ANALYSES OF STREAMS IN RED RIVER BASIN IN TEXAS
Continued

Date of collection	Specific conductance (Micromhos at 25° C.)	pH	Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
					Wichita River near Wichita Falls										
1949 July 21	4,350	8.0	10	200	77	615	146	486	1,080	3.5	2,540	3.45	816	696	62
					Caney Lake at Red River Arsenal near Texarkana										
1949 July 25	72	7.6	6.3	1.8	1.4	16	29	14	5.	.0	59	.10	10	0	77
					Caddo Lake at Longhorn Ordnance Plant, near Karnack										
1949 May 16	139	6.6	17	6.4	3.2	15	24	12	20	1.2	104	.14	29	9	53

MISCELLANEOUS ANALYSES OF STREAMS IN SABINE RIVER BASIN IN TEXAS

Date of collection	Specific conductance (Micromhos at 25° C.)	pH	Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
					Cherokee Lake, Gregg County										
1949 June 4	109	6.8	6.0	6.8	3.3	12	25	16	8.5	0.0	68	0.09	30	10	40

SABINE RIVER NEAR RULIFF, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on State Highway 235, 2.4 miles north of Ruliff, Newton County, 4.2 miles upstream from Kansas City-Southern Railway bridge, and 4.5 miles downstream from Cypress Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	415	314	17	10	3.7	45	48	8.7	64	0.0	177	0.24	198	40	1	71
Oct.11-20	515	236	17	8.5	3.2	34	46	8.4	44	.2	140	.19	195	34	0	68
Oct.21-31	442	238	18	8.9	3.5	32	45	7.1	44	.5	144	.20	172	37	0	66
Nov. 1-10	599	296	19	8.6	3.1	47	44	8.3	63	.2	174	.24	281	34	0	74
Nov.11-19	1,079	355	17	9.6	3.6	52	36	7.7	81	.5	199	.27	580	39	9	75
Nov.20, 26-28	8,545	169	8.4	4.2	2.0	24	9	7.7	39	.2	115	.16	2,650	19	11	73
Nov.21-25, 29-30, Dec.1	11,380	102	6.2	3.4	1.4	15	9	7.1	22	.2	67	.09	2,060	14	7	69
Dec. 2-10	3,360	334	13	8.2	1.7	54	20	12	82	.5	207	.28	1,880	27	11	81
Dec.11-20	1,627	299	17	8.2	1.7	49	24	12	72	.5	186	.25	817	27	8	80
Dec.21-25, 28-31	3,006	320	17	8.2	1.1	54	23	14	77	.2	204	.28	1,660	25	6	82
Dec.26-27	2,620	695	18	14	2.0	122	20	32	183	.5	411	.56	2,910	43	27	86
Jan. 1-4	5,365	198	11	7.4	3.1	24	14	12	42	.8	152	.21	2,200	31	20	63
Jan. 5-10	12,580	110	8.8	4.2	1.9	15	10	11	21	.8	98	.13	3,330	18	10	63
Jan.11-20	6,200	153	14	5.1	2.9	21	18	10	31	.8	120	.16	2,010	25	10	65
Jan.21-31	19,800	116	9.8	4.0	2.6	15	12	9.5	23	1.8	105	.14	5,610	21	11	61
Feb. 1-10	22,010	125	10	4.2	3.1	15	11	13	24	.2	117	.16	6,950	23	14	59
Feb.11-19	21,640	110	9.9	3.8	4.8	8.6	13	12	17	1.0	110	.15	6,430	29	19	39
Feb.20-28	17,170	140	11	5.8	3.5	14	16	13	23	.5	122	.17	5,660	29	16	52
Mar. 1-10	19,450	143	11	6.1	3.3	16	19	14	24	.5	100	.14	5,250	29	13	55
Mar.11-22	15,880	143	11	7.2	4.4	15	25	15	22	1.2	92	.13	3,940	36	16	47
Mar.23-31	25,540	102	7.7	5.2	2.8	12	20	9.4	17	.2	73	.10	5,030	24	8	51
Apr. 1-10	27,020	122	10	5.8	2.8	13	14	13	20	.7	102	.14	7,440	26	14	52
Apr.11-22	14,470	163	12	8.1	3.4	20	26	15	28	1.2	126	.17	4,920	34	13	56
Apr.23-30	20,350	88	8.1	3.3	2.4	11	12	9.3	16	.7	81	.11	4,450	18	8	58

SABINE RIVER NEAR RULIFF, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
May 1-5	21,060	95	11	4.8	1.6	11	16	7.9	14	1.0	88	0.12	5,000	19	6	56
May 6-10	15,280	157	12	6.8	2.4	22	23	13	29	.8	122	.17	5,030	27	8	64
May 11-20	9,493	174	13	8.8	3.1	20	27	16	28	1.2	136	.18	3,490	35	13	56
May 21-31	3,721	197	16	10	3.2	23	38	12	31	1.0	136	.18	1,370	38	7	57
June 1-5	5,194	325	15	11	4.0	46	33	23	65	2.8	196	.27	2,750	44	17	70
June 6-10	4,022	196	15	12	3.3	26	50	22	25	2.2	152	.21	1,650	44	2	57
June 11, 17-20	7,212	138	12	7.8	2.3	22	31	19	21	1.2	130	.18	2,530	29	4	62
June 12-16, 29-30	4,270	237	14	10	2.6	35	38	20	42	.8	149	.20	1,720	36	4	68
June 21-28	4,710	161	13	8.2	2.4	25	32	22	24	1.2	127	.17	1,620	30	4	64
July 1-12, 22-23	3,267	230	17	10	4.6	37	68	11	40	1.2	160	.22	1,410	44	0	65
July 13-20	3,208	129	15	7.2	2.7	25	58	5.8	20	.8	108	.15	935	29	0	65
July 21, 24-31	5,109	150	13	5.8	3.9	27	50	7.8	28	.8	130	.18	1,790	30	0	66
Aug. 1-10	6,480	201	12	6.5	3.5	25	20	11	39	2.2	148	.20	2,590	31	14	64
Aug. 11-20	3,555	213	15	9.0	3.4	26	36	10	37	1.8	156	.21	1,500	36	7	61
Aug. 21-31	1,687	314	18	12	3.8	42	44	10	64	1.5	188	.26	856	46	10	67
Sept. 1-12, 18-30	1,620	322	17	10	3.5	41	39	8.7	62	.2	164	.22	717	39	7	69
Sept. 13-17	1,316	461	18	12	4.8	67	44	11	105	.0	255	.35	906	50	14	75
Weighted average	8,636	147	11	6.0	3.1	18	21	12	27	0.9	113	0.15	2,630	28	10	59

NECHES RIVER AT EVADALE, TEX. October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 59, 200 feet upstream from Gulf, Colorado and Santa Fe Railway bridge at Evadale, and 15 miles upstream from Village Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	233	302	20	11	5.2	43	68	12	51	1.8	184	0.25	116	49	0	66
Oct.11-20	247	253	20	9.2	6.2	31	58	11	40	.8	155	.21	103	48	1	58
Oct.21-31	244	250	18	9.6	5.5	32	58	12	40	.8	147	.20	97	47	0	60
Nov. 1-10	280	296	18	10	5.2	41	59	11	54	.2	181	.25	137	46	0	66
Nov.11-18	399	370	18	11	4.5	56	60	11	76	.2	215	.29	232	46	0	73
Nov.19-30	2,562	150	9.9	5.1	3.5	18	14	16	27	.2	98	.13	678	27	16	59
Dec. 1-10	1,363	238	16	8.4	3.1	32	20	23	45	.2	169	.23	622	34	17	68
Dec.11-20	962	348	19	11	3.4	51	24	25	75	.2	218	.30	566	41	22	73
Dec.21-31	1,748	271	18	8.5	2.2	40	21	21	56	.2	186	.25	878	30	13	74
Jan. 1-4, 10	2,538	203	18	7.0	2.9	27	20	23	33	.2	130	.18	891	29	13	66
Jan. 5-9	4,428	148	15	7.2	2.4	19	19	19	23	.5	114	.16	1,360	28	12	59
Jan.11-20	2,516	212	19	7.9	3.7	27	24	19	39	.2	154	.21	1,050	35	15	63
Jan.21-31	11,270	103	11	4.4	1.8	12	15	14	13	.2	101	.14	3,070	18	6	59
Feb. 1-10	13,370	115	12	4.2	3.5	12	12	17	16	.5	103	.14	3,720	25	15	51
Feb.11-18, 27-28	12,660	138	12	5.8	3.7	15	13	20	22	.0	120	.16	4,100	30	19	53
Feb.19-26	8,259	189	15	7.4	3.5	22	13	26	30	.0	146	.20	3,260	33	22	59
Mar. 1-10	12,700	137	14	6.4	3.1	14	16	19	18	.8	119	.16	4,080	29	16	51
Mar.11-20	8,868	170	14	7.6	3.7	19	20	22	26	.5	147	.20	3,520	34	18	55
Mar.21-31	15,600	107	9.9	4.4	1.5	14	15	14	14	.8	96	.13	4,040	17	5	64
Apr. 1-10	19,980	108	12	5.4	2.1	12	15	14	14	1.2	108	.15	5,830	22	10	53
Apr.11-22	7,603	186	14	7.9	4.0	22	24	21	30	1.2	142	.19	2,910	36	16	57
Apr.23-30	15,990	104	9.9	4.8	1.9	12	13	12	16	1.2	101	.14	4,360	20	9	58
May 1-10	16,740	112	12	6.0	2.1	14	23	12	16	.8	114	.16	5,150	24	5	57
May 11-20	4,708	223	17	11	4.5	25	33	20	36	1.0	156	.21	1,980	46	19	54
May 21-31	2,107	236	19	11	4.7	26	36	19	38	1.0	160	.22	910	47	17	55

NECHES RIVER AT EVADALE, TEX. October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 1-10	2,267	188	16	8.8	3.5	21	29	18	28	1.2	143	0.19	875	36	13	56
June 11-16, 25-27	2,628	192	17	8.8	4.7	21	31	15	32	1.8	147	.20	1,040	41	16	53
June 17-24, 28-30	4,705	114	13	3.9	4.6	11	20	10	18	1.2	117	.16	1,490	29	12	46
July 1-10	1,512	183	19	9.6	4.8	18	32	12	30	1.0	142	.19	580	44	17	47
July 11-20	1,168	260	23	12	5.7	37	72	10	44	2.5	170	.23	536	53	0	60
July 21-31	1,422	186	17	9.2	4.4	32	68	8.8	32	.8	143	.19	549	41	0	63
Aug. 1-10	1,254	218	16	8.8	4.0	32	44	12	42	.5	154	.21	521	38	2	65
Aug.11-20	1,286	241	18	8.2	3.8	30	32	11	44	.8	173	.24	601	36	10	64
Aug.21-31	746	303	18	10	4.3	42	40	13	62	1.0	199	.27	401	43	10	68
Sept.1-10	533	258	19	9.6	5.3	32	46	11	46	1.5	170	.23	245	46	8	60
Sept.11-20	584	314	20	10	3.8	44	44	9.1	64	1.5	187	.25	295	41	4	70
Sept.21-25	1,027	329	18	9.9	4.4	46	40	9.9	70	.5	200	.27	555	43	10	70
Sept.26-30	893	178	14	6.7	3.8	22	34	7.0	32	.5	140	.19	338	32	4	60
Weighted average	5,030	144	13	6.2	2.9	17	20	16	22	0.7	122	0.17	1,650	27	11	57

MISCELLANEOUS ANALYSES OF STREAMS IN NECHES RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Angelina River near Horger																
1948 Oct. 24-30	101 /	609	--	--	--	--	--	96	25	115	--	--	--	--	--	--
Fern Lake near Nacogdoches																
Oct. --, 1948	--	84	7.6	2.8	3.4	1.6	8.7/3.2	19	3.5	12	1.8	62	0.08	15	0	60
Striker Creek near Summerfield																
Apr. 13, 1949	390	1,140	5.6	12	20	10	170	4	49	315	.2	640	.87	91	88	74
Taylor's Bayou near Fannett																
Dec. 1, 1948	--	585	7.5	--	--	--	--	96	129	55	--	396	.54	--	--	--

/ Mean discharge (second-feet).

CLEAR FORK TRINITY RIVER AT FORT WORTH, TEX., October 1948 to September 1949

Analyses of samples collected at Texas & Pacific water plant 1/8 mile downstream from gaging station which is at bridge on Stove Foundry road, 388 feet downstream from Texas & Pacific Railway bridge at Fort Worth, Tarrant County, and 3 miles upstream from mouth.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10 /	0	778	18	33	5.4	129	248	71	76	1.8	474	0.64	0	104	0	73
Oct.11-20 /	0	882	11	29	4.8	156	260	88	90	.8	532	.72	0	92	0	79
Oct.21-31 /	.03	943	15	29	3.8	171	263	98	100	.5	564	.77	.05	88	0	81
Nov. 1-10 /	0	951	15	28	3.6	175	263	101	102	.2	574	.78	0	85	0	82
Nov.11-20 /	0	979	16	31	4.0	177	266	106	107	.2	599	.81	0	94	0	80
Nov.21-30 /	0	976	17	31	4.6	178	268	106	104	.2	584	.79	0	96	0	80
Dec. 1-10 /	0	982	15	36	5.5	173	279	104	107	.2	598	.81	0	112	0	77
Dec.11-20 /	0	960	16	39	2.2	176	280	105	106	.0	596	.81	0	106	0	78
Dec.21-31 /	.25	965	16	40	2.2	176	283	103	108	.0	599	.81	.4	109	0	78
Jan. 1-10 /	.07	981	15	44	4.5	166	279	106	107	.0	608	.83	.1	128	0	74
Jan.11-31 /	16.0	1,020	15	42	6.3	174	284	114	112	.0	621	.84	27	131	0	74
Feb. 1-10	8.17	489	8.8	60	7.3	31	185	51	29	2.2	303	.41	6.7	180	28	27
Feb.11-20	9.27	466	6.6	56	6.6	35	175	47	35	2.8	278	.38	7.0	167	24	32
Feb.21-23, 28	17.0	489	7.5	58	6.0	36	183	47	32	4.0	281	.38	13	169	19	32
Feb.24-27	820	278	11	40	4.0	10	120	20	10	6.1	168	.23	372	116	18	16
Mar. 1-10	63.0	470	10	73	5.4	19	206	39	21	8.2	277	.38	47	204	36	17
Mar.11-20	35.9	484	8.2	70	6.2	23	206	43	24	3.8	280	.38	27	200	31	20
Mar.21,25, 28-31	916	418	12	65	5.7	15	194	29	18	4.0	253	.34	626	186	27	15
Mar.22-24, 26-27	878	270	9.2	36	5.5	14	127	17	13	3.2	172	.23	408	112	8	21
Apr. 1-10	159	472	9.4	73	6.2	20	220	35	22	4.2	290	.39	124	208	27	17
Apr.11-20	99.1	486	7.2	71	7.6	21	216	36	24	2.8	285	.39	76	208	31	18
Apr.21-30	182	451	10	66	6.7	19	206	31	21	2.8	269	.37	132	192	23	17

/ Includes days of less than 0.05 second-foot flow.

