TEXAS STATE BOARD OF WATER ENGINEERS

CHEMICAL COMPOSITION OF TEXAS SURFACE WATERS 1938-1945

W. W. Hastings and J. H. Rowley

Prepared in cooperation with the
United States Department of the Interior
Geological Survey
and others

September 1946

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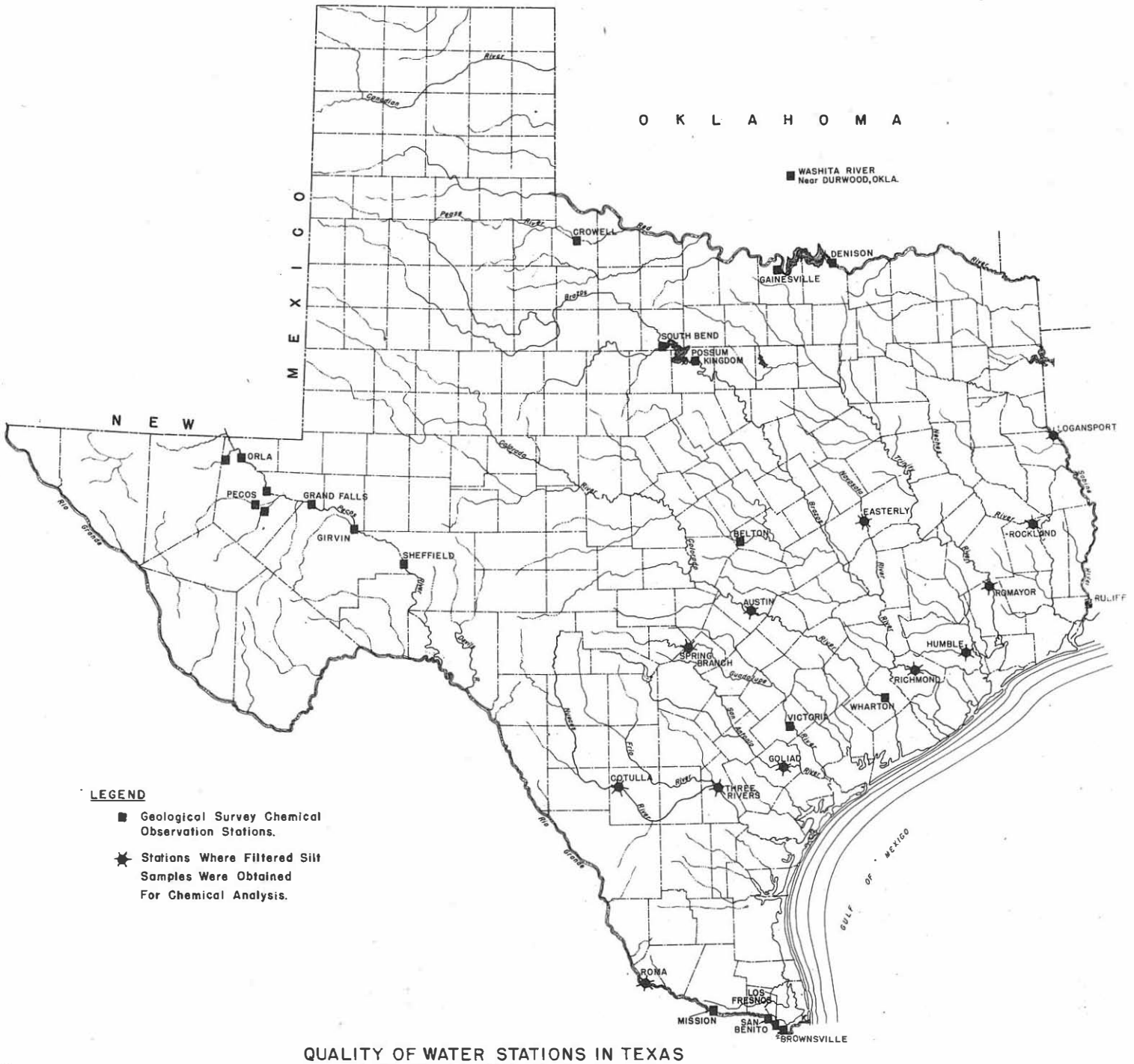

QUALITY OF WATER STATIONS IN TEXAS

UNITED STATES GEOLOGICAL SURVEY
IN COOPERATION WITH
TEXAS BOARD OF WATER ENGINEERS
AND OTHERS

Sept. 1946

CHEMICAL COMPOSITION OF TEXAS SURFACE WATERS, 1938-1945

by

W. W. Hastings and J. H. Rowley

Introduction

Information of the chemical character of stream waters is useful in connection with the location of industrial plants and the selection of sources of public water supplies and the planning of their treatment. Also the analytical data are needed in determining the suitability of the water for irrigation or other agricultural uses.

Streams in Texas differ widely in respect to their content of dissolved mineral matter. The chemical composition of surface waters frequently varies widely from day to day at any point along the river, an important factor with reference to continuous use of water from the streams. Also there are few streams in Texas that are uniform in concentration at any time from their headwaters to their lower reaches. Because of the fluctuations in mineral content, sampling at a selected point on a stream must be continued for years to obtain an adequate record of the quality of the water. Sampling stations should be operated at many points along the stream to determine the changes in the chemical character of the water as it passes downstream.

The quality of river water is intimately related to the discharge of the stream. At times of high discharge the concentration is likely to decrease; during periods of low flow the concentration increases. Data obtained only during a very dry or an unusually wet cycle can be misleading.

The analyses of waters collected daily from major streams in Texas

to date are given in this report. Analyses of samples collected in the Pecos River Basin are only summarized in this report, giving the weighted average analysis for each year and the maximum and minimum dissolved solids and hardness. The detailed analyses of surface waters in the Pecos River Basin will be compiled in a future publication. Pecos River analyses are on file with the Texas State Board of Water Engineers, Austin, Texas, and the Geological Survey offices at Austin, Texas, and Washington, D. C. Analyses of spot samples collected from small streams throughout Texas have been included in this report.

The analyses were made by the United States Geological Survey in cooperation with the Texas Board of Water Engineers, Pease River Flood Control District, City of Denison, City of Sherman, Red Bluff Water Power Control District, Cameron County Water Control and Improvement District No. 5, Brazos River Conservation and Reclamation District, Lower Colorado River Authority, U. S. Bureau of Reclamation, and the U. S. Department of Agriculture, Soil Conservation Service. Space for the Geological Survey laboratory is furnished at the University of Texas by the Bureau of Industrial Chemistry, Dr. E. P. Schoch, Director.

Collection of Samples

The location of the chemical observation stations on streams in Texas have been noted on the accompanying map.

Twenty-nine daily sampling stations have been maintained by the Geological Survey near sites where stream flow records are

collected. For twenty of these stations, samples were sent directly to the Geological Survey water resources laboratory for analysis. On September 1, 1945, nine stations were set up in cooperation with the Texas Board of Water Engineers, with collection of samples by the U. S. Department of Agriculture, Soil Conservation Service. At the time each daily silt sample was collected, an extra bottle of water was collected and mailed to the Soil Conservation Service laboratory and turned over to the Geological Survey laboratory for chemical analysis. Chemical data are available for the following sampling stations:

Station	Period of Record
Brazos River at Possum Kingdom Dam	Jan. 15, 1942 to Sept. 30, 1945
Brazos River near Richmond	September 1945
Brazos River near South Bend	Jan. 15, 1942 to Sept. 30, 1945
Colorado River at Wharton	Apr. 12, 1944 to Sept. 30, 1945
Guadalupe River at Victoria	September 1945
Lampasas River near Belton	Apr. 13, 1943 to June 30, 1944
Neches River at Rockland	September 1945
Nueces River near Three Rivers	September 1945
Pease River near Crowell	July 1, 1942 to June 30, 1943
Pecos River near Orla	July 1, 1937 to Sept. 30, 1945
Pecos River near Pecos	Apr. 1, 1939 to June 30, 1941
Pecos River below Grand Falls	Apr. 1, 1939 to June 30, 1941
Pecos River near Girvin	Aug. 28, 1939 to June 30, 1941
Pecos River near Sheffield	Nov. 3, 1939 to June 30, 1941
Red River near Gainesville	May 1, 1944 to Sept. 30, 1945
Red River at Denison Dam	May 1, 1944 to Sept. 30, 1945
Rio Grande near Brownsville	Mar. 1, 1943 to Feb. 29, 1944
Rio Grande near Los Fresnos	July 1, 1945 to Sept. 30, 1945
Rio Grande near Mission	July 1, 1945 to Sept. 30, 1945
Rio Grande near San Benito	Nov. 20, 1942 to June 30, 1943
Sabine River at Logansport, La.	Aug. 15, 1939 to Jan. 16, 1940
Sabine River near Ruliff	September 1945
Salt Draw near Pecos	Oct. 1, 1939 to Sept. 30, 1940
	Oct. 1, 1943 to Sept. 30, 1944
Salt Draw (Screwbean) near Orla	Oct. 1, 1943 to Sept. 30, 1944
San Antonio River at Goliad	September 1945
San Jacinto River at Huffman	September 1945
San Jacinto River near Humble	September 1945

Toyah Creek near Pecos	Oct. 1, 1939 to Sept. 30, 1940 Oct. 11, 1943 to Sept. 30, 1944
Toyah Creek near Toyah Lake near Pecos	During periods of flow in 1939 and 1944
Trinity River near Romayor	September 1945
Washita River near Durwood, Okla.	May 1, 1944 to Sept. 30, 1945

Funds had not been available for maintaining sampling stations on many of the larger streams in Texas until September 1, 1945. Additional records were obtained previously by analyzing the daily samples collected by the Soil Conservation Service, U. S. Department of Agriculture, for the determination of quantities of suspended matter. After filtering off the sediment in the samples, the water was poured back into the original bottles and turned over to the Geological Survey laboratory for chemical analysis.

As precipitation of calcium carbonate might have taken place on aeration when filtering off the suspended matter and in consideration of the possibility of mixing in returning the filtrate to the original bottle, only specific conductance and chloride were determined on most of the daily samples received from the Soil Conservation Service laboratory. An occasional complete analysis was made on a composite of daily samples to determine the general character of the water passing each station.

The stations from which the filtered silt samples were obtained for analysis in cooperation with the Soil Conservation Service are as follows:

Station	Period of Record
Brazos River near Richmond	Oct. 1, 1941 to Aug. 31, 1945
Colorado River at Austin	Nov. 1, 1941 to Sept. 30, 1942
Guadalupe River near Spring Branch	Jan. 1, 1942 to Dec. 31, 1942 Jan. 1, 1944 to Aug. 31, 1945

Navasota River near Easterly	Jan. 1, 1942 to Dec. 31, 1942
Neches River near Rockland	Oct. 1, 1941 to Sept. 30, 1942
Nueces River near Cotulla	Jan. 1, 1942 to Dec. 31, 1942
Nueces River near Three Rivers	Oct. 1, 1941 to Aug. 31, 1945
Rio Grande at Roma	Oct. 1, 1942 to May 31, 1943
Sabine River at Logansport, La.	Oct. 1, 1941 to Sept. 30, 1942
	Jan. 1, 1944 to Aug. 31, 1945
San Antonio River at Goliad	Jan. 1, 1942 to Dec. 31, 1942
	Jan. 1, 1944 to Nov. 10, 1944
	Apr. 11, 1945 to Aug. 31, 1945
San Jacinto River at Humble	Oct. 1, 1941 to Aug. 31, 1945
Trinity River at Romayor	Oct. 1, 1941 to Sept. 30, 1942
	Jan. 11, 1944 to Aug. 31, 1945

On July 1, 1945, two daily sampling stations on the Rio Grande and 92 monthly sampling stations on drains and wasteways in the Lower Rio Grande Valley were established, in cooperation with the Bureau of Reclamation. The two daily river stations are located at the Mission pumping plant near Mission and the Los Fresnos pumping plant near Los Fresnos. Partial analysis of three composite samples per month is made on the water from the Rio Grande at Mission pump, while only specific conductance and chloride is determined on the daily samples from the Rio Grande at Los Fresnos. Most of the records of analyses of water from the drains and wasteways are not included in this report but are on file with the Bureau of Reclamation in McAllen and Amarillo, Texas, and the U. S. Geological Survey in Austin, Texas, and Washington, D. C. Only the analyses for the Arroyo Colorado at Mercedes and the North Floodway near Sebastian are given.

Methods of Analyses

The constituents generally determined are calcium, magnesium, bicarbonate, sulfate, chloride, nitrate, and total dissolved solids.

Sodium and potassium are calculated as sodium. The total hardness is calculated from the determined calcium and magnesium or was determined by the soap method. The methods regularly followed in the water resources laboratory of the Geological Survey were used.[1]

The specific electrical conductance (Kx10^5 at 25°C) which affords a measure of the mineral content of the water, is determined on the daily samples. Daily samples of similar chemical composition are then mixed together for the analysis. At least three composites are made for each month as follows: Samples for first ten days, next ten days, and remainder of the month, except for February when the composites consist of samples comprising ten, nine and nine days respectively. For streams showing large changes in the quality of the water, composites were made more frequently, depending on the total salt content as indicated by measurement of the conductivity of the daily samples. The analyses are reported in parts per million.

Analyses

The analyses are arranged in geographical order by major drainage basins on each stream in downstream order. The location of the sampling station is given at the top of the table. The analyses of the spot samples collected in each basin follow the records of the daily sampling stations.

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1 Collins, W. D., Notes on Practical Water Analysis: U. S. Geological Survey Water-Supply Paper 596, pp. 235-261, 1928.

ANALYSES OF SURFACE WATERS

IN

RED RIVER BASIN

ANALYSES OF SAMPLES FROM RED RIVER NEAR GAINESVILLE, TEXAS, MAY 1, 1944 TO SEPT. 30, 1944

(Composites of daily samples collected at gaging station at bridge on U.S. Highway 77, a quarter of a mile downstream from Gulf, Colorado and Santa Fe Railway bridge, 5 miles downstream from Fish Creek, and 7 miles North of Gainesville. Drainage area 29,460 square miles. Analyses in parts per million. Analyzed by Geological Survey.)

Date of Collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved Solids Tons per day	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Non-carbonate	Per cent Sodium
May 1-10, 1944	1,610	276	143	44	373	143	289	658	3.2	1,580	2.15	6,870	538	421	6
May 11-20	508	425	207	63	616	153	471	1,060	1.5	2,490	3.39	3,420	776	650	6
May 21,22,24-26,28	748	293	150	49	403	176	300	705	2.2	1,700	2.31	3,430	576	432	6
May 23,27,29-31	1,498	174	98	27	221	127	170	392	2.2	973	1.32	3,940	356	252	5
June 1-10	2,113	440	240	60	647	134	659	1,030	4.6	2,710	3.69	15,500	846	736	6
June 11-12,17-20	8,902	279	178	35	397	126	465	610	3.8	1,750	2.38	42,100	588	484	5
June 13-16	957	132	83	19	163	115	181	252	2.2	757	1.03	1,960	285	191	5
June 21-30	1,527	274	178	36	379	136	438	600	3.2	1,700	2.31	7,010	592	480	5
July 1-10	496	393	232	62	560	143	604	925	2.0	2,460	3.35	3,290	834	717	5
July 11-20	650	600	352	84	940	131	921	1,560	2.8	3,920	5.33	6,880	1,200	1,120	6
July 21-25	1,228	660	420	80	1,030	108	1,140	1,650	5.5	4,380	5.96	14,500	1,380	1,290	6
July 26-31	1,590	296	178	39	388	110	442	635	4.0	1,740	2.37	7,470	604	514	5
Aug. 1-10	984	294	180	41	371	116	434	620	2.0	1,710	2.33	4,540	618	522	5
Aug. 11-20	369	349	207	56	452	132	528	760	0.8	2,070	2.82	2,060	747	639	5
Aug. 21-31	365	527	300	93	743	119	782	1,300	1.2	3,280	4.46	3,230	1,130	1,030	5
Sept. 1-2,7-10	794	377	215	54	532	110	519	910	2.8	4,910	3.11	4,910	758	668	6
Sept. 3-6	1,606	188	118	27	232	102	253	398	3.2	1,080	1.47	4,680	406	322	5
Sept. 11-15	377	407	216	63	571	122	480	1,020	1.8	2,410	3.28	2,450	798	698	6
Sept. 16-20	296	630	366	93	933	107	940	1,600	1.2	3,990	5.43	3,190	1,300	1,210	6
Sept. 21-22,24-30	276	753	384	86	1,240	144	940	2,070	1.8	4,790	6.51	3,570	1,310	1,190	6
Weighted Average	1,459	324	193	44	460	126	483	749	3.3	2,000	2.72	7,880	662	559	6

Red River near Gainesville, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey

Parts per million

Date of collection	Mean Discharge (second-feet)	Specific conductance (K x 10^5 at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per ac.ft.	Dissolved solids: Tons per day	Total Hardness as $CaCO_3$
Oct. 1-10, 1944	7,398	118	66	15	145		96	113	243	3.8	633	0.86	12,600	226
Oct. 11-13	2,103	282	137	37	360		103	314	612	3.2	1,510	2.05	8,570	494
Oct. 14-20	721	397	211	51	588		132	495	985	2.8	2,400	3.26	4,670	736
Oct. 21-31	333	429	222	58	622		138	487	1,080	3.0	2,540	3.45	2,280	792
Nov. 1-7	390	468	242	75	647		159	522	1,160	3.2	2,740	3.73	2,890	912
Nov. 8-10	1,233	171	90	24	214		123	155	365	3.2	996	1.35	3,320	323
Nov. 11-14	884	162	88	25	200		122	149	348	1.2	956	1.30	2,280	322
Nov. 15-20	440	333	175	56	444		147	353	800	1.2	1,910	2.60	2,270	667
Nov. 21-24	440	583	284	81	860		156	639	1,500	2.8	3,440	4.68	4,090	1040
Nov. 25-30	2,758	187	94	27	226		104	163	410	4.7	976	1.33	7,270	346
Dec. 1	1,100	183	92	28	241		115	138	445	4.7	1,010	1.37	3,000	344
Dec. 2-10	1,623	352	177	53	467		153	346	840	4.7	1,960	2.67	8,590	660
Dec. 11-20	1,117	588	306	74	880		168	683	1,510	4.1	3,540	4.81	10,700	1070
Dec. 21-31	483	581	316	80	885		214	675	1,530	6.9	3,600	4.90	4,690	1120
Jan. 1-10, 1945	569	567	288	88	856		226	665	1,460	6.0	3,470	4.72	5,330	1070
Jan. 11-20	504	655	310	97	1,030		214	751	1,740	3.5	4,040	5.49	5,500	1170
Jan. 21, 29-31	1,450	480	216	60	729		167	477	1,230	4.0	2,800	3.81	11,000	776
Jan. 22-28	2,591	302	140	40	437		135	296	740	4.0	1,720	2.34	12,000	514
Feb. 1-10	790	589	283	78	903		197	616	1,550	3.9	3,530	4.80	7,530	1030
Feb. 11-19	695	506	252	70	752		197	535	1,290	2.8	3,010	4.09	5,650	917
Feb. 20-22	3,843	227	123	33	301		139	207	538	12	1,280	1.74	13,300	442
Feb. 23-28	6,110	113	68	18	135		124	91	240	2.8	702	.95	11,600	244
Mar. 1-10	9,222	123	80	20	162		111	106	302	7.6	732	1.00	18,200	282
Mar. 11-14	5,320	187	110	30	268		131	172	490	5.0	1,140	1.55	16,400	398
Mar. 15-20	32,370	54.1	45	10	57		104	42	104	1.8	362	.49	31,600	154
Mar. 21-23, 30-31	15,890	115	72	19	134		120	101	242	3.8	736	1.00	31,600	258
Mar. 24-29	6,450	165	101	28	197		161	157	352	4.8	919	1.25	16,000	367
Apr. 1-3	18,090	59.2	49	11	54		125	50	91	1.8	360	.49	17,600	168
Apr. 4-6	6,500	95.9	62	18	104		143	82	179	.0	594	.81	10,400	228
Apr. 7-10	2,152	227	142	43	283		227	244	500	3.2	1,330	1.81	7,730	532
Apr. 11-14	10,940	172	107	33	205		161	198	360	3.4	986	1.34	29,100	402
Apr. 15-20	22,700	70.6	88	14	44		227	90	65	2.8	476	.65	29,100	277

Red River near Gainesville, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean Discharge (second-feet)	Specific conductance (K x 10^5 at 25°C)	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 ac.ft.	Dissolved solids: Tons per day	Total Hardness as $CaCO_3$
Apr. 21, 23-24, 1945	6,990	89.4	92	21	132	186	140	212	8.7	768	1.04	14,500	316
Apr. 22, 25-30	6,820	209	110	28	270	155	218	440	3.7	1,150	1.56	21,200	390
May 1-10	2,002	288	177	53	372	225	346	652	5.6	1,720	2.34	9,300	660
May 11-15	7,302	150	86	26	182	137	136	325	5.3	828	1.13	16,300	322
May 16-20	2,044	240	138	40	312	195	235	552	5.9	1,380	1.88	7,620	509
May 21-31	901	326	172	61	459	202	386	785	3.8	1,970	2.68	4,790	680
June 1-5, 8	646	341	187	74	450	201	383	840	2.2	2,040	2.77	3,560	771
June 6-7, 9-10	992	210	116	45	253	158	200	485	2.8	1,180	1.60	3,160	474
June 11-12, 20	4,773	235	136	41	298	139	309	505	10	1,370	1.86	17,700	508
June 13-19	7,493	97.1	66	17	104	122	79	195	3.5	525	.71	10,600	234
June 21-29	4,834	191	135	30	230	126	288	392	4.5	1,140	1.55	14,900	460
June 30, July 1-6	3,886	236	146	32	320	147	295	540	4.4	1,410	1.92	14,800	496
July 7-10	2,648	153	100	24	185	135	170	322	10	878	1.19	6,280	348
July 11,18-20	7,435	127	85	18	156	112	152	265	1.2	732	1.00	14,700	286
July 12-17	11,470	201	132	24	273	108	309	432	2.8	1,230	1.67	38,100	423
July 21,27-28,30-31	2,342	164	102	29	201	128	205	348	2.2	950	1.29	6,010	374
July 22-26, 29	1,698	261	165	35	344	156	353	572	2.0	1,550	2.11	7,110	556
Aug. 1-5, 7	1,333	135	92	24	159	157	156	269	3.2	887	1.21	2,810	323
Aug. 6, 8-10	1,020	271	158	45	372	170	337	635	3.5	1,630	2.22	4,490	580
Aug. 11-13	4,490	131	78	21	162	126	139	272	2.8	836	1.14	10,100	281
Aug. 14-20	2,571	246	179	34	308	128	422	502	3.8	1,510	2.05	10,500	586
Aug. 21-22, 30-31	974	466	254	57	635	160	597	1,060	2.2	2,680	3.64	7,050	863
Aug. 23-29	758	705	340	73	993	166	836	1,630	3.2	3,960	5.39	8,100	1,150
Sept. 1-10	332	427	218	67	634	170	514	1,080	1.8	2,600	3.54	2,330	820
Sept. 11-20	255	443	240	78	635	168	570	1,110	5.3	2,720	3.70	1,870	920
Sept. 21-27	1,131	428	224	77	638	156	546	1,110	.2	2,670	3.63	8,150	876
Sept. 28-29	31,250	68.7	46	14	66	94	53	130	.8	418	.57	35,300	172
Sept. 30	42,300	40.3	36	7.3	36	94	31	62	1.2	250	.34	28,600	120
Weighted Average	4,393	154	97	24	194	137	169	335	3.5	891	1.21	10,100	340

ANALYSES OF SAMPLES FROM RED RIVER AT DENISON DAM, NEAR DENISON, TEXAS MAY 1, 1944 to SEPT. 30, 1944

(Composites of daily 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 down stream from Sand Creek, 2 miles south of Colbert, Oklahoma. No appreciable inflow between dam and gaging station except during periods of heavy local rains. Drainage area 38,700 square miles above gaging stations. Analyses in parts per million. Analyzed by Geological Survey.)

Date of Collection	Mean discharge (second-feet)	Specific conductances ($K \times 10^5$ at 25° C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Hardness as $CaCO_3$: Per-cent sodium
May 1, 3-10, 1944	94.4	159	102	28	194	181	177	323	2.2	915	1.24	233	370	221	53
May 11-20	49.8	167	104	29	200	150	190	348	2.8	948	1.29	127	378	256	54
May 21-31	259	167	104	26	192	151	185	330	3.2	915	1.24	640	366	242	53
June 1-3,5-10	89.3	163	100	27	201	155	186	335	5.6	931	1.27	224	360	234	55
June 12-17,19-20	204	161	98	26	194	158	183	318	4.8	902	1.23	497	352	222	54
June 21-24, 26-30	872	175	108	28	217	159	207	360	3.5	1,000	1.36	2350	384	254	55
July 3-10	218	238	140	34	319	154	301	525	3.8	1,400	1.90	824	490	361	59
July 11-20	106	231	140	34	298	164	288	495	6.7	1,340	1.82	384	490	368	57
July 21-31	170	207	129	32	260	165	251	438	5.5	1,200	1.63	551	454	319	55
Aug. 3-5,7-10	872	196	126	30	238	164	247	398	4.2	1,120	1.52	2640	438	304	54
Aug. 12,14-16,18-19	746	243	148	37	315	162	323	520	4.9	1,430	1.94	2080	522	389	57
Aug. 21-26,28-31	448	238	145	37	309	159	319	510	4.5	1,400	1.90	1690	514	384	57
Sept. 1-3,5-9	89.6	244	148	37	316	170	326	515	3.5	1,430	1.94	346	522	382	57
Sept. 11-16,18-20	126	207	129	33	260	170	264	430	2.8	1,200	1.63	408	458	318	55
Sept. 21-30	117	197	124	33	233	170	248	390	4.4	1,120	1.52	354	445	306	53
Weighted Average	297	204	126	32	255	161	255	424	4.2	1,180	1.60	946	446	314	55

Red River at Denison Dam near Denison, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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 ac.ft.	Tons per day	Total Hardness as $CaCO_3$
Oct. 1-10, 1944	208	167	110	31	190	163	219	320	3.0	953	1.30	535	402
Oct. 11-20	171	162	108	30	187	163	216	312	2.0	935	1.27	432	393
Oct. 21-31	70.9	161	110	30	192	165	219	320	1.8	954	1.30	183	398
Nov. 1-10	221	166	114	28	200	166	225	320	1.8	975	1.33	582	400
Nov. 11-20	61.4	170	112	31	187	153	231	315	3.0	954	1.30	158	407
Nov. 21-30	94.7	168	110	33	195	156	230	328	3.8	977	1.33	250	410
Dec. 1-10	318	169	114	30	198	160	234	328	3.2	986	1.34	847	408
Dec. 11-20	340	172	106	29	210	154	235	332	2.0	990	1.35	909	364
Dec. 21-31	1,128	187	117	34	229	168	284	352	1.5	1,100	1.50	3,350	432
Jan. 1-10, 1945	149	220	127	34	296	172	290	465	2.0	1,300	1.77	523	457
Jan. 11-20	294	187	116	31	233	162	250	375	1.5	1,090	1.48	865	417
Jan. 21-31	361	183	138	35	201	164	244	378	3.9	1,080	1.47	1,050	488
Feb. 1-10	486	177	110	30	219	147	237	352	.8	1,030	1.40	1,350	398
Feb. 11-19	627	173	116	28	216	169	233	340	3.0	1,020	1.39	1,730	404
Feb. 20-28	943	169	113	30	197	165	225	328	3.2	978	1.33	2,490	406
Mar. 1-10	1,022	166	112	29	197	164	223	325	3.2	970	1.32	2,680	398
Mar. 11-20	9,560	152	120	30	176	154	214	322	3.2	941	1.28	24,600	423
Mar. 21-31	14,570	145	103	27	171	158	194	288	3.2	864	1.18	34,000	368
Apr. 1-10	10,060	136	92	27	148	150	171	255	1.2	768	1.04	20,900	340
Apr. 11-20	17,460	124	87	24	133	143	156	230	1.0	701	.95	33,000	316
Apr. 21-30	33,680	109	77	22	112	129	134	198	2.8	609	.83	55,400	282
May 1-10	42,080	100	70	18	108	130	115	181	1.2	557	.76	63,300	248
May 11-20	8,143	99.4	68	17	109	125	112	182	1.2	551	.75	12,100	240
May 21-31	11,680	94.1	67	16	99	127	106	164	2.2	517	.70	16,300	233
June 1-10	2,805	90.8	72	21	80	130	105	158	2.2	502	.68	3,800	266
June 11-20	5,160	89.6	70	17	90	131	104	158	2.0	506	.69	7,050	241
June 21-30	15,800	86.6	70	19	84	140	103	150	1.5	496	.67	21,200	258
July 1-10	25,880	85.2	68	19	84	149	98	146	.8	489	.67	34,200	248
July 11-20	24,080	90.0	69	19	93	145	102	160	1.2	516	.70	33,500	250
July 21-31	10,500	94.7	70	18	101	143	105	170	1.0	535	.73	15,200	248

Red River at Denison Dam near Denison, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Parts per million	Tons per ac.ft.	Tons per day	Total Hardness as $CaCO_3$
Aug. 1-10, 1945	5,177	99.4	75	19	105	147	114	180	1.2	567	0.77	7,930	255
Aug. 11-20	5,051	97.1	71	19	107	137	116	180	1.2	562	.76	7,660	255
Aug. 21-31	4,441	99.7	73	20	108	139	119	184	1.0	574	.78	6,880	264
Sept. 1-10	2,190	99.7	72	20	109	144	121	180	.8	574	.78	3,390	262
Sept. 11-20	2,640	92.5	69	17	92	132	109	152	8.6	513	.70	3,660	242
Sept. 21-30	3,340	96.2	73	18	98	145	113	164	1.0	538	.73	4,850	256
Weighted average	7,261	107	78	21	114	140	129	195	1.7	607	0.83	11,900	281

Analyses of samples from Pease River near Crowell, Texas, July 1942 to June 1943

(Composites of daily samples collected at gaging station at bridge on Texas Highway 283, 4 miles upstream from Raggedy Creek, 7 miles upstream from Kansas City, Mexico and Orient Railway bridge, and 8 miles north of Crowell. Drainage area 2, 937 square miles. Analyses in parts per million).
Analyzed by Geological Survey

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C.)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per ac.ft.	Dissolved solids: Tons per day	Per cent sodium
July 1-4,7-10, 1942	6.09	1,390	893	201	2,243	21	128	2,660	3,590	1.0	9,690	13.2	159	62
July 11-17	11.4	1,295	840	149	1,887	18	114	2,333	3,050	4.1	8,360	11.4	257	60
July 21-25	87.3	1,024	640	92	1,637	14	102	1,717	2,640	4.5	6,810	9.26	1,605	64
July 26-31	13.1	1,627	922	171	2,790	19	116	2,600	4,510	2.0	11,090	15.1	392	67
Aug. 1-4	.32	1,073	644	126	1,744	15	187	1,855	2,720	10	7,220	9.82	6.26	64
Aug. 12,14-15,18-20	81.4	977	682	100	1,514	15	126	1,888	2,390	6.5	6,670	9.07	1,466	61
Aug. 16-17	113	594	450	52	832	12	99	1,216	1,320	3.5	3,950	5.37	1,205	56
Aug. 21,23-24,26-31	38.1	1,126	764	122	1,783	18	129	2,097	2,900	3.0	7,770	10.6	799	62
Sept. 1,3-6,10	25.7	1,230	804	170	1,939	21	116	2,256	3,190	5.0	8,460	11.5	587	61
Sept. 7-9	233	520	445	52	664	13	109	1,173	1,040	7.0	3,470	4.72	2,183	52
Sept. 11-18	18.8	1,163	773	133	1,856	16	118	2,100	3,010	5.5	7,970	10.8	405	62
Sept. 19-20	6,835	277	306	35	250	11	102	812	378	3.0	1,866	2.54	4,400	38
Sept. 21-23	372	499	342	54	706	13	120	905	1,120	7.0	3,230	4.39	3,250	59
Sept. 24-30	123	947	548	98	1,546	14	138	1,486	2,470	8.0	6,260	8.51	2,086	66
Oct. 1-10	9.48	1,324	752	141	2,271	23	129	2,076	3,620	5.0	8,970	12.20	230	67
Oct. 11-14	683	1,295	793	153	2,169	24	130	2,216	3,490	5.0	8,920	12.13	16,400	65
Oct. 15	4,270	244	302	28	240		96	779	352	6.0	1,767	2.40	20,400	38
Oct. 16-20	402	390	298	41	532	14	107	782	810	7.0	2,550	3.47	2,770	56
Oct. 21,30	122	624	466	86	793	18	108	1,174	1,390	2.0	4,000	5.44	1,320	54
Oct. 22-29, 31	76.4	1,169	665	122	1,984	18	149	1,771	3,160	3.0	7,820	10.64	1,610	67
Nov. 1-10	46.7	1,259	734	149	2,142	24	146	2,031	3,470	4.0	8,640	11.75	1,090	66
Nov. 11-20	18.8	1,306	794	163	2,188	23	147	2,190	3,570	3.5	9,020	12.27	458	64
Nov. 21-30	13.0	9,510	818	170	2,174	22	159	2,275	3,540	3.5	9,090	12.36	319	63
Dec. 1-3, 5-10	21.0	1,358	768	162	2,320	21	160	2,155	3,740	3.5	9,250	12.58	524	66
Dec. 11-20	22.6	1,534	820	174	2,740	21	147	2,277	4,440	3.5	10,560	14.36	644	68
Dec. 21-22,25-31	48.9	1,173	635	140	1,981	18	149	1,751	3,220	3.0	7,830	10.65	865	67

Pease River near Crowell, Texas (Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (Second-feet)	Specific conductance (K x 10^5 at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per ac.ft.	Dissolved solids: Tons per day	Per cent sodium
Dec. 24	49.0	2,036	864	170	4,050		145	2,296	6,480	2.5	13,930	18.94	1,840	75
Jan. 1-5,7-10, 1943	39.0	1,412	684	145	2,429	22	163	1,870	3,920	2.0	9,160	12.46	965	7[illegible]
Jan. 11-20	17.9	1,740	854	183	3,050	28	170	2,392	4,900	1.5	11,500	15.64	556	7[illegible]
Jan. 21, 23-31	14.1	1,484	812	171	2,540	23	164	2,263	4,100	1.0	10,000	13.60	381	67
Feb. 1-10	11.9	1,555	839	187	2,730	28	140	2,384	4,430	1.5	10,680	14.52	343	68
Feb. 11-19	7.82	1,422	839	186	2,380	26	149	2,374	3,880	2.0	9,770	13.29	206	65
Feb. 20-28	8.18	1,453	849	189	2,520	27	135	2,459	4,070	1.5	10,200	13.87	225	66
Mar. 1-10	7.49	1,473	863	180	2,560	25	149	2,441	4,130	1.0	10,280	13.98	208	66
Mar. 11-20	6.60	1,540	891	186	2,750	22	133	2,540	4,430	.5	10,900	14.82	194	67
Mar. 21-31	11.3	1,565	872	185	2,860	22	141	2,484	4,590	.5	11,090	15.08	338	68
Apr. 1-7, 9-10	5.36	1,550	911	191	2,780	22	117	2,570	4,500	4.0	11,000	14.96	159	66
Apr. 11, 16, 18-20	72.8	1,333	830	167	2,136	21	123	2,291	3,500	6.4	9,030	12.28	1,770	63
Apr. 17	1,060	242	326	33	134		76	847	208	1.5	1,600	2.18	4,580	23
Apr. 21-23, 26-30	31.3	1,434	900	192	2,332	25	127	2,510	3,840	3.0	9,870	13.42	834	63
May 1-3, 6-8	23.7	1,629	991	217	2,730	26	122	2,810	4,470	1.0	11,300	15.37	723	64
May 10, 14, 17-20	1,102	507	408	56	686	15	102	1,063	1,110	3.0	3,400	4.62	10,100	55
May 15-16, 23-26,31	73.4	1,229	671	120	2,036	21	126	1,815	3,280	1.0	8,010	10.89	1,590	67
May 21-22, 27-30	81.3	431	342	48	544	15	88	907	875	3.0	2,780	3.78	610	53
June 1-3	55.5	1,207	741	133	1,964	27	134	1,966	3,220	1.0	8,130	11.06	1,220	64
June 6-10	2,169	401	335	46	505	20	119	858	820	1.2	2,650	3.60	15,500	52
June 12-20	44.9	1,088	702	135	1,742	24	131	1,929	2,840	1.5	7,450	10.13	903	62
June 21-30	24.7	1,265	814	163	2,058	26	125	2,286	3,350	2.5	8,770	11.93	585	63
Weighted average	161	554	424	64	783	16	112	1,130	1,250	3.2	3,740	5.09	1,620	57

ANALYSES OF SAMPLES FROM WASHITA RIVER NEAR DURWOOD, OKLA, MAY 1, 1944 to SEPT. 30, 1944

(Composites of daily samples collected at gaging station at Mulkey Bridge on State Highway 18, 1½ miles downstream from Caddo Creek and 4 miles north of Durwood. Drainage area 7,310 square miles. Analyses in parts per million. Analyzed by Geological Survey.)

