QUALITY OF WATER OF THE COLORADO RIVER, 1925-40

C.S. Howard
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James L. Jarrett

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By C. S. Howard

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INTRODUCTION

The study of the quality of water of the Colorado River and its tributaries has been a continuing one since 1925. The data so obtained have been useful in the planning and construction of dams and reservoirs, the utilization of the water within the basin, and in planning the economy of areas outside of the basin, partially or wholly dependent on the diversion or importation of water from the Colorado River or its tributaries. Much chemical quality data of the Colorado River and its tributaries collected during the period from 1925 to 1940 have not been published in detail.

The purpose of this report is to make available for consultation and ready reference those previously unpublished data collected for the period 1925 to 1940, mainly between 1930 and 1940. Included among these data are many detailed chemical analyses of composites of daily samples and single samples of the Colorado River and its main tributaries and less detailed analyses of many other samples. In a few instances, for continuity of the record, analyses are included that have been published in Survey reports. Discussions of the quality of water of the Colorado River basin either in published reports or in mimeograph form are available; therefore, this report will include only tabulated data.

Data obtained for the period 1925 to 1930 for the most part were published in three Geological Survey Water-Supply Papers, 596-B, 636-A, and 638-D, all out of print. Summary data for the streams in the Colorado River basin for the period 1925 to 1943 were published in U.S. Geological Survey Water-Supply Paper 970, "Quality of surface waters of the United States, 1943". These summaries consist mainly of annual weighted averages of chemical analyses, dissolved-solids loads, and extremes of dissolved solids and hardness. Analyses of samples from Lake Mead are available in a series of reports, "Lake Mead Density Currents Investigations", by the Bureau of Reclamation [1937-1940, Vols. I and II; 1940-1946, Vol. III]. Data on the suspended sediment in the Colorado River for the period 1925-1941 were published in 1947, in U.S. Geological Survey Water-Supply Paper 998. Since 1940 results of water-quality investigations in the Colorado River basin have been published in the annual U.S. Geological Survey reports, "Quality of surface waters of the United States".

ACKNOWLEDGMENTS

Quality-of-water investigations in the Colorado River basin, from their inception, have been under the immediate direction of the author, and under the general supervision of the Chief of the Quality of Water Branch of the U. S Geological Survey. Many chemists of the Branch have assisted in the analyses of water samples. District Engineers and other employees of the Surface Water Branch, U. S. Geological Survey, have participated in the investigations to the extent of furnishing discharge records of the streams and collecting many samples of water. The Bureau of Reclamation also assisted in the collection of samples at one or more stations.

SAMPLES

Samples for the analyses included in this report, for the most part, were collected daily in 4-ounce bottles and sent to the laboratory in Washington for analysis. The samples were collected at or near regularly operated gaging stations in order that the data obtained might be properly correlated with the discharge of the stream in subsequent evaluations and calculations. Single samples usually consisted of several 4-ounce bottles of water collected at one sampling time.

In the laboratory the suspended material in the samples was allowed to settle, and the clear water was siphoned off for analysis without disturbing the settled material. Normally three composite samples were prepared for each month, consisting of the first 10 days, the second 10 days, and the remainder of the month. Analyses of composites for shorter periods or for individual days were made at times. The samples were analyzed by methods regularly employed by the Geological Survey.

ANALYSES

Because most of the data were tabulated several years ago, the arrangement of data in the tables and reporting units vary somewhat with the current conventional method of reporting in Survey reports. Concentrations of dissolved solids are reported in parts per millions and tons per acre-foot, and the load of dissolved solids in tons per day is calculated also. The values reported for dissolved solids in parts per million in the tables of analyses are those obtained by summation of the determined chemical constituents for each analysis. In this summation the bicarbonate is converted to the equivalent carbonate by dividing it by the factor 2.03. Values for dissolved solids, in a few instances obtained by evaporation of a clear sample of water and drying the residue at 180°C for 1 hour, are indicated by footnotes.

The total hardness as $CaCO_3$ is calculated from the calcium and magnesium values. Noncarbonate hardness is also reported; it is calculated from the total hardness and the bicarbonate.

The tables of analyses also show values for percent sodium. These values are obtained by dividing the equivalents per million of sodium by the sum of the equivalents per million of calcium, magnesium, sodium, and potassium, and multiplying the quotient by 100. In a few analyses the results for sodium and potassium combined are shown as computed values as sodium, and are so used in the calculation for values for percent sodium.

Values for the borate ion (BO_3) rather than the current practice of reporting as (B) are given in most of the analyses. These values may be converted to values as boron (B) by multiplying by the factor 0.184.

Values for specific conductance in the tables are shown as $K \times 10^5$ rather than as micromhos as in the current quality-of-water reports. To convert $K \times 10^5$ values to micromhos multiply them by the factor 10.

SAMPLING STATIONS

The locations of sampling stations or places, the descriptions of which follow, are shown on figure 1. The stations are listed in downstream order in the basin; that is, the first station described is the highest upstream in the Colorado River basin either on the main or tributary stream. The tables of analyses appear in the same order of arrangement as the description of sampling stations.

In the descriptions under the item, "Records available", data are shown for the entire period of record for the station through September 1951; under the item, "Extremes", with reference to dissolved solids and hardness the data are shown only for the periods covered in this report. For the period 1925-1943 water years, extremes for the year and the period are shown in Water-Supply Paper 970; for each succeeding year since 1943, extremes for the year and the entire period of record are shown in the annual reports, "Quality of surface waters of the United States", as listed below:

Year	WSP number	Year	WSP number
1944	1022	1948	1133
1945	1030	1949	1163
1946	1050	1950	1189
1947	1102	1951	1200

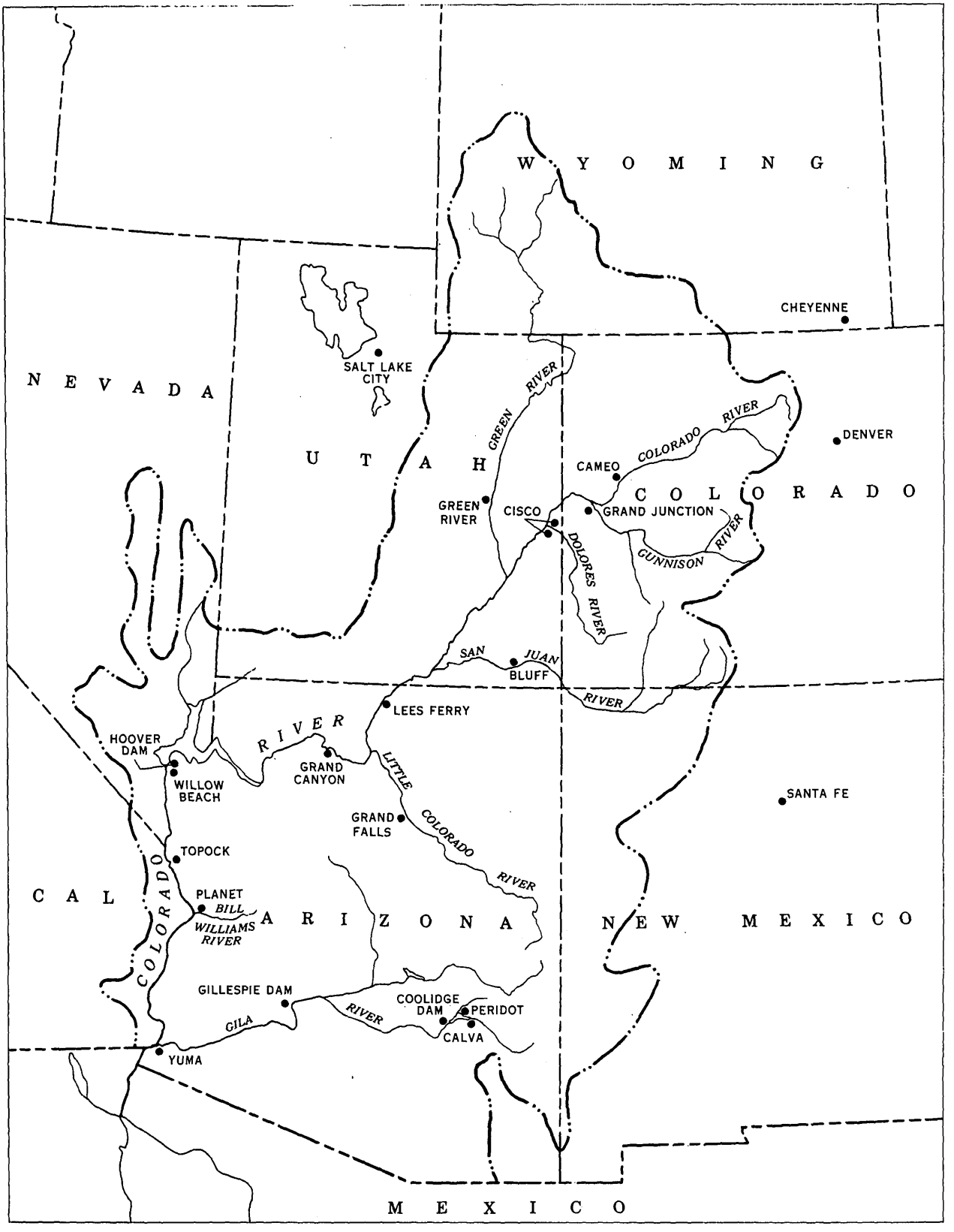

Fig. 1 Location of quality-of-water sampling stations in the Colorado River Basin, 1925–40

50 0 150 Miles

STATION DESCRIPTIONS

COLORADO RIVER NEAR CAMEO, COLO.

LOCATION. --At diversion dam, about 1½ miles upstream from Cameo, Mesa County, and 5 miles downstream from gaging station.
DRAINAGE AREA. --8,055 square miles above gaging station.
RECORDS AVAILABLE. --Chemical analyses: October 1933 to September 1951.
Water temperatures: April 1949 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 1,050 ppm Dec. 21-31, 1940; minimum, 143 ppm June 11-20, 1935.
Hardness (for period September 1933 to September 1935 only): Maximum, 399 ppm July 21-31, 1934; minimum, 98 ppm June 21-30, 1935.
REMARKS. --No appreciable inflow between gaging station and sampling point except during periods of heavy local rains.

GUNNISON RIVER NEAR GRAND JUNCTION, COLO.

LOCATION. --At gaging station half a mile upstream from point of diversion of Redlands power canal, and 3 miles upstream from mouth and Grand Junction, Mesa County.
DRAINAGE AREA. --8,020 square miles approximately.
RECORDS AVAILABLE. --Chemical analyses: October 1931 to September 1951.
Water temperatures: April 1949 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 2,980 ppm July 21-31, 1937; minimum, 233 ppm June 1-10, 1933.
Hardness (for period October 1931 to September 1936 only): Maximum, 1,370 ppm Sept. 1-20, 1934; minimum, 143 ppm June 1-10, 1933.

DOLORES RIVER NEAR CISCO, UTAH

LOCATION. --Near the mouth of the river about 10 miles south of Cisco.
RECORDS AVAILABLE. --Chemical analyses (monthly): October 1931 to September 1933; March to September 1951 (at gaging station 9 miles upstream from mouth).
Water temperatures: March to September 1951 (at gaging station 9 miles upstream from mouth).
Sediment records: March to September 1951 (at gaging station 9 miles upstream from mouth).
EXTREMES. --Dissolved solids: Maximum, 3,350 ppm Oct. 22, 1932; minimum, 215 ppm June 5, 1933.
Hardness: Maximum, 768 ppm Oct 22, 1932; minimum, 136 ppm June 24, 1932.

COLORADO RIVER NEAR CISCO, UTAH

LOCATION. --At gaging station, 1 mile downstream from Dolores River and 11 miles south of Cisco, Grand County.
DRAINAGE AREA. --24,100 square miles.
RECORDS AVAILABLE. --Chemical analyses: October 1928 to September 1951.
Water temperatures: April 1949 to September 1951.
Sediment records: May 1930 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 2670 ppm Aug. 11-20, 1940; minimum, 202 ppm June 11-20, 1935.

Hardness (for period October 1928 to September 1935 only): Maximum, 1,090 ppm Sept. 1-10, 1934; minimum, 132 ppm June 11-20, 1933.

GREEN RIVER AT GREEN RIVER, UTAH

LOCATION. --At gaging station, 1 mile southeast of town of Green River, Emery County, and 22 miles upstream from San Rafael River.
DRAINAGE AREA. --40,600 square miles.
RECORDS AVAILABLE. --Chemical analyses: August 1928 to September 1951.
Water temperatures: April 1949 to September 1951.
Sediment records: May 1930 to September 1949.
EXTREMES. --Dissolved solids: Maximum, 1,090 ppm Sept. 21-30, 1940; minimum, 194 ppm June 21-30, 1933.
Hardness (for period August 1928 to September 1935): Maximum, 488 ppm Dec. 21-31, 1933; minimum, 128 ppm June 21-30, 1933.

SAN JUAN RIVER NEAR BLUFF, UTAH

LOCATION. --At bridge on State Highway 47, 1,800 feet downstream from gaging station, and 20 miles southwest of Bluff, San Juan County.
DRAINAGE AREA. --23,000 square miles.
RECORDS AVAILABLE. --Chemical analyses: February to June 1927; June to October 1928; May 1929 to September 1951.
Water temperatures: May 1944 to September 1951.
Sediment Records: August 13 to September 21, 1928; July 1929 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 1,860 ppm July 21-31, 1934; minimum, 159 ppm June 11-20, 1929.
Hardness: Maximum, 874 ppm July 21-31, 1934; minimum, 106 ppm June 11-20, 1929.

COLORADO RIVER AT LEES FERRY, ARIZ.

LOCATION. --At gaging station at head of Marble Gorge at Lees Ferry, just upstream from Paria River, 28 miles downstream from Utah-Arizona State line, 61.5 miles upstream from Little Colorado River, and 79 miles downstream from San Juan River.
DRAINAGE AREA. --107,900 square miles.
RECORDS AVAILABLE. --Chemical analyses: January to July 1926; October 1926; December 1926; February to June 1927; August 1928 to September 1930; October 1942 to October 1945; October 1947 to September 1951.
Water temperatures: July 1949 to September 1951.
Sediment records: October 1928 to December 1933; November 1942 to September 1944; October 1947 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 1,410 ppm Oct. 11-20, 1928; minimum, 209 ppm June 11-20, 1929.
Hardness: Maximum, 720 ppm Oct. 11-20, 1928; minimum, 126 ppm June 13-19, 1926.

LITTLE COLORADO RIVER NEAR GRAND FALLS, ARIZ.

LOCATION. --At gaging station 1,000 feet downstream from Grand Falls on Navajo Indian Reservation, $4\frac{1}{2}$ miles upstream from Dinnebeto Wash, and 30 miles northeast of Flagstaff.
DRAINAGE AREA. --21,200 square miles, approximately.
RECORDS AVAILABLE. --Chemical analyses: December 1925 to May 1926; October 1926; January to April 1927; July to September 1931; November 1942; February 1943.
Sediment records: July 6 to September 26, 1931.

EXTREMES. --Dissolved solids: Maximum, 1,640 ppm Feb. 18, 1926; minimum, 295 ppm Apr. 15, 1927.
Hardness: Maximum, 380 ppm Feb. 18, 1926; minimum, 86 ppm Apr. 15, 1927.

COLORADO RIVER NEAR GRAND CANYON, ARIZ.

LOCATION. --At gaging station at Kaibab Bridge, 1/4 mile upstream from Bright Angel Creek, 11 miles by trail northeast of Grand Canyon village, Coconino County, and 267 miles upstream from Hoover Dam.
DRAINAGE AREA. --137,800 square miles.
RECORDS AVAILABLE. --Chemical analyses: August 1925 to November 1942; September 1943 to September 1951.
Water temperatures: October 1936 to October 1942; September 1943 to September 1951.
Sediment records: October 1925 to November 15, 1942; September 18, 1943 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 1,890 ppm Sept. 21-30, 1934; minimum, 226 ppm June 11-20, 1929.
Hardness: Maximum, 792 ppm Sept. 1-10, 1940; minimum, 127 ppm June 11-17, 1926.

COLORADO RIVER BELOW HOOVER DAM, ARIZ. -NEV.

LOCATION. --At Hoover Dam, about 1 mile upstream from gaging station.
DRAINAGE AREA. --167,800 square miles.
RECORDS AVAILABLE. --Chemical analyses: October 1939 to September 1951.
Water temperatures: October 1941 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 788 ppm Apr. 1-10, 1940; minimum, 735 ppm Nov. 11-20, 1939.
Hardness: Maximum, 403 ppm Sept. 1-10, 1940; minimum, 376 ppm Oct. 11-20, 21-31, 1939.

COLORADO RIVER NEAR WILLOW BEACH, ARIZ.

LOCATION. --At gaging station 2 miles upstream from Willow Beach and 10 miles downstream from Hoover Dam.
DRAINAGE AREA. --168,400 square miles.
RECORDS AVAILABLE. --Chemical analyses: July 1934 to September 1939; February 1945 to April 1946.
Water temperatures: March to April 1946.
Sediment records: October 1934 to September 1939.
EXTREMES. --Dissolved solids: Maximum, 1,710 ppm Oct. 1-10, 1934; minimum, 276 ppm Aug. 21-31, 1935.
Hardness: Maximum, 750 ppm Sept. 1-10, 1934; minimum, 160 ppm July 21-31, Aug. 1-10, Aug. 21-31, 1935.

COLORADO RIVER NEAR TOPOCK, ARIZ.

LOCATION. --At gaging station 3 miles downstream from Topock, 40 miles upstream from Parker Dam.
DRAINAGE AREA. --172,300 square miles.
RECORDS AVAILABLE. --Chemical analyses: August 1925 to September 1927; October 1933 to September 1934.
Sediment records: October 1925 to March 1939.
EXTREMES. --Dissolved solids: Maximum, 1,740 ppm Sept. 1-10, 1934; minimum, 253 ppm June 11-20, 1926.

Hardness: Maximum, 762 ppm Sept. 1-10, 1934; minimum, 146 ppm June 11-20, 1926.

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.

LOCATION. --At gaging station 1 mile west of Planet and 6 miles upstream from water line of Havasu Lake.
DRAINAGE AREA. --5,140 square miles, approximately.
RECORDS AVAILABLE. --Chemical analyses (monthly and semimonthly): December 1928 to August 1940; November 1942 to October 1946.
EXTREMES. --Dissolved solids: Maximum, 883 ppm Aug. 24, 1929; minimum, 160 ppm Feb. 19, 1932.
Hardness: Maximum, 528 ppm Aug. 24, 1929; minimum, 90 ppm Feb. 19, 1932.

GILA RIVER NEAR CALVA, ARIZ.

LOCATION. --At gaging station at the head of San Carlos Reservoir $1\frac{1}{2}$ miles northwest of Calva.
DRAINAGE AREA. --14,490 square miles.
RECORDS AVAILABLE. --Chemical analyses: August to September 1937; July 1943 to October 1944.

SAN CARLOS RIVER NEAR PERIDOT, ARIZ.

LOCATION. --At highway bridge 2 miles downstream from San Carlos and 2 miles upstream from Peridot.
DRAINAGE AREA. --1,040 square miles, approximately.
RECORDS AVAILABLE. --Chemical analyses: August to September 1937.

GILA RIVER BELOW COOLIDGE DAM, ARIZ.

LOCATION. --At gaging station about 2,200 feet downstream from Coolidge Dam.
DRAINAGE AREA. --12,890 square miles.
RECORDS AVAILABLE. --Chemical analyses: August to September 1937.

GILA RIVER AT GILLESPIE DAM, ARIZ.

LOCATION. --At Gillespie Dam 8 miles downstream from Hassayampa River.
DRAINAGE AREA. --49,600 square miles, approximately.
RECORDS AVAILABLE. --Chemical analyses: February 1926 to June 1927; March 1946; December 1950 to September 1951.
Water temperatures: December 1950 to September 1951.

COLORADO RIVER AT YUMA, ARIZ.

LOCATION. --At gaging station 1,800 feet downstream from bridge on U. S. Highway 80 at Yuma, Yuma County, 5 miles downstream from Gila River.
DRAINAGE AREA. --242,900 square miles, including all closed basins entirely within drainage boundary.
RECORDS AVAILABLE. --Chemical analyses: September 1926 to September 1928; October 1942 to September 1951.
EXTREMES. --Dissolved solids: Maximum, 1,300 ppm Jan. 11-20 1927; minimum 285 ppm June 11-20, 1928.
Hardness: Maximum, 567 ppm Oct. 21-31, 1926; minimum, 163 ppm June 11-20, 1928.

COLORADO RIVER NEAR CAMEO, COLO.

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1933	1,720			9.4	0.07	78	24	131	5.1	172	171	173	0.2	1.6	0.1	678	0.92	3,150	293	152	49
Oct. 11-20	1,700			13	.06	82	26	147	4.5	182	186	198	.3	1.9	.1	748	1.02	3,430	312	162	50
Oct. 21-31	1,400			15	.05	90	27	179	5.9	198	201	239	.1	1.7	.2	856	1.16	3,240	336	173	53
Nov. 1-10	1,420			13	.07	92	34	174	5.0	207	216	243	.1	2.4	.3	881	1.20	3,380	370	200	51
Nov. 11-20	1,480			14	.11	92	32	173	5.1	204	220	236	.0	2.4	.3	875	1.19	3,500	361	194	51
Nov. 21-30	1,400			15	.05	91	29	170	4.8	202	220	225	.0	2.6	.2	857	1.17	3,240	346	180	51
Dec. 1-10	1,340			12	.10	92	29	168	5.1	207	225	225	.3	2.5	.2	861	1.17	3,120	348	179	51
Dec. 11-16, 20	1,370			12	.06	96	28	168	2.9	214	222	230	.2	2.7	.2	867	1.18	3,210	354	179	50
Dec. 21-31	1,520			14	.06	98	29	183	4.5	216	226	249	.1	2.6	.1	915	1.24	3,750	364	186	52
Jan. 1-10, 1934	1,520			14	.08	93	28	178	2.1	212	222	232	.1	2.0	.1	876	1.19	3,600	347	173	53
Jan. 11, 13-20	1,380			13	.07	98	29	198	4.0	216	231	267	.4	2.7	.2	950	1.29	3,540	364	186	54
Jan. 21-31	1,370			13	.06	91	28	182	2.7	202	217	247	.3	2.3	.2	883	1.20	3,270	342	176	53
Feb. 1-4, 6-10	1,320			12	.04	85	26	180	5.9	208	207	243	.1	2.0	.6	864	1.18	3,080	319	148	55
Feb. 11-20	1,350			13	.04	87	27	189	7.2	197	213	259	.1	1.8	.6	894	1.22	3,260	328	166	55
Feb. 21-28	1,420			13	.04	86	26	188	5.0	199	213	253	.1	1.9	.6	884	1.20	3,390	322	158	56
Mar. 1-5, 7-10	1,360			13	.04	86	26	187	4.0	196	205	256	.0	1.6	.6	875	1.19	3,210	322	161	55
Mar. 11-18, 20	1,460			13	.05	83	25	179	7.2	195	195	252	.1	1.2	.6	852	1.16	3,360	310	150	55
Mar. 21-31	1,620			11	.04	77	21	161	4.6	177	173	225	.0	1.2	.3	761	1.03	3,330	278	134	55
Apr. 1-10	1,860			12	.07	72	20	147	4.6	170	166	202	.0	1.2	.2	709	.96	3,560	262	122	54
Apr. 11-20	2,760			11	.09	60	15	102	4.2	143	117	142	.2	1.0	.2	523	.71	3,900	211	94	51
Apr. 21-30	5,150			8.4	.12	45	10	57	3.7	114	72	79	.0	1.0	.1	332	.45	4,620	154	60	44
May 1-10	8,260			17	.08	40	8.2	38	2.2	106	59	52	.2	.8	2.5	270	.37	6,020	134	46	38
May 11-20	12,600			9.2	.08	31	5.8	22	1.8	84	37	29	.3	.6	3.0	178	.24	6,060	102	32	32
May 21-31	9,960			8.4	.25	30	6.3	28	4.5	78	42	38	.3	.5	.1	197	.27	5,300	101	37	36
June 1-10	6,790			12	.09	36	8.1	39	1.9	92	56	51	.2	.7	.1	250	.34	4,580	124	48	40
June 11-20	3,750			9.8	.09	45	10	63	2.2	105	77	88	.2	.5	.1	347	.47	3,510	154	68	47
June 21-31	2,390			10	.16	56	13	92	2.9	127	105	130	.2	.5	.1	472	.64	3,050	194	90	50
July 1-10	1,810			9.4	.06	66	16	120	3.0	143	126	176	.2	.5	.2	588	.80	2,870	230	114	53
July 11-20	1,250			11	.01	73	19	166	4.8	157	153	232	.3	.4	.1	737	1.00	2,490	260	132	58
July 21-31	1,490			17	.33	122	23	157	6.4	182	275	219	.2	1.2	.1	911	1.24	3,660	399	250	46
Aug. 1-10	1,240			15	.18	91	21	191	5.6	178	189	273	.0	2.9	.1	876	1.19	2,930	314	168	56
Aug. 11-20	1,540			14	.02	82	20	149	4.2	176	171	207	.1	1.2	.1	735	1.00	3,060	286	142	53
Aug. 21-31	1,430			13	.22	86	22	168	4.8	192	186	228	.2	1.2	.1	804	1.09	3,100	305	148	54
Sept. 1-10	1,100			13	.02	97	24	203	4.3	183	203	286	.1	1.1	.1	912	1.24	2,710	316	166	58
Sept. 11-20	1,140			13	.02	89	24	183	4.3	188	198	258	.0	1.1	.1	863	1.17	2,660	320	166	55
Sept. 21-30	1,490			14	.12	92	22	183	5.4	196	211	243	.3	1.2	.1	969	1.18	3,500	320	160	55
Weighted average	2,568			12	0.11	61	16	98	3.6	138	120	134	0.2	1.1	--	513	0.70	3,560	218	105	49

COLORADO RIVER NEAR CAMEO, COLO.--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934	1,270			12	0.08	88	21	167	5.0	189	184	236	0.1	0.6	0.2	807	1.10	2,770	306	151	54
Oct. 11-20	1,040			11	.12	95	23	201	5.2	195	202	287	.0	1.1	.3	922	1.25	2,590	332	172	56
Oct. 21-31	957			9.6	.07	93	23	187	6.1	194	198	267	.1	1.4	.1	881	1.20	2,280	327	168	55
Nov. 1-10	1,020			8.6	.09	95	24	191	6.2	194	207	272	.0	1.8	.2	901	1.23	2,480	336	176	55
Nov. 11-20	1,060			12	.11	92	23	181	5.6	187	199	257	.1	1.0	.1	863	1.17	2,470	324	170	54
Nov. 21-30	1,040			9.4	.05	91	24	181	6.1	194	209	253	.0	2.0	.2	866	1.18	2,430	326	174	54
Dec. 1-10	995			14	.07	102	29	206	6.1	197	252	287	.1	2.6	.1	996	1.35	2,680	374	212	54
Dec. 11-20	1,040			14	.08	100	26	196	6.4	204	229	260	.4	2.2	.9	935	1.27	2,630	356	190	54
Dec. 21-31	979			13	.12	92	26	185	6.4	196	212	257	.0	2.2	.7	891	1.21	2,360	336	176	54
Jan. 1-10, 1935	886			14	.10	96	27	203	6.4	202	216	277	.1	2.4	.5	942	1.28	2,250	350	185	55
Jan. 11-15, 20	1,010			10	.15	91	26	161	7.2	192	207	225	.3	2.2	.2	824	1.12	2,250	334	176	50
Jan. 21-31	1,100			10	.12	95	29	202	6.4	202	222	235	.2	2.2	.4	953	1.30	2,830	356	190	55
Feb. 1-10	962			—	.08	90	26	187	4.8	197	210	261	.2	2.0	.4	878	1.19	2,280	332	170	55
Feb. 11-19	931			—	.10	88	26	195	4.6	196	204	272	.2	1.5	.6	888	1.21	2,230	326	166	56
Feb. 20-28	928			23	.06	93	26	191	6.1	202	210	265	.2	1.6	.2	916	1.25	2,300	339	172	55
Mar. 1-10	960			20	.05	91	27	194	5.6	201	216	270	.1	1.7	.2	924	1.26	2,400	338	174	55
Mar. 11-20	999			18	.06	88	25	181	5.9	193	209	245	.3	1.5	.2	869	1.18	2,340	322	164	54
Mar. 21-31	1,090			16	.02	83	23	173	5.4	184	193	235	.1	1.5	.1	821	1.12	2,420	302	150	55
Apr. 1-10	1,500			14	.03	75	21	146	5.0	179	178	188	.1	1.5	.1	717	.98	2,900	274	127	53
Apr. 11-20	1,680			15	.03	76	21	132	4.2	175	167	180	.2	1.0	.1	683	.93	3,100	276	132	50
Apr. 21-30	2,650			13	.03	61	16	87	3.5	154	120	112	.3	1.4	.1	490	.67	3,510	218	92	46
May 1-10	2,740			13	.03	59	16	83	2.9	153	111	105	.2	1.0	.1	467	.64	3,450	213	88	45
May 11-20	4,900			14	.07	53	13	53	2.7	152	83	63	.2	1.6	.1	358	.49	4,740	186	82	38
May 21-31	9,430			15	.06	47	11	31	3.0	140	58	39	.2	1.1	.1	274	.37	6,980	162	48	29
June 1-10	15,800			19	.19	35	7.9	18	2.4	107	40	23	.1	.8	.1	199	.27	8,490	120	32	24
June 11-20	28,900			11	.24	31	5.9	10	2.1	90	26	12	.0	.6	.1	143	.19	11,160	102	28	17
June 21-30	19,500			10	.06	30	5.5	16	1.7	90	33	20	.2	.3	.0	161	.22	8,480	98	24	26
July 1-10	11,400			9.3	.04	32	6.6	25	1.9	88	44	33	.3	.4	.0	196	.27	6,030	107	35	33
July 11-20	7,580			8.6	.02	38	8.6	35	2.7	101	56	44	.3	.4	.0	243	.33	4,970	130	48	36
July 21-31	4,540			10	.03	47	11	52	3.5	119	81	70	.3	.6	.0	334	.45	4,090	162	65	40
Aug. 1-10	3,310			11	.03	56	13	68	3.8	134	98	93	.3	.7	.1	410	.56	3,660	194	84	43
Aug. 11-20	2,280			9.6	.03	65	16	95	4.0	148	123	131	.3	.6	.1	517	.70	3,180	228	106	47
Aug. 21-31	2,110			11	.07	74	23	86	4.0	161	138	143	.3	.3	.1	559	.76	3,180	279	147	40
Sept. 1-10	2,120			10	.07	76	19	113	4.0	158	159	146	.4	.3	.1	606	.82	3,470	268	138	47
Sept. 11-20	1,950			9.4	.06	72	20	98	4.5	153	148	151	.4	.2	.1	579	.79	3,050	262	136	44
Sept. 21-30	1,810			7.2	.04	84	21	132	4.0	168	180	187	.4	.2	.1	699	.95	3,420	296	158	49
Weighted average	3,952			12	0.11	48	11	55	3.0	122	78	74	0.2	0.8	0.1	343	0.47	3,660	165	85	41

COLORADO RIVER NEAR CAMEO, COLO.--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1935	1,990		--							165	158	148	0.4	0.7	--	624	0.85	3,350			
Oct. 11-20	1,850		--							179	178	169	.2	.6	--	727	.99	3,240			
Oct. 21-31	1,630		--							183	178	185	.2	.8	--	729	.99	3,270			
Nov. 1-10	1,750		--							177	172	174	.3	1.0	--	694	.94	3,280			
Nov. 11-20	1,560		--							183	178	195	.3	1.0	--	743	1.01	3,130			
Nov. 21-30	1,400		--							187	185	207	.2	.8	--	776	1.03	2,930			
Dec. 1-10	1,240		135							197	206	222	.2	1.6	0.1	842	1.15	2,820			
Dec. 11, 12, 15, 17-20	1,100		146							205	212	250	.3	1.5	.1	896	1.22	2,660			
Dec. 21-31	1,190		162							215	225	282	.3	1.6	.2	976	1.33	3,140			
Jan. 1-10, 1936	1,180		143							197	202	240	.3	1.8	.2	861	1.17	2,740			
Jan. 11-18	1,190		135							186	194	228	.2	1.4	.1	819	1.11	2,630			
Jan. 23-31	1,350		135							186	192	225	.2	1.4	.2	815	1.11	2,970			
Feb. 1-10	1,140		139							190	200	235	.2	1.5	.1	845	1.15	2,600			
Feb. 11-20	1,220		131							194	191	210	.4	1.7	--	822	1.12	2,710			
Feb. 21-29	1,210		132							196	198	222	.3	1.8	--	839	1.14	2,740			
Mar. 1-10	1,240		131							194	195	222	.3	1.7	--	832	1.13	2,790			
Mar. 11-20	1,290		125							187	179	211	.2	1.4	--	780	1.06	2,720			
Mar. 21-31	1,170		133							193	191	236	.3	1.2	--	847	1.15	2,680			
Apr. 1-10	1,020		138							--	--	--	--	--	--	824	1.12	2,270			
Apr. 11-20	4,420		83.4							--	--	--	--	--	--	510	.69	6,090			
Apr. 21-27, 29-30	11,100		37.3							--	--	--	--	--	--	238	.32	7,130			
May 1-10	13,300		34.1							--	--	--	--	--	--	207	.28	7,600			
May 11-20	18,200		28.7							--	--	--	--	--	--	174	.24	8,550			
May 21-31	24,800		25.1							--	--	--		--	--	153	.21	10,160			
June 1-10	17,900		29.0							--	--	--	--	--	--	173	.24	8,360			
June 11-20	17,300		26.4							--	--	--	--	--	--	161	.22	7,740			
June 21-30	11,800		33.4							--	--	--	--	--	-	192	.26	6,120			
July 1-10	6,730		47.9							--	--	--	--	--	--	272	.37	4,940			
July 11-19	6,240		56.6							--	--	--	--	--	--	342	.47	5,760			
July 21-31	4,140		78.1							--	--	--	-	--	--	476	.65	5,320			
Aug. 1-10	5,070		71.5							--	--	--	--	--	--	441	.60	6,040			
Aug. 11-20	3,670		74.3							--	--	--	--	--	--	443	.60	4,390			
Aug. 21-31	2,820		85.4							--	--	--	--	--	--	504	.69	3,840			
Sept. 1-10	2,480		96.2							--	--	--	--	--	--	589	.80	3,940			
Sept. 11-20	2,060		103							--	--	--	--	--	-	614	.84	3,420			
Sept. 21-30	1,620		116								-	--	--	--	--	706	.96	3,090			
Weighted average	5,010		--							--	--	--	--	--	--	324	0.44	4,380			

COLORADO RIVER NEAR CAMEO, COLO.--Continued

Mean discharge and dissolved solids, October 1936 to September 1938

Date	October 1936 to September 1937		Date	October 1937 to September 1938	
	Mean discharge (cfs)	Dissolved solids[a] (ppm)		Mean discharge (cfs)	Dissolved solids[a] (ppm)
Oct. 1-10, 1936	1,890	673	Oct. 1-10, 1937	1,860	761
Oct. 11-20	1,700	688	Oct. 15-20	2,150	726
Oct. 21-31	1,740	715	Oct. 21-31	1,960	712
Nov. 1-10	1,650	717	Nov. 1-10	1,880	708
Nov. 11-20	1,540	729	Nov. 11-16, 18-20	1,730	694
Nov. 21-30	1,350	785	Nov. 21-30	1,620	710
Dec. 1-10	1,200	920	Dec. 1-10	1,500	750
Dec. 11-20	1,250	909	Dec. 11-20	1,630	726
Dec. 21-31	1,280	846	Dec. 21-31	1,370	892
Jan 1-8, 1937	1,180	936	Jan. 1-10, 1938	1,250	908
Jan. 12, 14-20	1,100	993	Jan. 11-20	1,370	838
Jan. 24, 26-31	1,150	1,010	Jan. 21-31	1,240	900
Feb. 1-10	1,180	894	Feb. 1-10	1,240	890
Feb. 11-19	1,320	865	Feb. 11-19	1,420	814
Feb. 20-28	1,310	823	Feb. 20-28	1,210	865
Mar. 1-10	1,340	916	Mar. 1-10	2,140	784
Mar. 11-20	1,660	754	Mar. 11-20	1,850	784
Mar. 21-31	1,400	855	Mar. 21-31	1,770	736
Apr. 1-10	1,410	821	Apr. 1-10	1,600	794
Apr. 11-20	2,570	616	Apr. 11-20	2,960	586
Apr. 21-30	3,750	412	Apr. 21-30	9,320	366
May 1-10	6,130	358	May 1-10	10,300	316
May 11-20	15,700	254	May 11-20	13,100	296
May 21-31	14,300	210	May 21-31	18,500	239
June 1-10	10,800	233	June 1-10	27,700	205
June 11, 13-20	9,350	228	June 11-20	23,500	188
June 21-30	9,620	218	June 21-30	22,500	186
July 1-10	6,040	340	July 1-10	13,000	223
July 11-20	5,780	456	July 11-20	7,510	290
July 21-31	3,100	502	July 21-31	4,900	373
Aug. 1-10	2,440	579	Aug. 1-10	3,310	465
Aug. 11-20	1,830	772	Aug. 11-20	2,930	538
Aug. 21-31	1,920	761	Aug. 21-31	2,140	641
Sept. 1-10	2,230	658	Sept. 1-10	3,090	543
Sept. 11-20	1,820	732	Sept. 11-20	3,380	510
Sept. 21-30	1,810	817	Sept. 21-30	2,350	604
Weighted average	3,505	443	Weighted average	5,610	354

a Residue by evaporation.