CLEAR FORK TRINITY RIVER AT FORT WORTH, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
May 1-7	77.3	487	10	74	6.8	20	227	33	23	2.8	290	0.39	61	212	26	17
May 8-10	402	318	8.2	45	4.9	12	145	20	14	1.2	196	.27	213	132	22	17
May 11-13, 18	658	333	12	48	4.8	12	157	18	11	2.5	215	.29	382	140	11	15
May 14-16, 19-20	474	490	12	65	6.1	30	220	29	26	5.5	285	.39	365	187	6	26
May 17	42,500	180	13	22	3.1	12	98	6.9	3.0	2.2	124	.17	14,200	68	0	28
May 21-25, 28,31	740	430	15	68	6.0	18	215	32	15	3.8	264	.36	527	194	18	17
May 26-27, 29-30	4,238	263	12	37	4.1	12	137	12	6.0	2.0	169	.23	1,930	109	0	19
June 1-10	264	511	15	78	6.8	21	239	38	21	3.0	310	.42	221	222	26	17
June 11-20	217	424	14	62	6.7	19	192	31	22	3.8	260	.35	152	182	25	18
June 21-24, 30	343	456	17	65	9.4	16	195	38	23	4.2	278	.38	257	201	41	15
June 25-29	1,047	319	14	51	4.9	10	163	18	11	2.8	201	.27	568	147	14	13
July 1-10	84.6	513	16	76	9.8	19	226	43	27	3.8	312	.42	71	230	45	15
July 11-20	38.7	505	14	66	9.8	28	206	50	30	3.0	306	.42	32	205	36	23
July 21-31	25.5	530	12	68	8.8	31	214	47	33	2.8	308	.42	21	206	30	25
Aug. 1-10	33.3	499	14	63	7.9	31	204	45	29	2.2	302	.41	27	190	22	26
Aug.11-20	12.5	420	12	55	6.4	24	183	33	21	1.8	249	.34	8.4	164	14	24
Aug.21-31	3.16	437	14	57	7.6	29	200	36	25	1.2	268	.36	2.3	174	10	27
Sept. 1-10	2.84	469	16	58	8.1	26	192	37	27	1.5	272	.37	2.1	178	21	24
Sept. 11-15	64.3	486	14	58	6.9	36	203	41	30	.5	286	.39	50	173	6	31
Sept. 16-20	17.9	241	6.5	30	4.9	15	123	13	9.0	.5	140	.19	6.8	95	0	25
Sept. 21-30	3.42	272	6.8	36	6.4	11	129	15	12	1.0	154	.21	1.4	116	10	16
Weighted average	289	291	13	40	4.5	15	142	17	10	2.8	184	0.25	144	118	2	22

TRINITY RIVER NEAR OAKWOOD, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highways 79 and 84, 1½ miles upstream from International-Great Northern Railroad bridge and 6 miles northeast of Oakwood, Leon County.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	577	902	11	54	7.6	118	166	86	130	18	531	0.72	827	166	30	61
Oct. 11-15	462	876	7.8	48	6.9	117	155	66	140	12	508	.69	634	148	22	63
Oct. 16-20	339	1,150	7.8	58	9.2	166	178	60	232	9.5	678	.92	621	182	36	66
Oct. 21-31	306	1,290	6.8	58	9.6	190	180	91	240	20	729	.99	602	184	36	69
Nov. 1-10	257	1,440	9.4	50	10	234	168	109	282	32	811	1.10	563	166	28	75
Nov. 11-20	304	1,620	9.2	63	11	256	173	109	340	30	909	1.24	746	202	60	73
Nov. 21-30	382	1,600	14	46	10	268	133	103	352	33	901	1.23	929	156	47	79
Dec. 1-10	274	1,390	13	57	10	218	142	133	258	48	808	1.10	598	184	67	72
Dec. 11,15-18	372	1,140	13	48	9.4	168	124	86	220	29	637	.87	640	158	57	70
Dec. 12-14, 19-20	531	2,150	13	64	11	359	141	126	495	50	1,190	1.62	1,710	204	89	79
Dec. 21-23, 28-31	425	1,300	13	46	7.9	210	115	87	278	34	736	1.00	845	148	54	76
Dec. 24-27	399	2,080	14	56	11	351	141	116	495	16	1,130	1.54	1,220	185	70	80
Jan. 1-10	318	1,400	14	52	10	209	138	89	285	22	780	1.06	670	171	58	73
Jan. 11-20	637	1,270	16	46	9.8	193	112	81	268	24	713	.97	1,230	156	64	73
Jan. 21-25	1,168	1,180	12	38	9.0	186	97	62	270	15	691	.94	2,180	132	52	75
Jan. 26-31	9,243	314	7.5	37	3.9	21	96	42	21	2.8	216	.29	5,390	108	30	30
Feb. 1-10	10,820	375	9.0	43	4.0	28	110	44	32	4.2	220	.30	6,430	124	34	33
Feb. 11-19	2,998	532	11	56	5.6	45	137	65	52	8.2	323	.44	2,610	163	50	37
Feb. 20, 26-28	9,978	395	9.2	38	4.6	32	107	37	38	3.8	228	.31	6,140	114	26	38
Feb. 21-25	2,212	703	12	61	6.4	69	148	64	95	9.2	408	.55	2,440	178	57	46
Mar. 1-10	23,990	333	12	42	4.5	20	116	44	17	1.8	205	.28	13,300	123	28	26
Mar. 11-20	2,161	694	13	70	6.2	65	176	75	80	7.7	416	.57	2,430	200	56	41
Mar. 21-24	3,748	848	11	67	6.3	94	166	68	130	8.2	504	.69	5,100	193	57	51
Mar. 25-31	9,266	430	11	47	3.9	35	119	53	38	4.7	275	.37	6,880	133	36	37
Apr. 1-5	10,780	357	11	46	3.8	22	128	40	20	3.2	233	.32	6,780	130	26	26
Apr. 6-10	2,854	604	12	67	5.2	49	180	62	56	6.5	378	.51	2,910	188	41	36
Apr. 11-20	5,430	469	9.8	46	5.0	41	126	49	47	4.5	307	.42	4,500	135	32	40
Apr. 21-30	2,897	721	11	66	7.0	70	162	83	84	10	434	.59	3,390	194	60	44

TRINITY RIVER NEAR OAKWOOD, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
May 1-10	3,514	518	15	58	5.1	39	152	58	44	4.5	318	0.43	3,020	166	41	34
May 11-20	1,927	707	13	61	6.6	72	159	62	94	10	417	.57	2,170	179	48	47
May 21-31	17,120	339	15	44	3.6	20	130	28	21	2.2	204	.28	9,430	125	18	25
June 1-10	17,410	372	15	48	3.9	24	147	33	22	3.2	230	.31	10,800	136	15	28
June 11-17	2,874	606	14	61	5.5	56	179	52	63	7.8	360	.49	2,790	174	28	41
June 18-20	8,947	287	10	35	3.1	19	108	27	16	3.0	176	.24	4,250	100	12	29
June 21-26	13,600	314	11	40	2.9	21	124	24	20	2.8	193	.26	7,090	112	10	29
June 27-30	5,275	604	11	54	5.1	62	158	46	77	5.8	350	.48	4,980	156	26	46
July 1-4, 8	3,044	422	13	47	5.9	32	143	36	38	3.8	250	.34	2,050	142	24	33
July 5-7, 9-10	975	700	14	60	6.7	73	173	56	93	6.1	406	.55	1,070	177	35	47
July 11-20	710	826	15	69	6.6	94	201	80	104	12	486	.66	932	199	34	51
July 21, 24-26,30	835	791	12	56	5.9	97	165	76	108	11	457	.62	1,030	164	30	56
July 22-23, 27-29,31	840	1,300	13	58	8.5	196	166	77	270	9.7	724	.98	1,640	180	44	70
Aug. 1-10	434	931	14	60	8.3	104	178	62	135	12	495	.67	580	184	38	55
Aug. 11-12, 16-20	360	1,120	15	60	12	149	182	109	178	12	644	.88	626	199	50	62
Aug. 13-15	548	2,010	17	74	13	311	190	113	442	22	1,090	1.48	1,610	238	82	74
Aug. 21-31	255	1,220	17	69	13	158	203	111	198	11	708	.96	487	226	59	60
Sept. 1-10	258	1,440	9.2	70	9.4	216	214	120	265	9.2	816	1.11	568	213	38	69
Sept. 11-15	781	1,640	17	70	11	250	193	162	295	25	968	1.32	2,040	220	62	71
Sept. 16-20	542	874	11	52	6.3	112	144	67	140	17	488	.66	714	156	38	61
Sept. 21-30	384	905	11	53	6.8	123	156	79	143	20	529	.72	548	160	32	62
Weighted average	3,867	458	12	47	4.6	40	131	45	45	4.8	277	0.38	2,890	136	29	39

TRINITY RIVER AT ROMAYOR, TEX., October 1948 to September 1949

Analyses of samples collected at bridge of Gulf, Colorado & Santa Fe Railway, a quarter of a mile west of Romayor and 2½ miles downstream from Big Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	619	997	6.0	37	8.3	148	114	59	194	14	539	0.73	901	126	33	69
Oct. 11-20	641	991	3.4	36	9.2	146	118	58	195	17	559	.76	967	128	32	71
Oct. 21-31	508	953	1.9	36	8.8	140	132	67	175	8.3	537	.73	737	126	18	71
Nov. 1-10	479	907	4.1	42	7.0	129	145	47	175	.8	490	.67	634	134	15	68
Nov. 11-20	567	1,070	6.1	50	8.1	155	153	53	220	5.0	581	.79	889	158	33	68
Nov. 21-30	706	1,100	5.0	50	9.4	157	141	76	218	4.0	607	.83	1,160	164	48	68
Dec. 1-10	522	1,190	7.0	58	8.5	169	148	68	245	9.7	643	.87	906	180	58	67
Dec. 11-20	548	1,280	14	56	8.5	193	135	64	288	15	720	.98	1,070	175	64	71
Dec. 21-31	966	1,100	14	54	8.5	156	128	59	235	15	614	.84	1,600	170	65	67
Jan. 1-10	670	1,020	20	52	9.0	137	140	76	191	1.8	606	.82	1,100	167	52	64
Jan. 11-18	950	1,250	25	54	9.6	182	158	72	256	6.2	714	.97	1,830	175	45	69
Jan. 19-31	6,037	398	9.2	26	4.8	45	82	33	57	2.0	253	.34	4,120	85	17	54
Feb. 1-10	14,730	371	8.4	45	4.7	25	130	42	24	2.8	231	.31	9,190	132	25	42
Feb. 11-17	4,799	538	11	54	5.0	45	136	57	56	4.2	334	.45	4,330	156	44	39
Feb. 18-25	4,052	695	13	69	5.9	66	199	75	70	.8	427	.58	4,670	196	34	42
Feb. 26-28	23,070	264	12	21	3.8	29	68	34	27	1.5	162	.22	10,100	68	12	48
Mar. 1-10	19,580	381	9.9	43	4.4	27	128	32	31	3.0	252	.34	13,300	125	20	32
Mar. 11-13, 20	20,330	390	13	43	4.1	29	123	37	32	3.2	228	.31	12,500	124	23	34
Mar. 14-19	11,050	671	15	63	6.7	60	179	59	73	6.3	388	.53	11,600	184	38	42
Mar. 21-31	16,900	448	11	42	4.9	41	118	47	46	3.5	282	.38	12,900	125	28	41
Apr. 1-10	11,270	530	12	52	5.6	48	149	57	51	4.0	334	.45	10,200	153	31	40
Apr. 11-20	6,931	542	13	51	5.2	48	151	53	52	1.8	321	.44	6,010	149	25	41
Apr. 21-30	15,820	355	12	31	4.8	30	97	30	34	4.2	210	.29	8,970	97	18	40
May 1-10	5,521	554	14	55	7.4	46	162	60	48	5.8	330	.45	4,920	168	35	37
May 11-20	2,699	658	14	57	8.7	61	198	44	64	14	366	.50	2,670	178	16	43
May 21-26	3,488	937	13	62	7.6	115	186	54	156	7.7	528	.72	4,970	186	33	57
May 27-31	13,440	343	13	41	4.6	22	140	24	19	4.2	204	.28	7,400	121	6	29
June 1-10	21,820	443	15	46	6.0	33	165	24	32	6.3	260	.35	15,300	139	4	34
June 11-19	10,540	442	16	47	6.2	32	159	29	34	4.2	260	.35	7,400	143	12	33
June 20-25	9,108	694	14	64	8.7	66	194	70	74	2.8	409	.56	10,100	196	36	42
June 26-30	13,770	465	12	49	7.1	34	173	29	36	2.8	271	.37	10,100	152	10	33

TRINITY RIVER AT ROMAYOR, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
July 1-10	4,442	581	13	55	7.0	52	199	36	52	5.8	322	0.44	3,860	166	4	40
July 11-20	1,259	593	13	50	6.4	56	154	42	71	5.5	332	.45	1,130	152	26	45
July 21-28	1,201	705	9.4	52	7.4	81	167	61	94	4.6	400	.54	1,300	160	24	52
July 29-31	1,153	1,130	10	64	8.7	147	174	68	208	11	616	.84	1,920	196	53	62
Aug. 1-10	1,106	814	10	54	6.6	100	173	56	126	1.2	448	.61	1,340	162	20	57
Aug. 11-20	821	978	14	54	7.4	122	164	48	174	.0	532	.72	1,180	166	31	62
Aug. 21-31	509	1,080	12	49	9.2	141	131	71	202	.0	573	.78	787	160	53	66
Sept. 1-5	483	1,290	11	48	9.2	193	127	89	265	8.5	716	.97	934	158	54	73
Sept. 6-10	472	671	13	36	5.6	89	120	47	111	2.8	380	.52	484	113	14	63
Sept. 11-14	924	538	11	30	10	56	86	50	81	.0	280	.38	699	116	45	51
Sept. 15-20	1,771	1,350	9.2	58	13	174	136	71	275	3.0	690	.94	3,300	198	86	66
Sept. 21-26	1,030	1,180	9.2	58	14	163	193	113	195	7.5	694	.94	1,930	202	44	64
Sept. 27-30	644	337	8.8	31	5.4	29	108	15	39	3.5	202	.27	351	100	11	39
Weighted average	5,566	499	12	45	5.7	45	140	41	52	4.2	296	0.40	4,450	136	21	42

MISCELLANEOUS ANALYSES OF STREAMS IN TRINITY RIVER BASIN IN TEXAS
October 1945 to September 1949

Date of collection	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids Parts per million	Dissolved Solids Tons per acre foot	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Non-carbonate	Percent Sodium
Trinity River at Devers Pumping Plant, near Moss Bluff															
Oct. 1-5	888	--	8.6	45	8.0	122	150	53	163	2.8	493	0.67	146	22	65
Oct. 11,14-20	902	--	6.1	40	8.1	136	130	50	191	1.8	500	.68	134	27	69
Oct. 21-26	877	--	4.6	36	7.6	128	122	50	174	1.2	478	.65	121	21	70
July 11-14, 16,18-20	481	7.6	17	52	5.5	37	159	30	49	2.0	280	.38	152	22	34
July 21-25, 30-31	632	7.3	12	47	6.2	68	138	44	92	2.8	358	.49	143	30	51
Aug. 1-10	733	7.5	11	52	6.4	87	159	54	110	4.2	408	.55	156	26	55
Aug.11-20	771	7.6	14	48	6.2	94	139	37	138	2.2	436	.59	146	32	58
Aug.21-31	774	7.7	17	50	7.1	93	155	47	127	1.8	442	.60	154	27	57
Sept. 1-10	769	7.7	13	52	7.4	91	170	48	118	1.8	439	.60	160	55	55
Sept.11-20	916	7.7	13	48	6.9	133	151	64	174	1.0	524	.71	148	24	66
Sept.23-27, 29-30	955	7.4	10	46	6.3	140	128	62	194	2.2	542	.74	141	36	68
Sept.21-22,28	598	7.4	11	34	5.6	76	97	46	102	1.8	358	.49	108	28	60
Trinity River at Barber Hill Pumping Plant, near Cove															
Oct. 1-10	915	--	13	45	8.7	128	154	51	176	1.0	524	.71	148	22	65
Oct.11-20	938	--	12	48	9.0	128	157	51	179	.8	534	.73	157	28	64
July 2-10	408	7.4	14	47	4.4	30	151	28	32	2.0	236	.32	135	12	32
July 11-20	547	7.6	13	48	6.3	53	150	34	71	2.5	304	.41	146	23	44
July 21-31	528	8.0	18	42	7.2	55	145	26	75	1.8	311	.42	134	16	47
Aug. 1-10	472	8.0	17	41	5.5	47	137	27	61	1.8	280	.38	125	13	45
Aug.11-14	441	7.8	13	42	5.2	39	134	25	52	2.5	263	.36	126	16	40
Aug.15-20	740	7.8	11	43	9.4	89	117	45	138	1.8	422	.57	146	50	57
Aug.21-24	934	7.6	11	43	10	127	112	50	198	1.2	536	.73	148	56	65
Aug.25,31	2,630	7.6	13	66	41	407	138	119	695	1.8	1,410	1.92	333	220	73
Aug.26-29	4,130	7.7	9.2	76	73	676	133	191	1,170	2.0	2,260	3.07	490	380	75
Sept. 1-4	2,260	7.7	11	61	37	349	139	98	598	4.0	1,230	1.67	304	190	71

MISCELLANEOUS ANALYSES OF STREAMS IN TRINITY RIVER BASIN IN TEXAS
October 1948 to September 1949--Continued

Date of collection	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per-cent Sodium
Trinity River at Barber Hill Pumping Plant, near Cove															
Sept. 5-6, 8-10	3,480	7.6	10	76	59	555	137	157	965	1.8	1,890	2.57	432	320	74
Sept. 11-16	3,600	7.6	10	83	59	567	137	173	985	2.0	1,950	2.65	450	337	73
Sept. 17-20	2,770	7.6	12	76	43	429	146	128	742	1.2	1,500	2.04	366	247	72
Sept. 22-30	2,350	7.9	15	68	37	344	136	107	600	1.2	1,240	1.69	322	210	70
Trinity River at Lone Star Pumping Plant, at Anahuac															
June 1-10	353	8.2	19	45	4.6	22	139	30	23	2.8	218	.30	131	17	27
June 11-20	396	7.5	18	40	5.0	32	127	27	40	2.2	236	.32	120	16	37
June 21-25	479	7.7	17	48	5.8	39	138	42	49	4.2	280	.38	144	31	37
June 26-30	321	7.7	13	39	4.6	20	118	24	25	2.8	187	.25	116	20	27
July 1-5, 10	360	7.8	14	43	4.9	23	130	27	29	2.8	220	.30	127	21	28
July 6-9	512	8.0	14	52	5.7	45	149	46	56	4.0	320	.44	154	32	39
July 11-20	427	7.9	17	49	5.1	33	154	30	40	2.2	263	.36	143	17	34
July 21-31	489	7.8	14	42	6.1	47	134	26	67	2.2	290	.39	130	20	44
Aug. 1-10	531	8.0	14	28	9.1	62	109	21	92	2.2	298	.41	107	18	56
Aug. 11-20	544	8.0	14	30	9.2	61	113	19	93	1.2	304	.41	113	20	54
Aug. 21-30	586	7.8	15	30	14	68	114	32	108	1.2	328	.45	132	39	53
Aug. 31	3,410	8.1	11	75	65	532	146	151	945	2.0	1,840	2.50	454	335	72
Sept. 1-9	4,330	8.0	15	87	80	708	140	207	1,210	6.0	2,360	3.24	546	432	73
Sept. 11-16	7,310	7.7	15	100	148	1,270	148	316	2,250	--	4,170	5.67	858	736	76
Sept. 19-20	1,320	7.7	20	52	15	194	168	76	282	.0	772	1.05	192	54	69
Kaufman City Lake															
Aug. 17, 1949	129	7.8	--	--	--	--	56	--	3.0	--	--	--	--	--	--
Trinity River near Rosser															
July 28, 1949	524	8.2	24	64	7.6	37	218	45	27	8.5	334	--	190	12	30