Date of Collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
May 1-2,6-10 1944	1,711	90.1	116	32	43	217	257	47	4.2	706	0.82	3,260	421	243	18
May 3-5	5,213	39.1	59	17	28	173	92	27	3.2	373	0.42	5,250	217	75	22
May 11-20	657	88.9	112	33	40	206	247	51	4.8	657	0.80	1,170	415	246	17
May 21-22,24-27	1,920	82.5	94	31	42	208	211	42	3.7	590	0.72	3,060	362	191	20
May 23, 28-31	3,108	42.3	52	14	15	162	59	17	2.8	267	0.33	2,240	188	55	15
June 1-3,9-10	2,528	60.0	77	20	13	194	97	28	4.0	376	0.46	2,570	274	115	9.4
June 4-8	1,164	90.8	92	32	64	211	255	40	5.6	657	0.81	2,060	361	188	28
June 11-20	5,380	45.7	58	14	19	171	70	19	3.8	284	.36	4,130	202	62	17
June 21-30	1,792	66.8	89	23	19	187	165	21	3.8	465	.56	2,250	316	163	12
July 1-10	1,014	65.2	89	22	16	185	160	22	3.2	459	.55	1,260	312	161	11
July 11-20	472	111	133	45	51	237	326	65	1.8	824	1.00	1,050	517	382	18
July 21-25,30-31	465	125	145	50	67	230	393	81	2.0	936	1.16	1,180	568	378	20
July 26-29	725	80.8	92	33	35	203	200	46	2.2	561	.69	1,100	365	190	17
Aug. 1-6	928	99.4	124	40	33	176	322	44	5.8	724	.89	1,810	474	330	13
Aug. 7-10	654	63.0	83	22	14	143	177	15	6.6	428	.53	756	298	180	9.3
Aug. 11-20	292	70.2	91	26	20	193	180	20	4.2	490	.59	336	334	176	12
Aug 21-31	357	101	113	41	55	233	280	61	3.0	718	.91	692	450	260	21
Sept. 1-10	648	62.7	69	24	23	173	126	32	3.0	406	.49	710	270	128	16
Sept. 11-20	301	88.9	109	34	35	211	244	42	3.0	618	.78	502	412	238	16
Sept. 21-30	213	82.2	92	37	31	193	222	41	1.2	519	.71	298	382	223	15
Weighted Average	1,301	62.3	78	23	28	185	145	30	3.7	448	0.61	1,570	289	138	17

Washita River near Durwood, Okla. (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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 ac.ft.	Dissolved Solids: Tons per day	Total Hardness $CaCO_3$
Oct. 1-10, 1944	2,002	50.9	58	19	22	154	104	24	3.2	340	0.46	1,840	222
Oct. 11-20	546	51.4	56	17	22	156	91	23	2.8	328	.45	484	210
Oct. 21-31	236	76.4	85	31	33	218	166	42	1.8	516	.70	329	340
Nov. 1-10	388	89.7	99	37	47	224	214	62	.8	615	.84	644	399
Nov. 11-12, 16-17	413	72.8	84	28	36	203	155	45	2.8	509	.69	568	324
Nov. 13-15, 18-20	320	108	117	41	64	328	197	84	1.8	737	1.00	637	460
Nov. 21-24	322	95.9	88	39	63	392	65	89	4.2	580	.79	504	350
Nov. 25-30	1,131	56.4	62	18	25	167	94	33	1.8	346	.47	1,060	228
Dec. 1-5	547	89.3	87	30	40	212	173	51	2.8	514	.70	759	340
Dec. 6-10	1,914	48.9	56	16	20	166	73	24	3.8	275	.37	1,420	206
Dec. 11-20	600	79.7	100	28	32	218	184	43	3.5	540	.73	875	364
Dec. 21-31	427	98.2	102	40	55	230	245	64	5.0	624	.85	719	419
Jan. 1-10, 1945	403	120	110	46	70	248	275	88	3.0	771	1.05	839	464
Jan. 11-20	485	114	104	47	68	244	286	72	1.0	748	1.02	980	453
Jan. 21-31	664	110	127	40	60	236	253	80	1.5	758	1.03	1,360	432
Feb. 1-10	491	118	134	43	61	286	281	81	3.0	804	1.09	1,070	512
Feb. 11-19	491	108	122	46	60	246	295	74	2.8	780	1.06	1,030	494
Feb. 20-28	2,900	54.4	67	18	25	191	80	37	3.0	347	.47	2,720	240
Mar. 1-10	5,629	41.2	55	15	17	154	62	30	3.0	287	.39	4,360	199
Mar. 11-14, 18	8,306	43.2	58	16	17	169	64	28	2.8	291	.40	6,530	211
Mar. 15-17, 19-20	29,280	23.1	39	9.3	5.1	128	25	10	2.2	168	.23	13,300	136
Mar. 21-31	4,244	70.8	90	26	27	237	126	44	3.5	524	.71	6,000	332
Apr. 1-10	2,754	76.4	96	28	32	267	130	47	2.2	522	.71	3,880	354
Apr. 11-13	3,910	65.8	73	27	28	223	98	47	3.2	426	.58	4,500	293
Apr. 14-20	10,790	39.5	52	13	15	145	69	16	3.2	262	.36	7,570	183
Apr. 21-25	12,870	40.1	52	13	13	130	77	15	3.2	263	.36	9,140	183
Apr. 26-30	4,364	72.1	96	27	25	243	147	35	3.2	516	.70	6,080	350
May 1-10	1,868	91.3	100	42	38	236	223	54	3.2	576	.78	2,910	422
May 11-20	2,149	82.5	88	37	40	221	195	50	3.5	522	.71	3,030	372
May 21-31	943	106	109	52	53	271	273	66	1.8	688	.94	1,750	436

Washita River near Durwood, Okla. (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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 ac.ft.	Dissolved solids: Tons per day	Total Hardness as $CaCO_3$
June 1-4, 1945	985	109	112	54	51	269	280	70	1.2	780	1.06	2,070	502
June 5-7	3,080	59.3	56	22	35	174	86	52	1.8	396	.54	3,290	230
June 8-10	16,950	28.5	37	11	6.9	128	29	11	2.5	206	.28	9,430	138
June 11-20	17,610	33.0	42	11	13	134	44	14	3.8	194	.26	9,220	150
June 21-26	5,632	56.3	68	20	23	194	99	26	3.5	335	.46	5,090	252
June 27-30	2,265	83.1	102	34	34	286	168	40	3.5	522	.71	3,190	394
July 1-7, 9	1,989	80.4	90	36	38	260	164	48	4.8	509	.69	2,730	372
July 8, 10	5,800	51.0	59	19	22	174	93	22	3.2	304	.41	4,760	225
July 11-12	20,200	27.3	40	5.0	12	118	29	13	1.8	159	.22	8,670	120
July 13-20	4,962	50.1	62	16	23	160	102	21	3.8	307	.42	4,110	220
July 21-27	2,253	79.3	94	27	46	250	182	34	3.1	509	.69	3,110	346
July 28-31	5,712	41.4	48	13	23	160	56	23	1.2	243	.33	3,750	173
Aug. 1-6	1,487	71.8	97	28	23	240	151	36	3.8	528	.72	2,120	357
Aug. 7-10	5,528	37.4	47	13	22	165	46	24	1.2	247	.34	3,690	171
Aug. 11-17	3,007	45.4	52	16	29	191	58	28	1.8	289	.39	2,350	196
Aug. 18-20	1,760	75.4	90	31	41	266	153	44	1.5	563	.77	2,680	352
Aug. 21-31	928	85.2	104	36	46	274	208	44	5.6	632	.86	1,580	408
Sept. 1-10	469	90.1	86	46	47	274	193	56	1.2	636	.86	805	404
Sept. 11-20	350	99.3	86	54	52	305	197	66	.5	655	.89	619	436
Sept. 21-25	354	97.1	71	59	53	259	210	70	6.5	648	.88	619	420
Sept. 26-30	23,630	27.6	37	9.6	5.5	122	23	13	1.8	170	.23	10,800	132
Weighted average	3,520	46.7	58	17	19	167	80	25	2.8	329	0.39	2,710	214

ANALYSES OF SP T SAMPLES COLLECTED AT VARIOUS P.INTS
ON STREAMS IN RED RIVER BASIN IN TEXAS

ANALYZED BY GEOLOGICAL SURVEY

No.	Date of collection	Specific conductance K x 10⁵ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$	
1	9-13-44	144	92	34	159	270	135	251	[illegible]	893	370	
2	12-20-44	110	85	2[illegible]	105	2[illegible]	116	167	1.2	6[illegible]9	294	
3	5-2[illegible]-43	-	-	-	-	263	26[illegible]	121	-	-	-	
4	9-17-45	-	-	-	-	12[illegible]	2[illegible]	235	2.[illegible]	-	196[illegible]	a/
5	11-13-45	65.[illegible]	-	-	-	304	17	46	.[illegible]	-	2[illegible]2	a/
6	11-13-45	67.2	-	-	-	3[illegible]2	18	5[illegible]	.2	-	212	a/
7	7-15-42	297	198	44	383	116	529	61[illegible]	3.[illegible]	1,824	675	
8	11-16-39	-	546	124	393	186	1588	65[illegible]	5.5	3,398	1873	
9	3-17-42	8.8	5.6	2.7	7.8	25	7	1[illegible]	.2	9[illegible]	25	
10	10-14-41	-	4.2	1.7	6.4	15	8	7.[illegible]	.5	63	18	
11	10-14-41	-	4.6	2.3	6.9	22	10	5.[illegible]	.5	66	21	
12	3-17-42	9.3	5.4	3.1	8.1	21	12	1[illegible]	0	78	26	
13	3-17-42	7.7	4.7	2.4	8.3	20	7	11	.5	68	22	
14	9- -42	-	3.5	1.8	9.2	24	5.1	8.[illegible]	.[illegible]	931	16	
15	10-14-41	-	2.8	1.6	3.2	14	3	4.[illegible]	.75	43	14	
16	10-14-41	-	4.5	2.[illegible]	8.3	21	7	8.[illegible]	1.2	75	19	

1 Red River at Arthur City Texas; G.H. 5.39, Temp: 75°F; 3:15 PM
2 Red River at Arthur City Texas; G.H. 57[illegible], Disch 493
3 Buck Creek 1 mile East of Giles, Texas
4 Buck Creek at Childress Texas at bridge on U. S. Hwy. 83
5 Quitaque Creek at Quitaque, Texas at Gaging Station
6 Quitaque Creek at Quitaque, Texas at road crossing 3/4 miles below gaging station
7 Lake Kemp near Wichita Falls, Texas about ½ mile below dam
8 Salt Creek near Paducah, Texas
9 Black Cypress Creek, ½ mile above junction of Kelly Creek near Cornett, Texas
10 Peacock Creek at Road Crossing about 1 1/4 mile east of Jenkins Texas
11 Peacock Creek at old Highway No. 49 crossing 1 mile southeast of Love Chapel
12 Kelly Creek 1½ mile south of Cornett, Texas
13 Bruton's Creek at road crossing 2 miles below Jenkins, Texas
14 Ellison Creek at Daingerfield, Texas
15 Cloninger Creek at crossing of Hwy. 47 northwest of Hughes, Texas
16 Brutons Creek, at Road Crossing about ½ mile east of Jenkins, Texas

a/ Determined

ANALYSES OF SURFACE WATERS

IN

SABINE RIVER BASIN

Parts per million of chloride in samples of water collected from Sabine River at Logansport, Louisiana
(Analyzed by U. S. Geological Survey)

Day	Aug.	Sept.	Oct. 1939	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. 1940	May	June	July
1	-	295	-	550	3100	285	480	235	425	45	180	51
2	-	300	-	550	2495	-	520	265	265	65	205	49
3	-	-	450	570	2540	-	510	215	255	100	110	198
4	-	335	460	580	2390	-	360	412	230	152	84	-
5	-	350	450	-	2280	-	260	230	418	120	75	95
6	-	345	470	600	2190	-	108	240	390	224	58	180
7	-	92	470	600	2095	-	99	245	100	225	54	192
8	-	175	480	630	2050	120	93	235	120	185	-	121
9	-	258	475	-	1765	138	89	290	75	170	64	88
10	-	-	-	650	1670	172	100	280	130	100	43	76
11	-	290	480	-	1375	172	100	315	208	78	34	92
12	-	295	490	-	1165	210	107	300	138	82	19	115
13	-	310	480	715	1070	218	106	265	115	95	17	80
14	-	330	490	735	1085	245	101	400	110	85	33	68
15	580	370	490	835	1120	390	155	442	132	102	64	58
16	575	370	490	910	1035	475	145	178	168	120	78	44
17	565	390	490	1120	1295	485	138	218	95	160	75	50
18	560	390	490	1300	-	620	132	278	48	205	70	71
19	530	-	500	1445	-	590	80	432	58	250	76	97
20	535	-	480	1590	-	460	65	740	50	308	92	107
21	495	-	480	1585	1700	420	80	375	75	300	209	88
22	455	395	505	1410	-	480	178	278	100	222	178	108
23	360	405	510	1160	189	430	252	218	112	205	246	102
24	405	420	500	1580	87	475	258	305	138	98	164	280
25	435	420	510	1930	65	590	298	242	150	115	267	302
26	435	420	410	2270	74	640	272	-	152	250	94	215
27	395	430	510	2280	125	585	182	298	138	528	89	185
28	340	430	535	2990	174	570	208	220	-	238	90	180
29	290	430	530	2940	-	525	220	218	115	172	143	202
30	285	440	550	2780	-	455	-	265	50	62	65	290
31	285	-	560	-	229	490	-	495	-	130	-	310
	442.6	347.4	473.4	1318.3	1332.5	409.6	196.2	304.3	157.2	167.5	102.6	138.4

Parts per million of chloride in samples of water collected from Sabine River at Logansport, Louisiana
(Analyzed by U. S. Geological Survey)

Day	Aug.	Sept.	Oct. 1940	Nov.	Dec.	Jan. 1941
1	360	262	615	1360	74	27
2	385	185	222	1290	75	31
3	380	172	225	1105	75	41
4	378	178	240	885	76	39
5	362	152	230	1050	76	36
6	345	-	250	1500	78	43
7	392	172	245	270	67	43
8	415	147	220	200	54	44
9	452	120	225	302	-	43
10	448	117	-	328	39	54
11	420	135	230	380	36	61
12	400	160	250	335	42	89
13	428	-	252	388	47	114
14	460	-	277	-	49	118
15	410	215	298	820	48	117
16	422	210	312	-	54	60.0
17	505	210	348	200	46	
18	-	220	412	155	63	
19	575	230	495	155	65	
20	102	232	572	220	68	
21	258	245	492	145	74	
22	145	265	-	-	74	
23	205	285	458	18	76	
24	168	298	522	14	84	
25	258	312	555	-	85	
26	508	355	655	5.0	36	
27	585	460	650	15	26	
28	890	538	640	22	16	
29	710	602	-	44	17	
30	265	-	760	68	-	
31	348	-	-	-	35	
	399.3	249.1	394.4	433.6	57.1	40.7

Analyses of samples from Sabine River at Logansport, Louisiana, Oct. 1, 1941 to Sept. 30, 1942
(Composites of daily samples collected at gaging station on U. S. Hwy 84, in Logansport 200 ft. upstream from Texas & New Orleans RR Bridge)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Oct. 2,5, 1941	114				39	13	320		636	0.87	102 a/
Oct. 3-4	243				44	15	722		1,356	1.84	150 a/
Oct. 6-7	59.7				36	14	155		356	.48	80 a/
Oct. 11, 16	59.1				38	13	147		352	.48	51 a/
Oct. 17	32.4				44	11	71		166	.23	69 a/
Oct. 18-20											
12-15	90.0				40	11	249		446	.61	78 a/
Oct. 21-28	82.0	22	6.6	124	43	14	214	0.2	468	.64	82
Oct. 29	18.6				27	12	40	.0	103	.14	30 a/
Oct. 30-31	12.6	6.4	3.0	13	20	4.0	26	.0	97	.13	28
Nov. 1-4	23.6	10	4.4	27	26	11	49	.5	156	.21	42
Nov. 5-9	74.0	22	6.5	109	44	19	186	.5	421	.57	82
Nov. 10	38.2				140	18	33	2.0	197	.27	144 a/
Nov. 12-18	85.6	24	7.0	130	52	21	218		471	.64	89
Nov. 19-20	40.3				27	13	97		225	.31	64 a/
Nov. 21-29	42.8				38	12	102		239	.33	52 a/
Dec. 1-5,9-10	68.7				43	25	165	.5	388	.53	63 a/
Dec. 6-8	120				48	30	320	0.8	662	.90	96 a/
Dec. 15-17	81.1				52	23	206		473	.64	86 a/
Dec. 18-20											
11-14	53.5				46	26	118		315	.43	75 a/
Dec. 26-31											
21-24	59.2	20	4.9	88	45	26	139	.5	353	.48	70
Jan. 1-10,1942	74.9	20	8.4	107	42	34	176	.0	406	.55	84
Jan. 11-20	92.0				58	40	229	.8	518	.70	96 a/
Jan. 21-31	112	26	9.1	179	37	41	295	.8	613	.83	102

a/ Determined

Analyses of samples from Sabine River at Logansport, Louisiana, Oct. 1, 1941 to Sept. 30, 1942
(Composites of daily samples collected at gaging station on U. S. Hwy 84, in Logansport 200 ft. upstream from Texas & New Orleans RR Bridge)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Feb. 1, 1942	66.8						167				
Feb. 2	61.4										
Feb. 3	84.1										
Feb. 4	97.1						249				
Feb. 5	78.7										
Feb. 6	66.5						161				
Feb. 7	74.6										
Feb. 8	74.2						180				
Feb. 9	56.7										
Feb. 10	62.2						141				
Feb. 11	61.0						134				
Feb. 12	76.5										
Feb. 13	108						273				
Feb. 14	76.1						180				
Feb. 15	123						326				
Feb. 16	114										
Feb. 17	105						268				
Feb. 18	101										
Feb. 19	93.1						232				
Feb. 20	111						283				
Feb. 21	162						442				
Feb. 22	142						383				
Feb. 23	94.2						235				
Feb. 24	80.5						198				
Feb. 25	93.1						231				
Feb. 26	96.1						242				
Feb. 27	99.6						241				
Feb. 28	50.6						110				

Analyses of samples from Sabine River at Logansport, Louisiana, Oct. 1, 1941 to Sept. 30, 1942
(Composites of daily samples collected at gaging station on U. S. Hwy 84, in Logansport 200 ft. upstream from Texas & New Orleans RR Bridge)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NC_3)	Dissolved solids Parts per million	Dissolved solids Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Mar. 1-10, 1942	52.5	16	6.4	73	32	25	122	.5	308	0.42	66
Mar. 11-20	77.5	21	7.9	118	44	40	186	1.2	438	.60	85
Mar. 21	95.0						248				
Mar. 22	101										
Mar. 23	117						312				
Mar. 24	116										
Mar. 25	85.8						219				
Mar. 26	91.5										
Mar. 27	87.9										
Mar. 28	89.1										
Mar. 29	86.0						222				
Mar. 30	--										
Mar. 31	124						332				
April 1	94.9						243				
April 2	110						292				
April 3	82.3						209				
April 4	83.3										
April 5	--										
April 6	83.1										
April 7	82.3						209				
April 8	33.6						77				
April 9	32.9						70				
April 10	33.3						77				
April 11	33.9						81				
April 12	34.4										
April 13	--										
April 14	35.0										

Analyses of samples from Sabine River at Logansport, Louisiana, Oct. 1, 1941 to Sept. 30, 1942
(Composites of daily samples collected at gaging station on U. S. Hwy 84, in Logansport 200 ft. upstream from Texas & New Orleans RR Bridge)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)
June 6 , 1942	32.4	53	July 2	65.6	154
June 7	44.5	86	July 3	46.9	88
June 8	47.9		July 4	70.5	160
June 9	49.5	102	July 5	63.7	
June 10	--		July 6	64.8	153
June 11	93.9	254	July 7	76.7	188
June 12	85.2		July 8	119	328
June 13	81.5	210	July 9	184	520
June 14	48.7	115	July 10	126	335
June 15	38.8		July 11	136	365
June 16	34.2	69	July 12	142	
June 17	29.4		July 13	--	
June 18	28.4	57	July 14	146	415
June 19	40.6		July 15	189	550
June 20	40.2	89	July 16	209	625
June 21	39.3	81	July 17	25.2	36
June 22	41.8		July 18	215	635
June 23	48.7	98	July 19	191	
June 24	50.0		July 20	187	540
June 25	50.9		July 21	147	
June 26	48.0		July 22	--	
June 27	--		July 23	133	
June 28	44.2	85	July 24	132	
June 29	46.4		July 25	144	
June 30	43.9	84	July 26	145	
July 1	57.5		July 27	175	

Analyses of samples from Sabine River at Logansport, Louisiana, Oct. 1, 1941 to Sept. 30, 1942 (Composites of daily samples collected at gaging station on U. S. Hwy 84, in Logansport 200 ft. upstream from Texas & New Orleans RR Bridge)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance $K \times 10^5$ at 25°C	Chloride (Cl)	Date of collection	Specific Conductance $K \times 10^5$ at 25°C	Chloride (Cl)
July 28, 1942	180		August 23	506	625
July 29	177		August 24	28.8	52
July 30	188		August 25	--	
July 31	190		August 26	--	
August 1	184	520	August 27	--	
August 2	238		August 28	--	
August 3	205		August 29	--	
August 4	211		August 30	--	
August 5	246	675	August 31	49.8	130
August 6	260		September 1	55.0	136
August 7	294		September 2	63.9	
August 8	315	925	September 3	71.2	187
August 9	279		September 4	77.5	
August 10	287	852	September 5	114	312
August 11	289	1,145	September 6	104	
August 12	314		September 7	82.9	226
August 13	281		September 8	86.8	
August 14	258		September 9	124	354
August 15	257	760	September 10	86.8	238
August 16	41.9	62			
August 17	232	705			
August 18	--				
August 19	290				
August 20	289	905			
August 21	--				
August 22	134	275			

Analyses of samples from Sabine River at Logansport, Louisiana, Oct. 1, 1941 to Sept. 30, 1942
(Composites of daily samples collected at gaging station on U. S. Hwy 84, in Logansport 200 ft. upstream from Texas & New Orleans RR Bridge)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Sept. 11-12, 1942											
14-20	83.6	20	5.7	136	42	20	222	2.0	485	0.65	74
Sept. 21-25,30	104	26	7.2	166	50	21	275	4.5	586	.80	94

Analyses of samples from Sabine River at Logansport, Louisiana, Jan. 1, 1944, to Sept. 30, 1944
(Composites of daily samples collected at gaging station on U. S. Hwy. 84 in Logansport 200 ft. upstream from Texas and New Orleans RR Bridge)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as Ca CO_3 (calc.)
January 1-5, 1944	75.2	21	7.5	120	30	50	189	1.5	427	84
January 9-10	34.1				25	30	62	1.0		
January 11-12, 14-20	32.5	13	4.5	43	48	21	58	0.5	199	51
January 21-31	48.4	17	6.5	69	25	42	109	0.8	292	69
February 1-10	70.5	22	7.7	95	27	34	165	2.2	339	86
February 11	30.5						62			
February 12	34.9						78			
February 13	38.6						82			
February 14	36.6									
February 15	35.0									
February 16	36.5									
February 17	37.2									
February 18	43.6						94			
February 19	36.3									
February 20	37.8									
February 21	36.0						77			
February 22	56.0						74			
February 23	36.3									
February 24	32.5									
February 25	37.4									
February 26	34.4									
February 27	28.4						58			
February 28	27.1									
February 29	22.9						42			
March 1	31.4						42			
March 2	22.9									
March 3	22.2						21			
March 4	24.4									
March 5	27.9									
March 6	28.1									
March 7	25.8						50			

Sabine River at Logansport, Louisiana, Jan. 1, 1944, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25 °C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25 °C	Chloride (Cl)
March 8, 1944	26.4		April 9, 1944	22.5	17
March 9	28.5		April 10	30.8	70
March 10	27.8	—	April 11	31.7	
March 11	30.3	56	April 12	32.2	—
March 12	30.3		April 13	31.1	61
March 13	27.3	44	April 14	32.7	
March 14	29.1		April 15	32.6	
March 15	31.0		April 16	34.1	
March 16	45.9	95	April 17	33.4	
March 17	45.0		April 18	36.0	
March 18	43.6		April 19	33.1	—
March 19	32.9		April 20	44.7	69
March 20	33.6	65	April 21	35.1	57
March 21	52.0	105	April 22	37.4	
March 22	43.9		April 23	36.5	
March 23	36.9		April 24	37.7	
March 24	32.1	55	April 25	38.8	
March 25	34.5		April 26	36.7	—
March 26	39.0		April 27	45.9	60
March 27	30.0		April 28	10.4	15
March 28	28.1		April 29	10.6	
March 29	22.6	31	April 30	10.8	
March 30	19.8		May 1	11.7	17
March 31	16.1	90	May 2	12.7	
April 1	---		May 3	87.3	122
April 2	18.9		May 4	11.7	
April 3	16.5	23	May 5	8.8	
April 4	18.4		May 6	10.7	
April 5	25.1		May 7	12.6	
April 6	27.9		May 8	13.5	
April 7	27.3		May 9	14.6	
April 8	26.7		May 10	15.2	30

Sabine River at Logansport, Louisiana, Jan. 1, 1944, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
May 11, 1944	17.6		June 12, 1944	28.4	
May 12	25.3	34	June 13	33.7	
May 13	13.9		June 14	29.3	
May 14	14.5		June 15	34.4	
May 15	14.3	20	June 16	34.3	
May 16	17.3		June 17	26.4	42
May 17	1918		June 18	34.2	
May 18	--		June 19	35.2	
May 19	18.2	22	June 20	36.5	66
May 20	17.8		June 21	34.9	62
May 21	--		June 22	77.7	
May 22	16.8	22	June 23	41.1	
May 23	17.9		June 24	68.2	
May 24	20.8		June 25	55.0	
May 25	--		June 26	69.6	164
May 26	21.5		June 27	71.6	
May 27	23.1		June 28	74.7	
May 28	23.5		June 29	76.3	
May 29	26.2		June 30	81.5	130
May 30	27.7		July 1	97.8	
May 31	28.2	54	July 2	78.7	308
June 1	28.2		July 3	--	
June 2	27.9		July 4	--	
June 3	25.9	45	July 5	98.1	
June 4	27.2		July 6	104	
June 5	--		July 7	97.5	
June 6	24.4		July 8	104	
June 7	23.8		July 9	121	190
June 8	24.4		July 10	116	
June 9	28.7		July 11	117	316
June 10	38.7	72	July 12	136	
June 11	--		July 13	152	416

Sabine River near Logansport, Louisiana, Jan. 1, 1944, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
July 14, 1944	124		August 15, 1944	112	
July 15	99.9		August 16	117	
July 16	---		August 17	126	
July 17	86.9	214	August 18	133	
July 18	79.0		August 19	147	410
July 19	74.0		August 20	---	
July 20	70.0	214	August 21	155	32
July 21	64.4	162	August 22	153	
July 22	65.3		August 23	149	
July 23	70.9		August 24	149	
July 24	89.0		August 25	147	500
July 25	118		August 26	149	
July 26	96.8	150	August 27	149	
July 27	111		August 28	147	
July 28	118		August 29	152	
July 29	136		August 30	155	
July 30	149	244	August 31	---	
July 31	---		September 1	198	578
August 1	141	388	September 2	120	
August 2	120	316	September 3	---	
August 3	128		September 4	125	
August 4	130		September 5	123	354
August 5	99.0		September 6	94.7	
August 6	90.5		September 7	230	708
August 7	89.2		September 8	74.4	
August 8	87.6		September 9	---	--
August 9	86.1	206	September 10	71.3	186
August 10	--		September 11	110	306
August 11	80.7	200	September 12	84.0	
August 12	88.7		September 13	86.5	
August 13	93.0		September 14	156	
August 14	105		September 15	105	

Sabine River at Logansport, Louisiana, Jan. 1, 1944, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
September 16, 1944	99.2	
September 17	90.1	
September 18	84.3	
September 19	80.4	
September 20	74.4	192
September 21	76.8	
September 22	81.7	
September 23	77.6	
September 24	78.6	
September 25	76.8	
September 27	75.3	182
September 28	75.3	
September 29	77.6	
September 30	84.8	204

Sabine River at Logansport, Louisiana, (Continued)
October 1, 1944 to August 31, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)	Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)
October 1, 1944	74.9	86	November 3	125	
October 2	76.4		November 4	115	
October 3	78.9		November 5	---	
October 4	85.4		November 6	116	
October 5	108		November 7	122	
October 6	112		November 8	110	302
October 7	---		November 9	110	
October 8	---		November 10	143	
October 9	111		November 11	220	
October 10	144	400	November 12	---	
October 11	147		November 13	201	
October 12	147		November 14	185	
October 13	147		November 15	174	
October 14	132	360	November 16	244	740
October 15	158	450	November 17	244	
October 16	---		November 18	129	
October 17	147		November 19	220	--
October 18	149		November 20	157	465
October 19	146		November 21	198	
October 20	147		November 22	220	675
October 21	---		November 23	183	
October 22	190	580	November 24	220	--
October 23	219		November 25	71.2	168
October 24	236	720	November 26	---	
October 25	206		November 27	86.3	
October 26	196		November 28	108	
October 27	---		November 29	117	
October 28	236		November 30	83.9	
October 29	175		December 1	---	
October 30	---		December 2	49.2	
October 31	198		December 3	---	
November 1	175	505	December 4	---	
November 2	125		December 5	35.5	

Sabine River at Logansport, Louisiana, Oct. 1, 1944 to Aug. 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)	Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)
December 6, 1944	22.3		January 8, 1945	23.2	
December 7	22.3		January 9	23.8	
December 8	22.3		January 10	23.8	
December 9	32.2		January 11	22.7	
December 10	39.9		January 12	22.2	
December 11	47.3		January 13	22.4	
December 12	39.3		January 14	21.7	40
December 13	37.5	86	January 15	25.2	
December 14	75.1	96	January 16	25.0	
December 15	44.2		January 17	29.2	48
December 16	37.8		January 18	22.4	
December 17	36.0		January 19	23.8	
December 18	34.7		January 20	23.6	
December 19	---		January 21	17.9	
December 20	32.0		January 22	21.6	
December 21	---		January 23	14.5	28
December 22	41.7		January 24	15.0	
December 23	46.2		January 25	23.8	
December 24	52.7		January 26	20.8	
December 25	---		January 27	26.3	
December 26	52.7		January 28	28.3	—
December 27	63.9	172	January 29	28.9	56
December 28	39.5		January 30	27.8	
December 29	42.9		January 31	---	--
December 30	17.7	34	February 1	46.0	96
December 31	20.0		February 2	29.7	56
January 1, 1945	16.9		February 3	30.6	
January 2	18.1		February 4	35.9	
January 3	17.8		February 5	36.4	
January 4	16.3	30	February 6	35.3	
January 5	19.1		February 7	39.8	
January 6	21.5		February 8	46.5	104
January 7	29.5	42	February 9	44.5	

Sabine River at Logansport, Louisiana, Oct. 1, 1944 to Aug. 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)	Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)
February 10, 1945	---		March 15	17.6	
February 11	---		March 16	27.1	36
February 12	58.0	128	March 17	18.4	
February 13	52.5		March 18	27.1	
February 14	35.3		March 19	23.0	
February 15	34.7		March 20	20.1	
February 16	33.4	72	March 21	21.2	36
February 17	47.3		March 22	33.8	64
February 18	38.7		March 23	23.0	
February 19	37.6		March 24	24.2	
February 20	45.5		March 25	25.2	
February 21	29.3		March 26	24.8	
February 22	28.1		March 27	24.8	
February 23	25.6		March 28	23.6	
February 24	27.3	52	March 29	26.9	
February 25	25.6		March 30	23.8	
February 26	27.3		March 31	23.0	
February 27	25.9		April 1	28.8	34
February 28	25.9		April 2	21.6	
March 1	22.5	42	April 3	19.7	
March 2	18.7		April 4	11.2	
March 3	22.3		April 5	11.5	
March 4	18.4		April 6	9.0	10
March 5	9.1	16	April 7	15.1	
March 6	11.2		April 8	11.5	
March 7	18.4		April 9	9.1	
March 8	23.2		April 10	---	
March 9	16.1		April 11	12.2	
March 10	20.6		April 12	18.3	14
March 11	---		April 13	14.4	
March 12	19.2		April 14	13.7	
March 13	12.7	20	April 15	---	
March 14	14.5		April 16	15.7	

Sabine River at Logansport, Louisiana, Oct. 1, 1944 to Aug. 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)	Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)
April 17, 1945	13.7		May 20, 1945	33.6	
April 18	23.6		May 21	---	
April 19	22.1		May 22	58.4	132
April 20	25.6	42	May 23	58.1	
April 21	---		May 24	36.4	
April 22	26.9	42	May 25	33.5	62
April 23	27.8		May 26	34.6	
April 24	33.7		May 27	34.1	
April 25	38.3		May 28	40.8	
April 26	36.4		May 29	45.0	
April 27	43.2		May 30	44.7	
April 28	42.7		May 31	46.3	
April 29	---		June 1	46.6	
April 30	46.7	102	June 2	43.3	94
May 1	44.5		June 3	47.2	
May 2	61.5	138	June 4	54.5	
May 3	44.8		June 5	64.6	154
May 4	37.8		June 6	61.9	
May 5	39.4	72	June 7	62.8	
May 6	39.2		June 8	44.0	
May 7	39.6		June 9	43.8	
May 8	44.8		June 10	---	
May 9	39.2		June 11	24.3	50
May 10	43.6		June 12	21.1	
May 11	43.1		June 13	21.1	
May 12	54.6	132	June 14	14.1	
May 13	---		June 15	14.1	
May 14	43.9		June 16	13.4	
May 15	28.9		June 17	11.7	
May 16	32.4		June 18	11.9	
May 17	25.1	52	June 19	12.3	--
May 18	---		June 20	11.4	16
May 19	33.1		June 21	12.5	

Sabine River at Logansport, Louisiana, Oct. 1, 1944 to Aug. 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)	Date of collection	Specific conductance (K x10^5 at 25°C)	Chloride (Cl)
June 22, 1945	12.8		July 25, 1945	21.4	
June 23	11.2	14	July 26	22.2	
June 24	11.7		July 27	24.3	
June 25	11.5		July 28	29.1	
June 26	12.6		July 29	---	
June 27	14.2		July 30	28.0	
June 28	19.8		July 31	---	
June 29	20.5		Aug. 1	48.2	
June 30	22.7	30	Aug. 2	39.5	
July 1	25.2		Aug. 3	28.7	46
July 2	25.2		Aug. 4	29.8	
July 3	27.3		Aug. 5	---	
July 4	32.9		Aug. 6	46.5	104
July 5	28.1		Aug. 7	80.3	184
July 6	30.1		Aug. 8	54.0	
July 7	32.3		Aug. 9	---	
July 8	36.3		Aug. 10	54.9	
July 9	38.2		Aug. 11	---	
July 10	44.4		Aug. 12	---	
July 11	53.2	130	Aug. 13	64.7	
July 12	29.3		Aug. 14	60.1	146
July 13	18.0		Aug. 15	60.1	
July 14	17.0		Aug. 16	82.3	200
July 15	16.6	30	Aug. 17	60.7	
July 16	23.0		Aug. 18	73.3	
July 17	21.7	44	Aug. 19	---	
July 18	18.4		Aug. 20	66.7	
July 19	17.4		Aug. 21	79.4	
July 20	15.7		Aug. 22	80.2	
July 21	23.4		Aug. 23	101	
July 22	23.4		Aug. 24	118	
July 23	21.9		Aug. 25	118	324
July 24	21.4	34	Aug. 26	---	

Sabine River at Logansport, Louisiana, Oct. 1, 1944 to Aug. 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)
Aug. 27, 1945	81.4	
Aug. 28	101	
Aug. 29	101	
Aug. 30	69.9	
Aug. 31	68.5	160

Analyses of samples from the Sabine River near Ruliff, Texas, September 1, 1945 to September 30, 1945 (Composites of daily samples collected at bridge on State Highway 235, 2.4 miles north of Ruliff, Newton County, and 4.5 miles downstream from Cypress Creek.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (Calc.)
September 6-10, 1945	38.0	14	4.4	53	45	12	84	0.8	282	53
September 11, 13, 17	39.7	17	4.7	54	50	12	88	.8	238	62
September 28-30	25.8	15	4.4	35	47	8	59	.8	177	56

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN SABINE RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	9-15-39	-	7.2	2.9	36	56	5.5	40	0.2	181	30
2	10-26-39	-	7.8	3.2	40	45	4.6	54	.7	184	33
3	11- -39	-	6.5	2.4	37	28	5.8	55	.1	164	26
4	12-29-39	-	4.2	1.7	32	1[illegible]	5.5	52	.4	147	17
5	1-31-40	-	14	5.1	78	25	18	132	.[illegible]	303	56
6	2-28-40	-	10	4.3	56	24	19	89	.[illegible]	224	43
7	3-29-40	-	5.2	2.6	27	3[illegible]	4.9	37	.[illegible]	287	24
8	10-13-41	-	5.8	1.5	23	21	14	27	.4	139	21
9	12-13-43	-	22	2.8	1[illegible]	37	31	14	1.2	129	61
10	6-15-44	7.1	5.0	2.4	7.5	22	6.6	5.[illegible]	.8	75	2[illegible]
11	10-17-40	-	-	-	-	12	2	4.[illegible]	.1	-	10 a/
12	10-5-40	-	-	-	-	1[illegible]	2	5.[illegible]	.[illegible]	19	9 a/
13	4-10-41	-	2.[illegible]	.8	2.8	7.[illegible]	2.5	4.2	.2	36	8
14	10- 5-40	-	2.2	1.[illegible]	3.4	11	2.[illegible]	4.[illegible]	.2	37	10
15	10- 5-40	-	-	-	-	9.[illegible]	2	5.[illegible]	.2	-	9 a/
16	4-10-41	-	2.[illegible]	.8	2.8	7.[illegible]	2.1	4.4	.3	34	8
17	10- 5-40	-	-	-	-	9.[illegible]	2	5.[illegible]	.2	-	9 a/
18	10- 5-40	-	2.1	.5	3.8	1[illegible]	1.5	4.[illegible]	.2	38	7

a/ Determined

DESCRIPTION OF SAMPLING POINTS ON SABINE RIVER
NUMBERS CORRESPOND TO THOSE IN TABLE OF ANALYSES

1 Sabine River from Orange Co. Water Works main canal near Terry Texas.
2 Sabine River from Orange Co. Water Works main canal near Terry Texas.
3 Sabine River from Orange Co. Water Works main canal near Terry Texas.
4 Sabine River from Orange Co. Water Works main canal near Terry Texas.
5 Sabine River from Orange Co. Water Works main canal near Terry Texas.
6 Sabine River from Orange Co. Water Works main canal near Terry Texas.
7 Sabine River from Orange Co. Water Works main canal near Terry Texas.
8 Sabine River from Orange Co. Water Works main canal near Terry Texas.
9 Big Sandy Creek at Longview Texas.
10 Mill Creek 5 miles southwest of Center, Texas.
11 Big Cow Creek 2 miles northwest of Newton Texas State Hwy. no. 63.
12 Big Cow Creek at crossing of Hwy. 45 near Farrsville, Texas.
13 Big Cow Creek at Farrsville, Texas.
14 Little Cow Creek from old bridge park about 150 yards above measuring section and 200 yards above the crossing of Highway 63 near Burkeville, Texas.
15 Hunter Creek at crossing with Highway 45 near Farrsville, Texas.
16 Hunter Creek near Farrsville, Texas.
17 Hunter Creek at crossing with Highway 45 near Farrsville, Texas.
18 McGraw Creek from 1 mile above junction with Little Cow Creek and 200' below Willson sawmill, near Burkeville, Texas.

ANALYSES OF SURFACE WATERS

IN

NECHES RIVER BASIN

Analyses of samples from Neches River near Rockland, Texas, October 1, 1941 to September 30, 1942

(Composites of daily samples collected at gaging station on U. S. Highway 69, one mile north of Rockland, ¼ mile upstream from Texas and New Orleans Railroad Bridge.) Analyzed by Geological Survey. Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25° C	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	Total hardness as $CaCO_3$ (calc.)
Oct. 1-4,9-10, 1941	15.4				34	14	18		110	48 a/
Oct. 5-7	38.9				124	23	44		218	120 a/
Oct. 11-20	16.8				37	16	16		136	54 a/
Oct. 21-28	16.9	11	4.5	12	36	17	18	0.5	139	46
Oct. 29-30	24.2				38	18	40	.2	121	51 a/
Oct. 31	8.9				42	7	5.0	.5	54	32 a/
Nov. 1-10	7.6				28	5.6	2.0		71	27 a/
Nov. 11-14	10.9				31	12	10		97	43 a/
Nov. 15-20	20.3	13	5.9	17	50	18	24		170	57
Nov. 21-27	17.1				36	17	18		130	40 a/
Nov. 30	9.2				20	25	10		68	27 a/
Dec. 1-10	15.8				34	16	17		137	38 a/
Dec. 11-20	23.9				31	26	36		155	72 a/
Dec. 21-29	23.8				39	24	33	.3	173	48 a/
Jan. 1-10, 1942	25.9	19	4.0	27	42	27	43	.3	190	64
Jan. 11-20	26.4				36	32	45	.2	183	63 a/
Jan. 21-26,28-31	26.5	16	5.1	30	36	37	40	0.4	175	61
Mar. 1-10	19.0	15	5.2	12	37	23	22	.2	148	59
Mar. 11-20	26.1	20	4.9	33	70	34	35	.2	177	70
Mar. 21-22,24-31	28.6	15	6.9	26	38	37	38	.0	189	66
Apr. 1	31.6						44			
Apr. 5	28.4						41			
Apr. 7	27.0						40			
Apr. 8	14.7						18			
Apr. 9	9.9						10			
Apr. 10	9.8						9.0			
Apr. 11	11.5						10			
Apr. 13	16.7						19			
Apr. 14	13.5						13			
Apr. 15	27.8						42			
Apr. 16	13.3						13			

a/ Determined

Analyses of samples from Neches River near Rockland, Texas, October 1, 1941, to September 30, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
1 17, 1942	12.6		May 19, 1942	16.2	
ril 18	13.7		May 20	16.3	18
April 19	13.0		May 21	14.6	16
April 20	13.5	13	May 22	14.8	
April 21	14.5	26	May 23	15.4	
April 22	14.3		May 24	16.6	17
April 23	14.4		May 25	16.3	
April 24	14.7	28	May 26	13.5	14
April 25	14.6		May 27	12.7	
April 26	14.1		May 28	12.0	12
April 27	14.4	25	May 29	11.6	
April 28	13.9		May 30	12.3	
April 29	14.5		May 31	15.9	14
April 30	13.4	19	June 1	12.9	14
May 1	15.7	20	June 2	16.7	20
May 2	16.6		June 3	17.9	
May 3	16.3		June 4	17.9	
May 4	20.8	22	June 5	17.6	
May 5	--	18	June 6	17.6	22
May 6	17.4	22	June 7	18.7	
May 7	18.1		June 8	17.7	
May 8	19.0		June 9	--	
May 9	22.3	29	June 10	18.9	21
May 10	21.4		June 11	23.8	23
May 11	23.0	32	June 12	11.3	12
May 12	23.8		June 13	19.7	20
May 13	21.2		June 14	15.2	18
May 14	21.7	28	June 15	28.0	20
May 15	20.1		June 16	15.5	16
May 17	18.0	20	June 17	16.4	
May 18	16.9		June 18	17.0	19

Analyses of samples from Neches River near Rockland, Texas, October 1, 1941, to September 30, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^3 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^3 at 25°C	Chloride (Cl)
June 19, 1942	16.1		July 21, 1942	175	345
June 20	24.0	40	July 22	26.1	
June 21	20.7	26	July 23	27.7	
June 22	19.0		July 24	28.9	
June 23	23.0	26	July 25	26.8	
June 24	18.2		July 26	26.3	
June 25	18.2		July 27	26.5	
June 26	18.2	26	July 28	26.1	
June 28	24.0		July 29	27.1	
June 29	21.3	30	July 30	27.1	45
June 30	--		July 31	72.5	88
July 1	17.9	29			
July 2	19.7				
July 3	19.6				
July 4	18.6	25			
July 5	19.4				
July 6	17.8				
July 7	20.2				
July 8	18.3				
July 9	19.4				
July 10	18.4	22			
July 11	18.5	22			
July 12	--				
July 13	20.4				
July 14	22.0	28			
July 15	45.1	20			
July 16	45.5				
July 17	72.4	123			
July 18	72.5				
July 19	45.3	20			
July 20	176.0	350			

Analyses of samples from Neches River near Rockland, Texas, from October 1, 1941, to September 30, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 1-10, 1942	29.2	16	5.6	33	61	14	50	0.8	196	63
August 11	32.8						57			
August 12	30.7									
August 13	20.8									
August 14	31.3									
August 15	33.5						67			
August 16	32.4									
August 17	28.5									
August 18	27.5									
August 19	26.5									
August 20	23.4						36			
August 21	25.3						32			
August 22	14.4						14			
August 23	9.1									
August 24	8.3									
August 25	7.8						7.0			
August 26	--									
August 27	12.4									
August 28	12.4						14			
August 29	15.5						16			
August 30	--									
August 31	12.5						28			
September 1	21.7						30			
September 2	21.5									
September 3	18.3									
September 4	19.3									
September 5	18.6									
September 6	20.0						25			
September 7	36.6						77			
September 8	43.0						92			
September 9	23.0									
September 10	22.5						29			

Analyses of samples from Neches River near Rockland, Texas, from October 1, 1941, to September 30, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at $25^\circ C$	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
September 11-17, 19-20, 1942	17.3	16	3.1	15	40	22	21	1.0	143	53
September 21-24, 26-30	21.5	15	3.9	19	43	22	26	1.2	156	54

Neches River near Rockland, Texas, September 1, 1945 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
September 5-10, 1945	19.3	13	4.6	22	48	13	32	1.2	149	52
September 13-20	18.2	12	4.5	20	41	16	28	1.5	140	48
September 21-28	18.0	13	4.6	14	47	6	25	1.0	128	52

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN NECHES RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per Million