COLORADO RIVER NEAR CAMEO, COLO.--Continued

Chemical analyses, in parts per million, water year October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids[a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Oct. 1-10, 1938	2,022		114	--	--	--	--	--	--	--	--	--	--	--	--	696	0.95	3,800	--	--	--
Oct. 11-20	2,067		109	10	0.08	77	23	116	9.6	180	138	159	0.0	0.0	0.1	676	.92	3,770	287	--	46
Oct. 21-31	1,832		118	12	.08	80	23	134	8.5	186	179	185	.1	1.5	.3	740	1.01	3,660	294	--	49
Nov. 1-10	1,829		118	--	--	--	--	--	--	--	--	--	--	--	--	722	.98	3,550	--	--	--
Nov. 11-20	1,772		120	--	--	--	--	--	--	--	--	--	--	--	--	742	1.01	3,540	--	--	--
Nov. 21-30	1,634		135	--	--	--	--	--	--	--	--	--	--	--	--	833	1.13	3,660	--	--	--
Dec. 1-10	1,803		125	--	--	--	--	--	--	--	--	--	--	--	--	773	1.05	3,750	--	--	--
Dec. 11-14, 16-17, 20-	1,790		128	--	--	--	--	--	--	194	--	--	--	--	--	781	1.06	3,760	--	--	--
Dec. 21-31	1,494		138	--	--	--	--	--	--	208	--	--	--	--	--	842	.77	2,280	--	--	--
Jan. 1-10, 1939	1,578		136	--	--	--	--	--	--	199	--	--	--	--	--	821	1.12	3,500	--	--	--
Jan. 11 13, 15-20	1,464		130	--	--	--	--	--	--	--	--	--	--	--	--	792	1.08	3,130	--	--	--
Jan. 21-31	1,395		133	--	--	--	--	--	--	--	--	--	--	--	--	811	1.10	3,040	--	--	--
Feb. 1-5, 7-10	1,362		136	--	--	--	--	--	--	--	--	--	--	--	--	824	1.12	3,020	--	--	--
Feb. 11-19	1,319		136	--	--	--	--	--	--	--	--	--	--	--	--	832	1.13	2,950	--	--	--
Feb. 20 28	1,367		138	--	--	--	--	--	--	--	--	--	--	--	--	839	1.14	3,090	--	--	--
Mar. 1-10	1,354		134	--	--	--	--	--	--	--	--	--	--	--	--	817	1.11	2,980	--	--	--
Mar. 11-20	1,596		124	--	--	--	--	--	--	--	--	--	--	--	--	777	1.06	3,350	--	--	--
Mar. 21, 22, 24-31	2,445		103	--	--	--	--	--	--	--	--	--	--	--	--	646	.88	4,260	--	--	--
Apr. 1-10	2,829		91.0	--	--	--	--	--	--	--	--	--	--	--	--	547	.74	4,150	--	--	--
Apr. 11-20	2,871		80.2	--	--	--	--	--	--	--	--	--	--	--	--	510	.69	3,920	--	--	--
Apr. 21-31	4,310		57.9	--	--	--	--	--	--	--	--	--	--	--	--	418	.57	4,860	--	--	--
May 1-10	11,288		38.7	--	--	--	--	--	--	--	--	--	--	--	--	242	.33	7,380	--	--	--
May 11-20	13,620		32.2	--	--	--	--	--	--	--	--	--	--	--	--	198	.27	7,280	--	--	--
May 21-31	15,990		29.5	--	--	--	--	--	--	--	--	--	--	--	--	180	.24	7,600	--	--	--
June 2-10	15,820		29.4	--	--	--		--	--	--	--	--	--	--	--	175	.24	7,520	--	--	--
June 11-20	10,990		33.9	--	--	--		--	--	--	--	--	--	--	--	197	.27	5,880	--	--	--
June 22-30	6,347		49.0	--	--	--		--	--	--	--	--	--	--	--	295	.40	5,030	--	--	--
July 1, 4-10	4,521		60.1	--	--	--		--	--	--	--	--	--	--	--	355	.48	4,300	--	--	--
July 11-14, 16-20	2,879		80.3	--	--	--		--	--	--	--	--	--	--	--	475	.65	3,710	--	--	--
July 21-31	1,902		108	--	--	--		--	--	--	--	--	--	--	--	648	.88	3,310	--	--	--
Aug. 1-10	2,135		111	--	--	--	--	--	--	--	--	--	--	--	--	685	.93	3,930	--	--	--
Aug. 11, 13, 15, 16, 18-20	1,574		124	--	--	--	--	--	--	--	--	--	--	--	--	741	1.01	3,150	--	--	--
Aug. 21-31	1,229		146	--	--	--	--	--	--	--	--	--	--	--	--	872	1.19	2,900	--	--	--
Sept. 1-10	1,705		138	--	--	--	--	--	--	--	--	--	--	--	--	852	1.16	3,920	--	--	--
Sept. 11-20	1,957		122	--	--	--	--	--	--	--	--	--	--	--	--	750	1.02	3,950	--	--	--
Sept. 21-30	1,479		141	--	--	--	--	--	--	--	--	--	--	--	--	862	1.17	3,430	--	--	--
Weighted average	3,736		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.56	4,140	--	--	--

a Residue by evaporation.

COLORADO RIVER NEAR CAMEO, COLO.--Continued

Mean discharge and dissolved solids, water year October 1939 to September 1940

Date	Mean discharge (cfs)	Dissolved solids[a] (ppm)
Oct. 1,3-5,7-10,1939	1,620	795
Oct. 11-13, 15-20---	1,624	763
Oct. 21-30----------	1,429	811
Nov. 1-10----------	1,433	866
Nov. 11-20----------	1,310	870
Nov. 21-22, 24-30---	1,184	883
Dec. 1-7, 9, 10-----	1,103	894
Dec. 11-18, 20------	1,043	930
Dec. 21-24, 27, 29--	913	1,050
Jan. 3-10, 1940-----	1,067	935
Jan. 13, 15-20------	1,020	990
Jan. 21-31----------	984	1,010
Feb. 1, 3-10--------	1,028	897
Feb. 11-15, 17-20---	1,016	943
Feb. 21, 22, 24-29--	1,236	909
Mar. 1-10-----------	1,169	894
Mar. 11-20----------	1,142	898
Mar. 21-31----------	1,495	791
Apr. 1-10-----------	1,630	689
Apr. 11-20----------	1,671	683
Apr. 22-30----------	3,619	428
May 1-10------------	5,429	336
May 11-20-----------	10,870	232
May 21-29-----------	10,010	216
June 1-10-----------	12,460	191
June 12-20----------	3,257	218
June 21-30----------	6,166	274
July 1-10-----------	3,744	377
July 11-14, 16-20---	2,334	525
July 21-29, 31------	1,892	579
Aug. 1-4, 6-10------	1,272	795
Aug. 11-20----------	1,040	885
Aug. 21-23, 25-31---	1,653	860
Sept. 1-10----------	1,451	748
Sept. 11-20---------	1,511	823
Sept. 22-30----------	2,211	678
Weighted average--	2,753	469

a Residue by evaporation.

GUNNISON RIVER NEAR GRAND JUNCTION, COLO.

Chemical analyses, in parts per million, water year October 1931 to September 1932

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 3-10, 1931				18	0.08	233	86	222	2.7	226	1,130	33		13	0.1	1,850	2.51		935	750	34
Oct. 11-20				17	.06	201	87	199	6.9	242	1,000	31		15	.3	1,680	2.28		859	660	33
Oct. 21-31				15	.06	173	71	165	7.4	236	820	27		12	.2	1,410	1.91		724	530	33
Nov. 12-20				13	.08	171	66	162	5.9	253	771	24		16	.3	1,350	1.84		698	491	33
Nov. 21-30				12	.06	186	71	176	6.4	267	847	27		12	.3	1,470	2.00		756	537	33
Dec. 1-10				13	.06	173	76	170	8.7	279	811	26		18	.3	1,430	1.95		744	516	33
Dec. 11-20				12	.08	160	67	149	6.4	240	734	23		16	.3	1,290	1.75		675	478	32
Dec. 21-31				11	.04	140	67	156	3.2	226	707	24		17	.2	1,240	1.68		625	440	35
Jan. 1-10, 1932				12	.08	144	70	157	3.8	238	723	25		16	.2	1,270	1.72		648	452	34
Jan. 11-20				11	.04	140	68	153	4.2	228	699	25		18	.1	1,230	1.67		629	442	34
Jan. 21-31				16	.04	142	69	154	5.8	242	706	25		17	.1	1,250	1.71		638	440	34
Feb. 1-10				16	.04	134	63	150	5.3	217	675	24		22	.1	1,200	1.63		594	416	35
Feb. 11-20				14	.08	143	71	183	6.2	239	773	29		17	.1	1,350	1.84		649	453	38
Feb. 21-29				16	.08	139	70	161	3.7	212	737	28		18	.3	1,280	1.74		635	461	35
Mar. 1-10				15	.10	120	60	129	3.7	198	600	22		15	.2	1,060	1.44		546	384	34
Mar. 11-20				16	.10	120	60	129	3.7	195	599	22		15	.2	1,060	1.44		546	386	34
Mar. 21-31				13	.06	114	52	110	4.3	193	523	20		14	.4	945	1.29		498	340	32
Apr. 1-10				14	.04	81	30	61	4.0	171	286	13		9.8	.2	583	.79		326	186	29
Apr. 11-20				12	.08	63	18	33	2.9	172	149	8.0		7.7	.3	378	.51		231	90	23
Apr. 21-30				9.4	.06	58	20	42	2.9	132	189	8.0		6.6	.1	401	.55		226	118	28
May 1-10				18	.08	55	14	26	2.9	149	120	4.0		4.4	.3	318	.43		195	73	22
May 11-20				17	.08	48	9.8	17	2.1	140	74	3.0		3.2	.2	243	.33		160	46	19
May 21-31				17	.16	42	11	20	2.4	110	91	3.0		2.2	.2	243	.33		150	60	22
June 1-10				16	.08	50	15	29	2.7	113	144	5.0		2.5	.3	320	.44		186	94	25
June 11-20				14	.06	48	13	26	3.4	114	122	3.0		2.1	.1	288	.39		174	80	24
June 21-30				13	.08	47	14	25	3.2	107	130	4.0		2.2	.1	291	.40		175	88	23
July 1-10				14	.08	62	19	38	3.5	123	199	7.0		4.2	.2	407	.55		232	132	26
July 11-20				15	.08	89	30	55	4.3	150	322	10		5.5	.3	605	.82		346	222	25
July 21-31				20	.08	128	46	102	5.4	188	533	16		9.0	.1	952	1.29		508	354	30
Aug. 1-10				21	.10	140	51	112	5.3	195	593	16		10	.2	1,040	1.42		559	399	30
Aug. 11-20				21	.10	213	87	200	6.6	212	1,050	30		14	.1	1,730	2.35		889	715	33
Aug. 21-31				21	.12	190	73	170	7.0	217	886	28		14	.1	1,500	2.03		774	596	32
Sept. 1-10				19	.12	206	85	194	6.1	223	1,020	28		16	.1	1,680	2.28		864	680	33
Sept. 11-20				21	.12	277	123	274	6.6	240	1,450	41		24	.1	2,340	3.18		1,200	1,000	33
Sept. 21-30				19	.10	272	118	264	6.4	250	1,410	40		26	.5	2,280	3.10		1,160	959	33

GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Chemical analyses, in parts per million, water year October 1932 to September 1933

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1932---				19	0.10	240	105	244	6.2	260	1,240	35	-	23	0.6	2,040	2.77		1,030	818	34
Oct. 11-20 -------				21	.03	235	105	229	9.1	274	1,190	34	-	22	.7	1,980	2.69		1,020	794	33
Oct. 21-31 -------				20	.03	199	90	193	9.0	253	952	29	-	20	.6	1,680	2.28		866	659	32
Nov. 1-10 -------				20	.03	172	72	157	5.9	241	794	23	-	18	.5	1,380	1.88		726	528	32
Nov. 11-20 -------				20	.03	170	76	164	6.1	242	810	23	-	20	.5	1,410	1.91		737	538	32
Nov. 21-30 -------				19	.08	167	78	154	10	240	814	23	-	18	.6	1,400	1.91		738	541	31
Dec. 1-10 -------				12	.08	162	80	166	5.6	236	823	25	-	19	.5	1,410	1.92		734	540	33
Dec. 11-20 -------				13	.08	167	83	170	6.6	259	833	27	-	18	.4	1,440	1.97		758	546	33
Dec. 21-31 -------				11	.08	162	77	156	5.9	241	760	24	-	17	.5	1,320	1.80		696	498	33
Jan. 1-10, 1933---				14	.08	151	77	154	5.4	242	749	26	-	17	.3	1,310	1.79		694	495	32
Jan. 11-20 -------				14	.10	147	73	153	6.7	237	734	25	-	20	.2	1,290	1.75		667	473	33
Jan. 21-31 -------				14	.08	137	70	146	6.2	223	694	24	-	18	.3	1,220	1.66		630	447	33
Feb. 1-10 -------				13	.10	137	69	141	5.6	225	674	24	-	16	.3	1,190	1.62		626	441	33
Feb. 11-19 -------				18	.10	130	65	132	5.6	222	633	21	-	18	.3	1,130	1.54		592	410	32
Feb. 20-28 -------				16	.10	128	65	144	5.6	208	660	23	-	19	.3	1,160	1.58		587	416	35
Mar. 1-10 -------				13	.16	134	69	171	5.9	208	747	25	-	19	.4	1,290	1.75		618	448	37
Mar. 11-20 -------				18	.08	128	62	131	8.2	199	622	23	-	18	.6	1,110	1.51		574	412	33
Mar. 21-31 -------				17	.09	119	60	129	8.0	192	608	23	-	16	.5	1,080	1.46		544	386	34
Apr. 1-10 -------				18	.12	89	37	75	6.4	161	366	15	-	11	.3	697	.95		374	242	30
Apr. 11-20 -------				16	.09	130	54	126	8.3	190	605	25	-	16	.5	1,070	1.46		546	391	33
Apr. 21-30 -------				16	.08	107	48	110	4.2	177	514	21	0.0	11	.4	918	1.25		464	319	34
May 1-10 -------				15	.08	79	30	71	2.9	156	313	12	.1	7.5	.3	607	.83		320	192	32
May 11-20 -------				18	.06	77	27	57	5.8	165	263	11	.0	7.9	.3	548	.75		303	168	29
May 21-31 -------				14	.14	44	11	19	2.9	111	88	4.0	.1	3.0	.1	241	.33		155	64	21
June 1-10 -------				14	.14	41	9.8	19	2.2	102	90	4.0	.0	2.5	.2	233	.32		143	60	22
June 11-20 -------				13	.16	40	11	23	1.8	90	105	4.0	.0	2.3	.2	245	.33		145	71	25
June 21-30 -------				14	.10	60	19	40	3.5	121	192	8.0	-	3.9	.2	400	.54		228	128	27
July 1-10 -------				15	.10	100	35	75	5.4	162	386	14	-	6.5	.3	717	.98		394	260	29
July 11-20 -------				16	.22	144	53	116	5.4	189	616	18	-	8.2	.1	1,070	1.46		578	422	30
July 21-31 -------				18	.12	226	93	222	6.7	203	1,160	36	-	15	.8	1,880	2.56		946	780	34
Aug. 1-10 -------				22	.10	228	85	201	6.4	225	1,080	33	.4	13	1.0	1,880	2.41		918	734	32
Aug. 11-20 -------				20	.10	229	91	211	5.8	208	1,140	32	.6	11	1.0	1,850	2.51		946	775	32
Aug. 21-31 -------				12	.05	300	121	299	5.6	222	1,570	44	.7	21	.4	2,480	3.38		1,250	1,060	34
Sept. 1-10 -------				20	.04	318	124	325	7.6	223	1,710	47	.7	26	.5	2,700	3.67		1,340	1,160	34
Sept. 11-20 -------				20	.05	298	115	275	7.6	237	1,470	44	.7	26	.5	2,370	3.23		1,220	1,020	33
Sept. 21-30 -------				21	.05	240	92	200	6.0	233	1,110	28	.6	21	.5	1,840	2.50		978	786	30
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GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1933---	-			25	0.06	219	94	204	5.1	235	1,080	33	0.6	20	0.6	1,800	2.45	-	933	740	32
Oct. 11-20-------	-			17	.08	192	82	169	5.4	235	912	25	.8	17	.7	1,580	2.15	-	810	632	31
Oct. 21-31-------	-			18	.08	208	92	189	6.4	240	1,010	29	.8	19	.7	1,690	2.30	-	893	696	31
Nov. 1-10-------	-			17	.06	197	90	186	5.8	248	947	32	.5	20	.8	1,610	2.19	-	836	634	32
Nov. 11-20-------	-			23	.14	168	76	150	12	243	795	26	.4	20	.6	1,400	1.90	-	732	533	32
Nov. 21-30-------	-			23	.15	170	77	169	12	251	815	28	.4	21	.6	1,440	1.96	-	741	536	33
Dec. 1-10-------	-			21	.15	168	79	166	14	246	826	26	.3	20	.6	1,440	1.96	-	744	543	32
Dec. 11-20-------	-			21	.14	158	75	155	13	236	763	24	.4	20	.5	1,350	1.83	-	703	510	32
Dec. 21-31-------	-			21	.12	149	71	146	13	228	722	24	.3	18	.6	1,280	1.74	-	664	477	32
Jan. 1-10, 1934---	750			16	.04	147	80	189	3.5	210	848	29	.3	20	.5	1,440	1.96	-	696	519	37
Jan. 11-20-------	750			13	.02	147	73	160	3.8	220	754	31	.2	17	.5	1,320	1.79	-	667	482	34
Jan. 21-31-------	750			17	.04	140	71	156	3.5	215	730	25	.4	17	.5	1,270	1.72	-	642	466	34
Feb. 1-10-------	800			16	.04	130	66	147	3.0	203	680	24	.2	15	.4	1,180	1.61	-	596	430	35
Feb. 11-19-------	800			16	.04	122	65	151	3.2	191	669	25	.4	16	.5	1,160	1.58	-	572	416	36
Feb. 20-28-------	800			14	.18	134	73	173	2.9	213	749	27	.4	14	.6	1,290	1.76	-	634	460	37
Mar. 1-10-------	788			18	.04	111	58	131	3.2	179	590	21	.3	12	.4	1,030	1.40	2,198	516	369	35
Mar. 11-20-------	700			15	.06	102	50	115	2.7	171	511	19	.3	10	.3	909	1.24	1,718	460	320	35
Mar. 21-31-------	1,330			17	.08	120	58	131	12	189	601	26	.5	13	.3	1,070	1.46	3,850	538	383	34
Apr. 1-10-------	424			13	.09	171	88	222	12	220	985	38	.7	21	.3	1,660	2.26	1,905	789	608	37
Apr. 11-20-------	1,370			16	.18	97	37	84	8.0	167	405	18	.3	7.2	.3	755	1.03	2,790	394	257	31
Apr. 21-30-------	1,939			15	.12	76	23	50	5.8	151	247	8.0	.3	5.9	.2	506	.69	2,650	284	160	27
May 1-10-------	2,324			13	.15	86	31	72	6.4	146	351	13	.3	7.5	.3	652	.89	4,090	342	222	31
May 11-20-------	3,352			15	.17	66	20	42	5.3	130	212	8.0	.1	5.0	.5	438	.60	3,960	246	140	27
May 21-31-------	1,943			15	.18	92	32	72	5.6	143	363	12	.2	6.4	.5	669	.91	3,510	361	244	30
June 1-10-------	1,240			14	.04	154	56	125	4.6	193	675	19	.7	8.7	.6	1,150	1.57	3,860	615	457	30
June 11-20-------	278			12	.04	278	111	262	6.6	213	1,410	43	1.3	18	.8	2,250	3.06	1,687	1,150	976	33
June 21-30-------	212			18	.03	309	124	318	6.0	212	1,640	47	1.0	20	.5	2,590	3.52	1,480	1,280	1,110	35
July 1-10-------	152			23	.04	314	134	322	8.3	195	1,690	64	.6	16	.5	2,660	3.62	1,092	1,330	1,170	34
July 11-20-------	122			12	.03	294	120	332	9.2	167	1,690	53	1.0	13	.5	2,590	3.52	853	1,230	1,090	37
July 21-31-------	215			16	.2	261	106	295	11	220	1,400	48	.1	13	.9	2,260	3.08	1,313	1,090	907	37
Aug. 1-10-------	168			11	.18	287	117	323	9.5	180	1,590	57	.6	11	1.1	2,500	3.40	1,133	1,200	1,050	37
Aug. 11-20-------	150			9.0	.16	267	117	329	9.3	196	1,550	60	.6	12	.9	2,450	3.33	991	1,150	987	38
Aug. 21-31-------	141			15	.18	313	130	341	8.5	214	1,720	57	.7	13	.9	2,700	3.67	1,028	1,320	1,140	36
Sept. 1-10-------	187			16	.02	331	133	344	7.7	224	1,790	52	.7	17	1.1	2,800	3.81	1,414	1,370	1,190	35
Sept.11-20-------	321			18	.03	335	130	343	7.0	227	1,790	58	.7	22	1.1	2,820	3.83	2,441	1,370	1,180	35
Sept.21-30-------	293			19	.19	334	112	325	13	230	1,650	57	1.0	21	1.0	2,650	3.60	2,094	1,290	1,110	35
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GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	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)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934	213			20	0.1	312	133	339	10	233	1,710	55	0.8	23	0.6	2,720	3.70	1,564	1,330	1,130	36
Oct. 11-20	292			19	.1	316	130	340	14	267	1,690	57	1.0	23	.7	2,720	3.70	2,143	1,320	1,100	36
Oct. 21-28	298			22	.15	312	134	337	14	315	1,660	55	.4	15	.8	2,710	3.68	2,179	1,330	1,070	35
Nov. 1-10	374			21	.12	290	126	312	13	307	1,520	53	1.1	24	1.2	2,510	3.42	2,540	1,240	990	35
Nov. 11-20	466			20	.04	254	103	258	12	295	1,270	44	.4	22	.9	2,130	2.89	2,670	1,060	316	34
Nov. 21-30	707			8.2	.02	209	83	205	7.2	272	1,010	33	.5	18	.7	1,710	2.33	3,270	884	660	33
Dec. 1-10	727			18	.02	188	79	169	7.5	277	863	26	.4	17	.8	1,500	2.05	2,950	794	567	31
Dec. 11-20	863			18	.06	163	72	155	5.3	239	774	22	.6	14	.5	1,340	1.83	3,130	703	507	32
Dec. 21-31	790			17	.04	154	70	147	3.8	224	742	20	.7	14	.4	1,280	1.74	2,730	672	483	32
Jan. 1-10, 1935	681			18	.04	156	69	152	4.5	231	748	22	.4	14	.4	1,300	1.77	2,387	673	484	33
Jan. 11-20	762			17	.04	150	72	174	4.6	222	790	25	.4	15	.5	1,360	1.85	2,790	670	488	36
Jan. 21-31	716			18	.05	154	69	149	4.5	231	735	23	.5	12	.4	1,280	1.74	2,473	668	478	32
Feb. 1-10	745			16	.04	143	66	143	4.3	211	696	20	.4	13	.5	1,210	1.64	2,426	628	456	33
Feb. 11-19	591			21	.05	133	65	145	3.8	204	670	23	.3	13	.5	1,180	1.60	1,875	600	432	34
Feb. 20-28	724			17	.04	125	60	131	4.2	196	631	20	.3	12	.4	1,100	1.49	2,144	558	398	34
Mar. 1-10	718			31	.04	123	59	132	3.8	203	611	20	.5	13	.4	1,090	1.49	2,119	550	383	34
Mar. 11-20	747			19	.05	114	53	119	4.2	189	550	18	.4	12	.3	983	1.34	1,983	502	348	34
Mar. 21-31	731			22	.05	100	46	104	4.0	172	470	17	.3	11	.3	859	1.17	1,695	438	298	34
Apr. 1-10	684			22	.05	110	48	121	4.2	181	522	25	.3	12	.4	954	1.30	1,762	472	324	36
Apr. 11-20	661			16	.06	131	56	135	4.2	203	609	28	.5	10	.5	1,090	1.48	1,945	558	391	34
Apr. 21-30	1,630			12	.06	77	25	53	3.4	156	256	10	.3	6.4	.2	520	.71	2,289	295	167	28
May 1-10	1,860			18	.02	77	26	54	3.5	153	259	9.5	.4	5.4	.2	528	.72	2,650	299	174	28
May 11-20	4,240			14	.02	64	17	31	2.9	145	157	5.5	.3	4.1	.2	367	.50	4,200	230	110	22
May 21-31	6,620			17	.06	57	15	28	2.7	135	133	5.0	.2	3.2	.1	328	.45	5,860	204	93	23
June 1-10	8,720			16	.05	47	13	22	2.6	114	107	4.0	.2	2.1	.2	270	.37	6,360	171	78	22
June 11-20	13,200			19	.02	46	11	19	3.0	119	88	3.0	.2	2.4	.1	250	.34	8,910	160	62	20
June 21-30	7,520			16	.01	46	13	24	2.9	109	121	4.0	.2	2.4	.1	283	.38	5,750	168	79	23
July 1-10	3,360			16	.01	71	23	46	3.4	131	242	7.0	.3	3.6	.1	477	.65	4,330	272	164	27
July 11-20	2,240			18	.01	109	35	75	4.5	172	400	11	.3	5.8	.2	743	1.01	4,490	416	275	28
July 21-31	1,680			18	.02	134	45	98	5.1	189	531	14	.3	7.8	.3	946	1.29	4,290	520	364	29
Aug. 1-10	983			17	.13	193	69	134	7.7	219	787	25	.6	16	.4	1,360	1.85	3,600	765	586	27
Aug. 11-20	883			15	.07	203	79	169	7.2	218	933	26	.8	14	.4	1,550	2.11	3,700	832	653	30
Aug. 21-31	850			15	.12	224	86	180	8.2	228	1,030	31	.9	12	--	1,700	2.31	3,910	926	738	29
Sept. 1-10	907			15	.12	210	83	165	13	223	957	28	.8	12	.4	1,590	2.17	3,900	866	682	29
Sept. 11-20	765			14	.10	218	89	183	5.9	218	1,060	28	1.0	13	.4	1,720	2.34	3,550	910	732	30
Sept. 21-30	977			17	.12	247	101	226	6.9	230	1,250	35	1.0	14	.3	2,010	2.73	5,300	1,030	845	32
Weighted Average	1,916	-	-	17	0.04	90	32	67	3.9	154	341	11	0.3	6.0	0.23	644	0.88	3,330	356	230	29

GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids [a] Parts per million	Dissolved solids [a] Tons per acre-foot	Dissolved solids [a] Tons per day	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Non-carbonate	Percent sodium
Oct. 1-10, 1935----	1,180		-	10						213	776	20	0.8	13	-	1,400	1.90	4,450			
Oct. 11-20--------	870		-	7.5						223	887	26	.6	13	-	1,600	2.16	3,730			
Oct. 21-31--------	1,060		-	8.5						237	848	26	.5	16	-	1,540	2.10	4,420			
Nov. 1-10--------	1,090		-	10						224	724	24	.6	14	-	1,340	1.83	3,950			
Nov. 11-20--------	1,030		-	8.5						224	708	23	.5	14	-	1,330	1.80	3,690			
Nov. 21-30--------	951		156	-						215	685	23	.6	10	0.3	1,330	1.81	3,410			
Dec. 1-10---------	883		164	-						238	748	34	.6	7.8	.3	1,430	1.94	3,400			
Dec. 11-20--------	762		177	-						241	814	29	.6	7.8	.4	1,540	2.09	3,160			
Dec. 21-31--------	790		172	-						243	772	25	.6	16	.4	1,450	1.98	3,100			
Jan. 1-10, 1936 ---	811		155	-						220	707	21	.5	8.2	.4	1,310	1.78	2,870			
Jan. 11-20--------	826		122	-						136	489	16	.3	11	-	909	1.24	2,027			
Jan. 21-31--------	808		159	-						207	663	23	.1	17	-	1,240	1.68	2,700			
Feb. 1-10--------	784		169	-						219	717	29	.1	15	-	1,350	1.83	2,850			
Feb. 11-20--------	756		171	-						210	744	31	.2	17	-	1,380	1.87	2,810			
Feb. 21-29 --------	803		168	-						217	763	31	-	14	-	1,420	1.93	3,070			
Mar. 1-10 --------	836		147	-						201	647	27	-	11	-	1,220	1.66	2,750			
Mar. 11-20 --------	926		123	-						186	514	23	-	10	-	989	1.35	2,473			
Mar. 21-30 --------	928		130	-						-	-	-	-	-	-	942	1.28	2,360			
Apr. 1-10 --------	692		144	-						-	-	-	-	-	-	1,120	1.52	2,093			
Apr. 11-20 --------	4,190		82.0	-						-	-	-	-	-	-	570	.78	6,450			
Apr. 21-30 --------	9,820		40.3	-						-	-	-	-	-	-	252	.34	6,680			
May 1-10 --------	10,700		40.9	-						-	-	-	-	-	-	263	.36	7,600			
May 11-20 --------	10,200		38.0	-						-	-	-	-	-	-	243	.33	6,690			
May 21-31 --------	9,870		37.4	-						-	-	-	-	-	-	246	.33	6,560			
June 1-10 --------	6,200		57.4	-						-	-	-	-	-	-	375	.51	6,280			
June 11-20 --------	5,700		51.3	-						-	-	-	-	-	-	342	.47	5,260			
June 21-30 --------	3,320		67.7	-						-	-	-	-	-	-	470	.64	4,210			
July 1-10 --------	1,480		111	-						-	-	-	-	-	-	825	1.12	3,300			
July 11-20 --------	1,310		183	-						-	-	-	-	-	-	1,460	1.99	5,170			
July 21-31 --------	795		196	-						-	-	-	-	-	-	1,630	2.22	3,500			
Aug. 1-10 --------	1,820		138	-						-	-	-	-	-	-	1,090	1.49	5,380			
Aug. 11-20 --------	1,330		144	-						-	-	-	-	-	-	1,170	1.59	4,200			
Aug. 21-31 --------	767		201	-						-	-	-	-	-	-	1,700	2.31	3,520			
Sept. 1-10 --------	1,260		196	-						-	-	-	-	-	-	1,660	2.25	5,630			
Sept.11-20 --------	876		206	-						-	-	-	-	-	-	1,760	2.40	4,170			
Sept.21-30 --------	555		245	-						-	-	-	-	-	-	2,160	2.93	3,230			
Weighted Average -	2,415		-	-						-	-	-	-	-	-	627	0.85	4,090			

a Residue by evaporation.

DOLORES RIVER NEAR CISCO, UTAH

Chemical analyses, in parts per million, October 1931 to September 1933

Date of collection	Mean discharge (cfs)[a]	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 14, 1931				8.8	0.02	119	57	419	17	173	386	651	--	2.0	0.2	1,740	2.37		532	390	62
Nov. 3				8.2	.04	114	62	596	20	187	386	922	--	1.5	.1	2,200	2.99		540	386	70
Jan. 22, 1932				5.4	.08	110	49	472	17	216	303	732	--	3.6	.1	1,800	2.45		476	299	67
Feb. 25				6.6	.06	112	53	398	16	198	370	583	--	1.0	.2	1,640	2.23		498	335	63
Mar. 18				5.8	.08	93	40	195	9.3	197	280	261	--	1.0	.1	982	1.34		396	235	51
Apr. 1				8.2	.10	67	19	62	4.8	160	143	76	--	2.0	.1	461	.63		245	114	35
Apr. 23				4.4	.10	45	10	19	2.6	122	68	19	--	.9	.2	229	.31		154	54	21
Apr. 29				4.6	.08	59	15	29	2.4	132	130	22	--	.8	.1	328	.45		208	100	23
May 7				14	.08	49	10	21	2.4	145	57	16	--	1.6	.3	242	.33		164	44	21
May 21				10	.16	46	8.6	18	2.6	139	46	18	--	.7	.1	219	.30		150	36	20
June 7				11	.10	45	11	34	3.7	123	68	46	--	.5	.2	280	.38		158	56	31
June 24				9.0	.10	40	8.7	28	3.4	108	59	33	--	.3	.1	235	.32		136	48	30
July 8				9.4	.12	50	15	101	5.0	116	101	154	--	.3	.3	493	.67		186	92	53
July 22				7.8	.10	94	33	336	11	127	285	505	--	.5	.5	1,340	1.82		370	266	66
Aug. 19				11	.08	109	50	659	26	157	336	1,040	--	1.5	.1	2,310	3.14		478	349	74
Sept. 16				6.4	.10	134	80	905	34	193	477	1,450	--	.5	.1	3,180	4.32		664	506	74
Sept. 30				8.0	.12	122	66	312	14	184	460	455	--	2.0	.3	1,530	2.08		576	425	53
Oct. 22				5.2	0.10	141	101	926	38	201	598	1,440	—	1.5	0.2	3,350	4.56		768	603	71
Nov. 15				11	.09	139	75	690	34	218	437	1,110	--	1.5	.5	2,610	3.55		656	477	68
Dec. 8				7.0	.10	130	85	728	32	221	496	1,120	--	2.5	.2	2,710	3.69		674	493	69
Apr. 17, 1933				7.4	.11	93	40	378	19	185	256	602	--	1.2	.4	1,490	2.02		396	245	66
May 4				7.2	.17	55	21	124	11	146	131	185	--	.4	.2	607	.83		224	104	53
May 18				11	.22	67	21	100	4.6	174	134	138	0.4	.2	.7	562	.76		254	111	46
June 5				8.8	.12	48	7.3	19	1.4	128	48	17	--	1.9	.8	215	.29		150	45	22
June 19				8.6	.10	47	8.9	25	1.6	121	66	26	.4	1.0	.5	221	.30		154	55	26
July 5				8.8	.06	58	18	98	5.1	115	128	150	.4	1.0	.3	524	.71		218	124	49
July 18				12	.11	75	25	123	7.4	147	181	183	.4	2.0	.3	681	.93		290	170	47
Aug. 1				23	.28	195	20	273	10	328	386	365	.7	.4	.3	1,440	1.95		568	300	51
Aug. 19				8.2	.10	127	51	378	16	162	399	590	.5	.5	.3	1,650	2.24		526	394	60
Sept. 14				3.0	.19	72	24	122	7.0	137	195	162	.3	1.5	.2	654	.89		278	166	48

a Samples not collected at gaging station.