SAN JACINTO RIVER NEAR HUFFMAN, TEX., December 1948 to September 1949

Analyses of samples collected at the Sheldon Pumping Plant of the City of Houston, 5½ miles downstream from the Huffman gaging station at Beaumont, Sour Lake and Western Railway bridge, 3.4 miles southwest of Huffman, Harris County.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Dec. 1-4	145	502	14	19	5.7	68	60	9.8	113	0.5	288	0.39	113	71	22	68
Dec. 5-15	122	1,010	15	24	9.8	158	72	17	261	.8	540	.73	178	100	42	77
Dec. 16-29	128	417	16	20	4.3	53	62	4.4	91	.0	232	.32	80	68	17	63
Dec. 30-31	159	699	18	24	4.8	113	58	6.9	192	.0	406	.55	174	80	32	76
Jan. 1-10	156	677	16	23	4.7	103	65	5.4	172	.0	380	.52	160	77	24	74
Jan. 11-20	186	536	18	21	4.4	76	64	4.8	126	.0	309	.42	155	70	18	70
Jan. 21-27	1,433	306	12	13	4.9	40	44	7.3	67	.5	225	.31	871	53	17	62
Jan. 28-31	578	419	16	19	3.9	58	48	13	96	.8	284	.39	443	63	24	66
Feb. 1-10	491	524	14	24	4.4	71	55	14	122	.8	299	.41	396	78	33	66
Feb. 11-16, 23-25	1,434	281	7.5	14	2.4	42	40	17	60	.8	172	.23	666	45	10	67
Feb. 17-22	581	439	12	20	3.5	61	53	17	96	.8	252	.34	395	64	21	67
Feb. 26-28	19,130	105	6.0	7.4	2.0	18	23	22	17	.8	84	.11	4,340	27	8	60
Mar. 1-4, 12-13, 16	7,264	197	9.5	9.1	3.8	18	33	11	27	.8	131	.18	2,570	38	11	50
Mar. 5-11, 14-15, 17-21	1,761	279	11	14	3.5	35	41	7.9	59	.8	186	.25	884	49	16	61
Mar. 22-26, 31	12,730	115	6.2	9.2	3.4	8.5	27	7	18	.8	115	.16	3,950	37	15	33
Mar. 27-30	3,585	218	11	13	2.6	29	43	10	42	.5	163	.22	1,580	43	8	59
Apr. 1-3	7,510	126	5.5	6.2	2.0	15	23	3	23	1.2	119	.16	2,410	24	5	58
Apr. 4-8	4,188	202	8.8	11	2.7	23	35	4	39	1.8	156	.21	1,760	39	10	57
Apr. 9-15	1,431	280	13	18	3.1	33	54	10	51	3.0	193	.26	746	58	13	55
Apr. 16-20	760	366	17	22	3.4	43	65	7	71	3.0	235	.32	482	69	16	58
Apr. 21, 30	4,920	433	10	17	3.3	64	43	11	100	8.5	292	.40	3,880	56	21	71
Apr. 22-29	9,182	152	8.1	11	2.3	16	39	4.8	24	1.2	147	.20	3,640	37	5	49
May 1-10	1,230	286	16	21	3.6	30	67	6.7	50	1.2	202	.27	671	67	12	50
May 11-20	386	350	21	23	4.3	37	70	7.3	64	1.0	220	.30	229	75	18	52
May 21-31	445	382	19	23	4.3	43	69	6.5	74	.8	232	.32	279	75	19	55
June 1-10	235	395	18	24	7.6	38	71	5.6	77	.8	237	.32	150	91	33	47
June 11,14, 17-18,20	340	418	17	18	4.4	59	62	6.1	94	1.0	250	.34	230	63	12	67

SAN JACINTO RIVER NEAR HUFFMAN, TEX., December 1948 to September 1949
Continued

Date of Collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 12-13, 15-16,19	521	309	15	16	3.5	37	50	6.2	62	0.8	186	0.25	262	54	13	60
June 21-30	314	374	16	14	5.5	51	58	5.8	80	1.2	229	.31	194	58	10	66
July 1-10	185	456	17	24	4.4	61	86	5.8	94	1.2	262	.36	131	78	8	63
July 11-20	910	347	14	16	3.3	56	74	3.7	78	1.2	215	.29	528	54	0	70
July 21-31	322	351	15	16	3.2	58	78	4.4	78	.8	215	.29	187	53	0	70
Aug. 1-10	522	307	11	12	4.6	41	38	6.7	71	.8	207	.28	292	49	18	65
Aug. 11-20	224	417	18	19	4.9	56	56	4.9	97	1.0	255	.35	154	68	22	64
Aug. 21-31	123	474	19	24	4.1	62	76	4.4	102	.2	268	.36	89	77	14	64
Sept. 1-2,6	193	657	17	20	5.1	106	79	5.5	163	1.5	364	.50	190	71	6	76
Sept. 3-5, 7-10	182	383	16	16	4.1	52	58	5.0	83	.8	237	.32	116	57	9	67
Sept. 11-20	230	480	16	18	4.5	68	61	4.8	110	1.8	278	.38	173	63	13	70
Sept. 21-30	227	450	17	20	4.3	62	68	4.9	99	1.5	266	.36	163	68	12	66
Weighted average	1,533	214	9.4	12	3.1	26	39	9.2	41	1.2	157	0.21	650	43	11	57

MISCELLANEOUS ANALYSES OF STREAMS IN SAN JACINTO RIVER BASIN IN TEXAS

October - December 1948

Date of collection and Source	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
San Jacinto River at Magnolia Garden, near Crosby															
Oct. 2-5, 7-10	15,200	--	9.0	147	339	2,740	123	682	4,900	--	8,880	12.08	1,760	1,660	77
Oct.11-16, 20	15,600	--	7.8	143	347	2,850	119	705	5,070	--	9,180	12.48	1,780	1,690	78
Oct.21-31	16,300	--	11	175	373	2,990	128	766	5,360	--	9,740	13.25	1,970	1,860	77
Nov. 1-6,9, 11-12	14,700	--	7.8	151	323	2,680	118	660	4,790	--	8,670	11.79	1,700	1,610	77
Nov.10,18,20, 22-30	701	--	16	20	7.6	110	104	12	158	0.5	378	.51	81	0	75
Nov.13-16	5,410	--	12	62	105	900	77	212	1,600	3.5	2,930	3.98	586	523	77
Nov.17,21	1,830	--	17	31	32	325	192	61	491	2.0	1,050	1.43	209	52	77
Stewart Creek near Conroe															
Nov. 30	107	6.8	--	--	--	--	10	9.	19	--	94	.13	--	--	--
Dec. 1	176	6.7	--	--	--	--	70	6.	15	--	130	.18	--	--	--

BRAZOS RIVER AT POSSUM KINGDOM DAM, NEAR GRAFORD, TEX., October 1948 to September 1949

Analyses of samples collected immediately below dam on Brazos River, 2.6 miles upstream from Loving Creek, and 11.3 miles southwest of Graford. Discharge records reported are for gaging station at bridge on Palo Pinto-Graford highway, 300 feet downstream from Dark Valley Creek and 6.5 miles north of Palo Pinto. Gage is 20 miles downstream from Possum Kingdom Dam. No appreciable inflow between dam and gaging station except during periods of heavy local rains.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-31	193	2,520	14	172	27	325	126	385	525	3.2	1,510	2.05	787	540	436	57
Nov. 1-30	196	2,520	9.2	172	31	319	114	407	520	.8	1,520	2.07	804	556	463	56
Dec. 1-31	213	2,550	12	172	29	318	104	404	520	.8	1,510	2.05	868	548	463	56
Jan. 1-31	254	2,520	7.4	175	26	329	116	409	522	2.8	1,530	2.08	1,050	544	448	57
Feb. 1-28	292	2,580	9.9	179	26	339	112	426	535	.5	1,570	2.14	1,240	554	462	57
Mar. 1-31	149	2,850	8.8	186	29	376	120	408	620	2.8	1,690	2.30	680	583	484	58
Apr. 1-30	125	2,860	8.6	184	29	377	119	417	612	2.8	1,690	2.30	570	578	480	59
May 1-31	1,588	2,750	9.2	182	29	358	118	420	580	.5	1,640	2.23	7,030	573	476	58
June 1-30	3,209	2,590	11	164	28	339	117	390	538	1.2	1,530	2.08	13,300	524	428	58
July 1-31	797	2,500	8.8	148	27	339	114	355	535	1.2	1,470	2.00	3,160	480	387	61
Aug. 1-31	1,092	2,350	9.2	144	21	309	113	318	492	1.0	1,350	1.84	3,980	446	354	60
Sept. 1-30	1,130	2,220	9.0	133	20	295	108	298	465	1.2	1,270	1.73	3,870	414	326	61
Weighted average	769	2,540	9.9	161	26	333	115	375	531	1.2	1,500	2.04	3,110	509	415	59

BRAZOS RIVER NEAR WHITNEY, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on State Highway 22, 1.8 miles upstream from Towash Creek and 5 miles southwest of Whitney, Hill County, Texas.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	249	2,650	13	161	34	345	114	391	562	0.0	1,560	2.12	1,050	542	448	58
Oct.11-20	259	2,540	14	153	35	321	109	374	528	.2	1,480	2.01	1,030	526	436	57
Oct.21-31	221	2,470	7.2	151	34	306	115	358	508	.0	1,420	1.93	847	517	423	56
Nov. 1-10	204	2,450	5.8	156	31	323	118	374	520	.2	1,470	2.00	810	517	420	57
Nov.11-20	262	2,370	5.1	156	31	306	124	360	500	.0	1,420	1.93	1,000	517	416	56
Nov.21-30	239	2,460	7.8	160	29	324	132	379	505	1.2	1,470	2.00	949	518	410	57
Dec. 1-10	242	2,460	4.8	164	31	314	130	381	508	.0	1,470	2.00	960	537	430	56
Dec.11-20	274	2,200	3.8	143	28	280	131	333	445	.2	1,300	1.77	962	472	364	56
Dec.21-31	293	2,350	3.2	156	30	295	120	363	480	.0	1,390	1.89	1,100	513	414	56
Jan. 1-10	226	2,320	3.6	157	26	308	136	363	480	1.2	1,410	1.92	860	499	388	57
Jan.11-20	243	2,120	4.3	143	27	270	139	327	425	1.5	1,270	1.73	833	468	354	56
Jan.21-24, 30-31	348	1,790	3.3	124	22	225	132	272	352	1.8	1,070	1.45	1,010	400	292	55
Jan.25-29	585	1,280	5.1	90	17	157	135	184	235	2.8	774	1.05	1,220	294	184	54
Feb. 1-10	866	2,040	8.1	138	25	249	120	309	402	2.2	1,190	1.62	2,780	448	349	55
Feb.11-19	412	1,930	8.1	131	21	239	130	288	372	2.8	1,130	1.54	1,260	414	307	56
Feb.20-24	930	2,040	4.8	137	26	253	134	307	402	2.0	1,200	1.63	3,010	449	339	55
Feb.25-28	2,675	444	6.8	43	7.0	35	109	47	51	1.5	252	.34	1,820	136	47	36
Mar. 1-5	803	547	13	58	7.8	41	143	58	60	3.8	326	.44	707	176	60	33
Mar. 6-10	448	864	12	82	11	81	177	105	120	3.8	519	.71	628	250	104	42
Mar.11-21	404	1,240	6.0	96	17	140	162	168	215	3.2	749	1.02	817	310	176	50
Mar.22-25, 31	1,692	781	6.6	65	10	75	121	94	119	1.8	451	.61	2,060	203	104	45
Mar.26-30	3,406	378	8.0	42	5.9	26	125	31	35	2.8	217	.29	2,000	129	27	31
Apr. 1-10	633	872	9.8	74	11	88	161	98	131	2.2	516	.70	882	230	98	45
Apr.11-20	526	1,110	7.2	83	16	117	156	132	185	1.0	667	.91	947	273	145	48
Apr.21-22, 27-29	1,680	479	11	50	7.9	35	142	42	50	2.2	277	.38	1,260	157	41	32

BRAZOS RIVER NEAR WHITNEY, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Apr.23-26, 30	1,417	736	9.4	68	11	67	170	75	99	2.8	427	0.58	1,630	214	75	40
May 1-4, 7-10	1,117	615	8.6	54	8.7	58	144	57	83	2.0	356	.48	1,070	171	53	42
May 5-6	724	1,150	11	86	14	126	153	140	195	1.0	711	.97	1,390	272	146	50
May 11-16 27	2,098	886	11	68	10	93	127	95	147	3.2	538	.73	3,050	210	106	49
May 17-22	24,760	360	10	43	5.7	21	134	22	30	2.2	216	.29	14,400	131	21	26
May 23-26 28-31	6,336	1,200	12	89	15	135	139	147	218	2.2	733	1.00	12,500	284	170	51
June 1-10	3,941	2,230	8.6	150	27	274	131	333	445	.2	1,300	1.77	13,800	486	378	55
June 11-14 17-24	3,668	2,280	13	148	29	282	118	341	460	1.2	1,330	1.81	13,200	488	392	56
June 15-16 25-30 July 1	5,029	1,160	13	40	8.5	185	115	147	205	1.8	695	.94	9,440	135	41	75
July 2-10	1,511	2,220	12	137	28	272	125	306	445	.5	1,260	1.71	5,140	457	354	56
July 11-20	1,036	2,260	11	137	28	288	122	317	462	.8	1,300	1.77	3,640	457	357	58
July 21-31	798	2,390	9.4	141	31	312	117	337	502	2.5	1,390	1.89	2,990	480	384	59
Aug. 1-10	681	2,420	10	144	28	317	121	333	508	1.5	1,400	1.90	2,570	474	376	59
Aug.11-20	900	2,360	12	144	31	291	116	320	490	.5	1,350	1.83	3,280	487	392	56
Aug.21-31	1,155	2,310	11	140	31	286	117	316	478	.8	1,320	1.79	4,120	477	381	57
Sept. 1-10	1,404	2,220	8.2	136	22	291	114	305	462	.5	1,280	1.74	4,850	430	336	60
Sept.11-20	985	2,120	9.8	128	24	281	116	298	442	1.2	1,240	1.69	3,300	418	323	59
Sept.21-30	971	1,950	9.5	115	21	259	110	267	402	1.8	1,130	1.54	2,960	374	284	60
Weighted average	1,566	1,300	10	89	16	155	129	172	242	1.7	765	1.04	3,230	288	182	54

BRAZOS RIVER AT RICHMOND, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 59 in Richmond, Fort Bend County, about 925 feet downstream from Texas & New Orleans Railroad bridge.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	692	1,420	14	104	24	156	225	160	245	0.8	880	1.20	1,640	358	174	49
Oct.11-20	621	1,860	14	126	29	220	220	235	345	.8	1,080	1.47	1,810	434	253	52
Oct.21-31	613	1,780	13	123	29	202	232	222	315	.8	1,020	1.39	1,690	426	236	51
Nov. 1-10	543	1,590	13	110	27	183	239	188	278	.8	955	1.30	1,400	386	221	51
Nov.11-20	592	1,320	13	98	24	140	248	144	208	.8	781	1.06	1,250	343	140	47
Nov.21-30	601	1,450	14	103	25	162	251	168	240	2.2	860	1.17	1,400	360	164	50
Dec. 1-10	568	1,530	10	108	27	173	243	173	268	.5	948	1.29	1,450	380	182	50
Dec.11-20	561	1,520	11	109	26	166	230	174	262	.2	903	1.23	1,370	379	190	49
Dec.21-31	675	1,520	9.5	108	26	174	228	191	262	.2	920	1.25	1,680	376	190	50
Jan. 1-10	640	1,340	18	101	22	148	226	159	222	.0	824	1.12	1,420	342	158	48
Jan.11-20	654	1,370	19	98	23	155	232	162	225	.0	845	1.15	1,490	339	149	50
Jan.21-24	2,032	1,080	8.2	79	16	125	172	131	182	1.8	648	.88	3,560	263	122	51
Jan.25-31	2,579	520	8.6	42	7.3	51	117	51	68	1.8	304	.41	2,120	135	39	45
Feb. 1-10	3,309	513	10	43	6.7	50	103	59	68	1.8	308	.42	2,750	135	50	45
Feb.15-19, 24-25	1,871	1,070	9.2	77	15	118	144	127	184	1.2	669	.91	3,380	254	136	50
Feb.20-23, 26	3,056	1,750	9.9	100	18	235	157	185	362	2.8	1,070	1.46	8,830	324	195	61
Feb.11-14, 27-28	10,080	572	7.4	45	6.9	58	117	49	85	1.5	336	.46	9,140	141	45	47
Mar. 1-10	10,470	355	9.2	34	6.0	32	106	35	39	1.2	210	.29	5,940	110	23	39
Mar.11-20	2,329	587	13	55	8.4	51	162	47	70	2.2	364	.50	2,290	172	39	39
Mar.21-24	6,390	657	12	63	9.5	57	180	55	80	1.5	402	.55	6,940	196	48	39
Mar.25-31	13,070	361	10	43	6.4	21	133	31	26	2.2	222	.30	7,830	134	25	26
Apr. 1-10	7,086	431	11	43	6.2	35	123	35	49	2.0	258	.35	4,940	133	32	36
Apr.11-20	2,547	644	12	54	11	56	146	54	89	2.0	378	.51	2,600	180	60	40
Apr.21-22, 24,28	23,120	456	11	42	7.4	43	128	38	58	2.2	274	.37	17,100	135	30	41