No.	Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	9-15-39	-	12	4.1	45	58	8.0	63	.2	198	47
2	10- -39	-	11	3.6	41	56	5.8	56	.2	189	42
3	11- -39	-	8.7	2.9	30	44	7.6	39	.1	153	34
4	12-29-39	-	3.0	1.9	4.1	12	5.8	6.0	.3	101	15
5	1-31-40	-	13	4.8	51	25	25	82	0	214	52
6	2-28-40	-	11	4.9	44	20	25	72	.0	205	48
7	3-29-40	-	8.7	3.4	17	24	15	27	.3	148	36
8	10-13-41	-	14	4.9	74	21	13	132	.2	333	55
9	9-15-39	-	12	4.3	47	56	8.6	66	1.8	210	48
10	10- -39	-	11	4.1	42	54	7.1	60	.2	204	44
11	11- -39	-	8.2	2.8	33	48	6.6	40	.1	164	32
12	12-29-39	-	11	4.7	46	29	13	78	.2	212	47
13	1-31-40	-	13	5.2	64	23	25	105	.0	252	54
14	2-28-40	-	7.0	3.2	20	18	16	31	.0	146	31
15	3-29-40	-	7.6	2.9	18	24	11	28	-	148	31
16	9-15-39	-	9.8	3.7	39	56	7.6	50	.2	182	40
17	10- -39	-	10	4.4	39	48	8.0	56	.3	209	43
18	11- -39	-	9.5	3.2	35	44	6.9	49	.2	168	37
19	12-29-39	-	6.4	2.3	21	28	13	25	.3	143	25
20	1-31-40	-	9.0	3.5	32	20	22	47	.0	155	37
21	2-28-40	-	5.2	2.1	9.9	16	10	14	.0	164	22
22	3-39-40	-	7.7	2.8	12	24	9.2	20	.4	156	31
23	10-13-41	-	8.6	2.4	16	30	6.8	24	.0	141	31
24	4- 7-42	46.5	12	7.9	62	30	24	104	1.5	261	62
25	1-14-37	-	-	-	-	8.0	28	35	.0	-	32 a/
26	8-24-45	26.3	10	4.1	48	51	30	52	.2	194	42 a/
27	10-5-40	-	-	-	-	9.0	2	4.5	.1	-	8 a/

a/ Determined

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN NECHES RIVER BASIN CONTINUED

Analyzed by Geological Survey

No.	Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SC_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
28	10- 5-40	-	-	-	-	25	2	9.0	0.1	-	21 a/
29	10-19-40	-	-	-	-	14	2	5.0	.7	-	12 a/
30	4-10-41	-	13	1.0	7.3	44	3.5	8.9	.3	80	37
31	10- 5-40	-	-	-	-	13	2	5.0	.2	-	10 a/
32	10-5-40	-	-	-	-	10	1.5	4.5	.0	-	8 a/
33	10-28-39	-	3.9	1.3	6.2	18	1.8	8.0	.2	54	15
34	11- -39	-	4.0	1.2	6.7	21	2.6	7.0	.1	56	15
35	12-29-39	-	3.5	1.4	3.7	11	4.8	6.0	.2	72	14
36	1-31-40	-	4.3	1.4	6.8	16	4.0	10	.0	52	16
37	2-28-40	-	5.5	1.6	6.4	21	2.9	10	.0	60	20
38	3-29-40	-	5.5	1.9	4.4	20	3.0	8.0	.0	68	22
39	10-13-41	-	5.7	1.5	5.1	25	1.9	6.0	.6	80	20
40	9-15-39	-	6.6	1.5	5.8	23	2.1	8.0	.2	60	23
41	10- -39	-	5.2	1.4	6.9	23	3.2	8.0	.3	63	19
42	11- -39	-	4.8	1.0	6.9	21	2.4	8.0	.1	55	15
43	12-29-39	-	3.5	1.4	4.4	12	4.1	6.0	.2	68	14
44	1-31-40	-	4.4	1.4	6.9	17	3.9	10	.0	54	17
45	2-28-40	-	5.9	1.5	6.7	22	3.0	10	.0	64	21
46	3-29-40	-	5.5	1.8	4.6	20	3.0	8.0	.0	68	21
47	10-13-41	-	5.8	1.4	3.8	20	2.1	7.0	.2	84	20
48	9-15-39	-	26	16	183	58	328	328	.2	663	131
49	10-28-39	-	40	56	501	60	105	895	-	1640	330
50	11- -39	-	108	73	901	63	212	1600	-	2930	569
51	12-29-39	-	12	1.9	77	27	11	122	.2	290	38
52	1-31-40	-	22	10	182	39	22	310	.0	601	96
53	2-28-40	-	32	7.2	267	30	14	462	.0	856	115
54	3-29-40	-	22	5.2	149	33	9.7	258	.0	538	76
55	10-13-41	-	9.9	2.0	32	36	4.2	49	.6	192	33

a/ Determined

DESCRIPTION OF SAMPLING POINTS IN NECHES BASIN
NUMBERS CORRESPOND TO THOSE IN TABLE OF ANALYSES

1. Neches River at Evadale
2. Neches River at Evadale
3. Neches River at Evadale
4. Neches River at Evadale
5. Neches River at Evadale
6. Neches River at Evadale
7. Neches River at Evadale
8. Neches River at Evadale
9. Neches River at Beaumont Water Works Intake Canal near Beaumont
10. Neches River at Beaumont Water Works Intake Canal near Beaumont
11. Neches River at Beaumont Water Works Intake Canal near Beaumont
12. Neches River at Beaumont Water Works Intake Canal near Beaumont
13. Neches River at Beaumont Water Works Intake Canal near Beaumont
14. Neches River at Beaumont Water Works Intake Canal near Beaumont
15. Neches River at Beaumont Water Works Intake Canal near Beaumont
16. Neches River, main canal of Texas Public Service Co. near Beaumont
17. Neches River, main canal of Texas Public Service Co. near Beaumont
18. Neches River, main canal of Texas Public Service Co. near Beaumont
19. Neches River, main canal of Texas Public Service Co. near Beaumont
20. Neches River, main canal of Texas Public Service Co. near Beaumont
21. Neches River, main canal of Texas Public Service Co. near Beaumont
22. Neches River, main canal of Texas Public Service Co. near Beaumont
23. Neches River, main canal of Texas Public Service Co. near Beaumont
24. Angelina River near Lufkin, Texas, G.H. 6.9
25. Angelina River at Bridge on U.S. Highway 59 Angelina & Nacogdoches county lines Texas
26. Angelina River near Horger, Texas
27. Sandy Creek at crossing of Highway 96 near Jasper, Texas
28. Walnut Creek at crossing of Highway 96 near Jasper, Texas
29. Big Creek at crossing of Highway 190 at Birch Grove, Texas
30. Walnut Creek south of Jasper, Texas
31. Bishop creek at crossing of Highway 45 near Jasper, Texas
32. Melhouns Creek at crossing of Highway 45 near Jasper, Texas
33. Village Creek 2 miles east of Kountze, Texas
34. Village Creek 2 miles east of Kountze, Texas
35. Village Creek 2 miles east of Kountze, Texas

DESCRIPTION OF SAMPLING POINTS IN NECHES BASIN CONTINUED

36. Village Creek 2 miles east of Kountze, Texas
37. Village Creek 2 miles east of Kountze, Texas
38. Village Creek 2 miles east of Kountze, Texas
39. Village Creek 2 miles east of Kountze, Texas
40. Village Creek at Fletcher, Texas
41. Village Creek at Fletcher, Texas
42. Village Creek at Fletcher, Texas
43. Village Creek at Fletcher, Texas
44. Village Creek at Fletcher, Texas
45. Village Creek at Fletcher, Texas
46. Village Creek at Fletcher, Texas
47. Village Creek at Fletcher, Texas
48. Pine Island Bayou at Voth, Texas
49. Pine Island Bayou at Voth, Texas
50. Pine Island Bayou at Voth, Texas
51. Pine Island Bayou at Voth, Texas
52. Pine Island Bayou at Voth, Texas
53. Pine Island Bayou at Voth, Texas
54. Pine Island Bayou at Voth, Texas
55. Pine Island Bayou at Voth, Texas

ANALYSES OF SURFACE WATERS

IN

TRINITY RIVER BASIN

Trinity River near Romayor, Texas (Continued)
October 1, 1941, to September 30, 1942

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (calc.)
February 20, 1942	51.4						68			
February 21	62.7									
February 22	49.6						24			
February 23	82.3						75			
February 24	--									
February 25	--									
February 26	70.0						89			
February 27	52.9									
February 28	51.2						60			
March 3-10	44.6				110	38	54	2.2	267	126 a/
March 11-20	52.7	50	6.6	49	141	56	59	2.5	313	152
March 21-31	66.0	58	8.6	63	172	57	82	1.5	389	180
April 1	63.4						101			
April 2	60.8									
April 3	61.1									
April 4	62.0									
April 5	59.4						84			
April 6	59.0									
April 7	53.4						74			
April 8	37.6						47			
April 9	19.5						17			
April 10	22.6						24			
April 11	18.7						17			
April 12	22.1						22			
April 13	25.3									
April 14	29.7									
April 15	32.9						39			
April 16	32.3									
April 17	30.7						16			
April 18	30.2									
April 19	29.7									

a/ Determined

Trinity River near Romayor, Texas (Continued)
October 1, 1941, to September 30, 1942

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
April 20, 1942	29.9						13			
April 21	30.7						15			
April 22	31.8									
April 23	31.1									
April 24	33.5						17			
April 25	31.1									
April 26	30.7									
April 27	30.6						16			
April 28	32.3									
April 29	32.7									
April 30	32.9						18			
May 1	35.7						21			
May 2	33.7									
May 3	---									
May 4	29.8						13			
May 5	29.8									
May 6	28.1						12			
May 7	27.9									
May 8	27.9						12			
May 9	27.4									
May 10	27.5						11			
May 11-20	32.3	43	3.6	19	137	22	18	2.2	193	122
May 21	32.7						19			
May 22	27.6									
May 23	25.2						14			
May 24	29.7									
May 25	31.0									
May 26	31.1									
May 27	29.7						21			
May 28	32.6									
May 29	30.8									
May 30	30.4									
May 31	31.8						14			

Trinity River near Romayor, Texas (Continued)
October 1, 1941, to September 30, 1942

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
July 21-31, 1942	52.4	53	6.2	47	175	31	58	2.5	284	158
August 1-3,5-10	52.4	54	5.9	48	177	31	61	1.0	309	160
August 11	53.8						63			
August 12	53.1									
August 13	53.0									
August 14	56.8						78			
August 15	65.1									
August 16	65.4									
August 17	65.2						92			
August 18	--									
August 19	65.7									
August 20	77.1						135			
August 21	--									
August 22	15.9						9.0			
August 23	16.6									
August 24	21.4						23			
August 25	37.3									
August 26	40.8						51			
August 27	45.2									
August 28	55.3						94			
August 29	64.0									
August 30	76.8									
August 31	76.8						144			
September 1	74.7						140			
September 2	68.4						106			
September 3	59.0									
September 4	40.5						43			
September 5	42.6									
September 6	45.2									
September 7	45.7						56			
September 8	50.4									

Trinity River near Romayor, Texas (Continued)
October 1, 1941, to September 30, 1942

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
September 9	50.5						58			
September 10	37.7						45			
September 11-20	44.5	41	4.5	39	114	30	57	2.0	257	121
September 21-29	40.5	47	5.2	27	142	34	31	2.5	250	139

Analyses of samples from the Trinity River near Romayor, Texas, from January 11, 1944, to September 30, 1944

(Composites of daily samples collected at gaging station at bridge of Gulf, Colorado, and Santa Fe, $\frac{1}{4}$ mile west of Romayor and $2\frac{1}{2}$ miles downstream from Big Creek).

Analyzed be U. S. Geological Survey — Parts per million

Date of collection	Specific conductance K X 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (calc.)
Jan. 11,13,19,20, 1944	39.0	34	4.4	40	89	44	49	2.5	218	103
Jan. 12, 14-17	22.0	23	2.8	15	66	20	18	0.8	146	69
Jan. 21-29	36.9	32	4.4	32	76	44	41	2.2	220	98
Jan. 30, 31	18.2	--	--	--	57	12	13	0.5	--	--
Feb. 1-3	21.3	22	3.5	24	65	34	22	1.0	152	69
Feb. 4-10	44.4	39	5.6	43	101	51	54	2.2	286	120
Feb. 11-20	35.9	34	4.3	32	100	38	34	2.5	194	103
Feb. 21-23, 25-29	37.4	37	3.9	32	100	42	36	1.8	202	108
Mar. 1-10	33.8	40	4.9	23	128	31	22	1.8	186	120
Mar. 11	40.5						31			
Mar. 12	40.5									
Mar. 13	38.7									
Mar. 14	41.7									
Mar. 15	48.9						50			
Mar. 16	42.2									
Mar. 17	46.2									
Mar. 18	45.1									
Mar. 19	27.3									
Mar. 20	28.6						23			
Mar. 21	25.9						22			
Mar. 22	29.3									
Mar. 23	33.9						33			
Mar. 24	36.2									
Mar. 25	50.1						62			
Mar. 26	31.8									
Mar. 27	33.1									
Mar. 28	38.5									
Mar. 29	33.7									
Mar. 30	33.6									
Mar. 31	34.7						28			

Trinity River near Romayor, Texas (Continued)
January 1, 1944, to September 30, 1944

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 1, 1944	38.3		May 1, 1944	54.9	70
April 2	36.1		May 2	23.3	19
April 3	35.8	30	May 3	15.9	
April 4	38.9		May 4	12.5	8.0
April 5	43.0		May 5	14.9	
April 6	45.2		May 6	15.3	
April 7	47.0		May 7	17.9	
April 8	51.6		May 8	18.7	
April 9	62.9	96	May 9	20.4	16
April 10	46.5	39	May 10	59.4	79
April 11	52.4	52	May 11	26.9	10
April 12	47.0		May 12	26.4	
April 13	39.2	28	May 13	25.3	
April 14	43.6		May 14	20.1	
April 15	45.3		May 15	26.2	
April 16	45.9		May 16	26.4	
April 17	46.4		May 17	28.2	
April 18	47.2		May 18	29.4	
April 19	46.2		May 19	29.4	
April 20	46.9		May 20	31.5	16
April 21	49.5		May 21	31.6	
April 22	47.0		May 22	31.0	
April 23	44.6		May 23	30.6	
April 24	44.4	48	May 24	26.7	
April 25	46.1		May 25	27.5	19
April 26	45.6		May 26	29.4	
April 27	44.4		May 27	32.1	
April 28	48.4		May 28	30.2	
April 29	61.8	82	May 29	31.0	
April 30	59.1		May 30	37.7	28
			May 31	33.3	

Trinity River near Romayor, Texas (Continued)
January 1, 1944, to September 30, 1944

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
August 1, 1944	68.6		September 1, 1944	58.8	88
August 2	72.2		September 2	--	
August 3	72.5		September 3	50.1	
August 4	66.6		September 4	49.2	
August 5	68.1	106	September 5	--	
August 6	75.4		September 6	51.1	
August 7	75.8		September 7	40.2	
August 8	70.5		September 8	41.2	
August 9	72.2		September 9	38.3	
August 10	83.0	96	September 10	36.0	52
August 11	90.2	162	September 11	33.9	
August 12	--		September 12	33.7	42
August 13	71.8		September 13	36.1	
August 14	71.2		September 14	37.1	
August 15	67.2	106	September 15	48.6	
August 16	69.7		September 16	61.4	
August 17	71.5		September 17	64.8	
August 18	81.6		September 18	64.8	
August 19	--		September 19	68.7	106
August 20	69.7		September 20	65.9	
August 21	67.5		September 21	64.9	106
August 22	67.0		September 22	68.2	
August 23	66.2	98	September 23	68.8	
August 24	64.3		September 24	92.9	
August 25	74.9	120	September 25	96.9	212
August 26	63.9		September 26	71.3	
August 27	71.7		September 27	188	
August 28	72.0		September 28	190	520
August 29	82.1		September 29	178	
August 30	--		September 30	86.2	
August 31	42.5	66			

Trinity River near Romayor, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
October 1, 1944	63.1	110	October 29, 1944	92.5	
October 2	63.1		October 30	109	
October 3	60.1		October 31	----	
October 4	61.1		November 1	73.2	106
October 5	59.1		November 2	49.8	48
October 6	57.2		November 3	67.4	
October 7	54.3	80	November 4	63.6	
October 8	59.3		November 5	65.8	
October 9	77.5	140	November 6	85.0	72
October 10	34.3	20	November 7	72.8	
October 11	75.8		November 8	61.9	
October 12	72.3		November 9	59.3	
October 13	65.9		November 10	61.9	
October 14	62.5	102	November 11	----	
October 15	66.9		November 12	----	
October 16	128	320	November 13	----	
October 17	82.3		November 14	74.2	
October 18	88.8	180	November 15	64.4	194
October 19	82.0		November 16	78.9	
October 20	84.7		November 17	84.3	168
October 21	93.7	174	November 18	62.5	
October 22	102		November 19	77.8	
October 23	88.0		November 20	76.8	
October 24	67.2		November 21	76.7	190
October 25	57.7	88	November 22	61.5	
October 26	65.4		November 23	63.2	
October 27	104.0		November 24	41.9	
October 28	128	304	November 25	29.5	

Trinity River near Romayor, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
November 26, 1944	----		December 25, 1944	----	
November 27	28.4		December 26	28.6	22
November 28	21.3	32	December 27	56.7	70
November 29	25.1		December 28	53.6	
November 30	22.5		December 29	54.6	
December 1	23.1		December 30	80.1	104
December 2	53.1		December 31	55.1	
December 3	51.7		January 1, 1945	22.7	
December 4	52.2		January 2	20.2	
December 5	13.1		January 3	20.9	
December 6	13.1		January 4	33.9	
December 7	12.4		January 5	32.2	
December 8	40.5		January 6	32.8	
December 9	----		January 7	35.2	36
December 10	40.5		January 8	33.4	
December 11	40.1		January 9	18.6	
December 12	41.5		January 10	18.0	18
December 13	37.3		January 11	16.9	
December 14	37.3		January 12	36.7	
December 15	37.3		January 13	33.6	
December 16	37.3		January 14	33.2	
December 17	40.1		January 15	43.6	
December 18	----		January 16	32.5	
December 19	41.5		January 17	16.2	16
December 20	41.5		January 18	35.1	
December 21	42.3		January 19	41.2	
December 22	42.3		January 20	44.2	54
December 23	42.3		January 21	37.0	
December 24	----		January 22	43.0	

Trinity River near Romayor, Texas (continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
January 23, 1945	40.4		February 23, 1945	34.6	
January 24	38.3		February 24	36.0	
January 25	37.0		February 25	36.3	
January 26	19.9	22	February 26	34.0	
January 27	37.0		February 27	31.4	26
January 28	34.7		February 28	32.4	
January 29	37.0		March 1	32.3	
January 30	39.0	48	March 2	31.4	
February 1	----		March 3	31.4	
February 2	17.9	18	March 4	32.6	
February 3	43.5		March 5	31.4	
February 4	38.1		March 6	31.2	
February 5	38.1		March 7	32.6	18
February 6	38.1		March 8	32.3	
February 7	38.6		March 9	32.6	
February 8	39.4	42	March 10	30.9	
February 9	38.1		March 11	30.0	
February 10	38.1		March 12	28.2	
February 11	39.5		March 13	28.2	
February 12	38.7		March 14	28.2	
February 13	32.5		March 15	28.5	
February 14	28.9	32	March 16	28.5	14
February 15	38.2		March 17	30.0	
February 16	34.5		March 18	30.0	
February 17	40.9		March 19	29.4	
February 18	74.6		March 20	30.0	
February 19	75.5	114	March 21	33.4	
February 20	47.1		March 22	36.6	
February 21	46.3	50	March 23	30.0	
February 22	32.9		March 24	34.3	

Trinity River near Romayor, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
March 25, 1945	34.3		April 28, 1945	38.9	
March 26	34.3		April 29	40.6	
March 27	33.4	22	April 30	38.7	
March 28	34.5		May 1	38.7	
March 29	33.2		May 2	39.9	
March 30	31.9		May 3	39.0	
March 31	30.7		May 4	43.9	36
April 1	25.2		May 5	44.3	
April 2	30.4		May 6	43.9	
April 3	25.2	18	May 7	43.9	
April 4	25.9		May 8	44.3	
April 5	23.5		May 9	----	
April 6	23.3		May 10	43.9	
April 7	25.9		May 11	44.3	34
April 8	25.2		May 12	----	
April 9	25.2		May 13	----	
April 10	23.8		May 14	25.2	22
April 11	28.6		May 15	25.2	
April 12	28.6		May 16	25.7	
April 13	29.9		May 17	25.1	
April 14	29.1	14	May 18	25.0	
April 15	29.9		May 19	33.9	
April 16	28.1		May 20	34.3	
April 17	29.1		May 21	34.3	
April 18	----		May 22	45.0	
April 19	----		May 23	45.5	
April 20	28.1		May 24	45.5	
April 21	32.5		May 25	45.1	
April 22	32.2		May 26	46.4	
April 23	32.1		May 27	56.9	
April 24	38.7		May 28	58.7	
April 25	32.1		May 29	37.3	
April 26	32.7	22	May 30	57.4	
April 27	32.5		May 31	----	

Trinity River near Romayor, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
June 1, 1945	55.2		July 5, 1945	42.5	
June 2	55.5		July 6	42.5	
June 3	54.9		July 7	43.3	
June 4	55.8		July 8	33.6	
June 5	54.9		July 9	45.0	
June 6	58.9		July 10	45.0	
June 7	55.2		July 11	42.3	
June 8	56.3		July 12	41.1	
June 9	55.5		July 13	45.0	
June 10	66.1	88	July 14	44.4	
June 11	66.4	82	July 15	41.3	
June 12	66.7		July 16	45.0	
June 13	45.9		July 17	31.5	
June 14	44.4		July 18	41.3	
June 15	41.5		July 19	33.3	
June 16	42.7		July 20	----	
June 17	42.1		July 21	30.3	
June 18	57.7		July 22	28.6	16
June 19	51.1		July 23	29.1	
June 20	29.6	14	July 24	31.9	
June 21	29.9	16	July 25	33.6	16
June 22	29.9		July 26	31.9	
June 23	32.3		July 27	----	
June 24	31.1		July 28	----	
June 25	30.3		July 29	----	
June 26	32.3		July 30	----	
June 27	32.5		July 31	33.6	
June 28	35.7		August 1	38.7	
June 29	36.5		August 2	39.7	
June 30	36.5		August 3	74.6	76
July 1	36.0		August 4	37.8	32
July 2	35.2		August 5	47.8	48
July 3	35.2		August 6	51.9	
July 4	31.5		August 7	50.7	

Trinity River near Mayor, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (calc.)
August 8, 1945	50.7									
August 9	58.2									
August 10	58.2									
August 11	57.1									
August 12	62.6									
August 13	62.6									
August 14	62.6									
August 15	----									
August 16	----									
August 17	----									
August 18	62,6						74			
August 19	69.4									
August 20	72.0									
August 21	112						238			
August 22	112									
August 23	112									
August 24	114									
August 25	72.4									
August 26	----									
August 27	72.4									
August 28	57.8									
August 29	56.5									
August 30	56.5						78			
August 31	----									
September 1-3	16.4	20	3.7	11	64	13	16	1.2	114	65
September 4-7	31.8	25	3.9	36	72	23	52	1.8	216	78
September 8-12	129	64	7.9	196	140	47	320	3.2	773	192
September 13, 16-20	50.3	46	5.7	57	144	43	68	2.8	324	138
September 21-26, 28-30	55.6	49	6.1	58	161	39	71	1.5	333	148

ANALYSIS OF A SPOT SAMPLE COLLECTED IN THE TRINITY RIVER BASIN IN TEXAS
February 19, 1943
Elm Creek surface supply at Farmersville, Texas.
Parts per million

Calcium (Ca)	60
Magnesium (Mg)	4.3
Sodium and Potassium (Na+K) Calculated	11
Bicarbonate (HCO_3)	197
Sulfate (SO_4)	17
Chloride (Cl)	4.0
Nitrate (NO_3)	0.0
Total dissolved solids	222
Specific conductance ($K \times 10^5$) at 25°C	-
Total hardness as $CaCO_3$	167

ANALYSES OF SURFACE WATERS

IN

SAN JACINTO RIVER BASIN

Analyses of samples from San Jacinto River at Humble, Texas, October 1, 1941 to September 30, 1942.
(Composites of daily samples collected at bridge on U. S. Highway 59, about ½ mile downstream from Spring Creek and 2½ miles north of Humble.)
Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)
Oct. 1-4,6, 1941	26.2	–	–	–	60	5.9	42	–	176	75 a/
Oct. 8-10	41.2	–	–	–	62	5.8	94	–	264	90 a/
Oct. 11,13,14	30.3	–	–	–	74	5.7	51	–	220	66 a/
Oct. 15-20	19.5	–	–	–	66	4.7	22	–	147	60 a/
Oct. 21-31	31.0	26	5.9	24	80	7.0	48	0.2	208	89
Nov. 1-8	15.9	16	4.1	6.9	49	5.6	18	.5	123	57
Nov. 9-10	40.0	–	–	–	64	6.2	93	.5	268	90 a/
Nov. 11-20	40.1	31	6.0	35	88	6.8	70	–	247	102
Nov. 21-28	29.9	–	–	–	94	7.9	38	–	199	92 a/
Dec. 1-10	42.7	–	–	–	110	7.4	72	–	270	98 a/
Dec. 11-20	50.7	–	–	–	114	13	86	–	324	132 a/
Dec. 21-23,25,28	37.0	–	–	–	94	8.2	64	–	241	111 a/
Dec. 24,26-27,29-31	54.2	–	–	–	114	8.3	108	–	335	149 a/
Jan. 1-10, 1942	52.5	38	6.0	51	107	8.3	95	.0	311	120
Jan. 16-17, [illegible]	96.8	–	–	–	108	11	223	.2	540	129 a/
Jan. 11-15, 18-20	49.7	–	–	–	108	9.7	88	.4	290	124 a/
Jan. 21-31	42.3	34	4.0	43	90	9.2	73	0.5	256	101
Feb. 1	48.1	–	–	–	–	–	84	–	–	–
Feb. 4	52.1	–	–	–	–	–	97	–	–	–
Feb. 7	63.0	–	–	–	–	–	122	–	–	–
Feb. 9	61.0	–	–	–	–	–	125	–	–	–
Feb. 10	119	–	–	–	–	–	321	–	–	–
Feb. 11	117	–	–	–	–	–	319	–	–	–
Feb. 13	117	–	–	–	–	–	320	–	–	–
Feb. 14	53.8	–	–	–	–	–	106	–	–	–
Feb. 17	55.0	–	–	–	–	–	105	–	–	–
Feb. 19	56.3	–	–	–	–	–	109	–	–	–
Feb. 20	58.6	–	–	–	–	–	108	–	–	–
Feb. 22	43.1	–	–	–	–	–	78	–	–	–
Feb. 24	40.6	–	–	–	–	–	73	–	–	–

a/ Determined.

Analyses of samples from San Jacinto River nr. Humble, Texas, October 1, 1941, to September 30, 1942.
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium ($Na + K$)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
February 25, 1942	59.0						134			
February 26	149						240			
February 27	58.9									
February 28	57.6						129			
March 1-10	38.0	32	5.2	33	82	9.6	68	0.2	251	101
March 11-20	50.1	36	5.2	56	108	12	94	0.2	289	111
March 21-31	51.3	39	5.9	51	117	9.0	89	2.0	293	122
April 1-4	46.9				120	9.0	79	0.0	301	116 a/
April 5-8,10	20.8	13	2.8	21	38	5.5	37	0.0	142	44
April 9	9.4				32	4.0	12	0.0		
April 11-14,16-20	23.3	20	3.8	18	64	6.7	29	0.0	158	66
April 21	22.3						30			
April 22	24.7									
April 23	23.1									
April 24	23.6						33			
April 25	23.2									
April 26	30.4						43			
April 27	29.2									
April 28	28.1									
April 29	27.5									
April 30	27.3						41			
May 1	27.0						42			
May 2	29.0									
May 3	40.2						73			
May 4	40.6									
May 5	40.6									
May 6	38.7						71			
May 7	33.9									
May 9	33.4									
May 10	35.3						56			
May 11-20	29.7	27	3.4	27	77	6.3	49	0.8	197	81
May 21	51.5						100			
May 22	52.3									

a/ Determined.

Analyses of samples from San Jacinto River Nr. Humble, Texas, from October 1, 1941, to September 30, (Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as Ca
May 23, 1942	51.9						101			
May 24	49.3									
May 25	49.4									
May 26	49.6									
May 27	49.9						107			
May 28	49.4									
May 29	54.7									
May 30	52.4									
May 31	49.3						100			
June 1-10	32.3	23	3.8	34	72	5.8	58	0.5	206	73
June 11	26.8						52			
June 12	25.4									
June 13	25.7									
June 14	24.9						55			
June 15	33.9									
June 16	34.0									
June 17	34.0						52			
June 18	29.4									
June 19	28.7									
June 20	28.6						50			
June 21	29.8						52			
June 22	29.7									
June 23	30.4									
June 24	30.6									
June 25	33.7						54			
June 26	55.1						111			
June 27	43.6									
June 28	46.6						83			
June 29	43.0									
June 30	42.9						85			
July 1	19.9						44			
July 2	21.6									

Analyses of samples from San Jacinto River at Humble, Texas, from October 1, 1941, to September 30, 1942
(Continued)

Analyzed by Geological Survey

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_4)	Dissolved solids	Total hardness as $CaCO_3$
							Parts per million			
July 3, 1942	21.5									
July 4	22.8						40			
July 5	22.8									
July 6	22.6									
July 7	26.8									
July 8	26.8									
July 9	25.8									
July 10	25.2						38			
July 11	29.8						47			
July 12	29.1									
July 13	24.3									
July 14	28.3						47			
July 15-18	--									
July 19	39.2									
July 20	37.8						74			
July 21-23,25-31	38.0	28	3.5	44	89	8.1	69	1.2	198	84
August 1	40.2						79			
August 2	45.6									
August 3	45.7						87			
August 4	46.6									
August 5	46.5									
August 6	54.1						86			
August 7	47.5									
August 8	47.9									
August 9	45.2									
August 10	44.8						85			
August 11	43.8						77			
August 12	41.4									
August 13	42.0									
August 14	41.0									
August 15	46.9									
August 16	49.5						112			

Analyses of samples from San Jacinto River at Humble, Texas, from October 1, 1941, to September 30, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_4)	Dissolved solids	Total hardness as $CaCO_3$
August 17, 1942	48.8									
August 18	47.7									
August 19	44.1									
August 20	44.2						90			
August 21	45.8						88			
August 22	44.7									
August 23	44.7									
August 24	47.9									
August 25	55.9									
August 26	48.6						103			
August 27	48.7									
August 28	42.7									
August 29	43.0									
August 30	42.6									
August 31	42.4						87			
September 1	40.0						102			
September 2	44.7									
September 3	41.4									
September 4	42.0									
September 5	36.5						82			
September 6	38.5									
September 7	37.7									
September 8	45.1						85			
September 9	31.5									
September 10	32.9						69			
September 11-20	29.0	24	3.8	29	78	5.6	48	1.5	191	76
September 21-29	41.9	32	4.8	44	92	7.3	78	2.5	250	100

Analyses of samples from San Jacinto River at Humble, Texas, October 1, 1942, to September 30, 1943
(Composites of daily samples collected at bridge on U. S. Highway 59, about ½ mile downstream from Spring Creek and 2½ miles north of Humble.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^3 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 1, 1942	56.2						118			
October 2	57.5									
October 3	44.3									
October 4	43.8						80			
October 5	45.4									
October 6	46.3									
October 7	44.9									
October 8	45.9									
October 9	44.5									
October 10	41.4						76			
October 11	44.4						74			
October 12	44.0									
October 13	41.8									
October 14	40.8									
October 15	39.6						73			
October 17	42.3						77			
October 18	43.0									
October 19	51.5									
October 20	52.0						111			
October 21	43.3						78			
October 22	37.3									
October 23	37.3									
October 24	37.2						65			
November 1-5	25.8	18	3.4	25	53	10	42	0.2	176	59
November 7-10	44.7	36	6.6	44	115	11	75	0.5	275	117
November 11-20	50.6	32	4.6	61	99	4.6	101	3.0	295	99
November 21	62.3						139			
November 22	61.0									
November 23	53.9									
November 24	53.0									
November 25	53.8									

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
November 26, 1942	52.4									
November 27	52.2						99			
December 1-8	56.8	42	5.5	61	115	11	109	2.0	326	128
December 11	56.8						115			
December 12	56.4									
December 13	56.2									
December 14	56.2									
December 15	58.5						114			
December 16	56.2									
December 17	--									
December 18	62.2									
December 19	34.6						64			
December 20	--									
December 21-31	35.1	24	4.2	38	80	7.2	61	0.5	174	77
January 1, 1943	32.9						64			
January 2	37.3									
January 3	35.0									
January 4	34.3									
January 5	35.8						69			
January 6	--									
January 7	27.6						45			
January 8	12.7						20			
January 9	12.2						19			
January 10	11.5						18			
January 11	18.1						27			
January 12-23	--									
January 24	24.9						43			
January 25	26.7						50			
January 26-31	--									
February 13	48.2						83			
February 14	44.8									
February 15	45.9									
February 16	48.6									

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^3 at 25^0C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
February 17, 1943	47.7									
February 18	49.0									
February 19	41.5						76			
February 20	43.1						75			
February 21	41.6									
February 22	47.3									
February 23	47.2									
February 24	56.0									
February 25	52.5									
February 26	48.7									
February 27	42.5									
February 28	47.						81			
March 1	49.									
March 2	--									
March 3	50.0						95			
March 4	47.3									
March 5	47.3									
March 6	44.9									
March 8	47.8						92			
March 9	25.7									
March 10	24.0						34			
March 11	25.4									
March 12	40.9									
March 13	39.9									
March 14	44.0									
March 16	47.6									
March 17	47.5									
March 19	46.8									
March 20	53.1						101			
March 21	51.3									
March 22	54.3									
March 23	52.1									
March 24	53.8									

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate	Dissolved solids	Total hardness as $CaCO_3$
						66				
March 25, 1943	55.2						112			
March 26	20.9						38			
March 27	52.6						101			
March 28	22.0						51			
March 29	21.4									
March 30	23.2						41			
March 31	51.4						103			
April 1-8, 10	36.4	29	5.1	38	88	9.9	65	2.0	232	93
April 11	44.6						84			
April 12	45.0									
April 13	48.9									
April 14	54.4						105			
April 15	49.0									
April 16	47.9									
April 17	51.4									
April 18	50.7									
April 19	48.9									
April 20	49.4						108			
April 21	54.2						111			
April 22	43.5									
April 23	43.2									
April 24	42.5									
April 25	40.5						76			
April 26	45.1									
April 27	41.2									
April 28	40.1									
April 29	38.3						70			
May 1	52.1						104			
May 2	51.6									
May 3	50.8									
May 4	53.7									
May 5	50.8									

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1942, to September 30, 1943. (Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
May 7, 1943	31.9									
May 8	30.5						50			
May 9	32.3									
May 10	35.6									
May 11	19.6						32			
May 12	31.2									
May 13	31.3						66			
May 14	45.1									
May 15	61.5						126			
May 16	62.6									
May 17	62.4									
May 19	63.3									
May 20	60.2						122			
May 21-28	24.5	18	3.0	1.5	56	5.2	40	3.5	99	57
June 1	11.5						14			
June 2	10.9									
June 4	10.6									
June 5	22.3						11			
June 6	22.7									
June 7	24.0									
June 8	23.6									
June 10	32.3									
June 11	32.0						50			
June 12	34.3									
June 13	22.6									
June 14	23.0									
June 15	22.1						43			
June 16	40.9									
June 17	41.6									
June 18	41.8									
June 19	41.8						77			
June 20	41.1									

Analyses of samples from San Jacinto River, Humble, Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
June 21, 1943	45.0		July 21, 1943	38.4	71
June 22	42.4		July 22	37.5	
June 23	42.3		July 23	35.0	
June 24	42.2	75	July 24	37.7	
June 25	42.9		July 25	36.2	
June 26	40.8		July 26	7.0	
June 27	41.6		July 27	5.3	3.0
June 28	46.5		July 28	8.0	
June 29	46.1		July 29	18.4	20
June 30	46.8	93	July 30	6.8	
July 1	47.9		July 31	7.7	5.0
July 2	59.0	92	August 1	14.1	
July 3	49.2		August 2	14.3	
July 4	46.2		August 3	14.1	13
July 5	46.6		August 4	20.4	26
July 6	46.9		August 5	17.7	17
July 7	46.6	68	August 6	39.7	
July 8	34.4		August 7	37.9	
July 9	35.5		August 8	47.5	
July 10	34.9	48	August 9	48.0	
July 11	34.0		August 10	48.8	98
July 12	33.3				
July 13	32.4	65			
July 14	33.9				
July 16	36.9				
July 17	37.7				
July 18	38.9	68			
July 19	36.6				
July 20	37.5				

Analyses of samples from San Jacinto River nr [illegible], Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 11-20, 1943	48.7	30	5.0	61	103	7.0	96	0.5	294	96
August 21	45.1						90			
August 22	47.2									
August 23	45.1									
August 24	45.3									
August 25-31	--									
September 1	52.2						89			
September 2	51.8									
September 3	51.4									
September 4	60.3						102			
September 5	55.7									
September 6	53.1									
September 7	53.2									
September 8	52.4									
September 9	44.0						84			
September 10	52.7									
September 11	62.4									
September 12	62.1									
September 13	63.9						146			
September 14	64.0									
September 15	64.6									
September 16	63.5									
September 17	63.4									
September 18	65.4									
September 19	59.8									
September 20	60.8						143			
September 21	63.5						140			
September 22	57.0									
September 23	56.4									
September 24	57.4									
September 25	63.7									
September 26	57.1									
September 27	56.3						122			
September 28	56.2									
[illegible]	56.5									

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1943, to September 30, 1944
(Composites of daily samples collected at bridge on U. S. Highway 59, about ½ mile downstream from Spring Creek and 2½ miles north of Humble.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 1-4,6-10, 1943	63.8	30	5.5	100	109	5.9	156	0.2	351	98
October 21-28	93.9	31	7.3	145	85	6.5	245	1.5	478	108
November 11-20	67.8	31	6.0	96	99	14	152	0.8	349	102
November 21	66.4									
November 22	66.0									
November 24	99.8						141			
November 25	72.6									
November 26	80.6									
November 27	33.1									
November 28	29.8									
November 29	31.3									
November 30	30.9						66			
December 1-6, 8-10	59.7	29	5.7	80	94	14	127	0.2	302	96
December 11,12,14-16,18,19	25.1	16	4.0	23	49	8.8	40	0.8	117	56
December 13,17,20,22,25,26	43.7	23	4.5	55	46	35	85	1.2	226	76
December 21,23.24,27-31	16.2	9.6	4.5	17	38	8.4	24	0.8	83	37
January 1-10, 1944	20.1	12	2.6	25	40	8.0	37	0.8	105	41
January 11-13, 18	31.1				94	21	50	1.2	249	
January 14-17,19-20	14.5	11	3.2	15	34	15	21	1.2	135	41
January 21	16.2						19			
January 22	21.6									
January 23	22.3									
January 24	23.0									
January 25	22.2									
January 26	24.0						45			
January 27	26.9									
January 28	9.1									
January 29	9.0						12			
January 30	9.4									
January 31	9.4									

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1943, to September 30, 1944
(Continued)

Analyzed by Geological Survey

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Parts per million: Chloride (Cl)
February 1, 1944	14.4	
February 2	14.4	
February 3	15.2	
February 4	16.1	
February 5	16.7	
February 6	30.8	
February 7	15.5	
February 8	36.8	
February 9	38.5	
February 10	36.7	
February 11	9.8	14
February 12	25.7	49
February 13	10.0	14
February 14	10.9	
February 15	11.6	15
February 16	17.4	
February 17	17.4	
February 18	17.4	
February 19	17.4	
February 20	18.2	24
February 21	17.0	26
February 22	33.6	59
February 23	34.2	
February 24	35.0	
February 25	34.8	
February 26	35.8	
February 27	29.8	
February 28	28.8	
February 29	28.3	59
March 1	28.9	51
March 2	33.4	
March 3	33.9	
March 4, 1944	53.9	106
March 5	52.8	
March 6	52.1	
March 7	52.3	
March 8	52.6	
March 9	53.1	
March 10	53.9	133
March 11	55.0	94
March 12	55.2	
March 13	54.7	
March 14	54.5	
March 15	54.0	
March 16	54.8	116
March 17	9.2	9.0
March 18	7.8	8.0
March 19	8.6	
March 20	9.1	9.0
March 21	14.7	14
March 22	10.4	10
March 23	17.5	
March 24	18.2	24
March 25	18.1	
March 26	33.0	
March 27	30.4	
March 28	33.3	50
March 29	33.2	
March 30	32.7	
April 1	50.7	
April 2	44.1	88
April 3	44.0	
April 4	45.3	
April 5	45.8	90

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1943, to September 30, 1944
(Continued)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 6, 1944	41.6	
April 7	41.2	
April 8	40.2	
April 9	39.8	74
April 10	39.8	
April 11	40.6	
April 12	47.4	
April 13	47.8	98
April 14	47.2	
April 15	47.2	
April 16	46.9	
April 17	47.3	
April 18	47.4	
April 19	38.2	
April 20	37.4	75
April 21	38.8	
April 22	37.8	
April 23	39.3	77
April 24	37.0	
April 25	38.3	
April 26	38.5	
April 27	38.0	
April 29	18.6	
April 30	18.2	27
May 1	17.2	27
May 2	16.4	
May 3	27.6	44
May 4	18.2	
May 5	24.7	
May 6	16.9	
May 7	16.9	
May 8	24.7	
May 9, 1944	13.5	
May 10	13.5	20
May 11	13.4	21
May 12	12.7	
May 13	12.9	
May 14	13.1	
May 15	13.1	
May 16	27.1	
May 17	13.5	
May 18	13.9	
May 19	13.1	19
May 21	11.7	18
May 22	20.4	
May 23	25.8	23
May 24	21.1	
May 25	24.0	
May 26	21.8	
May 27	12.8	
May 28-31	--	
June 1	70.7	178
June 2	69.3	
June 3	70.2	
June 4	69.8	
June 6	59.9	
June 7	57.1	
June 8	57.4	
June 9	58.5	
June 10	56.3	128
June 11	78.4	192
June 12	58.8	124
June 13	63.3	
June 14	66.2	