COLORADO RIVER NEAR CISCO, UTAH

Chemical analyses, in parts per million, water year October 1928 to September 1929

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1928	2,860			18	0.05	163	72	226	6.7	209	794	133		22	0.5	1,540	2.09	11,900	703	532	41
Oct. 11-20	5,690			19	.06	171	69	204	6.2	216	778	106		20	.4	1,480	2.01	22,700	710	534	38
Oct. 21-31	3,800			20	.06	138	64	194	6.4	213	661	114		20	.4	1,320	1.80	13,600	608	433	41
Nov. 1-10	4,040			19	.05	143	67	200	5.8	210	721	100		18	.4	1,380	1.87	15,000	632	460	41
Nov. 11-20	3,780			15	.05	123	61	181	5.8	214	594	108		14	.4	1,210	1.64	12,300	558	382	41
Nov. 21-29	3,530			21	.08	124	62	196	4.6	224	595	122		18	.8	1,250	1.70	11,900	564	381	43
Dec. 1-10	2,900			21	.07	125	64	211	5.6	222	608	144		20	.6	1,310	1.78	10,200	575	393	44
Dec. 11-14, 19-20	2,100			24	.06	142	73	233	6.0	253	681	168		24	.8	1,480	2.01	8,370	654	447	43
Dec. 21-31	2,100			21	.06	143	73	240	6.7	262	668	189		22	.6	1,490	2.03	8,460	657	442	44
Jan. 1-10, 1929	2,150			19	.04	126	62	214	4.5	231	586	159		21	.8	1,300	1.77	7,580	570	380	45
Jan. 11-20	2,400			20	.08	123	61	202	5.4	231	550	156		20	.8	1,250	1.70	8,110	558	368	44
Jan. 21-30	2,290			19	.04	116	59	195	4.8	219	535	141		20	.6	1,200	1.63	7,410	532	352	44
Feb. 1-10	2,350			20	.08	117	58	196	5.1	212	552	135		22	.5	1,210	1.65	7,680	530	357	44
Feb. 11-19	2,090			20	.12	140	66	219	5.1	268	607	164		25	.7	1,380	1.87	7,780	621	402	43
Feb. 20-28	2,500			18	.10	118	48	160	5.9	182	509	110		16	.6	1,080	1.46	7,260	492	343	41
Mar. 1-10	4,000			11	.09	118	52	172	3.4	195	544	105		18	.8	1,120	1.52	12,100	508	348	42
Mar. 11-20	4,530			12	.08	113	56	190	3.2	214	542	121		18	.7	1,160	1.58	14,200	512	337	44
Mar. 21-31	4,950			14	.08	111	50	173	5.0	207	518	103		9.8	.4	1,090	1.48	14,500	482	313	43
Apr. 1-10	8,810			12	.10	82	32	101	4.2	171	297	67		4.3	.6	684	.93	16,300	336	196	39
Apr. 11-20	12,300			13	.27	73	29	83	7.0	178	246	59		4.8	.4	603	.82	20,000	301	155	37
Apr. 21-30	13,000			13	.24	63	24	64	6.4	157	189	40		4.8	.4	482	.66	16,900	256	127	34
May 1-10	19,500			16	.08	57	21	39	7.4	166	149	29		6.5	.2	407	.55	21,400	228	92	26
May 11-20	35,100			19	.22	41	13	25	4.2	129	81	13		3.3	.1	263	.36	24,900	156	50	25
May 22-31	47,100			14	.34	40	11	23	4.2	114	76	10		2.0	.6	237	.32	30,100	145	52	25
June 1-10	47,700			13	.19	39	12	17	5.3	119	65	10		1.3	.3	221	.30	28,500	147	50	19
June 11-13, 17-20	40,500			17	.24	40	10	16	5.0	100	68	12		1.9	.6	219	.30	29,300	141	59	19
June 21-30	32,100			6.2	.29	36	12	21	3.0	99	82	15		1.3	.2	226	.31	19,600	140	58	24
July 1-10	19,100			16	.26	48	16	35	3.7	112	125	28		1.1	.2	328	.45	16,900	186	94	29
July 11-13, 15-17, 19	10,900			17	.26	67	23	63	5.6	138	213	43		.9	.3	501	.68	14,700	262	148	34
July 22-31	13,200			20	.76	83	27	69	6.1	155	278	38		.5	.2	599	.81	21,400	318	191	32
Aug. 1-2, 4-10	17,200			18	.70	92	31	60	6.4	161	311	32		.4	.2	626	.85	29,100	357	233	26
Aug. 11-20	8,900			21	.38	91	35	80	15	157	329	54		3.7	.4	706	.96	17,000	371	242	31
Aug. 21-31	4,820			19	.23	97	46	107	16	171	420	80		3.4	.8	873	1.19	11,400	431	291	34
Sept. 1-10	12,000			24	.31	120	45	119	5.0	181	477	54		1.7	.2	935	1.27	30,300	484	336	34
Sept. 11-20	11,300			21	.14	74	32	71	5.6	152	268	41		2.0	.1	590	.80	18,000	316	192	32
Sept. 21-30	10,700			18	.08	85	31	81	4.2	162	304	47		6.0	.3	656	.89	19,000	340	200	34
Average				17	0.18	100	44	130	5.8	183	417	85		11	—	900	1.22		430	280	39
Weighted average	11,800			16	0.25	66	25	62	5.3	142	216	39		4.6	--	503	0.68	16,300	268	151	33

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1929 to September 1930

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-3, 5-10, 1929	7,310			14	0.06	82	38	98	4.8	160	340	61		6.5	0.3	723	0.98	14,300	360	230	37
Oct. 11-15,17-20----	7,240			16	.19	90	39	103	3.8	167	364	62		6.5	.3	767	1.04	15,000	385	248	37
Oct. 21-31----------	5,250			16	.08	95	49	127	3.7	185	423	82		11	.3	898	1.22	12,700	438	287	38
Nov. 1-10----------	5,090			14	.08	100	50	135	3.2	192	445	85		12	.3	939	1.28	12,900	455	298	39
Nov. 11-20----------	4,610			13	.06	106	51	152	6.6	207	463	104		10	.3	1,010	1.37	12,500	474	304	41
Nov. 21-30----------	4,120			15	.08	109	52	151	5.0	219	461	104		13	.6	1,020	1.38	11,300	486	306	40
Dec. 1-10----------	3,920			15	.06	107	52	155	5.1	215	468	107		14	.7	1,030	1.40	10,900	481	305	41
Dec. 11-12, 16-20----	3,570			14	.08	109	50	159	5.3	215	469	110		13	.7	1,040	1.41	9,970	478	302	42
Dec. 21-31----------	2,760			14	.08	127	61	215	6.1	246	544	180		16	.4	1,280	1.75	9,560	568	366	45
Jan. 1-10, 1930----	2,720			13	.07	115	56	186	7.0	226	498	152		12	.6	1,150	1.56	7,790	518	332	43
Jan. 11-13, 18-20----	2,400			17	.07	118	60	193	9.3	227	525	156		13	.4	1,200	1.64	8,440	541	355	43
Jan. 21-31----------	1,990			14	.08	116	56	189	7.4	228	493	151		14	.4	1,150	1.57	6,190	520	333	44
Feb. 1-10----------	3,390			15	.09	105	51	168	6.4	213	447	134		12	.6	1,040	1.42	9,540	472	297	43
Feb. 11-19----------	3,800			13	.04	100	50	172	6.7	201	473	122		11	.6	1,050	1.42	10,700	455	290	45
Feb. 20-28----------	4,010			10	.05	101	52	178	6.1	202	509	109		10	.6	1,080	1.46	11,600	466	300	45
Mar. 1-10----------	3,230			10	.05	111	53	191	6.7	214	521	140		10	.6	1,150	1.56	10,000	495	320	45
Mar. 11-20----------	3,290			10	.11	102	52	174	3.5	208	472	133		11	.5	1,060	1.44	9,410	468	298	44
Mar. 21-31----------	3,350			6.4	.05	99	46	153	8.2	205	407	123		9.1	.6	953	1.30	8,610	436	268	43
Apr. 1-8,10--------	7,320			13	.08	89	41	130	6.6	200	348	106		8.2	.5	840	1.14	16,600	390	226	41
Apr. 11-20----------	18,600			13	.08	54	15	35	5.6	160	109	24		4.1	.2	339	.46	17,100	196	66	27
Apr. 21-30----------	20,400			13	.09	51	14	35	5.6	140	116	25		3.0	.2	332	.45	18,300	185	70	28
May 1-10----------	16,400			13	.09	48	15	37	4.6	128	114	28		3.4	.7	326	.44	14,400	182	76	30
May 11-20----------	10,800			14	.06	61	23	63	5.0	140	201	45		5.6	.7	487	.66	14,200	246	132	35
May 21-31----------	22,600			17	.38	49	17	30	4.0	130	113	23		2.4	.2	320	.44	19,500	192	86	25
June 1-10----------	29,100			14	.40	41	13	28	3.0	104	100	20		2.4	.2	273	.37	21,400	156	71	27
June 11-20----------	30,500			11	.08	43	11	25	2.4	118	84	17		2.1	.1	254	.35	20,900	152	56	26
June 21-30----------	18,500			11	.08	53	16	41	2.6	124	136	27		3.6	.2	351	.48	17,500	198	97	31
July 1-3, 5-10-----	7,530			13	.02	63	25	78	3.5	127	233	59		6.5	.7	544	.74	11,000	260	156	39
July 11-20----------	6,830			15	.12	91	34	105	4.8	159	346	72		8.0	.8	754	1.03	13,900	367	236	38
July 21-23, 25-31---	6,890			13	.06	98	38	110	3.8	174	378	70		9.0	1.2	806	1.10	15,000	400	258	37
Aug. 1-10----------	9,760			20	.20	114	34	107	5.1	186	405	56		3.9	.8	837	1.14	22,000	424	272	35
Aug. 11-20----------	11,500			14	.10	114	32	91	4.6	204	361	48		3.1	.5	768	1.04	23,800	416	249	32
Aug. 21-31----------	4,720			14	.06	98	43	130	4.0	177	414	84		11	.3	885	1.20	11,300	422	276	40
Sept. 2-6, 8-10-----	3,480			14	.06	128	59	204	5.1	196	598	147		21	.3	1,270	1.73	11,900	562	402	44
Sept.11-20----------	3,220			14	.06	134	64	193	4.8	194	653	119		20	.3	1,300	1.76	11,300	598	438	41
Sept. 21-30---------	3,450			15	.08	158	68	225	4.2	222	743	138		26	.5	1,490	2.02	13,800	674	492	42
Average				14	0.10	94	41	127	5.1	184	383	90		9.6	--	853	1.16		403	252	40
Weighted average	8,420			14	0.14	73	28	80	4.4	156	254	55		6.1	--	593	0.81	13,500	297	169	36

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1930 to September 1931

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1930	4,400			15	0.08	153	62	187	3.8	217	670	105		30	0.5	1,330	1.81	15,800	637	459	39
Oct. 11-20	3,790			22	.04	132	59	186	5.3	215	591	121		32	.9	1,250	1.71	12,800	572	396	41
Oct. 21-31	3,260			25	.04	132	66	194	4.8	219	605	130		34	.9	1,300	1.77	11,400	601	422	41
Nov. 1-10	2,910			18	.04	136	68	207	5.1	226	636	137		40	.9	1,360	1.85	10,700	619	434	42
Nov. 11-20	3,010			19	.06	138	70	215	5.0	229	660	136		39	.9	1,400	1.90	11,300	632	445	42
Nov. 21-30	2,790			20	.08	139	67	217	8.7	237	646	147		40	.7	1,400	1.91	10,500	622	428	42
Dec. 1-10	2,540			20	.06	145	67	221	6.7	254	650	154		31	.5	1,420	1.93	9,730	638	430	43
Dec. 11-20	2,560			17	.06	137	64	219	6.6	245	617	152		32	.4	1,360	1.86	9,420	605	404	44
Dec. 21-31	1,920			19	.06	148	72	262	6.6	269	689	197		34	.3	1,560	2.12	8,080	666	445	46
Jan. 1-3, 5-10, 1931	2,000			17	.08	140	67	249	6.7	263	626	194		38	.3	1,470	2.00	7,910	625	410	46
Jan. 11-20	2,300			15	.06	138	61	225	3.7	246	588	174		31	.2	1,360	1.85	8,420	596	394	45
Jan. 21-31	2,300			7.6	.06	130	60	222	3.5	241	561	179		30	.2	1,310	1.78	8,140	571	374	46
Feb. 1-10	2,880			6.8	.08	122	50	217	3.4	220	575	158		27	.2	1,280	1.74	9,930	551	370	46
Feb. 11-19	2,910			8.0	.06	118	62	229	3.5	211	608	159		27	.3	1,320	1.79	10,300	550	376	47
Feb. 21-28	2,440			17	.08	118	61	220	3.5	223	561	164		33	.2	1,290	1.75	8,470	546	362	47
Mar. 1-3, 5-10	2,260			14	.08	120	58	231	5.1	221	547	196		29	.2	1,310	1.78	7,980	538	357	48
Mar. 11-20	2,400			14	.08	116	54	215	5.6	216	515	182		23	.8	1,230	1.67	7,970	512	334	47
Mar. 21-31	2,510			15	.08	109	51	200	5.6	206	486	168		21	.9	1,160	1.57	7,830	482	312	47
Apr. 1-2, 5-10	2,210			13	.08	110	53	212	5.4	201	496	186		19	.7	1,190	1.62	7,110	492	328	48
Apr. 11-20	3,720			9.8	.10	90	39	146	5.0	178	359	123		17	.4	877	1.19	8,800	385	239	45
Apr. 21-24,26-27,29-30	4,710			12	.06	86	33	123	3.5	178	324	89		15	.2	773	1.05	9,820	350	204	43
May 1-10	6,410			11	.08	82	31	104	2.6	178	283	79		14	.3	694	.94	12,000	332	186	40
May 11-20	8,920			11	.06	72	25	80	2.9	168	221	61		11	.3	567	.77	13,600	282	145	38
May 21-31	11,200			14	.08	61	19	54	3.2	141	168	40		4.4	.4	433	.59	13,100	230	114	33
June 1-10	15,400			8.6	.08	48	15	40	2.6	125	121	30		3.5	.3	330	.45	13,700	182	79	32
June 11-20	11,600			10	.04	85	35	106	4.5	145	336	78		10	.4	736	1.00	23,000	356	237	39
June 21-27, 29-30	7,610			9.6	.04	58	17	49	3.4	124	159	36		4.9	.2	398	.54	8,170	214	113	33
July 1-3, 6-10	6,440			9.4	.04	66	24	80	3.8	126	236	60		7.8	.3	549	.75	9,540	263	160	39
July 11-13, 15-20	2,090			10	.04	123	57	209	6.9	174	597	159		20	.2	1,270	1.72	7,150	542	399	45
July 21, 23-31	1,450			15	.08	166	86	269	8.2	203	917	203		20	.2	1,820	2.47	7,110	768	593	46
Aug. 1-6, 8-10	2,400			14	.14	186	68	250	7.9	211	820	162		14	.2	1,650	2.24	10,700	744	570	42
Aug. 11-20	1,180			12	.04	170	88	312	7.5	203	936	222		29	.2	1,880	2.55	5,970	786	620	46
Aug. 21-31	974			9.8	.12	210	99	371	7.4	196	1,170	241		36	.4	2,240	3.05	5,880	931	770	46
Sept. 1-10	1,060			9.8	.18	221	108	398	9.3	219	1,220	279		35	.4	2,390	3.25	6,820	996	816	46
Sept. 11-20	1,380			10	.13	220	115	363	9.1	224	1,190	260		35	.2	2,310	3.14	8,600	1,020	838	43
Sept. 21-30	4,540			8.0	.10	165	57	206	5.4	213	692	141		10	.2	1,390	1.89	17,000	646	472	41
Average				14	0.07	128	58	203	5.3	205	585	148		24	—	1,270	1.72		558	390	44
Weighted average	3,960			13	0.07	102	43	147	4.4	182	426	107		18	—	950	1.29	10,100	432	282	42

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1931 to September 1932

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1931 ----	4,320			14	0.21	163	57	196	5.3	205	677	133		12	0.2	1,360	1.85	15,800	642	474	40
Oct. 11-20----------	2,890			14	.06	147	67	208	5.3	197	691	143		16	.2	1,340	1.89	10,800	642	481	41
Oct. 21-31----------	3,000			13	.06	154	68	209	5.8	246	696	133		16	.3	1,420	1.93	11,400	664	462	40
Nov. 1-10----------	2,820			12	.06	139	64	210	5.3	225	637	144		15	.2	1,340	1.82	10,200	610	426	43
Nov. 11-20----------	3,110			15	.08	137	59	202	5.0	222	623	134		15	.2	1,300	1.77	10,900	584	402	43
Nov. 21-30----------	2,480			15	.10	143	69	227	5.8	246	689	148		20	.2	1,440	1.96	9,620	640	439	43
Dec. 1-10----------	2,200			14	.06	149	68	246	5.9	253	681	184		20	.3	1,490	2.03	8,860	652	444	45
Dec. 11-20----------	1,790			15	.06	153	71	242	6.1	266	690	174		20	.1	1,500	2.04	7,240	674	456	44
Dec. 21-31----------	2,350			15	.04	133	62	209	5.3	233	588	158		19	.1	1,300	1.77	8,260	587	396	43
Jan. 1-10, 1932 ----	2,020			13	.06	133	63	223	5.1	237	612	164		23	.2	1,350	1.84	7,360	591	397	45
Jan. 11-20----------	2,020			12	.04	127	61	210	3.8	236	572	159		18	.3	1,280	1.74	6,970	568	374	44
Jan. 21-31----------	1,690			14	.04	131	64	222	4.2	241	596	169		20	.3	1,340	1.82	6,100	590	392	45
Feb. 1-10----------	2,180			11	.04	117	55	197	4.5	218	524	152		16	.1	1,180	1.61	6,960	518	340	45
Feb. 11-20----------	3,390			11	.06	113	51	184	4.3	193	552	106		15	.1	1,130	1.54	10,300	492	334	45
Feb. 21-29----------	3,740			9.2	.06	114	54	192	3.7	202	554	119		14	.2	1,160	1.58	11,700	506	341	45
Mar. 1-10----------	3,110			12	.10	116	55	189	3.5	215	543	126		15	.1	1,170	1.59	9,750	516	340	44
Mar. 11-20----------	2,730			12	.10	113	56	194	4.2	213	534	139		16	.1	1,170	1.60	8,960	512	338	45
Mar. 21-31----------	3,590			11	.10	106	47	165	4.0	204	448	126		12	.1	1,020	1.39	9,870	458	291	44
Apr. 1-10----------	6,700			16	.10	95	38	128	4.8	202	347	99		9.6	.1	837	1.14	15,100	393	228	41
Apr. 11-20----------	14,500			17	.12	74	24	69	4.3	180	199	51		6.5	.1	534	.73	20,900	283	136	34
Apr. 21-30----------	15,600			14	.10	61	20	58	4.0	157	175	33		6.0	.1	448	.61	18,800	234	106	34
May 1-10----------	20,900			15	.10	59	20	48	4.2	159	154	30		5.1	.1	414	.56	23,300	229	98	31
May 11-20----------	40,200			15	.08	49	13	26	2.1	154	83	14		3.6	.1	282	.38	30,600	176	50	24
May 21-31----------	39,000			14	.08	43	11	21	2.2	124	73	14		2.2	.2	242	.33	25,500	152	51	23
June 1-10----------	25,300			13	.10	42	13	30	2.2	113	100	19		2.5	.2	278	.38	19,000	158	66	29
June 11-20----------	29,700			9.8	.10	42	11	24	4.5	110	90	16		2.2	.1	254	.35	20,300	150	60	25
June 21-30----------	30,100			11	.08	41	12	25	3.5	106	90	18		2.2	.1	255	.35	20,700	152	65	26
July 1-10----------	18,300			13	.04	47	15	39	2.2	116	125	25		2.5	.1	326	.44	16,100	179	84	32
July 11-20----------	12,800			13	.04	67	22	60	3.2	137	217	37		3.6	.3	490	.67	16,900	258	145	33
July 21-31----------	6,840			12	.04	83	31	96	4.4	154	301	71		5.5	.6	680	.92	12,500	335	208	38
Aug. 2-10----------	6,470			10	.08	100	38	107	3.8	171	382	62		8.2	.3	795	1.08	13,900	406	266	36
Aug. 11-20----------	2,710			8.2	.10	127	57	181	4.5	189	591	120		12	.2	1,190	1.62	8,730	552	396	41
Aug. 21-31----------	5,090			13	.38	167	59	191	5.6	206	729	106		11	.2	1,380	1.88	19,000	660	490	38
Sept. 1-10----------	3,470			9.8	.12	132	57	175	3.8	205	595	109		12	.3	1,200	1.63	11,700	564	396	40
Sept. 11-20 ---------	2,060			9.2	.14	154	76	239	4.6	209	789	158		16	.2	1,550	2.11	8,610	697	526	43
Sept. 21-30 --------	2,160			14	.10	185	90	273	5.1	219	952	168		22	.3	1,820	2.47	10,600	832	652	41
Average	--			13	0.09	110	47	153	4.3	193	469	104		12	--	1,010	1.37		468	310	41
Weighted average	9,210			13	0.09	69	25	72	3.5	152	288	48		6.0	--	540	0.73	13,400	275	150	36

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1932 to September 1933

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1932	2,453			13	0.10	162	82	242	5.6	220	835	148	—	18	0.4	1,610	2.20	10,700	742	561	41
Oct. 11-20	2,585			13	.10	159	78	242	5.1	233	802	149	--	19	.4	1,580	2.15	11,000	718	526	42
Oct. 21-31	3,084			12	.12	156	73	218	5.1	235	760	126	--	18	.4	1,480	2.02	12,300	690	497	41
Nov. 1-10	3,108			16	.03	147	63	193	5.4	232	654	117	--	19	.5	1,330	1.81	11,100	626	436	39
Nov. 11-20	3,027			17	.08	136	64	190	7.2	227	602	134	—	11	.5	1,270	1.73	10,400	602	416	40
Nov. 21-30	2,900			17	.08	135	64	181	8.0	227	605	130	—	11	.6	1,260	1.72	9,880	600	414	39
Dec. 1,3-10	2,752			16	.08	131	65	190	7.4	221	617	132	--	8.6	.6	1,280	1.74	9,480	594	414	41
Dec. 11-20	1,959			18	.08	152	74	232	11	243	687	182	--	16	.5	1,490	2.03	7,870	684	485	42
Dec. 21-29, 31	1,800			11	.08	148	71	233	5.9	258	648	186	—	16	.2	1,450	1.97	7,020	662	450	43
Jan. 1-10, 1933	1,800			10	.08	140	69	224	5.1	252	628	176	--	15	.3	1,390	1.89	6,740	633	426	43
Jan. 11-20	2,300			9.2	.08	132	64	207	4.8	242	579	168	--	15	.2	1,300	1.77	8,060	592	394	43
Jan. 21-24, 31	2,332			11	.16	126	60	199	8.0	225	556	154	--	16	.3	1,240	1.69	7,800	561	376	43
Feb. 2-10	2,258			9.2	.10	129	63	216	6.1	235	591	166	--	16	.3	1,310	1.78	7,960	581	388	44
Feb. 11-19	2,180			13	.08	129	61	220	5.4	240	565	178	--	16	.4	1,310	1.78	7,680	573	376	45
Feb. 20-28	2,384			11	.10	114	55	200	5.0	218	501	168	--	13	.3	1,170	1.60	7,550	510	332	46
Mar. 1-10	2,980			12	.10	109	53	196	4.8	194	532	136	--	13	.3	1,150	1.57	9,260	490	331	46
Mar. 11-20	3,161			9.6	.06	108	50	180	4.8	205	482	135	—	14	.4	1,080	1.47	9,200	475	307	45
Mar. 21-31	2,512			11	.04	108	53	197	5.0	205	503	157	--	14	.5	1,150	1.56	7,760	488	320	46
Apr. 1-10	3,514			9.4	.08	88	38	134	4.3	178	358	104	—	9.0	.4	832	1.13	7,860	376	230	43
Apr. 11-20	2,614			16	.08	104	47	169	5.9	192	459	129	0.0	12	.3	1,040	1.41	7,300	453	296	44
Apr. 21-30	2,942			16	.08	100	45	155	5.1	186	441	110	.0	11	.4	975	1.33	7,750	434	282	43
May 1-10	5,332			18	.08	82	34	107	4.8	170	324	70	.0	10	.2	734	1.00	10,600	344	205	40
May 11-20	6,308			23	.08	78	33	106	4.6	172	303	72	.0	9.0	.4	713	.97	12,100	330	189	41
May 21-31	26,540			16	.21	45	11	28	2.7	120	87	17	.1	2.7	.2	269	.37	19,400	158	59	27
June 1-10	40,880			9.6	.08	41	8.5	17	3.0	109	62	10	.5	2.2	.1	207	.28	22,700	138	48	21
June 11-20	37,610			7.6	.12	39	8.3	19	2.4	97	68	11	.4	1.8	.2	205	.28	20,900	132	52	23
June 21-30	22,530			7.8	.10	43	12	29	2.6	98	102	21	.4	2.2	.3	268	.36	16,100	157	76	28
July 1-10	11,020			8.8	.06	62	20	59	3.0	110	204	38	.4	3.9	.3	453	.62	13,500	236	146	35
July 11-20	7,060			17	.12	76	29	80	3.5	140	274	59	.6	5.3	.2	614	.84	11,700	308	194	36
July 21-31	2,813			16	.17	106	49	151	3.5	163	475	104	.8	11	.1	997	1.36	7,570	466	332	41
Aug. 1-10	3,487			19	.10	140	55	189	4.8	193	599	139	1.2	9.8	.2	1,250	1.70	11,700	576	418	41
Aug. 11-20	2,248			13	.08	148	70	201	5.1	193	734	119	.1	16	.5	1,400	1.91	8,500	658	500	39
Aug. 21-31	1,545			6.2	.06	181	97	283	6.9	203	998	164	.4	24	.4	1,860	2.53	7,740	850	684	42
Sept. 1-10	1,539			7.0	.08	183	102	298	5.9	200	1050	176	.4	24	.4	1,940	2.64	8,040	876	712	42
Sept. 11-20	2,923			19	.06	177	86	244	7.2	214	875	157	.4	22	.4	1,690	2.30	13,300	795	620	40
Sept. 21-30	3,385			17	.12	165	71	200	8.5	207	766	119	.6	12	.8	1,460	1.99	13,300	704	534	38
Average				13	0.09	119	55	173	5.4	196	537	121	--	13	—	1,130	1.54	--	523	362	41
Weighted average	6,400			12	0.11	75	29	86	3.8	144	273	59	--	6.6	—	616	0.84	10,600	306	188	38

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1933 -----	2,960			20	0.12	153	75	211	5.8	204	751	134	0.4	14	0.6	1,460	1.99	11,700	690	524	40
Oct. 11-20----------	2,670			16	.14	153	76	203	5.8	207	756	123	.4	15	.6	1,450	1.97	10,400	694	526	39
Oct. 21-31----------	2,240			18	.10	161	83	230	4.5	229	807	141	.4	18	.6	1,580	2.14	9,530	744	556	40
Nov. 1-10----------	2,550			14	.10	164	83	236	6.7	232	821	145	.5	17	.7	1,600	2.18	11,000	751	561	40
Nov. 11-20----------	2,580			13	.12	147	76	209	5.8	236	700	142	.4	14	.6	1,420	1.94	9,920	680	486	40
Nov. 21-30----------	2,540			19	.13	147	70	214	12	238	680	148	.2	17	.5	1,420	1.94	9,770	655	460	41
Dec. 1,3-10---------	2,480			19	.13	140	70	212	14	236	660	150	.2	18	.6	1,400	1.90	9,370	638	444	41
Dec. 11-20----------	2,540			20	.14	139	66	211	13	233	636	150	.2	18	.6	1,370	1.86	9,580	618	428	42
Dec. 21-29, 31 ------	2,490			21	.12	141	70	218	13	240	649	164	.1	19	.6	1,410	1.92	9,500	640	444	42
Jan. 1-8, 10, 1934---	2,470			20	.14	126	64	207	13	222	610	148	.1	18	.5	1,320	1.79	8,780	578	396	43
Jan. 11-20----------	2,160			20	.04	135	67	228	5.0	236	622	172	.4	17	.5	1,380	1.88	8,070	612	419	44
Jan. 21-31----------	2,210			19	.04	126	61	216	3.8	228	578	162	.2	17	.6	1,300	1.76	7,730	566	378	45
Feb. 1-10-----------	2,200			17	.04	123	60	215	3.8	220	568	161	.2	15	.5	1,270	1.73	7,550	554	373	46
Feb. 11-14, 16-20 ---	2,190			16	.04	120	60	215	4.2	214	575	159	.2	17	.5	1,270	1.73	7,520	546	370	46
Feb. 21-28----------	2,410			15	.04	117	60	216	3.0	216	567	155	.3	16	.5	1,260	1.71	8,170	538	362	46
Mar. 1-10-----------	2,290			17	.05	113	56	202	3.7	208	533	154	.2	16	.6	1,200	1.63	7,400	512	342	46
Mar. 11-16, 18-20----	2,270			16	.03	106	50	184	7.4	200	466	158	.3	11	.3	1,100	1.49	6,720	470	306	45
Mar. 21-31----------	2,100			15	.03	105	50	185	7.2	196	471	156	.3	12	.3	1,100	1.49	6,230	468	307	46
Apr. 1-10 ----------	2,040			14	.03	109	53	197	7.2	196	515	158	.3	13	.5	1,160	1.58	6,410	490	330	46
Apr. 11-20----------	3,520			16	.04	97	44	160	6.7	179	441	116	.2	11	.3	980	1.33	9,470	423	276	45
Apr. 21-30----------	5,880			13	.06	68	26	81	4.6	136	247	62	.1	6.9	.2	576	.78	9,140	276	165	38
May 1-10 ----------	8,790			12	.06	69	24	77	3.0	139	245	47	.3	6.0	.8	552	.75	13,100	270	156	38
May 11-20----------	14,000			12	.08	47	14	39	1.9	105	130	26	.1	2.8	2.5	325	.44	12,300	175	89	32
May 21-31----------	10,100			8.6	.04	54	19	55	2.9	112	173	38	.3	4.0	.3	410	.56	11,200	213	121	36
June 1-10----------	7,770			10	.06	68	24	70	3.8	129	237	47	.1	5.4	.2	529	.72	11,100	268	162	36
June 11-20----------	3,440			13	.08	86	38	124	4.8	136	372	94	.2	7.6	.3	807	1.10	7,500	370	259	42
June 21-30----------	1,950			4.4	.16	123	59	188	5.3	163	596	133	.8	12	.4	1,200	1.63	6,330	550	416	42
July 1-10----------	1,280			10	.04	147	77	246	4.2	182	776	170	.5	19	.4	1,540	2.09	5,320	684	534	44
July 11-20----------	826			12	.04	177	102	330	5.2	183	1,080	207	.6	27	.4	2,030	2.76	4,530	861	711	45
July 21-31----------	1,060			10	.08	230	106	343	9.5	203	1,210	214	.0	23	.7	2,250	3.06	6,440	1,010	844	42
Aug. 1-10----------	869			9.0	.07	215	119	376	7.5	188	1,250	254	.1	29	.6	2,350	3.20	5,520	1,030	872	44
Aug. 11-20----------	1,040			15	.02	212	120	410	9.6	211	1,190	338	.3	25	.3	2,420	3.29	6,800	1,020	850	46
Aug. 21-31----------	1,130			14	.02	190	93	311	8.3	219	971	238	.4	20	.4	1,950	2.66	5,960	856	677	44
Sept. 1-10----------	830			16	.02	222	131	397	7.0	231	1,320	263	.3	28	.4	2,500	3.40	5,600	1,090	903	44
Sept. 11-20----------	1,030			16	.05	217	114	347	6.4	221	1,170	240	.3	25	.3	2,250	3.06	6,250	1,010	830	43
Sept. 21-30----------	1,380			15	.20	202	100	349	8.8	223	1,070	260	.3	22	.9	2,140	2.91	7,960	915	732	45
Average				15	0.07	137	68	220	6.6	199	679	156	0.3	16	0.5	1,400	1.90		622	458	43
Weighted average	3,070			14	0.07	105	48	154	5.4	172	474	109	--	11	--	1,010	1.37	8,310	460	318	42

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934	1,450			9.8	0.11	171	82	285	6.7	216	837	228	0.6	18	0.6	1,740	2.37	6,830	764	597	45
Oct. 11-20	1,300			12	.15	178	89	327	9.6	223	934	258	.4	18	.7	1,940	2.63	6,800	810	627	46
Oct. 21-31	1,310			15	.15	189	94	321	10	239	952	255	.1	22	.6	1,980	2.69	6,990	858	662	45
Nov. 1-10	1,420			17	.19	202	100	339	9.6	251	1,040	251	.2	25	.7	2,110	2.86	8,070	915	710	44
Nov. 11-20	1,740			15	.18	178	81	278	10	237	863	200	.3	20	.8	1,760	2.40	8,230	777	583	43
Nov. 21-28, 30	2,030			17	.14	169	91	247	6.6	236	797	184	.6	20	.5	1,640	2.23	8,980	755	562	41
Dec. 1-7, 9-10	1,780			18	.12	166	77	238	7.0	248	751	178	.5	26	.9	1,580	2.15	7,610	731	528	41
Dec. 11, 12, 14-20	2,310			18	.16	150	68	222	6.4	237	658	178	.5	16	.7	1,430	1.95	8,940	654	460	42
Dec. 21-31	2,120			16	.12	133	64	217	7.0	224	615	159	.5	16	.5	1,340	1.82	7,660	595	412	44
Jan. 1-10, 1935	1,910			15	.14	136	63	210	6.1	218	605	171	.1	15	.9	1,330	1.81	6,850	598	420	43
Jan. 11-12, 14-20	2,270			15	.05	124	59	209	4.5	212	580	159	.3	12	.5	1,270	1.72	7,770	552	378	45
Jan. 21-31	2,000			16	.04	146	70	239	4.8	238	681	186	.3	15	.3	1,480	2.01	7,960	652	458	44
Feb. 1-10	2,070			16	.05	126	60	204	4.6	218	564	160	.3	14	.3	1,260	1.71	7,020	561	382	44
Feb. 11-19	1,910			13	.02	128	61	217	4.8	221	583	170	.3	15	.2	1,300	1.77	6,710	570	390	45
Feb. 20-28	2,060			14	.02	122	57	209	4.8	216	543	170	.3	14	.2	1,240	1.69	6,900	539	362	45
Mar. 1-10	2,040			14	.03	121	58	211	5.1	215	547	170	.2	13	.3	1,240	1.69	6,860	540	364	46
Mar. 11-20	2,120			18	.04	115	54	203	5.3	210	512	170	.3	11	.2	1,190	1.62	6,820	509	337	46
Mar. 21-31	2,130			17	.03	106	49	186	5.1	198	460	152	.3	5.7	.2	1,080	1.47	6,210	466	304	46
Apr. 1-10	3,440			14	.03	106	43	177	6.6	202	422	155	.4	8.2	.2	1,030	1.40	9,590	442	276	46
Apr. 11-20	4,060			13	.04	101	42	179	5.4	195	436	140	.3	9.8	.2	1,020	1.39	11,200	424	264	47
Apr. 21-30	5,390			13	.03	82	29	98	4.3	178	269	78	.2	7.4	.2	669	.91	10,600	324	178	39
May 1-10	5,730			13	.03	81	30	96	4.2	166	280	70	.2	7.3	.1	664	.90	10,300	326	190	39
May 11-20	11,200			14	.05	67	21	56	3.7	159	178	38	.2	5.5	.2	462	.63	14,000	254	123	32
May 21-31	18,300			18	.04	61	18	39	3.4	155	134	25	.1	3.9	.1	379	.52	18,700	226	99	27
June 1-10	25,800			16	.16	47	13	26	2.7	119	90	16	.0	2.0	.1	271	.37	18,900	171	74	25
June 11-20	45,000			13	.24	37	11	15	3.2	98	62	11	.0	1.5	.1	202	.27	24,500	138	57	19
June 21-30	28,400			13	.02	44	11	25	1.9	117	82	16	.0	1.6	.1	252	.34	19,300	155	59	26
July 1-10	14,900			12	.02	51	16	41	2.2	115	137	28	.1	2.8	.1	347	.47	14,000	194	100	31
July 11-20	10,200			13	.06	66	22	61	3.0	134	206	43	.2	3.1	.2	483	.66	13,300	255	145	34
July 21-31	6,640			15	.02	88	31	88	3.5	153	315	60	.2	4.6	.2	681	.93	12,200	347	222	35
Aug. 1-10	4,230			9.8	.13	112	41	117	5.1	172	433	92	.5	5.3	.2	901	1.23	10,300	448	307	36
Aug. 12-20	3,180			10	.12	142	58	160	5.9	198	612	104	.6	7.7	.3	1,200	1.63	10,300	593	430	37
Aug. 21-31	3,150			11	.15	160	67	178	7.2	209	683	123	.3	13	.3	1,350	1.83	11,400	675	504	36
Sept. 1-10	3,110			14	.11	159	65	165	5.9	205	656	117	.3	10	.3	1,290	1.76	10,900	664	496	35
Sept. 11-20	2,820			10	.08	158	71	169	4.5	196	674	123	.7	12	.4	1,320	1.79	10,000	686	526	35
Sept. 21-30	2,880			7.0	.12	165	76	247	6.1	205	837	153	.7	15	.4	1,610	2.19	12,500	724	556	42
Average				14	0.09	122	54	175	5.5	195	529	133	0.3	12	0.4	1,140	1.55		526	366	42
Weighted average	6,466			14	.10	75	28	81	3.8	148	256	60	.2	5.5	.2	596	.81	10,400	302	180	36

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids [a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Oct. 1-10, 1935	3,620		160							191	588	99	0.8	3.3	0.2	1,240	1.68	12,100			
Oct. 11-20	2,670		183							208	693	130	.6	5.5	.3	1,440	1.96	10,400			
Oct. 21-31	2,890		183							226	702	124	.7	3.4	.3	1,460	1.99	11,400			
Nov. 1-10	3,230		167							214	604	118	.6	1.8	.3	1,290	1.75	11,200			
Nov. 11-20	3,130		166							212	577	126	.5	5.6	.3	1,250	1.70	10,600			
Nov. 21-30	2,820		172							218	590	134	.7	4.1	.5	1,300	1.78	9,990			
Dec. 1-10	2,590		183							225	609	153	.6	5.3	.4	1,330	1.85	9,520			
Dec. 11-20	2,310		183							223	598	157	.7	5.2	.3	1,360	1.86	8,510			
Dec. 21-31	2,100		201							249	661	194	.7	5.4	.3	1,540	2.09	8,730			
Jan. 1-5, 10, 1936	2,290		182							228	562	161	.2	15	.3	1,330	1.81	8,230			
Jan. 11-20	2,320		174							215	538	152	.2	13	.3	1,270	1.73	7,960			
Jan. 21, 28, 30-31	2,320		151							—	—	—	—	—	—	1,060	1.44	6,640			
Feb. 1-10	2,640		174							212	527	156	.2	13	.3	1,250	1.71	9,940			
Feb. 11-20	2,730		169							207	509	150	.2	12	.3	1,210	1.64	8,900			
Feb. 21-29	2,640		170							219	540	147	—	12	—	1,270	1.73	9,070			
Mar. 1-10	2,490		158							215	482	146	—	8.9	—	1,170	1.59	7,860			
Mar. 11-20	2,850		146							205	428	132	--	7.6	--	1,050	1.43	9,110			
Mar. 21-31	2,790		147							205	435	133	—	9.8	--	1,060	1.45	8,010			
Apr. 1-10	2,360		163							--	--	--	--	--	--	1,160	1.57	7,360			
Apr. 11-20	11,800		118							--	--	—	—	--	—	304	1.09	25,600			
Apr. 21-30	25,400		45.6							--	--	—	—	—	—	295	.40	20,200			
May 1-10	27,100		41.3							--	--	—	—	—	—	268	.36	19,600			
May 11-20	28,900		39.2							--	--	—	—	—	—	253	.34	19,700			
May 21-31	35,200		34.6													224	.30	21,300			
June 1-10	24,800		45							—	—	—	--	--	--	282	.38	18,900			
June 11-20	23,500		41.1							--	--	—	--	--	—	266	.36	18,900			
June 21-30	15,100		56.4							—	—	—	--	--	--	360	.49	14,700			
July 1-10	8,060		82.4							—	—	—	--	--	--	544	.74	11,800			
July 11-20	7,440		116							—	—	—	—	—	—	810	1.10	16,300			
July 21-31	4,400		133							—	—	—	—	—	—	948	1.29	11,300			
Aug. 1-10	6,540		117							—	—	—	—	—	—	858	1.17	15,200			
Aug. 11-20	4,810		120							--	—	—	—	—	—	370	1.18	11,300			
Aug. 21-31	3,400		154							--	—	—	--	--	--	1,150	1.57	10,600			
Sept. 1-10	3,720		170							—	—	—	--	--	—	1,320	1.79	13,200			
Sept. 11-20	2,700		183							—	—	—	—	—	—	1,400	1.91	10,200			
Sept. 21-30	2,030		200							—	—	—	—	—	—	1,500	2.04	8,220			
Average			--							--	—	—	—	—	—	1,010	1.37				
Weighted average	7,942		--							--	—	—	—	—	—	568	.77	12,200			

a Residue by evaporation.