BRAZOS RIVER AT RICHMOND, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Apr. 23, 25-27, 29-30	33,050	289	11	34	5.8	21	120	24	20	2.8	184	0.25	16,400	109	10	29
May 1-10	18,700	376	14	45	6.3	22	144	28	26	3.2	233	.32	11,800	138	20	26
May 11-20	4,566	536	14	57	8.8	37	169	42	53	3.0	320	.44	3,950	178	40	31
May 21-31	17,250	383	11	42	6.7	25	136	25	33	2.8	229	.31	10,700	132	21	29
June 1-6	9,020	740	14	67	11	66	156	79	102	1.8	431	.59	10,500	212	84	40
June 7-10	6,170	1,230	14	95	17	130	160	154	211	1.8	740	1.01	12,300	307	176	48
June 11-20	5,860	1,790	14	128	22	214	157	258	338	1.2	1,050	1.43	16,600	410	282	53
June 21-30	11,000	1,420	13	104	18	157	141	191	255	1.8	868	1.18	25,800	334	218	51
July 1-10	6,314	928	18	74	12	100	156	104	151	1.2	554	.75	9,440	234	106	48
July 11-20	2,540	1,280	15	94	17	138	156	155	223	1.0	758	1.03	5,200	304	176	50
July 26-29	1,605	943	13	74	14	86	145	101	145	1.0	541	.74	2,340	242	123	44
July 21-25 30-31	1,939	1,480	12	101	20	169	148	187	270	.8	860	1.17	4,500	334	212	53
Aug. 1-10	1,292	1,470	12	94	20	173	153	181	268	.8	880	1.20	3,070	316	191	54
Aug.11-20	900	1,530	12	97	22	181	171	183	280	.8	910	1.24	2,210	332	192	54
Aug.21-31	853	1,760	12	108	24	218	162	224	338	.8	1,000	1.36	2,300	368	235	56
Sept. 1-10	938	1,860	12	104	22	248	149	237	368	1.2	1,070	1.46	2,710	350	228	61
Sept.11-20	1,494	1,860	8.6	114	20	242	137	245	372	.5	1,070	1.46	4,320	366	254	59
Sept.21-30	1,240	1,570	11	100	18	198	156	198	298	.5	968	1.32	3,240	324	196	57
Weighted average	4,645	703	12	59	10	70	141	76	103	2.1	423	0.57	5,310	188	72	45

SALT FORK BRAZOS RIVER NEAR ASPERMONT, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 83, 5.5 miles downstream from Dove Creek and 13.2 miles northwest of Aspermont, Stonewall County, Tex.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-8	0.10	63,600	13	1,420	402	15,900	155	3,570	25,400	--	46,800	63.6	13.	5,200	5,070	87
Oct. 9	2.30	17,600	13	369	82	3,450	135	1,430	5,080	--	10,500	14.3	65	1,260	1,150	86
Oct. 12	55.0	8,420	9.5	372	41	1,520	62	951	2,380	--	5,300	7.21	787	1,100	1,050	75
Oct.10-11, 13-14	444	12,700	8.1	422	63	2,380	82	1,040	3,780	--	7,730	10.5	9,270	1,310	1,240	80
Oct.15-20	5.30	30,900	8.6	858	187	6,640	122	2,070	10,700	--	20,500	27.9	293	2,910	2,810	83
Oct.21-28, 30	3.73	50,500	15	1,240	308	13,300	137	2,790	21,500	--	39,200	53.3	395	4,360	4,250	87
Oct.29,31	24.5	19,200	14	581	90	3,810	78	1,360	6,120	--	12,000	16.3	794	1,820	1,760	82
Nov. 1, 5-7	370	13,800	11	489	83	2,930	109	1,210	4,670	--	9,450	12.9	9,440	1,560	1,470	80
Nov. 2-4	136	6,680	11	298	48	1,110	90	779	1,750	2.0	4,040	5.49	1,480	941	837	72
Nov. 8-10	9.23	22,200	12	737	152	4,110	160	1,780	6,680	--	13,500	18.4	336	2,460	2,330	78
Nov.11-14, 16-18	5.76	30,600	11	932	206	6,610	154	2,240	10,700	--	20,800	28.3	323	3,170	3,050	82
Nov. 15, 19-20	3.30	47,500	11	1,260	301	11,400	159	3,030	18,300	--	34,400	46.8	307	4,380	4,250	85
Nov.21-30	1.92	46,000	15	1,170	318	10,800	161	2,890	17,400	--	32,700	44.5	170	4,230	4,100	85
Dec. 1-10	.85	51,900	12	1,290	350	12,700	163	3,170	20,400	--	38,000	51.7	87	4,660	4,520	86
Dec.11-20	.74	52,500	12	1,290	371	12,600	174	3,220	20,300	--	37,900	51.5	76	4,740	4,600	85
Dec.21-31	1.55	54,500	8.2	1,280	379	13,300	139	3,070	21,500	6.0	39,600	53.9	166	4,750	4,640	86
Jan. 1-10	1.23	53,700	11	1,280	379	12,900	150	2,960	21,000	--	38,600	52.5	128	4,750	4,630	86
Jan.11-12, 15-20	11.8	53,800	12	1,010	311	13,400	144	2,310	21,600	--	38,700	52.6	1,230	3,800	3,680	88
Jan.13-14	16.5	92,100	12	1,290	469	27,500	109	2,660	44,000	--	76,000	103	3,390	5,150	5,060	92
Jan.21-31	15.5	62,200	10	904	294	15,800	137	2,410	25,000	--	44,500	60.5	1,860	3,460	3,350	91
Feb. 1-10	8.70	45,100	13	929	267	10,200	144	2,220	16,400	--	30,100	40.9	707	3,420	3,300	87

SALT FORK BRAZOS RIVER NEAR ASPERMONT, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Feb.11-19	5.06	52,300	9.2	1,010	300	11,700	132	2,520	18,800	--	34,400	46.8	470	3,750	3,650	87
Feb.20-28	5.63	59,300	10	1,160	346	14,800	137	2,610	23,900	--	42,900	58.3	652	4,320	4,200	88
Mar. 1-10	4.05	61,600	8.8	1,240	384	14,500	124	2,760	23,600	--	42,600	57.9	466	4,670	4,570	87
Mar.11-20	1.88	60,400	11	1,300	384	15,100	126	2,980	24,400	--	44,200	60.1	224	4,820	4,720	87
Mar. 21, 24-28	8.50	90,000	14	1,330	490	28,400	105	2,850	45,400	--	78,500	107	1,800	5,330	5,250	92
Mar.22-23, 29-31	13.1	31,600	9.8	988	194	6,850	97	2,460	11,000	--	21,500	29.2	760	3,260	3,180	82
Apr. 1-10	2.33	57,900	7.2	1,280	357	14,500	124	2,960	23,400	--	42,600	57.9	268	4,660	4,560	87
Apr.11-18, 20,29	7.94	64,300	13	1,310	405	16,400	136	3,190	26,300	--	47,700	64.9	1,020	4,940	4,820	88
Apr. 19, 21, 24-27,30	40.4	29,300	13	685	192	6,310	137	1,780	10,100	--	19,100	26.0	2,080	2,500	2,390	85
Apr.22-23,28	47.7	15,700	14	430	97	3,030	119	1,100	4,830	--	9,560	13.0	1,230	1,470	1,370	82
May 1-6	16.6	47,200	8.0	928	244	11,100	83	2,250	17,800	--	32,400	44.1	1,450	3,320	3,250	88
May 7	1,470	12,900	19	387	83	2,220	158	1,110	3,140	--	7,340	9.98	29,100	1,310	1,180	79
May 8-10	250	3,530	14	128	28	540	130	339	808	11	1,930	2.62	1,300	434	328	73
May 11-13, 16, 21-27	499	5,580	19	246	44	898	123	616	1,420	3.0	3,310	4.50	4,460	795	694	71
May 14-15, 29-31	57.8	12,000	18	386	96	2,180	143	979	3,520	--	7,250	9.86	1,130	1,360	1,240	78
May 17-19	2,970	2,640	16	210	23	362	96	556	528	4.2	1,750	2.38	14,000	618	540	56
May 20,28	380	3,890	16	266	34	542	99	691	835	4.5	2,440	3.32	2,500	804	723	59
June 1-4	64.4	16,400	17	535	112	3,210	121	1,350	5,160	--	10,400	14.1	1,810	1,800	1,700	80
June 5-9	989	4,740	18	271	42	716	133	699	1,110	3.5	2,920	3.97	7,800	849	740	65
June 10-14	1,902	2,640	16	210	23	362	96	556	528	4.2	1,750	2.38	8,990	618	540	56
June 15-17	479	4,490	16	282	36	653	104	716	1,020	2.8	2,780	3.78	3,600	852	767	62
June 18-20	83.7	8,990	17	344	72	1,580	126	884	2,530	--	5,490	7.47	1,240	1,150	1,050	75
June 21-25	35.4	17,300	20	530	133	3,450	115	1,410	5,530	--	11,100	15.1	1,060	1,870	1,780	80

SALT FORK BRAZOS RIVER NEAR ASPERMONT, TEX., October 1948 to September 1949
Continued - 2

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 26-30	11.2	27,100	19	786	192	5,460	114	1,980	8,840	--	17,300	23.5	523	2,750	2,660	81
July 1-9	29.3	47,600	18	1,230	300	11,100	123	3,030	17,800	--	33,500	45.6	2,650	4,300	4,200	85
July 10-13, 19	215	12,600	22	643	94	2,160	96	1,640	3,480	--	8,090	11.0	4,700	1,990	1,910	70
July 14-15, 30, Aug. 2	194	4,370	19	176	37	716	158	461	1,090	.5	2,580	3.51	1,350	591	462	72
July 16,31, Aug. 1	109	2,790	17	128	34	433	138	336	662	5.0	1,680	2.28	494	460	346	67
July 17-18, 26-29	94.7	7,430	17	324	66	1,240	136	864	1,960	2.0	4,540	6.17	1,160	1,080	968	71
July 20-25	2.30	43,600	23	1,080	253	9,900	139	2,480	16,000	--	29,800	40.5	185	3,740	3,620	85
Aug. 3,7-8, 12	104	6,750	13	428	57	1,030	103	1,040	1,680	1.0	4,300	5.85	1,210	1,300	1,220	63
Aug. 4-6,9, 16-19	20.5	12,900	12	427	92	2,360	120	1,020	3,840	--	7,810	10.6	432	1,440	1,350	78
Aug. 10-11	23.2	42,900	18	924	220	9,890	91	1,860	16,100	--	29,100	39.6	1,820	3,210	3,140	87
Aug. 13-15	131	5,060	13	388	52	672	80	986	1,100	.5	3,250	4.42	1,150	1,180	1,120	55
Aug. 20-31	1.68	52,200	16	1,210	348	12,100	127	3,090	19,500	--	36,300	49.4	165	4,450	4,350	86
Sept. 1-11	5.05	56,000	15	1,290	388	13,300	139	3,260	21,500	--	39,800	54.1	543	4,820	4,700	86
Sept. 12-13, 17-20	123	6,920	11	354	53	1,080	101	950	1,690	1.2	4,190	5.70	1,390	1,100	1,020	68
Sept. 14-16	1,921	3,510	12	198	30	502	102	556	740	3.2	2,090	2.84	10,800	618	534	64
Sept. 21-23	38.3	12,600	18	419	92	2,500	124	1,120	3,970	--	8,180	11.1	846	1,420	1,320	79
Sept. 24-30	13.4	19,200	20	616	142	4,090	110	1,610	6,560	--	13,100	17.8	474	2,120	2,030	81
Weighted average	157	6,380	15	274	46	1,160	112	709	1,820	--	4,080	5.55	1,730	873	781	74

DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 83, 8 miles downstream from Mountain Creek and 10 miles south of Aspermont, Stonewall County.

Date of collection	Mean Discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	91.4	2,540	11	363	30	193	101	934	278	1.2	1,860	2.53	459	1,030	946	29
Oct.11-14	332	1,250	9.0	132	16	112	111	353	128	1.2	849	1.15	761	396	304	38
Oct.15-16	26.5	1,620	9.2	165	20	160	100	465	195	1.2	1,060	1.44	76	494	412	41
Oct.17-19	11.1	2,510	11	262	40	247	111	736	352	2.5	1,710	2.33	51	818	728	39
Nov. 1-7	663	1,330	9.9	98	17	150	123	291	166	3.2	820	1.12	1,470	314	214	51
Nov. 8-10	27.7	2,320	9.7	176	38	268	137	505	380	4.4	1,450	1.97	108	595	482	49
Feb. 10	1.30	5,990	7.0	450	75	825	129	1,330	1,230	1.5	3,980	5.41	14	1,430	1,330	56
Feb.11-13, 15-20	2.80	6,720	9.5	532	83	931	128	1,520	1,420	3.0	4,560	6.20	34	1,670	1,560	55
Feb. 14	13	2,820	7.7	272	34	304	72	742	458	2.2	1,860	2.53	65	819	760	45
Feb.21-28	2.28	6,530	10	576	93	856	130	1,630	1,330	2.5	4,560	6.20	28	1,820	1,710	51
Mar. 1-10	0.77	6,340	13	636	92	779	116	1,770	1,220	1.5	4,570	6.22	9.5	1,970	1,870	46
Mar.11-20	0	5,080	12	660	91	493	124	1,830	770	1.2	3,920	5.33	0	2,020	1,920	35
Mar. 21-31	8.2	5,130	12	676	95	491	127	1,890	760	1.5	3,990	5.43	8.1	2,080	1,970	34
Apr.21-25, 28-30	152	2,580	12	313	39	233	84	904	310	1.8	1,850	2.52	759	942	872	35
Apr.26-27	22	4,600	14	324	57	625	104	958	935	.8	2,970	4.04	176	1,040	958	57
May 1-2	37.5	2,900	12	406	45	246	70	1,190	308	2.8	2,240	3.05	227	1,200	1,140	31
May 3-6	13.0	4,770	16	518	61	369	104	1,060	820	1.8	2,900	3.94	102	1,540	1,460	34
May 7-10	1,341	1,560	15	168	25	50	149	282	152	2.5	768	1.04	103	522	400	17
May 11-20	250	1,420	17	120	23	148	148	351	160	2.8	939	1.28	634	394	272	45
May 21-28	581	1,600	14	201	22	126	103	550	147	2.2	1,110	1.51	1,740	592	508	32
May 29-31, June 1-3	22.5	2,660	13	280	38	264	106	767	385	1.2	1,800	2.45	109	855	768	40

DOUBLE MOUNTAIN FORK BRAZOS RIVER NEAR ASPERMONT, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 4-16	1,120	1,110	16	107	16	105	121	317	92	3.2	746	1.01	2,260	333	234	41
June 17-20	124	1,530	16	135	19	168	120	399	188	2.2	986	1.34	330	415	316	47
June 21-23	39.3	2,940	21	210	50	358	118	693	488	1.5	1,880	2.56	199	730	633	52
June 24-30	3.58	4,760	28	354	73	625	105	1,140	900	1.2	3,170	4.31	306	1,180	1,100	53
July 31, Aug. 1-4	12.6	1,540	16	86	22	202	102	347	212	1.0	968	1.32	33	305	222	59
Aug. 5-10	10.7	2,450	14	329	38	193	84	933	252	1.2	1,800	2.45	52	977	908	30
Aug.11-20	38.5	2,030	15	273	28	158	72	782	188	7.4	1,480	2.01	154	796	738	30
Aug.21-31 ✓	1.05	3,540	17	380	56	378	98	1,150	512	.5	2,540	3.45	7.2	1,180	1,100	41
Sept. 1-2	5.55	2,500	12	340	42	187	79	932	278	.0	1,830	2.49	27	1,020	956	28
Sept. 3-8 ✓	0	4,300	18	572	81	387	103	1,660	560	.0	3,330	4.53	0	1,760	1,680	32
Sept. 9-10	328	1,460	13	57	19	210	118	247	230	.2	850	1.16	753	220	124	67
Sept.11-20	1,168	1,020	14	81	13	110	115	254	95	2.2	664	.90	2,090	256	162	48
Sept.21-24	47.5	1,650	18	112	19	221	130	364	250	1.2	1,050	1.43	135	358	251	57
Sept.25-30	20.5	3,170	19	238	43	439	124	757	592	.8	2,150	2.92	119	771	670	55
Weighted average	139	1,410	14	138	20	130	120	380	150	2.6	916	1.25	344	426	328	40

✓ Includes days of less than 0.05 second-foot flow.