Analyses of samples from San Jacinto River nr. Humble, Texas, from October 1, 1943, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance Kx10^3 at 25°C	Chloride (Cl)
June 15, 1944	63.5	
June 16	63.8	144
June 17	64.7	
June 18	62.4	
June 21	69.3	168
June 22	60.9	
June 23	55.9	118
June 25	103	
June 26	106	
June 27	103	
June 28	110	276
June 29	104	
June 30	104	
September 1	45.8	
September 2	43.6	
September 3	42.1	88
September 4	43.9	
September 5	43.6	
September 6	56.7	
September 7	56.7	
September 8	58.8	128
September 9	57.2	
September 10	57.9	
September 22	15.9	
September 23	16.6	
September 24	14.5	
September 25	15.2	
September 26	19.7	30
September 27	16.4	
September 28	17.2	
September 29	15.4	
September 30	18.7	

San Jacinto River near Humble, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
October 1, 1944	60.9		November 9, 1944	63.1	
October 2	55.3		November 10	63.6	28
October 3	56.8		November 11	63.6	
October 4	55.3		November 12	64.4	
October 5	54.9	126	November 13	66.3	152
October 6	55.7		November 14	----	
October 7	54.6		November 15	69.2	
October 8	67.2		November 16	62.3	
October 9	67.8		November 17-19	----	
October 10	67.0	160	November 20	20.6	26
October 11	66.9	156	November 21	19.4	
October 12	66.3		November 22	19.9	
October 13	67.5		November 23	19.6	
October 14	65.3		November 24	20.3	26
October 15	67.5		November 25	19.8	
October 16	65.9		November 26	18.6	
October 17	----		November 27	----	
October 18	66.6		November 28	19.0	
October 19	66.6		November 29-30	----	
October 20	67.5		December 1-20	----	
October 21	69.7		December 21-23	----	
October 22	68.2	162	December 24	22.5	
October 23	69.5		December 25	----	
October 24	67.4		December 26	22.5	
October 25	68.2		December 27	23.1	
October 26	68.5		December 28	22.5	
October 27	69.0		December 29	22.5	
October 28	----		December 30	----	
October 29	67.4		December 31	26.1	
October 30	75.2	180	January 1, 1945	25.6	
October 31	----		January 2	24.5	
November 1-6	----		January 3	22.6	38
November 7	64.0		January 4	48.9	
November 8	65.1		January 5	----	

San Jacinto River near Humble, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
January 6, 1945	50.1		February 9, 1945	34.5	68
January 7	23.6		February 10	38.9	
January 8	50.2	188	February 11	30.1	
January 9	49.0		February 12	37.2	
January 10	28.8		February 13	30.8	
January 11	29.5		February 14	42.8	—
January 12	37.7		February 15	24.5	86
January 13	40.9	72	February 16	23.4	
January 14	32.7		February 17	24.0	
January 15	29.0		February 18	----	
January 16	26.6	48	February 19	24.2	
January 17	28.4		February 20	24.6	40
January 18	28.4		February 21	24.4	
January 19	12.1	10	February 22	24.4	
January 20	----		February 23	17.2	24
January 21	21.8		February 24	20.4	
January 22	19.3	34	February 25	----	
January 23	----		February 26	45.9	
January 24	19.3		February 27	45.9	
January 25	18.3		February 28	46.2	98
January 26	43.0		March 1	43.9	90
January 27	41.9		March 2	43.9	
January 28	42.8		March 3	44.4	
January 29	41.3		March 4	53.8	
January 30	44.5	92	March 5	53.8	
January 31	----		March 6	54.6	112
February 1	41.6		March 7	53.8	
February 2	41.6		March 8	52.7	
February 3	76.7	210	March 9	52.7	
February 4	76.7		March 10	52.7	
February 5	77.5		March 11	53.4	102
February 6	77.5		March 12	----	
February 7	74.3		March 13	47.6	
February 8	76.7		March 14	52.8	
			March 15	41.0	

San Jacinto River near Humble, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
March 16, 1945	42.1		April 18	41.8	
March 17	42.1		April 19	23.9	
March 18	19.2	8.0	April 20	22.5	52
March 19	23.1		April 21	23.0	52
March 20	19.8		April 22	24.1	
March 21	18.9	22	April 23	7.9	10
March 22	----		April 24	----	
March 23	18.2		April 25	----	
March 24	44.3		April 26	----	
March 25	----		April 27	55.3	
March 26	44.9		April 28	----	
March 27	----		April 29	56.7	
March 28	44.9	92	April 30	55.6	130
March 29	44.3		May 1	----	
March 30	26.6	50	May 2	----	
March 31	28.2		May 3	----	
April 1	18.6		May 4	----	
April 2	7.6	10	May 5	----	
April 3	9.4		May 6	----	
April 4	21.5		May 7	----	
April 5	----		May 8	----	
April 6	----		May 9	----	
April 7	67.5	142	May 10	----	
April 8	22.8		May 11	----	
April 9	21.9	42	May 12	42.9	
April 10	----		May 13	42.2	
April 11	43.4	86	May 14	43.7	
April 12	41.8		May 15	43.7	96
April 13	41.8		May 16	45.5	
April 14	44.6		May 17	43.3	
April 15	41.8		May 18	43.0	
April 16	41.8		May 19	21.5	
April 17	44.6		May 20	21.2	30

San Jacinto River near Humble, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)	Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)
May 21, 1945	22.7	32	June 23, 1945	72.2	
May 22	22.9		June 24,	73.4	
May 23	40.4		June 25	71.0	
May 24	26.1		June 26	70.7	
May 25	22.0		June 27	72.2	
May 26	----		June 28	72.2	
May 27	43.6	96	June 29	73.4	
May 28	42.8		June 30	72.2	
May 29	----		July 1	57.5	
May 30	----		July 2	52.4	
May 31	----		July 3	52.4	
June 1	64.8	154	July 4	52.4	
June 2	64.8		July 5	52.4	
June 3	64.3		July 6	52.4	
June 4	65.1		July 7	52.4	
June 5	65.8		July 8	51.9	
June 6	----		July 9	51.9	
June 7	----		July 10	57.5	
June 8	----		July 11	53.3	120
June 9	15.9		July 12	53.3	
June 10	15.6	28	July 13	43.7	
June 11	24.1		July 14	----	
June 12	16.6		July 15	62.4	74
June 13	15.2	28	July 16	42.5	
June 14	15.5		July 17	43.7	
June 15	48.9		July 18	----	
June 16	48.1		July 19	43.7	88
June 17	47.7		July 20	43.7	
June 18	49.9	106	July 21-31	----	
June 19	47.7		August 1	79.5	186
June 20	48.1		August 2	78.1	184
June 21	48.1	104	August 3	78.1	
June 22	52.7		August 4	78.1	

San Jacinto River near Humble, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 5, 1945	----									
August 6	78.5									
August 7-10	----									
August 11	79.9									
August 12	78.2									
August 13	76.6						184			
August 14	----									
August 15	76.6									
August 16	108									
August 17	110						282			
August 18	108									
August 19	108									
August 20	108									
August 21	----									
August 22	107						286			
August 23	106									
August 24	108									
August 25	78.0									
August 26-29	----									
August 30	12.7						14			
August 31	13.0									
September 3-7, 9-10	61.2	30	4.9	84	87	4	143	1.0	365	95
September 12-15, 17-20	66.6	30	4.8	92	84	7	155	1.2	387	95
September 22, 29-30	54.3	25	4.8	79	72	9	130	1.8	335	82

Analyses of samples from the San Jacinto River near Huffman, Texas,
September 1, 1945 to September 30, 1945

(Composites of daily samples collected at the Sheldon pumping plant of the City of Houston, 5½ miles downstream from the Huffman gaging station, located at Beaumont, Sour Lake and Western Railway Bridge, 0.4 mile downstream from confluence of East and West Forks of San Jacinto River and 3.4 miles southwest of Huffman.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K.x1C 5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K), (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (calc.)
September 1-2, 1945	8.1	-	-	-	30	6	7.0	1.0	-	-
September 7-8, 10	22.9	21	4.4	17	58	4	38	1.8	185	71
September 11, 13-18	36.2	22	3.6	45	67	6	74	1.8	243	70
September 28, 30	43.8	-	-	-	69	6	96	-	-	-

ANALYSES OF SURFACE WATERS

IN

BRAZOS RIVER BASIN

ANALYSES OF SAMPLES FROM BRAZOS RIVER NEAR SOUTH BEND, TEXAS, JAN. 15, 1942 to SEPT. 30, 1942

(Composites of daily samples collected at gaging station at bridge on Texas Highway 67, 0.3 mile upstream from Wichita Falls and Southern Railroad bridge, 1.6 miles downstream from Clear Fork of Brazos River. Analyses in parts per million.

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved Solids Tons per day	Hardness as $CaCO_3$ Total	Percent sodium
Jan. 15-20, 1942	238	724	370	92	1,131	252	918	1,840	4.7	4,480	6.09	2,870	1,302	65
Jan. 21	-	287	-	-	-	173	551	515	3.5	-			682a/	-
Jan. 22-31	204	748	362	88	1,199	240	860	1,970	1.5	4,610	6.27	2,540	1,266	67
Feb. 1-10	152	709	355	95	1,103	240	827	1,855	1.5	4,350	5.92	1,786	1,276	65
Feb. 11-13, 15-19	134	669	352	91	1,024	236	802	1,735	1.0	4,120	5.60	1,488	1,252	64
Feb. 20,21,24-28	267	575	324	93	852	254	782	1,430	5.6	3,610	4.91	2,600	1,191	61
Feb. 22-23	469	393	238	72	525	265	595	845	4.5	2,410	3.28	3,050	890	56
Mar. 1-8, 10	125	689	359	109	1,047	228	950	1,730	5.0	4,310	5.86	1,453	1,344	63
Mar. 11-20	89.1	718	388	112	1,124	217	1,039	1,850	5.7	4,630	6.30	1,114	1,429	63
Mar. 21-31	63.1	738	402	118	1,117	212	1,030	1,900	2.0	4,680	6.36	797	1,488	62
Apr. 1-7	463	673	393	122	986	213	983	1,720	1.8	4,310	5.86	5,380	1,482	59
Apr. 8-10	22,100	52.0	36	8.0	56	94	31	95	1.2	312	.37	16,300	123	50
Apr. 11-13	2,000	127	91	24	152	154	158	258	3.0	762	1.04	4,110	326	50
Apr. 14-15	2,000	250	150	43	315	165	282	570	4.0	1,445	1.97	7,800	552	55
Apr. 16	2,400	328	324	81	1,396	165	818	2,260	2.2	4,960	6.75	32,100	1,142	73
Apr. 17-18	1,860	432	241	55	621	162	709	925	2.5	2,630	3.58	13,200	828	62
Apr. 19-20	8,145	205	128	28	305	132	265	505	2.5	1,298	1.77	28,500	434	60
Apr. 21	9,420	57.0	-	-	-	186	47	87	-	423			183a/	-
Apr. 22-24, 28-29	5,117	106	73	15	120	144	103	197	2.0	651	0.89	8,990	244	52
Apr. 30	1,270	212	122	27	277	160	228	460	1.5	1,194	1.62	4,090	416	59
May 1-4	499	254	147	34	340	181	273	575	2.5	1,461	1.99	1,968	507	59
May 5-6	296	362	192	50	518	197	384	885	1.2	2,127	2.89	1,703	684	62
May 7-10	1,483	150	108	23	164	145	136	325	2.2	906	1.13	3,320	364	50
May 11-19	934	253	146	39	330	189	268	572	2.0	1,450	1.97	3,660	525	58
May 20	7,770	67.1	-	-	-	128	46	121	2.8	413	-	-	174a/	-
May 21-22, 24	3,315	103	74	17	110	140	115	182	3.0	630	.86	5,640	254	48
May 23, 25-30	934	181	106	28	227	151	181	395	2.8	1,014	1.38	2,560	380	56
May 31	295	489	199	51	789	177	431	1,295	2.5	2,860	3.89	2,278	706	71

a/ Determined

Brazos River near South Bend, Texas - Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Percent Sodium
June 1-6, 1942	396	548	250	59	887	184	560	1,460	1.5	3,310	4.50	3,540	866	69
June 7-8	1,685	183	100	22	243	122	130	410	2.2	1,017	1.38	4,630	340	61
June 9-10	1,000	339	200	49	475	173	464	785	2.2	2,060	2.80	5,560	700	60
June 13-14	228	586	271	56	954	133	612	1,580	7.8	3,550	4.83	2,181	907	70
June 15-17	4,493	87.1	58	11	74	115	66	133	1.5	400	.54	4,350	190	46
June 11-12, 18-20	2,279	237	163	33	296	134	396	468	5.8	1,428	1.94	8,790	542	54
June 21-26, 28-30	394	450	262	48	653	135	640	1,055	7.6	2,730	3.71	2,910	852	62
July 1-10	96.0	593	304	71	906	154	741	1,500	9.0	3,610	4.91	936	1,050	65
July 11-14	588	457	261	55	650	137	640	1,070	5.0	2,750	3.74	4,370	878	62
July 15-20	192	706	404	60	1,119	109	961	1,820	13	4,450	6.05	2,304	1,254	66
July 21,23-27,30-31	31.1	837	406	79	1,384	145	945	2,300	.8	5,190	7.06	436	1,338	69
Aug. 1-10	10.8	783	400	97	1,169	148	849	2,080	.2	4,670	6.35	136	1,398	65
Aug. 11-20	39.3	779	405	102	1,168	153	794	2,140	.5	4,680	6.36	497	1,430	64
Aug. 21-23	364	825	496	80	1,306	109	1,244	2,140	4.5	5,320	7.24	5,230	1,567	64
Aug. 24-31	1,557	378	278	41	489	104	723	770	3.8	2,356	3.20	9,910	362	55
Sept. 1-6	1,159	249	191	28	317	109	445	515	2.2	1,552	2.11	4,860	592	54
Sept. 7-9	9,335	58.0	40	7.3	60	91	53	92	1.8	299	.41	8,910	130	50
Sept. 10		96.4	---	---	---	106	150	157	3.2	624			---	---
Sept. 11-14	2,655	149	130	24	150	116	335	215	2.5	914	1.24	6,550	423	43
Sept. 16-20	406	268	199	29	336	113	471	540	2.0	1,633	2.22	1,791	616	54
Sept. 21, 27-30	2,736	283	156	28	420	138	398	630	2.5	1,702	2.31	12,600	504	64
Weighted average	1,309	184	110	24	251	125	226	411	2.2	1,035	1.48	4,070	373	59

a/ Determined

Analyses of samples from Brazos River near South Bend, Texas Oct. 1, 1942 to Sept. 30, 1943

(Composites of daily samples collected at gaging station at bridge on Texas Highway 67, 0.3 miles upstream from Wichita Fall and Southern Railroad bridge, 1.6 miles downstream from Clear Fork of Brazos River, and 2.0 miles northeast of South Bend. Drainage area 21,600 square miles. Analyses in parts per million. Analyzed by Geological Survey.)

Date of collection	Mean discharge (Second-feet)	Specific conductance ($K \times 10^5$ at 25°C.)	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	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Hardness as $CaCO_3$: Per cent sodium
Oct. 1-10, 1942	540	362	184	38	544	133	445	868	1.2	2,146	2.92	3,130	615	506	66
Oct. 11-14	229	593	287	60	942	146	745	1,500	1.0	3,610	4.91	2,230	962	843	68
Oct. 15	2,700	210	113	20	282	104	233	460	2.5	1,162	1.58	8,470	364	279	63
Oct. 16	5,080	125	73	13	158	121	103	262	4.0	673	.92	9,230	236	136	59
Oct. 17-20	24,920	90.1	64	9.7	85	89	111	138	1.0	453	.62	30,500	200	126	48
Oct. 21-22	6,885	195.9	76	13	103	132	146	144	4.5	551	.75	10,200	243	134	48
Oct. 23-26,31	1,620	174	115	19	226	136	249	342	410	1,022	1.39	4,470	365	254	57
Nov. 1		143	---	--	---	76	106	290	3.0	853	1.16	3,520	---	---	--
Oct. 27-30	646	276	160	27	423	149	356	662	4.3	1,706	2.32	2,980	510	398	64
Nov. 4-10	821	275	148	30	381	136	307	630	1.5	1,564	2.13	3,470	493	382	63
Nov. 11-18	261	459	232	50	659	167	477	1,120	4.0	2,640	3.59	1,860	784	643	65
Nov. 28-30	138	558	279	65	833	205	564	1,430	4.0	3,290	4.47	1,230	964	796	65
Dec. 1-3,5-10	129	517	259	61	779	213	525	1,325	1.0	3,050	4.15	1,060	898	723	65
Dec. 11-14,16,18-20	150	645	316	83	998	212	642	1,740	5.0	3,890	5.29	1,580	1,130	956	66
Dec. 21	543	895	292	80	1,598	180	579	2,680	4.5	5,320	7.24	7,800	1,058	910	77
Jan. 2-10, 1943	210	579	248	64	943	202	600	1,525	2.0	3,490	4.75	1,980	882	716	70
Jan. 11-20	120	658	288	77	1,071	208	658	1,775	6.0	3,980	5.41	1,290	1,035	864	69
Jan. 21-31	80.5	728	318	86	1,154	202	731	1,935	1.2	4,320	5.88	939	1,147	982	69
Feb. 1-3, 5-10	90.9	705	346	94	1,110	222	733	1,925	5.0	4,320	5.88	710	1,250	1068	66
Feb. 11-20	52.7	644	324	94	981	226	701	1,710	3.0	3,920	5.33	558	1,195	1010	64
Feb. 21-28	53.4	611	291	86	942	154	673	1,630	4.0	3,700	5.03	533	1,080	954	65
Mar. 1-10	54.8	599	286	93	906	119	681	1,600	3.0	3,630	4.94	537	1,096	999	64
Mar. 11-20	145	566	310	99	796	201	623	1485	5.0	3,420	4.65	1,340	1,180	1016	59

Brazos River near South Bend, Texas--Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K x 10^5 at 25°C)	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	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non carbonate	Per cent Sodium
Mar. 21-24, 1943	117	537	304	99	770	195	871	1,255	3.0	3,400	4.62	1,070	1,166	1,006	59
Mar. 25-27	1,046	183	110	29	209	125	179	395	3.0	987	1.34	2,790	394	291	54
Apr. 1-3	215	501	296	74	722	135	810	1,175	2.0	3,150	4.28	1,830	1,043	932	60
Apr. 4-6	123	1,040	370	98	1,898	164	907	3,100	4.0	6,460	8.79	2,150	1,326	1,192	76
Apr. 7-10	628	836	366	98	1,420	139	915	2,365	3.0	5,240	7.13	8,836	1,316	1,202	70
Apr. 11,13-14,16	1,322	354	207	44	488	136	540	768	2.5	2,116	2.88	7,550	693	5,586	60
Apr. 17-19	1,693	151	88	18	197	108	164	328	.5	849	1.15	3,830	294	205	59
Apr. 23-28	147	325	177	45	442	154	416	728	2.0	1,886	2.56	749	626	500	61
May 1,3,6-10	141	363	210	62	488	171	529	815	.5	2,139	2.98	833	779	639	58
May 11-14,16-19	125	407	236	65	561	153	642	910	.2	2,490	3.39	840	856	731	59
May 20	310	1,378	410	107	2,630	142	949	4,310	.5	8,480	11.53	7,100	1,463	1,346	80
May 22-28,31	462	301	144	38	431	150	360	675	3.0	1,725	2.35	2,150	516	392	65
May 21,29-30	213	640	258	66	1,059	149	663	1,705	2.0	3,830	5.21	2,200	916	794	72
June 1,8-10	4,755	447	257	45	642	119	691	995	2.8	2,690	3.66	34,500	826	729	63
June 2-7	821	232	192	31	249	110	510	372	2.2	1,410	1.92	3,130	606	516	47
June 11-20	1,205	265	142	25	386	137	382	555	4.6	1,562	2.12	5,080	458	345	65
June 21, 26-29	337	329	230	36	419	108	548	690	1.5	1,978	2.69	1,800	722	634	56
June 22-25,30	335	211	178	27	238	107	439	372	2.8	1,310	1.78	1,180	555	468	48
July 1,4-7,9-10	300	409	277	42	575	110	723	900	3.5	2,570	3.50	2,080	864	774	59
July 2-3	325	181	106	18	236	117	235	360	3.0	1,016	1.38	892	338	242	60
July 8	1,110	897	502	77	1,437	133	1,164	2,390	2.0	5,640	7.67	16,900	1,570	1,460	67
July 11-20	160	370	136	37	564	126	548	825	4.2	2,226	3.03	962	616	512	67
July 21-22,25-27	29.4	539	278	60	840	120	793	1,305	1.0	3,340	4.54	265	940	842	66
July 23-24,28-31	20.4	897	380	85	1,549	128	966	2,520	.5	5,560	7.56	306	1,298	1,193	72
Aug. 1-10	4.29	872	368	95	1,199	128	647	2,580	.2	4,950	6.73	57	1,809	1,704	59
Aug. 11-20	1.43	713	342	99	1,041	156	512	2,030	1.0	4,100	5.58	16	1,260	1,132	64
Aug. 21-31	0.40	633	326	83	962	176	541	1,800	5.5	3,820	5.20	4	1,155	1,011	64
Sept. 1-10	.09	637	322	83	943	188	533	1,760	3.5	3,740	5.09	1	1,145	991	64
Sept. 11-20	.0	555	288	73	813	216	484	1,490	3.5	3,260	4.43	0	1,018	842	63
Sept. 21-30	.0	476	242	63	743	224	509	1,250	2.5	2,920	3.97	0	863	680	65
Weighted Average	678	244	136	27	340	118	305	549	2.2	1,420	1.93	2,600	450	354	62

ANALYSES OF SAMPLES FROM BRAZOS RIVER NEAR SOUTH BEND, TEXAS

Oct. 1, 1943 to Sept. 30, 1944

Composites of daily samples collected at gaging station at bridge on Texas Highway 67, 0.3 mile upstream from Wichita Falls and Southern Railroad bridge, 1.6 miles downstream from Clear Fork of Brazos River, and 2.0 miles northeast of South Bend. Drainage area 21,600 square miles. Analyses in parts per million. Analyzed by Geological Survey.)

Date of Collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Hardness as $CaCO_3$: Per cent sodium
Oct 1-10,1943	21.2	610	340	93	810	137	244	1,860	3.5	3,420	4.65	196	1,230	1,120	59
Oct 11-20	10.2	852	458	133	1,160	152	244	2,720	4.5	4,800	6.53	132	1,690	1,570	60
Oct. 21-31	5.50	767	404	122	1,040	160	262	2,380	4.0	4,290	5.83	64	1,510	1,380	60
Nov. 1-10	1.18	628	328	102	883	162	314	1,910	4.5	3,620	4.92	12	1,240	1,100	61
Nov. 11-20	0.94	682	346	107	1,050	163	368	2,180	6.0	4,140	5.63	11	1,300	1,170	64
Nov 21-30	1.26	778	392	119	1,070	131	349	2,360	2.0	4,360	5.93	15	1,470	1,360	61
Dec. 1-4,6-10	2.51	960	472	141	1,420	155	328	3,100	3.0	5,540	7.53	38	1,770	1,630	64
Dec. 5	5.90	470	251	65	640	89	282	1,360	1.8	2,640	3.59	43	884	821	61
Dec. 11-20	3.35	1,080	538	148	1,650	167	390	3,540	2.5	6,350	8.64	57	1,950	1,810	65
Dec. 21-31	3.45	1,070	500	150	1,640	152	389	3,480	3.0	6,240	8.49	58	1,860	1,740	66
Jan. 1-3, 1944	89.3	901	440	117	1,330	139	385	2,800	7.0	5,150	7.00	1,240	1,580	1,460	65
Jan. 4-10	44.0	559	272	72	782	150	334	1,560	7.0	3,100	4.22	368	975	852	64
Jan. 11-20	11.8	719	320	72	1,170	167	630	2,020	6.5	4,300	5.85	137	1,090	958	70
Jan. 21-31	7.48	904	362	181	1,190	161	366	2,640	4.0	4,820	6.56	97	1,650	1,520	61
Feb. 1-10	17.5	793	308	86	1,340	129	779	2,210	8.8	4,800	6.53	227	1,120	1,020	72
Feb. 11-20	28.7	846	320	89	1,460	137	837	2,380	2.5	5,160	7.02	400	1,160	1,050	73
Feb. 21-25	31.2	1,020	352	103	1,720	134	762	2,940	3.0	5,950	8.09	501	1,300	1,190	74
Feb. 26-28	746	385	162	46	553	111	251	1,020	5.3	2,090	2.84	4,210	594	502	67
Feb. 29	5,120	87.1	56	15	90	121	45	172	10	448	0.61	6,190	202	102	49
Mar. 1-3	1,473	203	102	19	289	121	209	452	7.4	1,140	1.55	4,530	332	234	65
Mar. 4-10	190	379	183	35	578	104	470	905	8.0	2,230	3.03	1,140	600	516	68

ANALYSES OF SAMPLES FROM BRAZOS RIVER NEAR SOUTH BEND, TEXAS,----------Continued

Date of collection 1944	Mean discharge (second-feet)	Specific conductance (K x 10^5 at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non carbonate	Hardness as $CaCO_3$: Per cent sodium
Mar. 11-15,19-20	49.0	590	222	43	987	122	551	1,560	4.2	3,430	4.66	454	731	631	75
Mar. 16-18	67.7	394	162	40	606	119	363	1,000	1.5	2,230	3.03	408	569	472	70
Mar. 21-31	34.6	618	240	72	998	130	646	1,620	2.5	3,640	4.95	340	895	708	71
Apr. 1,5-8	52.1	575	268	73	921	154	633	1,550	2.0	3,520	4.79	495	969	843	67
Apr. 2,9	130	183	87	20	264	87	180	435	1.5	1,030	1.40	361	299	228	66
Apr. 3-4,10	16.7	370	165	40	552	116	334	945	2.2	2,100	2.86	95	576	482	68
Apr. 11-13	6.17	495	240	58	776	149	493	1,340	2.0	2,980	4.05	50	838	716	67
Apr. 14-20	4.63	759	334	91	1,230	165	802	2,070	1.5	4,610	6.27	58	1,210	1070	69
Apr. 21-22,27-28	78.6	717	338	98	1,050	136	384	2,140	1.2	4,080	5.55	866	1,250	1140	65
Apr. 23-24	48.0	256	131	38	351	126	160	690	3.5	1,440	1.96	187	483	380	61
Apr. 25-26,29-30	151	447	220	58	647	109	191	1,350	1.5	2,520	3.43	1030	788	698	64
May 1, 6-8	171	212	122	28	285	105	267	475	5.5	1,230	1.67	568	420	334	60
May 2-5	1,796	90.0	62	11	103	109	76	181	0.0	487	0.66	2360	200	110	53
May 11-20	16.3	434	248	54	629	115	608	1,050	2.0	2,650	3.60	117	841	747	62
May 21-23	308	511	286	73	715	125	660	1,260	2.5	3,060	4.16	2540	1,010	912	61
May 24-29	1,527	251	186	33	344	117	451	552	3.2	1,630	2.22	6720	603	504	55
May 30-31	3,035	122	89	15	145	124	180	217	3.8	711	0.97	5830	284	182	53
June 1,9-11,13	1,027	153	100	16	187	116	208	288	4.1	860	1.17	2380	316	220	56
June 8	452	485	250	41	819	111	592	1,320	4.8	3,080	4.19	3760	792	702	69
June 12, 14-20	956	316	182	26	441	101	456	680	5.1	1,840	2.50	4750	561	478	63
June 21-22	110	403	254	37	604	108	602	980	3.2	2,530	3.44	751	786	698	63
July 6-10	34.1	172	102	22	226	145	161	388	2.5	973	1.32	90	345	226	59
July 11-12	19.0	180	107	29	214	145	139	415	3.8	979	1.33	50	386	267	55
July 13-17	27.5	435	231	55	629	112	422	1,160	3.9	2,560	3.48	190	802	710	63
July 22-31	1,240	237	160	31	297	113	351	505	3.8	1,400	1.90	4690	527	434	55
Aug. 1-10	21.2	349	214	37	506	110	570	780	2.8	2,160	2.94	532	686	596	62
Aug 11-20	29.6	354	191	38	477	115	347	860	2.0	1,970	2.68	157	632	538	62

ANALYSES OF SAMPLES FROM BRAZOS RIVER NEAR SOUTH BEND, TEXAS, CONTINUED

Date of collection	Mean discharge (Second-feet	Specific conductance (K x 10^5 at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Hardness as $CaCO_3$: Per cent sodium
Aug. 21-29	19.1	425	229	51	596	146	362	1,120	1.0	2,430	3.30	125	781	662	62
Aug. 30-31	2,240	144	78	16	176	79	47	375	0.5	731	0.99	4420	260	196	59
Sept 1-3,6	568	82.1	55	11	90	95	50	174	4.3	431	0.59	661	182	104	52
Sept. 4-5,7-9	395	219	141	30	205	99	235	420	4.0	1,080	1.47	1150	476	394	48
Sept. 10	75.0	489	229	39	764	89	465	1,300	2.8	2,840	3.86	575	732	659	69
Sept. 11-13	47.7	511	230	38	835	98	522	1,360	2.8	3,040	4.13	392	730	650	71
Sept. 14-20	30.6	309	175	36	416	108	296	773	2.8	1,750	2.38	145	584	496	61
Sept. 21-30	18.2	380	188	44	545	118	261	1,040	0.8	2,140	2.91	105	650	554	65
Weighted Average	236	192	113	23	255	113	203	441	4.9	1,100	1.50	701	376	284	60

Brazos River near South Bend, Texas, (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey

Parts per million

Date of collection	Mean discharge (Second-feet)	Specific conductance (K x 10^5 at 25°C)	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 ac.ft.	Hardness as $CaCO_3$: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
Oct. 1-3, 1944	234	1,520	615	88	2,830	106	1,450	4,580	4.5	9,620	13.08	6,080	1,900	1,810	76
Oct. 4, 9-10	2,657	185	105	19	246	96	226	395	4.8	1,040	1.41	7,460	340	262	61
Oct. 5-8	3,908	76.7	54	11	80	98	86	129	2.2	410	.56	4,330	180	100	49
Oct. 11-20	121	300	172	31	421	104	375	705	2.8	1,760	2.39	575	556	472	62
Oct. 21-31	30.2	537	256	46	789	128	553	1,320	1.8	3,030	4.12	247	828	723	67
Nov. 1-7	24.1	611	302	58	961	139	654	1,620	1.8	3,670	4.99	239	992	878	68
Nov. 8-10	50.7	307	160	32	426	107	271	770	1.8	1,710	2.33	234	531	444	64
Nov. 11-13,19-20	74.8	444	207	45	667	109	478	1,100	2.0	2,560	3.48	517	702	612	67
Nov. 14-18	47.4	335	188	38	464	108	436	765	3.2	1,950	2.65	250	625	546	61
Nov. 21-28	168.8	377	204	37	538	120	388	940	3.2	2,170	2.95	989	661	562	64
Nov. 29-30	84.5	708	316	60	1,110	123	574	1,950	2.8	4,070	5.54	929	1,040	934	70
Dec. 1-7	79.9	989	326	65	1,700	141	666	2,810	3.2	5,640	7.67	1,220	1,080	966	77
Dec. 8-10	266	664	270	54	1,100	132	579	1,830	4.8	3,900	5.30	2,800	896	788	75
Dec. 11	350	2,270	535	113	4,550	111	1,130	7,380	9.7	13,800	18.77	13,000	1,800	1,710	85
Dec. 12	274	994	372	62	1,810	112	977	2,840	8.8	6,120	8.32	4,530	1,180	1,090	77
Dec. 13-20	126	588	260	50	948	122	541	1,520	6.0	3,490	4.75	1,190	854	754	72
Dec. 21-31	88.7	764	314	63	1,270	155	644	2,120	7.3	4,490	6.11	1,080	1,040	916	73
Jan. 1-10, 1945	74.1	906	374	83	1,540	154	789	2,610	6.5	5,480	7.45	1,100	1,280	1,150	72
Jan. 11-20	57.2	1,300	418	104	2,380	145	978	3,900	3.0	7,850	10.68	1,210	1,470	1,350	78
Jan. 21, 28-31	88.6	1,200	427	106	2,130	157	981	3,530	6.0	7,260	9.87	1,740	1,500	1,370	76
Jan. 22-27	90.3	639	242	58	1,050	132	537	1,740	7.0	3,700	5.03	902	842	734	73
Feb. 1-10	50.3	1,680	521	135	3,300	156	1,140	5,470	6.5	10,600	14.42	1,440	1,860	1,730	79
Feb. 11-19	40.0	1,230	472	120	2,180	144	910	3,780	6.5	7,540	10.25	814	1,670	1,550	74
Feb. 20-22	63.3	1,140	443	105	1,994	147	801	3,470	5.5	6,890	9.37	1,180	1,540	1,430	73
Feb. 23-28	137	551	240	61	873	124	309	1,640	3.2	3,190	4.34	1,180	850	758	69
Mar. 1-10	233	521	223	63	796	125	272	1,530	3.0	2,950	4.01	1,860	816	713	68
Mar. 11-12,15-17	492	449	177	45	699	125	239	1,270	4.0	2,500	3.40	3,320	626	524	71
Mar. 14	237	1,240	357	88	2,400	111	761	3,960	3.5	7,620	10.36	4,880	1,250	1,160	83
Mar. 13,18-19	2,673	293	134	33	414	117	177	770	4.4	1,590	2.16	11,500	470	374	66
Mar. 20	9,950	92.9	60	10	113	98	73	197	2.2	504	.69	13,500	190	110	56
Mar. 21-23	2,270	86.2	72	16	78	121	116	136	2.2	486	.65	2,940	246	146	41

Brazos River near South Bend, Texas. (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance (K x 10^5 at 25°C)	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 ac.ft.	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
Mar. 26-30, 1945	263	346	210	41	488	114	433	855	4.0	2,090	2.84	1,480	692	599	60
Mar. 24-25,31	829	211	124	27	275	106	214	500	4.2	1,200	1.63	2,690	420	334	59
Apr. 1-5	438	206	114	24	277	110	169	508	3.2	1,150	1.56	1,360	383	293	61
Apr. 6-10	82.6	396	201	44	590	136	370	1,040	3.8	2,320	3.16	517	682	571	65
Apr. 11-12	2,575	209	112	26	280	124	125	540	3.1	1,150	1.56	800	386	285	61
Apr. 13-20	2,406	77.0	56	12	81	119	60	144	3.2	415	.56	2,700	190	92	48
Apr. 21-27,29-30	496	162	88	21	213	115	114	392	3.2	888	1.21	1,190	306	212	60
Apr. 28	504	419	194	59	593	108	115	1,280	3.0	2,300	3.13	3,130	726	638	64
May 1-6	123	302	156	34	447	132	307	760	3.2	1,770	2.41	588	530	422	65
May 7-10	85.0	641	280	65	1,070	146	640	1,770	2.2	2,900	3.94	666	966	847	71
May 11,13-15	676	110	76	15	123	134	100	215	2.2	597	.31	1,090	251	141	52
May 12,16-20	388	255	138	29	357	133	255	612	2.2	1,460	1.99	1,530	464	354	63
May 21-24,30-31	56.8	277	155	35	378	143	270	675	2.2	1,590	2.16	244	531	414	62
May 25-29	35.6	352	190	48	492	150	361	880	2.0	2,050	2.79	197	672	548	62
June 1-5, 10	318	223	139	33	277	147	234	510	2.2	1,270	1.73	1,090	482	362	56
June 6-8	447	116	88	24	118	137	103	192	.5	673	.92	812	318	206	45
June 9	641	590	368	57	904	131	938	1,440	3.8	3,780	5.14	6,540	1,190	1,050	63
June 11, 14	1,730	209	156	27	163	122	147	425	2.8	981	1.33	4,580	500	400	42
June 12-13	3,540	104	82	13	115	116	120	202	3.0	592	.81	5,660	258	163	49
June 15	3,950	1,040	462	74	1,850	110	1,030	3,060	3.5	6,530	8.88	69,600	1,460	1,370	73
June 16-17,20	889	419	315	37	573	95	787	910	4.0	2,670	3.63	6,410	938	860	57
June 18-19	746	326	293	28	424	92	715	670	4.2	2,180	2.96	4,390	846	770	52
June 21-30	214	397	280	37	570	106	663	930	3.4	2,540	3.45	1,470	851	764	59
July 1-2	158	683	438	60	1,060	116	1,060	1,730	2.5	4,410	6.00	1,880	1,340	1,240	63
July 3	789	105	83	16	115	121	141	196	1.5	612	.83	1,300	273	174	48
July 4-5	293	314	164	40	449	104	199	890	3.5	1,800	2.45	1,420	574	488	63
July 6-7,9-10	2,692	81.4	60	9.9	93	102	86	154	1.8	455	.62	3,310	190	106	51
July 8	959	45.3	42	9.2	39	96	48	69	2.5	257	.35	665	143	64	37
July 11-12	4,235	73.3	50	9.1	80	122	94	114	3.2	420	.57	4,800	187	87	48
July 13, 17-20	3,128	302	253	22	427	101	663	620	3.9	2,040	2.77	17,200	722	639	56
July 14-16	5,823	202	176	16	248	112	431	355	4.2	1,290	1.75	22,700	505	435	52
July 21-26	364	305	192	21	460	123	489	675	3.7	1,900	2.58	18,700	566	464	64

Brazos River near South Bend, Texas. (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey

Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C	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 ac.ft.	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
July 27-31, 1945	113	431	235	38	676	116	569	1,080	2.2	2,660	3.62	812	742	648	66
Aug. 1-10	51.0	532	270	55	838	121	635	1,390	1.8	3,250	4.42	448	900	801	67
Aug. 11,15-17	284	253	159	38	302	121	420	475	1.2	1,460	1.99	1,120	553	454	54
Aug. 12-14	576	127	100	21	144	120	197	244	1.8	767	1.04	1,190	335	238	48
Aug. 18-20	83.7	459	243	61	666	110	665	1,080	1.5	2,770	3.77	626	858	768	63
Aug. 21-26	30.5	421	246	69	595	126	691	970	1.2	2,630	3.58	217	898	794	59
Aug. 27-31	11.4	542	304	78	815	120	826	1,340	3.2	3,430	4.66	106	1,080	980	62
Sept. 1-10	3.56	610	344	93	890	122	869	1,540	.8	3,800	5.17	37	1,240	1,140	61
Sept. 11-20	.66	682	380	116	1,000	127	874	1,840	1.5	4,270	5.81	8	1,430	1,320	61
Sept. 21-25,27-28	.53	683	376	111	1,030	132	838	1,880	.8	4,300	5.85	6	1,400	1,290	62
Sept. 26, 29	170	494	289	66	714	99	713	1,220	.8	3,050	4.15	1,400	992	912	61
Sept. 30	1,460	890	452	71	1,510	87	891	2,620	1.8	5,590	7.60	22,000	1,420	1,350	70
Weighted Average	545	247	146	24	358	113	294	588	3.3	1,480	2.01	2,170	463	370	63

Analyses of samples from Brazos River at Possum Kingdom Dam, near Graford, Texas, January 15, 1942, to September 30, 1942 (Composites of daily samples collected, immediately below dam on Brazos River, 2.6 miles upstream from Loving Creek, and 11.3 miles southwest of Graford; Analyses in parts per million. Analyzed by Geological Survey).