COLORADO RIVER NEAR CISCO, UTAH--Continued

Mean discharge and dissolved solids, October 1936 to September 1938

Date	October 1936 to September 1937		Date	October 1937 to September 1938	
	Mean discharge (cfs)	Dissolved solids[a] (ppm)		Mean discharge (cfs)	Dissolved solids[a] (ppm)
Oct. 1-10,1936----	2,420	1,580	Oct. 1-10,1937----	2,450	1,670
Oct. 11-20 --------	2,380	1,520	Oct. 11-20--------	3,290	1,490
Oct. 21-31 --------	2,820	1,530	Oct. 21-31--------	3,210	1,310
Nov. 1-10 ---------	3,120	1,400	Nov. 1-10---------	3,140	1,320
Nov. 11-20 --------	2,950	1,270	Nov. 11-20--------	3,040	1,270
Nov. 21-30 --------	2,630	1,280	Nov. 21-30--------	2,930	1,170
Dec. 1-10 ---------	2,300	1,450	Dec. 1-10---------	2,740	1,260
Dec. 11-20 --------	2,470	1,470	Dec. 11-20--------	3,290	1,240
Dec. 21-31 --------	2,470	1,310	Dec. 21-31--------	2,280	1,500
Jan. 1-10,1937----	1,580	1,440	Jan. 1-10, 1938---	2,460	1,380
Jan. 11-20 --------	1,300	1,490	Jan. 11-20--------	2,580	1,330
Jan. 21-31 --------	1,300	1,440	Jan. 21-31--------	2,270	1,400
Feb. 1-10 ---------	2,200	1,210	Feb. 1-10---------	2,430	1,320
Feb. 11-20 --------	2,200	1,150	Feb. 11-19--------	2,650	1,230
Feb. 21-28 --------	2,200	1,110	Feb. 21-38--------	2,300	1,330
Mar. 1-3,5-10------	3,190	1,060	Mar. 1-3, 5-10----	4,560	1,310
Mar. 11-20 --------	3,450	1,120	Mar. 11-20--------	3,720	1,210
Mar. 21-31 --------	2,960	1,110	Mar. 21-31--------	4,170	1,120
Apr. 1-10 ---------	2,940	1,090	Apr. 1-10---------	3,770	1,150
Apr. 11-20 --------	10,900	770	Apr. 11-20--------	11,400	722
Apr. 21-30 --------	15,400	431	Apr. 21-30--------	31,200	366
May 1-10 ----------	18,800	370	May 1-10----------	23,200	336
May 11-20 ---------	34,700	279	May 11-20---------	26,700	323
May 21-31 ---------	24,600	288	May 21-31---------	33,900	289
June 1-10 ---------	17,800	350	June 1-10---------	48,600	236
June 11-20 --------	13,000	439	June 11-20--------	37,400	267
June 21-30 --------	13,300	589	June 21-30--------	35,200	280
July 1-10 ---------	8,160	626	July 1-10---------	20,100	345
July 11-20 --------	8,910	877	July 11-20--------	10,200	573
July 21-31 --------	3,440	1,180	July 21-31--------	6,200	750
Aug. 1-10 ---------	2,800	1,320	Aug. 1-10---------	4,000	1,190
Aug. 11-20 --------	1,650	1,670	Aug. 11-20--------	3,880	1,190
Aug. 21-31 --------	2,110	1,900	Aug. 21-31--------	2,120	1,550
Sept. 1-10 --------	3,420	1,490	Sept. 1-10--------	7,100	1,160
Sept. 11-20 -------	1,920	1,630	Sept. 11-20-------	6,840	980
Sept. 21-30 -------	1,830	1,860	Sept. 21-30-------	3,920	1,150
Weighted average	6,383	690	Weighted average	10,250	546

a Residue by evaporation.

COLORADO RIVER NEAR CISCO, UTAH--Continued

Chemical analyses, in parts per million, water year October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids [a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Oct. 1-10, 1938	3,494		191	—	—	—	—	—	—	—	—	—	—	—	—	1,440			—		
Oct. 11-20	3,972		166	16	0.16	141	58	160	13	230	571	111	0.2	9.7	0.2	1,260			590		
Oct. 21-31	3,281		171	15	.16	130	61	174	13	220	568	130	.3	10	.2	1,280			575		
Nov. 1-10	3,341		173	—	—	—	—	—	—	224	—	—	—	—	—	1,270			—		
Nov. 11-20	3,568		165	—	—	—	—	—	—	215	—	—	—	—	—	1,200			—		
Nov. 21-30	2,995		177	—	—	—	—	—	—	241	—	—	—	—	—	1,260			—		
Dec. 1-10	3,183		171	—	—	—	—	—	—	228	—	—	—	—	—	1,230			—		
Dec. 11-20	2,871		172	—	—	—	—	—	—	—	—	—	—	—	—	1,220			—		
Dec. 21-25, 28-31	2,599		190	—	—	—	—	—	—	—	—	—	—	—	—	1,330			—		
Jan. 1-10, 1939	2,670		186	—	—	—	—	—	—	—	—	—	—	—	—	1,290			—		
Jan. 11-20	2,655		179	—	—	—	—	—	—	—	—	—	—	—	—	1,220			—		
Jan. 21-31	2,509		174	—	—	—	—	—	—	—	—	—	—	—	—	1,200			—		
Feb. 1-10	2,525		184	—	—	—	—	—	—	—	—	—	—	—	—	1,300			—		
Feb. 11-20	2,425		179	—	—	—	—	—	—	—	—	—	—	—	—	1,200			—		
Feb. 21-28	2,556		176	—	—	—	—	—	—	—	—	—	—	—	—	1,180			—		
Mar. 1-6, 8, 10	2,645		169	—	—	—	—	—	—	—	—	—	—	—	—	1,130			—		
Mar. 11-20	3,339		139	—	—	—	—	—	—	—	—	—	—	—	—	1,170			—		
Mar. 21-31	7,343		121	—	—	—	—	—	—	—	—	—	—	—	—	855			—		
Apr. 1-8, 10	8,716		95.8	—	—	—	—	—	—	—	—	—	—	—	—	673			—		
Apr. 11-20	7,586		83.2	—	—	—	—	—	—	—	—	—	—	—	—	587			—		
Apr. 21-30	9,652		75.2	—	—	—	—	—	—	—	—	—	—	—	—	539			—		
May 1-3, 5-10	19,320		49.8	—	—	—	—	—	—	—	—	—	—	—	—	349			—		
May 11-20	18,860		46.1	—	—	—	—	—	—	—	—	—	—	—	—	295			—		
May 21-31	20,640		45.1	—	—	—	—	—	—	—	—	—	—	—	—	291			—		
June 2-10	21,300		47.3	—	—	—	—	—	—	—	—	—	—	—	—	305			—		
June 11-20	14,910		55.5	—	—	—	—	—	—	—	—	—	—	—	—	352			—		
June 21-30	7,508		86.6	—	—	—	—	—	—	—	—	—	—	—	—	569			—		
July 1-10	4,898		109	—	—	—	—	—	—	—	—	—	—	—	—	742			—		
July 11-20	2,700		152	—	—	—	—	—	—	—	—	—	—	—	—	1,090			—		
July 21-23, 25-31	1,689		207	—	—	—	—	—	—	—	—	—	—	—	—	1,580			—		
Aug. 1-10	2,555		203	—	—	—	—	—	—	—	—	—	—	—	—	1,550			—		
Aug. 11, 14-16, 18-20	1,571		221	—	—	—	—	—	—	—	—	—	—	—	—	1,750			—		
Aug. 21, 23-31	1,282		282	—	—	—	—	—	—	—	—	—	—	—	—	2,350			—		
Sept. 1-10	3,076		259	—	—	—	—	—	—	—	—	—	—	—	—	2,140			—		
Sept. 11-20	4,307		136	—	—	—	—	—	—	—	—	—	—	—	—	1,450			—		
Sept. 21-23, 25-26, 28-30	2,403		214	—	—	—	—	—	—	—	—	—	—	—	—	1,640			—		
Average																1,120					
Weighted average	5,873		--	--	--	--	--	--	--	--	--	--	--	--	--	734			--		

a Residue by evaporation.

COLORADO RIVER NEAR CISCO, UTAH--Continued

Mean discharge and dissolved solids, water year October 1939 to September 1940

Date	October 1939 to September 1940	
	Mean discharge (cfs)	Dissolved solids [a] (ppm)
Oct. 1-5, 7-10	2,599	1,570
Oct. 11-20	2,465	1,530
Oct. 21-31	2,180	1,720
Nov. 1-10	2,552	1,540
Nov. 11-18, 20	2,600	1,500
Nov. 21-30	2,445	1,530
Dec. 1-10	2,289	1,470
Dec. 11-20	2,072	1,530
Dec. 21-31	1,795	1,670
Jan. 1-7, 9-10	2,243	1,580
Jan. 11-20	2,037	1,530
Jan. 23, 25, 26, 28-31	2,114	1,550
Feb. 1-5, 7-10	2,502	1,340
Feb. 11, 13, 15-20	2,108	1,440
Feb. 21-28	2,577	1,410
Mar. 1-10	2,513	1,320
Mar. 11-20	2,320	1,280
Mar. 21-24, 26-31	3,410	1,050
Apr. 1-10	3,635	916
Apr. 11-20	4,278	912
Apr. 21-29	11,030	545
May 1-9	13,080	430
May 11-20	22,030	324
May 21-31	16,140	348
June 1-5, 7-10	18,550	330
June 11-13, 15, 17, 19, 20	11,180	430
June 21-24, 26-30	7,525	577
July 1-10	4,034	873
July 11-20	2,681	1,270
July 21-24, 26-29, 31	2,113	1,470
Aug. 1-4, 6-10	1,176	2,140
Aug. 11-20	785	2,670
Aug. 21-26, 28-31	2,178	2,290
Sept. 1-4, 6-10	1,794	1,910
Sept. 11-14, 16-20	2,071	2,060
Sept. 21, 23-28, 30	4,798	1,480
Weighted average	4,771	836

a Residue by evaporation.

GREEN RIVER AT GREEN RIVER, UTAH

Chemical analyses, in parts per million, August to September 1928

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Aug. 1-10, 1928	4,520			41	0.11	50	20	51	2.9	165	142	25		0.8	—	414	0.56	5,050	207	72	34
Aug. 11-20	3,740			27	.06	54	22	61	3.5	177	169	31		1.8	0.4	456	.62	4,500	226	80	37
Aug. 21-31	2,900			27	.10	59	25	71	3.7	180	204	32		1.9	.2	513	.70	4,020	250	102	38
Sept. 1-10	2,300			6.2	.06	59	25	71	3.7	180	202	40		1.1	1.3	497	.68	3,090	250	102	38
Sept. 11-20	1,860			10	.06	60	28	71	8.0	185	210	44		1.0	3.0	523	.71	2,630	264	113	36
Sept. 21-30	—			13	.04	69	30	90	4.5	199	259	50		1.6	1.2	615	.84	—	296	132	39

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1928 to September 1929

Date of collection	Mean discharge (second-feet)	Suspended matter (per-cent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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, 1928	1,630			12	0.06	68	31	96	5.6	202	268	54		1.7	2.0	636	0.86	2,800	297	132	41
Oct. 11-20	5,450			15	.13	99	34	106	5.1	197	380	50		2.2	1.0	788	1.07	11,600	387	226	37
Oct. 21-31	3,610			18	.08	75	26	112	4.3	198	305	45		2.4	.8	685	.93	6,680	294	132	45
Nov. 1-10	3,020			19	.04	78	35	107	3.7	220	315	49		.8	.7	716	.97	5,840	338	158	40
Nov. 11-20	3,100			13	.04	75	34	105	3.8	220	299	50		.8	.8	689	.94	5,770	327	146	41
Nov. 21-30	2,420			14	.12	78	37	102	3.2	231	298	53		1.4	.8	701	.95	4,580	346	157	39
Dec. 1-10	2,040			16	.07	80	39	104	3.8	235	304	57		1.2	1.0	721	.98	3,970	360	168	38
Dec. 11-20	1,300			16	.07	95	47	121	3.8	276	353	69		2.1	1.0	843	1.15	2,960	430	204	38
Dec. 21-30	1,430			19	.06	102	47	123	4.0	295	363	72		2.0	.8	876	1.19	3,380	448	206	37
Jan. 1-2, 7-10, 1929	2,050			16	.06	91	39	99	3.8	266	290	60		1.6	1.0	731	.99	4,050	388	170	35
Jan. 11-20	1,880			16	.05	84	37	91	3.7	253	263	56		2.7	.7	678	.92	3,440	362	154	35
Jan. 21-31	2,080			14	.05	79	35	87	3.0	236	247	52		2.2	.5	636	.86	3,570	341	148	35
Feb. 1-10	2,000			20	.15	76	34	87	3.0	229	253	52		2.0	.7	640	.87	3,460	330	142	36
Feb. 11-19	1,730			15	.11	82	39	100	2.2	244	289	56		2.4	.8	706	.96	3,300	365	165	37
Feb. 20-28	2,180			16	.08	80	37	99	2.2	239	279	53		2.4	.7	686	.93	4,040	352	156	38
Mar. 1-10	3,260			15	.11	76	35	99	2.1	216	292	47		2.8	.6	675	.92	5,940	334	156	39
Mar. 11-20	13,300			12	.13	70	24	89	2.4	176	262	33		4.8	1.0	584	.79	20,970	273	129	41
Mar. 21-31	7,100			13	.08	72	29	90	6.6	186	276	43		3.2	.6	624	.85	11,960	298	146	39
Apr. 1-10	11,600			14	.09	68	24	87	4.8	194	240	34		1.4	.8	569	.77	17,820	268	109	41
Apr. 11-20	8,970			12	.11	61	21	71	4.0	180	198	31		.9	.7	488	.66	11,820	238	91	39
Apr. 21-30	16,200			13	.20	53	23	49	6.1	174	154	18		1.7	.5	404	.55	17,670	227	84	31
May 1-10	13,400			15	.08	53	21	49	5.6	187	141	19		2.7	.2	398	.54	14,400	219	66	32
May 11-20	23,800			15	.17	44	18	29	5.0	172	93	11		2.4	.2	302	.41	19,410	184	43	25
May 21-31	36,900			20	.34	40	14	26	2.4	148	69	8.0		1.2	.2	254	.35	25,200	158	36	26
June 1-10	28,300			16	.24	37	14	20	5.6	150	63	8.0		.8	.3	239	.33	18,260	150	27	22
June 11-20	32,500			15	.37	37	11	16	5.3	132	49	6.8		.6	.2	206	.28	18,080	138	30	20
June 21-30	24,100			15	.26	38	11	19	3.8	134	55	9.0		.6	.2	218	.30	14,190	140	30	22
July 1-10	15,900			15	.27	36	12	22	3.5	128	63	12		.6	.3	227	.31	9,750	140	34	25
July 11-20	9,040			14	.27	46	18	38	4.8	145	124	18		.7	.3	335	.46	8,180	189	70	30
July 21-31	6,630			18	.67	69	26	63	7.7	181	219	35		.2	.3	528	.72	9,450	279	130	32
Aug. 2-10	7,230			21	.72	98	33	80	8.8	198	339	29		.2	.3	707	.96	13,800	380	218	31
Aug. 11-20	4,000			15	.22	72	33	69	14	195	251	33		3.1	.6	586	.80	6,330	315	155	31
Aug. 21-31	3,230			14	.17	70	32	70	15	198	243	41		.8	.5	583	.79	5,080	306	144	32
Sept. 1-10	6,480			16	.54	88	33	86	5.9	200	331	37		.4	.3	696	.95	12,180	355	191	34
Sept. 11-20	5,940			15	.06	64	28	71	6.9	183	236	28		.6	.2	540	.73	8,660	274	124	35
Sept. 21-30	6,620			19	.13	92	32	79	4.8	197	323	31		.9	.4	679	.92	12,140	361	200	32
Weighted average	8,930			16	0.24	55	21	49	4.8	169	154	22		1.4		406	0.55	9,740	224	86	32

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1929 to September 1930

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10,1929 -----	4,520			17	0.14	67	29	82	4.2	190	255	36		1.5	0.5	585	0.80	7,130	286	130	38
Oct. 11-20 ----------	4,400			19	.11	64	31	76	3.7	194	238	34		1.6	.4	563	.77	6,680	287	128	36
Oct. 21-31 ----------	3,610			14	.16	67	34	82	3,4	201	253	39		1.6	.4	593	.81	5,770	307	142	36
Nov. 1-10----------	3,370			13	.06	69	35	83	3.4	213	262	43		1.5	.4	615	.84	5,590	316	142	36
Nov. 11, 13-20 -----	2,930			8.0	.08	75	37	93	5.1	223	285	48		1.8	.5	663	.90	5,240	339	156	37
Nov. 21-30 ----------	2,080			14	.06	81	40	104	3.7	255	304	51		2.0	.8	725	.99	4,070	366	158	38
Dec. 1-9----------	2,560			12	.06	80	39	99	4.5	254	286	52		1.8	.7	699	.95	4,820	360	152	37
Dec. 11-20----------	2,580			11	.08	73	35	90	4.0	234	262	46		2.2	.7	639	.87	4,450	326	134	37
Dec. 21-31----------	1,350			12	.08	81	40	97	8.3	246	304	52		1.9	.8	717	.98	2,610	366	165	36
Jan. 1-10, 1930 ----	1,570			12	.07	89	43	104	5.9	265	308	62		2.0	.7	756	1.03	3,200	399	182	36
Jan. 11-14, 19-20 --	1,140			14	.04	87	41	102	5.6	265	310	60		2.2	.8	752	1.02	2,300	386	168	36
Jan. 21-31----------	1,070			11	.09	89	43	105	6.4	273	315	62		2.2	.8	768	1.04	2,220	399	176	36
Feb. 1-10----------	3,060			10	.08	82	38	91	6.1	257	275	54		1.8	.6	685	.93	5,650	360	150	35
Feb. 11-19----------	3,840			11	.03	72	34	93	3.8	218	271	48		2.1	.8	642	.87	6,650	320	141	38
Feb. 20-28----------	5,710			9.2	.06	70	34	101	3.4	199	300	44		2.4	.8	662	.90	10,200	314	152	41
Mar. 1-10 ----------	3,680			7.0	.07	68	34	94	6.1	204	304	46		1.8	.8	661	.90	6,560	310	142	39
Mar. 11-20----------	3,550			4.6	.05	77	38	101	4.5	228	299	50		1.6	1.0	688	.94	6,590	348	161	38
Mar. 21, 23-31 -----	4,650			14	.08	69	32	88	4.5	205	264	41		1.5	.8	615	.84	7,710	304	136	38
Apr. 1-10----------	4,350			13	.06	70	34	91	4.2	210	269	43		1.4	.8	629	.86	7,380	314	142	38
Apr. 11-20----------	13,500			15	.09	52	19	44	4.3	194	130	19		.6	.6	380	.52	13,800	208	49	31
Apr. 21-30----------	12,900			9.8	.06	57	18	35	4.3	176	124	16		1.8	.6	353	.48	12,300	216	72	26
May 1-10----------	14,100			9.8	.07	43	15	24	3.0	153	78	13		1.0	.3	262	.36	9,960	169	44	23
May 11-20----------	9,490			11	.10	45	17	34	4.2	154	110	17		.7	.4	315	.43	8,060	182	56	28
May 21-31 ----------	11,900			14	.11	46	17	36	3.7	164	102	18		.8	.3	318	.43	10,200	185	50	27
June 1-10----------	19,300			17	.48	37	13	21	2.9	130	68	12		1.2	.3	237	.32	12,500	146	40	23
June 11-20----------	19,300			14	.08	40	13	25	2.1	139	75	10		1.0	.4	249	.34	13,000	154	40	26
June 21-30----------	13,600			13	.08	39	13	24	2.2	129	73	12		1.2	.8	241	.33	8,840	151	46	25
July 1-3, 5-10 -----	6,240			14	.04	44	15	32	3.8	155	91	18		.8	.1	295	.40	4,960	172	44	28
July 11-20----------	5,470			18	.08	57	21	56	4.2	180	168	25		.9	.2	439	.60	6,480	228	81	34
July 21-31----------	5,160			17	.04	59	21	54	2.7	187	156	26		1.8	1.2	430	.58	5,980	234	80	33
Aug. 1-9 ----------	5,270			20	.13	116	38	98	4.2	217	420	32		.2	.8	835	1.14	11,900	446	268	32
Aug. 11-20----------	12,800			19	.08	93	30	99	4.3	216	340	34		.4	1.5	726	.99	25,100	356	178	37
Aug. 21-31----------	6,760			14	.24	59	19	63	5.0	184	172	27		.4	.5	450	.61	8,200	225	74	37
Sept. 2-10----------	4,780			17	.28	79	27	79	4.8	184	271	34		.2	.4	603	.82	7,770	308	157	35
Sept. 11-20---------	2,960			11	.16	65	26	72	4.8	189	212	38		2.1	.3	524	.71	4,180	269	114	36
Sept. 21-30---------	3,650			11	.14	79	31	96	5.3	191	310	43		.8	.4	670	.91	6,590	324	168	39
Weighted average	6,290			14	0.13	59	23	56	3.8	179	177	26		1.2	--	448	0.61	7,630	242	95	33

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1930 to September 1931

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Oct. 1-10, 1930	3,880			13	0.10	82	30	95	4.8	192	311	40		3.2	0.5	674	0.92	7,050	328	170	38
Oct. 11-20	4,150			14	.14	62	28	78	4.3	185	231	37		2.6	.5	548	.75	6,130	270	116	38
Oct. 21-31	3,760			12	.04	61	27	67	2.7	190	199	34		2.2	.7	499	.68	5,060	263	108	35
Nov. 1-10	3,020			8.2	.04	66	31	76	3.0	198	228	39		2.0	.7	551	.75	4,490	292	130	36
Nov. 11-20	2,830			8.6	.06	72	34	84	5.4	200	262	45		2.4	1.0	612	.83	4,670	320	156	36
Nov. 21-30	1,600			11	.08	83	40	103	5.8	227	316	58		2.4	1.0	731	.99	3,150	372	186	37
Dec. 1-10	1,780			16	.06	93	45	115	4.8	268	352	60		3.8	.8	822	1.12	3,950	417	198	37
Dec. 11-20	2,050			16	.06	92	43	109	4.3	268	329	56		3.3	.8	785	1.07	4,340	406	187	37
Dec. 21-31	1,770			15	.08	87	39	97	4.0	257	289	53		3.0	.8	714	.97	3,410	378	167	36
Jan. 1-10, 1931	1,440			15	.10	87	37	96	4.3	261	270	59		3.0	.8	700	.95	2,720	369	155	36
Jan. 11-20	1,570			9.0	.04	82	35	88	1.8	247	244	55		3.0	.5	640	.87	2,710	348	146	35
Jan. 21-31	1,580			7.2	.08	76	32	82	1.6	234	222	50		3.2	.6	589	.80	2,510	321	129	36
Feb. 1-10	1,650			12	.06	78	36	98	1.6	223	283	50		3.8	.4	672	.91	2,990	342	160	38
Feb. 11-19	1,960			6.6	.08	79	40	105	1.9	218	323	50		4.0	.3	717	.98	3,790	362	183	39
Feb. 20-28	2,250			9.4	.06	78	41	119	2.4	218	351	56		3.9	.5	768	1.04	4,660	363	184	41
Mar. 1-10	2,750			11	.10	74	38	106	2.2	216	306	52		3.7	.4	699	.95	5,180	340	164	40
Mar. 11-20	3,350			6.8	.08	79	38	105	2.2	214	307	58		3.6	.4	705	.96	6,370	353	178	39
Mar. 21-31	4,330			7.4	.10	66	31	100	2.9	190	273	46		3.0	.4	623	.85	7,280	292	136	42
Apr. 1-10	3,390			13	.10	73	34	107	4.0	212	297	50		3.4	1.2	686	.93	6,270	322	148	42
Apr. 11-18, 20	5,200			6.0	.06	71	29	92	2.6	213	255	41		3.2	.5	605	.82	8,480	296	122	40
Apr. 21-30	6,350			6.2	.12	56	21	62	2.2	173	167	30		3.6	.4	433	.59	7,420	226	84	37
May 1-10	5,770			12	.08	56	22	58	2.7	179	163	29		3.1	.6	434	.59	6,750	230	84	35
May 11-20	7,760			9.6	.08	51	18	42	2.2	169	117	21		3.0	.8	347	.47	7,260	202	63	31
May 21-31	9,670			8.6	.08	43	14	29	2.2	145	80	16		3.4	.8	268	.36	6,990	165	46	27
June 1-10	9,120			13	.15	39	13	27	2.1	134	74	14		1.0	.5	249	.34	6,120	151	41	28
June 11-12, 14-20	8,790			12	.13	40	12	31	3.0	138	78	16		1.1	.6	261	.35	6,190	150	36	31
June 21-30	4,440			15	.10	44	14	31	2.9	148	82	18		.5	.2	280	.38	3,350	168	46	28
July 1-3, 6-10	2,640			15	.12	50	17	48	3.5	163	121	29		1.3	.8	365	.50	2,600	195	62	34
July 11-20	1,560			13	.04	55	19	55	3.0	180	138	33		1.4	.2	406	.55	1,710	216	68	35
July 21-31	953			13	.04	70	24	65	4.0	194	189	40		2.0	.3	503	.68	1,290	273	114	34
Aug. 1-10	1,720			13	.04	112	44	155	5.0	220	512	61		1.6	.3	1,010	1.38	4,690	460	280	42
Aug. 11-20	1,400			16	.04	81	29	123	4.6	227	312	61		1.4	.5	740	1.01	2,790	321	135	45
Aug. 21-31	1,360			12	.04	71	27	98	3.8	206	249	54		1.6	.4	618	.84	2,270	288	119	42
Sept. 1-10	993			17	.04	77	33	132	3.8	205	349	61		2.8	.3	777	1.06	2,080	328	160	46
Sept. 11-20	737			10	.04	67	27	89	3.5	204	218	58		.8	.4	574	.78	1,140	278	111	41
Sept. 21-30	1,100			12	.08	73	28	96	3.5	212	240	66		.9	.5	624	.85	1,850	297	123	41
Weighted average	3,300			11	0.09	62	25	709	3.0	185	199	35		2.6	--	499	0.68	4,440	258	106	37

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1931 to September 1932

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1931	1,480			9.0	0.19	75	26	88	4.8	195	255	49		1.4	0.1	604	0.82	2,410	294	134	39
Oct. 11-20	1,340			7.0	.14	68	28	92	3.8	202	235	59		1.0	.5	593	.81	2,143	284	119	41
Oct. 21-31	1,620			9.4	.06	75	33	101	4.5	212	277	56		1.3	.4	662	.90	2,890	322	148	40
Nov. 1-10	1,670			11	.06	78	35	120	5.4	220	306	69		2.2	.5	735	1.00	3,310	338	158	43
Nov. 11-20	1,870			10	.06	73	34	99	4.5	217	273	54		1.3	.5	656	.89	3,310	322	144	40
Nov. 22, 24-30	950			9.4	.06	79	38	110	3.7	238	294	61		1.0	.5	713	.97	1,830	353	158	40
Dec. 2-4	705			12	--	--	--	--	--	287	365	74		--	--	896	1.22	--	--	--	--
Dec. 11, 13-20	610			11	.04	92	41	112	3.0	286	306	67		1.9	.3	775	1.05	1,270	398	184	38
Dec. 21-31	1,250			10	.06	86	35	96	1.9	263	258	59		1.9	.4	677	.92	2,280	358	143	37
Jan. 1-10, 1932	1,230			8.4	.04	77	32	87	2.6	241	231	54		1.8	.5	613	.83	2,040	324	126	37
Jan. 11-20	1,310			7.6	.02	77	31	86	2.1	236	216	226		1.8	.4	601	.82	2,120	320	126	37
Jan. 21-31	1,320			13	.04	77	33	90	3.5	248	230	54		1.7	.3	624	.85	2,220	328	124	37
Feb. 1-10	1,410			11	.00	70	29	79	3.2	218	209	47		1.0	.2	557	.76	2,120	294	115	37
Feb. 11-20	1,580			7.8	.04	54	23	62	2.7	162	173	34		1.4	--	438	.60	1,870	230	96	37
Feb. 21-29	1,700			11	.06	80	38	103	4.8	227	316	51		1.9	.2	718	.98	3,470	336	170	38
Mar. 1-10	2,670			12	.06	76	36	102	4.6	223	301	48		1.8	.2	691	.94	4,980	338	154	39
Mar. 11-20	3,240			10	.06	67	32	107	4.5	194	293	50		2.1	.2	661	.90	5,780	298	140	43
Mar. 21-31	6,260			8.8	.06	79	29	94	3.5	227	260	42		4.4	.7	633	.86	10,700	316	130	39
Apr. 1-10	7,780			10	.06	75	27	94	3.7	223	259	38		4.0	.4	621	.84	13,100	298	115	40
Apr. 11-20	5,750			9.2	.06	66	25	78	3.5	199	223	32		3.6	.4	538	.73	9,790	268	104	38
Apr. 21-30	10,200			11	.06	54	19	43	3.0	175	132	18		4.0	.3	370	.50	10,200	213	70	30
May 1-10	12,000			8.6	.10	60	20	57	4.2	195	152	21		3.5	.3	422	.57	13,700	232	72	34
May 11-20	23,600			13	.12	49	16	31	3.7	182	82	11		2.7	.2	298	.41	19,000	188	40	26
May 21-31	31,100			9.6	.14	44	13	20	3.0	160	57	8.0		2.2	.2	236	.32	19,800	164	32	21
June 1-10	18,900			--	.05	42	13	26	3.2	154	69	10		1.3	.3	240	.33	12,200	152	32	26
June 11-20	19,700			13	.08	40	13	25	2.9	144	69	11		.8	.2	246	.33	13,100	154	36	26
June 21-30	24,200			13	.10	42	11	23	1.9	150	57	9.0		.9	.3	232	.32	15,100	150	27	25
July 1-10	18,300			12	.10	40	12	22	2.6	147	58	10		.9	.3	230	.31	11,400	150	29	24
July 11-20	9,100			12	.20	63	20	53	3.5	174	176	22		1.2	.5	437	.59	10,700	239	96	32
July 21-31	5,810			12	.12	60	20	54	3.7	176	168	26		1.4	.5	432	.59	6,770	232	88	33
Aug. 1-10	4,570			8.4	.20	68	24	66	3.5	206	199	27		.9	.4	498	.68	6,140	268	99	34
Aug. 11-20	2,860			8.8	.27	62	23	62	3.7	196	176	31		.7	.4	464	.63	3,580	249	88	35
Aug. 21-31	4,140			11	.48	120	39	118	5.4	231	462	38		1.3	.3	909	1.24	10,100	460	270	35
Sept. 1-10	3,240			9.0	.20	84	31	95	4.8	205	312	39		1.8	.4	678	.92	5,930	337	169	38
Sept. 11-20	1,930			11	.16	75	32	111	4.5	202	300	60		1.9	.4	695	.95	3,520	318	153	43
Sept. 21-23, 25-30	1,590			9.2	.12	70	33	103	3.5	203	280	55		.8	.4	655	.89	2,810	310	144	42
Weighted average	6,340			11	0.11	55	19	47	3.3	177	134	21		1.9	--	380	0.51	6,910	216	70	32

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1932 to September 1933

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-7, 10, 1932	1,560			10	0.10	73	36	108	3.7	208	302	60	--	0.8	0.4	696	0.95	2,930	330	160	41
Oct. 11-20	1,795			11	.02	73	38	108	3.4	213	305	56	--	.8	.6	700	.95	3,390	338	164	41
Oct. 21-31	2,305			12	.02	78	40	119	3.5	222	344	58	--	1.7	.8	766	1.04	4,770	359	177	42
Nov. 1-10	2,320			12	.02	77	39	107	3.7	226	316	51	--	1.7	.8	719	.98	4,500	352	168	39
Nov. 11-20	2,215			13	.02	80	40	106	3.4	235	317	52	--	1.2	.7	728	.99	4,350	364	172	39
Nov. 21-30	2,290			12	.03	79	39	102	3.5	233	303	50	0.0	1.2	.7	704	.96	4,350	358	166	38
Dec. 1-9	1,990			12	.02	81	40	107	3.4	238	319	53	--	1.4	.7	734	1.00	3,940	366	172	39
Dec. 11-20	830			5.8	.10	95	47	129	3.8	278	377	61	--	1.4	.6	857	1.17	1,921	430	202	39
Dec. 21-31	1,000			6.6	.08	108	53	133	4.0	312	397	80	--	1.8	.4	937	1.27	2,530	488	232	37
Jan. 1-10, 1933	1,100			7.8	.10	96	43	106	4.2	286	315	62	--	1.6	.6	777	1.06	2,308	416	182	35
Jan. 11-20	1,350			7.8	.08	86	37	90	3.7	255	268	55	--	1.5	.6	675	.92	2,460	366	158	34
Jan. 21-24, 27-31	1,645			7.0	.14	74	33	88	4.3	221	252	48	--	1.7	.5	617	.84	2,740	320	139	37
Feb. 1-2, 4-10	1,640			5.2	.10	75	35	92	3.5	223	263	52	--	1.8	.5	638	.87	2,830	331	148	37
Feb. 11-19	1,585			10	.13	84	38	99	3.5	251	284	56	--	2.0	.5	700	.95	3,000	366	160	37
Feb. 20, 22-28	1,815			8.6	.12	80	36	97	3.4	239	273	56	--	1.8	.5	674	.92	3,300	348	152	37
Mar. 1-10	2,185			9.0	.11	78	38	107	3.5	214	325	50	--	1.8	.5	718	.98	4,240	350	175	40
Mar. 11-20	3,720			8.4	.08	74	37	111	4.0	200	333	48	--	2.6	.6	717	.98	7,200	336	172	41
Mar. 21-31	3,355			7.4	.04	73	39	111	4.2	201	325	54	--	2.0	.6	715	.97	6,480	342	178	41
Apr. 1-10	4,010			9.0	.08	72	35	105	4.0	199	311	48	--	1.6	.6	684	.93	7,410	324	160	41
Apr. 11-20	3,635			12	.06	69	31	84	3.5	199	257	38	.1	2.2	.6	595	.81	5,840	300	136	37
Apr. 21-30	5,870			12	.10	67	29	82	3.5	198	239	37	.0	2.2	.5	569	.77	9,020	286	124	38
May 1-10	10,780			10	.12	50	19	50	2.7	164	140	21	.0	1.8	.5	375	.51	10,910	203	68	34
May 11-20	7,145			15	.10	56	22	58	2.1	179	159	24	.4	1.7	.7	426	.58	8,220	230	84	35
May 21-27, 29-31	14,070			15	.10	50	17	43	1.1	195	104	16	.4	1.8	.5	344	.47	13,070	195	35	32
June 1-10	24,640			13	.12	43	12	20	1.6	148	58	9.0	.4	1.4	.7	231	.31	15,370	157	36	22
June 11-20	26,440			13	.12	38	9.6	19	1.4	129	48	8.0	.4	1.2	.4	202	.27	14,420	134	29	23
June 21-30	18,020			11	.08	36	9.3	16	3.2	121	50	8.0	.4	.9	.3	194	.26	9,440	128	29	21
July 1-10	8,310			9.6	.14	46	14	37	2.9	132	115	15	.4	1.0	.5	306	.42	6,870	172	64	31
July 11-20	5,345			18	.06	74	22	65	4.5	186	212	29	.7	1.6	.2	518	.70	7,480	275	122	34
July 21-31	2,880			19	.08	54	21	57	3.7	173	157	32	.7	1.0	.2	431	.59	3,350	222	80	35
Aug. 1-10	2,355			22	.10	73	29	84	4.8	200	261	41	.7	2.6	.3	617	.84	3,920	301	137	37
Aug. 11-20	1,685			18	.12	65	29	87	4.5	193	242	43	.1	1.1	.4	585	.80	2,660	281	123	40
Aug. 21-31	1,240			4.8	.23	65	30	90	5.9	194	243	47	.2	.9	.2	582	.79	1,949	286	126	40
Sept. 1-2, 5-10	1,455			14	.14	87	36	113	4.2	201	353	46	.2	.7	.3	753	1.02	2,960	365	200	40
Sept. 11, 13-20	1,370			10	.09	83	38	116	5.8	200	335	60	.2	1.3	.4	748	1.02	2,770	363	199	40
Sept. 21-30	1,210			7.6	.10	69	34	101	5.8	192	274	58	.3	.4	.6	645	.88	2,107	312	154	41
Weighted average	4,870			12	0.10	55	21	54	2.7	172	156	25		1.5		412	0.56	5,420	224	83	34