CLEAR FORK BRAZOS RIVER AT NUGENT, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at county highway bridge in Nugent, Jones County, 4 miles upstream from Deadman Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-8	0.10	1,630	19	122	61	126	256	247	260	1.2	1,000	1.36	0.3	556	346	33
Oct. 9-14	918	351	9.8	45	8.2	13	112	61	13	1.2	225	.31	558	146	54	16
Oct.15-20	9.05	503	11	60	12	25	124	101	32	1.2	317	.43	7.7	199	98	21
Oct.21-25	132	392	7.8	56	8.0	11	90	101	12	2.2	256	.35	91	173	99	13
Oct.26-31	16.6	639	7.8	66	15	43	104	141	61	1.8	408	.55	18	226	141	29
Nov. 1-10	3.24	806	10	66	21	69	145	133	101	.8	508	.69	4.4	251	132	37
Nov.11-20	2.60	1,210	10	114	36	91	186	258	148	.0	800	1.09	5.6	432	280	31
Nov.21-30	2.81	1,710	8.8	163	54	138	233	417	215	.2	1,110	1.51	8.4	629	438	32
Dec. 1-10	2.79	2,270	7.5	206	72	205	251	604	298	3.2	1,520	2.07	11	810	604	36
Dec.11-20	1.67	2,600	5.5	236	86	250	278	721	358	3.2	1,800	2.45	8.1	942	714	37
Dec.21-31	2.06	3,040	4.3	285	106	292	289	946	395	4.2	2,170	2.95	12	1,150	910	36
Jan. 1-20, 30-31	3.63	3,220	6.0	283	109	330	239	1030	425	5.8	2,310	3.14	23	1,150	958	38
Jan. 21-29	21.4	3,950	6.4	336	116	446	252	1220	570	6.8	2,830	3.85	164	1,320	1,110	42
Feb. 1-10	4.78	2,250	9.0	202	76	199	181	675	280	4.0	1,530	2.08	20	816	668	35
Feb.11-19	8.89	2,850	8.1	218	74	322	197	734	440	3.5	1,900	2.58	46	848	687	45
Feb.20-28	7.24	2,600	8.8	228	81	246	230	739	338	3.5	1,760	2.39	34	902	714	37
Mar. 1-10	3.73	3,490	6.5	279	97	407	180	1060	515	5.2	2,460	3.35	25	1,100	948	45
Mar.11-20	2.65	5,090	5.0	342	125	687	166	1330	950	1.8	3,520	4.79	25	1,370	1,230	52
Mar.21-31	4.15	5,650	4.1	370	138	774	140	1460	1090	2.5	3,910	5.32	44	1,490	1,380	53
Apr. 1-10	1.80	5,320	6.1	346	138	685	141	1380	970	1.2	3,600	4.90	18	1,430	1,320	51
Apr.11-19	4.14	4,320	6.1	286	121	545	142	1160	760	.8	2,950	4.01	33	1,210	1,100	49
Apr.20,29	121	716	14	56	16	62	122	126	76	2.2	448	.61	146	206	106	39
Apr. 21	198	3,240	15	254	102	366	105	1110	430	2.2	2,330	3.17	1,250	1,050	968	43
Apr.22,30	200	1,370	14	123	32	126	147	369	145	4.2	900	1.22	486	438	318	38
Apr.23-28	81.8	447	11	46	9.1	33	121	72	33	2.8	266	.36	59	152	53	32

CLEAR FORK BRAZOS RIVER AT NUGENT, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
May 1-2	101	1,710	18	130	29	187	149	354	253	2.2	1,050	1.43	286	444	322	48
May 3-6, 10	171	699	11	58	15	61	132	121	73	2.8	414	.56	191	206	98	39
May 7-9	884	301	8.2	31	7.2	20	100	34	22	2.8	175	.24	418	107	25	29
May 11-16	123	497	11	54	11	28	139	87	25	1.2	298	.41	99	180	66	25
May 17-19 28-31	71.4	952	11	84	20	87	145	207	102	3.2	621	.84	120	292	172	39
May 20	210	2,380	19	190	48	274	214	566	352	6.6	1,560	2.12	885	672	496	47
May 21-27	193	472	11	54	10	28	124	92	26	3.0	302	.41	157	176	74	26
June 1-7 9,16	60.8	1,550	10	130	32	153	132	384	198	2.8	1,020	1.39	167	456	348	42
June 8, 10-15, 17-20	160	680	13	66	14	51	126	136	60	2.8	424	.58	183	222	118	33
June 21-30	4.66	770	12	63	18	67	136	146	79	1.5	474	.64	6.0	231	120	39
July 1-10	1.18	1,210	16	84	40	113	176	237	162	1.8	758	1.03	2.4	374	230	40
July 11-13 17	2.80	1,420	16	91	44	147	177	266	215	2.5	887	1.21	6.7	408	263	44
July 14-16	78	473	10	40	12	37	116	71	42	2.8	284	.39	60	149	54	35
July 18-20	2.23	711	11	52	18	64	138	96	91	2.2	424	.58	2.6	204	91	41
July 21-31	0.11	974	14	66	29	91	194	119	140	1.5	592	.81	.2	284	124	41
Aug. 1-10	5.70	1,080	14	64	36	107	184	156	160	1.5	666	.91	10	308	156	43
Aug. 11-18	5.24	1,330	5.8	96	43	128	147	385	121	2.2	933	1.27	13	416	296	40
Aug. 19-31	2.35	2,880	7.0	226	99	299	161	938	362	2.2	2,010	2.73	13	971	839	40
Sept. 1-3	167	657	11	80	11	41	92	194	38	2.2	422	.57	190	244	169	27
Sept. 4-13	6.30	1,010	13	124	19	69	140	316	66	.0	676	.92	11	388	273	28
Sept. 14, 17-20	232	444	11	45	8.2	33	106	77	35	1.5	263	.36	165	146	59	33

CLEAR FORK BRAZOS RIVER AT NUGENT, TEX., October 1945 to September 1949
Continued-2

Date of collection	Mean Discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Sept.15-16	860	264	8.8	34	1.1	20	104	32	8.0	2.5	158	0.21	367	89	4	32
Sept. 21, 25-30	5.24	495	13	48	11	37	139	68	42	1.2	289	.39	4.1	165	51	33
Sept.22-24	8.87	371	13	38	14	17	130	43	26	2.0	217	.30	5.2	152	46	20
Weighted average	58.1	659	10	65	15	54	120	145	63	2.3	425	0.58	67.	224	125	34

/ Includes days of less than 0.05 second-foot flow.

MISCELLANEOUS ANALYSES OF STREAMS IN BRAZOS RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
						Double Mountain Fork Brazos River near Rotan										
1949 Sept. 21	5	2,210	7.9	17	122	26	310	129	420	385	0.8	1,340	1.82	412	306	62
						Brazos River near Benjamin										
1949 July 29	30	17,100	--	--	--	--	--	--	--	5,200	--	--	--	--	--	--
						Brazos River at Waco										
1949 June 7	3,560	2,200	8.0	7.8	127	28	274	67	325	450	.0	1,240	1.69	432	377	58
						Brazos River near Marlin										
1948 Oct. 6	225	2,490	--	8.0	159	35	313	138	372	512	1.2	1,470	2.00	541	428	56
Nov. 10	164	2,280	--	5.2	146	31	290	146	337	462	.2	1,340	1.82	492	372	56
Dec. 14	194	2,280	--	2.7	147	30	285	138	337	458	.8	1,330	1.81	490	378	56
Feb. 4, 1949	878	1,490	--	5.5	108	18	177	146	214	272	3.8	897	1.22	344	224	53
Apr. 1	1,800	424	--	13	50	8.3	29	148	42	38	3.0	302	.41	159	38	28
May 5	1,380	533	--	21	53	5.4	49	134	47	70	4.2	331	.45	154	44	41
June 15	4,120	1,530	8.1	14	106	20	178	127	221	282	1.8	979	1.33	346	242	53
July --	1,100	2,350	8.4	15	144	31	303	142	327	488	1.2	1,380	1.88	487	370	58
Aug. 30	471	2,170	8.1	14	130	27	274	121	293	445	.8	1,240	1.69	436	336	58
						Brazos River near Bryan										
1948 Oct. 5	526	2,500	--	9.2	163	35	309	142	364	515	1.8	1,470	2.00	551	434	55
Nov. 9	245	1,830	--	8.0	100	33	214	162	244	328	.8	1,010	1.37	385	252	55
Dec. 13	272	1,910	--	6.8	105	31	225	136	270	345	.5	1,050	1.43	390	278	56
Mar. 31, 1949	4,900	513	--	13	52	9.6	42	154	45	60	3.2	323	.44	170	44	35
May 5	5,520	422	--	18	48	9.8	23	146	34	36	4.0	268	.36	160	46	23
July 27	1,180	1,910	8.2	17	119	30	231	148	264	372	1.0	1,110	1.51	420	299	54
Aug. 29	975	2,050	8.2	13	124	26	258	133	276	412	.8	1,180	1.60	416	308	57
						Salt Fork Brazos River near Jayton										
Sept. 21, 1949	--	8,438	--	--	--	--	--	--	919	2,240	--	--	--	--	--	--
						Salt Fork Brazos River at county bridge, near railway crossing, near Peacock										
Sept. 20, 1949	--	10,300	--	--	--	--	--	--	649	3,020	--	--	--	--	--	--

MISCELLANEOUS ANALYSES OF STREAMS IN BRAZOS RIVER BASIN IN TEXAS
Continued

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Salt Fork Brazos River at Highway 280 bridge, near Peacock																
Sept. 20, 1949	--	9,780	--	--	--	--	--	--	627	2,820	--	--	--	--	--	--
Fort Phantom Hill Reservoir near Nugent																
Oct. 1, 1948	--	652	7.9	4.7	33	22	63/14	211	52	70	1.2	365	0.50	173	0	42
Leon River near Temple																
1949																
Sept. 1-10	--	798	8.0	12	73	21	59	257	52	94	.5	481	.65	268	58	32
Sept. 12-20	--	756	8.2	24	67	20	.58	237	49	91	.8	451	.61	249	55	33
Sept. 21-30	--	820	8.1	24	68	21	68	245	56	102	.8	490	.67	256	55	37
Lampasas River near Camp Hood																
May 25, 1949	--	931	7.8	8.0	62	27	85	247	25	156	1.8	520	.71	266	63	41

MISCELLANEOUS ANALYSES OF STREAMS IN SAN BERNARD BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Specific conductance (Micromhos at 25° C.)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
San Bernard River on Needville-Bolling Road														
Jan. 14, 1949	966	16	94	24	67	349	22	120	0.0	552	0.75	333	47	30
San Bernard River at pump intake New Gulf Sulphur Co.														
Jan. 14, 1949	1,460	16	102	26	155	354	30	268	.0	825	1.12	362	72	48
San Bernard River on Wharton-West Columbia Road														
Jan. 14, 1949	1,070	14	80	27	95	384	8	138	.0	583	.79	310	0	40

COLORADO RIVER AT COLORADO CITY, TEX. October 1948 to September 1949

Analyses of samples collected at gaging station 3,517 feet upstream from bridge on U. S. Highway 80, 4,100 feet upstream from Texas & Pacific Railway bridge, and 1.6 miles upstream from Lone Wolf Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-9	1.56	10,800	9.0	242	84	2,050	122	622	3,310	--	6,380	8.68	27	949	850	82
Oct. 9	982	5,450	12	140	39	966	136	309	1,540	5.5	3,080	4.19	8,170	510	398	80
Oct. 9-10	1,590	1,570	14	59	15	219	124	73	358	3.8	840	1.14	3,610	208	107	70
Oct. 10	1,420	779	8.6	36	9.4	140	126	59	189	2.8	517	.70	1,980	128	25	70
Oct. 11	570	484	11	23	3.4	70	116	39	60	2.8	286	.39	440	71	0	68
Oct. 12	132	713	9.5	26	6.3	108	114	50	127	1.8	391	.53	139	91	0	72
Oct. 13	53.0	1,210	8.8	36	11	187	98	75	270	3.8	650	.88	93	135	54	75
Oct. 14	26.0	1,710	9.5	47	16	270	104	101	408	5.0	934	1.27	66	184	98	76
Oct. 15, 17-18	11.6	2,940	8.8	74	24	491	115	167	765	5.2	1,590	2.16	50	283	189	79
Oct. 16	14.0	1,300	7.0	54	20	172	106	113	272	3.2	728	.99	28	217	130	63
Oct. 19-21	7.37	3,740	7.7	90	33	627	124	208	995	2.8	2,020	2.75	40	360	258	79
Oct. 22-31	3.63	5,660	7.5	128	43	1,010	129	319	1,600	1.0	3,170	4.31	31	496	391	82
Nov. 1-2	55.8	7,180	7.5	170	57	1,310	166	410	2,080	--	4,120	5.60	621	659	523	81
Nov. 3, 6-10	67.8	2,020	11	55	18	319	117	127	478	2.8	1,070	1.46	196	212	116	77
Nov. 4-5	91.0	874	12	32	7.8	130	109	54	176	2.2	481	.65	118	112	22	72
Nov. 11-14	3.25	3,510	6.6	108	30	588	241	197	900	.0	1,950	2.65	17	393	196	76
Nov. 15-20	2.87	6,110	5.5	136	48	1,110	132	366	1,750	.5	3,480	4.73	27	537	429	82
Nov. 21-30	1.71	7,910	7.2	172	65	1,440	141	479	2,280	--	4,510	6.13	21	698	581	82
Dec. 1-10	1.18	10,300	8.1	226	93	1,940	164	649	3,080	--	6,080	8.27	19	946	812	82
Dec. 11-20	1.76	11,900	10	260	95	2,090	165	775	3,290	--	6,600	8.98	31	1,040	904	81
Dec. 21-31	2.41	13,200	3.2	287	113	2,510	142	812	4,020	--	7,820	10.64	51	1,180	1,060	82
Jan. 1-10	2.21	13,800	4.0	307	117	2,670	146	877	4,270	--	8,320	11.32	50	1,250	1,130	82
Jan. 11-20	7.25	12,800	7.5	295	112	2,450	152	818	3,940	--	7,700	10.47	151	1,200	1,070	82
Jan. 21-31	7.93	11,400	4.8	276	110	2,110	164	761	3,410	--	6,750	9.18	145	1,140	1,010	80
Feb. 1-10	5.21	12,300	5.5	293	108	2,340	166	830	3,730	--	7,390	10.05	104	1,180	1,040	81
Feb. 11-19	2.03	14,600	3.7	325	125	2,860	154	940	4,560	--	8,890	12.09	49	1,320	1,200	82
Feb. 20-28	4.44	15,000	2.5	323	128	2,920	145	975	4,650	--	9,070	12.34	109	1,330	1,210	83

COLORADO RIVER AT COLORADO CITY, TEX. October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Mar. 1-10	2.85	14,800	2.8	329	137	2,910	148	1,010	4,640	--	9,100	12.38	70	1,380	1,260	82
Mar. 11-20	1.53	17,500	3.1	393	165	3,460	189	1,200	5,520	--	10,800	14.69	45	1,660	1,500	82
Mar. 21-31	.93	20,700	2.6	466	195	4,230	130	1,420	6,790	--	13,200	17.95	33	1,960	1,860	82
Apr. 1-10	.76	21,100	4.3	447	178	4,380	120	1,440	6,930	--	13,400	18.22	27	1,850	1,750	84
Apr. 11-18 /	.25	21,500	8.4	477	195	4,450	121	1,500	7,100	--	13,800	18.77	9.3	1,990	1,890	83
Apr. 19	568	4,460	9.5	118	39	748	102	321	1,180	.0	2,470	3.36	3,790	455	372	78
Apr. 19-22, 28,30	614	831	10	36	8.1	117	110	69	151	2.2	452	.61	749	124	34	67
Apr. 23-24, 28,29	179	1,960	9.4	59	16	310	100	121	480	1.8	1,050	1.43	507	213	131	76
Apr. 25-27, 28	38.6	3,800	8.4	96	33	651	110	238	1,030	.5	2,110	2.87	220	375	285	79
May 1-2	41.0	1,560	12	46	13	244	111	95	358	4.2	847	1.15	94	168	78	76
May 3-7	129	3,640	9.5	94	32	692	143	407	940	4.8	2,250	3.06	784	366	249	80
May 8-10, 16	462	686	15	33	5.4	102	100	56	131	2.5	395	.54	493	104	22	68
May 11-15, 17-20	29.0	2,850	9.5	76	26	455	124	199	692	.8	1,520	2.07	119	296	195	77
May 21-27	56.3	5,960	14	146	50	1,060	142	385	1,670	2.2	3,400	4.62	517	570	454	80
May 28-31	717	500	10	24	3.2	74	114	42	69	.5	290	.39	561	73	0	69
June 1-8, 14-17	108	1,520	14	47	11	245	124	100	345	2.8	836	1.14	244	162	61	77
June 9-13	545	594	14	32	5.8	76	119	32	96	3.2	332	.45	489	104	6	61
June 18-20	6.43	3,240	14	86	25	546	134	220	825	2.5	1,780	2.42	31	318	208	79
June 21-30, July 1-8, 20-31 /	.91	5,590	15	127	50	987	145	361	1,540	1.5	3,150	4.28	7.7	522	404	80
Aug. 1-10 /	1.49	8,370	8.8	188	61	1,540	90	504	2,460	--	4,810	6.54	19	720	646	82
Aug. 11	62.0	7,640	7.5	150	47	1,400	90	372	2,230	--	4,250	5.78	711	568	494	84
Aug. 12, 16, 18, 20	220.	1,510	12	47	12	237	113	93	348	1.8	832	1.13	494	167	74	75
Aug. 13-15, 17,19	199.	779	19	32	6.4	115	111	58	144	1.8	440	.60	236	106	16	70