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Per cent sodium
Jan. 15-16,20,1942	183	333	188	43	450	190	400	745	1.2	1,921	2.61	951	646	60
Jan. 17-19	4,703	167	120	21	187	136	247	300	1.2	943	1.28	12,000	386	51
Jan. 21-25,27-31	131	350	191	41	504	188	411	820	1.5	2,073	2.82	735	645	63
Feb. 2-9	189	367	194	43	523	192	424	850	2.0	2,131	2.90	1,086	661	63
Feb. 11-19	134	359	193	42	508	189	421	825	1.0	2,083	2.83	752	654	63
Feb. 20-21, 23-24, 26-28	129	335	186	42	483	189	406	785	1.5	1,997	2.72	696	636	62
Mar. 1-10	129	309	174	40	431	176	388	700	1.2	1,821	2.48	635	598	61
Mar. 11-20	116	300	172	37	431	181	379	690	2.0	1,800	2.45	562	581	62
Mar. 21-31	118	300	172	36	424	186	378	685	1.8	1,798	2.45	575	577	61
Apr. 1-6, 8-10	6,257	219	147	29	324	161	322	512	1.5	1,415	1.92	23,900	486	59
Apr. 12, 14-19	107	234	146	29	312	163	312	498	1.5	1,379	1.88	398	484	58
Apr. 13, 20	13,300	165	112	21	189	139	228	300	1.8	920	1.25	33,000	366	53
Apr. 21-22,25,29	10,620	165	116	20	204	137	239	320	1.2	968	1.32	27,600	372	54
May 1-10	1,115	204	129	26	265	153	272	422	1.5	1,191	1.62	3,590	429	57
May 11-17, 19-20	3,518	191	125	25	241	148	258	388	1.0	1,111	1.51	10,600	415	56
May 21-23,25-31	2,058	193	126	26	240	151	258	390	1.8	1,116	1.52	6,200	422	55
June 1-6, 8-10	2,991	184	119	23	220	148	246	348	1.2	1,030	1.40	8,320	392	55
June 11-20	3,643	159	108	21	191	136	200	318	3.0	908	1.23	8,930	356	54
June 21-22,24-30	577	180	119	23	228	143	238	368	3.5	1,050	1.43	1,637	392	56
July 1-10	242	180	118	24	229	148	237	368	3.5	1,052	1.43	689	393	56
July 11-20	303	178	118	24	223	144	232	365	4.5	1,037	1.41	849	393	55
July 21-31	304	171	111	22	216	147	221	345	.8	988	1.34	811	368	56
Aug. 1-10	272	168	108	21	213	148	212	338	.8	966	1.31	709	356	57
Aug. 11-20	251	164	108	20	209	148	207	332	.8	950	1.29	644	352	56
Aug. 21-31	304	167	106	21	207	142	207	332	2.0	945	1.29	776	351	56

Brazos River at Possum Kingdom Dam, near Graford, Tex. - Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Percent sodium
Sept. 1-10, 1942	4,225	145	94	18	182	136	176	290	1.5	829	1.13	9,460	308	56
Sept. 11-20	701	157	126	21	155	138	182	308	1.8	862	1.17	1,632	401	46
Sept. 21-30	1,746	162	106	22	192	149	188	322	2.0	905	1.23	4,270	355	54
Weighted average	1,750	177	119	23	220	144	242	352	1.6	1,029	1.40	5,030	392	55

Analyses of samples from Brazos River at Possum Kingdom Dam, near Graford, Texas, October 1942 to September 1943.
(Composites of daily samples collected immediately below dam on Brazos River 2.6 miles upstream from Loving Creek, and 11.3 miles southwest of Graford. Analyses in parts per million. Analyzed by Geological Survey.)

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved solids: Tons per day	Total hardness as $CaCO_3$	Percent sodium
Oct. 1-10, 1942	120	168	106	22	200	149	191	330	3.0	925	1.26	300	355	55
Oct. 11-20	13,310	156	102	20	189	142	179	315	1.5	877	1.19	31,500	336	55
Oct. 21,23-30	3,097	179	115	21	235	141	221	380	3.0	1,044	1.42	8,730	374	58
Nov. 1-10	1,211	178	110	22	228	132	219	372	1.5	1,018	1.38	3,330	365	58
Nov. 11-20	309	171	106	21	218	134	208	352	1.2	972	1.32	811	351	57
Nov. 21-30	315	162	104	21	194	127	182	335	2.0	909	1.24	773	346	55
Dec. 1-10	267	163	100	19	206	128	192	333	.2	913	1.24	658	328	58
Dec. 11-20	308	159	104	19	183	132	179	312	1.0	863	1.17	718	338	54
Dec. 21-31	350	157	96	18	163	123	187	298	1.8	846	1.15	799	318	56
Jan. 2-8,10, 1943	245	185	108	19	243	132	215	385	.8	1,036	1.41	685	348	60
Jan. 11-20	536	233	132	27	302	140	242	515	3.0	1,291	1.76	1,870	440	60
Jan. 21-31	1,147	210	116	24	276	134	220	460	1.0	1,163	1.58	3,600	388	61
Feb. 2-10	1,241	200	118	23	265	134	218	445	1.0	1,136	1.54	3,500	389	60
Feb. 11-20	1,242	198	118	24	259	137	219	435	1.0	1,116	1.52	3,400	388	59
Feb. 21-28	1,172	198	118	22	272	141	223	445	1.5	1,151	1.57	3,640	385	62
Mar. 1-10	1,162	183	114	21	250	135	216	410	1.5	1,073	1.47	3,380	371	59
Mar. 11-20	1,198	174	103	21	213	121	195	358	.5	950	1.29	3,070	344	57
Mar. 21-27,29-31	1,350	168	112	21	210	134	195	360	1.0	965	1.31	3,520	366	55
Apr. 1-9	1,338	169	106	20	223	138	198	362	1.0	978	1.33	3,530	346	58
Apr. 11-20	1,246	182	106	21	234	131	204	382	2.0	1,014	1.38	3,410	351	59
Apr. 21-25,27	1,240	183	109	21	230	135	203	380	1.0	1,010	1.37	3,380	358	58
May 7-10	598	177	107	21	224	130	195	375	1.5	988	1.34	1,600	354	58
May 11-12,16-20	200	174	104	21	218	129	194	362	1.0	964	1.31	521	346	58
May 21-27,29-30	882	173	103	22	212	130	192	355	2.5	950	1.29	2,260	348	57

Brazos River at Possum Kingdom Dam near Graford, Texas--Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent Sodium
June 3-4,6-10,1943	717	171	105	20	212	127	190	360	1.2	951	1.29	1,840	344	240	57
June 11-20	785	173	107	20	218	135	188	365	2.0	966	1.31	2,050	349	238	58
June 21-30	920	177	109	21	227	136	198	378	1.2	1,001	1.36	2,490	358	247	58
July 1-7, 9-10	899	184	114	21	230	140	204	385	2.0	1,025	1.39	2,490	371	256	57
July 11-20	793	189	112	23	243	140	203	408	1.5	1,060	1.44	2,270	374	260	59
July 21-31	1,107	194	116	24	248	138	218	415	1.0	1,090	1.48	3,260	388	275	58
Aug. 1-10	1,054	203	116	25	263	144	232	428	.5	1,135	1.54	3,230	392	274	59
Aug. 11-20	613	212	118	27	282	151	242	455	1.0	1,199	1.63	1,980	406	282	60
Aug. 21-31	433	214	129	27	278	143	247	472	3.8	1,240	1.69	1,450	433	316	58
Sept. 1-10	433	222	128	27	285	147	250	472	3.5	1,238	1.68	1,450	430	310	59
Sept. 11-20	67.4	224	125	28	299	147	252	490	3.5	1,270	1.73	231	427	306	60
Sept. 21-30	73.0	225	130	28	301	155	255	495	3.5	1,289	1.75	254	440	312	60
Weighted Average	1,161	176	109	21	223	138	201	370	1.6	994	1.35	3,110	358	246	57

ANALYSES OF SAMPLES FROM BRAZOS RIVER AT POSSUM KINGDOM DAM, NEAR GRAFORD, TEXAS, OCT. 1, 1943 to SEPT. 30, 1944

(Composites of daily 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 6½ miles north of Palo Pinto. The gage is about 15 miles from Possum Kingdom Dam. No appreciable inflow between dam and gaging station except during periods of heavy local rains. Drainage area above dam 22,550 square miles; above gaging station 22,760 square miles. Analyses in parts per million. Analyzed by Geological Survey.)

Date of collection	Mean discharge (second feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non carbonate	Per cent sodium
Oct. 1-10, 1943	27.6	230	136	28	303	164	256	515	3.0	1,330	1.81	99	460	325	59
Oct. 11-20	143	230	135	28	307	156	257	512	2.2	1,320	1.80	510	452	324	60
Oct. 21-31	82.9	230	137	29	302	161	263	502	3.5	1,320	1.80	295	461	329	59
Nov. 1-10	57.7	226	130	28	303	153	265	492	4.0	1,300	1.77	203	440	314	60
Nov. 11-20	30.2	225	126	27	324	157	278	502	3.5	1,340	1.82	109	426	297	62
Nov. 21-30	41.9	233	136	28	304	157	270	502	2.2	1,320	1.80	149	460	320	59
Dec. 1-10	65.2	221	135	28	291	144	273	482	3.5	1,280	1.74	225	452	334	58
Dec. 11-20	43.2	219	134	28	290	150	273	475	2.8	1,280	1.74	149	450	326	58
Dec. 21-31	40.0	220	131	27	275	136	276	450	3.2	1,230	1.67	133	438	326	58
Jan. 1-10, 1944	125	222	134	26	294	148	275	475	3.0	1,280	1.74	432	442	320	59
Jan. 11-20	125	221	136	24	293	148	272	475	1.2	1,270	1.73	429	438	316	59
Jan. 21-31	127	222	135	31	290	149	275	485	1.8	1,290	1.75	442	454	342	58
Feb. 1-9	203	235	141	28	309	144	276	518	3.8	1,350	1.84	740	470	349	59
Feb. 11-20	73.3	235	138	23	336	148	279	535	2.5	1,390	1.89	275	439	318	62
Feb. 21-29	403	237	136	27	323	151	267	530	3.2	1,360	1.85	1,480	450	326	61
Mar. 1-10	105	239	130	29	331	142	279	532	6.8	1,380	1.88	391	444	327	62
Mar. 11-20	106	239	131	27	327	147	280	520	5.2	1,360	1.85	389	438	318	62
Mar. 21-31	109	227	135	27	313	138	275	515	2.2	1,340	1.82	394	448	335	60
Apr. 1-10	52.9	225	138	28	308	149	275	510	1.5	1,330	1.81	190	460	338	59
Apr. 11-20	46.4	231	136	25	316	153	274	508	2.2	1,340	1.82	168	442	317	61
Apr. 21-30	183	229	134	27	314	153	278	505	1.0	1,330	1.81	657	446	320	61
May 1-8	128	228	142	34	285	138	281	500	4.5	1,310	1.78	453	494	382	56
May 11-20	170	226	140	27	296	144	274	495	2.2	1,310	1.78	601	460	342	58
May 21-31	220	226	140	25	307	149	281	498	2.8	1,330	1.81	790	452	330	60
June 1-10	114	226	136	32	296	148	276	498	4.4	1,320	1.80	406	471	350	58
June 11-20	143	226	138	28	300	150	277	495	2.8	1,310	1.78	506	460	336	59

ANALYSES OF SAMPLES FROM BRAZOS RIVER AT POSSUM KINGDOM DAM, NEAR GRAFORD, TEXAS ----------CONTINUED

Date of Collection	Mean discharge (second feet)	Specific conductance ($K \times 10^5$ at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
June 21-30	392	226	138	27	308	156	276	502	2.5	1,330	1.81	1,410	456	328	60
July 1-10	79.1	231	138	28	304	152	277	500	1.8	1,320	1.80	282	460	335	59
July 11-18	330	228	139	30	293	144	281	492	4.9	1,310	1.78	1,170	470	352	58
July 22,24-31	252	226	140	30	294	152	281	492	2.0	1,310	1.78	891	473	348	57
Aug. 1-10	322	226	138	29	295	152	277	490	1.5	1,310	1.78	1,140	464	339	58
Aug. 11-20	577	229	140	26	290	151	272	482	1.2	1,290	1.75	2,010	456	332	58
Aug. 21-31	395	223	139	26	288	149	266	482	0.5	1,270	1.73	1,350	454	332	58
Sept. 1-10	225	222	138	29	299	156	269	500	1.5	1,310	1.78	796	464	336	58
Sept 11-20	82.3	224	138	31	289	157	268	490	2.8	1,300	1.77	289	472	344	57
Sept. 21-30	298	221	136	26	303	155	269	495	1.5	1,310	1.78	1,050	446	320	60
Weighted Average	164	227	137	28	301	152	274	498	2.5	1,310	1.78	580	457	332	59

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Brazos River at Possum Kingdom Dam near Graford, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	Parts per million: 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 ac.ft.	Dissolved solids: Tons per day	Total hardness as $CaCO_3$
Oct. 1-10, 1944	312	234	136	27	295	152	266	488	2.2	1,290	1.75	1,090	450
Oct. 11-20	179	223	133	29	298	158	267	488	2.8	1,300	1.77	628	451
Oct. 21-31	500	239	136	26	301	147	264	498	4.2	1,300	1.77	1,760	446
Nov. 1-10	629	225	133	26	273	148	263	450	2.0	1,220	1.66	2,070	439
Nov. 11-20	335	228	136	27	320	150	267	515	3.8	1,350	1.84	1,220	450
Nov. 21-30	201	235	136	26	311	140	272	512	2.8	1,330	1.81	722	446
Dec. 1-10	495	216	138	26	312	142	274	515	3.7	1,340	1.82	1,790	452
Dec. 11-20	415	229	132	30	310	146	268	515	3.2	1,330	1.81	1,490	453
Dec. 21-31	339	243	138	27	331	135	273	552	3.2	1,390	1.89	1,270	456
Jan. 1-10, 1945	542	253	138	28	330	135	274	552	4.3	1,390	1.89	2,030	460
Jan. 11-20	503	255	135	30	359	142	279	590	1.5	1,460	1.99	1,980	460
Jan. 21-31	257	254	136	28	353	136	276	582	3.0	1,440	1.96	999	454
Feb. 1-10	426	251	140	29	342	138	271	578	3.2	1,430	1.94	1,640	458
Feb. 11-19	452	259	144	29	360	140	279	605	2.8	1,490	2.03	1,820	478
Feb. 20-28	544	263	144	29	382	143	282	620	2.5	1,530	2.08	2,250	478
Mar. 1-10	707	256	142	29	361	141	276	605	3.8	1,490	2.03	2,840	474
Mar. 11-20	777	264	142	29	390	136	277	652	3.2	1,560	2.12	3,270	474
Mar. 21-31	883	274	150	32	381	137	279	658	3.2	1,570	2.14	3,740	502
Apr. 1-10	436	266	142	29	380	144	279	630	3.2	1,530	2.08	1,800	474
Apr. 11-20	739	256	140	30	358	138	272	605	2.8	1,480	2.01	2,950	473
Apr. 21-30	453	251	138	30	355	140	268	598	2.2	1,460	1.99	1,790	468
May 1-10	625	251	138	27	359	138	270	595	2.2	1,460	1.99	2,460	458
May 11-20	636	249	140	26	348	138	255	590	2.2	1,430	1.94	2,460	456
May 21-31	347	242	136	28	334	135	258	568	1.2	1,390	1.89	1,300	454
June 1-10	678	238	128	28	330	134	252	552	2.2	1,360	1.85	2,490	434
June 11-20	706	233	126	27	342	136	249	565	1.8	1,380	1.88	2,630	426
June 21-30	600	234	129	25	329	134	242	550	2.2	1,340	1.82	2,170	425
July 1-10	769	228	130	26	342	137	241	575	.5	1,380	1.88	2,870	432
July 11-20	752	227	132	25	317	137	237	540	1.8	1,320	1.80	2,680	432
July 21-31	934	227	128	27	315	137	232	538	2.2	1,310	1.78	3,300	430
Aug. 1-10	800	227	127	27	300	146	220	518	1.5	1,270	1.73	2,740	428
Aug. 11-20	581	227	124	26	306	150	217	518	2.2	1,270	1.73	1,990	416

Brazos River at Possum Kingdom Dam near Graford, Texas (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25°C)	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 ac.ft.	Dissolved solids: Tons per day	Total Hardness as $CaCO_3$
Aug. 21-31	500	217	122	17	312	143	208	510	1.5	1,240	1.69	1,670	374
Sept. 1-10	320	222	125	26	308	147	214	525	4.2	1,270	1.73	1,100	419
Sept. 11-20	320	214	122	26	293	136	209	510	1.8	1,230	1.67	1,060	412
Sept. 21-30	320	213	118	26	296	140	204	508	1.8	1,220	1.66	1,050	402
Weighted average	528	241	135	27	335	140	256	561	2.5	1,390	1.89	1,980	448

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1941 to September 30, 1942
(Composites of daily samples collected at gaging station at bridge on U.S. Hwy.90 in Richmond, about 1,500 feet downstream from Texas and New Orleans Railroad Bridge.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)
Oct. 1-10, 1941	78.8				194	76	106		455	242 a/
Oct. 11-15	100				143	130	156		593	230 a/
Oct. 16-20	65.6			67	116	80	92		379	162 a/
Oct. 22-23	37.4	42	5.0	26	135	20	34	2.5	220	125
Oct. 21,24-31	119	92	15	126	123	178	197	0.5	715	291
Nov. 1,3-10	106	84	13	113	108	175	169	.5	655	263
Nov. 2	65.1				93	72	98	.5		192 a/
Nov. 11-20	120	102	17	121	158	198	178		753	324
Nov. 21-28	93.4				196	121	127		569	276 a/
Nov. 29-30	59.4				174	52	62		317	204 a/
Dec. 1-10	75.9				234	72	82		459	231 a/
Dec. 11-20	87.6	85	18	73	260	82	104	.8	521	236
Dec. 21-31	89.5	86	19	76	256	92	107		535	292
Jan. 1-7,9, 1942	94.2	88	19	83	262	94	117	.9	575	298
Jan. 11-20	124	108	21	124	252	145	139	1.5	746	356
Jan. 21-29	97.5	87	19	94	268	94	126	2.8	587	295
Jan. 30-31	188	129	26	231	212	206	385	1.5	1,083	429
Feb. 1-10	134				223	160	208		785	309 a/
Feb. 11-19	93.8				262	91	115		558	273 a/
Feb. 20-22,24-28	93.8	81	19	88	244	91	124	1.5	560	280
Mar. 1-10	102	84	20	99	252	92	144	1.0	604	292
Mar. 11-20	119	86	22	122	252	105	179	1.2	668	305
Mar. 21-31	114	86	23	117	247	106	169	.8	677	309
Apr. 1,3-4,6-8	112	85	24	115	268	104	164	1.0	660	310
Apr. 9-10	40.0	34	6.0	39	123	25	47	1.8	225	110
Apr. 11-14	36.4	40	6.3	29	115	41	36	2.5	230	126
Apr. 15-20	78.4	63	10	33	115	101	127	1.5	481	198
Apr. 21-23	67.7				118	79	98	1.2	424	171 a/
Apr. 24-30	44.5	44	7.9	32	120	46	46	.5	274	142

a/ Determined.

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1941 to September 30, 1942--Continued

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)
May 1-6, 1942	46.9	48	8.0	35	144	42	46	2.0	277	153
May 7-10	74.1	71	13	62	172	76	101	2.2	449	230
May 15-18	35.8	42	6.6	22	126	33	29	2.5	216	132
May 11-14,19-20	57.3	60	9.6	43	166	57	60	2.5	344	189
May 21-31	44.2	46	8.4	32	132	42	47	1.5	264	149
June 1-10	60.8	59	11	50	171	56	72	1.5	365	192
June 21-30	60.0	52	10	44	154	45	66	1.5	326	171
July 1-4,6-7,10	70.2	64	12	61	163	65	99	2.0	410	209
July 8	32.5				115	15	33	1.8		99 a/
July 11-20	63.7	64	14	49	204	55	68	2.5	371	217
July 21-25,27-31	75.7	66	17	68	214	73	93	.8	472	234
Aug. 1-10	87.4	68	20	83	220	87	115	.2	515	252
Aug. 11-20	93.5	68	23	92	226	92	130	.2	552	264
Aug. 21-30	89.7	64	19	94	201	90	130	1.0	544	238
Sept. 1-10	57.6	51	13	52	174	56	65	2.0	386	181
Sept.11-20	43.8	42	7.2	33	122	39	45	1.8	247	134
Sept.21-30	59.5	57	9.6	50	163	49	73	2.5	348	182

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1942, to September 30, 1943
(Composites of daily samples collected at gaging station at bridge on U. S. Hwy. 90 in Richmond, about 1,500 feet downstream from Texas and New Orleans Railroad Bridge.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 1-9, 1942	88.4	78	15	83	207	81	128	1.8	532	256
October 11-18, 20	70.5	70	14	54	222	55	77	2.5	406	232
October 21-23	56.8	54	9.3	46	139	54	71	3.5	306	173
October 24-31	100	77	14	111	139	108	185	4.0	609	250
November 1-10	74.4	64	12	65	158	71	103	1.2	440	209
November 11-16	55.3	58	10	40	172	55	50	2.8	337	186
November 17-20	98.4	85	15	91	207	93	145	1.5	582	274
November 21-30	90.0	78	16	85	222	83	124	1.5	542	260
December 1-10	83.4	79	18	66	258	70	90	2.2	490	271
December 11-20	85.7	76	21	74	250	83	101	4.0	515	276
December 22-24,27,30	72.3	69	16	58	222	65	81	2.0	430	238
January 1-10, 1943	53.5	52	9.4	44	159	51	56	2.2	293	168
January 11	59.6						71			
January 12	--									
January 13	62.9						73			
January 14	136						325			
January 15	39.8						35			
January 16	71.9						130			
January 17	93.3						183			
January 18	48.1						49			
January 19	--									
January 20	56.6						62			
January 21-25,28-31	79.8	82	16	62	228	77	96	4.0	543	270
February 1-10	116	92	21	119	242	114	181	3.0	686	316
February 11-20	131	96	25	141	222	133	232	1.0	788	342
February 21	130						226			
February 22	130									
February 23	131									
February 24	127									
February 25	139						242			
February 26	137									

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1942, to September 30, 1943 (Cont.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
February 27, 1943	137									
February 28	137						240			
March 1	135						230			
March 2	--									
March 3	--									
March 4	131									
March 5	129									
March 6	131									
March 7	136									
March 8	133									
March 9	--									
March 10	139						250			
March 11-20	139	94	22	160	213	142	248	2.0	835	325
March 21-27	132	86	19	173	194	124	268	3.0	798	292
March 28-31	69.5	61	11	65	141	78	98	4.0	416	197
April 1-10	86.6	70	14	92	167	96	137	3.0	528	232
April 11	85.4						118			
April 12	84.2									
April 13	61.1						75			
April 14	69.2									
April 15	58.3									
April 16	57.0									
April 17	58.8						70			
April 18	--									
April 19	87.1									
April 20	87.4						130			
April 21	96.3						153			
April 22	100									
April 23	99.3									
April 24	101									
April 25	82.4						122			
April 26	106									
April 27	113						187			

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
April 28, 1943	92.8									
April 29	85.4									
April 30	103									
May 1	113						190			
May 2	118									
May 3	118									
May 4	115									
May 5	118									
May 6	131									
May 7	127									
May 8	133						235			
May 9	133									
May 10	125						225			
May 11	123						220			
May 12	198						310			
May 13	391						530			
May 14	231									
May 15	85.7						124			
May 16	73.6									
May 17	73.9									
May 18	68.3									
May 19	68.3									
May 20	65.1						83			
May 21-31	81.5	69	13	77	188	77	111	3.0	480	226
June 1-9	40.0	39	6.3	33	116	40	40	1.2	217	123
June 11	67.4						98			
June 12	37.6						61			
June 13	89.3									
June 14	93.5									
June 15	95.1									
June 16	98.6						165			
June 17	125									

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
June 18, 1943	136	254	July 21, 1943	115	189
June 19	133		July 22	96.4	
June 20	108		July 23	77.9	
June 21	88.2	134	July 24	76.6	106
June 22	88.0		July 25	83.0	
June 23	85.0		July 26	106	
June 24	86.1		July 27	122	
June 25	83.9		July 28	115	
June 26	76.9		July 29	123	213
June 27	73.4		July 30	36.4	40
June 28	75.8		July 31	67.1	146
June 29	71.6	85	August 1	37.4	48
June 30	72.9		August 2	35.7	
July 1	94.1	142	August 3	44.4	
July 2	112		August 4	62.1	101
July 3	118		August 5	99.8	
July 4	115		August 6	104.0	194
July 5	118		August 7	88.6	
July 6	120	200	August 8	107	193
July 7	--		August 9	99.8	
July 8	--		August 10	100	
July 9	116		August 11	119	210
July 10	119		August 12	125	
July 11	120		August 13	135	
July 12	125		August 14	145	
July 13	132		August 15	152	
July 14	131		August 16	155	
July 15	--		August 17	158	
July 16	115		August 18	158	
July 17	112	205	August 19	165	
July 18	121		August 20	164	320
July 19	144				
July 20	149	292			

Analyses of samples from Brazos River at Richmond, Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 21-31, 1943	172	110	26	215	200	183	348	3.8	997	382
September 1	159						307			
September 2	153									
September 3	156									
September 4	155									
September 5	152									
September 6	145									
September 7	138						249			
September 8	144									
September 9	139									
September 10	139									
September 11	140									
September 12	150									
September 13	177						355			
September 14	108									
September 15	81.3						118			
September 16	85.3									
September 17	95.8									
September 18	120						201			
September 19	91.8									
September 20	86.3									
September 21	99.0						160			
September 22	102									
September 23	108									
September 24	112									
September 25	113									
September 26	115									
September 27	124									
September 28	125									
September 29	127						222			
September 30	126									

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1943, to September 30, 1944.
(Composites of daily samples collected at gaging station at bridge on U. S. Hwy. 90 in Richmond, about 1,500 feet downstream from Texas and New Orleans Railroad Bridge.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness at $CaCO_3$ (calc.)
October 1, 1943	124									
October 2	123									
October 3	102						154			
October 4	76.0						102			
October 5	82.0									
October 6	70.5									
October 7	97.3						148			
October 8	86.7									
October 9	89.9									
October 10	79.8						115			
October 11-19	77.2	66	15	69	221	73	84	0.8	458	226
October 20	43.9						41			
October 21-31	52.8	57	11	40	192	48	47	1.2	314	188
November 1-10	80.3	72	16	71	236	53	106	0.8	435	246
November 11-20	98.5	80	20	103	259	81	148	0.8	560	282
November 21-30	96.3	72	20	100	258	72	136	0.8	528	262
December 1-2, 4-10	74.2	68	14	68	232	55	90	0.5	410	227
December 11-13, 15-20	75.2	71	15	72	255	57	90	0.4	431	238
December 21-22,24,27-31	65.1	56	12	64	198	47	82	1.0	360	190
January 1-2, 6-10, 1944	43.2	43	6.8	38	138	42	42	2.5	242	135
January 3-5	108	37	5.6	177	128	35	254	1.0	573	116
January 11-20	40.1	37	6.2	36	116	30	49	1.8	237	118
January 21-28, 30-31	39.7	37	5.9	34	113	31	46	2.0	233	117
February 1	31.0									
February 2	33.2									
February 3	31.5									
February 4	31.5									
February 5	31.6									
February 6	28.5									
February 7	30.3									

Brazos River at Richmond, Texas, Oct. 1, 1943, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^2 at 25^0C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as Ca CO_3
February 8, 1944	33.9									
February 9	35.8									
February 10	37.0									
February 11-20	44.7	42	6.5	33	127	40	39	3.2	226	132
February 21-23,25-29	45.4	48	7.0	32	141	42	39	5.4	243	149
March 1-10	42.7	47	8.1	28	153	35	33	3.8	230	151
March 11	41.8						32			
March 12	40.2									
March 13	40.7									
March 14	43.1									
March 15	48.0						44			
March 16	44.9									
March 17	53.3						80			
March 18	36.3									
March 19	31.9									
March 20	36.0						29			
March 21	48.1						67			
March 22	53.5									
March 23	59.8						82			
March 24	57.2									
March 25	43.0									
March 26	32.8									
March 27	31.5						19			
March 28	32.5									
March 29	36.4									
March 30	39.6									
March 31	42.5						34			
April 1	50.1									
April 2	48.5									
April 3	45.6									
April 4	44.6						39			
April 5	45.5									
April 6	47.3									

Brazos River at Richmond, Texas, Oct. 1, 1943, to Sept. 30, 1944.
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^3$ at 25°C	Chloride (Cl)	Date of collection	Specific conductance $K \times 10^3$ at 25°C	Chloride (Cl)
April 7, 1944	49.9		May 9, 1944	--	
April 8	50.4		May 10	27.0	
April 9	49.5		May 11	28.4	14
April 10	54.1	48	May 12	39.0	
April 11	56.8		May 13	33.3	
April 12	57.4		May 14	30.4	
April 13	59.5		May 15	30.5	
April 14	59.1		May 16	30.5	
April 15	60.2	54	May 17	35.1	
April 16	--		May 18	39.8	38
April 17	56.1		May 19	34.7	
April 18	56.8		May 20	37.1	
April 19	53.5		May 21	38.8	22
April 20	64.1	60	May 22	40.6	
April 21	--		May 23	37.8	
April 22	54.1	54	May 24	42.4	31
April 23	--		May 25	36.4	
April 24	60.4		May 26	39.2	
April 25	63.1		May 27	40.1	
April 26	63.1		May 28	40.1	
April 27	63.9		May 29	36.7	
April 28	63.0		May 30	28.9	17
April 29	64.6	70	June 1	34.5	17
April 30	63.4		June 2	39.4	
May 1	65.3	73	June 3	34.0	
May 2	60.2		June 4	37.4	
May 3	43.3	42	June 5	36.2	
May 4	29.2		June 6	39.6	
May 5	--		June 7	42.6	
May 6	26.6	10	June 8	47.0	36
May 7	31.5		June 9	42.0	
May 8	28.8		June 10	--	

Brazos River at Richmond, Texas, Oct. 1, 1943, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
June 11, 1944	33.4		July 13, 1944	70.5	
June 12	31.1	16	July 14	73.7	
June 13	33.9		July 15	75.6	
June 14	36.9		July 16	77.3	91
June 15	40.9	24	July 17	68.3	
June 16	44.7		July 18	69.3	
June 17	48.4		July 19	69.5	
June 18	48.1		July 20	--	
June 19	50.1		July 21	79.7	
June 20	51.6	34	July 22	83.5	
June 21	51.6		July 23	85.8	
June 22	52.8		July 24	89.1	126
June 23	54.3		July 25	80.6	
June 24	56.3		July 26	82.3	
June 25	58.4		July 27	76.0	
June 26	59.0		July 28	75.8	94
June 27	59.7		July 29	84.0	
June 28	59.3		July 30	80.6	
June 29	60.1	47	July 31	--	
June 30	--		August 1	103	168
July 1	63.3		August 2	99.4	
July 2	56.7	48	August 3	85.4	
July 3	59.6		August 4	85.4	122
July 4	57.3		August 5	94.1	
July 5	61.3		August 6	94.1	
July 6	62.5		August 7	96.8	
July 7	63.0		August 8	96.8	
July 8	62.6		August 9	96.8	
July 9	65.3		August 10	--	
July 10	72.4	75	August 11	100	140
July 11	68.3	66	August 12	99.7	
July 12	68.3		August 13	88.4	

Brazos River at Richmond, Texas, Oct. 1, 1943, to Sept. 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
August 14, 1944	88.4		September 15, 1944	28.7	
August 15	86.6		September 16	--	
August 16	85.6	118	September 17	31.5	
August 17	85.9		September 18	50.9	
August 18	85.9		September 19	51.2	
August 19	87.1		September 20	67.0	86
August 20	87.1		September 21	71.3	
August 21	80.2		September 22	71.3	
August 22	79.5		September 23	70.5	
August 23	78.7	100	September 24	65.6	
August 24	80.4		September 25	67.3	
August 25	80.0		September 26	66.8	68
August 26	82.8		September 27	69.4	
August 27	84.1		September 28	73.2	
August 28	86.5		September 29	73.9	80
August 29	86.0	118	September 30	73.2	
August 30	70.3	88			
August 31	76.0				
September 1	84.9				
September 2	85.6				
September 3	68.0				
September 4	64.4	102			
September 5	66.8				
September 6	67.8				
September 7	99.7	186			
September 8	70.5				
September 9	84.9				
September 10	65.5				
September 11	40.5				
September 12	28.1				
September 13	28.6				
September 14	28.2	19			

Analyses of samples from Brazos River at Richmond, Texas, October 1, 1944 to September 30, 1945
(Composites of daily samples collected at gaging station at bridge on U. S. Hwy. 90 in Richmond, about 1,500 feet downstream from Texas and New Orleans Railroad Bridge.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)	Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)
October 1, 1944	70.3		November 2	107	176
October 2	71.2		November 3	81.6	
October 3	71.2		November 4	81.6	
October 4	70.3		November 5	76.7	94
October 5	70.3		November 6	87.2	
October 6	70.3		November 7	81.8	
October 7	70.3		November 8	85.9	
October 8	69.5	78	November 9	87.9	
October 9	69.5		November 10	87.9	
October 10	69.5		November 11	93.1	124
October 11	72.3	80	November 12	90.6	
October 12	73.0		November 13	94.6	
October 13	94.9		November 14	94.6	
October 14	90.8		November 15	94.6	
October 15	115		November 16	94.6	
October 16	120	213	November 17	64.6	
October 17	94.3		November 18	53.2	
October 18	96.8		November 19	----	
October 19	67.4		November 20	49.4	66
October 20	66.6		November 21	64.4	
October 21	67.5	79	November 22	44.9	
October 22	67.5		November 23	60.5	
October 23	69.3		November 24	47.8	
October 24	69.3		November 25	43.4	
October 25	69.2		November 26	44.1	
October 26	69.2		November 27	36.5	
October 27	73.3		November 28	36.5	
October 28	83.0		November 29	34.0	
October 29	95.5		November 30	39.0	
October 30	240	632	December 1	30.1	
October 31	102	162	December 2	30.1	
November 1	92.2		December 3	31.7	

Brazos River at Richmond, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)	Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)
December 4	32.7		January 6	35.8	
December 5	81.9		January 7	38.7	
December 6	65.5		January 8	33.5	24
December 7	50.4		January 9	38.2	
December 8	51.9		January 10	42.3	
December 9	52.6		January 11	34.1	28
December 10	50.4		January 12	34.3	
December 11	54.1		January 13	34.9	
December 12	46.9		January 14	35.1	
December 13	46.2		January 15	40.9	
December 14	46.2	44	January 16	40.9	
December 15	49.2		January 17	46.0	
December 16	50.1		January 18	45.0	
December 17	56.1		January 19	55.7	106
December 18	28.3	20	January 20	45.4	
December 19	60.1		January 21	52.3	66
December 20	60.1		January 22	41.7	
December 21	75.1		January 23	34.7	
December 22	75.1		January 24	42.2	
December 23	76.9		January 25	32.2	26
December 24	75.1	94	January 26	33.5	
December 25	75.1		January 27	37.2	
December 26	79.9		January 28	36.4	
December 27	79.9		January 29	46.6	
December 28	----		January 30	43.9	
December 29	41.0		January 31	48.8	
December 30	33.9		February 1	52.5	
December 31	33.2	24	February 2	55.1	
January 1, 1945	39.2		February 3	54.8	
January 2	45.7	60	February 4	49.3	
January 3	38.9		February 5	49.3	
January 4	----		February 6	58.3	66
January 5	36.2		February 7	42.2	

Brazos River at Richmond, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25° C)	Chloride (Cl)	Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)
February 8, 1945	39.0	34	March 14, 1945	51.7	
February 9	50.6		March 15	53.1	
February 10	52.9		March 16	52.3	
February 11	----		March 17	52.3	
February 12	48.7		March 18	53.1	
February 13	51.7		March 19	58.3	
February 14	53.4	52	March 20	43.2	38
February 15	49.6		March 21	46.5	40
February 16	64.3		March 22	49.4	
February 17	44.0		March 23	51.7	
February 18	44.8		March 24	67.7	
February 19	47.3		March 25	56.5	
February 20	45.5		March 26	53.7	
February 21	47.1		March 27	52.0	
February 22	47.1		March 28	54.4	
February 23	48.6		March 29	59.7	
February 24	44.9	36	March 30	63.6	72
February 25	40.3		March 31	57.8	
February 26	39.5		April 1	42.3	
February 27	39.5		April 2	51.7	78
February 28	----		April 3	37.4	
March 1	37.9	18	April 4	34.7	26
March 2	44.8		April 5	41.8	
March 3	48.4		April 6	37.9	
March 4	58.9	74	April 7	36.2	
March 5	45.1		April 8	36.6	
March 6	41.0		April 9	37.0	
March 7	40.6		April 10	35.8	
March 8	37.6		April 11	38.7	
March 9	40.6		April 12	41.5	
March 10	----		April 13	39.7	
March 11	54.6		April 14	42.1	
March 12	49.8		April 15	45.8	36
March 13	56.3	58	April 16	40.8	

Brazos River at Richmond, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
April 17, 1945	47.8		May 20, 1945	70.7	90
April 18	45.8		May 21	76.5	102
April 19	48.6		May 22	59.8	
April 20	55.2		May 23	74.1	
April 21	----		May 24	----	
April 22	85.9	143	May 25	87.2	
April 23	69.5	101	May 26	64.7	
April 24	----		May 27	69.2	
April 25	32.0		May 28	----	
April 26	30.8	18	May 29	60.7	
April 27	31.0		May 30-31	----	
April 28	33.5		June 1	88.5	
April 29	36.3		June 2	88.0	
April 30	38.6		June 3	96.3	144
May 1	41.9		June 4	70.8	
May 2	48.2		June 5	66.1	
May 3	50.1		June 6	73.5	
May 4	51.9		June 7	87.2	
May 5	54.3		June 8	81.8	
May 6	54.7		June 9	86.2	
May 7	56.3	52	June 10	76.5	
May 8	59.2		June 11	67.1	
May 9	58.4		June 12	54.5	
May 10	58.4		June 13	54.5	
May 11	62.7		June 14	57.4	
May 12	62.7		June 15	63.2	
May 13	41.5		June 16	62.1	
May 14	37.2	30	June 17	46.8	
May 15	46.1		June 18	53.2	
May 16	53.6		June 19	46.8	
May 17	52.8		June 20	----	
May 18	53.3		June 21	42.7	40
May 19	54.6		June 22	47.4	

Brazos River at Richmond, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25° C	Chloride (Cl)
June 23, 1945	46.6		July 26, 1945	52.9	
June 24	35.3		July 27	52.9	
June 25	35.3		July 28	56.2	
June 26	35.7		July 29	58.8	
June 27	42.1		July 30	58.8	
June 28	51.4		July 31	61.6	58
June 29	56.1		August 1	63.4	
June 30	56.1	68	August 2	61.3	66
July 1	70.8		August 3	67.6	
July 2	65.9		August 4	71.7	
July 3	64.7		August 5	77.0	
June 4	65.9		August 6	87.3	
July 5	71.2		August 7	100	160
July 6	56.3	64	August 8	98.5	
July 7	65.9		August 9	90.5	
July 8	77.4		August 10	113	
July 9	72.1		August 11	111	
July 10	107	188	August 12	119	
July 11	82.9		August 13	125	
July 12	131	250	August 14	116	
July 13	63.3		August 15	69.5	92
July 14	61.2		August 16	138	
July 15	48.2		August 17	140	262
July 16	34.2	24	August 18	138	
July 17	46.4		August 19	131	
July 18	47.1		August 20	131	
July 19	52.8		August 21	91.9	154
July 20	55.6		August 22	86.7	
July 21	49.8		August 23	103	
July 22	52.3		August 24	91.9	
July 23	48.6		August 25	123	
July 24	48.2	50	August 26	135	
July 25	49.6		August 27	137	268

Brazos River at Richmond, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 28, 1945	108									
August 29	27.0									
August 30	24.2									
August 31	23.3						22			
September 1-6, 8-10	35.3	38	5.5	27	116	25	38	1.2	227	117
September 11-14	37.3	39	6.7	34	119	28	51	1.2	271	125
September 15-20	62.3	52	10	68	150	46	104	.8	387	171
September 21-30	99.2	76	20	100	225	78	158	.8	582	272

Analyses of samples from Lampasas River near Belton, Texas, from April 13, 1943, to September 30, 1943
(Composites of daily samples collected from the Lampasas River 4 miles Southwest of Belton, 19 miles downstream by river from Youngsport gaging station.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
April 13, 1943	65.4	57	29	35	261	31	64	1.2	381	262
April 19	57.5	56	20	35	220	30	65	-	314	222
April 18	70.9						90			
April 20	60.3						66			
April 21	67.3									
April 22	57.6									
April 23	64.7									
April 24	70.2									
April 25	70.0						95			
April 26	74.4									
April 27	74.9									
April 28	76.1									
April 29	76.1									
April 30	78.7						111			
May 5	81.4	55	31	69	252	34	122	-	435	265
May 30	67.4									
May 31	60.7									
June 1	69.6									
June 2	71.0									
June 3	72.1									
June 4	70.0									
June 5	59.7									
June 6	61.4									
June 7	65.3									
June 8	70.3									
June 9	72.1									
June 10	73.9									
June 11	71.0									
June 12	72.2									
June 13	76.3									

Analyses of samples from Lampasas River near Belton, Texas, from April 13, 1943, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance Kx10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
June 14, 1943	77.2									
June 15	79.9									
June 16	79.7									
June 18	84.9									
June 19	86.5									
June 20	87.6									
June 21	83.4									
June 22	89.3									
June 23	91.1									
June 24	92.9									
June 25	94.0									
June 26	95.4									
June 27	96.8									
June 28	98.0									
June 29	99.8									
June 30	100									
July 1	102									
July 2	103									
July 3	104									
July 4	106									
July 5	106									
July 6	107									
July 7	107									
July 8	107									
July 9	108									
July 10	108									
July 11	102									
July 12	117									
July 13	118									
July 14	114									
July 15	121									
July 16	119									
July 17	117									

Analyses of samples from Lampasas River near Belton, Texas, from April 13, 1943, to September 30, 1943 (Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
July 18, 1943	114									
July 19	112									
July 20	112									
July 21	111									
July 22	112									
July 23	114									
July 24	114									
July 25	117									
July 26	120									
July 27	127									
July 28	121									
July 29	127									
July 30	136									
July 31	144									
August 1	142									
August 2	145									
August 3	146	60	39	174	205	21	352	1.0	748	310
August 4	147									
August 5	144									
August 6	141									
August 7	135									
August 8	129									
August 9	125									
August 10	124									
August 11	125									
August 12	127									
August 13	129									
August 14	131									
August 15	134									
August 16	137									
August 17	139									
August 18	139									

Analyses of samples from Lampasas River near Belton, Texas, from April 13, 1943, to September 30, 1943.
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 19, 1943	139									
August 20	136									
August 21	141									
August 22	141									
August 23	142									
August 24	142									
August 25	142									
August 26	136									
August 27	135									
August 28	139									
August 29	142									
August 30	139									
August 31	129									
September 1	143									
September 2	147									
September 3	142									
September 4	149	58	33	188	174	24	369	1.8	760	280
September 5	43.1									
September 6	49.2									
September 7	29.0									
September 8	29.8									
September 9	26.7	30	7.7	14	120	10	19	1.8	142	106
September 10	30.9									
September 11	33.8									
September 12	36.5									
September 13	39.2									
September 14	42.8									
September 15	44.6									
September 16	46.1									
September 17	47.5									
September 18	50.1									
September 19	51.0									