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 2-10, 1933	1,350			9.2	0.17	75	35	110	6.4	194	317	57	0.4	0.8	0.6	707	0.96	2,580	331	172	41
Oct. 11-20	1,156			8.2	.14	69	38	111	5.4	198	301	62	.3	.8	.6	693	.94	2,163	328	166	42
Oct. 21-31	1,192			7.8	.17	73	39	117	4.8	205	324	64	.3	.8	.7	732	1.00	2,356	342	174	42
Nov. 1-10	1,362			11	.15	76	41	123	4.3	218	343	66	.3	.9	.8	773	1.05	2,840	358	180	42
Nov. 12-20	1,481			11	.20	78	44	123	4.5	232	346	63	.3	1.1	.7	785	1.07	3,140	376	186	41
Nov. 21-30	1,610			16	.05	79	42	120	6.4	239	338	60	.1	1.0	.7	780	1.06	3,390	370	174	41
Dec. 1-10	1,590			14	.09	83	42	123	5.9	241	357	60	.1	1.6	.7	805	1.09	3,460	380	182	41
Dec. 11-20	1,480			12	.04	84	45	124	5.6	247	352	62	.1	2.0	.7	808	1.10	3,230	394	192	40
Dec. 21-31	1,130			12	.06	94	49	137	6.1	271	404	67	.2	1.9	.7	905	1.23	2,760	436	214	40
Jan. 1-10, 1934	1,940			13	.04	84	43	119	5.4	248	340	57	.1	1.8	.7	786	1.07	4,120	386	184	40
Jan. 11-20	1,390			9.8	.07	88	46	128	5.9	259	378	61	.2	1.6	.7	846	1.15	3,180	408	196	40
Jan. 21-31	1,550			14	.04	87	45	123	6.1	256	357	66	.2	1.5	.5	826	1.12	3,460	402	192	40
Feb. 1-10	2,060			14	.04	81	42	118	5.3	239	337	59	.2	1.7	.6	776	1.06	4,320	374	178	40
Feb. 11-17, 19-20	2,300			13	.04	78	38	110	5.6	223	320	52	.1	2.0	.6	729	.99	4,530	350	168	40
Feb. 21, 23-28	2,070			12	.04	79	41	118	5.8	226	342	58	.0	1.6	.6	769	1.05	4,300	366	180	41
Mar. 1-6, 9-10	1,990			10	.04	74	43	119	5.6	214	340	59	.1	.9	.6	757	1.03	4,070	362	186	41
Mar. 11-12, 15, 18-20	2,240			14	.05	75	36	113	7.5	224	322	56	.2	1.0	.4	735	1.00	4,450	335	152	42
Mar. 21-31	2,220			10	.04	71	34	102	5.1	213	291	52	.2	.8	.3	671	.91	4,020	317	142	41
Apr. 1-10	2,370			10	.04	64	29	83	5.6	198	238	46	.2	.5	.4	574	.78	3,670	278	116	39
Apr. 11-20	2,570			10	.07	63	27	85	6.1	194	233	46	.2	.7	.5	567	.77	3,930	268	109	40
Apr. 21-28, 30	3,840			13	.05	47	18	55	5.4	156	145	32	.1	.8	.2	393	.53	4,070	192	64	38
May 1-10	4,000			14	.14	42	13	40	4.6	142	97	23	.2	1.1	.3	305	.41	3,290	158	42	35
May 11-20	5,640			14	.20	40	13	38	5.0	135	93	21	.1	1.0	.6	292	.40	4,450	154	43	34
May 21-31	4,540			9.4	.06	36	11	34	2.2	129	71	17	.2	.7	.2	245	.33	3,000	135	30	35
June 1-10	3,450			12	.08	39	13	38	2.2	135	87	18	.4	.6	.2	277	.38	2,580	151	40	35
June 11-20	1,840			6.4	.08	43	16	46	2.2	150	106	25	.3	.3	.3	319	.43	1,585	174	50	36
June 21-30	1,100			11	.05	53	20	62	3.0	178	148	34	.1	.7	.6	420	.57	1,247	214	68	38
July 1-10	806			9.0	.08	56	23	72	3.2	195	174	37	.2	.3	.7	471	.64	1,025	234	74	40
July 11-20	619			8.4	.06	56	25	86	3.8	199	196	42	.2	.6	.4	516	.70	862	243	80	43
July 21-31	522			9.6	.04	62	30	104	5.4	215	255	46	.4	1.2	.5	620	.84	874	278	102	44
Aug. 1-10	522			7.0	.06	72	36	146	4.8	248	328	71	.0	1.2	.7	788	1.07	1,111	328	124	49
Aug. 11-20	853			5.4	.08	62	28	117	4.6	217	257	56	.1	1.8	.7	639	.87	1,472	270	92	48
Aug. 21-31	755			11	.08	66	29	103	6.6	220	246	56	.3	1.1	.4	627	.85	1,278	284	103	43
Sept. 1-10	656			13	.08	70	31	111	6.6	217	265	64	.3	1.5	.4	669	.91	1,185	302	124	44
Sept. 12, 15-20	679			9.4	.07	90	34	115	6.7	203	354	63	.4	2.7	.4	775	1.05	1,421	364	198	40
Sept. 21-30	475			7.2	.12	73	29	110	4.8	214	251	75	.4	1.0	.4	657	.89	843	301	126	44
Weighted average	1,820			12	0.08	63	29	86	4.9	193	234	44		1.1		568	.77	2,790	276	118	40

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934	616			9.6	0.14	73	30	127	4.5	229	263	88	0.3	0.8	0.5	709	0.96	1,179	306	118	47
Oct. 11-18, 20	694			6.6	.13	74	31	125	5.0	220	278	85	.3	.6	.6	714	.97	1,338	312	132	46
Oct. 21-31	831			7.0	.16	70	30	117	7.4	219	259	75	.0	.2	.6	674	.92	1,512	298	118	45
Nov. 1-10	836			7.6	.10	71	30	122	5.1	218	266	78	.0	.5	.6	688	.94	1,553	300	122	46
Nov. 11-20	928			6.2	.08	71	29	107	5.3	219	248	68	.0	.5	.4	643	.87	1,611	296	116	43
Nov. 21-30	1,040			7.0	.03	76	33	121	5.1	224	296	72	.0	1.0	.6	721	.98	2,025	325	142	44
Dec. 1-10	700			7.8	.03	81	37	124	4.8	249	309	73	.0	.9	.6	760	1.03	1,436	354	150	43
Dec. 11-12, 14-20	838			11	.04	91	44	118	4.2	232	338	81	.4	1.4	.7	803	1.09	1,817	408	218	38
Dec. 21-31	1,220			13	.04	85	39	120	3.4	258	305	74	.8	1.3	.7	769	1.05	2,530	372	161	41
Jan. 1-10, 1935	1,080			12	.04	84	38	113	3.0	255	289	65	.6	1.6	.3	732	1.00	2,135	366	156	40
Jan. 11-20	1,220			12	.06	83	37	110	2.9	239	287	64	.1	1.4	.7	715	.97	2,355	359	163	40
Jan. 21-31	1,050			--	.14	83	36	103	4.2	246	267	64	.2	1.1	1.0	680	.92	1,928	355	154	38
Feb. 1-10	1,370			--	.10	80	36	102	4.2	239	274	61	.5	1.2	.8	677	.92	2,500	348	152	39
Feb. 11-19	1,600			--	.22	71	33	96	3.4	200	249	57	.4	1.0	1.0	609	.83	2,630	312	148	40
Feb. 20-28	1,570			12	.04	73	34	99	5.3	227	261	59	.1	1.3	.4	657	.89	2,790	322	136	40
Mar. 1-10	1,690			11	.04	74	35	104	5.0	224	277	56	.3	1.4	.5	674	.92	3,080	328	145	40
Mar. 11-20	1,870			12	.05	74	34	106	5.1	227	284	56	.3	2.0	.6	685	.93	3,460	324	138	41
Mar. 21-31	2,100			12	.08	69	30	97	4.0	202	267	49	.1	1.7	.6	629	.86	3,570	296	130	41
Apr. 1-10	2,200			15	.02	70	31	99	3.8	211	267	48	.3	1.7	.3	640	.87	3,800	302	129	41
Apr. 11-20	2,400			13	.04	66	29	93	2.9	201	248	45	.1	1.7	.4	598	.81	3,880	284	119	41
Apr. 21-30	4,090			12	.05	61	25	68	3.8	200	185	33	.1	2.6	.3	489	.67	5,400	255	91	36
May 1-10	4,360			16	.01	57	22	56	3.8	185	153	27	.1	3.0	.4	429	.58	5,050	232	81	34
May 11-20	6,320			13	.03	53	20	43	2.7	189	121	21	.1	2.6	.2	370	.50	6,310	214	80	30
May 21-31	11,200			16	.02	50	17	36	3.4	178	97	16	.1	1.8	.2	325	.44	9,830	195	49	28
June 1-10	17,300			14	.08	53	15	22		163	87	12	.3	.8	.2	284	.39	13,270	194	60	20
June 11-20	28,200			15	.04	45	12	17	3.8	142	60	8.0	.4	.6	.2	232	.32	17,660	162	46	18
June 21-30	18,200			13	.04	39	11	13	4.2	129	51	9.0	.4	.4	.2	205	.28	10,070	142	37	16
July 1-10	9,230			12	.08	36	12	24	.6	121	66	12	.3	.4	.2	223	.30	5,560	140	40	27
July 11-20	4,420			11	.04	44	14	36	3.4	150	94	16	.4	.4	.2	293	.40	3,500	168	44	31
July 21-31	2,800			13	.14	55	20	56	4.3	182	154	24	.4	.6	.3	417	.57	3,150	220	70	35
Aug. 1-10	1,990			11	.04	55	20	59	4.0	183	149	28	.4	.8	.3	417	.57	2,241	220	70	36
Aug. 11-16, 18-20	2,180			13	.04	69	24	70	4.5	195	203	35	.4	.4	.2	515	.70	3,030	270	110	35
Aug. 21-31	1,900			15	.15	77	28	99	5.1	208	268	43	.6	.3	.4	639	.87	3,280	307	136	41
Sept. 1-10	1,490			13	.12	75	27	97	5.4	213	259	46	.6	.4	.3	628	.85	2,530	298	124	41
Sept. 11-20	1,380			13	.32	86	28	97	5.3	203	300	48	.6	.5	.4	679	.92	2,530	330	163	38
Sept. 21-30	952			12	.13	74	28	106	3.5	194	274	60	.3	.3	.3	654	.89	1,681	300	140	43
Weighted average	3,940			13	0.06	54	19	45	3.6	169	129	24	0.3	1.0	0.3	371	0.50	3,950	213	74	31

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids[a] Parts per million	Dissolved solids[a] Tons per acre-foot	Dissolved solids[a] Tons per day	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Percent sodium
Oct. 1-10, 1935	950		--	6.0						214	301	64	0.8	1.2	--	732	1.00	1,878			
Oct. 11-20	911		--	5.5						208	277	67	.6	.5	--	692	.94	1,702			
Oct. 21-31	1,010		--	5.5						222	320	71	.4	.5	--	779	1.06	2,124			
Nov. 1-10	1,290		--	7.0						231	320	67	.4	.8	--	780	1.06	2,720			
Nov. 11-20	1,420		--	5.0						236	290	59	.2	.8	--	724	.98	2,780			
Nov. 21-30	1,460		106	--						225	294	55	.4	.7	.5	736	1.00	2,900			
Dec. 1-10	1,070		112	--						234	328	57	.3	.7	.5	787	1.07	2,274			
Dec. 11-20	915		116	--						259	334	66	.4	.8	.4	838	1.14	2,070			
Dec. 21-31	975		129	--						287	389	70	.4	.8	.3	939	1.28	2,472			
Jan. 1-10, 1936	1,100		120	--						278	338	75	.4	.8	.4	873	1.19	2,590			
Jan. 11-20	1,080		110	--						263	290	60	.2	1.4	--	758	1.03	2,210			
Jan. 21-27, 29-31	1,070		103	--						238	266	56	.3	1.5	--	698	.95	2,017			
Feb. 1-10	1,230		105	--						241	281	54	.5	1.6	--	718	.98	2,384			
Feb. 11-20	1,530		105	--						232	299	54	.3	2.0	--	734	1.00	3,030			
Feb. 21-29	2,010		103	--						206	294	52	.1	1.7	--	698	.95	3,790			
Mar. 1-10	2,140		102	--						210	285	53	.7	1.5	--	690	.94	3,990			
Mar. 11-20	2,560		91	--						223	253	45	--	1.4	--	625	.85	4,320			
Mar. 21-31	2,180		98	--						218	284	50	--	1.4	--	681	.93	4,010			
Apr. 1-10	2,070		101	--						222	298	51	--	1.2	--	710	.97	3,970			
Apr. 11-20	4,160		108	--						--	--	--	--	--	--	747	1.02	8,390			
Apr. 21-30	16,300		57.4	--						--	--	--	--	--	--	402	.55	17,690			
May 1-10	18,600		45.7	--						--	--	--	--	--	--	300	.41	15,070			
May 11-20	20,800		41.5	--						--	--	--	--	--	--	272	.37	15,280			
May 21-31	24,400		34.9	--						--	--	--	--	--	--	226	.31	14,890			
June 1-10	24,200		41.8	--						--	--	--	--	--	--	262	.36	17,120			
June 11-20	16,300		39.7	--						--	--	--	--	--	--	257	.35	11,310			
June 21-30	12,500		38.7	--						--	--	--	--	--	--	268	.36	9,040			
July 1-10	7,270		46.7	--						--	--	--	--	--	--	300	.41	5,890			
July 11-20	7,220		96.2	--						--	--	--	--	--	--	663	.90	12,920			
July 21-31	4,250		88.6	--						--	--	--	--	--	--	601	.82	6,900			
Aug. 1-10	8,350		105	--						--	--	--	--	--	--	729	.99	16,440			
Aug. 11-20	4,350		89.2	--						--	--	--	--	--	--	600	.82	7,050			
Aug. 21-31	2,990		111	--						--	--	--	--	--	--	774	1.05	6,250			
Sept. 1-10	2,870		111	--						--	--	--	--	--	--	784	1.07	6,080			
Sept. 11-20	2,350		102	--						--	--	--	--	--	--	691	.94	4,380			
Sept. 21-30	1,650		100	--						--	--	--	--	--	--	570	.91	2,980			
Weighted average	5,713									--	--	--	--	--	--	416	0.57	6,420			

a Residue by evaporation.

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Mean discharge and dissolved solids, October 1936 to September 1938

Date	October 1936 to September 1937 Mean discharge (cfs)	Dissolved solids[a] (ppm)	Date	October 1937 to September 1938 Mean discharge (cfs)	Dissolved solids[a] (ppm)
Oct. 1-10, 1936	1,600	695	Oct. 1-10, 1937	1,540	837
Oct. 11-20	1,710	726	Oct. 11-20	1,960	937
Oct. 21-31	2,400	841	Oct. 21-31	2,420	817
Nov. 1-10	2,370	755	Nov. 1-10	2,090	786
Nov. 11-20	2,120	710	Nov. 11-20	2,010	825
Nov. 21-30	2,090	737	Nov. 21-30	2,160	806
Dec. 1-10	1,320	840	Dec. 1-10	1,940	714
Dec. 11-20	1,140	952	Dec. 11-20	2,430	754
Dec. 21-31	1,480	866	Dec. 21-31	2,950	713
Jan. 1-10, 1937	1,000	808	Jan. 1-10, 1938	1,440	699
Jan. 11-20	1,000	871	Jan. 11-20	1,660	719
Jan. 21-31	1,000	861	Jan. 21-31	1,810	694
Feb. 1-10	1,700	756	Feb. 1-10	2,060	673
Feb. 11-20	1,700	717	Feb. 11-19	2,500	748
Feb. 21-28	1,700	709	Feb. 20-28	2,220	778
Mar. 1-10	2,170	779	Mar. 1-10	4,800	758
Mar. 11-20	5,100	834	Mar. 11-20	4,060	692
Mar. 21-31	6,280	751	Mar. 21-31	4,010	676
Apr. 1-10	4,940	741	Apr. 1-10	3,170	688
Apr. 11-20	8,260	614	Apr. 11-20	4,780	658
Apr. 21-30	9,540	478	Apr. 21-30	15,600	436
May 1-10	9,900	436	May 1-10	17,100	338
May 11-20	23,600	320	May 11-20	14,100	388
May 21-31	22,600	295	May 21-31	23,100	339
June 1-10	21,800	330	June 1-10	29,700	266
June 11-20	12,100	332	June 11-20	22,500	265
June 21-30	11,400	349	June 21-30	15,600	325
July 1-10	7,580	434	July 1-10	12,700	331
July 11-20	14,000	759	July 11-20	6,780	409
July 21-31	5,720	594	July 21-31	4,550	508
Aug. 1-10	3,540	630	Aug. 1-10	3,580	670
Aug. 11-20	2,220	657	Aug. 11-20	2,910	682
Aug. 21-31	2,080	747	Aug. 21-31	2,040	641
Sept. 1-10	3,770	896	Sept. 1-10	7,120	1,040
Sept. 11-20	1,880	833	Sept. 11-20	4,940	756
Sept. 21-30	1,780	900	Sept. 21-30	2,890	635
Weighted average	5,709	517	Weighted average	6,557	467

a Residue by evaporation.

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Chemical analyses, in parts per million, water year October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids [a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Oct. 1-10, 1938	2,926		115	--	--	--	--	--	--	--	--	--	--	--	--	789	1.07	6,200	--	--	--
Oct. 11-20	4,543		110	14	0.08	93	33	106	8.2	242	329	46	0.3	0.8	0.9	782	1.06	9,530	368	169	40
Oct. 21-31	3,945		94.1	12	.08	80	31	84	8.0	223	269	36	.3	1.0	.9	658	.89	6,950	327	144	37
Nov. 1-4, 6-10	3,579		91.6	--	--	--	--	--	--	--	--	--	--	--	--	618	.84	5,950	--	--	--
Nov. 11-20	2,967		94.9	--	--	--	--	--	--	--	--	--	--	--	--	636	.86	5,050	--	--	--
Nov. 21-30	2,079		105	--	--	--	--	--	--	--	--	--	--	--	--	703	.96	3,950	--	--	--
Dec. 1-10	2,670		109	--	--	--	--	--	--	--	--	--	--	--	--	748	1.02	5,390	--	--	--
Dec. 11-20	2,691		91.8	--	--	--	--	--	--	--	--	--	--	--	--	609	.83	4,420	--	--	--
Dec. 21-31	2,168		105	--	--	--	--	--	--	--	--	--	--	--	--	710	.97	4,160	--	--	--
Jan. 1-10, 1939	1,857		111	--	--	--	--	--	--	--	--	--	--	--	--	766	1.04	3,820	--	--	--
Jan. 11-18, 20	2,258		100	--	--	--	--	--	--	--	--	--	--	--	--	682	.93	4,160	--	--	--
Jan. 21-28, 30	2,128		98.0	--	--	--	--	--	--	--	--	--	--	--	--	654	.89	3,750	--	--	--
Feb. 1-10	1,789		99.0	--	--	--	--	--	--	--	--	--	--	--	--	688	.94	3,330	--	--	--
Feb. 11-20	1,850		99.8	--	--	--	--	--	--	--	--	--	--	--	--	680	.92	3,370	--	--	--
Feb. 21-28	1,980		100	--	--	--	--	--	--	--	--	--	--	--	--	670	.91	3,570	--	--	--
Mar. 1-10	2,293		96.0	--	--	--	--	--	--	--	--	--	--	--	--	650	.88	4,000	--	--	--
Mar. 11-20	3,729		109	--	--	--	--	--	--	--	--	--	--	--	--	761	1.03	7,600	--	--	--
Mar. 21-31	12,400		93.7	--	--	--	--	--	--	--	--	--	--	--	--	679	.92	2,260	--	--	--
Apr. 1, 3-10	8,352		77.0	--	--	--	--	--	--	--	--	--	--	--	--	559	.76	12,600	--	--	--
Apr. 12-14, 16-20	6,792		68.6	--	--	--	--	--	--	--	--	--	--	--	--	488	.66	8,880	--	--	--
Apr. 21-30	7,354		67.1	--	--	--	--	--	--	--	--	--	--	--	--	479	.65	9,460	--	--	--
May 1-4, 6-10	14,860		50.2	--	--	--	--	--	--	--	--	--	--	--	--	354	.48	14,100	--	--	--
May 11-14, 16-20	14,750		45.9	--	--	--	--	--	--	--	--	--	--	--	--	297	.40	11,700	--	--	--
May 21-25, 27-31	13,518		43.8	--	--	--	--	--	--	--	--	--	--	--	--	286	.39	10,400	--	--	--
June 1-3, 7, 9, 10	12,360		51.6	--	--	--	--	--	--	--	--	--	--	--	--	329	.45	11,000	--	--	--
June 12-14, 17, 18, 20-	8,250		49.4	--	--	--	--	--	--	--	--	--	--	--	--	312	.42	6,860	--	--	--
June 21-23, 26-30	5,803		53.6	--	--	--	--	--	--	--	--	--	--	--	--	351	.48	5,520	--	--	--
July 1-9	3,508		60.8	--	--	--	--	--	--	--	--	--	--	--	--	394	.54	3,750	--	--	--
July 11-20	2,686		57.7	--	--	--	--	--	--	--	--	--	--	--	--	371	.50	2,660	--	--	--
July 21-27, 29-31	1,805		72.8													487	.66	2,360			
Aug. 1-7, 9-10	2,024		91.5	--	--	--	--	--	--	--	--	--	--	--	--	624	.85	3,410	--	--	--
Aug. 12-19	1,675		92.0	--	--	--	--	--	--	--	--	--	--	--	--	619	.84	2,790	--	--	--
Aug. 21-31	1,173		89.2	--	--	--	--	--	--	--	--	--	--	--	--	596	.81	1,880	--	--	--
Sept. 1-9	1,663		119	--	--	--	--	--	--	--	--	--	--	--	--	859	1.17	3,850	--	--	--
Sept. 11-20	2,854		124	--	--	--	--	--	--	--	--	--	--	--	--	883	1.20	6,780	--	--	--
Sept. 21-30	1,842		107	--	--	--	--	--	--	--	--	--	--	--	--	725	.99	3,610	--	--	--
Weighted average	4,724		--	--	--	--	--	--	--	--	--	--	--	--	--	505	0.69	6,450	--	--	--

a Residue by evaporation.

GREEN RIVER AT GREEN RIVER, UTAH--Continued

Mean discharge and dissolved solids, water year October 1939 to September 1940

Date of collection	Mean discharge (cfs)	Dissolved solids [a] (ppm)
Oct. 1-10, 1939	2,090	853
Oct. 11-20	2,230	717
Oct. 21-31	1,855	723
Nov. 1-10	1,771	738
Nov. 11-20	1,689	742
Nov. 21-30	1,490	804
Dec. 1-10	1,609	865
Dec. 11-20	1,673	863
Dec. 21-31	1,080	910
Jan. 1-10, 1940	1,507	944
Jan. 11-20	1,378	871
Jan. 21-27, 29-31	1,119	925
Feb. 1-9	1,660	872
Feb. 11-13, 15-20	1,664	832
Feb. 22-26, 28, 29	1,717	842
Mar. 1, 2, 4-10	3,800	774
Mar. 11-20	2,894	814
Mar. 21-31	3,022	777
Apr. 1-9	3,702	663
Apr. 13-20	3,225	557
Apr. 21-30	5,854	466
May 1-10	8,172	352
May 11-20	13,690	279
May 21-31	12,350	268
June 1-10	12,700	273
June 11-14, 16, 18, 20	7,156	285
June 21-30	4,959	226
July 1-2, 4-9	2,649	381
July 11-20	1,614	429
July 21-27, 29, 31	1,018	593
Aug. 1-10	779	732
Aug. 11-17, 19	645	562
Aug. 21-31	973	933
Sept. 1-10	921	985
Sept. 11-20	1,372	1,040
Sept. 21-23, 25-30	1,791	1,090
Weighted average	3,273	508

a Residue by evaporation.

SAN JUAN RIVER NEAR BLUFF, UTAH

Chemical analyses, in parts per million, June 1928 to September nber 1

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
June 5, 1928	8,240			13	0.46	33	8.5	13	2.7	84	62	6.0		0.8	0.2	181	0.25	4,030	118	48	19
Aug. 12-20	896			32	.22	150	28	117	5.9	186	548	23		2.4	.7	998	1.36	2,410	490	337	34
Aug. 21-31	788			33	.20	110	25	124	6.2	212	431	25		1.5	.6	860	1.17	1,830	378	204	41
Sept. 1-10	990			30	.24	90	20	84	5.0	183	310	16		1.6	.4	647	.88	1,730	306	156	37
Sept. 11-20	516			31	.06	91	21	87	5.4	166	328	21		3.3	.3	670	.91	933	314	178	37
Oct. 12	1,790			--	--	85	36	76	6.8	508	64	28		--	--	546	.74	2,640	360	0	31
Oct. 14	2,280			--	--	95	30	95		222	335	26		--	--	690	.94	4,250	360	178	36
Oct. 31	4,130			--	--	102	28	75	6.0	179	342	24		--	--	665	.90	7,420	370	223	30
May 1-10, 1929	7,308			17	.13	43	10	20		118	81	3.0		1.1	.1	233	.32	7,308	148	52	23
May 11-20	10,100			13	.55	38	8.2	14	1.8	104	61	4.0		.8	.2	193	.26	5,260	128	44	19
May 21-31	11,000			22	.17	39	7.1	21	5.9	110	76	4.2		.6	.2	230	.31	6,830	126	30	25
June 1-10	10,910			8.4	.22	37	8.2	13	5.4	105	62	3.8		.5	.2	190	.26	5,600	126	40	18
June 11-20	8,604			9.0	.14	32	6.3	10	5.0	93	47	3.2		.6	.3	159	.22	3,690	106	30	16
June 21-30	6,225			11	.31	33	7.7	14	3.4	90	60	4.1		.3	.3	178	.24	2,990	114	40	20
July 1-10	3,328			21	.69	66	17	45	5.0	132	188	14		.2	.2	422	.57	3,790	234	126	29
July 11-20	2,199			21	.25	51	10	25	5.0	111	101	12		.4	.1	280	.38	1,660	168	78	24
July 21-31	5,941			20	.51	88	21	79	8.0	182	305	14		.2	.2	625	.85	10,000	306	157	35
Aug. 1-3, 5-10	13,810			23	.66	116	23	75	16	205	376	12		.6	.3	743	1.01	27,700	384	216	29
Aug. 11-20	11,400			18	.34	60	12	76	16	145	226	11		.5	.7	491	.67	15,100	199	80	43
Aug. 21-24, 26-31	3,390			18	.24	84	19	53	4.8	145	257	12		.4	.2	520	.71	4,760	288	168	28
Sept. 1-10	7,429			20	1.6	82	18	71	4.0	163	295	10		.4	.2	582	.79	11,700	278	145	35
Sept. 11-20	3,428			18	.11	56	11	34	3.4	129	138	7.0		.8	.1	332	.45	3,070	185	80	28
Sept. 21-30	11,280			29	.32	80	16	74	4.5	165	269	10		.6	.2	565	.77	17,200	266	130	37

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1929 to September 1930

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1929	2,990			20	0.14	60	13	35	2.9	129	154	8.0		1.7	0.1	358	0.49	2,890	203	98	27
Oct. 11-20	2,170			16	.10	73	17	49	2.7	139	215	10		2.9	.1	454	.62	2,660	252	138	29
Oct. 21-31	1,500			14	.09	79	18	49	5.4	154	230	13		2.3	.2	487	.66	1,970	271	145	28
Nov. 1-9	1,250			13	.25	88	23	56	5.9	161	272	15		2.3	.2	555	.75	1,870	314	182	28
Nov. 11-15, 17-20	1,070			12	.31	90	25	59	5.9	168	282	18		.8	.2	576	.78	1,660	328	190	28
Nov. 21-30	881			9.0	.16	94	25	62	5.3	171	296	17		3.5	.2	596	.81	1,420	338	198	28
Dec. 2-10	864			15	.15	102	29	75	3.4	180	346	20		4.7	.2	684	.93	1,590	374	226	30
Dec. 11-20	776			13	.10	102	31	72	6.0	180	355	20		5.1	.2	693	.94	1,450	382	234	29
Dec. 21-30	403			13	.08	124	36	94	3.5	224	425	26		5.1	.3	837	1.14	910	458	274	31
Jan. 1, 4-10, 1930	555			8.2	.12	101	26	68	5.0	168	334	22		2.8	.6	650	.88	973	359	222	29
Jan. 11-18, 20	484			6.0	.07	118	31	85	5.3	200	399	26		3.3	.6	772	1.05	1,010	422	258	30
Jan. 21-31	399			11	.08	128	35	92	4.5	220	432	26		5.1	.1	842	1.15	906	464	283	30
Feb. 1-2, 4-10	763			17	.07	91	31	82	2.6	137	377	24		2.7	.4	696	.95	1,430	354	242	33
Feb. 11-19	1,550			11	.07	93	28	79	3.2	147	362	21		3.8	.5	673	.92	2,810	347	226	33
Feb. 20-26, 28	1,530			8.8	.06	105	33	87	3.0	169	411	23		3.1	.5	757	1.03	3,120	398	259	32
Mar. 1, 3-10	924			6.0	.07	103	33	81	4.2	169	384	22		2.5	.8	716	.97	1,780	392	253	31
Mar. 11-20	1,210			11	.06	97	30	74	4.6	171	348	22		2.3	.8	673	.92	2,200	366	226	30
Mar. 21-31	1,570			14	.10	87	24	55	4.6	175	270	14		2.0	.4	557	.76	2,360	316	172	27
Apr. 1-10	2,790			13	.05	74	20	40	4.2	164	211	11		1.5	.3	456	.62	3,430	266	132	24
Apr. 11-20	4,810			13	.05	54	12	26	4.0	142	118	6.0		1.2	.5	304	.41	3,940	184	68	23
Apr. 21-24, 26-29	5,710			17	.08	55	12	25	2.9	152	108	5.0		1.0	.6	301	.41	4,640	187	62	22
May 1-10	4,200			16	.08	50	11	24	2.6	132	104	5.0		1.4	.6	279	.38	3,160	170	62	23
May 12-20	2,820			14	.04	60	14	31	2.4	144	136	8.0		1.8	.2	338	.46	2,570	207	89	24
May 21-31	6,020			18	.08	49	10	23	2.6	136	93	6.0		1.2	.5	270	.37	4,380	164	52	23
June 1-10	7,630			16	.06	53	10	20	2.7	134	96	4.0		1.0	.1	269	.37	5,540	174	64	20
June 11-16	6,490			13	.06	39	7.5	16	2.1	108	64	4.0		1.3	.2	200	.27	3,500	128	40	21
June 21-30	3,030			18	.04	51	9.2	23	3.2	122	106	7.0		1.5	.1	279	.38	2,280	166	66	23
July 1-10	973			18	.04	61	14	38	3.7	126	170	12		1.2	.1	380	.52	997	210	106	28
July 11-20	2,400			25	.07	182	37	119	6.6	259	606	22		.4	.4	1,130	1.53	7,290	606	394	30
July 21-31	4,260			24	.16	107	20	95	4.2	210	353	14		1.4	1.2	722	.98	8,300	349	177	37
Aug. 1-10	5,370			20	.10	97	20	92	4.2	213	320	14		.5	1.5	673	.92	9,750	324	150	38
Aug. 11-12, 14-20	6,040			19	.10	101	19	87	3.7	202	322	11		1.4	.7	664	.90	10,800	330	164	36
Aug. 21-31	915			21	.06	84	17	64	3.5	161	254	14		3.0	.3	540	.73	1,330	280	148	33
Sept. 1-4, 8-10	544			20	.08	114	26	91	4.0	175	398	21		2.8	.8	763	1.04	1,120	392	248	33
Sept. 11-20	405			21	.12	106	27	90	4.0	169	385	22		4.8	.4	743	1.01	812	376	237	34
Sept. 21-30	355			12	.10	123	31	105	3.2	185	454	26		12	.6	857	1.17	821	434	283	34
Weighted average	2,380			16	0.10	75	17	50	3.5	159	214	11		1.7		466	0.63	2,990	257	126	29

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1930 to September 1931

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1930	575			12	0.10	127	32	109	3.4	201	463	25		8.2	1.0	879	1.20	1,360	448	284	34
Oct. 11, 13-20	582			13	.06	116	31	92	4.3	179	413	23		12	.5	793	1.08	1,240	417	270	32
Oct. 21-31	515			13	.06	113	31	91	4.2	181	406	23		14	.4	784	1.07	1,090	410	261	32
Nov. 1-10	458			12	.08	122	36	100	4.2	188	454	26		15	.4	862	1.17	1,060	452	298	32
Nov. 11-20	562			13	.04	131	39	112	3.8	193	503	29		16	.5	942	1.28	1,430	488	330	33
Nov. 21-30	641			12	.08	127	39	108	5.0	197	490	27		12	.7	917	1.25	1,590	478	316	33
Dec. 1-10	594			14	.10	126	38	103	5.1	204	469	27		12	.6	895	1.22	1,430	470	304	33
Dec. 11-20	490			10	.04	130	39	102	3.0	209	467	29		8.0	.3	889	1.21	1,180	486	314	31
Dec. 21-31	170			12	.04	186	53	159	4.0	280	706	43		9.0	---	1,310	1.78	601	682	452	33
Jan. 1-10, 1931	300			10	.04	158	44	129	4.2	259	570	35		8.2	.2	1,086	1.48	879	576	363	33
Jan. 11-20	325			9.6	.08	146	41	118	3.5	235	528	32		8.0	.2	1,002	1.36	878	533	340	32
Jan. 21-31	378			10	.04	133	36	109	3.7	212	480	28		13	.2	917	1.25	935	480	306	33
Feb. 1-10	1,040			9.0	.06	118	32	99	4.2	175	438	24		14	.5	824	1.12	2,310	426	282	33
Feb. 11-19	1,020			13	.04	119	35	119	4.2	184	487	25		14	.3	907	1.23	2,500	441	290	37
Feb. 20-28	631			11	.08	124	38	116	3.5	192	491	27		14	.2	919	1.25	1,560	466	308	35
Mar. 1-10	480			11	.10	130	41	124	3.4	194	509	50		12	.2	976	1.33	1,260	493	334	35
Mar. 11-20	530			12	.10	121	38	108	3.5	187	481	29		9.4	.3	894	1.22	1,280	458	304	34
Mar. 21-31	810			17	.12	109	32	93	2.1	188	399	20		9.6	.4	774	1.05	1,690	404	250	33
Apr. 1-10	787			13	.10	103	29	82	3.0	180	358	21		7.4	.5	705	.96	1,500	376	228	32
Apr. 11-20	1,320			12	.06	75	19	55	2.6	163	221	12		5.5	.3	482	.66	1,720	265	132	31
Apr. 21-30	1,890			9.6	.10	70	17	47	2.6	150	195	11		5.0	.4	431	.59	2,200	244	122	29
May 1-8, 10	2,900			11	.12	77	18	55	3.0	152	228	12		6.0	.6	485	.66	3,790	266	142	31
May 11-20	3,460			14	.10	65	13	33	2.9	154	142	8.0		2.2	.3	356	.48	3,320	216	90	25
May 21-31	3,780			12	.08	53	10	27	2.9	138	103	6.0		1.8	.3	284	.39	2,900	174	60	25
June 1-8, 10	4,980			14	.06	46	8.4	24	2.6	127	85	6.0		1.4	.4	250	.34	3,360	150	46	25
June 11-20	3,350			16	.12	42	8.0	24	2.2	113	88	6.0		1.5	.3	244	.33	2,200	133	46	27
June 21-30	1,680			13	.04	55	10	34	3.2	125	133	9.0		1.3	.3	320	.44	1,450	178	76	29
July 1-10	2,680			13	.04	69	13	56	3.7	144	203	12		2.7	.7	443	.60	3,200	226	108	35
July 11-20	480			12	.04	87	16	63	4.8	148	264	20		2.0	.8	542	.74	702	283	162	32
July 21-31	400			16	.20	161	32	141	6.1	179	637	27		3.7	.2	1,110	1.51	1,200	534	387	36
Aug. 1-10	1,690			18	.20	141	26	165	5.8	225	584	22		3.8	.2	1,080	1.46	4,910	459	274	43
Aug. 11-15, 17-20	676			17	.10	112	22	109	5.1	208	398	19		.6	.3	785	1.07	1,430	370	200	39
Aug. 21-31	256			21	.04	142	26	132	4.8	200	530	25		3.6	.2	983	1.34	679	462	298	38
Sept. 1-10	118			23	.08	175	39	190	5.4	203	758	40		5.2	.2	1,340	1.82	425	597	430	41
Sept. 11-20	1,240			18	.16	182	38	176	5.3	228	735	33		1.8	.1	1,300	1.77	4,350	610	423	38
Sept. 21-30	2,510			12	.10	82	16	74	3.8	189	252	13		.4	.2	546	.74	3,700	270	116	37
Weighted average	1,230			13	0.09	85	20	68	3.4	163	274	15		4.8	--	563	0.77	1,870	294	160	33