COLORADO RIVER AT COLORADO CITY, TEX. October 1948 to September 1949
Continued--2

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Aug.21-22	36.5	2,400	14	70	15	394	122	126	610	1.0	1,290	1.75	127	236	136	78
Aug.23-31	3.23	5,240	15	121	20	963	132	270	1,480	1.5	2,940	4.00	26	384	276	84
Sept.1-10 /	.54	7,830	14	194	59	1,390	116	416	2,290	--	4,420	6.01	6.4	726	632	81
Sept. 11	63.0	10,700	8.6	250	81	2,020	129	599	3,270	--	6,290	8.55	1,070	957	852	82
Sept.12-14	217	1,420	9.4	45	12	219	133	94	305	1.5	756	1.03	443	162	53	75
Sept.15-20	184	544	9.9	18	4.9	86	107	44	83	2.0	308	.42	153	65	0	74
Sept.21-22	64.5	835	29	30	7.2	121	122	73	134	2.0	468	.64	82	104	4	71
Sept.23-24	15.0	2,330	17	54	15	380	112	135	560	1.5	1,220	1.66	49	196	104	81
Sept. 25	7.60	3,520	16	78	24	628	123	187	965	1.0	1,960	2.67	40	293	192	82
Sept.26-30	3.06	5,630	12	115	39	1,030	119	298	1,620	1.0	3,170	4.31	26	448	350	83
Weighted average	63.6	1,670	12	52	14	279	120	114	408	2.2	948	1.29	163	188	89	76

/ Includes days of less than 0.05 second foot flow.

COLORADO RIVER AT ROBERT LEE, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on State Highway 208 in Robert Lee, Coke County, half a mile upstream from Mountain Creek.

Date of collection	Mean discharge (second feet)	Specific Conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-11	69.4	1,070	16	64	16	129	122	138	185	1.8	657	0.89	123	226	126	55
Oct. 11-20	259	803	10	35	8.5	117	113	81	141	1.8	467	.64	327	122	30	68
Oct. 21-31	21.0	1,260	11	63	16	172	128	150	238	1.2	762	1.04	43	223	118	63
Nov. 1-6	59.3	1,910	8.8	97	23	262	147	237	382	0.8	1,080	1.47	173	336	216	63
Nov. 7-10	58.5	5,310	8.0	148	45	925	146	372	1,460	0.5	3,030	4.12	479	554	435	78
Nov. 11-20	15.8	2,310	6.5	78	22	358	136	216	515	0.2	1,260	1.71	54	285	174	73
Nov. 21-30	5.04	2,000	6.0	90	26	289	152	240	415	0.2	1,140	1.55	16	332	207	65
Dec. 1-10	2.80	2,150	8.2	114	28	304	169	285	442	2.2	1,270	1.73	9.6	400	261	62
Dec. 11-20	2.92	2,240	6.0	126	29	310	172	314	452	2.2	1,320	1.80	10	434	292	61
Dec. 21-31	2.82	2,390	5.5	142	33	326	166	359	488	1.8	1,440	1.96	11	490	354	59
Jan. 1-10	2.69	2,570	5.5	150	37	345	153	398	522	1.2	1,530	2.08	11	526	401	59
Jan. 11-20	9.93	2,720	6.2	160	38	370	160	414	565	1.8	1,630	2.22	44	556	424	59
Jan. 21-31	18.6	3,970	5.5	202	51	583	147	561	905	1.2	2,380	3.24	120	714	593	64
Feb. 1-10	12.4	3,960	5.8	229	57	561	140	649	875	2.2	2,450	3.33	82	806	692	60
Feb. 11-14,19	16.8	3,650	6.1	191	52	521	125	540	820	2.2	2,190	2.98	99	690	588	62
Feb. 14-18	7.36	1,470	5.8	82	19	197	82	210	300	2.8	880	1.20	17	282	216	60
Feb. 20-28	34.9	4,730	5.5	203	57	740	121	575	1,170	3.5	2,810	3.82	265	741	642	68
Mar. 1-3	19.0	4,540	5.0	189	50	706	99	541	1,110	3.5	2,650	3.60	136	677	596	69
Mar. 4-10	10.7	2,790	6.1	155	32	381	93	423	588	2.0	1,630	2.22	47	518	442	62
Mar. 11-20	5.67	3,480	6.2	205	43	485	101	557	765	1.2	2,110	2.87	32	688	606	60
Mar. 21-31	4.17	3,880	4.1	205	49	561	107	565	890	1.5	2,330	3.17	26	713	626	63
Apr. 1-10	2.08	3,730	12	190	51	535	110	529	855	0.5	2,230	3.03	13	684	594	63
Apr. 11-19	3.20	3,630	9.8	185	52	520	130	514	825	1.2	2,170	2.95	19	676	569	63
Apr. 19-21	1232	2,640	17	105	25	390	115	243	612	2.8	1,450	1.97	4820	365	271	70
Apr. 19-20, 22-30	1035	724	14	44	8.3	87	95	86	116	2.8	418	.57	1170	144	66	57
May 1-7	336	1,090	15	49	13	145	100	99	215	2.8	610	.83	553	176	94	64
May 8-16,20	2176	511	14	33	7.3	57	102	55	66	3.8	298	.41	1750	112	29	53
May 21-27,29-31	473	866	17	53	12	100	107	107	140	2.2	499	.68	637	182	94	54
May 29	2660	1,660	19	70	16	240	114	117	385	4.5	971	1.32	6970	240	147	68

COLORADO RIVER AT ROBERT LEE, TEX., October 1948 to September 1949
(Continued)

Date of Collection	Mean discharge (second feet)	Specific Conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 1-7,8	205	881	21	49	10	99	125	101	119	3.8	475	0.65	263	164	61	57
June 8	4,293	432	16	46	6.9	31	112	64	35	4.8	267	.36	3,090	143	51	32
June 8	8,340	564	18	49	8.2	39	86	71	66	4.2	326	.44	7,340	156	86	35
June 8	7,968	359	18	38	7.0	24	108	39	29	8.2	218	.30	4,690	124	35	30
June 8	5,467	297	21	34	6.8	16	100	36	17	4.4	186	.25	2,750	113	31	23
June 9	2,930	388	16	35	6.9	33	117	38	35	4.3	236	.32	1,870	116	20	39
June 9	2,930	1,010	23	50	12	140	108	87	210	4.2	597	.81	4,720	174	86	64
June 9	2,930	1,640	23	67	16	237	109	121	375	4.4	961	1.31	7,600	233	144	69
June 10	1,760	671	18	33	7.5	87	124	76	83	6.1	382	.52	1,820	114	12	62
June 11	2,150	384	17	29	5.8	39	100	48	33	4.4	232	.32	1,350	96	14	47
June 12-15	443	449	21	30	7.2	46	106	45	48	4.4	270	.37	323	104	18	49
June 16-18	118	981	19	57	12	124	128	118	165	1.8	572	.78	182	192	87	58
June 19-24	80.3	1,480	20	82	18	198	142	187	282	1.2	890	1.21	193	278	162	61
June 25-30	25.5	1,350	15	88	20	159	120	212	232	1.2	831	1.13	57	302	203	53
July 1-10	8.85	1,750	18	102	29	215	115	291	315	2.5	1,030	1.40	25	374	280	56
July 11-13, 16-17	63.1	2,010	22	115	35	240	92	346	365	2.2	1,170	1.59	199	431	356	55
July 14-15	169	476	19	54	7.9	16	84	82	29	7.8	301	.41	137	167	98	17
July 18-19	140	4,240	20	158	55	653	120	482	1,020	3.0	2,450	3.33	926	620	522	70
July 20-31	15.4	2,290	18	90	32	324	113	245	505	1.8	1,270	1.73	53	356	264	66
Aug. 1-10 1/	1.84	2,640	23	104	36	414	91	333	628	1.2	1,580	2.15	7.8	408	333	69
Aug. 11-13	2.17	3,130	23	144	44	467	83	474	705	0.5	1,900	2.58	11	540	472	65
Aug. 14	347	4,840	21	140	42	842	133	387	1,300	8.5	2,810	3.82	2,630	522	413	78
Aug. 15	320	1,510	19	40	11	244	123	118	315	8.3	827	1.12	715	145	44	79
Aug. 15-20	205	800	20	28	6.9	120	112	76	131	4.5	450	.61	249	98	6.	73
Aug. 21-31	29.3	1,470	19	58	16	218	114	143	312	1.5	839	1.14	66	210	117	69
Sept. 1-5	97.8	561	12	50	7.9	49	94	91	65	2.0	342	.47	90	158	80	40
Sept. 6-10	9.78	864	14	62	12	95	119	116	136	0.2	530	.72	14	204	106	50
Sept. 14,20	472	368	11	30	5.2	36	83	46	40	3.0	220	.30	280	96	28	45

1/ Includes days of less than 0.05 second-foot flow

COLORADO RIVER AT ROBERT LEE, TEX., October 1948 to September 1949
(Continued)

Date of collection	Mean discharge (second feet)	Specific Conductance (Micromhos)	(SiO_4) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Sept. 11-13 15,16	271	1,230	13	61	15	167	107	133	248	2.2	729	0.99	533	214	126	63
Sept. 14,16-19	761	686	15	35	7.4	94	106	72	111	3.8	398	.54	818	118	31	63
Sept. 21-24	140	640	22	30	7.4	87	106	65	97	3.8	368	.50	139	106	18	64
Sept. 25-30	31.2	1,320	16	60	49	124	125	132	268	1.8	721	.98	61	351	248	43
Weighted Average	240	772	16	45	10	96	105	85	131	3.7	450	0.61	292	154	68	58

COLORADO RIVER NEAR SAN SABA, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 190, 5.2 miles downstream from San Saba River and 9.2 miles east of San Saba.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	164	1,160	16	79	29	119	196	132	195	2.5	695	0.95	308	316	156	45
Oct.11-14	238	1,330	14	82	28	148	188	154	230	1.8	780	1.06	501	320	166	50
Oct.15-20	600	759	11	59	16	70	158	91	99	2.0	454	.62	735	213	84	42
Oct.21-31	149	641	11	56	18	51	192	55	76	3.2	387	.53	156	214	56	34
Nov. 1-6	96.3	970	13	73	23	95	232	85	143	2.2	563	.77	146	276	86	43
Nov. 7-20	110	1,640	11	93	28	205	244	122	328	3.8	949	1.29	282	347	147	56
Nov.21-30	102	1,040	11	68	23	106	244	55	168	.8	574	.78	158	264	64	47
Dec. 1-10	86.2	890	11	66	25	85	276	42	128	1.8	506	.69	118	268	41	41
Dec.11-20	97.2	925	9.0	68	25	88	281	42	134	1.5	516	.70	135	272	42	41
Dec.21-31	106	874	9.8	67	25	80	286	40	119	1.2	492	.67	141	270	36	39
Jan. 1-10	97.7	858	11	66	31	63	283	39	110	.5	475	.65	125	292	60	32
Jan.11-20	161	880	8.2	68	26	76	271	50	118	.8	488	.66	212	276	54	37
Jan.21-31	371	859	8.0	66	17	86	223	74	113	2.2	494	.67	495	234	52	44
Feb. 1-10	197	499	9.0	50	17	29	203	29	43	1.5	300	.41	160	195	28	24
Feb.11-19	166	752	9.9	68	23	58	231	74	86	1.5	440	.60	197	264	74	32
Feb.20-26	592	860	8.8	70	23	74	220	86	112	1.5	521	.71	833	269	88	37
Feb.27-28	1,184	489	8.0	43	12	38	141	39	58	2.2	298	.41	953	157	41	35
Mar. 1-10	281	523	11	52	15	33	194	36	46	2.2	290	.39	220	192	32	27
Mar.11-20	146	605	7.8	59	20	37	226	43	55	1.8	335	.46	132	229	44	26
Mar.21-31	3,580	361	10	40	8.8	21	140	22	30	3.2	212	.29	2,050	136	21	25
Apr. 1-10	187	484	13	51	15	25	204	17	40	2.2	292	.40	147	189	22	22
Apr.11-20	1,452	517	11	53	17	34	222	31	42	2.8	336	.46	1,320	202	20	27
Apr.21-23, 27-30	18,880	315	11	38	5.7	17	126	16	22	5.4	189	.26	9,630	118	15	24
Apr.24-26	8,473	665	12	52	7.8	70	141	52	102	1.5	390	.53	8,920	162	46	48

COLORADO RIVER NEAR SAN SABA, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
May 1,5-7	6,410	471	14	49	8.1	33	140	34	53	4.2	286	0.39	4,950	156	41	32
May 2-4, 8-10	6,020	334	13	41	7.2	15	137	15	24	3.2	201	.27	3,270	132	20	20
May 11-20	5,576	435	12	44	8.5	31	145	31	42	3.0	256	.35	3,850	145	26	32
May 21-31	3,423	369	11	41	8.3	19	130	24	32	2.0	222	.30	2,050	136	30	23
June 1-5	1,490	439	15	46	9.5	27	135	43	39	2.8	275	.37	1,110	154	43	28
June 6-11	2,039	859	16	57	15	95	162	65	146	3.8	497	.68	2,740	204	71	50
June 12-20	1,844	475	13	42	11	39	149	37	50	3.8	277	.38	1,380	150	28	36
June 21-24	684	512	13	48	15	37	176	37	55	2.8	302	.41	558	182	38	31
June 25-30	976	376	11	19	5.8	53	146	22	29	2.8	220	.30	580	71	0	62
July 1-10	319	522	12	48	14	37	176	36	52	2.5	298	.41	257	178	33	31
July 11-20	292	544	15	50	17	37	206	29	54	1.8	301	.41	237	195	26	29
July 21-31	241	613	14	53	14	53	186	49	71	2.2	351	.48	228	190	38	38
Aug. 1-10	281	672	14	56	18	58	212	50	81	1.8	400	.54	303	214	40	37
Aug. 11-20	425	502	14	45	11	39	143	45	55	1.8	306	.42	351	158	40	35
Aug. 21-31	183	516	14	48	12	38	164	35	56	2.2	314	.43	155	170	35	33
Sept. 1-9	207	685	14	58	15	58	178	61	86	1.8	420	.57	235	206	60	38
Sept. 10-13, 17	277	1,920	15	108	31	242	167	231	385	2.8	1,100	1.50	823	397	260	57
Sept. 14-16, 18-20	730	971	16	62	21	104	189	100	147	1.5	564	.77	1,110	241	86	48
Sept. 21-30	393	453	9.9	39	9.1	37	118	45	50	2.2	261	.35	277	135	38	38
Weighted average	1,309	455	12	45	9.4	34	147	31	48	3.5	270	0.37	954	151	30	33

COLORADO RIVER AT AUSTIN, TEX., October 1948 to September 1949

Analyses of samples collected at raw water intake pipe of Austin City Water Plant 4.5 miles upstream from gaging station at southeast edge of Austin on Montopolis Bridge on U. S. Highway 290.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-31	939	447	9.9	39	15	31	158	28	47	1.0	255	0.35	647	159	30	30
Nov. 1-30	768	475	9.4	41	14	37	166	30	51	.8	270	.37	560	160	24	33
Dec. 1-31	732	488	8.8	42	16	34	170	31	51	.8	279	.38	551	171	31	30
Jan. 1-31	702	515	7.2	44	16	40	179	32	58	1.0	288	.39	546	176	30	33
Feb. 1-28	720	498	8.1	44	16	35	177	31	52	1.0	280	.38	544	176	31	30
Mar. 1-31	1,125	497	7.7	44	15	37	176	32	53	1.2	281	.38	854	172	28	32
Apr. 1-30	1,069	493	8.0	44	15	35	173	31	51	2.2	271	.37	782	172	30	31
May 1-31	1,174	492	10	44	15	34	172	31	51	1.5	283	.38	897	172	31	30
June 1-30	2,042	497	9.5	41	15	38	166	32	53	2.2	281	.38	1,550	164	28	33
July 1-31	1,912	483	11	42	15	35	174	31	47	1.8	272	.37	1,400	166	24	31
Aug. 1-31	1,806	477	9.5	42	13	36	169	30	47	1.8	268	.36	1,310	158	20	33
Sept. 1-30	1,547	485	11	43	11	40	168	31	49	1.0	269	.37	1,120	153	15	36
Weighted average	1,214	487	9.5	42	14	36	170	30	50	1.5	274	0.37	898	162	23	33