Analyses of samples from the Lampasas River, near Belton, Texas, from April 13, 1943, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
September 20, 1943	52.8									
September 21	--									
September 22	56.3									
September 23	59.5									
September 24	61.9									
September 25	62.7									
September 26	62.8									
September 27	62.4									
September 28	66.7									
September 29	66.9									

Analyses of samples from Lampasas River near Belton, Texas, from October 1, 1943, to June 30, 1944
(Composites of daily samples collected from the Lampasas River 4 miles Southwest of Belton, 19 miles downstream by river from Youngsport gaging station.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 1, 1943	75.5									
October 2	76.8									
October 3	88.6									
October 9	134									
October 15	87.1									
October 28	80.2									
October 29	74.0									
October 30	70.5									
October 31	67.7									
November 1	66.5									
November 2	66.2									
November 4	68.5									
November 5	77.8									
November 8	101									
November 9	107									
November 10	111									
November 11	119									
November 12	123									
November 13	126									
November 14	129									
November 15	138									
November 16	139									
November 17	145									
November 18	155									
November 19	156									
November 20	157									
November 21	160									
November 22	159									
November 23	151									
November 24	143									
November 25	138									

Analyses of samples from the Lampasas River near Belton, Texas, from October 1, 1943, to June 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
November 26, 1943	135									
November 27	137									
November 28	144									
November 29	146									
November 30	138									
December 1	129									
December 2	118									
December 3	118									
December 4	111									
December 5	110									
December 6	118									
December 8	132									
December 9	137									
December 10	140									
December 11	143									
December 12	144									
December 13	151	76	36	169	250	21	338	1.2	764	338
December 14	150									
December 15	147									
December 16	146									
December 17	137									
December 18	137									
December 19	134									
December 20	133									
December 22	138									
December 23	138									
December 24	143									
December 26	133									
December 27	131									
December 28	125									
December 29	124									
December 31	117									

Analyses of samples from the Lampasas River near Belton, Texas, from October 1, 1943, to June 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Date of collection	Specific conductance K x 10^5 at 25°C	Date of collection	Specific conductance K x 10
January 1, 1944	--	February 18, 1944	54.5	March 24, 1944	45.6
January 2	117	February 19	55.1	March 25	49.1
January 3	--	February 20	55.5	March 26	50.9
January 4	54.9	February 21	50.9	March 27	51.6
January 5	59.1	February 22	50.7	March 28	53.6
January 6	54.8	February 23	54.2	March 29	52.8
January 7	61.0	February 24	50.6	March 30	53.6
January 9	59.9	February 25	49.6	March 31	53.1
January 13	63.2	February 26	31.0	April 1	54.3
January 14	66.3	March 1	44.3	April 2	54.3
January 15	64.3	March 2	46.1	April 3	54.4
January 20	62.8	March 3	49.4	April 4	55.0
January 21	55.1	March 4	50.9	April 5	55.6
January 23	58.4	March 5	52.2	April 6	55.8
January 24	52.0	March 6	47.3	April 7	55.8
January 25	34.8	March 7	50.7	April 8	57.5
January 31	56.5	March 8	51.1	April 9	55.3
February 1	56.7	March 9	51.1	April 10	55.8
February 2	55.5	March 10	51.9	April 11	56.4
February 3	54.4	March 12	54.2	April 12	56.5
February 4	56.2	March 13	47.9	April 13	56.8
February 5	56.6	March 14	52.5	April 14	57.2
February 8	31.8	March 15	52.3	April 15	57.5
February 9	37.4	March 16	51.3	April 16	57.5
February 10	44.9	March 17	52.1	April 17	57.8
February 11	44.7	March 18	52.8	April 18	60.9
February 13	51.3	March 19	52.2	April 19	61.3
February 14	40.3	March 20	40.0	April 20	61.4
February 15	46.2	March 21	52.7	April 21	62.4
February 16	54.9	March 22	44.3	April 22	62.0
February 17	50.8	March 23	48.1	April 23	62.5

Analyses of samples from the Lampasas River near Belton, Texas, from October 1, 1943, to June 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
April 24, 1944	62.5									
April 25	63.1									
April 26	63.5									
April 27	63.9									
April 28	64.2									
April 29	64.5									
April 30	23.8									
May 2	19.1	30	6.6	9.5	116	9	13	0	125	102
May 1	30.0									
May 3	21.1									
May 4	41.8									
May 5	42.2									
May 6	52.4									
May 7	57.6									
May 8	57.4									
May 9	47.1									
May 10	38.3									
May 11	30.3									
May 12	50.8									
May 13	55.6									
May 14	57.6									
May 15	58.1									
May 16	58.6									
May 17	58.6									
May 18	58.4									
May 19	57.9									
May 20	58.4									
May 21	55.4									
May 22	55.9									
May 23	50.3									
May 24	52.3									
May 25	20.4									

Analyses of samples from Lampasas River near Belton, Texas, from October 1, 1943, to June 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Date of collection	Specific conductance K x 10^5 at 25°C
May 26, 1944	20.3	June 26, 1944	59.9
May 27	47.2	June 27	61.2
May 28	45.0	June 28	60.9
May 29	45.9	June 29	62.1
May 30	54.4	June 30	62.6
May 31	55.7		
June 1	58.0		
June 2	58.0		
June 3	58.3		
June 4	57.4		
June 5	58.3		
June 6	42.9		
June 7	37.5		
June 8	50.1		
June 9	52.8		
June 10	56.1		
June 11	54.9		
June 12	54.9		
June 13	55.5		
June 14	52.6		
Juen 15	55.4		
June 16	56.6		
June 17	57.0		
June 18	57.0		
June 19	57.9		
June 20	58.1		
June 21	56.2		
June 22	58.7		
June 23	58.7		
June 24	59.7		
June 25	59.9		

Analyses of samples from Navasota River near Easterly, Texas, January 1, 1942 to December 31, 1942. (Composites of daily samples collected at gaging station at bridge on U. S. Highway 79, 1 mile upstream from Missouri Pacific Railroad bridge and 6 miles northeast of Easterly)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (Calc.)
Jan. 1-2,5,1942	406	74	22	678	114	45	1,140	0.0	2,015	275
Jan. 6-7	254	56	17	428	110	47	710	.0	1,312	210
Jan. 8-10	156	43	13	253	122	46	400	.0	845	161
Jan. 11,13-20	185				117	51	500	.5	1,012	174 a/
Jan. 21-31	157	46	12	248	99	57	398	.8	864	164
Feb. 1	134						325			
Beb. 2	136									
Feb. 3	141									
Feb. 4	143						360			
Feb. 6	180						468			
Feb. 8	197						512			
Feb. 10	211						560			
Feb. 11	248						690			
Feb. 12	339						990			
Feb. 13	375						1,110			
Feb. 14	352									
Feb. 15	252						715			
Feb. 17	205						560			
Feb. 18	220									
Feb. 19	239						660			
Feb. 20	55.6						49			
Feb. 21	56.2									
Feb. 22	5-.5						46			
Feb. 23	52.8									
Feb. 24	53.9						51			
Feb. 25	487						1,470			
Feb. 26	684						2,130			
Feb. 27	620									
Feb. 28	607						1,860			

a/ Determined

Samples from Navasota River near Easterly, Texas, 1942, Specific Conductance ($Kx10^5$ at 25°C and Chloride (Cl.) determinations.

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance ($Kx10^5$ at 25°C)	Chloride (Cl)
Mar. 2, 1942	577	1,770
Mar. 3	477	1,445
Mar. 4	385	1,135
Mar. 5	310	875
Mar. 6	284	805
Mar. 7	259	720
Mar. 8	246	670
Mar. 9	212	565
Mar. 10	189	490
Mar. 11	196	505
Mar. 12	248	690
Mar. 13	210	570
Mar. 14	304	835
Mar. 15	675	1,900
Mar. 16	834	2,710
Mar. 17	724	2,390
Mar. 18	662	2,095
Mar. 19	585	1,825
Mar. 20	512	1,640
Mar. 21	438	1,395
Mar. 22	394	955
Mar. 23	317	--
Mar. 24	281	--
Mar. 25	249	665
Mar. 26	216	--
Mar. 27	196	--
Mar. 28	185	500
Mar. 30	180	--
Mar. 31	174	470
Apr. 1, 1942	182	460
Apr. 2	179	---
Apr. 3	175	---
Apr. 4	169	425
Apr. 5	163	---
Apr. 6	156	395
Apr. 7	146	---
Apr. 8	16.4	18
Apr. 9	15.0	20
Apr. 10	29.0	59
Apr. 11	51.8	98
Apr. 12	47.7	79
Apr. 13	63.9	131
Apr. 14	79.0	172
Apr. 15	92.8	210
Apr. 16	106	245
Apr. 17	114	271
Apr. 18	112	---
Apr. 19	114	---
Apr. 20	117	282
Apr. 21	56.3	120
Apr. 23	34.2	64
Apr. 24	92.4	214
Apr. 25	42.1	78
Apr. 26	71.3	162
Apr. 27	48.9	84
Apr. 30	35.1	38
May 1	32.0	32
May 2	41.0	56
May 3, 1942	46.0	--
May 4	56.0	91
May 5	55.3	--
May 6	59.4	--
May 7	62.1	--
May 8	65.5	121
May 9	32.0	49
May 10	55.1	113
May 11	51.7	93
May 12	27.2	40
May 13	14.0	13
May 15	49.3	79
May 16	38.3	58
May 17	43.1	70
May 18	24.7	36
May 19	12.0	--
May 20	11.4	13
May 21	16.2	19
May 22	29.1	52
May 23	25.2	36
May 25	22.8	30
May 26	53.2	88
May 27	147	375
May 28	87.0	180
May 29	73.2	136
May 30	67.4	--
May 31	65.4	110
June 2	69.6	116
June 4	71.3	--

Analyses of samples from Navasota River near Easterly, Texas, from Jan. 1, 1942, to Dec. 31, 1942
(Continued)

*Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
June 5, 1942	70.1						117			
June 6	--									
June 7	75.4						134			
June 8	58.9						99			
June 9	68.8						80			
June 10	71.5						131			
June 11	21.5						28			
June 12	40.1						69			
June 13	47.4						105			
June 14	60.5						128			
June 15	--									
June 16	23.6									
June 17	22.5						32			
June 18	--									
June 19	38.8						51			
June 20	--									
June 21	43.5						61			
June 22	48.2									
June 23	53.2						74			
June 24	55.5									
June 25	55.1						85			
June 26	62.1						102			
June 27	59.5									
June 28	59.2						96			
June 29	60.2									
June 30	61.1						102			
July 1	61.7						102			
July 2	62.4									
July 3	61.7									
July 4	66.8									
July 5	68.5									
July 6	68.2						105			

Analyses of samples from Navasota River near Easterly, Texas, from Jan. 1, 1942, to Dec. 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
July 7, 1942	--									
July 8	69.6									
July 9	68.8									
July 10	69.8						116			
July 11	72.3						121			
July 12	70.4									
July 13	75.9									
July 14	76.6									
July 15	75.2						133			
July 16	120						325			
July 17	110						290			
July 18	---									
July 19	--									
July 20	81.6						126			
July 21-26, 28-30	74.9	47	12	82	121	66	126	0.5	432	167
August 1	71.2						116			
August 2	70.5									
August 3	70.2									
August 4	68.8						112			
August 5	70.5									
August 6	70.2									
August 7	62.7						110			
August 8	--									
August 9	64.6									
August 10	66.6						106			
August 11	67.4						101			
August 12	65.8									
August 13	65.2									
August 14	62.3						93			
August 15	--									
August 16	62.2									
August 17	62.9									

Analyses of samples from Navasota River near [illegible], Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 18, 1942	60.4									
August 19	62.4									
August 20	62.5						92			
August 21	66.5						90			
August 22	65.3									
August 23	61.8									
August 24	61.5									
August 25	60.7						106			
August 26	58.3									
August 27	57.3									
August 28	60.0						105			
August 29	119									
August 30	119						264			
August 31	121									
September 1	182						506			
September 2	183									
September 3	182									
September 4	181									
September 5	116									
September 6	118						271			
September 7	108									
September 8	106						248			
September 9	32.6									
September 10	30.5						33			
September 11-20	41.5	34	6.1	38	110	20	58	0.5	255	110
September 21-22,24-27	54.6	38	6.6	63	116	29	93	3.0	322	122
October 1	65.4						103			
October 2	61.1									
October 3	63.3									
October 4	60.4									
October 5	60.0						104			
October 6	59.7									

Analyses of samples from Navasota River near Easterly, Texas, from January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 7, 1942	59.0									
October 8	58.9									
October 9	59.6									
October 10	58.7						99			
October 11	66.1						104			
October 12	64.3									
October 13	62.1									
October 14	60.8									
October 15	61.8									
October 16	49.8						86			
October 17	47.0									
October 18	117						208			
October 19	174						259			
October 20	--									
October 21-23	53.1	40	6.2	34	143	28	37	1.8	217	125
October 24-27	118	64	8.8	159	158	29	270	.5	686	196
October 28-31	216	67	11	356	135	31	598	0.2	1130	212
November 1-9	61.7	31	5.7	78	84	25	124	0.2	358	101
November 11-20	51.0	41	6.6	70	115	31	74	0.5	299	79
November 21-29	56.5	40	7.2	59	112	37	89	0.0	330	128
December 1-10	61.0	39	7.7	69	107	46	102	0.0	316	129
December 11-20	61.4	40	9.2	65	995	45	108	1.5	348	138
December 22-23, 25	72.3	46	10	83	110	50	138	0.5	382	156
December 27-28,30,31	32.7	21	5.1	35	72	16	52	0.8	165	73

D

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN BRAZOS RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	7/15/42	1,314	508	72	2,408	80	1,215	3,870	14	8,130	1,564
2	6/9/42	509	280	66	749	159	765	1,185	1.2	3,120	970
3	3/4/45	---	63	36	201	405	294	177	0.8	1,060	510
4	4/18-6/15, 1944	194	272	30	117	140	685	162	1.8	1,340	802
5	7/21-8/1, 1944	---	203	29	171	241	510	190	0.8	1,220	626
6	5/25-28/45	325	398	52	324	194	1,100	430	2.0	2,400	1,210
7	6/5/45	316	482	54	259	182	1,270	360	12	2,530	1,420
8	6/5-6/45	230	414	37	119	148	1,030	176	3.8	1,850	1,180
9	6/6-8/45	220	444	32	79	126	1,070	135	3.2	1,830	1,240
10	6/12-13/45	209	406	29	80	122	960	145	2.2	1,680	1,130
11	6/13-14/45	205	368	35	78	95	868	177	1.5	1,570	1,060
12	7/11-16/45	146	242	27	61	112	587	102	1.0	1,080	715
13	7/11-16/45	164	243	24	110	110	654	122	1.8	1,210	705
14	7/16-20/45	135	101	16	174	136	338	164	2.2	862	318
15	6/5-6/45	554	426	42	801	108	1,050	1,270	5.7	3,650	1,240
16	6/12/45	451	456	41	583	159	1,180	860	1.8	3,200	1,310
17	7/10-12/45	446	252	36	687	136	634	1,060	4.4	2,740	777
18	7/13/45	268	314	25	265	89	775	412	3.2	1,840	885
19	7/14-16/45	331	321	28	400	115	800	608	2.2	2,220	916
20	7/17-20/45	776	322	78	1,240	156	780	2,040	2.0	4,540	1,120
21	4/29-7/2/44	1,420	640	84	2,770	123	1,570	4,420	4.5	9,550	1,940
22	7/14-8/8/44	---	522	74	2,810	117	1,250	4,480	2.5	9,200	1,610
23	6/4/45	799	496	57	945	135	1,180	1,550	3.5	4,300	1,470
24	6/4-8/45	1,000	348	62	1,720	133	759	2,810	14	5,780	1,120
25	6/12/45	3,350	815	119	7,160	148	1,820	11,400	4.4	21,400	2,520
26	6/12/45	1,190	525	64	2,140	162	1,120	3,490	2.5	7,420	1,570
27	6/12-15/45	719	596	56	773	141	1,430	1,270	5.8	4,200	1,720
28	7/9-13/45	466	286	34	717	137	703	1,110	4.4	2,920	854
29	7/13/45	295	366	35	277	137	866	455	5.6	2,070	1,060

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS CONTINUED
ON STREAMS IN BRAZOS RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
30	7/13-16/45	393	274	32	563	118	686	870	3.0	2,490	563
31	7/16-20/45	685	286	58	1,130	152	742	1,780	4.6	4,080	952
32	5/5/45	30,100	1,770	1,080	92,800	40	3,060	147,000	--	246,000	8,860
33	5/19/45	30,700	1,830	1,160	96,400	38	2,910	153,000	--	255,000	9,340
34	6/7/45	29,500	1,940	931	85,300	44	3,610	135,000	--	227,000	8,670
35	8/2/45	28,800	1,940	1,220	90,500	22	3,400	144,000	--	241,000	9,860
36	5/5/45	30,700	1,890	1,180	96,400	64	3,160	153,000	--	256,000	9,570
37	5/19/45	30,700	1,770	1,200	97,000	51	2,830	154,000	--	257,000	9,350
38	3/25/44	74.1	73	15	62	93	185	72	0.8	460	244
39	7/15/42	67.7	64	21	48	186	105	63	0.0	396	246
40	7/8/41	---	117	30	174	154	200	325	1.5	934	416
41	3/17/44	---	---	--	---	398	180	222	37	---	---
42	5/5/43	---	53	4.5	168	172	110	178	1.0	626	151
43	4/21/43	---	61	5.4	42	149	64	49	3.5	316	174
44	3/19/42	129	106	29	125	112	290	185	.2	876	384
45	1/19/46	89.5	72	39	58	352	25	102	1.8	501	340

DESCRIPTION OF SAMPLING POINTS IN BRAZOS RIVER BASIN
NUMBERS CORRESPOND TO THOSE IN TABLE OF ANALYSES

1 Brazos River at Seymour, Texas, G. H. 0.86
2 Brazos River near South Bend, Texas, collected about 1/4 mile above confluence with Clear Fork
3 North Fork of Double Mountain Fork of Brazos River at County Road crossing, 4 miles north of Slaton, Tex.
4 Double Mountain Fork at Brazos River near Aspermont, Tex. Composite sample by Bureau of Reclamation
5 Double Mountain Fork at Brazos River near Aspermont, Tex. Composite sample by Bureau of Reclamation
6 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau Reclamtion composite No. 1
7 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau Reclamation composite No. 2
8 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 3
9 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 4
10 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 5
11 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 6
12 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 7
13 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 8
14 Double Mountain Fork at Brazos River near Aspermont, Tex. Bureau of Reclamation composite No. 9
15 Upper Salt Fork of Brazos River at bridge on county road 5 miles above Dove Creek. Bureau of Reclamation composite No. 1
16 Upper Salt Fork of Brazos River at bridge on county road 5 miles above Dove Creek. Bureau of Reclamation composite No. 2
17 Upper Salt Fork of Brazos River at bridge on county road 5 miles above Dove Creek. Bureau of Reclamation composite No. 3
18 Upper Salt Fork of Brazos River at bridge on county road 5 miles above Dove Creek. Bureau of Reclamation composite No. 4
19 Upper Salt Fork of Brazos River at bridge on county road 5 miles above Dove Creek. Bureau of Reclamation composite No. 5
20 Upper Salt Fork of Brazos River at bridge on county road 5 miles above Dove Creek. Bureau of Reclamation composite No. 6
21 Salt Fork of Brazos River near Aspermont, Texas. Composite sample Bureau of Reclamation
22 Salt Fork of Brazos River near Aspermont, Texas. Composite sample Bureau of Reclamation
23 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 1
24 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 2
25 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 3
26 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 4
27 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 5
28 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 6
29 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 7

DESCRIPTION OF SAMPLING POINTS IN BRAZOS RIVER BASIN CONTINUED

30 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 8
31 Salt Fork of Brazos River near Aspermont, Texas. Bureau of Reclamation, composite No. 9
32 Dove Creek about 6 miles above confluence of Salt Fork, Brazos River. Bur. of Recl. Sample No. 1
33 Dove Creek about 6 miles above confluence of Salt Fork, Brazos River. Bur. of Recl. Sample No. 2
34 Dove Creek about 6 miles above confluence of Salt Fork, Brazos River
35 Dove Creek about 6 miles above confluence of Salt Fork, Brazos River
36 Dove Creek about 1 mile above confluence of Salt Fork, Brazos River. Bur. of Recl. Sample No. 1
37 Dove Creek about 1 mile above confluence of Salt Fork, Brazos River. Bur. of Recl. Sample No. 2
38 Clearfork of the Brazos River at Stamford, Texas
39 Clearfork of the Brazos River near Crystal Falls, Texas
40 Clearfork of the Brazos River $\frac{1}{2}$ mile above confluence with Brazos River at South Bend, Texas
41 Salt Branch of Mule Creek 2 miles south of Haskell, Texas
42 Nolan Creek at Killeen, Texas
43 Navasota River at Groesbeck, Texas
44 Yegua Creek near Summerfield, Texas, G.H. 3.70, 3:30 P.M.
45 Sulfur Creek at Lampasas, Texas

ANALYSES OF SURFACE WATERS

IN

COLORADO RIVER BASIN

...om Colorado River near Austin, Texas, October 1, 1941 to September 30, 1942.
...es collected at gaging station at Montopolis Bridge at southeast edge of Austin at bridge on U. S. Highway 290.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (Calc.)
1941											
Oct. 1		48	14	7.6	159	22	28	0.6	225	0.31	178
Nov. 5, 10	42.5				188		30	1.5	240	.33	180a/
Nov. 12,14,18,19	43.7	49	15	20	194	24	31		246	.33	184
Nov. 21,24,26,28	44.8				190	22	30		252	.34	172a/
Dec. 1,3,5,8, 11,12,15,17, 19,22,24,26	46.5	48	14	27	186	27	36		262	.36	172
1942											
Jan. 2,5,7,9, 12,14,16,19, 21,23,26,28,30	47.0	48	13	29	187	27	38	1.2	265	.36	174
Feb. 2,6,7,9,11, 13,16,25,27	46.7	48	16	25	190	27	39	1.5	263	.36	186
Mar. 2,4,6,9,11, 13,16,18, 20,23,25,27, 30	47.0	48	14	32	197	28	39	1.0	268	.36	177
Apr. 1,3,6,8,10, 13,15,17,20, 22,24,27,29	46.1	47	15	24	191	26	33	1.5	270	.37	179
May 1,4,6,8,11, 13,15,17,20, 22,25,27,29	48.2	51	15	27	202	27	37	1.2	272	.37	189
June 1,3,5,8,10, 12,15,17,19,22, 24,26,29	46.9	48	15	28	195	27	38	1.0	273	.37	182
July 1,3,5,6,8, 10,13,15,17,20, 22,24,27,29,31	48.5	49	15	31	200	29	40	1.5	308	.42	184

Analyses of samples from Colorado River near Austin, Texas, October 1, 1941 to September 30, 1942
(Composites of samples collected at gaging station at Montopolis Bridge at southeast edge of Austin at bridge on U. S. Highway 290.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre foot	Total hardness as $CaCO_3$ (calc.)
Aug. 3, 5, 7, 10, 12, 14, 17, 19, 21, 24, 26, 28, 31, 1942	49.9	48	15	37	198	32	45	1.8	285	0.39	182
Sept. 2, 4, 7, 8, 9, 11, 14, 16, 18, 21, 23, 25, 28, 30	47.8	49	15	29	193	30	40	1.5	280	.38	184

ANALYSES OF SAMPLES FROM COLORADO RIVER AT WHARTON, TEXAS, APRIL 12, 1944 to SEPT. 30, 1944

(Composites of daily samples collected at gaging station on bridge on U.S. Highway 96 in Wharton, Wharton County, 1,000 feet downstream from Texas and New Orleans Railroad bridge and 12 miles upstream from Jones Creek. Drainage area 41,150 square miles. Analyses in parts per million. Analyzed by Geological Survey.)

Date of Collection	Mean discharge (Second-feet)	Specific conductance ($K \times 10^5$) at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
Apr. 12-20, 1944	1,641	51.3	54	16	28	207	37	47	2.5	322	0.40	1,430	201	31	25
Apr. 21-30	1,430	53.1	54	17	36	211	36	51	2.0	323	0.41	1,250	205	32	28
May 1-10	2,688	44.7	50	13	27	168	35	42	3.5	275	0.34	2,000	178	41	25
May 11-14,16-19	2,869	42.4	51	10	21	149	39	34	5.4	267	0.32	2,070	168	46	22
May 24-31	5,059	40.3	46	11	20	151	29	34	2.2	249	0.30	3,400	160	36	21
June 1 -10	2,715	51.1	54	15	27	188	35	44	3.2	304	0.37	2,230	196	42	23
June 11-17, 19-20	2,476	50.8	52	15	27	188	35	41	2.2	311	0.36	2,080	192	38	24
June 21-30	2,032	52.0	48	17	30	178	33	51	4.0	322	.37	1,770	190	44	26
July 1,3-4 6-10	2,096	51.7	50	17	36	191	34	56	3.8	313	.40	1,770	195	38	29
July 11-14 17-19	2,541	49.3	44	18	33	176	37	49	4.5	295	.37	2,020	184	40	28
July 22-31	2,575	49.6	46	17	36	198	33	46	2.0	287	.38	2,000	185	23	30
Aug. 1-3,5,8-10	2,518	51.0	49	18	26	185	33	47	1.2	300	.36	2,040	196	45	22
Aug 11-18,20	2,191	48.7	46	18	26	180	32	45	1.2	291	.35	1,720	189	41	23
Aug 23-31	2,216	46.5	44	18	23	177	29	41	0.5	274	.33	1,640	184	39	21
Sept. 1-8,10	4,220	35.2	40	12	17	149	23	28	1.5	229	.27	2,610	150	27	20
Sept. 11-20	2,338	42.6	46	13	22	174	26	32	0.8	250	.31	1,580	168	26	22
Sept. 24-30	3,131	43.3	44	13	29	178	24	38	1.2	252	.32	2,130	163	17	28
Weighted Average	2,649	46.0	47	15	26	175	32	41	2.4	279	0.38	2,000	179	36	24

Analyses of Samples from Colorado River at Wharton, Texas, October 1, 1944 to September 30, 1945

(Composites of daily samples collected at gaging station on bridge on U. S. Highway 96 in Wharton, Wharton County, 1,000 feet downstream from Texas and New Orleans Railroad bridge and 12 miles upstream from Jones Creek. Drainage area 41,150 square miles.

Analyzed by Geological Survey

Date of collection	Mean discharge (second-feet)	Specific conductance (K x 10^5 at 25°C)	Parts per million: 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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
Oct. 1-10, 1944	2,992	42.2	44	14	20	169	22	35	0.8	247	0.34	2,000	168	29	21
Oct. 11-20	2,405	43.9	44	15	25	182	24	36	1.2	260	.35	1,690	172	22	24
Oct. 21-31	2,357	48.0	46	16	24	183	26	39	1.5	267	.36	1,700	181	31	23
Nov. 1-10	1,869	48.8	48	18	26	192	30	43	1.2	290	.39	1,460	194	36	22
Nov. 11-20	1,828	48.8	54	17	21	207	16	41	1.8	294	.40	1,450	205	35	14
Nov. 21-30	5,385	33.9	40	8.1	9.5	128	15	22	2.8	207	.28	3,010	133	28	13
Dec. 1-10	7,414	40.2	46	10	14	142	31	26	2.2	232	.32	4,640	156	40	17
Dec. 11-20	2,925	45.7	56	13	17	181	30	35	2.8	277	.38	2,190	193	45	16
Dec. 21-28	2,368	50.5	56	16	23	200	30	42	3.2	296	.40	1,890	206	42	20
Dec. 29-31	6,700	31.1	37	9.6	6.3	114	16	24	1.8	196	.27	3,550	132	38	9
Jan. 1-10, 1945	4,168	39.2	46	10	16	137	34	29	3.4	251	.34	2,820	156	44	19
Jan. 11-18	2,828	46.1	54	15	19	188	30	36	1.0	266	.36	2,030	196	42	17
Jan. 19-24	14,700	29.3	41	7.6	4.3	121	22	14	1.5	180	.24	7,140	134	34	7
Jan. 25-31	3,190	44.9	55	13	20	193	30	30	2.5	269	.37	2,320	191	32	18
Feb. 1-10	3,417	45.6	53	14	21	188	31	34	2.5	278	.38	2,560	190	36	20
Feb. 11-19	4,272	43.7	52	14	15	178	22	34	2.8	287	.39	3,310	187	41	14
Feb. 20-28	4,629	42.8	49	12	27	169	36	31	2.5	260	.35	3,250	172	33	19
Mar. 1-10	3,179	50.2	61	16	23	214	34	39	2.5	324	.44	2,780	218	42	19
Mar. 11-20	3,540	48.5	54	15	23	196	30	38	1.8	281	.38	2,690	196	36	20
Mar. 21-31	3,878	43.3	51	15	19	176	30	38	.8	255	.35	2,670	189	45	18
Apr. 1-4	23,380	23.7	34	7.2	4.8	107	18	12	1.8	182	.25	11,500	114	27	8
Apr. 5-10	4,565	37.4	49	9.4	14	153	28	24	2.8	247	.34	3,040	161	36	16
Apr. 11-20	3,310	45.6	50	16	27	190	33	42	.5	290	.39	2,590	191	35	24
Apr. 21-30	5,986	39.7	49	12	21	169	34	30	2.2	260	.35	4,200	172	33	22
May 1-10	3,454	47.6	50	16	27	201	28	38	1.8	278	.38	2,590	191	26	23
May 11-20	2,697	48.4	58	18	16	208	29	37	1.5	294	.40	2,140	218	48	14
May 21-31	1,735	49.2	54	18	20	199	29	41	.8	289	.39	1,350	209	46	17
June 1-10	1,718	48.6	50	18	20	193	28	39	.5	281	.38	1,300	199	41	18

Colorado River at Wharton, Texas, (Continued)
October 1, 1944 to September 30, 1945

Analyzed by Geological Survey — Parts per million

Date of collection	Mean discharge (Second-feet)	Specific conductance (K x10^5 at 25°C)	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	Dissolved Solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Non-carbonate	Per cent sodium
June 11-20, 1945	3,392	47.1	51	17	21	187	32	39	1.5	297	0.40	2,720	197	44	19
June 21-30	3,320	36.2	45	9.2	18	144	30	26	3.0	237	.32	2,120	150	32	20
July 1-10	1,624	47.2	48	17	29	186	31	48	1.2	296	.40	1,300	190	38	25
July 11-20	1,838	49.6	49	18	28	200	27	45	1.5	297	.40	1,470	196	32	23
July 21-31	4,739	45.5	48	18	20	191	25	37	2.2	274	.37	3,510	194	37	18
Aug. 1-10	4,444	44.1	46	17	28	202	24	37	2.2	258	.35	3,100	185	19	25
Aug. 11-20	3,075	45.4	46	17	23	191	23	37	1.2	271	.37	2,250	185	28	21
Aug. 21-26	2,345	45.4	44	18	30	200	25	42	.5	268	.36	1,700	184	20	26
Aug. 27-31	6,430	30.8	37	11	18	150	14	27	1.2	215	.29	3,730	138	14	22
Sept. 1-10	2,934	46.2	47	16	24	179	28	41	1.2	300	.41	2,380	183	36	22
Sept. 11-20	2,248	46.2	46	18	25	192	24	42	1.5	300	.41	1,820	189	31	22
Sept. 21-30	2,358	46.2	47	19	23	193	26	42	.2	276	.38	1,760	195	37	20
Weighted Average	3,766	41.3	47	13	18	168	27	32	1.9	255	0.35	2,590	171	33	19

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS ON STREAMS IN COLORADO RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance $K \times 10^5$ At 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	8-28-41	83.3	--	--	--	150	60	151	2.5	492	172 a/
2	8-29-41	47.0	--	--	--	223	32	34	.5	293	178 a/
3	9-17-41	48.7	--	--	--	220	30	33	1.0	298	206 a/
4	10/1-10/41	44.1	--	--	--	175	26	37	--	261	165 a/
5	10/11-20/41	44.5	--	--	--	183	23	29	--	220	144 a/
6	10/21-31/41	42.0	49	11	16	166	28	26	1.0	235	168
7	8-10-45	---	82	28	36	322	45	61	1.5	484	320
8	12- -42	---	48	25	21	256	19	26	0.0	274	223
9	1-16-46	50.6	72	22	1.1	276	17	20	1.2	281	270

a/ Determined

DESCRIPTION OF SAMPLING POINTS

1 Colorado River near San Saba, Texas
2 Colorado River near Eagle Lake, Texas
3 Colorado River at Eagle Lake, Texas
4 Colorado River near Eagle Lake, Texas
5 Colorado River near Eagle Lake, Texas
6 Colorado River at Eagle Lake, Texas
7 North Concho Creek at gaging station at Sterling City, Texas
8 Pecan Creek 10 miles south of San Angelo, Texas
9 San Saba River near Menard, Texas

ANALYSES OF SURFACE WATERS

IN

LAVACA RIVER BASIN

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN LAVACA RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	8-21-45	63.9	71	8.0	62	260	26	74	0.0	390	210
2	7- -45	----	59	28	109	144	59	226	.0	567	262
3	7- -45	----	52	25	111	136	56	216	.0	661	233
4	7- -45	----	77	25	77	213	41	174	.2	596	295

1 Lavaca River at Edna, Texas; time: 5:30.
2 Goff Bayou near Port Lavaca, Texas.
3 Jenkins Canal near Port Lavaca, Texas.
4 Steam Boat Bayou near Port Lavaca, Texas.

ANALYSES OF SURFACE WATERS

IN

GUADALUPE RIVER BASIN

Analyses of samples from Guadalupe River near Spring Branch, Texas, January 1, 1942, to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 46, 4 miles southeast of Spring Branch and 6 miles downstream from Curry Creek.)
Analyzed by U. S. Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium Na + K (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
January 1-10, 1942	52.0	64	23	12	273	22	22	4.5	296	254
January 11-18	53.0				270	23	21	5.5	292	267 a/
January 19	88.1				302	86	86	7.2		352 a/
January 21-31	50.5	62	22	16	272	21	21	4.5	290	245
February 1	50.9				269					
February 2	51.1									
February 3	50.6									
February 4	50.9									
February 5	50.2				269					
February 6	50.0									
February 7	50.4									
February 8	51.9									
February 9	--									
February 10	49.9				270					
February 11	49.9				261					
February 12	50.0									
February 13	49.8									
February 14	50.3				266					
February 15	49.3									
February 16	49.7									
February 17	50.0				259					
February 18	50.0									
February 19	48.8				257					
February 20	50.5				259		19			
February 21	49.8				270		19			
February 25	--									
February 26	57.6				270		20			
February 27	--									
February 28	47.6				260		18			
March 1	49.9				266					
March 2	50.0									

a/ Determined.

Analyses of samples from Guadalupe River near Spring Branch, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
March 3, 1942	48.8		April 3, 1942	47.2	
March 4	49.6		April 4	47.0	
March 5	49.9		April 5	46.6	246
March 6	49.7		April 6	47.1	
March 7	49.0		April 7	45.7	242
March 8	49.0		April 8	26.1	140
March 9	49.0		April 9	34.8	187
March 10	49.0		April 10	45.3	244
March 11	99.9		April 11	49.6	20
March 12	49.1		April 12	48.3	
March 13	49.0		April 13	48.4	
March 14	49.3		April 14	48.5	
March 15	49.4		April 15	48.2	20
March 16	49.6		April 16	51.9	
March 17	48.9		April 17	47.5	
March 18	48.8		April 18	48.0	
March 19	46.6		April 19	48.0	20
March 20	47.0		April 20	29.8	10
March 21	48.4		April 21	33.1	14
March 22	48.1		April 22	35.3	
March 23	48.0		April 23	32.0	
March 24	48.0		Arpil 24	37.7	12
March 25	48.4		April 25	24.1	7.0
March 26	48.4		April 26	23.9	
March 27	49.2		April 27	25.4	6.0
March 28	47.8		April 28	45.2	13
March 29	47.2		April 29	51.1	
March 30	46.2		April 30	48.0	13
March 31	46.9		May 1	49.3	16
April 1	45.9		May 2	49.5	
April 2	46.4		May 3	49.1	

Analyses of samples from Guadalupe River near Spring Branch, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by U. S. Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
May 4, 1942	34.4	10	June 5, 1942	49.5	18
May 5	42.5		June 6	48.2	
May 6	33.4		June 7	49.5	
May 7	43.7	16	June 8	49.6	16
May 8	28.6	6.0	June 9	49.6	
May 9	35.9	8.0	June 10	49.0	20
May 10	41.9	11	June 11	--	
May 11	46.2	14	June 12	51.9	21
May 12	--		June 13	48.4	
May 13	48.5		June 14	47.4	
May 14	50.0		June 15	48.4	
May 15	50.3		June 16	47.9	18
May 16	50.3	16	June 17	47.7	
May 17	--		June 18	49.9	
May 18	50.3		June 19	47.9	
May 19	49.1	18	June 20	47.3	18
May 20	28.6	8.0	June 21	48.1	20
May 21	35.2	8.0	June 22	48.0	
May 22	48.2		June 23	48.2	
May 23	51.5	13	June 24	48.2	20
May 24	51.6		June 25	47.4	
May 25	50.2		June 26	49.0	
May 26	50.6		June 27	48.4	18
May 27	50.6	15	June 28	47.5	
May 28	50.2		June 29	47.6	
May 29	50.2		June 30	46.9	18
May 30	48.3	14	July 1	49.1	20
May 31	--		July 2	46.4	
June 1	47.7	17	July 3	47.7	
June 2	49.2		July 4	46.8	
June 3	53.4	30	July 5	39.1	14
June 4	49.3		July 6	44.9	

Analyses of Samples from Guadalupe River at Spring Branch, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
July 7, 1942	46.5									
July 8	46.4									
July 9	47.9									
July 10	47.2						18			
July 11	45.1						16			
July 12	46.5									
July 13	46.3									
July 14	45.9						18			
July 15	47.7									
July 16	48.0									
July 17	46.4						19			
July 24-31	46.1	53	22	13	240	19	23	2.8	280	223
August 1	45.7						21			
August 2	45.1									
August 3	47.8									
August 4	45.4									
August 5	45.6									
August 6	43.7									
August 7	45.4									
August 8	45.1									
August 9	45.1									
August 10	44.8						21			
August 11	--									
August 12	49.0						26			
August 13	45.2									
August 14	46.1									
August 15	46.1									
August 16	48.1						32			
August 17	43.1									
August 18	41.1									
August 19	28.8						12			
August 20	31.2						14			

Analyses of Samples from Guadalupe River nr. Spring Branch, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 21, 1942	47.4						21			
August 22	46.6									
August 23	48.5									
August 24	48.2									
August 25	50.8									
August 26	48.1									
August 27	45.9						29			
August 28	39.2						13			
August 29	87.5						91			
August 30	45.6									
August 31	47.2						23			
September 1	45.9						16			
September 2	47.2									
September 3	45.2									
September 4	45.5									
September 5	46.5						19			
September 6	52.3									
September 7	47.3									
September 8	26.2						5.0			
September 9	29.1									
September 10	42.1						9.0			
September 11-20	47.6	69	15	11	268	12	16	3.0	295	234
September 21, 23-30	48.9	68	18	15	273	24	17	3.5	326	244
October 1	53.1						19			
October 2	49.0									
October 3	50.0									
October 4	37.5						13			
October 5	33.3									
October 6	37.8									
October 8	43.5									
October 9	41.1						12			
October 10	--									

Analyses of samples from Guadalupe River nr. Spring Branch, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25^0C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 11, 1942	--									
October 12	48.1						17			
October 13	48.5									
October 14	50.7									
October 15	50.0									
October 16	37.3						13			
October 17	32.7									
October 19	35.2									
October 20	40.2						19			
October 22-31	51.0	72	18	7.1	271	18	18	4.0	332	254
November 1-10	49.9	67	21	14	279	22	19	6.4	313	254
November 11-20	51.5	68	22	11	282	22	18	3.5	309	260
November 21-30	48.4	69	18	11	270	19	17	4.0	300	246
December 1-10	56.0	70	19	18	280	25	24	4.0	345	252
December 11-20	53.5	72	22	11	290	23	20	4.0	313	270
December 21-31	51.0	70	21	10	283	20	19	4.0	310	261

Analyses of samples from Guadalupe River near Spring Branch, Texas, from January 1, 1944, to September 30, 1944 (Composites of daily samples collected at gaging station at bridge on State Highway 46, 4 miles southeast of Spring Branch and 6 miles downstream from Curry Creek.)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_4)	Dissolved solids	Total hardness as $CaCO_3$
January 1-10, 1944	46.0	60	18	12	252	16	17	2.8	250	224
January 11-20	50.1	67	18	16	278	17	20	3.0	290	241
January 21-31	46.1	57	19	12	239	19	20	3.2	265	220
February 1-10	47.3	63	19	14	257	23	20	2.5	279	235
February 11	32.0						18			
February 12	36.0									
February 13	31.9									
February 14	33.2									
February 15	47.9									
February 16	42.4						18			
February 17	--									
February 18	47.1									
February 19	50.2									
February 20	47.9						18			
February 21	50.2						24			
February 22	49.3									
February 23	47.4									
February 24	48.8									
February 25	--									
February 26	37.0									
February 27	35.8						11			
February 28	37.4									
February 29	43.6						12			
March 1	48.3						16			
March 2	42.1									
March 3	51.7									
March 4	28.1						22			
March 5	51.4									
March 6	52.4									
March 7	52.9									
March 8	46.5									