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1931 to September 1932

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1931	3,690			15	0.17	80	14	59	4.3	187	215	9.0		1.0	0.1	490	0.67	4,880	257	104	33
Oct. 11-20	2,330			14	.22	111	17	63	4.2	192	301	11		1.5	.1	618	.84	3,880	347	190	28
Oct. 21-24, 26-31	1,700			16	.06	109	19	83	5.1	181	349	17		1.8	.5	689	.94	3,160	350	202	34
Nov. 1-10	848			11	.06	102	20	74	4.8	170	325	18		2.7	.4	641	.87	1,470	336	197	32
Nov. 11-12, 16-20	1,890			8.4	.08	124	25	85	4.5	191	398	19		5.3	.3	763	1.04	3,890	412	256	31
Nov. 21-30	664			8.8	.06	123	25	96	4.8	201	404	24		5.5	.2	790	1.07	1,410	410	246	33
Dec. 1, 3-6, 8, 10	492			9.8	.06	114	27	94	4.8	185	401	24		5.0	.4	771	1.05	1,020	396	244	34
Dec. 11-20	658			11	.04	114	25	96	4.3	209	378	23		4.8	.2	759	1.03	1,350	388	216	35
Dec. 21-31	1,040			7.0	.04	104	24	79	4.0	184	335	22		4.7	.2	670	.91	1,880	358	207	32
Jan. 1-10, 1932	627			13	.06	111	27	91	4.0	196	381	23		4.1	.1	751	1.02	1,270	388	228	33
Jan. 11-20	613			12	.06	106	26	82	4.2	191	355	23		3.4	.1	706	.96	1,170	372	215	32
Jan. 21-22, 24-31	483			13	.06	116	30	91	3.4	207	394	24		3.9	.3	777	1.06	1,010	413	244	32
Feb. 1-10	4,450			12	.08	106	26	83	4.2	164	376	20		4.9	.2	713	.97	8,560	372	237	32
Feb. 11-20	3,480			14	.08	89	17	106	5.4	188	336	18		5.1	.2	683	.93	6,410	292	138	44
Feb. 21-29	2,800			11	.06	98	21	101	5.3	190	356	18		4.8	.2	709	.96	5,350	331	176	39
Mar. 1-9	2,300			9.8	.08	89	19	73	5.4	176	287	16		4.4	.1	590	.80	5,250	300	156	34
Mar. 11-20	2,710			7.8	.10	91	23	61	3.5	180	274	16		4.2	.1	569	.77	4,160	322	174	29
Mar. 21-31	3,990			6.6	.08	79	19	52	4.8	179	219	11		3.9	.1	484	.66	5,210	275	128	29
Apr. 1-10	7,250			5.2	.10	67	16	35	3.0	164	157	6.0		3.2	.2	373	.51	7,290	233	98	24
Apr. 11-20	9,470			6.2	.10	54	12	29	3.2	143	118	6.0		2.3	.2	301	.41	7,690	184	68	25
Apr. 21-30	7,010			12	.08	59	13	29	3.7	152	127	6.0		1.8	.1	326	.44	6,160	200	76	23
May 1-10	6,500			11	.08	53	12	25	3.2	136	110	6.0		.8	.1	288	.39	5,048	182	70	23
May 11-20	11,100			13	.12	47	9.6	20	2.7	129	84	4.0		1.2	.1	245	.33	7,340	157	52	21
May 21-31	13,200			11	.12	39	8.1	16	3.4	113	67	3.0		1.2	.1	205	.28	7,300	131	38	21
June 1-10	8,220			14	.12	41	7.6	18	2.7	108	74	5.0		1.4	.2	217	.30	4,800	134	45	22
June 11-20	9,020			14	.14	36	6.6	16	2.7	102	62	4.0		.9	.3	193	.26	5,160	117	34	23
June 21-30	9,660			15	.14	36	7.1	16	2.9	95	68	4.0		.9	.3	197	.27	5,130	119	41	22
July 1-10	5,900			15	.08	49	9.2	23	1.1	120	95	6.0		1.4	.3	259	.35	4,120	160	62	24
July 11-20	4,180			16	.10	52	9.9	30	1.8	128	113	7.0		2.3	.3	295	.40	3,330	170	66	27
July 21, 23-31	2,560			19	.20	64	14	45	1.8	137	180	10		1.6	.3	403	.55	2,780	217	104	31
Aug. 1-10	2,610			19	.10	67	12	39	3.8	152	172	9.0		2.1	.4	399	.54	2,810	216	92	28
Aug. 11-20	1,050			19	.19	92	18	64	4.3	154	294	16		1.4	.5	585	.80	1,660	304	178	31
Aug. 21-26, 28-31	6,510			22	.30	93	17	85	4.6	197	302	12		.2	.3	633	.86	11,100	302	140	38
Sept. 1-10	2,240			16	.06	68	12	37	3.7	139	179	10		3.0	.4	397	.54	2,400	219	105	26
Sept. 11-20	815			16	.06	84	18	59	3.7	149	259	16		3.3	.5	533	.72	1,170	284	162	31
Sept. 21-30	1,830			16	.10	116	24	100	5.4	167	422	21		3.7	.7	790	1.07	3,900	388	251	36
Weighted average	4,049			13	0.12	64	13	41	3.4	144	167	8.6		2.1		383	0.52	4,180	213	95	29

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1932 to September 1933

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1932	720			15	0.04	116	28	85	5.8	179	405	22	—	4.6	0.3	770	1.05	1,497	404	258	31
Oct. 11-20	725			13	.05	118	31	87	7.7	178	420	24	--	4.0	.3	792	1.08	1,550	422	276	30
Oct. 21-31	950			15	.04	124	34	98	3.8	194	444	25	--	6.1	.3	846	1.15	2,170	450	290	32
Nov. 1-4, 6-10	710			15	.04	115	34	89	3.5	183	422	23	0.0	5.9	.3	798	1.09	1,530	427	277	31
Nov. 11-20	615			13	.05	124	38	99	3.7	197	467	26	--	6.3	.4	874	1.19	1,451	466	304	31
Nov. 21-30	585			14	.12	128	40	96	5.8	197	478	30	--	3.3	.5	892	1.21	1,409	484	322	30
Dec. 1, 4, 7, 10	600			13	.15	124	41	101	8.0	180	476	28	--	3.5	.5	833	1.20	1,430	478	330	31
Dec. 11-15, 17-20	455			7.8	.08	138	46	115	4.2	216	542	32	--	5.2	.2	997	1.36	1,225	534	356	32
Dec. 21-29	265			9.2	.10	145	47	123	4.8	237	561	34	--	3.9	.3	1,040	1.42	748	556	362	32
Jan. 3, 7, 9, 10, 1933	315			6.4	.24	107	34	85	5.8	173	398	26	--	3.1	.2	751	1.02	639	407	265	31
Jan. 11-20	385			8.4	.12	124	34	102	4.3	217	435	29	--	4.3	.3	848	1.15	881	450	272	33
Jan. 21-23, 25, 27, 29-31	690			7.4	.10	119	33	96	4.5	189	428	28	--	4.4	.3	814	1.11	1,516	432	278	32
Feb. 1, 3-10	680			8.8	.10	127	34	100	4.5	201	450	29	--	4.3	.2	857	1.17	1,573	457	292	32
Feb. 11-19	735			11	.10	141	39	115	4.3	236	500	33	--	5.2	.2	965	1.31	1,915	512	319	33
Feb. 20-28	1,205			8.4	.06	101	29	86	4.5	168	373	24	--	3.4	.5	712	.97	2,316	371	234	33
Mar. 1-10	1,340			8.8	.06	107	30	99	4.3	173	419	24	—	5.5	.4	783	1.06	3,470	390	248	35
Mar. 11-20	1,220			9.2	.08	107	30	85	4.0	171	385	23	—	3.6	.4	731	.99	2,408	390	250	32
Mar. 21-31	755			11	.06	111	34	88	4.2	181	415	24	—	3.8	.4	780	1.06	1,590	417	268	31
Apr. 1-10	1,310			14	.10	81	23	55	2.9	157	260	11	.0	2.4	.2	527	.72	1,864	296	168	28
Apr. 11, 13-20	940			14	.08	75	22	54	2.7	151	240	16	.0	2.7	.2	501	.68	1,272	278	154	29
Apr. 21-30	1,030			13	.10	71	20	52	2.7	142	230	13	.0	2.4	.2	474	.64	1,318	259	142	30
May 1-10	1,460			11	.12	80	24	57	2.9	139	277	15	.0	2.8	.2	538	.73	2,121	298	184	29
May 11-20	1,205			18	.06	77	23	58	3.0	155	253	16	.2	3.4	.2	528	.72	1,718	286	160	30
May 21-31	5,355			15	.10	52	12	28	3.7	131	114	7.0	.2	2.0	.2	298	.41	4,310	180	72	25
June 1-10	8,775			11	.10	41	7.4	18	2.4	107	70	4.0	.2	1.5	.1	208	.28	4,930	133	46	22
June 11-13, 15-20	7,820			12	.12	41	7.2	20	2.4	97	85	4.0	.2	1.4	.1	221	.30	4,670	132	52	24
June 21-30	5,535			13	.08	57	10	35	3.8	134	129	7.0	.4	1.9	.1	323	.44	4,830	183	73	29
July 1-10	3,110			16	.24	82	16	56	4.6	149	244	12	.4	1.0	.1	505	.69	4,240	270	148	31
July 11-20	2,315			15	.08	84	18	65	5.3	158	270	12	.6	1.1	.2	548	.75	3,430	284	154	33
July 21-31	1,145			22	.10	96	20	103	5.0	183	357	20	.4	1.0	.1	714	.97	2,207	322	172	41
Aug. 1-10	1,265			17	.10	127	25	129	5.1	224	462	25	.3	.5	.2	901	1.23	3,080	420	236	40
Aug. 11-20	510			21	.12	80	13	91	5.3	168	280	17	.4	3.2	.1	593	.81	817	253	116	43
Aug. 21-31	210			8.2	.28	110	25	129	4.5	192	439	26	.4	4.8	.3	841	1.14	477	378	220	42
Sept. 1-10	800			16	.18	112	23	135	6.6	169	461	26	.4	3.3	.3	867	1.18	1,873	374	236	43
Sept. 11-20	3,410			19	.24	115	20	109	5.8	192	399	16	.3	.1	.3	779	1.06	7,170	369	212	39
Sept. 21-23, 25-30	2,440			15	.08	88	17	64	4.8	146	275	12	.3	2.0	.3	550	.75	3,620	290	170	32
Weighted average	1,720			13	0.11	77	18	58	3.9	147	240	13	--	2.3	--	498	0.68	2,313	263	146	32

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1933	2,440			14	0.20	105	22	100	4.8	192	380	18	0.3	1.0	0.2	740	1.01	4,880	352	195	38
Oct. 11-20	1,670			12	.12	97	19	85	5.3	177	329	16	.6	3.2	.1	654	.89	2,950	320	175	36
Oct. 21-31	807			12	.08	100	22	74	4.8	160	328	19	.8	4.6	.2	644	.88	1,403	340	209	32
Nov. 1-10	680			9.2	.10	111	28	82	3.8	168	386	23	.8	4.1	.2	731	.99	1,342	392	254	31
Nov. 11-20	592			17	.07	112	32	88	4.0	183	394	24	.3	5.6	.3	767	1.04	1,226	411	261	32
Nov. 21-29	586			16	.05	114	32	98	4.5	185	424	25	.2	5.1	.4	811	1.10	1,283	416	264	34
Dec. 1-5, 7-10	828			15	.07	141	38	111	5.0	181	539	27	.2	7.7	.4	973	1.32	2,175	508	360	32
Dec. 11-20	560			15	.10	125	37	103	4.2	191	470	27	.1	6.4	.5	882	1.20	1,334	464	308	32
Dec. 21-23, 26-31	614			13	.08	121	37	98	4.5	188	438	20	.6	6.8	.3	822	1.12	1,363	454	300	29
Jan. 1-7, 9-10, 1934	638			15	.09	115	36	92	3.8	182	430	20	.4	6.0	.3	808	1.10	1,392	435	286	31
Jan. 11-16, 18-20	492			13	.09	122	37	99	3.4	197	443	24	.3	6.0	.3	845	1.15	1,122	456	295	32
Jan. 21-31	570			13	.06	114	33	97	2.2	183	427	26	.3	5.0	.2	808	1.10	1,244	420	270	33
Feb. 1-10	512			12	.08	114	34	98	2.2	178	434	25	.2	5.4	.2	813	1.11	1,124	424	278	33
Feb. 11-20	526			16	.07	110	31	98	3.7	172	416	24	.1	5.9	.1	789	1.07	1,121	402	261	34
Feb. 21-28	720			15	.06	112	34	101	4.0	169	447	24	.2	4.9	.2	825	1.12	1,604	420	281	34
Mar. 1-10	564			16	.07	114	34	102	3.4	183	452	24	.1	5.0	.2	841	1.14	1,281	424	274	34
Mar. 11-16, 18-20	730			19	.12	98	27	80	3.0	180	336	19	.0	4.1	.2	675	.92	1,330	356	208	33
Mar. 21-27, 29-31	781			14	.05	80	21	59	4.2	160	256	14	.2	2.0	.5	529	.72	1,116	286	155	31
Apr. 1-10	860			12	.05	82	22	61	4.2	154	269	14	.2	2.9	.4	543	.74	1,261	295	169	31
Apr. 11-20	1,720			20	.10	71	17	52	4.0	149	214	12	.1	2.5	.3	466	.63	2,164	247	125	31
Apr. 21-30	2,910			13	.06	51	11	33	3.4	125	127	8.0	.1	1.6	.3	310	.42	2,436	172	70	29
May 1-10	2,830			15	.26	60	12	34	4.8	134	146	8.0	.2	2.3	.1	349	.47	2,670	199	89	27
May 11-20	3,230			14	.24	50	8.8	26	5.3	128	100	8.0	.1	1.4	.1	277	.38	2,416	161	56	25
May 21-31	1,420			11	.04	58	12	39	2.7	124	148	11	.4	2.0	.3	345	.47	1,323	194	92	30
June 1-10	1,420			12	.05	65	12	62	3.4	137	198	15	.4	3.0	.3	438	.60	1,679	212	99	39
June 11-20	279			21	.09	83	15	77	4.5	144	278	19	.3	1.4	.1	570	.78	429	268	150	38
June 21-30	28			16	.07	105	23	137	4.5	120	487	33	.4	.7	.3	866	1.18	655	356	258	43
July 1-10	--			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July 14-19	12			21	.24	188	44	291	9.0	140	1,040	57	.4	4.5	.4	1,720	2.34	558	650	536	49
July 21-31	674			25	.16	271	48	247	6.2	285	1,070	43	.9	.1	.5	1,060	2.52	3,380	874	640	38
Aug. 1-10	109			20	.20	166	27	197	5.9	209	694	38	.8	2.9	.2	1,260	1.71	369	526	354	45
Aug. 11-20	210			25	.16	210	39	257	6.9	265	926	47	.5	.3	.4	1,640	2.23	931	684	468	45
Aug. 21-31	1,010			22	.10	207	43	223	7.2	244	885	40	.5	.5	.6	1,550	2.11	4,220	694	494	41
Sept. 1-2, 4-10	498			23	.61	153	30	170	7.2	240	607	34	.4	.4	.5	1,140	1.56	1,538	506	309	42
Sept. 11-20	280			22	.51	155	27	215	6.4	252	678	36	.3	.3	.5	1,260	1.72	956	498	292	48
Sept. 21-30	1,070			17	.26	148	25	143	6.6	228	535	28	.0	3.6	.6	1,020	1.39	2,940	472	286	39
Weighted average	--			15	0.14	96	22	81	4.5	167	332	18	--	2.9	--	655	0.89	1,615	330	193	34

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934	512			16	0.11	97	15	79	5.9	170	292	22	0.0	3.3	0.2	514	0.84	849	304	164	36
Oct. 11-20	272			13	.10	121	20	103	5.8	187	396	30	.6	3.6	.4	785	1.07	577	384	230	36
Oct. 21-31	285			15	.10	123	22	111	5.6	193	418	32	.5	3.9	.6	826	1.12	636	398	240	37
Nov. 1-10	227			11	.10	138	26	132	5.3	202	496	36	.0	4.7	.8	949	1.29	582	452	286	39
Nov. 11-20	355			11	.09	137	26	127	6.1	206	494	33	.1	5.3	.3	941	1.28	902	449	280	38
Nov. 21-30	452			11	.08	137	30	123	5.9	205	496	34	.2	6.6	.4	945	1.29	1,153	466	298	36
Dec. 1-10	204			12	.06	150	35	135	6.4	235	547	38	.2	6.2	.3	1,050	1.42	576	518	326	36
Dec. 11-20	657			14	.04	137	30	127	5.1	211	493	32	.5	5.6	.4	948	1.29	1,682	466	292	37
Dec. 21-31	451			13	.06	127	31	116	3.7	186	467	31	.5	4.6	.2	885	1.20	1,078	444	292	36
Jan. 1-10, 1935	454			9.2	.07	124	31	111	4.0	196	442	28	.6	5.1	.4	852	1.16	1,044	437	276	35
Jan. 11-20	919			12	.07	118	30	133	4.8	208	459	29	.6	6.4	.4	895	1.22	2,221	418	248	41
Jan. 21-31	591			12	.12	132	33	144	5.1	228	508	34	.4	5.8	.6	987	1.34	1,575	465	278	40
Feb. 1-10	1,000			--	.10	99	24	96	5.3	194	342	22	.4	6.0	.8	690	.94	1,863	346	186	37
Feb. 11-19	814			12	.04	105	25	93	5.3	190	364	22	.4	4.5	.3	725	.99	1,593	365	210	35
Feb. 20-28	869			12	.05	109	26	108	5.1	202	400	23	.4	5.0	.3	788	1.07	1,849	379	214	38
Mar. 1-10	866			12	.06	104	24	95	4.3	189	361	21	.4	4.6	.2	719	.98	1,681	358	203	36
Mar. 11-20	1,130			10	.04	108	27	95	5.1	199	376	21	.3	4.9	.3	745	1.01	2,273	380	218	35
Mar. 21-31	1,690			11	.06	88	22	68	5.0	165	285	15	.3	3.5	.2	579	.79	2,640	310	175	32
Apr. 1-10	3,690			16	.05	78	17	40	4.5	190	176	8	.2	6.1	.1	439	.60	4,370	264	109	24
Apr. 11-20	4,360			16	.05	64	14	35	3.7	166	142	7.0	.3	2.8	.1	367	.50	4,320	217	81	26
Apr. 21-30	4,740			14	.04	54	11	26	3.5	151	100	5.0	.2	2.1	.1	290	.39	3,710	180	56	23
May 1-10	3,560			17	.02	58	12	32	2.7	148	121	7.2	.3	2.0	.2	325	.44	3,120	194	72	26
May 11-20	5,940			16	.02	56	11	24	3.0	152	100	4.5	.3	1.3	.1	291	.40	4,670	185	60	22
May 21-31	8,480			15	.03	51	10	24	2.7	137	92	5.2	.3	1.6	.1	269	.37	6,160	168	56	23
June 1-10	10,300			14	.06	40	7.8	17	2.2	113	66	3.8	.2	.9	.1	208	.28	5,780	132	40	22
June 11-20	15,700			17	.04	44	6.1	16	2.8	133	56	3.5	.3	1.6	.0	213	.29	9,030	135	26	20
June 21-30	12,300			16	.04	38	5.4	13	2.7	112	48	3.0	.2	1.0	.0	182	.25	6,040	117	25	19
July 1-10	7,010			15	.04	35	5.2	15	2.7	94	60	4.0	.2	.8	.0	184	.25	3,480	109	32	22
July 11-20	4,810			15	.10	49	7.9	30	4.0	118	100	9.0	.4	.6	.1	274	.37	3,560	155	58	29
July 21-28, 30-31	2,920			17	.10	50	8.3	36	4.3	99	141	9.0	.8	.4	.1	316	.43	2,491	159	78	32
Aug. 1-10	2,510			20	.10	75	13	73	5.0	144	254	12	1.0	1.2	.2	525	.71	3,560	240	122	39
Aug. 11-20	1,810			15	.11	83	14	60	5.0	128	271	14	1.1	1.4	.2	528	.72	2,580	264	160	32
Aug. 21-31	1,900			14	.14	84	17	65	4.5	154	249	14	1.3	2.1	.2	527	.72	2,700	280	154	33
Sept. 1-10	1,690			12	.12	95	20	75	4.8	169	296	15	1.3	2.6	.2	605	.82	2,760	319	180	33
Sept. 11-20	895			4.5	.14	80	18	63	3.7	138	261	15	1.0	2.1	.1	516	.70	1,247	274	160	33
Sept. 21-30	4,210			16	.05	112	22	115	5.4	177	421	21	1.2	1.6	.2	802	1.09	9,120	370	225	40
Weighted average	3,020			15	0.05	60	11	38	3.4	140	145	8.4	0.4	1.9	0.1	353	0.48	2,670	194	80	29

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1935	1,480		--	16	0.04	85	15	71	4.2	148	270	14	1.0	2.4	0.1	552	0.75	2,206	274	152	36
Oct. 11-20	826		--	15	.05	93	21	70	4.0	153	308	18	1.0	2.5	.1	608	.83	1,356	318	193	32
Oct. 21-31	1,050		--	14	.03	105	27	97	4.0	170	384	20	1.1	3.1	.1	739	1.01	2,095	373	234	36
Nov. 1-10	737		--	13	.04	106	27	79	3.8	173	365	21	.9	3.2	.1	704	.96	1,401	376	234	31
Nov. 11-20	664		--	15	.03	115	31	87	3.2	178	405	22	.6	3.8	.1	770	1.05	1,380	414	268	31
Nov. 21-30	675		--	13	.03	114	32	87	3.0	182	402	22	.6	3.8	.1	767	1.04	1,398	416	267	31
Dec. 1-10	635		--	14	.03	118	33	95	3.0	191	429	25	.5	4.7	.2	816	1.11	1,399	430	274	32
Dec. 11-13, 15-20	489		--	15	.03	115	32	95	3.2	197	413	25	.4	3.8	.2	799	1.09	1,055	418	257	33
Dec. 21-24,26-28,30-31	443		--	16	.04	128	34	109	5.4	205	461	29	.4	4.1	.3	868	1.21	1,062	460	292	34
Jan. 1-10, 1936	500		--	15	.04	123	32	100	5.4	205	430	27	.3	3.8	.3	838	1.14	1,131	438	270	33
Jan. 11-20	624		--	16	.04	119	31	95	5.1	193	421	25	.3	4.1	.2	812	1.10	1,368	424	266	32
Jan. 21-28, 30-31	642		--	15	.03	120	32	96	5.1	190	424	25	.3	4.3	.2	815	1.11	1,413	431	275	32
Feb. 1-10	634		--	14	.03	112	30	93	4.6	184	397	24	.3	4.1	.2	770	1.05	1,318	403	252	33
Feb. 11-20	938		--	14	.07	111	30	102	5.6	190	415	23	.3	4.2	.2	799	1.09	2,024	400	245	35
Feb. 21-29	1,060		--	18	.08	112	28	113	4.3	233	411	22	.3	5.8	--	829	1.13	2,373	394	204	38
Mar. 1-10	2,610		--	17	.04	102	21	92	4.8	233	317	16	.3	6.4	.2	691	.94	4,870	341	150	37
Mar. 11-20	2,520		--	15	.07	80	17	46	3.8	193	193	9.0	.3	2.8	.1	462	.63	3,140	270	112	27
Mar. 21-31	1,640		--	15	.03	81	20	47	3.7	172	223	11	.3	3.0	.1	489	.67	2,165	284	143	26
Apr. 1-10	1,950		--	15	.04	83	21	48	3.5	180	226	10	.1	1.8	.1	497	.68	2,620	294	146	26
Apr. 11-20	6,600		--	14	.05	60	12	29	3.2	168	112	5.0	.2	1.8	.1	320	.44	5,700	199	82	24
Apr. 21-30	7,360		--	15	.11	48	9.1	11	6.9	133	69	3.2	.3	1.2	.1	229	.31	4,550	158	46	13
May 1-10	7,830		--	14	.08	45	8.5	12	6.2	127	66	3.3	.2	1.5	.1	219	.30	4,630	148	44	14
May 11-20	5,840		--	15	.24	45	8.6	15	7.0	120	73	6.6	.3	1.0	.6	231	.31	3,640	148	50	17
May 21-31	7,020		--	15	.20	36	6.8	9.9	6.1	97	59	3.4	.1	1.0	.2	185	.25	3,510	118	38	15
June 1-3, 5-10	4,610		--	16	.08	49	9.3	20	3.5	124	91	5.7	.0	1.2	.1	257	.35	3,200	160	59	21
June 11-20	3,520		--	15	.02	45	8.7	21	3.0	114	92	5.6	.0	1.5	.2	248	.34	2,357	148	55	23
June 21-30	1,500		--	17	.18	60	12	35	3.7	131	152	10	.2	1.1	.2	356	.48	1,442	199	92	27
July 1-10	636		--	16	.05	66	13	51	3.8	133	203	13	.4	1.3	.3	433	.59	744	218	109	33
July 11-20	900		93.4	18	.10	101	25	73	5.6	172	342	18	.1	2.3	.7	670	.91	1,628	355	214	30
July 21-31	476		99.5	16	.05	98	25	83	5.4	175	346	20	.7	4.5	.5	685	.93	880	348	204	34
Aug. 1-10	3,480		124	24	.10	134	32	127	6.4	276	456	22	.3	1.2	.1	939	1.28	8,820	466	240	37
Aug. 12-20	1,480		88.4	20	.12	103	19	62	5.9	188	277	14	.5	1.3	.4	595	.81	2,378	335	181	28
Aug. 21-31	2,620		117	18	.12	126	24	103	6.2	246	395	16	.7	.5	.1	811	1.10	5,740	413	212	35
Sept. 1-10	4,000		91.8	16	.80	105	19	69	5.9	210	285	12	.6	1.2	.4	618	.84	6,670	340	168	30
Sept. 11-20	1,390		79.8	20	.20	88	18	58	5.3	164	252	13	.5	1.1	.1	537	.73	2,015	294	159	30
Sept. 21-30	1,540		113	18	.34	128	27	99	5.4	218	421	18	.4	2.0	.1	927	1.12	3,440	430	252	33
Weighted average	2,250		--	16	0.15	74	16	46	5.1	161	196	10	0.3	1.9	0.2	445	0.61	2,700	250	118	28

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1936 to September 1937

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1936	978		92.4	17	0.08	103	22	77	4.5	178	325	18	0.4	3.2	0.3	558	0.89	1,738	348	202	32
Oct. 11-20	770		94.2	14	.06	103	25	77	4.2	177	336	18	.5	2.8	.1	568	.91	1,389	360	215	31
Oct. 21-31	1,450		110	16	.27	136	31	83	4.8	193	444	20	.5	2.7	.1	833	1.13	3,260	467	309	28
Nov. 1-10	1,600		95.5	16	.20	106	24	79	4.5	188	343	18	.3	2.1	.1	686	.93	2,960	363	209	32
Nov. 11-20	1,040		88.7	14	.02	96	24	68	4.2	171	311	17	.2	2.8	.1	621	.84	1,744	338	198	30
Nov. 21-30	980		88.0	13	.08	94	25	66	5.4	170	303	16	.7	3.5	.1	610	.83	1,614	338	198	29
Dec. 1-10	771		93.4	15	.12	99	27	71	6.7	179	325	20	.5	3.6	.1	656	.89	1,366	358	212	30
Dec. 11-19	709		--	12	.08	110	33	79	6.7	192	369	23	.5	4.1	.1	732	1.00	1,401	410	252	29
Dec. 21-28	858		--	12	.08	117	30	85	7.0	197	400	23	.2	4.4	.0	776	1.06	1,798	416	254	30
Jan. 11-14,16,18, 1937	400		114	1.2	.12	134	33	79	6.7	178	438	23	.5	3.6	.1	807	1.10	872	470	324	26
Jan. 21-28, 30-31	400		123	2.0	.06	128	38	97	5.1	231	444	28	.4	4.3	.1	861	1.17	930	476	286	30
Feb. 1-10	2,280		106	3.0	.10	102	30	92	5.4	199	368	24	.2	4.8	.2	728	.99	4,480	378	215	34
Feb. 12-20	3,700		104	10	.10	97	21	108	6.6	189	368	19	.2	6.8	.1	730	.99	7,290	328	174	41
Feb. 21-28	1,380		111	11	.08	110	25	111	6.2	187	412	20	.2	5.4	.1	793	1.08	2,950	378	224	39
Mar. 1-10	1,390		119	10	.08	122	30	109	6.4	183	466	23	.0	5.6	.1	862	1.17	3,240	428	278	35
Mar. 11-20	4,810		89.2	10	.16	85	20	86	5.8	171	301	15	.3	3.5	.1	611	.83	7,940	294	154	38
Mar. 21-31	3,200		85.2	26	.25	91	23	63	4.6	199	270	14	.0	2.5	.3	592	.81	5,110	322	158	29
Apr. 1-10	4,580		73.2	21	.07	81	21	48	4.6	198	209	11	.0	3.8	.3	497	.68	6,150	288	126	26
Apr. 11-20	12,300		56.8	22	.25	69	15	31	4.6	198	130	5.5	.0	1.3	.2	376	.51	12,490	234	71	22
Apr. 21-30	10,200		45.9	20	.11	53	11	23	4.2	162	87	4.2	.0	1.2	.1	284	.39	7,820	178	44	21
May 1-10	9,260		39.0	20	.13	50	9.8	20	2.7	145	76	3.8	.0	1.3	.1	255	.35	6,380	166	46	21
May 11-20	14,000		33.2	18	.03	42	7.6	16	3.0	127	60	3.2	.0	3.2	.1	213	.29	8,050	136	32	20
May 21-31	9,710		36.1	18	.05	46	8.4	19	3.2	126	77	4.5	.0	.6	.1	239	.33	6,270	150	46	21
June 1-10	6,520		37.8	18	.03	46	9.3	20	2.9	125	84	5.0	.0	.6	.1	247	.34	4,350	153	50	22
June 11-20	5,340		36.0	17	.02	43	8.8	22	2.9	113	82	4.8	.0	.9	.1	237	.32	3,420	144	51	25
June 21-30	4,860		41.8	17	.03	48	10	26	3.4	121	105	6.0	.0	1.4	.1	276	.38	3,620	161	62	25
July 1-10	3,020		57.5	19	.24	63	16	39	3.4	137	172	9.0	.2	1.8	.2	391	.53	3,190	223	110	27
July 11-20	3,580		92.8	21	.55	99	24	76	3.7	199	320	15	.3	1.9	.3	655	.89	6,330	346	190	32
July 21-31	1,500		120	19	.09	139	32	87	4.5	181	470	19	.2	2.7	.3	863	1.17	3,500	478	330	28
Aug. 1-10	1,140		103	19	.03	108	24	88	4.2	184	368	17	.3	2.2	.4	721	.98	2,220	368	217	34
Aug. 11-20	357		107	18	.67	108	25	97	2.9	178	388	23	.3	3.2	.4	754	1.03	727	372	226	36
Aug. 21-31	403		124	18	.08	120	28	111	6.1	204	431	25	.0	4.4	.2	844	1.15	918	414	248	36
Sept. 1-10	915		152	19	.13	145	30	161	6.9	298	537	24	.0	1.0	.6	1,070	1.46	2,650	486	242	41
Sept. 11-20	295		130	16	.04	123	24	126	8.2	212	455	23	.0	3.7	.4	883	1.20	703	406	232	40
Sept. 21-30	1,180		147	20	.06	139	32	141	7.2	186	567	30	.1	3.5	.6	1,030	1.40	3,280	478	326	39
Weighted average	--		--	18	0.12	69	15	44	4.1	160	181	9.3	—	1.9	—	422	0.57	3,670	234	102	29

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1937 to September 1938

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-9, 1937	2,720		131	17	0.04	120	22	138	6.6	208	472	22	0.0	1.8	0.4	902	1.23	6,620	390	220	43
Oct. 12-20	932		125	13	.04	123	26	112	6.9	186	453	26	.0	4.1	.4	856	1.16	2,154	414	262	37
Oct. 21-31	772		112	13	.04	111	25	95	5.3	178	395	21	.0	4.0	.3	757	1.03	1,578	380	234	35
Nov. 1-10	662		112	14	.04	113	30	93	5.0	185	401	24	.0	3.7	.4	775	1.05	1,385	406	254	33
Nov. 11-20	639		115	13	.08	115	31	97	5.8	191	415	26	.1	3.7	.2	801	1.09	1,382	414	258	33
Nov. 21-30	539		118	12	.08	118	34	98	6.4	198	426	28	.0	3.9	.2	824	1.12	1,199	434	272	32
Dec. 1-10	551		127	13	.08	128	37	105	5.3	202	471	29	.0	3.8	.2	892	1.21	1,327	472	306	32
Dec. 11-20	680		131	12	.08	129	41	109	6.4	201	499	29	.0	4.8	.3	929	1.26	1,706	490	326	32
Dec. 21-31	564		126	13	.08	125	38	104	5.9	204	470	29	.0	4.0	.4	889	1.21	1,354	468	301	32
Jan. 1-10, 1938	624		117	13	.08	125	36	101	3.4	212	445	28	.0	4.2	.4	860	1.17	1,449	460	286	32
Jan. 11-20	595		117	13	.04	126	36	102	4.3	206	452	27	.1	4.1	.2	866	1.18	1,391	462	294	32
Jan. 21-31	561		114	12	.04	120	36	101	3.4	200	436	27	.1	4.0	.2	838	1.14	1,269	448	284	33
Feb. 1-10	648		112	11	.08	118	35	99	3.8	194	429	28	.1	4.3	.4	824	1.12	1,442	438	280	33
Feb. 11-19	1,270		118	15	.08	115	32	108	5.6	212	431	22	.0	3.5	.4	837	1.14	2,870	418	244	36
Feb. 20-28	654		113	14	.08	115	32	97	3.7	193	411	22	.0	3.8	.2	794	1.08	1,402	418	260	33
Mar. 1-10	4,460		98.2	14	.08	92	23	96	3.0	195	330	16	.1	2.4	.2	673	.92	8,100	324	164	39
Mar. 11-20	1,920		105	14	.04	108	30	85	3.8	195	370	18	.1	4.0	.1	729	.99	3,780	393	233	32
Mar. 21-31	2,790		78.9	12	.06	84	23	58	3.4	182	248	12	.1	3.5	.1	534	.73	4,020	304	155	29
Apr. 1-10	2,630		75.3	13	.08	79	24	57	3.4	170	248	12	.2	3.4	.1	524	.71	3,720	296	156	29
Apr. 11-20	5,180		57.9	15	.06	67	17	40	2.1	180	151	7.5	.2	2.2	.1	391	.53	5,470	237	90	27
Apr. 21-30	11,400		41.8	14	.07	52	11	25	1.9	155	88	4.2	.2	1.6	.2	274	.37	8,430	175	48	23
May 1-10	7,080		38.6	13	.08	51	12	22	1.8	126	110	4	.1	1.1	.1	277	.38	5,300	177	74	21
May 11-14, 16-20	6,870		40.4	14	.04	50	11	22	2.1	132	93	4.0	.0	1.0	.1	262	.36	4,860	170	62	22
May 21-31	9,580		33.6	13	.08	42	8.1	19	1.9	119	69	3.0	.1	1.0	.2	216	.29	5,590	138	41	23
June 1-10	14,000		32.4	16	.01	44	7.3	11	3.8	130	54	2.8	.1	.6	.1	204	.28	7,710	140	34	14
June 11-20	9,670		31.9	17	.01	43	6.8	13	4.3	122	57	3.0	.0	.5	.1	205	.28	5,350	136	36	17
June 21-30	10,700		38.8	16	.02	48	8.8	19	5.6	118	90	5.1	.1	.1	.1	251	.34	7,250	156	60	20
July 1-10	7,580		35.8	15	.02	46	8.2	16	4.2	113	80	4.0	.0	.2	.1	229	.31	4,690	148	56	19
July 11-20	2,510		49.8	16	.01	57	11	33	4.5	126	135	7.4	.0	1.6	.2	328	.45	2,223	187	84	27
July 22-23, 25-31	1,460		80.4	15	.08	97	20	50	5.6	158	269	14	.2	2.3	.2	551	.75	2,172	324	194	25
Aug. 1-10	899		73.4	14	.06	77	17	57	5.8	155	227	17	.1	1.3	.2	493	.67	1,197	262	135	32
Aug. 11-20	1,250		121	19	.06	124	20	130	6.7	214	450	20	.0	1.9	.3	877	1.19	2,960	392	216	41
Aug. 21-30	313		93.0	14	.06	93	17	87	6.4	153	326	22	.0	1.9	.2	643	.87	543	302	176	38
Sept. 1-10	4,660		128	17	.06	124	21	143	7.0	197	498	21	.1	1.2	.2	929	1.26	11,690	396	234	43
Sept. 11-20	4,140		71.3	15	.04	77	14	63	5.9	180	214	10	.4	1.2	.1	489	.67	5,470	250	102	35
Sept. 21-30	1,330		69.9	13	.02	76	16	53	5.3	137	230	11	.4	1.3	.1	474	.64	1,702	256	143	30
Weighted average	3,410		--	16	0.05	65	14	43	3.8	149	170	8.5	0.1	1.4	0.2	393	0.53	3,620	220	98	29