COLORADO RIVER AT WHARTON, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station on U. S. Highway 59 in Wharton, Wharton County, 1,000 feet downstream from Texas & New Orleans Railroad bridge and 12 miles upstream from Jones Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-31	845	508	17	46	16	33	190	30	47	0.8	290	0.39	662	181	26	29
Nov. 1-30	871	521	9.8	48	16	33	186	31	51	.8	294	.40	691	186	34	28
Dec. 1-31	815	542	6.8	52	16	37	205	33	52	1.2	303	.41	667	196	28	29
Jan. 1-31	949	542	10	51	15	38	199	34	50	2.2	304	.41	779	189	26	30
Feb. 1-23	963	532	9.9	52	16	33	193	34	51	2.8	300	.41	780	196	38	27
Feb.24-28	12,030	240	8.4	28	4.1	19	104	12	20	1.5	144	.20	4,680	87	2	32
Mar. 1-31	2,082	464	11	46	12	31	165	35	41	2.8	268	.36	1,510	164	29	29
Apr. 1-21	1,419	524	14	48	14	40	188	35	51	2.2	312	.42	1,200	178	24	33
Apr.22-30	10,520	273	14	34	3.9	14	112	20	12	2.5	182	.25	5,170	101	9	23
May 1-31	1,673	494	18	47	14	32	172	37	44	3.2	293	.40	1,320	175	34	28
June 1-30	1,630	500	15	44	15	32	168	33	48	2.2	287	.39	1,260	172	34	29
July 1-31	1,567	489	17	42	15	34	166	31	50	2.5	277	.38	1,170	166	30	31
Aug. 1-31	1,162	488	14	40	15	36	168	31	49	2.2	276	.38	866	162	24	33
Sept.1-30	1,490	484	14	45	13	34	172	30	47	1.8	278	.38	1,120	166	25	31
Weighted average	1,804	406	12	39	11	27	148	27	36	2.0	237	0.32	1,150	143	21	29

MORGAN CREEK NEAR COLORADO CITY, TEX., October 1948 to July 1949

Analyses of samples collected at gaging station 227 feet downstream from U. S. Highway 80 bridge, about 1 mile upstream from Texas & Pacific Railway bridge, 5 miles west of Colorado City and 5½ miles downstream from Cherry Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 11-13	0.90	558	13	26	7.1	76	88	70	81	1.5	330	0.45	0.8	94	22	64
Nov. 3,7	0	1,650	7.2	62	21	264	157	248	302	3.8	994	1.35	--	241	112	70
Jan. 13,16-18	.08	6,170	4.0	196	86	1,070	232	872	1,470	4.5	3,820	5.20	.8	842	652	73
Jan. 21-27, 29-31	.19	7,830	3.7	218	105	1,400	188	1,050	1,960	3.5	4,830	6.57	2.5	976	822	76
Feb. 1-2, 6-8, 12	.05	8,540	2.8	238	116	1,540	159	1,130	2,200	--	5,310	7.22	.7	1,070	940	76
Mar. 2-3,5, 7, 10	.10	1,770	9.2	63	24	260	106	236	345	3.0	992	1.35	.3	255	168	69
Mar. 12, 14	0	2,010	6.8	71	27	299	114	281	390	1.8	1,130	1.54	--	288	194	69
Mar. 21, 24, 26	0	2,150	4.6	79	32	327	128	319	425	3.0	1,250	1.70	--	328	224	68
Apr. 19 (7:00 A.M.)	--	2,070	16	93	31	307	176	319	390	1.2	1,240	1.69	--	360	216	65
Apr. 19 (10:15 A.M.)	--	394	14	33	7.4	40	128	38	37	3.2	275	.37	--	113	8	43
Apr. 20 (7:[illegible])	2,330	227	10	27	5.1	16	109	19	8.0	3.2	171	.23	1,080	88	0	28
Apr. 21-22, 28-30	239	372	11	32	6.6	35	111	46	30	2.0	222	.30	143	107	16	41
Apr. 23-24	4.75	1,130	12	60	17	145	121	163	187	2.2	678	.92	8.7	220	120	59
Apr. 26-27	10.8	2,140	11	97	30	307	147	306	420	2.2	1,250	1.70	36	366	245	65
May 1, 6	5.00	700	14	49	11	75	107	119	84	1.5	427	.58	5.8	168	80	49
May 7-9	--	276	15	26	5.2	24	104	29	15	1.0	171	.23	--	86	1	37
May 2-4	1.60	1,500	14	76	21	202	140	213	268	2.0	899	1.22	3.9	276	162	61
June 11-12,19	--	803	20	50	12	94	129	107	113	4.0	475	.65	--	174	69	54
June 14, 20	--	1,430	18	75	21	190	159	207	240	3.0	850	1.16	--	274	143	60
June 16-18	--	497	22	42	7.8	47	139	58	45	2.0	302	.41	--	137	23	43
June 21-22, 25-26, 31	--	1,460	24	76	22	190	144	219	245	2.5	884	1.20	--	280	162	60

MORGAN CREEK NEAR COLORADO CITY, TEX., October 1948 to July 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 27, 29	--	394	24	36	6.2	28	119	33	29	4.0	243	0.33	--	115	18	34
July 4-5, 8	--	2,290	21	97	31	344	176	317	455	1.2	1,350	1.84	--	370	226	57

LAKE COLORADO CITY

Samples collected short distance above dam on new reservoir on Morgan Creek near Colorado City, Texas. Storage began about May 1, 1949.

May 9	--	309	8.0	24	4.0	32	87	37	25	1.8	175	.24	--	76	5	48
Sept. 25	--	471	9.9	40	8.6	45	154	49	39	.0	267	.36	--	135	9	42

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Mean Discharge (second feet)	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Colorado River near Ira																
Oct. 5, 1948	--	8,450	--	--	--	--	--	108	420	2,530	--	--	--	--	--	--
Oct. 14	--	2,810	--	--	--	--	--	104	85	732	--	--	--	--	--	--
Colorado River at Ballinger																
Nov. 22, 1948	15	2,570	--	6.0	158	40	338	178	398	518	4.5	1,550	2.11	559	413	57
Feb. 10, 1949	15	2,520	--	2.4	162	49	306	179	449	465	2.2	1,520	2.07	606	460	52
Concho River near Paint Rock																
Nov. 22, 1948	19	824	--	9.8	66	29	61	191	106	106	.0	514	.70	284	127	32
Dove Creek, Schleicher County																
Sept. 27, 1949 /	10.8	1,180	7.9	29	69	20	121	236	24	208	6.8	596	.81	254	60	51
Lake Brownwood near Brownwood																
July 29, 1949	--	350	7.9	10	40	8.1	20	136	16	34	1.0	196	.27	133	22	25
Pecan Bayou at Brownwood																
Nov. 23, 1948	.1	412	--	5.5	51	7.2	23	159	26	35	.2	254	.35	157	27	24
Feb. 10, 1949	.4	457	--	7.0	54	9.4	24	181	26	36	.0	264	.36	173	25	23
Horde Creek Reservoir																
July 28, 1949	--	247	7.8	15	36	4.3	11	138	8.8	6.0	2.0	153	.21	108	0	19
San Saba River at San Saba																
Nov. 23, 1948	42	547	--	10	66	31	12	328	9.9	18	1.2	320	.44	292	23	8
Feb. 8, 1949	68	526	--	10	62	27	13	307	13	19	1.2	300	.41	266	14	9
Llano River at Llano																
Nov. 21, 1948	86	362	--	8.2	38	21	3.6	191	9.6	16	.0	197	.27	181	25	4
Feb. 8, 1949	108	401	--	6.2	40	22	12	213	13	19	.8	224	.30	190	16	12
Llano River near confluence of Colorado River																
Oct. --, 1948	--	335	8.2	11	36	17	9.5/4.2	185	8.7	19	.0	197	.27	160	8	14
Pedernales River near Johnson City																
Nov. 21, 1948	9.8	779	--	2.4	50	44	31	234	35	102	.8	387	.53	306	134	18

/ Instantaneous discharge.

GUADALUPE RIVER AT VICTORIA, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on U. S. Highway 59 in Victoria, Victoria County, 1,300 feet upstream from Texas & New Orleans Railroad bridge and 10 miles upstream from Coleto Creek.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	355	659	17	55	20	49	217	30	80	4.0	378	0.51	362	220	42	32
Oct.11-20	493	650	18	56	20	46	220	29	79	.8	371	.50	494	222	42	31
Oct.21-31	542	640	15	54	17	39	200	29	67	1.8	344	.47	503	205	41	29
Nov. 1-10	372	586	17	60	19	31	223	29	57	1.8	340	.46	341	228	44	23
Nov.11-20	414	671	19	65	18	51	246	31	72	1.8	380	.52	425	236	34	31
Nov.21-30	403	673	14	67	21	40	250	29	74	2.0	389	.53	423	254	48	26
Dec. 1-10	422	810	12	71	22	58	234	31	118	2.2	468	.64	533	268	76	32
Dec.11-20	434	754	13	69	21	54	240	32	102	2.2	447	.61	524	258	62	31
Dec.21-31	425	823	14	73	21	60	246	32	114	2.2	473	.64	543	268	67	33
Jan. 1-10	415	742	21	68	22	50	240	32	97	2.0	434	.59	486	260	64	29
Jan.11-20	444	734	17	69	21	49	240	33	89	10	424	.58	508	258	62	29
Jan.21-27	593	719	13	68	20	51	247	31	89	2.8	437	.59	700	252	49	31
Jan.28-31	598	1,270	12	87	30	126	245	43	260	4.0	789	1.07	1,270	340	140	45
Feb. 1-10	539	1,130	9.4	76	25	119	225	44	225	4.0	643	.87	936	292	108	47
Feb.11-19	525	647	5.1	52	18	50	194	35	83	1.5	377	.51	534	204	45	35
Feb.20-28	1,989	704	8.1	57	18	58	198	32	103	2.2	434	.59	2,330	216	54	37
Mar. 1-10	2,919	659	11	60	16	50	193	33	92	3.0	378	.51	2,980	216	58	34
Mar.11-20	1,045	667	13	62	15	48	196	33	87	3.0	414	.56	1,170	216	56	32
Mar.21-24, 29	752	561	13	56	13	38	188	27	65	3.2	349	.47	709	194	40	30
Mar.25-28, 30-31	862	805	13	73	19	61	228	34	119	3.2	488	.66	1,140	260	73	34
Apr. 1-10	827	736	13	74	20	46	248	34	88	3.5	442	.60	987	266	63	27
Apr.11-20	712	769	13	72	20	53	247	33	98	3.0	464	.63	892	262	59	31
Apr. 21,24	5,035	1,180	11	73	21	--	170	--	250	6.6	674	.92	9,160	268	129	--
Apr. 22, 27-30	13,780	373	12	35	6.2	30	107	20	47	2.8	262	.36	9,750	113	25	36

GUADALUPE RIVER AT VICTORIA, TEX., October 1945 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Apr. 23, 25-26	9,557	770	11	52	11	82	118	27	160	2.8	458	0.62	11,800	175	78	50
May 1-5	8,360	468	16	51	8.0	33	170	26	46	2.2	284	.39	6,410	160	21	31
May 6-10	2,118	718	18	76	15	50	242	34	88	3.2	434	.59	2,480	251	52	30
May 11-20	1,864	691	16	75	16	42	251	31	74	3.2	425	.58	2,140	253	48	27
May 21-31	1,345	660	16	73	16	42	253	32	68	3.2	396	.54	1,440	248	40	27
June 1-10	1,061	729	18	68	21	47	240	33	89	2.8	428	.58	1,230	256	60	29
June 11-19	1,507	577	18	59	16	36	217	26	59	2.8	329	.45	1,340	213	35	27
June 20-21 27-30	898	647	16	61	22	25	226	32	74	2.8	376	.51	912	242	58	25
June 22-26	872	1,030	16	76	25	92	227	38	187	2.8	595	.81	1,400	292	106	40
July 1-10	775	598	16	58	20	34	217	29	65	2.0	352	.48	737	226	48	25
July 11-16, 18	929	670	19	55	20	52	203	32	93	1.8	392	.53	983	220	53	34
July 17, 19-20	1,335	533	16	47	12	44	174	25	65	2.5	310	.42	1,120	167	24	36
July 21-31	857	471	16	46	11	35	175	20	49	2.5	277	.38	641	160	17	32
Aug. 1-5, 9-10	670	549	15	52	14	40	197	27	58	2.5	315	.43	570	188	26	31
Aug. 6-8	892	1,080	13	64	20	120	167	31	235	2.5	626	.85	1,510	242	104	52
Aug.11-20	722	656	19	60	17	48	224	28	78	1.5	376	.51	733	220	36	32
Aug.21-31	536	590	18	55	18	37	216	29	60	1.2	341	.46	493	212	34	28
Sept. 1-10	535	585	17	54	19	39	219	29	61	1.8	360	.49	520	213	34	28
Sept.11-20	493	579	16	54	19	37	222	28	57	1.0	332	.45	442	213	31	27
Sept.21-30	697	554	18	55	13	43	224	26	52	1.2	320	.43	602	191	7	33
Weighted average	1,200	632	14	57	15	48	190	28	86	2.7	380	0.52	1,230	204	48	34

MISCELLANEOUS ANALYSES OF STREAMS IN THE GUADALUPE RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	pH	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
1949																
				Cibolo Creek 0.7 mile above Sutherland Springs												
Aug. 17	12.6	617	21	56	11	52	174	62	64	2.0	8.1	365	0.50	185	42	38
				Cibolo Creek 500 feet above Sutherland Springs												
Aug. 17	.2	860	18	12	4.2	177	388	31	58	.0	8.2	516	.70	48	0	89
				Cibolo Creek at Sutherland Springs												
Aug. 17	1.3	887	17	8.6	3.9	196	435	38	48	.0	8.1	535	.73	38	0	92
				Cibolo Creek one-half mile below Sutherland Springs												
Aug. 17	14.1	633	20	52	10	59	180	60	63	1.2	8.2	373	.51	171	24	43

NUECES RIVER NEAR MATHIS, TEX., October 1948 to September 1949

Analyses of samples collected at intake tower at Lake Corpus Christi near Mathis, San Patricio County, and 0.8 mile upstream from gaging station at bridge on U. S. Highway 59.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-31	518	421	19	38	5.9	41	157	29	35	1.2	259	0.35	362	119	0	43
Nov. 1-30	128	400	14	36	4.9	40	134	28	40	1.0	246	.33	85	110	0	44
Dec. 1-31	31.8	419	16	39	3.3	45	154	26	39	.5	261	.35	22	111	0	47
Jan. 1-31	39.8	442	13	42	6.5	41	167	29	37	.5	274	.37	29	132	0	40
Feb. 1-28	48.7	445	15	42	5.4	46	168	29	41	.5	288	.39	38	127	0	44
Mar. 1-31	2,372	393	16	43	4.6	33	165	20	28	1.8	247	.34	1,580	126	0	36
Apr. 1-26	890	407	19	50	6.4	27	184	20	26	2.2	262	.36	630	151	0	28
Apr. 27-30	19,450	261	12	28	3.6	24	108	22	17	2.2	175	.24	9,190	85	0	38
May 1-31	3,976	373	22	43	4.9	27	162	17	25	.8	233	.32	2,500	127	0	32
June 1-30	1,821	429	21	47	5.8	35	167	27	36	1.2	267	.36	1,310	141	4	35
July 1-31	1,590	368	19	41	5.5	26	145	25	25	1.2	230	.31	987	125	6	31
Aug. 1-31	650	347	19	38	4.5	28	128	27	28	1.5	209	.28	367	113	8	35
Sept. 1-30	67.0	445	22	48	4.7	40	170	34	36	.5	274	.37	50	139	0	38
Weighted average	1,225	366	18	41	4.9	29	151	22	26	1.4	231	0.31	764	122	0	34

MISCELLANEOUS ANALYSES OF STREAMS IN NUECES RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Discharge (second feet)	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Nueces River near Laguna																
May 27, 1949	131 /	432	7.9	13	58	15	7.8	234	9.3	13	4.5	236	0.32	206	15	8
Nueces River near Tilden																
Aug. 17, 1949	838	384	8.3	--	--	--	--	166	38	18	--	--	--	--	--	--
Frio River at Calliham																
Aug. 16, 1949	89	437	8.2	--	--	--	--	144	40	50	--	--	--	--	--	--
Atascosa River near Three Rivers																
Aug. 16, 1949	35	1,480	8.2	--	--	--	--	157	226	175	--	--	--	--	--	--

/ Mean discharge (second-feet).