Analyses of samples from Guadalupe River near Spring Branch, Texas, from January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
March 9, 1944	52.0	18	April 10, 1944	47.8	
March 10	--		April 11	49.3	
March 11	52.5	20	April 12	49.7	
March 12	49.2		April 13	41.5	24
March 13	52.3		April 14	56.2	34
March 14	51.0		April 15	54.5	
March 15	29.3	90	April 16	51.4	
March 16	47.7		April 17	43.2	19
March 17	36.4		April 18	46.0	
March 18	35.0		April 19	50.3	
March 19	45.7		April 20	51.3	
March 20	41.0	12	April 21	51.5	18
March 21	51.2	16	April 22	45.3	16
March 22	51.2		April 23	46.1	
March 23	49.5		April 24	49.8	
March 24	34.4	10	April 25	51.0	
March 25	49.4		April 26	48.7	
March 26	50.5		April 27	49.8	
March 27	50.8		April 28	50.5	
March 28	57.0	33	April 29	50.8	
March 29	51.1		April 30	49.6	16
March 30	52.8		May 1	26.7	
March 31	53.7		May 2	25.3	50
April 1	49.9	17	May 3	35.3	
April 2	--		May 4	43.4	12
April 3	38.7		May 5	44.3	
April 4	56.1		May 6	40.5	
April 5	34.3	15	May 7	49.9	29
April 6	53.5		May 8	45.9	
April 7	58.7	31	May 9	48.1	
April 8	51.3		May 10	37.6	11
April 9	39.0	17	May 11	48.5	

Analyses of samples from Guadalupe River near Spring Branch, Texas, January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
May 12, 1944	45.2	16	June 13, 1944	46.9	
May 13	50.0		June 14	46.7	
May 14	51.1		June 15	45.6	
May 15	--		June 16	46.2	
May 16	51.1		June 17	42.6	
May 17	51.9		June 18	53.5	20
May 18	50.7		June 19	46.2	
May 19	53.3	20	June 20	51.8	
May 20	--		June 21	52.3	19
May 21	51.2	18	June 22	51.1	
May 22	46.9		June 23	53.2	
May 23	46.7		June 24	46.8	20
May 24	45.9		June 25	51.8	
May 25	46.2		June 26	51.8	
May 26	23.9	7.0	June 27	47.7	
May 27	44.8		June 28	52.5	
May 28	33.3		June 29	51.3	
May 29	55.4		June 30	49.7	
May 30	56.7		July 1	47.4	
May 31	55.7		July 2	46.8	18
June 1	56.9		July 3	48.2	
June 2	46.8	17	July 4	52.7	
June 3	55.8		July 5	52.2	
June 4	58.2	17	July 6	51.6	
June 5	53.9		July 7	46.8	
June 6	55.3		July 8	51.4	
June 7	51.3		July 9	--	
June 8	54.4		July 10	51.4	22
June 9	52.1		July 11	50.9	
June 10	39.0	18	July 12	38.5	20
June 11	47.8		July 13	48.6	
June 12	42.2	19	July 14	52.3	22

Analyses of samples from Guadalupe River near Spring [illegible], Texas, January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
July 15, 1944	52.0		August 16, 1944	37.5	
July 16	52.2		August 17	45.9	
July 17	43.0		August 18	48.8	
July 18	44.7		August 19	44.8	
July 19	47.8		August 20	49.8	24
July 20	51.0		August 21	47.9	
July 21	50.1		August 22	40.1	20
July 22	39.0		August 23	49.6	
July 23	50.5		August 24	50.1	
July 24	50.3	22	August 25	50.1	22
July 25	50.3		August 26	49.6	
July 26	--		August 27	48.4	
July 27	49.9		August 28	47.7	
July 28	36.8	24	August 29	--	
July 29	50.5		August 30	32.9	
July 30	49.8		August 31	28.3	6.0
July 31	50.3		September 1	34.3	8.0
August 1	47.4		September 2	--	
August 2	50.5		September 3	48.0	
August 3	38.4	24	September 4	47.0	
August 4	48.1		September 5	50.1	26
August 5	49.7		September 6	48.5	
August 6	64.5	104	September 7	34.8	
August 7	43.3		September 8	35.3	
August 8	40.9		September 9	41.5	
August 9	40.6		September 10	--	
August 10	40.2		September 11	44.2	
August 11	86.3	160	September 12	41.7	18
August 12	38.2		September 13	53.0	18
August 13	50.5		September 14	49.4	
August 14	50.6	22	September 15	48.4	
August 15	37.4	24	September 16	50.1	

Analyses of samples from Guadalupe River near Spring Branch, Texas, from January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
September 17, 1944	45.8	
September 18	45.8	
September 19	45.0	
September 20	48.8	
September 21	51.4	
September 22	45.1	
September 23	--	
September 24	51.5	
September 25	51.4	
September 26	51.5	
September 27	50.3	20
September 28	45.9	
September 29	50.8	
September 30	51.5	

Analyses of samples from Guadalupe River near Spring Branch, Texas, October 1, 1944 to August 31, 1945 (Composites of daily samples collected at gaging station at bridge on State Highway 46, 4 miles southeast of Spring Branch and 6 miles downstream from Curry Creek):

Analyzed by U. S. Geological Survey

Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Chloride (Cl)	Date of collection	Specific conductance $K \times 10^5$ at 25°C	Chloride (Cl)
October 1, 1944	51.5		November 1, 1944	49.9	
October 2	53.1		November 2	52.4	
October 3	54.5		November 3	---	
October 4	56.6	26	November 4	54.3	—
October 5	25.7	10	November 5	40.2	26
October 6	27.0		November 6	---	
October 7	33.4		November 7	52.2	
October 8	43.5		November 8	---	
October 9	44.9		November 9	---	
October 10	51.1	16	November 10	---	
October 11	59.0	46	November 11	---	
October 12	53.8		November 12	---	
October 13	53.4		November 13	---	
October 14	48.0		November 14	---	
October 15	54.7		November 15	61.2	
October 16	---		November 16	53.1	
October 17	54.3		November 17	53.9	
October 18	53.4		November 18	51.1	22
October 19	49.8		November 19	62.8	42
October 20	50.3		November 20	---	
October 21	53.0		November 21	54.1	26
October 22	---		November 22	52.7	
October 23	41.1		November 23	---	
October 24	49.1		November 24	50.0	
October 25	---		November 25	52.9	
October 26	---		November 26	---	
October 27	52.0	22	November 27	---	
October 28	52.5		November 28	---	
October 29	52.7		November 29	---	
October 30	53.3		November 30	56.6	
October 31	55.0		December 1	57.2	

Guadalupe River near Spring Brance, Texas, October 1, 1944 to August 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
December 2, 1944	56.5		January 3, 1945	51.1	
December 3, 1944	57.2		January 4	48.7	
December 4	57.2		January 5	50.3	
December 5	42.0		January 6	44.5	
December 6	37.8		January 7	32.0	18
December 7	50.5		January 8	---	
December 8	50.5		January 9	47.6	
December 9	50.5		January 10	46.9	
December 10	52.2		January 11	55.6	
December 11	54.6		January 12	55.6	
December 12	54.6		January 13	---	
December 13	53.2		January 14	55.2	
December 14	55.6		January 15	55.2	
December 15	56.7		January 16	53.7	20
December 16	58.3		January 17	51.9	
December 17	56.1		January 18	51.9	
December 18	53.2		January 19	50.3	
December 19	54.6		January 20	54.2	
December 20	54.6		January 21	50.3	
December 21	54.6		January 22	50.3	
December 22	56.7		January 23	51.3	
December 23	56.7		January 24	45.8	
December 24	51.3		January 25	44.6	
December 25	54.1		January 26	54.9	20
December 26	---		January 27	47.5	
December 27	51.8		January 28	45.4	
December 28	---		January 29	54.4	
December 29	---		January 30	21.1	34
December 30	53.6		January 31	53.3	
December 31	53.6		February 1	41.6	18
January 1, 1945	44.5		February 2	56.5	20
January 2	50.3	22	February 3	55.6	

Guadalupe River near Spring Branch, Texas, October 1, 1944 to August 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of Collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of Collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
February 4, 1945	54.1		March 8, 1945	54.5	
February 5	54.1		March 9	60.5	
February 6	54.5		March 10	54.5	
February 7	53.3		March 11	54.6	
February 8	55.0		March 12	55.1	
February 9	54.6	20	March 13	55.1	
February 10	---		March 14	51.3	
February 11	44.6		March 15	42.5	
February 12	42.6		March 16	34.9	12
February 13	50.6		March 17	45.8	
February 14	51.9		March 18	54.5	
February 15	51.9		March 19	60.2	35
February 16	53.7		March 20	---	
February 17	55.3	18	March 21	39.3	
February 18	54.6		March 22	38.3	
February 19	54.6		March 23	36.3	
February 20	53.0		March 24	40.3	
February 21	42.3	18	March 25	40.3	20
February 22	51.6		March 26	38.5	
February 23	44.2		March 27	37.0	
February 24	53.6		March 28	38.7	
February 25	54.3	18	March 29	40.3	
February 26	46.3		March 30	40.3	
February 27	51.3		March 31	---	
February 28	63.8		April 1	38.5	12
March 1	60.5	38	April 2	46.1	
March 2	---		April 3	45.2	
March 3	47.2		April 4	50.9	
March 4	46.1	14	April 5	50.9	
March 5	46.1		April 6	52.3	
March 6	54.5		April 7	62.1	22
March 7	54.5		April 8	53.9	

Guadalupe River near Spring Branch, Texas, October 1, 1944 to August 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of Collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 9, 1945	52.3		May 11, 1945	51.9	
April 10	56.4		May 12	37.9	
April 11	40.7	18	May 13	51.3	
April 12	46.5		May 14	51.9	
April 13	54.3		May 15	52.3	22
April 14	---		May 16	51.0	
April 15	52.5		May 17	51.6	
April 16	52.5		May 18	51.3	
April 17	52.5		May 19	51.0	
April 18	---		May 20	53.0	
April 19	54.3		May 21	52.2	
April 20	54.3	20	May 22	51.3	
April 21	54.2		May 23	51.3	
April 22	54.8		May 24	51.3	22
April 23	35.2	24	May 25	50.6	
April 24	52.5		May 26	51.3	
April 25	50.7		May 27	---	
April 26	49.8		May 28	50.6	
April 27	50.4		May 29	---	
April 28	60.0	22	May 30	51.3	
April 29	52.7		May 31	---	
April 30	52.7		June 1	40.9	
May 1	52.0		June 2	51.2	
May 2	52.7		June 3	51.7	
May 3	52.7		June 4	52.2	
May 4	52.7	20	June 5	49.5	
May 5	53.2		June 6	47.8	
May 6	51.8		June 7	52.2	
May 7	51.8		June 8	51.4	
May 8	52.5		June 9	54.4	38
May 9	---		June 10	50.6	
May 10	51.9		June 11	49.3	

Guadalupe River near Spring Branch, Texas. October 1, 1944 to August 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of Collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of Collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
June 12, 1945	48.3		July 14, 1945	30.9	
June 13	47.9		July 15	39.1	
June 14	48.3		July 16	39.1	
June 15	47.1		July 17	37.1	
June 16	50.8		July 18	34.5	
June 17	48.3		July 19	37.1	
June 18	50.3		July 20	---	
June 19	---		July 21	47:1	18
June 20	50.8		July 22	---	
June 21	50.2		July 23	49.0	26
June 22	49.7		July 24	---	
June 23	44.9		July 25	47.8	
June 24	43.1		July 26	47.8	
June 25	43.6		July 27	47.8	
June 26	46.1		July 28	47.8	
June 27	46.1		July 29	48.6	
June 28	47.4		July 30	48.2	
June 29	48.5		July 31	48.2	
June 30	47.8		August 1	---	
July 1	---		August 2	---	
July 2	43.0		August 3	---	
July 3	36.7		August 4	---	
July 4	45.1		August 5	---	
July 5	---		August 6	47.8	
July 6	45.1		August 7	47.4	
July 7	43.0		August 8	47.4	22
July 8	43.0		August 9	47.8	
July 9	46.3		August 10	47.4	
July 10	42.5		August 11	53.3	
July 11	45.8		August 12	46.2	
July 12	30.9		August 13	47.7	
July 13	30.9		August 14	48.1	

Guadalupe River near Spring Branch, Texas, October 1, 1944 to August 31, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of Collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of Collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
August 15, 1945	47.7				
August 16	48.1	24			
August 17	48.1				
August 18	47.7				
August 19	49.7				
August 20	46.2				
August 21	42.3				
August 22	47.7				
August 23	46.9				
August 24	92.1	112			
August 25	73.3				
August 26	---				
August 27	---				
August 28	---				
August 29	50.1				
August 30	35.9	18			
August 31	---				

Analyses of samples from Guadalupe River at Victoria, Texas, September 1, 1945 to September 30, 1945
(Composites of daily samples collected at bridge on U. S. Highway 96 in Victoria, Victoria County, 1,300 feet upstream from Texas and New Orleans Railroad bridge and 10 miles upstream from Coleto Creek.)

Analyzed by U. S. Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium Na+K (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
September 1-10, 1945	144	88	29	157	203	60	318	3.8	832	338
September 11-20	137	86	31	139	201	58	296	1.2	789	342
September 21-30	152	92	30	171	227	57	340	.8	866	353

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
1942											
Jan. 1-10	89.8	100	22	55	302	78	90	6.0	541	0.74	340
Jan. 11-17,20	90.0				300	82	92	7.8	542	.74	297a/
Jan. 18-19	53.1				272	22	25	1.2	300	.41	246a/
Jan. 21-31	89.2	97	21	66	293	86	94	9.4	553	.75	328
Feb. 1	93.0				301						
Feb. 2	89.8										
Feb. 3	91.6										
Feb. 4	88.3				295						
Feb. 5	-				-						
Feb. 6	93.2				300						
Feb. 7	91.3										
Feb. 8	90.9										
Feb. 9	81.2										
Feb. 10	86.0				273						
Feb. 11	89.0				282						
Feb. 12	87.7										
Feb. 13	92.4										
Feb. 14	89.3										
Feb. 15	89.1				297						
Feb. 18	85.3				288						
Feb. 19	84.9				298						
Feb. 20	79.5				256		76				
Feb. 21	83.7				290		76				
Feb. 22	-				-		760				
Feb. 23	-				-		1,320				
Feb. 24	-				-		3,830				
Feb. 25	116				312		133				
Feb. 26	103				-		-				
Feb. 27	97.0				322		116				
Feb. 28	92.2				308		91				

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (Calc.)
March 1, 1942	51.7				128						
" 2	49.7				-						
" 3	50.2				132						
" 4	94.0				300						
" 5	93.1				-						
" 6	94.1				302						
" 8	52.0				262						
" 9	89.6				292						
" 10	91.9				-						
" 11	92.7				287						
" 12	92.1				-						
" 13	91.9				-						
" 14	89.8				297						
" 15	90.3				-						
" 16	91.2				-						
" 17	90.4				287						
" 18	90.8										
" 19	91.0										
" 20	89.8				288						
" 22	92.5				286						
" 23	92.0				-						
" 24	91.4				-						
" 25	91.4				288						
" 26	88.9				-						
" 27	91.2				-						
" 28	89.6				288						
" 29	93.4				-						
" 30	92.4				-						
" 31	91.6				288						

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Bicarbonate (HCO_3)	Chloride (Cl)	Date of collection	Specific conductance $K \times 10^5$ at 25°C	Bicarbonate (HCO_3)	Chloride (Cl)
Apr. 1, 1942	94.4	300		May 1, 1942	48.8		43
" 2	95.3	-		" 2	56.5		
" 4	95.4	-		" 3	64.6		65
" 5	95.1	296		" 4	71.0		
" 6	94.3	-		" 5	77.2		78
" 7	94.2	292		" 6	79.8		76
" 8	91.5	281		" 7	49.3		36
" 9	80.7	223		" 8	39.8		102
" 10	42.6	140		" 9	44.7		42
" 11	33.8	126	20	" 10	51.6		34
" 12	55.9	179	57	" 12	69.0		68
" 13	55.8	-	-	" 13	72.2		
" 14	65.0	200	69	" 14	76.7		
" 15	73.0	226	82	" 15	76.7		74
" 16	69.5	-	69	" 16	80.3		
" 17	75.9	252	75	" 17	85.3		85
" 18	76.4	-	71	" 19	83.2		
" 19	80.1	269	80	" 20	86.0		85
" 20	84.5	277	88	" 22	84.6		84
" 21	84.0		97	" 24	86.2		
" 22	86.8			" 25	86.8		
" 23	88.1			" 26	81.5		96
" 24	87.1			" 27	81.5		
" 25	81.7		37	" 28	43.3		32
" 26	47.0			" 29	62.6		59
" 27	45.4			" 30	77.6		
" 28	61.1		53	" 31	76.2		75
" 29	62.1						
" 30	54.9		39				

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942.
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
June 1, 1942	81.6						82				
" 3	82.0						82				
" 4	81.5						-				
" 5	81.4										
" 6	82.6						86				
" 7	81.3										
" 8	78.8										
" 9	79.8										
" 10	71.7						80				
" 11	71.1						61				
" 12	63.6										
" 13	57.5						51				
" 14	70.2										
" 15	70.2						68				
" 16	71.3										
" 17	79.7						83				
" 18	77.5										
" 19	78.6										
" 20	75.8						74				
" 21	85.0						88				
" 22	85.1										
" 23	82.9										
" 24	85.9										
" 25	89.7										
" 26	86.8						90				
" 28	83.6						92				

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla. Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$
July 1, 1942	39.1										
" 2	33.5						27				
" 3	76.4						78				
" 4	58.2						62				
" 6	17.4										
" 7	18.6						9.0				
" 9	39.2										
" 10	38.4						39				
" 12	69.6						54				
" 13	70.8										
" 14											
" 15											
" 16											
" 17											
" 18											
" 19											
" 20											
" 21,23-26-29-30	104	98	22	99	327	113	115	4.1	676	0.92	335
Aug. 1	99.7						110				
" 2	97.0										
" 3	105										
" 4	108										
" 5	105						114				
" 6	109										
" 7	107										
" 8	106										
" 9	107										
" 10	104						111				

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)[3]
Aug. 11, 1942	104						113				
" 12	102										
" 13	104										
" 14	107										
" 15	106						112				
" 17	100										
" 18	98.4										
" 19	72.4						79				
" 20	91.1						73				
" 21	81.0						65				
" 22	80.2										
" 24	100						125				
" 25	121						192				
" 26	38.8						42				
" 27	94.1										
" 28	98.3										
" 29	95.8						100				
" 30	74.5						74				
" 31	87.1						88				
Sept. 1	90.4						101				
" 2	82.6										
" 3	92.1										
" 4	63.1						58				
" 7	40.7						25				
" 8	33.3										
" 9	34.2						30				
" 10	24.2						12				
" 11,14	25.7				138.	40	18	1.5			
" 15-18	77.5	98	15	42	296	73	55		496	0.67	306
" 21-29	98.4	107	23	66	329	93	97	.5	621	.84	362

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1942 to December 31, 1942
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Dissolved solids Tons per acre foot	Total hardness as $CaCO_3$ (calc.)
Oct. 1, 1942	101						98				
" 2	104										
" 3	102										
" 4	104										
" 5	103										
" 6	104						99				
" 7	37.7						21				
" 8	28.7						14				
" 9	35.2						20				
" 10	46.9						35				
" 11	63.1						46				
" 12	68.9										
" 13	88.2						75				
" 14	80.4										
" 16	93.2										
" 17	92.4						134				
" 18	67.6						54				
" 19	47.0										
" 20	40.8						33				
" 21-24	36.9	44	6.1	18	136	26	23	2.8	190	0.26	135
" 25-28, 30-31	75.1	89	16	40	276	67	54	4.9	473	.64	288
Nov. 1-10	85.9	98	22	61	326	88	74	5.9	547	.74	335
" 11-19	91.5	105	22	57	330	84	81	4.5	572	.78	352
" 22	90.9						80				
" 23	93.4										
" 29	91.1										
" 30	92.2						85				
Dec. 1-10	94.3	106	22	63	337	85	86	7.2	535	.73	355
" 12-18	92.8	99	23	66	318	92	85	9.2	531	.72	341

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1944, to September 30, 1944
(Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southwest of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na,K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
January 1-9, 1944	84.2	83	20	69	265	86	88	9.0	486	289
January 11-16,18-19	87.0	89	20	65	276	76	94	10	490	304
January 21-27	89.0	87	22	69	288	82	91	7.8	501	308
January 28-31	52.4	53	11	28	171	23	49	5.8	254	178
February 1-10	79.3	78	17	50	247	47	81	9.0	404	264
February 11	85.0						95			
February 12	89.1									
February 13	88.9									
February 14	89.1									
February 15	86.9									
February 16	97.0									
February 17	97.0									
February 18	97.3									
February 19	97.3									
February 20	97.0						110			
February 21	--									
February 22	91.0						100			
February 23	--									
February 24	90.7									
February 25	127									
February 26	93.1									
February 27	92.0									
February 28	86.3									
February 29	87.0						93			
March 1	90.2									
March 2	43.1						34			
March 3	25.9						26			
March 4	85.3									
March 5	90.6									
March 6	--									
March 7	85.5						93			
March 8	92.5						110			

Analyses of samples from San Antonio River at Elmendorf, Texas, January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Chloride (Cl)	Date of collection	Specific conducatnce ($K \times 10^5$ at 25°C)	Chloride (Cl)
March 9, 1944	88.1		April 11, 1944	77.5	
March 10	87.2		April 12	80.5	
March 11	87.4		April 13	77.0	77
March 12	87.2		April 14	80.5	
March 13	89.9		April 15	80.7	
March 14	93.0	117	April 16	81.0	
March 15	76.4	103	April 17	79.2	
March 16	55.9	51	April 18	79.1	
March 17	70.0		April 19	79.1	
March 18	55.3		April 20	82.3	82
March 19	53.8		April 21	--	
March 20	49.2	31	April 22	83.1	81
March 21	52.3		April 23	83.1	
March 22	66.5		April 24	86.1	88
March 23	70.6	78	April 25	85.2	
March 24	67.1		April 26	85.4	
March 25	51.0	46	April 27	86.5	
March 26	51.7		April 28	85.2	
March 27	--		April 29	85.4	
March 28	--		April 30	85.4	
March 29	53.0		May 1	60.5	61
March 30	52.3		May 2	27.7	
March 31	84.7	90	May 3	26.9	
April 1	87.6		May 4	25.0	12
April 2	88.0	73	May 5	33.8	
April 3	85.7		May 6	49.5	
April 4	85.5		May 7	47.8	39
April 5	45.3	109	May 8	47.4	
April 6	80.9		May 9	87.8	
April 7	80.0		May 10	90.4	126
April 8	81.7		May 11	91.5	128
April 9	78.4	79	May 12	89.4	
April 10	78.5		May 13	75.9	

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey — 66 — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
May 14, 1944	76.5		June 15, 1944	71.8	
May 15	76.5	73	June 16	--	
May 16	76.5		June 17	83.2	
May 17	76.9		June 18	81.6	
May 18	--		June 19	85.3	
May 19	86.4		June 20	85.6	86
May 20	85.4		June 21	85.6	
May 21	85.5	94	June 22	82.1	
May 22	68.1		June 23	85.3	
May 23	68.5	70	June 24	85.1	
May 24	36.5		June 25	83.7	
May 25	36.5		June 26	84.8	
May 26	35.4		June 27	86.3	
May 27	34.3	22	June 28	87.6	
May 28	18.8	10	June 29	87.3	
May 29	21.5		June 30	87.6	98
May 30	23.5		July 1	89.1	
May 31	--		July 2	--	
June 1	35.9	22	July 3	78.4	
June 2	40.6		July 4	78.0	
June 3	57.2		July 5	79.9	
June 4	57.2	48	July 6	67.7	
June 5	41.2		July 7	68.0	
June 6	50.0		July 8	68.5	
June 7	50.4		July 9	74.5	
June 8	35.3		July 10	82.2	
June 9	73.3	94	July 11	80.9	
June 10	34.3		July 12	79.8	
June 11	--		July 13	80.0	
June 12	55.4	48	July 14	79.1	
June 13	77.0		July 15	79.6	
June 14	77.4		July 16	79.1	80

Analyses of samples from San Antonio River at Goliad, Texas, January 1, 1944, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
July 17, 1944	--		August 18, 1944	83.6	92
July 18	80.7		August 19	83.6	
July 19	79.4		August 20	81.4	
July 20	80.5		August 21	83.6	
July 21	79.3		August 22	81.4	
July 22	79.3		August 23	83.6	
July 23	80.2		August 24	82.7	98
July 24	76.2		August 25	83.6	
July 25	81.6		August 26	79.2	
July 26	76.2		August 27	79.2	
July 27	81.6		August 28	80.5	
July 28	80.6		August 29	--	
July 29	80.9		August 30	60.0	56
July 30	--		August 31	--	
July 31	81.8	90	September 1	34.2	21
August 1	82.3		September 2	38.7	
August 2	82.3		September 3	38.6	
August 3	82.3		September 4	42.5	
August 4	84.6		September 5	51.0	
August 5	80.1	96	September 6	51.9	
August 6	91.0	110	September 7	30.0	
August 7	84.6		September 8	29.0	16
August 8	84.6		September 9	--	
August 9	--		September 10	58.3	51
August 10	84.6		September 11	46.3	38
August 11	--		September 12	48.1	
August 12	82.9		September 13	48.1	
August 13	75.5	90	September 14	70.6	
August 14	82.9		September 15	70.6	
August 15	81.8		September 16	--	
August 16	78.0		September 17	73.9	94
August 17	--		September 18	73.9	

Analyses of samples from San Antonio River at Goliad, Texas, October 1, 1944 to September 30, 1945 (Composites of daily samples collected at gaging station at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad and 10 miles upstream from Manahuilla Creek).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
October 1, 1944	85.1	84	October 31, 1944	---	
October 2	85.1		November 1	69.8	210
October 3	85.1		November 2	---	
October 4	82.1		November 3	---	
October 5	82.1		November 4	---	
October 6	---		November 5	---	
October 7	68.9		November 6	---	
October 8	68.2	50	November 7	---	
October 9	68.2		November 8	---	
October 10	---		November 9	77.2	
October 11	73.9		November 10	---	
October 12	---		November 11-April 10, 1945	---	
October 13	72.1		April 11	---	
October 14	72.1	72	April 12	---	
October 15	72.6		April 13	72.9	
October 16	72.6		April 14	75.2	
October 17	72.1		April 15	75.5	
October 18	75.2		April 16	75.5	66
October 19	82.5	194	April 17	75.5	
October 20	---		April 18	75.2	
October 21	73.7		April 19	75.2	
October 22	82.3		April 20	75.5	
October 23	69.0		April 21	63.7	
October 24	---		April 22	32.8	20
October 25	80.1		April 23	35.2	
October 26	82.5	80	April 24	44.8	
October 27	---		April 25	61.0	
October 28	---		April 26	67.9	
October 29	---		April 27	61.7	
October 30	---		April 28	67.9	

San Antonio River at Goliad, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 29, 1945	73.3		May 30, 1945	---	
April 30	75.1	72	May 31	72.8	
May 1	---		June 1	74.0	78
May 2	77.5	72	June 2	73.5	
May 3	78.3		June 3	59.5	
May 4	79.9		June 4	74.0	
May 5	79.9		June 5	68.9	
May 6	78.3		June 6	66.8	
May 7	---		June 7	67.3	
May 8	---		June 8	70.7	
May 9	---		June 9	68.4	
May 10	66.2		June 10	73.5	
May 11	54.8		June 11	74.5	
May 12	71.1		June 12	68.3	
May 13	76.0		June 13	68.3	
May 14	---		June 14	63.6	82
May 15	64.5	74	June 15	---	
May 16	79.3		June 16	---	
May 17	79.3		June 17	---	
May 18	---		June 18	---	
May 19	76.0		June 19	---	
May 20	76.0		June 20	---	
May 21	79.9	78	June 21	---	
May 22	78.6		June 22	---	
May 23	78.6		June 23	46.9	
May 24	60.5		June 24	48.1	
May 25	75.2		June 25	37.0	
May 26	70.2		June 26	33.7	
May 27	72.1		June 27	37.0	
May 28	---		June 28	52.8	
May 29	---		June 29	66.8	

San Antonio River at Goliad, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
June 30, 1945	95.9	132	July 31, 1945	---	
July 1	49.8		August 1	---	
July 2	65.9		August 2	---	
July 3	65.9		August 3	---	
July 4	70.5		August 4	75.7	70
July 5	70.5		August 5	69.7	
July 6	72.2		August 6	71.5	
July 7	71.5		August 7	68.0	–
July 8	70.2		August 8	60.5	60
July 9	67.4		August 9	65.7	
July 10	60.7		August 10	75.0	
July 11	64.9		August 11	72.2	
July 12	71.4		August 12	76.0	
July 13	70.8		August 13	76.0	
July 14	77.6		August 14	77.0	
July 15	71.5		August 15	76.0	78
July 16	69.7		August 16	80.7	
July 17	68.8		August 17	77.0	
July 18	71.5		August 18	79.0	
July 19	69.7		August 19	76.0	
July 20	---		August 20	76.0	
July 21	77.9		August 21	---	
July 22	44.3	84	August 22	71.7	–
July 23	74.6		August 23	48.8	26
July 24	61.8		August 24	---	
July 25	75.9		August 25	---	
July 26	---		August 26	69.8	
July 27	---		August 27	73.8	
July 28	---		August 28	75.1	
July 29	82.0	82	August 29	73.8	–
July 30	82.0		August 30	75.1	76

San Antonio River at Goliad, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium & Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (calc.)
August 31, 1945	72.5									--
September 1-5, 7-10	70.3	58	20	61	219	60	81	3.2	434	226
September 11-13	71.6	79	20	44	257	62	68	4.5	468	279
September 14-30	No samples									

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN GUADALUPE RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	9- -44	-	64	14	8.0	250	10	11	4.7	242	217
2	7-28-44	42.2	56	20	18	260	22	15	3.8	280	222
3	2-23-44	63.9	72	20	31	251	25	67	3.0	348	262
4	2-23-44	170	112	34	178	267	54	377	-	886	420
5	8-21-45	137	---	--	---	--	--	302	---	---	---
6	7- -45	---	88	28	118	222	57	247	.8	742	334
7	9-9-44	---	76	19	3.2	274	23	16	4.4	316	268
8	8-21-45	70.8	--	--	---	---	--	72	---	---	---
9	2-23-44	3,080	1,100	433	5,500	193	782	11,000	---	18,900	4,530
10	2-23-44	2,260	895	308	3,830	74	518	7,960	---	13,500	3,500
11	2-23-44	50.0	70	18	16	274	24	21	4.8	289	248
12	2-23-44	63.0	--	--	--	267	40	46	---	---	---
13	2-23-44	201	139	40	215	271	114	452	---	1,090	512
14	2-23-44	236	140	44	274	268	112	560	---	1,260	530
15	2-23-44	693	315	90	1,020	242	277	2,040	---	3,860	1,160
16	2-23-44	383	212	42	510	237	217	985	---	2,080	702
17	2-23-44	1,770	704	349	2,790	401	900	5,670	---	10,600	3,190

DESCRIPTIONS OF SAMPLING POINTS IN GUADALUPE RIVER BASIN
NUMBERS CORRESPOND TO THOSE IN TABLE OF ANALYSES

1 Guadalupe River at New Braunfels, Texas
2 Guadalupe River taken from river just above dam at power plant Temp: 87 °F, Seguin, Texas
3 Guadalupe River about 6 miles above confluence with San Marcos River near Gonzales, Texas
4 Guadalupe River about one mile below confluence of San Marcos and Guadalupe Rivers 1 mile southeast of Gonzales, Texas
5 Guadalupe River at Victoria, Texas
6 Guadalupe River at Port Lavaca, Texas
7 Comal River at New Braunfels, Texas
8 San Antonio River near Goliad, Texas
9 Dorst Creek at Highway 3 about 11 miles East of Seguin, Texas. Represents major portion of salt water from Dorst Oil Field, 5:05 PM
10 Nash Creek at State Hwy. 3 about one mile west of Guadalupe Gonzales County line and 3 miles west of Belmont, Texas
11 San Marcos River collected at county road crossing 1/4 mile south of Fentress at 11:40 AM.
12 San Marcos River just above Luling Oil field: north edge of Texas State Lease, 11:15 AM near Luling, Texas
13 San Marcos River at Luling, Texas G.H. 4.50, 12:05 PM.
14 San Marcos River collected about two miles west of Gonzales at bridge on State Highway 3 at 4:30 PM
15 Plum Creek at U. S. Highway 90 about 3 miles from Luling, about 4 miles below confluence of West Fork and Plum Creek below salt water inflow from Salt Flat Oil Field, 3:00 PM
16 Plum Creek at county road about one mile above confluence with West Fork; at Soda Springs Church 1:50 PM near Luling, Texas
17 West Fork of Plum Creek at County road about ½ mile above confluence with Plum Creek, 1:40 PM near Luling, Texas

ANALYSES OF SURFACE WATERS

IN

NUECES RIVER BASIN

Analyses of samples from Nueces River at Cotulla, Texas, January 1, 1942 to December 31, 1942.
(Composites of daily samples collected at gaging station on U. S. Hwy. 81 at Cotulla, 1/3 mile upstream from International-Great Northern Railroad Bridge.)

Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)
Jan. 1-10, 1942	119	30	6.2	227	345	119	133	0.3	711	100
Jan. 11-19	128	23	7.5	255	382	129	139	.2	773	88
Jan. 21-31	141	22	6.4	295	418	148	159	.4	866	82
Feb. 1	153				448					
Feb. 5	143				446					
Feb. 10	144				446					
Feb. 11	145				440					
Feb. 14	169				507					
Feb. 15	133				508					
Feb. 19	152				452					
Feb. 20	152				472					
Feb. 22	173				502					
Feb. 24	167				498					
Feb. 26	162				492					
Feb. 28	184				524					
Mar. 1	164				472					
Mar. 3	182				500					
Mar. 5	187				516					
Mar. 10	187				514					
Mar. 12	193				567					
Mar. 15	192				544					
Mar. 20	186				534					
Mar. 21-31	178	18	10	379	504	179	220	.0	1,054	86
Apr. 2	178				492					
Apr. 4	114				284					
Apr. 7	183				492					
Apr. 10	175				464					
Apr. 12	177				466		227			
Apr. 13	182				468		237			
Apr. 14	33.7				144		16			
Apr. 17	34.1				145		20			
Apr. 20	35.0				152		16			

Analyses of samples from Nueces River at Cotulla, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 21, 1942	25.4	17	May 23, 1942	32.2	9.0
April 22	36.9		May 24	--	
April 23	38.0		May 25	29.0	
April 24	43.1	32	May 26	28.4	6.0
April 25	41.2		May 27	29.1	
April 26	42.1		May 28	30.6	8.0
April 27	46.0	34	May 29	34.8	
April 28	47.5		May 30	31.8	
April 29	49.1		May 31	33.3	11
April 30	51.5	41	June 1	--	
May 1	--	50	June 2	36.7	9.0
May 2	56.8	50	June 3	36.4	
May 3	55.6		June 4	36.2	
May 4	58.0	52	June 5	37.3	13
May 5	60.8		June 6	38.0	
May 6	63.3	59	June 7	38.4	
May 7	66.4		June 8	40.1	18
May 8	76.7	71	June 9	41.1	
May 9	78.6		June 10	41.9	21
May 10	77.6	75	June 11	--	
May 11	83.9	76	June 12	46.4	26
May 12	85.4		June 13	47.4	
May 13	--		June 14	49.9	
May 14	75.8	80	June 15	50.0	
May 15	77.3		June 16	50.8	36
May 16	74.4		June 17	51.2	
May 17	77.5		June 18	52.2	
May 18	84.0	86	June 19	53.2	
May 19	70.9	79	June 20	52.5	42
May 21	84.8		June 21	55.1	42
May 22	88.7	105	June 22	54.1	

Analyses of samples from Nueces River at Cotulla, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
June 23, 1942	55.2						48			
June 24	--									
June 25	--									
June 26	56.0						51			
June 27	59.7									
June 28	57.9									
June 29	59.3									
June 30	57.6						58			
July 1	62.2									
July 2	--									
July 3	60.6						56			
July 4	36.6						21			
July 5	22.5						8.0			
July 6	--									
July 7	26.3									
July 8	26.1						10			
July 9	--									
July 10	54.8						23			
July 11	36.6						24			
July 12	31.5									
July 13	32.4									
July 14	32.8									
July 15	34.0						19			
July 16	39.6									
July 17	41.1									
July 18	--									
July 19	37.4									
July 20	38.1						21			
July 21-22,24-29,31	46.0	47	6.6	42	189	32	33	0.8	295	144
August 1-29	--									
August 30	41.6						15			
August 31	76.6						101			

Analyses of samples from Nueces River at Cotulla, Texas, January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
September 1, 1942	76.6						86			
September 2	37.2						17			
September 3	31.4									
September 4	21.0						1.0			
September 5	18.7						3.0			
September 6	25.5						5.0			
September 7	24.4									
September 8	22.4									
September 9	21.1						1.0			
September 10	24.8									
September 11-16,18-20	29.5	45	4.7	7.6	156	12	5.0	1.0	193	132
September 21-28,30	38.8	54	7.4	19	198	20	15	2.0	249	165
October 1	41.4						18			
October 2	44.7									
October 3	44.5									
October 4	47.2						28			
October 5	22.9						6.0			
October 6	21.2									
October 7	27.8						21			
October 8	31.3									
October 9	23.6						10			
October 10	34.4									
October 11	38.2						18			
October 12	--									
October 13	37.3									
October 14	39.9									
October 15	45.0						32			
October 16	60.7									
October 17	--									
October 18	62.9						55			
October 19	--									
October 20	77.9						97			

Analyses of samples from Nueces River at Cotulla, Texas, from January 1, 1942, to December 31, 1942
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solide	Total hardness as $CaCO_3$
October 21-31, 1942	40.2	57	9.6	11	201	18	14	3.2	250	182
November 1-10	42.8	61	12	16	235	18	15	2.5	279	202
November 11-20	48.1	58	12	29	218	33	30	1.5	288	194
November 21-24,27-30	65.5	59	13	61	250	48	55	0.5	387	200
December 1	74.6						71			
December 2	67.5									
December 3	76.5									
December 4	73.7						75			
December 5	76.8									
December 6	182						258			
December 7	164						233			
December 8	84.0									
December 9	92.7									
December 10	92.6						107			
December 11-20	111	66	21	141	289	119	138	1.5	651	251
December 21-31	107	50	15	165	322	100	125	2.0	634	186

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1941 to September 30, 1942
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
1941											
Oct. 1-4,7-10	83.3				248	88	93		535	0.73	230 a/
Oct. 5-6	31.0				98	30	24		209	0.28	93 a/
Oct. 11-20	111				310	101	138		660	0.90	255 a/
Oct. 21-28	124	101	15	142	338	113	161	0.0	744	1.01	314
Oct. 30-31	33.7	42	5.4	16	146	16	17	3.0	191	.26	127
Nov. 1-4	69.2				220	58	76	1.0	415	.57	198 a/
Nov. 5-10	106	86	11	122	290	91	136	.5	626	.85	260
Nov. 11-20	122	87	15	154	301	111	178		744	1.01	278
Nov. 21-30	136				356	126	197		844	1.15	294 a/
Dec. 2-10	133				305	122	203	.5	808	1.10	232 a/
Dec. 11-20	137				332	122	206	.5	831	1.13	270 a/
Dec. 21-31	155				355	143	245		904	1.23	306 a/
Jan. 1-10,1942	155	88	19	214	336	138	244	.0	929	1.26	298
Jan. 11-13 15-20	149				354	135	245	.2	907	1.23	267 a/
Jan. 21-31	155	92	18	227	349	143	255	.4	932	1.27	304
Feb. 1-10	156				358	141	245		928	1.26	297 a/
Feb. 11-19	143				296	147	228		860	1.17	249 a/
Feb. 20-28	150	91	20	206	312	152	243	0.4	902	1.23	309
Mar. 1-10	146	92	19	197	318	139	235	.2	886	1.20	308
Mar. 11-20	153	92	19	218	335	144	253	.8	908	1.23	308
Mar. 21-31	159	90	20	229	338	147	252	.2	964	1.31	306
April 1-9	153	86	19	221	318	143	257	.8	907	1.23	292
April 10	33.4	32	5.4	32	116	35	27	2.0	205	.28	102
April 11-12	43.7				126	46	44	3.0			129 a/
April 13-20	112	79	17	135	262	112	162	.0	688	.94	267

a/ Determined

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1941 to September 30, 1942
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)
April 21, 1942	---	--	May 17, 1942	109	
April 22	131	222	May 18	109	
April 23	111	161	May 19	112	163
April 24	104	148	May 20	68.0	79
April 25	85.5	107	May 21	44.3	40
April 26	41.9	42	May 22	40.5	
April 27	55.1	66	May 23	57.0	71
April 28	54.0	64	May 24	46.1	
April 29	76.8	134	May 25	48.5	
April 30	55.4	65	May 26	50.8	50
May 1	---		May 27	64.7	
May 2	69.3	94	May 28	62.1	72
May 3	77.3	107	May 29	48.1	
May 4	97.7	141	May 30	42.8	29
May 5	99.9	143	May 31	---	
May 6	29.0	17	June 1	42.8	22
May 7	48.3	54	June 2	46.5	
May 8	60.7	81	June 3	47.8	
May 9	97.9	148	June 4	48.1	38
May 10	47.8	44	June 5	54.3	
May 11	43.4	40	June 6	58.7	57
May 12	119	263	June 7	91.1	123
May 13	85.9	118	June 8	92.8	
May 14	88.5		June 9	98.1	
May 15	104		June 10	88.0	114
May 16	103		June 11	75.2	98