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1938	1,523		94.6	18	0.16	102	25	73	6.1	181	328	18	0.6	2.9	0.8	663	0.90	2,710	358	209	30
Oct. 11-20	2,148		66.2	14	.04	77	17	43	4.3	165	194	11	.2	2.0	.8	444	.60	2,550	262	127	26
Oct. 21-31	1,582		68.0	16	.04	76	18	46	3.8	151	208	12	.2	1.6	.8	456	.62	1,940	264	145	27
Nov. 1-3, 5-10	1,239		82.0	15	.04	87	24	61	3.8	159	279	16	.4	2.9	.6	592	.81	1,990	316	185	29
Nov. 11-20	954		90.8	16	.04	96	28	66	3.4	170	318	18	.5	3.6	.9	632	.86	1,620	354	215	27
Nov. 21-30	711		94.8	15	.04	101	29	70	4.2	182	330	18	.3	3.1	.8	660	.90	1,270	371	222	29
Dec. 1-10	822		100	16	.04	105	30	75	2.9	183	356	20	.5	4.0	.6	700	.95	1,550	386	236	30
Dec. 11-20	751		103	15	.04	107	32	79	3.2	181	371	20	.4	3.7	.6	721	.98	1,460	398	250	30
Dec. 21-31	739		108	12	.04	108	31	87	3.2	186	386	24	.1	4.0	.4	747	1.02	1,490	397	244	32
Jan. 1-10, 1939	706		106	18	.03	110	32	77	15	201	383	23	.2	3.1	.7	760	1.03	1,440	406	242	28
Jan. 11-20	637		102	19	.03	105	31	75	13	196	364	21	.3	3.1	.7	728	.99	1,250	390	229	29
Jan. 21-31	752		104	20	.03	109	31	76	13	199	373	21	.3	3.1	.7	744	1.01	1,500	400	236	28
Feb. 1-4, 6-10	499		113	18	.03	122	34	86	11	203	417	23	.2	3.1	.7	814	1.11	1,100	444	278	29
Feb. 11-19	661		108	19	.04	111	33	81	11	197	391	25	.3	3.2	.7	772	1.05	1,370	412	251	29
Feb. 20-24, 26-28	698		103	17	.02	107	31	76	12	196	368	23	.2	3.2	.7	734	1.00	1,380	394	234	29
Mar. 1-10	702		113	24	.06	114	33	93	4.5	204	397	24	.2	2.9	.6	793	1.08	1,500	420	253	32
Mar. 11-20	1,989		121	22	.06	119	29	113	5.3	227	428	20	.4	3.3	.4	852	1.16	4,570	416	230	37
Mar. 21-31	4,072		73.9	17	.04	83	18	54	4.6	199	204	10	.2	4.2	.4	493	.67	5,400	281	118	29
Apr. 1-10	3,571		62.3	17	.06	69	17	41	4.3	173	164	9.0	.3	2.5	.2	409	.56	3,960	242	100	26
Apr. 11-20	2,868		50.2	14	.04	56	14	30	3.2	147	123	8.0	.3	1.8	.2	323	.44	2,500	198	77	24
Apr. 21-30	3,184		45.7	15	.08	53	12	27	2.6	137	111	6.0	.3	1.6	.3	296	.40	2,520	182	70	24
May 1-10	5,314		39	17	.04	51	9.2	16	5.9	151	75	4.8	.4	1.8	.2	256	.35	3,680	166	42	17
May 11-20	5,070		37	16	.02	46	8.3	16	2.4	127	74	4.6	.4	1.6	.2	232	.32	3,210	149	45	19
May 21-31	4,928		38	15	.02	50	7.9	17	2.6	134	75	4.9	.2	1.5	.2	240	.33	3,220	158	48	19
June 1-10	4,548		37.6	15	.08	46	8.8	19	4.6	112	90	9.0	.0	1.4	.1	249	.34	3,060	151	59	21
June 11-20	2,677		42.6	14	.08	53	9.7	26	4.2	120	109	10	.1	1.2	.5	286	.39	2,070	172	74	24
June 21-30	858		60.1	17	.12	67	14	42	5.1	132	180	14	.0	1.6	.3	406	.55	934	224	116	28
July 1-10	492		76.2	14	.08	80	16	63	7.2	144	251	20	.1	2.0	.2	524	.71	692	266	148	33
July 12-17, 19-20	196		96.9	13	.08	89	22	85	6.4	114	368	28	.2	1.2	--	669	.91	353	312	219	37
July 22-27, 31	132		131	15	.08	120	31	141	7.5	130	555	37	--	1.6	--	972	1.32	345	427	320	41
Aug. 1-10	168		162	21	.40	156	30	177	7.0	215	652	35	.0	4.8	.5	1,190	1.62	539	513	337	42
Aug. 11-20	41.0		174	18	.12	156	38	203	11	134	769	50	.7	2.5	.4	1,310	1.78	145	546	436	44
Aug. 21-23, 28,30,31	37.8		202	22	.30	226	46	205	10	327	832	48	.7	1.5	.4	1,550	2.11	158	753	485	37
Sept. 1-10	484		146	21	.16	134	29	169	7.4	282	534	29	.7	.5	.4	1,060	1.44	1,380	454	222	44
Sept. 11-20	4,238		87.3	16	.06	98	18	72	5.1	209	275	15	.5	1.0	.3	604	.82	6,880	318	147	32
Sept. 21-30	1,399		83.1	16	.04	96	18	66	5.1	161	288	17	.5	2.0	.3	588	.80	2,220	314	182	31
Weighted average	1,712		--	16	0.05	73	16	46	4.7	161	195	11.6	0.3	2.2	0.4	446	0.61	2,070	248	116	28

SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Chemical analyses, in parts per million, water year October 1939 to September 1940

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-9, 1939	745		83.8	17	0.04	91	18	68	4.6	161	283	19	0.5	2.0	0.3	582	0.79	1,170	301	169	33
Oct. 11-20	562		97.6	17	.06	105	24	83	5.9	180	344	23	.4	3.0	.4	694	.94	1,050	361	213	33
Oct. 21-26, 28-31	588		106	23	.06	107	26	97	5.8	190	379	25	.2	3.0	.4	760	1.03	1,200	374	218	36
Nov. 1-10	610		102	14	.04	107	26	88	5.1	194	359	24	.2	3.5	.4	722	.98	1,180	374	215	33
Nov. 11-18, 20	681		101	18	.08	103	25	92	5.1	187	358	24	.1	3.5	.4	721	.98	1,320	360	206	35
Nov. 21-25, 27-30	555		109	17	.06	113	29	94	4.5	195	392	25	.1	4.0	.4	775	1.05	1,150	401	241	33
Dec. 1-4, 6, 8, 10	546		112	15	.08	115	32	97	4.5	187	423	27	.6	4.0	.4	810	1.10	1,190	419	265	33
Dec. 11-18, 20	484		118	16	.06	121	33	102	4.5	203	430	27	.2	4.5	.4	838	1.14	1,090	438	271	33
Dec. 21-24, 26, 28-31	406		124	17	.06	126	34	109	4.2	210	455	31	.1	4.5	.4	884	1.20	965	454	282	34
Jan. 3, 4, 6, 9, 1940	642		123	16	.08	122	36	112	5.4	200	469	29	.1	5.0	.4	893	1.21	1,540	453	288	35
Jan. 11, 14, 17, 19	744		124	13	.08	120	33	122	6.4	212	465	29	.1	5.5	.4	898	1.22	1,800	435	261	37
Jan. 21-31	539		124	16	.15	127	33	110	4.8	211	454	33	.4	4.4	.4	887	1.21	1,290	453	280	34
Feb. 2-10	1,081		120	17	.13	109	29	117	5.0	199	434	26	.4	4.2	.4	840	1.14	2,440	391	228	39
Feb. 11-17, 19, 20	556		121	16	.13	121	32	110	3.7	196	459	29	.4	4.6	.3	872	1.19	1,310	434	273	35
Feb. 21-26, 28, 29	977		121	16	.22	119	33	110	4.3	209	448	28	.8	3.0	.5	865	1.18	2,280	433	261	35
Mar. 1-10	1,174		110	20	.13	106	28	102	4.2	195	401	23	.4	2.5	.3	783	1.06	2,460	380	220	37
Mar. 11, 13, 15-20	862		104	15	.12	107	29	82	4.3	184	373	21	.4	4.0	.3	726	.99	1,690	386	235	31
Mar. 21-29, 31	1,552		79.4	17	.20	83	22	58	5.1	172	252	16	.5	1.5	.1	540	.73	2,240	298	156	31
Apr. 1, 2, 4-10	1,318		69.8	16	.10	74	20	47	5.1	151	222	14	.2	1.5	.2	474	.64	1,670	267	142	27
Apr. 11-15, 16, 18-20	1,652		64.0	15	.06	67	18	43	4.2	144	196	12	.5	1.5	.2	428	.58	1,900	241	124	28
Apr. 21-30	3,340		46.7	14	.08	53	12	27	3.8	133	119	8.0	.4	1.0	.1	304	.41	2,710	182	73	24
May 1-10	3,540		45.1	14	.06	51	11	26	4.0	132	109	8.0	.7	.8	.1	290	.39	2,730	173	14	24
May 11-20	6,177		36.0	12	.10	45	8.3	19	3.7	120	78	6.0	.5	1.2	.1	233	.32	3,910	146	48	22
May 21-31	4,400		39.0	13	.08	44	9.1	25	3.2	104	99	7.0	.5	.9	.2	253	.34	2,960	147	62	27
June 1-10	3,907		38.1	13	.17	45	8.2	22	2.7	105	91	6.0	.5	.6	.1	241	.33	2,550	146	--	24
June 11-20	1,589		51.7	15	.10	57	11	34	3.2	113	150	10	.5	1.2	.2	338	.46	1,450	187	--	28
June 21-22, 23-30	867		65.0	18	.15	68	15	51	4.0	133	202	15	.4	.1	.4	439	.60	1,030	232	122	32
July 1-10	568		86.8	18	.15	95	19	71	4.2	160	301	20	.5	1.3	.4	609	.83	933	315	184	33
July 11-20	172		125	16	.33	122	30	126	6.7	192	487	33	.5	1.1	.6	917	1.25	426	428	270	39
July 21-31	813		162	20	.36	145	33	191	6.9	212	666	35	.4	1.4	.6	1,200	1.63	2,620	498	324	45
Aug. 1-4, 6-8, 10	159		164	20	.24	144	25	206	7.7	207	671	36	.2	3.3	.6	1,220	1.66	523	462	293	49
Aug. 11-14, 16-20	82		176	19	.53	175	31	202	7.2	216	758	38	.6	2.0	.6	1,340	1.82	295	565	387	43
Aug. 22-31	1,661		151	23	.69	160	30	151	6.9	262	595	27	.2	.1	.6	1,120	1.52	5,000	523	308	38
Sept. 1-10	327		123	17	.22	122	24	125	6.7	191	470	28	.2	1.9	.6	889	1.21	783	403	246	40
Sept. 11-20	1,382		141	22	.63	150	28	144	7.4	265	530	28	.6	1.1	.8	1,040	1.41	3,860	490	272	39
Sept. 21-24, 26-30	4,071		111	18	.47	122	24	95	6.8	218	392	18	.6	.6	.8	785	1.07	8,620	403	224	33
Weighted average	1,372		77.3	16	0.18	82	18	64	4.5	160	258	15	0.5	1.6	0.3	539	0.73	1,980	278	148	33

COLORADO RIVER AT LEES FERRY, ARIZ.

Chemical analyses, in parts per million, January 1926 to September 1928

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Jan. 11, 1926	6,170			20	0.19	108	41	148	8.3	214	414	108		15	—	968	1.32	16,100	438	262	42
Feb. 25	6,320			14	.12	100	43	150		199	428	96		8.2	—	937	1.27	16,000	426	264	43
Mar. 26	15,100			12	.21	66	27	109	7.4	188	273	57		.8	—	645	.88	26,300	276	122	45
May 24-30	73,400			17	.34	49	13	32	3.7	129	121	15		.0	—	315	.43	62,400	176	70	28
May 31-June 6	71,300			17	.48	38	13	23	5.0	122	76	13		.0	—	246	.33	47,400	148	48	28
June 7	77,500			—	—	46	10	25		139	76	12		.5	--	238	.32	53,800	156	42	26
June 13-19	63,500			20	.19	36	8.9	26	.6	113	75	12		.3	--	235	.32	40,300	126	34	31
June 20-27	38,600			23	.27	39	10	31	1.6	112	86	13		.3	--	259	.35	27,000	138	46	32
July 10	27,600			34	1.0	58	15	50	2.1	126	165	30		.5	--	418	.57	31,100	206	102	34
July 11	29,100			14	.51	61	16	51	2.1	126	185	28		.6	--	420	.57	33,000	218	114	33
Oct. 12-13	7,920			20	.30	133	42	168	7.5	194	561	104		7.2	--	1,140	1.55	24,400	504	346	42
Dec. 7	6,750			25	.17	109	48	161	8.5	214	461	114		4.6	--	1,040	1.41	18,900	470	294	42
Feb. 24-27, 1927	6,850			30	.27	105	42	142	8.0	221	396	98		7.7	--	938	1.28	17,300	434	254	41
Mar. 26	7,710			13	.22	93	40	141	5.9	206	398	99		3.6	--	895	1.22	18,600	396	228	43
Apr. 18-24	15,400			14	.13	68	22	70	3.8	165	206	44		2.2	--	511	.69	21,200	260	125	36
Apr. 25-29, May 1-2	29,800			13	.13	60	20	58	3.5	157	172	38		1.9	--	444	.60	35,700	232	103	35
May 3-9	58,900			23	.22	46	13	36	2.9	143	93	19		.6	--	304	.41	48,300	168	52	31
May 10-16	51,700			25	.15	42	12	26	4.3	135	83	15		1.7	--	276	.38	38,500	154	44	26
May 17-21, 23, 26	75,300			28	.34	43	12	28	3.2	137	83	14		.7	--	280	.38	57,100	157	44	28
May 28-June 3	62,000			19	.24	39	10	25	1.9	123	62	14		.8	--	233	.32	39,000	138	38	28
June 4-10	49,000			19	.31	40	12	31	2.9	117	83	16		.5	--	262	.36	34,700	150	54	31
June 12-17	64,800			15	.30	45	13	31	2.2	122	104	16		.5	--	287	.39	50,200	166	66	29
Aug. 1-10, 1928	13,160			14	.04	75	25	80	4.3	154	255	51		3.6	.2	584	.79	20,750	290	164	37
Aug. 11-20	9,340			35	.06	94	33	104	5.4	168	353	74		5.4	.3	787	1.07	19,850	370	232	37
Aug. 21-31	8,080			14	.35	137	39	131	6.6	190	511	81		3.8	1.4	1,020	1.38	22,190	502	347	36
Sept. 1-10	7,260			26	.06	130	42	158	7.0	192	519	108		6.7	1	1,090	1.48	21,390	497	340	40
Sept. 11-13, 17-20	5,050			40	.05	112	47	156	7.2	200	487	100		10	.9	1,060	1.44	14,430	473	309	41
Sept. 21-30	5,070			23	.06	120	54	175	5.9	200	550	120		11	1.1	1,160	1.57	15,850	522	358	42

COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1928 to September 1929.

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1928	5,840			19	0.06	151	57	187	6.7	194	658	116		14	1.1	1,300	1.77	20,600	612	452	40
Oct. 11-20	14,500			22	.43	201	53	170	9.6	194	762	97		1.1	.6	1,410	1.92	55,300	720	560	34
Oct. 21-31	9,220			17	.07	136	43	148	7.0	194	528	79		6.7	.5	1,060	1.44	26,400	516	358	38
Nov. 1-2, 4-10	11,500			17	.07	127	42	148	5.8	191	511	85		6.7	.4	1,040	1.41	32,200	490	333	39
Nov. 11-20	8,910			18	.08	119	46	152	5.0	204	501	91		10	1.4	1,040	1.42	25,100	486	319	40
Nov. 21-30	8,210			15	.08	110	44	149	5.1	208	454	94		10	1.5	984	1.34	21,800	456	285	41
Dec. 1-10	7,910			16	.08	109	46	154	4.8	211	456	104		11	1.0	1,000	1.37	21,500	461	288	42
Dec. 11-17, 19-20	5,260			31	.05	117	52	172	4.8	232	499	119		12	.8	1,120	1.52	15,900	506	316	42
Dec. 21-31	3,680			17	.06	133	59	201	7.4	259	558	150		15	.7	1,270	1.72	12,600	574	362	43
Jan. 1-10, 1929	5,630			18	.06	129	58	188	5.1	261	519	146		14	.6	1,210	1.64	18,300	560	346	42
Jan. 11-20	5,010			20	.10	120	53	163	5.0	249	474	121		10	.6	1,090	1.48	14,700	518	314	40
Jan. 21-31	5,330			25	.11	111	49	156	4.8	235	428	123		11	.5	1,020	1.39	15,600	478	286	41
Feb. 1-10	7,090			14	.06	104	42	144	3.4	208	399	108		11	.6	928	1.26	17,800	432	262	42
Feb. 11-19	5,140			14	.08	106	46	159	3.8	217	431	115		13	.7	995	1.35	13,800	454	276	43
Feb. 20-28	6,180			13	.08	114	49	171	2.9	224	459	130		11	.7	1,060	1.44	17,700	486	302	43
Mar. 1-10	8,800			11	.09	107	44	153	2.6	210	427	111		10	.6	969	1.32	23,000	448	276	42
Mar. 11-20	22,800			14	.35	104	34	114	6.2	192	392	60		1.6	.6	821	1.12	50,500	400	242	38
Mar. 21-31	13,400			12	.24	93	35	117	7.2	190	360	72		4.8	.5	795	1.08	28,800	376	220	40
Apr. 1-10	24,700			13	.25	82	30	100	7.0	181	300	58		3.5	.8	683	.93	45,500	328	180	39
Apr. 11, 13-20	23,200			13	.28	68	24	74	7.4	168	220	41		3.1	.6	534	.73	33,400	268	130	37
Apr. 21-30	36,500			17	.59	60	20	51	5.6	170	159	27		.9	1.0	425	.58	41,900	232	92	32
May 1-10	33,300			16	.49	60	20	52	7.5	172	157	30		.8	.5	428	.58	38,500	232	90	32
May 11-20	65,900			18	.69	47	15	33	6.7	156	95	15		1.4	.4	309	.42	55,900	179	51	28
May 21-31	96,300			15	.67	38	12	22	5.0	131	69	11		.7	.2	238	.32	61,900	144	37	24
June 1-10	86,200			16	.26	44	13	18	5.3	142	77	12		.9	.2	256	.35	59,600	164	47	19
June 11-20	87,600			14	.33	35	12	14	4.3	127	57	9.0		.7	.3	209	.28	49,400	137	33	18
June 21-30	68,400			17	.33	40	11	18	5.0	122	72	15		.7	.3	239	.33	44,100	145	45	20
July 1-10	44,600			13	.26	43	11	28	4.5	117	92	15		.8	.2	265	.36	31,900	152	56	28
July 11-20	25,800			16	.30	54	17	42	5.0	142	139	27		.6	.3	371	.50	25,800	205	88	30
July 21-25, 27-31	27,900			20	.36	84	27	67	14	176	271	41		1.2	.4	612	.83	46,100	320	176	30
Aug. 1-10	50,000			22	.39	140	33	87	16	195	472	31		.9	.4	898	1.22	121,000	485	325	27
Aug. 11-20	30,600			22	.45	91	25	83	14	171	319	30		1.0	.6	670	.91	55,400	330	190	34
Aug. 21-31	13,400			15	--	82	28	88	8.0	168	294	44		1.0	.2	646	.88	23,400	320	182	37
Sept. 1-10	26,800			22	.36	121	30	109	4.3	202	422	47		1.7	.3	857	1.17	62,000	426	260	35
Sept. 11-20	25,500			18	.10	97	28	83	4.5	170	341	35		2.3	.3	693	.94	47,700	357	218	33
Sept. 21-30	30,400			14	.10	98	25	86	4.2	163	347	33		1.3	.3	689	.94	56,600	348	214	35
Weighted average	26,500			17	0.36	72	23	62	6.5	160	222	35		2.2	0.4	518	0.70	37,000	274	143	32

COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1929 to September 1930

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1929	17,300			12	0.07	79	26	73	4.3	160	272	31		4.0	0.3	580	0.79	27,100	304	173	34
Oct. 11-20	15,700			12	.06	85	31	89	3.5	171	312	46		5.2	.3	668	.91	28,300	340	200	36
Oct. 21-31	12,200			11	.06	89	34	98	3.4	174	334	56		5.2	.3	716	.97	23,600	362	220	37
Nov. 1-10	10,200			9.6	.10	96	38	108	6.7	195	363	69		5.8	.4	792	1.08	21,800	396	236	37
Nov. 11-20	9,820			12	.18	97	41	119	5.4	200	381	76		6.2	.4	836	1.14	22,100	410	246	38
Nov. 21-30	8,090			12	.20	103	44	127	5.9	211	401	86		5.5	.1	888	1.21	19,400	438	265	38
Dec. 1-10	7,870			14	.12	108	47	134	8.2	220	428	96		8.2	.7	952	1.29	20,200	463	282	38
Dec. 11-20	8,000			14	.13	103	45	133	5.1	217	403	95		7.8	.7	913	1.24	19,700	442	264	39
Dec. 21-31	5,550			14	.12	100	45	136	4.6	220	392	100		7.5	.7	908	1.23	13,600	434	254	40
Jan. 1-10, 1930	5,340			10	.08	123	52	167	8.8	249	478	135		10	.5	1,110	1.51	15,900	521	317	41
Jan. 11-20	5,400			10	.10	113	48	156	8.2	242	430	126		8.8	.5	1,020	1.39	14,800	480	281	41
Jan. 21-31	3,740			9.0	.09	125	53	174	8.2	262	472	138		8.3	.6	1,120	1.52	11,200	530	316	41
Feb. 1-10	6,360			11	.06	113	47	158	3.2	245	435	127		8.3	.8	1,020	1.39	17,500	476	274	42
Feb. 11-19	8,040			7.0	.07	101	41	130	3.2	215	381	100		6.7	.6	876	1.19	19,000	420	244	40
Feb. 20-28	11,900			7.0	.07	105	40	135	4.8	205	418	92		6.7	.6	910	1.24	29,200	426	258	40
Mar. 1-10	9,610			9.8	.10	95	41	137	6.6	205	402	90		4.1	.9	887	1.21	23,000	406	238	42
Mar. 11-20	8,190			4.4	.05	99	43	142	6.9	210	405	105		5.1	.8	914	1.24	20,200	424	252	42
Mar. 21-31	9,900			10	.06	93	41	127	9.1	206	373	90		4.5	.9	849	1.15	22,700	400	232	40
Apr. 1-10	10,100			8.6	.06	84	36	110	6.4	198	323	78		3.5	1.0	747	1.02	20,300	358	195	40
Apr. 11-12, 14-20	37,500			24	.41	63	23	66	3.5	180	176	41		.5	.2	486	.66	49,200	252	104	36
Apr. 21-30	38,300			19	.17	52	18	38	4.6	161	115	24		.5	.2	351	.48	36,000	204	72	28
May 1-10	38,300			16	.24	47	14	32	3.5	145	97	20		1.2	.2	302	.41	31,200	175	56	28
May 11-20	24,200			14	.08	53	18	42	3.8	150	133	28		2.2	.3	368	.50	24,000	206	84	30
May 21-31	33,800			14	.14	53	18	46	3.7	149	142	29		1.8	.3	381	.52	34,700	206	84	32
June 1-10	56,800			15	.10	48	13	29	2.9	139	96	16		.6	.8	289	.39	44,300	174	60	26
June 11-20	57,500			14	.16	41	12	26	2.7	121	84	16		1.0	.5	256	.35	39,700	152	53	27
June 21-30	40,300			18	.21	47	14	34	3.2	129	115	20		.6	.2	315	.43	34,200	175	70	29
July 1-10	18,300			13	.12	51	17	44	3.4	130	138	32		2.0	.2	365	.50	18,000	198	91	32
July 11-20	15,600			19	.54	83	27	80	4.3	178	264	51		.4	1.1	617	.84	26,000	318	172	35
July 21-31	17,800			19	.39	100	28	99	4.5	175	361	47		.2	1.2	745	1.01	35,800	364	221	37
Aug. 1-10	20,500			20	.18	126	32	107	4.6	178	453	50		.2	1.1	881	1.20	48,700	446	300	34
Aug. 11-20	34,700			21	.13	156	36	114	5.3	191	560	38		.2	1.1	1,020	1.39	95,900	538	381	31
Aug. 21-31	16,800			16	.30	85	25	86	5.6	188	286	41		1.0	.3	638	.87	28,900	315	161	37
Sept. 1-10	11,000			23	.25	94	30	97	6.4	174	339	55		3.3	.5	734	1.00	21,800	358	216	37
Sept. 11-20	8,460			12	.08	141	42	144	6.2	189	543	81		8.2	.3	1,070	1.46	24,400	524	370	37
Sept. 21-30	6,810			13	.10	120	46	148	6.4	186	498	93		17	.4	1,030	1.40	19,000	488	336	39
Weighted average	18,000			15	0.17	76	25	74	4.3	167	247	44		2.5	0.5	570	0.78	27,800	292	156	35

LITTLE COLORADO RIVER NEAR GRAND FALLS, ARIZ.

Chemical analyses, in parts per million, December 1925 to September 1931

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Dec. 7-9, 1925	20			19	0.40	71	19	263	9.6	168	122	408		2.3	--	997	1.36	54	118	255	70
Dec. 11-15	92			16	.26	41	13	137	6.7	127	65	202		1.8	--	545	.74	135	156	52	66
Dec. 16-20	24			27	.36	47	13	148	7.2	137	67	224		1.4	--	602	.82	39	171	58	66
Dec. 21-25	15			19	.30	55	16	186	7.8	129	85	295		1.6	--	730	.99	30	204	98	67
Dec. 26-29	20			14	.29	58	26	226	9.6	142	100	368		1.9	--	874	1.19	47	252	135	67
Jan. 12, 1926	18			21	.21	92	26	352	13	226	205	510		1.8	--	1,332	1.81	65	336	152	70
Feb. 18	0			17	.29	101	31	446	10	206	277	651		.0	--	1,635	2.22	0	380	210	72
Mar. 13	220			12	.17	72	19	339	6.4	184	133	505		1.0	--	1,178	1.60	700	258	106	59
May 18	46			15	.15	26	7.2	82	5.3	95	49	109		.0	--	340	.46	42	94	16	66
Oct. 16	21			22	.33	78	16	376	9.1	239	197	488		1.5	--	1,306	1.78	74	260	64	76
Jan. 19, 1927	35			8.4	.18	60	16	281	12	223	135	375		1.5	--	999	1.36	94	216	33	74
Feb. 1	20			21	.30	87	27	397	6.6	244	185	588		2.1	--	1,434	1.95	77	328	128	73
Mar. 22	655			6.8	.26	27	5.4	82	4.2	137	71	70		.0	--	334	.45	591	90	0	67
Apr. 14	495			15	.28	--	--	68	6.6	101	58	72		--	--	--	.40	389	88	5	61
Apr. 15	355			18	.24	27	4.6	68	5.6	99	50	72		1.2	--	295	.40	283	86	6	64
July 4-7, 10, 1931	331			26	.34	52	12	256	4.8	298	256	162		.5	4.0	916	1.25	818	180	0	76
July 11-14, 16-20	112			18	.10	48	10	298	3.7	247	232	264		.5	6.0	996	1.35	301	161	0	80
July 21-31	679			18	.06	37	7.5	243	3.7	246	220	161		.5	5.0	811	1.10	1,490	124	0	81
Aug. 1-10	1,866			14	.12	38	7.8	205	3.7	170	244	126		6.8	3.0	729	.99	3,670	127	0	78
Aug. 11-19	474			14	.10	35	7.2	190	5.8	150	220	129		3.0	2.5	678	.92	867	117	0	78
Aug. 21-31	225			17	.10	46	9.3	214	5.6	190	238	159		1.0	2.5	783	1.06	475	153	0	76
Sept. 1-10	210			14	.12	44	8.8	206	3.2	163	238	157		4.0	.5	755	1.03	428	146	12	76
Sept. 11-20	254			11	.10	46	9.4	207	3.0	164	238	155		3.0	.6	753	1.02	516	154	19	75
Sept. 21-27	449			12	.06	53	11	225	3.8	173	288	161		3.0	.6	842	1.15	1,020	178	36	74

COLORADO RIVER NEAR GRAND CANYON, ARIZ.

Chemical analyses, in parts per million, August 1925 to September 1926

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Aug. 23-29, 1925----	17,100	2.54		21	0.46	149	38	160		227	538	98		5.0		1,121	1.52	51,700	528	342	
Sept. 5-8 ----------	28,600	3.05		25	.48	150	33	130		206	511	65		1.0		1,017	1.38	79,000	510	341	
Sept. 23-24, 29-30 --	19,100	1.80		17	.26	127	32	147		211	453	87		.0		967	1.32	49,800	448	276	
Oct. 9-15 ----------	19,400	2.14		13	.27	170	38	138		181	607	80		.0		1,135	1.54	59,400	580	432	
Oct. 16-22 ---------	17,800	.84		23	.34	105	30	97	4.8	176	362	67		4.0		780	1.06	37,400	386	242	
Oct. 23-29 ---------	13,400	.31		20	.38	94	30	105	4.2	171	331	80		5.0		754	1.03	27,300	358	218	
Oct. 30-Nov. 5 -----	11,900	.15		18	.34	90	32	104	5.6	174	315	86		3.1		740	1.01	23,800	356	214	
Nov. 6-12 ----------	11,900	.20		27	.16	99	30	126		195	342	91		4.2		815	1.11	26,200	370	210	
Nov. 13-19 ---------	10,300	.14		12	.14	105	33	128		212	347	94		4.1		828	1.13	23,000	398	224	
Nov. 20-26 ---------	9,320	.10		14	.15	100	36	136		203	355	108		4.2		853	1.16	21,400	398	231	
Dec. 1-3 ----------	8,510	--		18	.40	104	40	132	9.9	212	357	125		11		901	1.23	20,700	424	250	
Dec. 4-10 ----------	8,590	.08		24	.14	100	41	146	8.0	211	385	128		4.7		941	1.28	21,800	418	245	
Dec. 11-17 ---------	7,950	.08		23	.14	100	42	146	8.8	211	377	130		6.3		937	1.27	20,100	422	249	
Dec. 18-24 ---------	6,570	.05		19	.11	103	43	152	9.3	210	383	139		8.0		960	1.31	17,000	434	262	
Dec. 25-31 ---------	6,340	.05		21	.12	112	47	163	9.9	220	415	158		8.9		1,043	1.42	17,800	473	292	
Jan. 1-7, 1926------	6,070	.06		18	.17	109	39	152	18	221	381	149		13		988	1.34	18,300	432	252	
Jan. 8-10, 12, 14---	6,540	.05		21	.20	107	41	159	19	222	391	143		14		1,005	1.37	17,700	436	254	
Jan. 17-21 ---------	5,750	.04		15	.16	108	45	175	7.2	232	390	165		10		1,030	1.40	16,000	454	264	
Jan. 22-28 ---------	5,350	.03		19	.22	106	45	193	6.9	237	415	173		11		1,086	1.48	15,700	450	256	
Jan. 29-31, Feb. 2, 4	5,290	.03		17	.20	109	46	197	8.7	246	409	190		7.1		1,105	1.50	15,800	461	260	
Feb. 5-11 ----------	6,420	.03		18	.23	111	45	183	7.2	233	409	167		8.0		1,063	1.45	18,400	462	271	
Feb. 12-18 ---------	6,850	.09		20	.10	105	42	158		218	380	149		6.0		968	1.32	17,900	434	256	
Feb. 19-25 ---------	6,970	.11		22	.11	107	42	169		216	404	147		6.0		1,004	1.37	18,900	440	262	
Feb. 26-Mar. 4------	6,430	.08		13	.11	102	43	173		204	405	149		8.2		993	1.35	17,300	432	264	
Mar. 5-11 ----------	7,440	.10		17	.14	102	44	170	7.4	220	395	149		1.5		994	1.35	19,900	436	255	
Mar. 12-18 ---------	9,310	.27		14	.14	90	36	142	7.5	209	335	128		1.6		857	1.17	22,000	372	201	
Mar. 19-25 ---------	13,300	.58		15	.19	92	36	131	6.4	205	334	107		1.4		824	1.12	30,200	378	210	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, August 1925 to September 1926--Continued

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Mar. 26-Apr. 1, 1926	15,000	0.72		13	0.22	75	28	107	7.4	190	257	80		1.8		663	0.90	26,800	302	146	
Apr. 2-8	14,100	.63		14	.22	67	23	106	5.9	190	233	79		1.8		624	.85	23,700	282	106	
Apr. 9-13, 15	21,500	1.16		12	.29	75	24	109	7.4	192	264	70		1.7		658	.89	38,200	286	128	
Apr. 16-21	28,400	.93		17	.28	67	24	77	5.6	187	207	51		.0		541	.74	41,400	266	112	
Apr. 23-29	45,600	1.38		24	.20	62	17	51	4.2	170	153	33		.0		428	.58	52,600	224	85	
Apr. 30-May 6	52,000	.94		13	.19	35	13	43	4.5	146	91	22		.0		294	.40	41,200	141	22	
May 7-13	61,800	.68		9.6	.18	47	14	37	5.0	143	100	23		.0		306	.42	51,000	175	58	
May 14, 15, 17-20	37,100	.38		23	.21	49	13	40	5.1	154	101	28		.5		336	.46	33,600	176	50	
May 21-27	55,000	.43		20	.32	48	12	40	4.5	143	109	25		.3		330	.45	48,900	170	52	
May 28-June 3	73,900	.62		18	.41	41	12	29	5.3	124	86	18		1.1		272	.37	54,200	152	50	
June 4-10	76,300	.32		18	.40	37	11	26	4.8	118	75	21		.4		252	.34	51,900	138	41	
June 11-17	69,800	.23		28	.22	37	8.4	27	2.4	109	64	16		.3		237	.32	44,600	127	38	
June 22-24	48,200	.18		14	1.2	41	10	42	7.7	127	92	28		.3		299	.41	38,900	144	40	
June 25-July 1	31,100	.15		26	.14	45	13	41	5.8	128	104	32		.5		331	.45	27,800	166	61	
July 3-8	26,200	.09		19	.17	46	15	49	6.6	133	109	41		.6		352	.48	24,900	176	68	
July 10-15	30,500	.49		20	.26	61	17	62	6.1	142	179	42		.6		458	.62	37,700	222	106	
July 16-22	24,300	.95		27	.71	75	21	82	3.8	170	243	49		.6		566	.80	38,400	274	134	
July 23-29	14,200	.32		23	.17	66	20	94	7.2	159	218	73		.7		580	.79	22,200	246	116	
July 30-Aug. 5	11,000	.45		15	.34	82	24	108	8.8	171	265	90		1.3		679	.92	20,100	303	163	
Aug. 6-12	9,630	.55		20	.17	98	30	135	8.7	181	341	110		1.1		833	1.13	21,600	368	220	
Aug. 13-19	12,100	.83		25	.27	134	35	151	8.3	185	478	112		1.9		1,037	1.41	33,900	478	327	
Aug. 20-22, 24-26	8,380	.68		23	.20	88	32	153	4.5	204	373	102		.7		877	1.19	19,800	351	184	
Aug. 27-Sept. 2	5,750	.30		25	.30	100	32	176	6.4	199	403	134		1.8		976	1.33	15,100	381	218	
Sept. 3-9	4,360	.07		18	.23	116	38	181	4.8	206	421	160		3.4		1,044	1.42	12,300	446	276	
Sept. 10-16	6,610	1.79		16	.26	128	41	189	3.7	220	478	154		2.9		1,121	1.52	20,000	488	308	
Sept. 17-23	5,520	.87		16	.29	136	40	198	4.5	214	523	157		4.6		1,185	1.61	17,600	504	328	
Sept. 24-30	9,940	3.28		19	.33	144	43	213	8.7	227	551	160		1.6		1,252	1.70	33,500	536	350	
Average [a]		--		19	0.25	89	31	120	7.0	188	309	98		3.5		768	1.04		350	196	
Weighted average [a]	19,900	--		19	0.31	66	21	75	5.7	159	201	56		1.6		523	0.71	28,100	251	121	

a Averages are for the period Oct. 9, 1925 to Sept. 30, 1926.