RIO GRANDE AT MISSION PUMPING PLANT, NEAR MISSION, TEX.
October 1948 to September 1949
Analyses of samples collected at Mission Pumping Plant 3 miles south of Mission, Hidalgo County, Tex.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	--	898	22	72	17	89	165	151	106	3.0	562	0.76	--	250	114	44
Oct.11-20	--	924	19	74	16	95	158	160	112	4.0	575	.78	--	250	121	45
Oct.21-31	--	655	14	55	11	63	136	108	66	2.8	400	.54	--	182	71	43
Nov. 1-10	--	790	17	67	17	72	152	135	90	2.8	492	.67	--	237	112	40
Nov.11-20	--	935	22	72	19	96	159	162	116	4.0	582	.79	--	258	127	45
Nov.21-30	--	1,080	21	76	23	118	155	195	148	3.0	664	.90	--	284	157	48
Dec. 1-10	--	1,140	24	72	26	128	146	207	162	2.2	707	.96	--	286	167	49
Dec.11-20	--	1,200	24	80	27	134	170	206	174	2.8	739	1.01	--	310	171	48
Dec.21-31	--	1,310	21	90	29	146	186	221	196	2.8	819	1.11	--	344	191	48
Jan. 1-10	--	1,450	22	94	31	168	191	250	218	3.2	909	1.24	--	362	206	50
Jan.11-20	--	1,420	19	94	31	161	192	241	212	4.2	886	1.20	--	362	204	49
Jan.21-31	--	1,500	18	98	32	173	194	262	225	4.2	951	1.29	--	376	217	50
Feb. 1-10	--	1,450	20	92	30	170	179	256	218	3.8	917	1.25	--	353	206	51
Feb.11-19	--	1,590	21	97	31	195	179	279	250	5.0	967	1.32	--	370	223	53
Feb.20-25	--	1,640	21	98	32	205	178	295	258	4.8	1,000	1.36	--	376	230	54
Feb.25-28	--	524	11	50	9.0	48	136	76	52	3.2	324	.44	--	162	50	39
Mar. 1-5	--	501	13	46	8.5	44	112	73	53	4.2	315	.43	--	150	58	39
Mar. 6-10	--	882	17	76	16	83	156	134	117	5.4	553	.75	--	256	128	42
Mar.11-20	--	1,140	17	86	22	125	176	185	168	4.2	700	.95	--	305	161	47
Mar.21-31	--	1,220	17	86	24	138	178	202	180	3.5	759	1.03	--	313	167	49
Apr. 1-10	--	1,180	21	74	25	130	141	205	168	5.5	734	1.00	--	288	172	50
Apr.11-21	--	1,230	20	76	26	147	148	216	188	4.6	746	1.01	--	296	175	52
Apr.22-30	--	566	13	50	8.1	53	118	91	56	3.5	340	.46	--	158	62	42
May 1-7, 9-10	--	757	21	64	12	71	152	106	90	2.2	460	.63	--	209	84	43

RIO GRANDE AT MISSION PUMPING PLANT, NEAR MISSION, TEX., Continued
October 1948 to September 1949

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
May 11-18	--	657	17	57	11	59	136	102	69	2.0	402	0.55	--	188	76	41
May 19-30	--	997	20	77	17	101	160	159	130	2.5	618	.84	--	262	131	46
June 1-10	--	1,140	24	76	24	118	146	169	175	3.2	687	.93	--	288	168	47
June 11-20	--	722	18	60	13	66	140	108	83	4.2	433	.59	--	203	88	42
June 21-30	--	949	18	82	16	93	155	190	101	6.0	600	.82	--	270	144	43
July 1-10	--	1,060	22	76	20	117	146	184	150	5.2	646	.88	--	272	152	48
July 11-20	--	956	19	70	19	95	145	140	135	4.8	570	.78	--	252	134	45
July 21-29	--	1,310	20	86	27	148	160	225	198	3.0	806	1.10	--	326	194	50
Aug. 1-5, 10	--	605	20	53	11	51	133	91	56	8.3	370	.50	--	178	68	39
Aug. 6-9	--	1,080	24	102	19	93	151	249	103	7.8	709	.96	--	332	208	38
Aug. 11-20	--	587	23	59	10	39	142	84	44	8.3	369	.50	--	188	72	31
Aug. 21-31	--	870	23	88	9.8	77	1	183	73	8.7	568	.77	--	260	134	39
Sept. 1-10	--	925	22	76	16	93	155	163	111	5.1	601	.82	--	256	128	44
Sept. 11-19, 30	--	1,000	20	80	18	102	147	187	125	4.0	657	.89	--	274	153	45
Sept. 20-23, 25-29	--	775	17	66	11	76	134	138	82	6.1	497	.68	--	210	100	44

PECOS RIVER NEAR ORLA, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station 6 miles southeast of Orla, Reeves County, 11 miles downstream from Salt (Screwbean) Draw, and 14 miles downstream from Red Bluff Dam.

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	0.55	10,600	27	534	214	1,700	120	1,890	2,720	--	7,140	9.71	11	2,210	2,110	63
Oct.11-20	14.7	10,800	26	530	218	1,730	118	1,910	2,760	--	7,230	9.83	287	2,220	2,120	63
Oct.21-31	6.75	11,200	12	547	230	1,784	103	1,960	2,860	--	7,450	10.13	136	2,310	2,260	62
Nov. 1-10	48	10,000	17	526	210	1,620	112	1,890	2,580	--	6,900	9.38	894	2,180	2,080	62
Nov.11-20	10.3	10,100	15	552	213	1,620	120	1,950	2,580	--	6,990	9.51	194	2,250	2,160	61
Nov.21-30	4.76	10,300	13	560	220	1,660	123	2,000	2,650	--	7,160	9.74	92	2,300	2,200	61
Dec. 1-10	8.88	10,100	12	558	224	1,570	123	2,000	2,510	--	6,930	9.42	166	2,310	2,210	60
Dec.11-20	3.44	10,100	13	566	227	1,580	128	2,030	2,520	--	7,000	9.52	65	2,350	2,240	59
Dec.21-31	13.9	9,970	13	578	229	1,530	138	2,030	2,470	--	6,920	9.41	260	2,380	2,270	58
Jan. 1-10	10.9	10,100	14	574	231	1,580	131	2,060	2,530	--	7,050	9.59	207	2,380	2,280	59
Jan.11-20	17.9	9,480	11	518	216	1,440	121	1,870	2,320	--	6,430	8.74	311	2,180	2,080	59
Jan.21-31	3.65	10,000	9.9	538	224	1,540	114	1,930	2,490	--	6,790	9.23	67	2,260	2,170	60
Feb. 1-10	3.90	10,500	10	580	238	1,570	114	2,030	2,580	--	7,060	9.60	74	2,430	2,330	58
Feb.11-19	12.1	9,620	9.4	532	216	1,450	117	1,930	2,320	--	6,520	8.87	213	2,220	2,120	59
Feb.20-28	10.9	9,600	6.5	530	218	1,440	111	1,940	2,300	--	6,490	8.83	191	2,220	2,130	59
Apr. 1-10	206	8,490	14	490	198	1,250	131	1,820	1,950	1.0	5,790	7.87	3,220	2,040	1,930	57
Apr.11-20	352	8,690	14	500	200	1,290	133	1,840	2,020	--	5,930	8.06	5,640	2,070	1,960	58
Apr.21-30	181	8,790	12	500	204	1,310	139	1,850	2,050	--	5,990	8.15	2,930	2,090	1,970	58
May 1-10	26.0	9,540	14	538	225	1,400	95	2,020	2,220	--	6,460	8.79	453	2,270	2,190	57
May 11-20	41.4	9,070	14	520	210	1,350	115	1,940	2,120	--	6,210	8.45	694	2,160	2,070	58
May 21-31	79.9	9,050	14	528	213	1,320	118	1,930	2,100	--	6,160	8.38	1,330	2,190	2,100	57
June 1-10	26.4	9,870	18	546	218	1,510	81	2,010	2,400	--	6,740	9.17	480	2,260	2,190	59
June 11, 14-20	26.1	9,680	18	538	215	1,480	77	1,990	2,350	--	6,630	9.02	467	2,230	2,160	59
June 12-13	23.5	3,730	18	256	73	457	53	830	725	2.2	2,390	3.25	152	939	896	51

PECOS RIVER NEAR ORLA, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 21-30	267	8,400	17	502	190	1,220	104	1,840	1,900	1.5	5,720	7.78	4,120	2,030	1,950	57
July 1-10	379	7,430	15	452	171	1,050	106	1,650	1,640	1.5	5,030	6.84	5,150	1,830	1,740	56
July 11-20	309	7,340	14	442	168	1,050	168	1,600	1,640	.5	4,970	6.76	4,150	1,790	1,710	56
July 21-31	205	7,570	16	442	171	1,100	114	1,610	1,720	.5	5,120	6.96	2,830	1,810	1,710	57
Aug. 1-10	195	8,350	18	488	171	1,250	104	1,710	1,960	1.2	5,650	7.68	2,970	1,920	1,840	59
Aug.11-20	34.2	8,160	18	496	170	1,200	116	1,740	1,870	1.5	5,550	7.55	512	1,940	1,840	57
Aug.21-31	127	8,100	19	492	182	1,150	90	1,690	1,870	.5	5,450	7.41	1,870	1,980	1,900	56
Sept.1-8	136	7,890	22	488	177	1,180	116	1,720	1,860	3.0	5,510	7.49	2,020	1,950	1,850	57
Sept.9-10, 21-22, 25,27	88.7	5,150	17	444	93	686	91	1,340	1,070	3.0	3,700	5.03	886	1,490	1,420	50
Sept.11-20	153	7,670	17	490	145	1,140	94	1,580	1,830	1.5	5,250	7.14	2,170	1,820	1,740	58
Sept.23-24, 26, 28-30	11.5	9,350	17	574	203	1,470	104	1,990	2,350	--	6,660	9.06	207	2,270	2,180	59
Weighted average	88.1	8,220	15	485	154	1,210	114	1,750	1,900	--	5,590	7.60	1,330	1,970	1,870	57

PECOS RIVER BELOW GRANDFALLS, TEX., October 1948 to September 1949

Analyses of samples collected at gaging station at bridge on county road between Grandfalls and Imperial, 7.1 miles southeast of Grandfalls, Ward County, and 10 miles downstream from Chacatori Draw.

Date of collection	Mean discharge (Second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Oct. 1-10	14.2	13,500	32	759	356	2,270	153	3,020	3,560	--	10,100	13.74	387	3,360	3,230	59
Oct.11-20	17.8	13,500	29	757	359	2,320	169	2,980	3,660	--	10,200	13.87	490	3,360	3,230	60
Oct.21-31	18.2	13,500	22	734	353	2,310	178	2,930	3,620	--	10,100	13.74	496	3,280	3,150	60
Nov. 1-10	15.5	14,000	20	727	350	2,330	188	2,970	3,600	--	10,100	13.74	423	3,250	3,100	61
Nov.11-20	24.6	15,100	16	758	360	2,520	177	3,020	3,940	--	10,700	14.55	711	3,370	3,230	62
Nov.21-30	38.9	16,100	14	778	372	2,720	162	3,040	4,320	--	11,300	15.37	1,190	3,470	3,340	63
Dec. 1-10	31.9	15,700	16	764	370	2,610	163	3,000	4,150	--	11,000	14.96	947	3,430	3,290	62
Dec.11-20	29.9	15,500	16	752	363	2,600	175	2,940	4,130	--	10,900	14.82	880	3,370	3,230	63
Dec.21-31	29.1	15,500	17	744	365	2,640	179	2,910	4,200	--	11,000	14.96	864	3,360	3,210	63
Jan. 1-10	24.5	15,300	20	746	355	2,570	200	2,930	4,040	--	10,800	14.69	714	3,320	3,160	63
Jan.11-20	46.2	16,400	17	748	365	2,810	189	2,920	4,460	--	11,400	15.50	1,420	3,370	3,210	64
Jan.21-31	38.7	14,300	16	651	322	2,400	189	2,540	3,800	--	9,820	13.36	1.030	2,950	2,790	64
Feb. 1-10	31.9	13,700	16	675	320	2,270	183	2,610	3,590	--	9,570	13.02	824	3,000	2,850	62
Feb.11-19	32.2	14,500	13	690	330	2,460	180	2,720	3,870	--	10,200	13.87	887	3,080	2,930	64
Feb.20-28	37.8	15,400	10	707	345	2,630	174	2,800	4,140	--	10,700	14.55	1,090	3,180	3,040	64
Mar. 1-10	32.5	15,200	15	740	360	2,530	167	2,920	4,000	--	10,600	14.42	930	3,330	3,190	62
Mar.11-20	22.7	15,200	14	735	360	2,530	174	2,920	4,000	--	10,600	14.42	650	3,320	3,170	62
Mar.21-31	31.6	15,500	13	749	368	2,560	188	2,930	4,080	--	10,800	14.69	921	3,380	3,230	62
Apr. 1-10	22.2	15,300	21	733	368	2,530	149	2,980	3,980	--	10,700	14.55	641	3,340	3,220	62
Apr.11-20	21.1	13,800	19	698	345	2,200	135	2,800	3,490	--	9,620	13.08	548	3,160	3,050	60
Apr.21-30	33.7	14,300	18	702	342	2,350	164	2,810	3,690	--	9,990	13.59	909	3,160	3,020	62
May 1-10	23.0	13,000	18	642	321	2,060	119	2,630	3,240	--	8,970	12.20	557	2,920	2,820	61
May 11-20	33.5	14,500	20	699	350	2,370	138	2,880	3,710	--	10,100	13.74	914	3,180	3,070	62
May 21-31	20.6	14,400	22	718	351	2,370	156	2,900	3,710	--	10,100	13.74	562	3,240	3,110	61
June 1-10	29.4	14,600	22	723	350	2,480	118	2,900	3,920	--	10,500	14.28	833	3,240	3,150	62

PECOS RIVER BELOW GRANDFALLS, TEX., October 1948 to September 1949
Continued

Date of collection	Mean discharge (second feet)	Specific conductance (Micromhos)	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Dissolved Solids: Tons per Day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
June 11-20	26.4	15,400	22	743	361	2,540	122	2,990	4,010	--	10,700	14.55	763	3,340	3,240	62
June 21-30	17.1	15,500	23	789	372	2,570	124	3,100	4,090	--	11,000	14.96	508	3,500	3,400	62
July 1-10	15.3	15,400	30	762	348	2,560	94	3,060	3,990	--	10,800	14.69	446	3,330	3,260	63
July 11-20	14.8	15,300	29	774	369	2,540	94	3,080	4,040	--	10,900	14.82	436	3,450	3,370	62
July 21-31	15.9	14,900	30	754	353	2,420	90	3,040	3,790	--	10,400	14.14	446	3,330	3,260	61
Aug. 1-10	16.3	14,700	22	760	348	2,410	141	2,990	3,780	--	10,400	14.14	458	3,330	3,210	61
Aug.11-20	26.3	15,200	23	706	309	2,250	138	2,770	3,490	--	9,620	13.08	683	3,030	2,920	62
Aug.21-31	24.7	13,700	19	742	369	2,500	142	3,000	3,940	--	10,600	14.42	707	3,370	3,250	62
Sept. 1-10	20.1	12,500	26	677	323	2,070	147	2,730	3,230	--	9,130	12.42	495	3,020	2,900	60
Sept.11-20	19.0	12,400	28	667	324	2,070	161	2,690	3,230	--	9,090	12.36	466	3,000	2,860	60
Sept.21-30	27.1	13,800	28	702	348	2,370	159	2,900	3,680	--	10,100	13.74	739	3,180	3,050	62
Weighted average	25.6	14,700	19	726	351	2,460	159	2,880	3,880	--	10,400	14.14	719	3,260	3,120	62

MISCELLANEOUS ANALYSES OF STREAMS IN RIO GRANDE RIVER BASIN IN TEXAS
October 1948 to September 1949

Date of collection	Mean Discharge (second feet)	Specific conductance (Micromhos)	pH	(SiO_2) Silica	(Ca) Calcium	(Mg) Magnesium	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	(SO_4) Sulfate	(Cl) Chloride	(NO_3) Nitrate	Dissolved Solids: Parts per million	Dissolved Solids: Tons per acre foot	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Percent Sodium
Pecos River at spillway of Red Bluff Dam, near Orla																
Oct. 12, 1948	--	11,800	--	33	545	236	1,940	135	2,020	3,070	--	7,910	10.76	2,330	2,220	64
Toyah Creek below Toyah Lake, near Pecos																
May 3-11, 1949	280	12,000	7.5	8.4	805	233	1,840	53	2,700	2,910	--	8,520	11.59	2,970	2,920	57
Chacon Creek near Laredo																
May 27, 1949	--	6,430	7.7	7.2	248	143	1,090	327	1,630	1,140	0.0	4,420	6.01	1,210	939	66
Los Olmos Creek near Rio Grande City																
May 27, 1949	1/ 10	18,700	7.5	23	681	89	3,550	106	1,070	6,080	--	11,500	15.64	2,070	1,980	79
La Joya Creek at reservoir site near Samfordyce																
May 27, 1949	--	9,340	7.8	58	124	78	1,870	222	1,150	2,350	--	5,740	7.81	630	448	87

1/ Instantaneous discharge.