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1941 to September 30, 1942
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific Conductance K x 10^5 at 25°C	Chloride (Cl)
June 12, 1942	77.9		July 1, 1942	47.7	51
June 13	81.2		July 2	80.5	122
June 14	--		July 3	35.2	28
June 15	85.2	130	July 4	49.3	
June 16	93.7		July 5	49.2	51
June 17	93.6	146	July 6	26.6	12
June 18	106		July 7	18.1	
June 19	120		July 8	15.3	5.0
June 20	127	194	July 9	22.7	
June 21	126	196	July 10	23.5	8.0
June 22	--		July 11	27.8	10
June 23	137		July 12	29.0	
June 24	136	218	July 13	33.2	
June 25	60.4	68	July 14	39.6	19
June 26	75.8		July 15	42.1	
June 27	79.3		July 16	50.3	38
June 28	79.4	126	July 17	54.1	
June 29	48.6	52	July 18	63.3	54
June 30	44.2	44	July 19	98.6	
			July 20	108	126

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1941 to September 30, 1942
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
July 21-31, 1942	133	119	18	149	348	164	169	.8	853	1.17	371
August 1	137						202				
August 2	150										
August 3	145										
August 4	146										
August 5	150						202				
August 6	145										
August 7	155										
August 8	156										
August 9	156						215				
August 10	--										
August 11	155						212				
August 12	154										
August 13	159										
August 14	157										
August 15	162										
August 16	154										
August 17	169						245				
August 18	156										
August 19	90.4										
August 20	92.8						125				
August 21	105						153				
August 22	103										
August 23	103										
August 24	99.1										

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1941 to September 30, 1942
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
August 25, 1942	89.8						101				
August 26	147						215				
August 27	--										
August 28	131						193				
August 29	130										
August 30	25.4						13				
August 31	32.4						23				
Sept. 1-3,5,7 9-10	29.8	33	3.2	21	115	21	17	1.8	199	0.27	96
Sept. 11-16, 18	27.2	38	3.5	18	138	17	12	1.0	195	0.27	109
Sept. 17	--										
Sept. 19	43.7										
Sept. 20	44.5						32				
Sept. 21-24	47.9	61	6.7	35	210	33	35	.8	318	.43	180
Sept. 25-30	100	106	14	97	308	108	118	1.5	643	.87	322

Analysis of samples from Nueces River near Three Rivers, Texas, October 1, 1942 to September 30, 1943
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Oct. 1, 1942	124						148				
Oct. 2	125										
Oct. 3	125										
Oct. 4	127										
Oct. 5	127						159				
Oct. 6	154						219				
Oct. 7	51.3						46				
Oct. 8	46.2										
Oct. 9	94.8						180				
Oct. 10	78.3						144				
Oct. 11	47.9						49				
Oct. 12	66.9										
Oct. 13	72.5						84				
Oct. 14	85.2										
Oct. 15	94.7						109				
Oct. 16	95.4										
Oct. 17	102										
Oct. 18	106						127				
Oct. 19	116										
Oct. 20	122						138				
Oct. 22-27	42.7	46	6.2	27	139	28	39	0.5	270	0.37	140
Oct. 21,28-31	69.1	74	11	55	225	71	64	1.2	440	.60	230
Nov. 1-10	88.8	74	16	92	235	102	108	.5	547	.74	250
Nov. 12-19	118	98	20	112	286	124	145	1.5	703	.96	326

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1942 to September 30, 1943
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of Collection	Specific Conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Nov. 21-30, 1942	141	110	22	174	346	170	200	.2	913	1.24	365
Dec. 1	140						228				
Dec. 2	144										
Dec. 3	141										
Dec. 4	153										
Dec. 5	73.5						85				
Dec. 6-10	--										
Dec. 11-16	--										
Dec. 17	161						266				
Dec. 18	173										
Dec. 19	184										
Dec. 20	185						287				
Dec. 21-28											
30-31	183	115	25	248	380	205	287	.5	1,068	1.45	390
Jan. 1-10, 1943	183	115	28	246	356	207	303	2.0	1,076	1.46	402
Jan. 11	180						297				
Jan. 12	172										
Jan. 13	177										
Jan. 14	180										
Jan. 15	175						277				
Jan. 16-20	--										
Jan. 21-31	--										
Feb. 1-10	166	105	26	219	338	182	268	2.0	986	1.34	369
Feb. 11	160						284				
Feb. 12	166										

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1942 to September 30, 1943
(Composites of daily samples collected at gaging station 100 ft.downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
Feb. 13, 1943	152										
Feb. 14	156										
Feb. 15	157										
Feb. 16	156										
Feb. 17	160										
Feb. 18	162										
Feb. 19	171										
Feb. 20	162						285				
Feb. 21	163						284				
Feb. 22	154										
Feb. 23	162										
Feb. 24	157										
Feb. 25	167										
Feb. 26	167										
Feb. 27	164										
Feb. 28	168						294				
March 1	177						278				
March 2	177										
March 3	174										
March 4	176										
March 5	175										
March 6	173										
March 7	155										
March 8	181										
March 9	179										
March 10	184						318				

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1942 to September 30, 1943
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
March 11-20, '43	180	109	28	240	315	219	298	.5	1,050	1.43	385
March 21-31	154	100	21	201	270	165	260	2.0	890	1.21	336
April 1-10	142	96	21	183	263	173	232	1.0	866	1.18	326
April 11	160						258				
April 12	169										
April 13	169										
April 14	177										
April 15	178										
April 16	188										
April 17	186										
April 18	186										
April 19	160										
April 20	156						268				
April 21	172						300				
April 22	160										
April 23	157										
April 24	147						250				
April 25	158										
April 26	159										
April 27	156										
April 28	156										
April 29	157										
April 30	157						268				
May 1	156										
May 2	158										
May 3	154										

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Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1942 to September 30, 1943
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific Conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Total hardness as $CaCO_3$ (calc.)
May 4, 1943	156										
May 5	158						255				
May 6	160										
May 7	157										
May 8	162										
May 9	165										
May 10	169										
May 11	94.1						148				
May 12	74.3										
May 13	64.6										
May 14	63.2						80				
May 15	75.8										
May 16	108										
May 17	119										
May 18	126						202				
May 19	128										
May 20	118										
May 21-25 27-31	121	62	12	172	229	111	195	.0	715	0.97	204
June 1-9	39.3	33	4.5	39	106	33	45	2.2	209	0.28	101
June 10	--										
June 11	34.9										
June 12	34.2						44				
June 13	36.3										
June 14	38.8										
June 15	34.3										
June 16	33.1										
June 17	35.1										
June 18	43.2										
June 19	44.3						20				

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^2 at 25°C	Chloride (Cl)
June 21, 1943	44.2	43	July 21,1943	--	
June 22	72.2	94	July 22	44.3	46
June 23	50.9		July 23	44.4	
June 24	175	438	July 24	47.2	
June 25	104	205	July 25	49.8	
June 26	--		July 26	57.6	
June 27	74.9		July 27	62.0	68
June 28	79.1	124	July 28	64.7	
June 29	82.0		July 29	75.0	
June 30	85.6		July 30	77.6	
July 1	86.0	130	July 31	89.1	121
July 2	88.3		August 1	102	145
July 3	91.0		August 2	102	
July 4	93.1		August 3	109	
July 5	96.6		August 4	108	
July 6	99.6		August 5	113	
July 7	105		August 6	122	
July 8	105		August 7	121	
July 9	109		August 8	120	185
July 10	109	166	August 9	--	
July 11	118	182	August 10	--	
July 12	101		August 11	124	197
July 13	117		August 12	124	
July 14	73.7	89	August 13	125	
July 15	24.4		August 14	129	
July 16	21.7	8.0	August 15	130	
July 17	26.4		August 16	136	
July 18	31.6		August 17	135	
July 19	40.7		August 18	136	222
July 20	43.4	114	August 19	135	
			August 20	135	

Analyses of samples from Nueces River near Three Rivers, Texas, from October 1, 1942, to September 30, 1943
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
August 21-31, 1943	141	102	17	169	272	139	229	0.2	856	324
September 1	--									
September 2	32.5						16			
September 3	45.2									
September 4	155						141			
September 5	68.3									
September 6	44.6									
September 7	52.0									
September 8	46.5									
September 9	39.9						35			
September 10	44.9									
September 11	46.0						45			
September 12	66.7						108			
September 13	66.6									
September 14	46.8									
September 15	47.8									
September 16	52.8									
September 17	54.5						25			
September 18	32.7									
September 19	52.6									
September 20	50.5									
September 21	52.2									
September 22	45.8						54			
September 23	63.1									
September 24	65.8									
September 25	64.4									
September 26	66.6									
September 27	77.4						127			
September 28	52.3									
September 29	50.8									
September 30	60.0						73			

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1943, to September 30, 1944
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde, and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)
Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na/K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
October 1, 1943	76.3						146			
October 2	61.6									
October 3	65.4									
October 4	48.3									
October 5	57.1						73			
October 6	77.4									
October 7	81.6									
October 8	55.8									
October 9	47.7									
October 10	40.5						31			
October 11-20	58.2	42	5.5	65	155	37	73	0.5	322	128
October 21-23,25	63.5	53	9.2	69	195	56	72	0.5	376	171
October 24,26-31	105	76	13	135	261	101	154	0.2	635	243
November 1-4	133	81	19	169	276	138	196	0.8	740	280
November 6-9	79.6	50	8.4	108	192	66	118	1.0	446	160
November 11-12,20	110	60	13	147	211	70	196	0.5	590	203
November 13-19	52.9	41	7.4	57	161	36	61	0.5	282	133
November 21-22,24-30	79.6	50	8.3	103	187	59	118	0.8	431	159
December 1-3,5-10	77.5	43	7.2	111	170	59	125	0.2	429	137
December 11-20	95.9	58	11	120	205	80	142	0.2	512	190
December 21-31	127	73	15	179	286	122	192	0.5	764	244
January 1-10, 1944	149	66	14	235	310	120	250	0.8	874	222
January 11-16,18-20	148	62	14	242	310	131	246	0.5	880	212
January 21	160						296			
January 22	166									
January 23	164									
January 24	54.9									
January 25	51.8									
January 26	28.2						24			
January 27	84.0									

Analyses of samples from Nueces River near Three Rivers, Texas, from October 1, 1943, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
January 28, 1944	65.8	95	March 1, 1944	173	
January 29	90.6		March 2	173	
January 30	36.5	29	March 3	177	
January 31	68.2	124	March 4	173	
February 1	63.7		March 5	57.9	63
February 2	74.5		March 6	106	188
February 3	89.2		March 7	111	
February 4	103		March 8	132	245
February 5	117		March 9	122	214
February 6	125		March 10	215	
February 7	140		March 11	--	
February 8	140		March 12	74.1	
February 9	141		March 13	86.5	170
February 10	139		March 14	129	
February 11	134		March 15	141	
February 12	133		March 16	140	
February 13	--		March 17	154	280
February 14	126		March 18	140	
February 15	90.7	101	March 19	107	192
February 16	46.4		March 20	72.6	108
February 17	138	224	March 21	99.7	147
February 18	129		March 22	79.9	
February 19	44.1	16	March 24	60.4	75
February 20	134		March 25	62.3	
February 21	138	216	March 26	85.7	
February 22	141		March 27	120	
February 23	138		March 28	62.2	
February 24	43.3	40	March 29	68.8	
February 25	158		March 30	123	228
February 26	163		March 31	70.1	
February 27	164		April 1	87.1	
February 28	166		April 2	80.7	
February 29	169	297	April 3	73.7	72

Analyses of samples from Nueces River near Three Rivers, Texas, from October 1, 1943, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 4, 1944	75.9		May 6, 1944	44.6	
April 5	76.9		May 7	40.8	
April 6	85.3		May 8	39.8	
April 7	95.6		May 9	37.6	
April 8	90.7		May 10	40.4	30
April 9	94.1		May 11	42.3	32
April 10	104	168	May 12	44.0	
April 11	98.1	158	May 13	51.2	
April 12	102		May 14	51.2	
April 13	75.3		May 15	53.7	
April 14	72.7	92	May 16	59.3	
April 15	87.7		May 17	65.8	
April 16	102		May 18	72.4	87
April 17	110		May 19	69.2	
April 18	115		May 20	57.9	
April 19	120		May 21	75.0	94
April 20	127	185	May 22	84.3	118
April 21	133	200	May 23	77.0	
April 22	138		May 24	65.9	
April 23	139		May 25	89.8	
April 24	141		May 26	54.8	60
April 25	144		May 27	31.6	
April 26	145		May 28	25.1	
April 27	148	238	May 29	19.8	6.0
April 28	147		May 30	20.3	
April 29	145		May 31	26.9	
April 30	144		June 1	34.3	
May 1	154	275	June 2	29.8	16
May 2	58.8		June 3	32.6	
May 3	39.4		June 4	31.6	
May 4	39.4	35	June 5	34.9	
May 5	53.9		June 6	35.5	

Analyses of samples from Nueces River near Three Rivers, Texas, from October 1, 1943, to September 1, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^3 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^3 at 25°C	Chloride (Cl)
June 7, 1944	34.3		July 9, 1944	--	
June 8	35.2		July 10	64.5	
June 9	36.7	21	July 11	55.8	62
June 10	35.9		July 12	58.6	
June 11	42.4	34	July 13	68.2	
June 12	39.1		July 14	68.5	
June 13	39.7		July 15	72.3	
June 14	36.5		July 16	84.7	
June 15	35.0		July 17	84.7	
June 16	33.5	15	July 18	85.2	
June 17	33.7		July 19	87.8	
June 18	40.9		July 20	91.1	122
June 19	48.9		July 21	93.5	
June 20	57.2	65	July 22	92.0	132
June 21	61.3	72	July 23	96.1	
June 22	62.2		July 24	99.1	
June 23	67.0		July 25	102	
June 24	67.9		July 26	102	
June 25	75.7		July 27	102	
June 26	75.5		July 28	106	
June 27	77.5		July 29	108	
June 28	79.3		July 30	107	
June 29	82.2	108	July 31	108	158
June 30	75.5		August 1	105	
July 1	129	242	August 2	104	
July 2	61.2		August 3	106	
July 3	63.9	80	August 4	105	
July 4	88.2		August 5	106	
July 5	57.1		August 6	110	166
July 6	53.7		August 7	104	
July 7	32.1	24	August 8	66.3	92
July 8	51.5		August 9	61.8	

Analyses of samples from Nueces River near Three Rivers, Texas, from October 1, 1943, to September 30, 1944
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
August 11, 1944	79.7	136
August 12	79.7	
August 13	83.7	
August 14	80.8	
August 15	91.3	
August 16	100	158
August 17	97.8	
August 18	104	
August 19	104	
August 20	--	
August 21	108	174
August 22	108	
August 23	109	
August 24	132	214
August 25	123	
August 26	124	
August 27	122	
August 28	111	
August 29	40.8	
August 30	35.6	
August 31	34.3	430
September 1	48.5	54
September 2	30.6	
September 3	27.8	
September 4	26.5	
September 5	25.7	6.0
September 6	26.5	
September 7	25.8	
September 8	27.2	
September 9	27.7	
September 10	--	
September 11, 1944	33.6	
September 12	28.9	5.0
September 13	29.5	
September 14	29.8	
September 15	32.3	
September 16	34.8	
September 17	47.2	
September 18	43.6	
September 19	--	
September 20	48.6	41
September 21	46.0	28
September 22	49.3	
September 23	52.3	
September 24	53.9	
September 25	54.9	
September 26	60.3	54
September 27	61.4	
September 28	64.5	
September 29	56.3	
September 30	84.0	160

Analyses of samples from Nueces River near Three Rivers, Texas, October 1, 1944 to September 30, 1945
(Composites of daily samples collected at gaging station 100 ft. downstream from San Antonio, Uvalde and Gulf Railroad Bridge, half mile downstream from Frio River and 2 miles southeast of Three Rivers.)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
October 1, 1944	63.5		November 1, 1944	91.9	
October 2	59.7	84	November 2	89.0	
October 3	60.3		November 3	85.8	
October 4	64.8		November 4	103	148
October 5	65.4		November 5	152	265
October 6	68.4		November 6	45.3	56
October 7	---		November 7	80.5	
October 8	188	240	November 8	71.6	
October 9	29.1	485	November 9	74.7	
October 10	128	14	November 10	77.7	
October 11	28.8	18	November 11	89.1	144
October 12	46.1	52	November 12	108	
October 13	61.3		November 13	112	
October 14	97.8	124	November 14	105	
October 15	58.8		November 15	108	
October 16	55.4		November 16	110	
October 17	47.4		November 17	115	
October 18	47.4		November 18	118	
October 19	50.6		November 19	130	192
October 20	52.7		November 20	111	
October 21	54.5	56	November 21	97.0	
October 22	57.6		November 22	76.1	
October 23	58.6		November 23	98.0	
October 24	62.3		November 24	113	
October 25	64.8		November 25	128	232
October 26	66.0		November 26	124	
October 27	68.5		November 27	131	
October 28	74.5		November 28	70.0	
October 29	76.4		November 29	66.9	
October 30	78.9		November 30	84.8	124
October 31	79.8	98	December 1	85.2	

Nueces River near Three Rivers, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
December 2, 1944	86.0		January 3, 1945	166	
December 3, 1944	92.1		January 4	179	
December 4	99.5		January 5	179	
December 5	115		January 6	179	
December 6	127		January 7	179	
December 7	52.0		January 8	173	320
December 8	44.9		January 9	173	
December 9	39.0		January 10	168	
December 10	112		January 11	166	
December 11	64.7		January 12	162	
December 12	63.7		January 13	164	
December 13	111		January 14	164	
December 14	107		January 15	162	265
December 15	101		January 16	160	
December 16	47.4		January 17	160	
December 17	114		January 18	162	
December 18	---		January 19	160	
December 19	122		January 20	160	
December 20	128		January 21	171	300
December 21	146		January 22	99.1	
December 22	144		January 23	141	
December 23	149		January 24	40.2	—
December 24	149		January 25	33.1	26
December 25	157		January 26	53.7	
December 26	170		January 27	60.5	
December 27	176		January 28	63.7	95
December 28	---		January 29	65.3	
December 29	181		January 30	77.9	
December 30	181		January 31	74.7	
December 31	170		February 1	78.6	118
January 1, 1945	---		February 2	78.6	
January 2	161		February 3	85.1	

Nueces River near Three Rivers, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
February 4, 1945	---		March 8, 1945	133	
February 5	91.9		March 9	135	
February 6	106		March 10	134	
February 7	---		March 11	137	216
February 8	106		March 12	137	
February 9	106	172	March 13	49.0	
February 10	85.1		March 14	58.9	—
February 11	91.8	136	March 15	42.4	46
February 12	78.4		March 16	64.7	
February 13	36.5		March 17	44.9	
February 14	37.0		March 18	46.1	
February 15	29.0	26	March 19	49.0	
February 16	79.2		March 20	88.2	145
February 17	57.8		March 21	---	
February 18	91.5		March 22	86.6	144
February 19	91.8		March 23	69.8	
February 20	80.7		March 24	70.8	
February 21	96.2		March 25	70.8	
February 22	90.7	130	March 26	93.4	
February 23	86.7		March 27	151	272
February 24	86.7		March 28	151	
February 25	107		March 29	89.3	
February 26	110		March 30	86.6	
February 27	104		March 31	103	
February 28	115	170	April 1	36.9	
March 1	122		April 2	29.7	22
March 2	117		April 3	37.8	
March 3	124		April 4	45.3	
March 4	127	168	April 5	45.3	—
March 5	127		April 6	51.4	64
March 6	129		April 7	42.2	
March 7	133		April 8	42.2	

Nueces River near Three Rivers, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
April 9, 1945	37.5	
April 10	34.4	
April 11	36.2	
April 12	35.4	
April 13	34.3	16
April 14	38.8	
April 15	52.1	
April 16	54.3	
April 17	56.2	
April 18	62.6	
April 19	65.1	
April 20	72.4	90
April 21	40.5	
April 22	31.3	
April 23	25.1	
April 24	34.4	
April 25	28.9	
April 26	43.4	
April 27	36.4	36
April 28	33.3	
April 29	34.4	
April 30	34.1	
April 31	---	
May 1	---	
May 2	33.7	
May 3	33.5	14
May 4	34.2	
May 5	41.6	
May 6	47.7	
May 7	53.1	
May 8	60.1	66
May 9	55.8	
May 10, 1945	44.7	
May 11	51.9	58
May 12	32.1	20
May 13	---	
May 14	48.6	
May 15	50.6	
May 16	55.8	
May 17	44.8	
May 18	43.5	
May 19	40.1	
May 20	43.5	
May 21	38.5	
May 22	35.7	20
May 23	36.4	
May 24	45.3	
May 25	48.5	
May 26	58.1	
May 27	58.7	
May 28	65.7	
May 29	68.8	
May 30	72.8	
May 31	79.7	104
June 1	85.2	110
June 2	89.8	
June 3	95.1	
June 4	94.2	
June 5	104	
June 6	104	
June 7	112	
June 8	112	
June 9	---	—
June 10	112	168

Nueces River near Three Rivers, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)	Date of collection	Specific conductance (K x 10^5 at 25°C)	Chloride (Cl)
June 11, 1945	122		July 14	85.7	
June 12	141		July 15	85.7	
June 13	---		July 16	77.5	
June 14	60.6		July 17	63.1	112
June 15	60.6		July 18	41.8	46
June 16	23.0	10	July 19	43.0	
June 17	60.0		July 20	45.5	
June 18	23.6		July 21	45.5	
June 19	30.0		July 22	45.2	52
June 20	30.0		July 23	47.0	
June 21	39.9		July 24	52.8	
June 22	40.4		July 25	---	
June 23	43.3		July 26	61.2	
June 24	43.3		July 27	62.0	82
June 25	---		July 28	64.0	
June 26	---		July 29	68.4	
June 27	---		July 30	72.3	
June 28	---		July 31	74.3	98
June 29	55.1		August 1	73.9	104
June 30	62.2		August 2	76.5	
July 1	61.5	70	August 3	90.8	
July 2	65.4		August 4	80.1	
July 3	70.7		August 5	80.1	
July 4	70.7		August 6	85.0	
July 5	69.3		August 7	87.4	
July 6	75.2		August 8	90.8	
July 7	79.3		August 9	---	
July 8	88.3		August 10	96.5	142
July 9	94.0		August 11	102	
July 10	97.1	128	August 12	---	
July 11	95.6	124	August 13	102	
July 12	87.4		August 14	104	
July 13	81.6		August 15	101	

Nueces River near Three Rivers, Texas, October 1, 1944 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	Calcium (Ca)	Magnesium (Mg)	Sodium & Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$ (calc.)
August 16	107						160			
August 17	107									
August 18	111									
August 19	116									
August 20	116									
August 21	164						275			
August 22	117									
August 23	119									
August 24	119									
August 25	120						184			
August 26	120									
August 27	120									
August 28	128									
August 29	141									
August 30	144									
August 31	147									
September 1-5	115	94	12	136	233	112	192	0.8	732	284
September 6-10	49.6	52	4.9	55	163	69	44	1.2	331	150
September 11-14	66.0	66	6.8	63	190	65	83	1.5	384	192
September 15, 17-20	144	82	16	216	283	149	249	.8	896	270
September 21-29	143	85	14	203	282	136	239	.8	868	270
September 30	49.0						58			

ANALYSES OF SPOT SAMPLES COLLECTED AT VARIOUS POINTS
ON STREAMS IN NUECES RIVER BASIN IN TEXAS

Analyzed by Geological Survey — Parts per million

No.	Date of collection	Specific conductance $K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
1	3-20-42	154	89	20	216	337	139	251	0.2	903	304
2	7- -45	62.4	62	7.2	55	177	44	73	0	362	184
3	7- -45	62.8	56	6.5	65	180	43	74	.4	370	166
4	3-20-42	144	88	28	188	274	228	199	.5	867	334
5	8-14-45	176	46	21	309	294	223	265	.5	1,030	202
6	3-20-42	165	102	24	231	364	220	232	.5	989	353

DESCRIPTION OF SAMPLING POINTS

1 Frio River collected at dam just west of Three Rivers, Texas
2 Nueces River near Robstown, Texas
3 Nueces River near Corpus Christi, Texas
4 Atascosa River collected at bridge on U. S. Highway 281 near Campbelton, Texas
5 Atascosa River at Campbelton, Texas
6 Atascosa River collected about two miles above confluence with Frio River near Three Rivers, Texas

ANALYSES OF SURFACE WATERS

IN

RIO GRANDE BASIN

Analyses of samples collected from Rio Grande at Roma, Texas, October 1, 1942 to May 30, 1943

(Composites of daily samples collected at International Bridge between Roma, Texas and San Pedro, Tamaulipas, 992.0 river miles below American Dam at El Paso, Texas). Analyzed by Geological Survey. Results in parts per million.

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)
Oct. 1-10, 1942	73.2	65	12	76	141	148	73	4.5	468	212
Oct. 11-20	113	92	19	92	176	206	104	3.0	728	308
Oct. 21-22,25-31	124	102	22	128	174	236	165	4.0	802	345
Nov. 1-10	156	116	30	170	177	302	228	2.0	935	413
Nov. 11-13	70.7	62	14	62	143	106	82	3.8	444	212
Nov. 14-20	141	104	28	147	160	272	198	1.5	898	374
Nov. 21-27	213	156	44	245	154	483	335	1.5	1,358	570
Dec. 1-10	184	146	39	201	159	438	270	1.5	1,168	525
Dec. 11-20	181	139	39	193	170	388	270	4.0	1,117	508
Dec. 21-31	187	133	40	208	159	402	282	3.5	1,147	496
Jan. 1-10, 1943	181	134	38	200	172	370	280	6.0	1,127	490
Jan. 11-15,17-20	203	147	45	228	173	434	320	4.0	1,263	552
Jan. 21-29,31	209	154	47	237	175	460	332	4.0	1,320	578
Feb. 1-9	207	145	46	236	170	441	328	3.0	1,283	551
Feb. 11-20	202	138	46	239	167	423	335	3.0	1,266	534
Feb. 21-28	193	124	44	235	173	393	318	3.0	1,202	490
Mar. 11-20	180	108	39	209	161	329	290	2.0	1,056	430
Mar. 21-31	176	108	37	214	168	323	292	2.0	1,059	421
Apr. 1-4,6-10	170	103	38	206	164	314	282	2.0	1,026	413
May 21-23	187	92	43	228	122	322	330	2.0	1,077	406
May 24-30	85.5	65	16	82	136	134	108	3.5	520	228

Analyses of samples collected from the Rio Grande near Mission, Texas, July 1, 1945 to September 30, 1945 (Composites of daily samples collected at Mission pumping plant 3 miles south of Mission, Texas).

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance ($K \times 10^5$) at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (Calc.)
July 1-11, 1945	135	87	30	162	152	242	222	3.5	929	340
July 12-20	74.9	72	13	70	160	157	60	8.2	514	233
July 21-31	99.8	84	16	106	154	206	114	4.7	660	276
August 1-10	97.1	81	17	95	149	188	111	5.9	660	272
August 11-20	120	81	22	121	127	226	152	1.8	779	292
August 21-31	131	86	26	145	126	274	175	1.8	866	322
September 1-10	140	92	30	164	134	302	200	2.2	908	353
September 11-20	137	82	28	167	136	257	213	1.8	874	320
September 21-30	146	88	34	173	142	292	222	2.5	940	360

ANALYSES OF SAMPLES FROM RIO GRANDE AT SAN BENITO, TEXAS May 13, 1938 to May 3, 1942
(Spot Samples Colledted at pumping plant of Cameron County District No. 2, 10 miles southwest of San Benito)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K) (Calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
5-13-38	-	104	29	158	119	283	234	-	868	381
5-24-38	-	78	30	175	119	276	223	-	841	319
5-26-38	-	82	20	125	134	220	155	-	668	287
6-8-38	-	80	20	153	146	227	182	-	734	282
7-8-38	-	59	9.4	76	128	168	50	-	425	186
7-26-38	-	70	14	83	146	136	106	-	481	230
7-27-38	-	83	13	93	183	156	106	-	541	260
7-27-38	-	60	11	51	180	82	48	3.6	347	194
7-28-38	-	52	8.9	21	146	45	30	4.7	234	168
3-10-39	-	80	26	147	159	218	190	-	739	306
3-15-39	-	100	26	749	177	236	205	-	803	356
3-18-39	-	99	27	145	171	244	198	-	797	357
3-21-39	-	91	28	143	171	224	198	-	768	342
3-24-39	-	92	26	138	183	222	180	-	748	336
3-27-39	-	94	26	144	177	226	195	-	772	341
3-30-39	-	103	29	160	183	240	232	-	854	378
4-1-39	-	105	28	175	165	259	250	-	898	377
4-3-39	-	92	33	174	159	257	245	-	879	365
4-6-39	-	90	30	168	153	253	230	-	846	349
4-8-39	-	93	29	162	159	249	224	-	835	353
4-11-39	-	85	28	136	171	220	180	-	733	327
4-14-39	-	94	26	134	177	224	180	-	745	341
4-16-39	-	95	28	166	153	261	224	-	849	352
4-19-39	-	84	23	111	128	246	130	-	657	304
4-21-39	-	89	21	107	146	192	156	-	637	308
4-24-39	-	89	27	167	165	240	220	-	824	332
4-27-39	-	97	29	113	159	261	146	-	724	363
4-29-39	-	82	26	150	134	222	210	-	756	311
4-30-39	-	118	31	169	146	308	249	-	947	424

ANALYSES OF SAMPLES FROM RIO GRANDE AT SAN BENITO, TEXAS May 13, 1938 to May 3, 1942 continued

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
5-1-39	-	98	23	132	146	234	186	-	745	339
5-2-39	-	58	16	88	122	141	110	-	473	210
8:00 AM 5-6-39	-	176	49	242	146	599	300	-	1438	640
6:00 PM 5-6-39	-	88	22	119	153	229	145	-	681	309
5-7-39	-	59	11	70	128	120	80	-	403	192
5-15-39	-	66	12	69	122	117	100	-	424	212
5-16-39	-	59	9.2	46	134	74	70	-	324	186
July 20-39	-	78	21	126	134	226	150	-	667	283
2-20-42	281	174	64	343	170	558	512	0.5	1,735	697
2-27-42	295	188	72	356	162	625	535	1.0	1,857	765
3-6-42	-	172	60	328	168	570	465	2.5	1,680	676
3-13-42	232	152	53	290	173	495	402	3.0	1,480	598
3-20-42	243	149	55	310	178	487	438	2.0	1,529	598
3-27-42	-	130	54	310	154	456	440	0.5	1,466	546
4-10-42	244	136	56	321	161	478	452	1.2	1,524	570
4-26-42	201	118	44	253	164	380	348	6.6	1,230	476
5-3-42	194	110	43	258	184	365	340	1.2	1,208	452

Analyses of samples from Rio Grande at San Benito, Texas, November 20, 1942 to June 30, 1943
(Composites of daily samples collected at pumping plant of Cameron County District No. 2, 10 miles southwest of San Benito)

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance K x 10^5 at 25° C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)[3]
Nov. 20-30, 1942	173	125	35	195	152	370	260	1.2	1,079	456
Dec. 1-10	181	147	39	138	153	439	248	4.0	1,140	528
Dec. 11-20	168	129	36	179	163	383	230	4.0	1,041	470
Dec. 21-31	179	130	38	196	159	386	262	3.0	1,093	480
Jan. 1-10, 1943	159	114	35	170	150	337	228	2.0	960	428
Jan. 11-20	172	122	37	183	158	354	252	2.0	1,028	456
Jan. 21-31	191	138	43	210	174	410	288	2.5	1,177	522
Feb. 1-10	188	136	44	228	139	446	308	3.0	1,234	520
Feb. 11-19	195	134	44	239	154	430	322	3.0	1,248	516
Feb. 20-28	190	130	42	222	162	394	308	3.0	1,179	497
Mar. 1-10	175	113	40	201	147	345	285	3.0	1,059	446
Mar. 11-20	177	110	41	210	163	333	295	3.0	1,072	443
Mar. 21-31	175	106	39	208	162	321	290	2.0	1,046	425
Apr. 1-10	174	96	39	209	156	315	280	3.5	1,019	400
Apr. 11-20	166	93	37	195	146	295	268	3.0	963	384
Apr. 21-25	85.0	60	22	81	147	130	112	3.0	480	240
Apr. 26-30	143	88	32	158	145	242	228	1.0	820	351
May 1-10	175	102	41	205	170	300	295	1.5	1,028	423
May 11-15,18-20	185	107	41	217	133	366	295	1.2	1,093	436
May 16-17	324	241	91	391	142	1,030	450	4.0	2,277	976
May 21-27	183	108	40	215	165	313	310	4.0	1,071	434
May 28-31	73.4	58	15	67	126	123	83	3.0	411	206
June 1-7,9-10	82.8	60	14	89	136	137	102	3.9	473	207
June 11-20	74.2	59	12	73	122	121	90	3.5	419	196
June 21-30	120	86	20	133	140	221	170	1.8	701	296

Analyses of samples collected from the Rio Grande near Los Fresnos, Texas, July 1, 1945 to September 30, 1945 (Composites of daily samples collected at Los Fresnos pumping plant 5 miles west of Brownsville, Texas).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
July 1, 1945	148		August 2, 1945	91.4	
July 2	151	245	August 3	80.7	80
July 3	151		August 4	82.0	
July 4	146		August 5	88.4	
July 5	146		August 6	89.1	102
July 6	143		August 7	94.4	
July 7	146	220	August 8	94.4	
July 8	142	215	August 9	89.1	
July 9	143		August 10	96.1	106
July 10	143		August 11	98.2	108
July 11	162	270	August 12	98.2	
July 12	129		August 13	101	
July 13	102	94	August 14	100	
July 14	127		August 15	93.6	
July 15	89.1	54	August 16	90.6	
July 16	69.4		August 17	105	138
July 17	117		August 18	110	144
July 18	80.8		August 19	105	
July 19	79.0		August 20	101	
July 20	61.1	48	August 21	103	
July 21	60.1	56	August 22	106	
July 22	76.9		August 23	103	
July 23	93.6	110	August 24	110	
July 24	103		August 25	---	
July 25	83.0		August 26	---	
July 26	87.6		August 27	97.9	114
July 27	95.3		August 28	115	164
July 28	103		August 29	140	
July 29	115	144	August 30	144	220
July 30	115		August 31	---	
July 31	111		September 1	119	
August 1	89.9		September 2	124	

Rio Grande near Los Fresnos, Texas, July 1, 1945 to September 30, 1945
(Continued)

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)	Date of collection	Specific conductance K x 10^5 at 25°C	Chloride (Cl)
September 3, 1945	135	152			
September 4	124				
September 5	120				
September 6	106	134			
September 7	132				
September 8	148	216			
September 9	148				
September 10	139				
September 11	135				
September 12	123	168			
September 13	136				
September 14	135				
September 15	138				
September 16	138				
September 17	148	230			
September 18	145				
September 19	130	204			
September 20	132				
September 21	130	206			
September 22	128				
September 23	128				
September 24	129				
September 25	119	182			
September 26	119				
September 27	110				
September 28	105				
September 29	96.8	144			
September 30	103				

Analyses of samples collected from the Rio Grande river near Brownsville, Texas, March 1, 1943 to February 29, 1944 (Composites of daily samples collected at pumping plant of Cameron County District No. 5 (El Jardin) 3 miles southeast of Brownsville).

Analyzed by Geological Survey

Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C	Calcium (Ca)	Magnesium (Mg)	Sodium and Potassium (Na + K) (calc.)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids Parts per million	Total hardness as $CaCO_3$ (calc.)
Mar. 1-10, 1943	180	120	40	201	177	351	275	3.0	1,077	464
Mar. 12-20	176	112	40	203	182	328	278	3.0	1,054	444
Mar. 21-25,29-31	177	114	38	217	173	329	300	1.5	1,087	440
Apr. 1-10	173	107	37	214	170	322	290	2.0	1,056	419
Apr. 11-13,15-20	171	98	39	208	180	310	285	3.0	1,022	405
Apr. 21-22,24-30	121	80	28	128	161	199	178	3.0	695	314
May 1-10	171	112	38	192	215	284	270	1.5	1,003	436
May 11-14, 16-20	179	111	42	210	206	312	292	1.2	1,070	450
May 21-28	242	171	61	273	220	584	340	3.5	1,541	678
May 29-31	79.5	59	16	78	135	135	91	4.0	450	213
June 1-5,7-8	88.4	70	16	89	147	143	114	3.0	507	240
July 6-10,11-13	140	93	26	168	152	263	215	2.7	843	337
July 27, Aug. 3,8-10	103	82	14	114	163	198	118	4.1	610	262
Aug. 11-20	97.1	78	14	106	171	163	119	4.6	569	252
Aug. 21-31	125	98	24	133	211	192	180	3.2	761	343
Sept. 1-7	142	100	30	161	209	225	220	10	849	373
Sept. 8-10	87.6	62	14	99	118	153	117	5.9	509	218
Sept. 11-20	84.2	60	16	89	111	166	101	4.2	491	216
Sept. 21-30	103	70	18	113	121	179	146	3.5	589	248
Oct. 1-10	98.0	69	16	95	122	164	121	3.5	529	238
Oct. 11-20	85.8	71	14	87	133	170	95	4.0	506	234
Oct. 21-31	113	84	20	124	158	196	160	3.2	665	292
Nov. 1-10	130	85	25	158	154	245	195	1.5	785	315
11-14, Nov. 19-20	123	83	24	145	156	226	182	1.2	738	306
Nov. 15-18	72.2	54	16	75	124	126	92	1.2	425	201
Nov. 21-30	139	88	28	160	148	258	206	1.8	815	334
Dec. 1-10	144	91	29	164	144	253	225	3.8	837	340
Dec. 21-31	163	94	35	206	141	293	280	2.0	985	378
Dec. 11-20	142	90	27	159	153	250	222	2.2	820	336

Analyses of samples collected from the Rio Grande river near Brownsville, Texas, March 1, 1943 to February 29, 1944 (Composites of daily samples collected at pumping plant of Cameron County District No. 5 (El Jardin) 3 miles southeast of Brownsville).

Analyzed by Geological Survey — Parts per million

Date of collection	Specific conductance ($K \times 10^5$ at 25°C)	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	Total hardness as $CaCO_3$ (calc.)
Jan. 11-10, 1944	164	99	33	203	155	301	270	3.8	986	382
Jan. 11-20	165	98	33	206	168	308	260	3.8	992	380
Jan. 21-31	163	98	34	190	164	286	257	3.5	938	384
Feb. 1-10	158	90	33	207	156	294	265	2.8	969	360
Feb. 11-20	163	92	36	183	159	249	272	2.0	912	378
Feb. 21-29	160	94	36	167	182	216	262	1.5	866	382

WEIGHTED AVERAGE ANALYSES OF WATER FROM STREAMS IN PECOS RIVER BASIN

Analyzed by Geological Survey

Year ended Sept. 30	Mean discharge (second-feet)	Specific conductance K x 10^5 at 25°C	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)
									Pecos River at
1938	301	508	15	0.06	520	116	557	16	110
1939	256	646	13	.07	583	161	773	21	109
1940	152	786	15	.07	592	200	1,050	20	121
1941	1,284	315	18	.08	364	72	280	11	121
1942	1,115	375	20	.05	396	96	370	12	129
1943	428	515	19	.08	498	142	554	20	114
1944	226	634	21	.09	586	186	725	22	111
1945	244	739	19	.09	601	200	926	24	113
									Pecos River at
1940[1]	86.9	839	-	-	618	224	1,130		121
1941	646	380	-	-	349	71	303		103
									Pecos River below
1940	52.8	1,280	21	.05	725	308	2,030	25	168
1941	556	489	20	.08	429	112	585	14	119
1942[1]	1,535	462	24	.07	429	111	519	14	143
									Pecos River near
1940	71.3	1,560	19	.05	737	392	2,600	29	154
1941[1]	490	591	-	-	444	135	814		127
									Pecos River near
1940[2]	-	1,240	-	-	576	306	2,040		145
1941[1]	458	600	-	-	447	138	830		135

1 For nine months' period ended June 30.
2 For eleven months Nov. 3, 1939 to Sept. 30, 1940.

DURING PERIOD 1938 to 1945 AT STATIONS FOR WHICH RECORDS ARE AVAILABLE

Parts per million									
Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	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
Orla, Texas									
1,610	868	-	1.4	3,760	5.00	3,060	1,770	1,680	40
1,890	1,240	0.7	1.7	4,740	6.45	3,280	2,120	2,030	44
2,020	1,670	1.0	1.8	5,640	7.67	2,290	2,300	2,200	50
1,070	434	.2	3.0	2,310	3.14	8,000	1,200	1,100	33
1,230	570	.5	1.7	2,760	3.75	8,300	1,380	1,280	37
1,650	872	.7	1.2	3,810	5.18	4,400	1,830	1,730	39
1,940	1,180	.8	3.0	4,720	6.42	2,880	2,230	2,140	42
2,040	1,530	1.2	2.5	5,430	7.38	3,580	2,320	2,230	46
Pecos, Texas									
2,110	1,850	-	2.0	5,950	8.09	1,480	2,460	2,360	50
1,042	479	-	1.8	2,307	3.14	4,030	1,160	1,080	36
Grandfalls, Texas									
2,670	3,240	2.0	2.6	9,110	12.4	1,300	3,070	2,940	59
1,340	924	.6	3.4	3,490	4.75	5,260	1,480	1,390	45
1,340	811	-	2.3	3,320	4.52	13,700	1,530	1,410	42
Girvin, Texas									
3,060	4,130	2.3	1.2	11,000	15.0	2,130	3,450	3,180	62
1,500	1,240	-	1.6	4,210	5.73	5,540	1,660	1,560	52
Sheffield, Texas									
2,380	3,210	-	1.3	8,580	11.7	-	2,690	2,580	62
1,480	1,300	-	2.3	4,260	5.79	5,270	1,680	1,570	52