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1926 to September 1927

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1926	7,840	1.47		17	0.26	143	42	199	8.0	214	576	140		7.0		1,238	1.68	26,200	530	354	
Oct. 11-20	8,450	.67		15	.19	150	50	192	8.7	211	597	135		3.1		1,255	1.71	27,100	580	407	
Oct. 21-31	6,660	.18		16	.16	120	47	174	7.7	206	483	139		5.6		1,094	1.49	19,600	493	324	
Nov. 1-10	5,980	.08		14	.18	122	50	192	7.7	228	493	158		2.6		1,152	1.57	18,600	510	323	
Nov. 11-20	6,280	.09		13	.17	124	52	201	7.7	237	517	164		4.3		1,200	1.63	20,300	524	328	
Nov. 21-30	6,480	.08		17	.15	123	52	179	11	235	488	165		8.8		1,160	1.58	20,300	521	328	
Dec. 1-10	7,810	.13		17	.15	114	48	190	9.2	223	467	150		12		1,117	1.52	23,500	482	300	
Dec. 11-20	8,540	.40		12	.14	114	43	157	9.2	210	438	128		13		1,018	1.38	23,400	462	290	
Dec. 21-29, 31	4,180	.08		16	.14	112	46	203	12	238	467	170		9.8		1,153	1.57	13,000	458	274	
Jan. 1, 2, 4-10, 1927	3,940	.04		16	.15	143	68	245	12	289	557	248		22		1,454	1.98	15,400	636	400	
Jan. 11-20	6,660	.11		15	.24	125	53	199	7.2	264	460	185		9.0		1,183	1.61	21,200	530	314	
Jan. 21-31	6,920	.86		11	.20	106	45	168	5.8	227	391	148		9.2		996	1.35	18,600	450	264	
Feb. 1-10	6,030	.62		15	.22	108	46	174	8.3	226	401	163		7.2		1,034	1.41	16,800	458	274	
Feb. 11-18	8,430	.17		21	.28	108	43	185	7.5	224	405	161		5.8		1,047	1.42	23,300	446	263	
Feb. 20-24, 26-28	10,800	1.10		18	.35	94	30	163	7.4	215	340	124		4.4		887	1.21	25,800	358	182	
Mar. 1-10	12,000	.64		16	.28	97	33	157	7.5	205	371	122		5.6		910	1.24	29,400	376	210	
Mar. 11-20	11,200	.51		5.4	.24	102	39	150	6.6	207	407	111		2.8		926	1.26	28,000	415	246	
Mar. 21-31	9,930	.37		4.4	.28	98	38	153	5.0	227	362	126		2.4		901	1.23	24,100	400	214	
Apr. 1-10	20,300	.79		4.4	.26	81	30	113	7.2	200	300	87		3.9		725	.99	39,700	326	162	
Apr. 11-20	22,700	.57		6.0	.18	66	22	71	1.8	171	193	56		3.3		503	.68	30,800	255	115	
Apr. 21-30	21,800	.45		8.0	.25	66	22	76	3.0	168	193	58		3.1		512	.70	30,100	255	118	
May 1-10	55,100	1.37		15	.16	49	15	42	3.7	159	104	29		1.2		337	.46	50,100	17	54	
May 11-20	53,400	3.71		16	.17	44	13	33	4.6	133	85	23		1.8		286	.39	41,200	184	54	
May 21-31	78,900	.38		14	.21	41	10	23	5.1	121	66	18		1.5		238	.32	50,600	144	44	
June 1-10	51,200	.13		23	.17	41	11	26	5.0	122	73	20		.7		260	.35	35,900	148	48	
June 11-20	65,300	.27		25	.18	51	12	37	3.8	128	110	21		1.4		324	.44	57,300	177	72	
June 21-30	67,800	.54		17	.21	47	12	35	6.1	127	108	20		1.6		310	.42	56,700	167	63	
July 1-10	72,100	1.11		20	.24	65	14	48	5.9	142	169	24		1.1		417	.57	81,100	220	103	
July 11-20	34,100	.71		23	.22	74	19	55	4.6	163	192	36		1.2		485	.66	44,600	262	129	
July 21-31	19,300	.45		19	.19	71	22	71	3.2	163	205	53		1.7		526	.72	27,400	268	134	
Aug. 1-10	19,200	1.25		21	.26	116	29	101	4.8	189	371	67		1.4		805	1.09	41,700	408	254	
Aug. 11-20	17,300	1.28		18	.17	117	29	103	4.2	179	378	66		1.5		805	1.09	37,600	411	264	
Aug. 21-31	12,300	.89		21	.11	95	28	109	6.4	179	325	86		2.9		762	1.04	25,300	352	206	
Sept. 1, 3-10	14,700	2.08		22	.25	144	39	144	9.0	201	515	94		1.0		1,067	1.45	42,300	520	356	
Sept. 11-20	67,600	5.94		18	.61	152	32	109	5.8	188	518	46		.8		975	1.33	178,000	511	357	
Sept. 21-30	27,000	1.46		16	.24	104	25	88	5.9	172	336	44		2.1		706	.96	51,400	362	222	
Average		--		16	0.22	98	34	127	6.6	194	346	100		4.6		827	1.12		384	226	
Weighted average	23,000	--		17	0.24	77	22	77	5.5	162	235	53		2.4		569	0.77	36,600	282	150	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1927 to September 1928

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1927	20,200	0.85		17	0.23	93	26	84	4.8	162	302	46		3.4	0.4	656	0.89	35,700	339	206	
Oct. 11-20	15,200	.25		16	.18	85	27	84	5.6	180	263	69		3.4	.8	642	.87	26,300	323	176	
Oct. 21-31	12,000	.14		12	.21	92	31	107	3.2	196	299	81		2.9	.7	725	.99	23,500	357	196	
Nov. 1, 2, 4-10	15,100	.75		16	.20	128	40	126	5.6	189	466	84		3.0	.7	962	1.31	39,200	484	329	
Nov. 11-20	12,500	.32		16	.22	98	34	121	3.4	193	356	89		3.9	.8	816	1.11	27,400	384	226	
Nov. 21-30	11,600	.19		11	.23	94	36	118	5.0	199	342	93		2.9	.8	800	1.09	25,000	382	220	
Dec. 1-3, 8	10,400	.14		--	--	--	--	--	--	--	339	103		--	--	--	--	--	--	--	
Dec. 11-20	7,790	--		--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	
Dec. 24-31	5,790	.04		14	.22	113	46	169	10	240	407	151		9.8	.7	1,038	1.41	16,200	471	274	
Jan. 1-10, 1928	7,660	.05		14	.24	111	47	156	6.5	234	410	140		6.8	.8	1,009	1.37	20,800	470	278	
Jan. 11-20	8,700	.09		15	.24	104	44	147	6.2	231	380	123		6.2	.8	939	1.28	22,000	440	251	
Jan. 21-31	7,960	.07		14	.23	96	41	142	7.8	218	358	120		6.8	.6	893	1.21	19,200	408	230	
Feb. 1-10	9,520	.30		10	.20	99	40	144	6.6	210	357	126		4.8	.6	891	1.21	22,900	412	240	
Feb. 11-20	8,810	.24		8.6	.23	99	37	145	7.2	218	353	117		4.3	.7	879	1.20	20,900	399	220	
Feb. 21-29	7,720	.98		17	.09	101	41	153	5.6	226	375	125		3.2	.6	932	1.27	19,400	420	236	
Mar. 1-10	9,750	.28		16	.12	94	39	150	4.8	225	349	123		4.9	.7	892	1.21	23,500	395	210	
Mar. 11-20	13,200	.52		14	.12	90	34	131	5.8	207	335	92		4.1	.6	808	1.10	28,800	364	195	
Mar. 21-29, 31	14,900	.48		15	.13	86	32	122	4.3	201	307	86		3.2	.8	755	1.03	30,300	346	182	
Apr. 1-5, 7-10	19,700	.69		13	.14	72	25	80	3.4	173	218	58		4.6	.6	559	.76	29,700	282	140	
Apr. 11-20	13,300	.26		19	.22	72	26	73	5.8	186	201	61		1.7	.7	551	.75	19,800	286	134	
Apr. 22-30	16,800	.32		18	.22	72	28	79	4.0	192	215	70		2.1	.4	583	.79	26,400	294	137	
May 1-9	55,500	1.52		17	.28	58	19	40	5.1	173	125	33		.8	.3	383	.52	57,300	222	80	
May 11, 13-20	79,300	1.11		15	.24	54	14	20	6.1	145	96	17		.8	.3	295	.40	63,100	192	74	
May 21-31	73,200	.76		18	.10	48	14	30	2.4	140	98	17		1.0	.2	298	.41	58,800	178	63	
June 1-10	96,800	.76		16	.06	40	11	23	2.1	131	66	10		.4	.2	233	.32	60,800	145	38	
June 11-20	52,800	.35		18	.10	46	12	31	3.0	131	85	20		2.1	.2	282	.38	40,200	164	57	
June 21-29	40,200	.28		15	.09	48	15	43	3.0	136	119	27		2.4	.2	339	.46	36,800	182	70	
July 1-10	35,200	.22		12	.06	44	14	35	2.9	126	99	26		1.8	.2	297	.40	28,200	168	64	
July 11-20	21,900	.13		13	.07	50	15	51	1.9	130	123	42		2.4	--	362	.49	21,400	186	80	
July 21-31	19,300	.48		39	.13	69	21	76	4.5	160	204	56		3.3	--	553	.75	28,800	258	128	
Aug. 2-10	13,800	.56		46	.04	79	23	96	5.9	176	254	73		4.6	.2	668	.91	24,900	292	148	
Aug. 11-20	10,100	.42		21	.04	96	34	117	5.8	174	351	90		6.3	.3	807	1.10	22,000	380	237	
Aug. 21-23, 25-31	8,820	.90		14	.22	119	38	141	6.6	200	429	111		4.2	1.4	962	1.31	22,900	453	289	
Sept. 1-10	7,820	.79		12	.14	142	42	177	7.7	210	525	143		6.0	.5	1,158	1.57	24,400	527	355	
Sept. 11-20	5,680	.19		15	.08	117	45	161	24	205	469	144		10	1.8	1,086	1.48	16,600	477	309	
Sept. 21-30	5,390	.06		14	.08	121	52	196	6.7	216	509	165		13	.7	1,183	1.61	17,200	516	339	
Average		--		16	0.16	86	31	105	5.7	186	291	84		4.1	--	713	0.97	--	342	190	
Weighted average	29,400	--		17	0.15	66	22	65	4.3	162	187	48		2.4	--	491	0.67	--	255	122	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1928 to September 1929

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-3, 6-10, 1928	6,200	0.21		18	0.06	142	59	209	6.6	215	612	164		16	0.5	1,333	1.81	22,300	597	421	
Oct. 11-20	14,000	2.00		15	.07	208	56	196	7.7	206	798	128		5.4	1.5	1,516	2.06	57,200	750	580	
Oct. 21-31	9,160	.88		16	.07	151	45	166	9.6	198	585	112		5.5	.5	1,188	1.62	29,300	562	400	
Nov. 1-10	11,900	1.01		16	.06	125	41	159	8.3	201	494	109		7.2	.5	1,059	1.44	34,000	450	316	
Nov. 11-20	9,250	.26		20	.09	121	46	173	5.1	216	492	121		10	1.2	1,095	1.49	27,300	491	314	
Nov. 21-30	8,550	.17		18	.08	112	45	168	5.4	219	453	124		8.3	1.4	1,042	1.42	24,000	464	285	
Dec. 1, 3-10	8,380	.12		15	.07	111	48	170	5.0	222	443	136		8.6	.9	1,046	1.42	23,600	474	292	
Dec. 11-20	5,740	.08		16	.07	112	50	182	5.1	235	452	153		7.5	.8	1,093	1.49	16,900	485	292	
Dec. 21-31	3,940	.03		18	.05	134	59	235	5.9	276	533	220		13	.9	1,354	1.84	14,400	577	351	
Jan. 1-2, 4-10, 1929	5,770	.05		18	.06	131	57	210	5.6	276	500	190		12	1.0	1,260	1.71	19,600	562	336	
Jan. 11-17	5,120	.02		18	.06	125	54	197	5.0	279	452	184		11	2.0	1,183	1.61	16,300	534	306	
Jan. 21-22, 24-31	6,120	.05		22	.12	114	50	186	4.3	250	429	167		12	.7	1,108	1.51	18,300	490	285	
Feb. 1-10	7,360	.11		20	.12	108	46	161	4.3	233	391	150		12	.6	1,007	1.37	20,000	459	268	
Feb. 11-19	5,630	.06		19	.08	108	45	175	4.3	227	403	165		11	.7	1,049	1.43	15,900	454	268	
Feb. 20-28	6,430	.06		20	.10	113	49	181	4.5	238	434	165		13	.5	1,097	1.49	19,000	484	288	
Mar. 1-10	8,280	.18		12	.14	107	46	175	3.5	224	413	158		10	.8	1,035	1.41	23,100	456	272	
Mar. 11-20	23,700	2.06		11	.20	104	33	125	6.1	190	392	79		9.0	1.0	853	1.16	54,500	395	240	
Mar. 21-31	14,500	.69		15	.13	98	32	126	6.4	200	341	88		5.2	.6	810	1.10	31,700	376	212	
Apr. 1-10	29,200	1.67		13	.13	89	25	95	5.3	193	265	70		2.1	.7	660	.90	52,000	325	167	
Apr. 11-20	23,500	.87		14	.10	71	24	78	6.1	182	218	56		2.7	--	560	.76	35,500	276	126	
Apr. 21-30	36,500	.90		18	.16	59	20	59	7.7	172	162	36		.4	.3	447	.61	44,000	229	88	
May 1-10	31,700	.54		14	.10	58	21	53	5.0	172	160	38		2.9	.3	437	.59	37,400	231	90	
May 11-20	62,900	.71		12	.31	48	16	37	6.6	155	102	22		1.2	.5	322	.44	54,600	186	59	
May 22-31	92,600	.94		11	.33	42	13	27	4.6	136	77	15		1.8	.2	259	.35	64,800	158	47	
June 1-10	84,100	.54		17	.12	42	12	27	5.6	132	77	14		1.3	.3	261	.35	59,200	154	46	
June 11, 13-20	86,400	.35		14	.18	36	12	20	7.0	117	63	15		1.2	.6	226	.31	52,700	140	44	
June 21-30	67,700	.21		13	.29	40	12	23	4.5	125	72	18		.8	.3	245	.33	44,700	150	47	
July 1-10	45,600	.15		22	.24	42	13	31	3.5	121	86	23		1.0	.2	281	.38	34,600	158	60	
July 11-20	26,600	.35		22	.60	61	18	48	5.6	147	151	37		.2	.2	416	.57	30,100	226	106	
July 21-31	31,200	2.40		17	.51	80	23	91	8.5	164	272	61		.2	.3	634	.86	53,300	294	160	
Aug. 1-3, 5, 6, 9-10	51,900	5.10		39	.37	142	35	104	14	202	503	43		1.1	.7	981	1.33	137,000	498	333	
Aug. 11-13, 15-20	33,600	2.60		20	.23	96	23	102	4.5	186	327	44		.8	.2	709	.96	64,200	334	182	
Aug. 21-31	13,700	.41		18	.17	96	26	95	3.4	178	291	68		1.2	.2	686	.93	25,400	346	200	
Sept. 1-2, 4-10	26,400	3.30		37	.05	119	35	107	8.3	194	426	66		.6	.2	895	1.22	63,700	441	282	
Sept. 11-20	25,900	1.44		20	.30	106	29	94	5.3	175	368	50		1.6	.4	760	1.03	53,100	384	240	
Sept. 21, 23-30	33,200	3.50		22	.38	104	26	99	5.3	191	354	50		1.3	.4	756	1.03	67,700	366	210	
Average		--		18	0.17	99	35	122	5.9	196	350	93		5.5	--	824	1.12		390	229	
Weighted average	26,800	--		18	0.23	74	23	73	6.2	164	229	48		2.5	--	555	0.75	40,100	279	144	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1929 to September 1930

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1, 4-10, 1929--	17,900	0.46		19	0.25	82	26	85	5.1	168	267	60		4.4	0.4	632	0.86	30,500	312	174	
Oct. 11-20 ---------	15,900	.39		21	.13	86	32	103	3.8	184	303	71		7.2	.2	720	.98	30,900	351	200	
Oct. 21-31 ---------	12,700	.32		37	.14	94	35	111	4.3	188	334	81		5.5	.3	795	1.08	27,200	378	224	
Nov. 1, 3-10 -------	10,700	.12		17	.20	95	40	122	7.6	202	352	94		6.9	.4	824	1.12	23,800	402	236	
Nov. 11-20 ---------	10,200	.09		18	.08	101	42	134	6.2	218	378	103		6.1	.6	896	1.22	24,700	424	246	
Nov. 21-30 ---------	8,580	.06		15	.06	105	45	147	5.4	228	402	118		5.6	.7	955	1.30	22,100	447	260	
Dec. 1-2, 4-10------	8,170	.06		15	.08	112	47	154	10	240	424	130		6.1	.6	1,016	1.38	22,400	473	276	
Dec. 11-19 ---------	8,290	.06		16	.08	105	46	149	9.1	233	399	126		7.4	.5	972	1.32	21,700	451	260	
Dec. 22-31 ---------	6,120	.03		16	.10	105	45	161	8.8	240	377	144		7.0	.6	982	1.34	16,200	447	250	
Jan. 1, 3-10, 1930--	5,500	.02		15	.10	124	53	198	9.3	268	457	184		8.6	.6	1,182	1.61	17,500	528	308	
Jan. 12-20 ---------	5,940	.02		11	.09	114	50	178	8.5	261	409	172		7.1	.5	1,078	1.47	17,300	490	276	
Jan. 21-24 ---------	4,160	.02		18	.05	119	50	185	9.0	268	423	176		8.0	--	1,120	1.52	12,600	502	283	
Feb. 2, 4-10 -------	6,370	.03		16	.04	115	50	177	8.2	257	429	158		9.2	.8	1,089	1.48	18,700	492	282	
Feb. 11-19 ---------	8,130	.08		12	.05	106	44	158	8.7	236	375	134		7.1	.6	959	1.30	21,000	446	252	
Feb. 20-28 ---------	11,700	.27		13	.04	105	42	148	5.1	210	399	113		5.6	.9	934	1.27	29,500	434	262	
Mar. 1-3, 5-8, 10---	10,300	.20		7.2	.12	95	40	;52	5.8	202	394	116		6.2	.8	916	1.25	25,400	402	236	
Mar. 11-20 ---------	8,570	.12		14	.05	101	44	161	6.9	224	394	136		5.6	.8	973	1.32	22,500	433	250	
Mar. 21-31 ---------	10,900	.31		12	.06	99	40	148	7.0	234	360	122		5.0	.9	908	1.23	26,700	412	220	
Apr. 1-3, 8-10------	10,500	.24		12	.11	86	35	124	6.9	215	302	106		4.0	.6	782	1.06	22,100	358	182	
Apr. 11-13, 15-20---	36,800	1.09		8.2	.12	69	23	71	6.7	187	199	51		3.1	.8	523	.71	51,900	266	113	
Apr. 21-28, 30 -----	37,000	.59		16	.12	57	18	40	4.5	177	113	32		1.6	.3	369	.50	36,800	216	71	
May 1-3, 5-10 ------	39,000	.49		14	.07	53	16	30	5.0	172	97	29		1.0	.3	330	.45	34,700	198	58	
May 11-20 ----------	24,900	.21		14	.08	54	17	48	3.8	158	127	38		3.3	.3	383	.52	25,700	205	76	
May 21-31 ----------	33,500	.29		15	.24	56	19	52	4.2	155	147	40		3.0	.3	413	.56	37,300	218	91	
June 1-8, 10 -------	56,400	.66		17	.09	59	15	35	3.5	174	104	23		3.0	.2	345	.47	52,500	208	66	
June 11-20 ---------	56,900	.36		16	.08	48	12	31	3.2	143	86	22		2.2	.2	291	.40	44,700	170	52	
June 21-25, 27-30---	41,800	.26		14	.10	50	14	36	3.5	139	107	27		2.0	.4	322	.44	36,300	182	68	
July 2, 4-10 -------	19,400	.07		19	.10	52	18	56	3.2	138	141	49		2.8	.6	409	.56	21,400	204	91	
July 11-20 ---------	17,800	2.27		17	.14	101	27	110	5.6	194	324	80		.5	.2	762	1.04	36,600	363	204	
July 21-27, 29-31---	19,300	1.87		18	.06	106	28	110	6.6	192	365	64		2.2	.6	794	1.08	41,300	380	222	
Aug. 1-10 ----------	22,600	3.30		23	.14	132	34	121	4.6	204	463	64		.8	.9	943	1.28	57,500	470	302	
Aug. 11-20 ---------	38,000	5.20		20	.08	155	35	126	5.3	203	557	50		.2	1.7	1,049	1.43	108,000	531	364	
Aug. 21-31 ---------	17,800	1.22		19	.18	85	26	104	4.2	200	285	58		1.0	.8	681	.93	32,700	319	155	
Sept. 1-10 ---------	11,100	.63		21	.16	96	30	120	4.6	190	336	83		5.1	.8	789	1.07	23,600	363	208	
Sept. 11-12, 14-20--	8,920	.92		19	.20	153	44	166	5.3	205	568	114		8.2	.7	1,179	1.60	28,500	563	395	
Sept. 21-30 --------	6,760	.16		13	.08	118	44	166	4.3	209	458	130		18	.8	1,054	1.43	19,200	476	304	
Average		--		16	0.11	94	34	117	5.9	203	324	92		5.0	--	788	1.07		374	208	
Weighted average	18,500	--		16	0.11	81	26	85	5.0	184	252	62		3.4	--	622	0.85	31,100	309	158	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1930 to September 1931

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1930 ----	9,780	0.71		13	0.12	142	49	178	5.1	210	563	122		16	0.6	1,192	1.62	31,400	556	384	
Oct. 11-20----------	8,850	.37		12	.12	119	44	160	4.0	214	463	114		16	.9	1,038	1.41	24,800	478	302	
Oct. 21-31----------	9,000	.18		15	.06	109	43	142	7.7	214	408	111		9.4	.7	951	1.29	23,100	449	274	
Nov. 1-3,5-8,10 ----	7,740	.12		12	.08	109	44	144	7.2	226	396	119		9.2	.5	952	1.29	19,900	453	268	
Nov.12-20 ----------	7,600	.18		13	.08	114	48	157	8.7	215	438	134		12	.8	1,031	1.40	21,100	482	306	
Nov. 21-30----------	7,140	.17		14	.08	115	50	170	8.3	228	456	139		12	.9	1,077	1.46	20,700	492	306	
Dec. 1-10----------	5,610	.17		12	.08	125	51	180	7.7	234	465	168		17	.5	1,141	1.55	17,300	522	330	
Dec. 11,16-20 ------	5,620	.06		12	.04	110	41	151	3.5	214	393	134		10	.6	960	1.31	14,600	443	268	
Dec. 21-31----------	4,130	.03		12	.02	130	58	218	5.3	287	491	202		18	.2	1,276	1.74	14,200	563	328	
Jan. 1-10,1931 -----	4,020	.02		10	.04	136	59	228	5.4	297	502	215		18	.2	1,320	1.80	14,300	582	338	
Jan. 11-20----------	4,690	.02		13	.06	132	58	224	5.3	290	493	213		16	.2	1,297	1.76	16,300	568	330	
Jan. 21-31----------	4,910	.04		7.0	.08	122	52	199	4.2	270	434	191		15	.3	1,157	1.57	15,300	518	297	
Feb. 1-10----------	6,490	.11		13	.06	112	46	176	3.8	237	402	164		15	.5	1,049	1.43	18,400	468	274	
Feb. 11-19----------	7,530	.38		12	.06	115	43	183	4.8	226	432	160		14	.3	1,075	1.46	21,800	464	279	
Feb. 20-28----------	6,850	.33		12	.08	120	46	198	5.1	237	479	154		17	.2	1,148	1.56	21,200	488	294	
Mar. 1-10----------	6,190	.11		14	.10	114	50	198	6.6	233	471	166		14	.8	1,148	1.56	19,200	490	299	
Mar. 11-20----------	6,800	.18		13	.10	107	46	184	5.9	240	422	156		11	.8	1,063	1.45	19,500	456	260	
Mar. 21-31----------	8,900	.39		12	.08	100	40	165	6.7	236	377	136		10	1.2	963	1.31	23,100	414	220	
Apr. 1-10----------	7,530	.25		13	.08	90	38	160	4.8	219	347	134		9.0	.9	904	1.23	18,400	380	201	
Apr. 11-15,17-20 ---	8,550	.26		11	.08	94	40	162	5.4	220	366	136		8.6	.8	931	1.27	21,500	399	218	
Apr. 21-30----------	12,900	.43		13	.06	80	31	114	3.7	209	262	88		7.0	.8	702	.95	24,400	327	156	
May 1-10----------	13,800	.58		10	.08	78	26	109	3.8	191	257	80		6.9	.6	665	.90	24,800	302	145	
May 11-20----------	16,700	.31		9.4	.06	68	24	82	3.0	177	200	65		6.0	.6	545	.74	24,500	268	123	
May 21-31----------	25,700	.85		13	.10	60	20	61	3.5	171	152	46		2.4	.6	442	.60	30,600	232	92	
June 1-10----------	27,600	.66		10	.13	53	16	50	3.4	151	126	38		1.8	.3	373	.51	27,800	198	74	
June 12-13,16-20 ---	26,400	.44		19	.08	53	15	45	3.4	148	116	35		2.4	.4	362	.49	25,800	194	72	
June 21-25,27-30 ---	17,200	.14		14	.06	55	17	55	3.5	143	134	51		2.1	.4	402	.55	18,600	208	90	
July 1-10----------	14,000	.40		17	.06	72	22	84	3.7	157	217	70		3.8	.3	567	.77	21,400	270	142	
July 11-20----------	6,960	.17		11	.10	79	26	109	4.6	168	244	104		5.7	.5	666	.91	12,500	304	166	
July 21-31----------	4,090	.92		21	.06	95	30	181	4.5	222	321	169		2.0	.3	933	1.27	10,300	360	178	
Aug. 1-10----------	7,460	4.01		19	.06	141	37	224	5.3	260	549	150		1.0	.5	1,254	1.71	25,200	504	291	
Aug. 11-20----------	5,370	1.66		18	.04	159	47	247	5.3	235	656	181		3.0	.3	1,432	1.95	20,700	590	398	
Aug. 21-31----------	3,210	.84		15	.04	135	45	239	5.8	242	532	206		6.8	.4	1,304	1.77	11,300	522	324	
Sept. 1-10----------	2,930	.41		13	.04	135	53	264	5.4	243	555	242		9.8	.2	1,397	1.90	11,000	555	356	
Sept. 11-20---------	3,080	.75		11	.17	158	59	293	7.4	256	680	250		9.4	.7	1,594	2.17	13,200	637	427	
Sept. 21-30---------	9,070	2.69		9.6	.20	173	51	226	5.8	248	689	160		1.0	.3	1,438	1.96	35,200	641	438	
Average		--		13	0.08	109	41	166	5.2	221	402	139		9.4	--	993	1.35		438	257	
Weighted average	9,280	0.55		13	0.08	93	34	131	4.7	201	325	107		7.5	--	813	1.11	20,400	372	208	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1931 to September 1932

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1931	11,500	2.61		15	0.08	139	37	161	7.5	223	500	113		2.0	0.1	1,084	1.47	33,600	499	316	
Oct. 11-16,18-20	6,780	.79		9.6	.06	131	37	157	7.9	205	459	125		7.2	.2	1,035	1.41	18,900	479	311	
Oct. 21-31	7,910	1.15		10	.08	150	42	172	5.9	226	523	132		6.8	.3	1,153	1.57	24,600	547	362	
Nov. 1-10	5,860	.22		11	.06	128	47	190	5.9	217	501	157		8.2	.3	1,155	1.57	18,300	513	335	
Nov. 11-20	8,080	1.19		12	.08	130	40	180	5.9	237	462	142		9.3	.3	1,098	1.49	23,900	489	295	
Nov. 21-30	5,720	.31		12	.06	127	44	188	5.6	231	472	156		9.0	.3	1,127	1.53	17,400	498	308	
Dec. 1-10	4,140	.10		12	.06	129	50	213	5.8	249	479	195		11	.2	1,218	1.66	13,600	528	324	
Dec. 11-20	4,370	.12		12	.06	134	52	221	6.4	269	494	205		11	.2	1,268	1.72	14,900	548	328	
Dec. 21-31	4,780	.12		13	.06	135	55	230	4.6	293	491	220		11	.2	1,304	1.77	16,800	563	323	
Jan. 1-10, 1932	5,360	.13		11	.08	119	47	186	4.6	257	420	172		9.0	.2	1,095	1.49	15,800	490	280	
Jan. 11-20	5,120	.10		11	.06	118	48	191	4.8	258	424	180		9.0	.2	1,113	1.51	15,400	492	280	
Jan. 21-31	4,520	.06		8.0	.04	118	49	198	4.2	259	420	193		9.2	.2	1,127	1.53	13,700	496	284	
Feb. 1-2,4-5,7-10	7,660	.66		10	.04	113	41	183	5.1	254	385	170		7.4	.3	1,040	1.41	21,500	450	242	
Feb. 11-17, 19	20,200	2.99		9.2	.10	89	22	139	5.1	205	303	92		5.7	.1	766	1.04	41,700	312	144	
Feb. 22-24,26-29	10,000	.60		9.8	.08	107	33	169	5.0	209	406	121		8.0	.1	962	1.31	25,900	402	231	
Mar. 1-10	12,900	1.23		9.0	.08	103	29	153	4.2	226	357	106		6.8	.2	879	1.20	30,600	376	191	
Mar. 11-20	11,400	.70		11	.08	98	31	141	4.3	218	341	103		6.0	.2	843	1.15	25,900	372	194	
Mar. 21-31	16,800	.97		8.2	.10	87	27	119	3.8	211	286	83		4.8	.3	723	.98	32,800	328	155	
Apr. 1-10	21,300	1.05		15	.10	83	26	95	3.6	200	248	70		4.2	.2	643	.87	36,900	314	150	
Apr. 11-20	29,100	1.45		17	.08	70	20	73	4.2	190	191	47		2.7	.2	519	.71	40,700	256	101	
Apr. 21-30	36,500	1.33		16	.12	63	18	50	3.8	176	142	34		2.9	.3	417	.57	41,000	231	87	
May 1-10	36,200	.86		7.8	.12	64	19	54	4.3	180	151	35		4.8	.2	429	.58	41,900	238	90	
May 11-20	63,900	.90		7.8	.08	55	15	38	4.2	174	103	23		3.6	.2	335	.46	57,700	199	56	
May 21-31	90,900	.65		11	.08	48	12	25	4.0	152	71	16		1.0	.2	263	.36	64,500	170	45	
June 1-10	58,000	.48		16	.10	48	13	31	3.4	151	80	22		1.8	.2	290	.39	45,400	174	50	
June 11-20	58,400	.32		12	.10	48	13	30	3.4	142	90	23		2.0	.2	292	.40	46,000	174	57	
June 21-30	66,100	.26		13	.20	43	12	30	2.6	132	76	19		2.0	.1	263	.36	46,900	157	49	
July 1-10	52,000	.27		12	.10	44	12	32	3.0	132	85	23		1.9	.2	278	.38	39,000	160	52	
July 11-20	31,100	.86		19	.26	81	21	65	3.2	167	218	45		1.0	.3	536	.73	45,000	288	152	
July 21-31	19,200	.34		16	.10	74	22	79	3.0	166	215	61		2.2	.4	554	.75	28,700	275	139	
Aug. 1-10	16,800	.83		16	.32	99	28	110	4.2	187	324	81		1.8	.5	756	1.03	34,300	362	208	
Aug. 11-20	8,630	.28		18	.07	93	31	109	6.2	196	301	93		4.9	.8	753	1.02	17,500	360	199	
Aug. 21-31	20,900	3.10		19	.60	147	36	136	7.2	220	494	95		1.1	.6	1,046	1.42	59,000	515	334	
Sept. 1-10	14,700	2.39		20	.21	166	40	141	7.2	200	586	79		2.5	.7	1,140	1.55	45,200	579	415	
Sept. 11-20	6,520	.33		16	.14	121	39	146	6.9	199	433	118		6.1	.6	984	1.34	17,300	462	300	
Sept. 21-30	6,000	.45		12	.12	132	44	188	5.9	218	503	157		7.6	.5	1,157	1.57	18,700	510	332	
Average				13	0.12	101	32	128	4.9	206	334	103		5.4	--	823	1.12		384	214	
Weighted average	21,900	.81		13	0.13	73	21	74	4.1	176	202	54		3.3	--	531	0.72	31,400	268	124	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1932 to September 1933

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1932-----	5,540	0.55		11	0.16	151	51	223	6.1	214	609	186	--	9.4	0.5	1,352	1.84	20,220	586	410	
Oct. 11-15,20 ------	5,150	.12		14	.05	142	57	216	7.0	230	593	179	--	11	.7	1,332	1.81	18,520	589	400	
Oct. 21-31 ---------	6,530	.31		14	.04	141	55	207	7.0	235	573	168	--	9.4	.6	1,290	1.75	22,740	578	386	
Nov. 1,3-10 --------	6,860	.11		14	.06	133	55	196	5.8	238	550	154	--	9.0	.7	1,234	1.68	22,860	558	363	
Nov. 11-20 ---------	6,500	.07		14	.06	127	54	186	5.6	242	506	153	--	8.8	.6	1,174	1.60	20,600	539	340	
Nov. 21-30 ---------	6,600	.07		15	.09	124	54	183	7.5	241	499	165	--	5.2	.5	1,171	1.59	20,870	532	334	
Dec. 1,2,4-8,10-----	6,320	.07		15	.12	116	51	176	8.8	233	464	155	--	4.1	.5	1,105	1.50	18,860	499	308	
Dec. 11-13,15-18,20-	4,610	.04		9.4	.10	121	53	210	5.9	251	471	197	--	7.0	.3	1,198	1.63	14,910	520	314	
Dec. 21-31 ---------	3,680	.03		11	.08	146	64	256	7.7	288	566	254	--	11	.2	1,458	1.98	14,490	628	392	
Jan.1-2,5-7,9-10,1933	3,490	.03		13	.08	151	67	263	7.5	319	578	255	--	10	.2	1,502	2.04	14,150	652	391	
Jan. 11-20 ---------	4,800	.04		14	.10	125	54	202	5.4	271	463	185	--	7.0	.3	1,189	1.62	15,410	534	312	
Jan. 21,23-31 ------	5,460	.06		12	.11	85	36	138	4.5	191	310	129	--	4.5	.3	813	1.11	11,990	360	204	
Feb. 1-10----------	4,960	.04		9.6	.14	80	32	125	4.6	168	280	122	--	4.2	.4	740	1.01	9,910	331	194	
Feb. 11-19---------	4,230	.08		14	.10	122	50	203	5.9	251	458	186	--	7.2	.4	1,170	1.59	13,360	510	304	
Feb. 20-28---------	5,760	.11		10	.15	122	46	201	6.4	210	504	164	--	7.5	.4	1,164	1.58	18,100	494	322	
Mar. 1-10----------	8,250	.55		9.4	.12	114	40	170	5.6	216	423	141	--	6.2	.3	1,016	1.38	22,630	449	272	
Mar. 11-20---------	9,160	.49		14	.12	115	42	174	4.8	223	455	129	.0	7.2	.4	1,051	1.43	26,000	460	276	
Mar. 21-24,26-31 ---	8,430	.32		11	.08	103	40	163	4.8	221	398	130	.0	5.1	.4	964	1.31	21,940	422	240	
Apr. 1-10----------	8,910	.32		17	.08	103	41	171	5.8	232	398	143	.0	5.3	.8	998	1.36	24,010	426	236	
Apr. 11-17,19-20 ---	9,060	.26		15	.08	86	35	129	5.0	215	308	103	.2	4.1	.7	791	1.08	19,350	358	182	
Apr. 21-30---------	8,280	.28		16	.10	88	37	144	5.6	211	329	121	.0	4.3	.7	849	1.15	18,980	372	198	
May 1-10-----------	15,500	.66		15	.10	82	30	113	4.8	215	267	85	.0	5.5	.7	708	.96	29,600	328	152	
May 11-15,17-20 ----	15,100	.36		15	.10	69	25	88	4.5	179	213	67	.2	4.0	.7	574	.78	23,400	275	128	
May 21-31----------	35,900	1.05		14	.10	68	21	62	5.0	184	161	47	.5	3.1	.2	472	.64	45,800	256	105	
June 1-10----------	72,800	.76		12	.06	52	12	27	3.5	156	79	19	.5	2.4	.1	284	.39	55,800	180	52	
June 11-20---------	72,000	.31		9.6	.08	44	10	22	3.5	128	66	16	.4	3.0	.2	237	.32	46,100	151	46	
June 21-30---------	55,600	.32		12	.08	49	11	28	3.8	140	80	21	.4	2.0	.1	276	.38	41,100	168	53	
July 2-10----------	27,100	.44		12	.12	66	16	50	5.1	148	160	38	.4	3.6	.2	424	.58	31,000	230	109	
July 11-12,14-20 ---	20,800	1.08		15	.06	103	25	88	6.1	178	315	58	.6	2.8	.3	701	.95	39,400	360	214	
July 21-28,30-31 ---	10,600	1.56		13	.20	105	28	129	5.8	211	330	100	.3	2.3	.3	817	1.11	23,380	377	204	
Aug. 1-10----------	8,050	1.11		8.2	.27	117	34	147	5.8	210	408	114	.5	3.0	.3	941	1.28	20,450	432	260	
Aug. 11-20---------	6,880	1.91		8.4	.27	140	36	178	2.9	212	518	117	.6	3.6	.4	1,109	1.51	20,600	498	324	
Aug. 21-31---------	4,560	.93		22	.12	140	43	181	8.7	232	502	155	.5	2.0	.5	1,168	1.59	14,380	526	336	
Sept. 1-10---------	3,290	.34		14	.21	164	56	207	9.3	224	650	166	.5	10	.5	1,387	1.89	12,320	640	456	
Sept. 11-20--------	9,330	3.25		18	.11	171	42	199	8.0	230	636	135	.6	3.0	.5	1,325	1.80	33,400	600	411	
Sept. 21-30--------	8,490	.63		13	.11	149	43	179	8.2	214	559	133	.6	4.1	.5	1,194	1.62	27,400	549	374	
Average		--		13	0.11	112	40	156	5.9	216	408	130	--	5.6	0.4	977	1.33		444	267	
Weighted average	13,800	--		13	0.10	82	26	93	4.9	181	249	74	--	4.0	--	635	0.86	23,660	312	163	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1933	8,970	2.33		14	0.12	152	49	169	9.6	211	579	120	0.5	3.9	0.6	1,201	1.63	29,100	581	408	
Oct. 11-20	7,550	1.76		12	.12	147	42	185	7.2	217	551	128	.5	8.1	.7	1,188	1.62	24,220	540	362	
Oct.21-24,26-27,29-31	4,970	.45		15	.10	139	51	190	6.9	216	552	151	.5	9.8	.6	1,222	1.66	16,400	556	380	
Nov. 1-3,6-10	4,840	.14		23	.11	137	57	205	7.0	228	564	170	.2	10		1,286	1.75	16,810	576	390	
Nov.11-12,14-16,18-20	5,430	.14		20	.05	138	58	214	6.6	232	582	174	.2	10	.6	1,317	1.79	19,310	583	393	
Nov. 21-30	5,410	.11		19	.06	132	57	205	6.9	242	551	171	.2	8.9	.5	1,270	1.73	18,550	564	366	
Dec. 1-10	6,620	.41		18	.11	130	52	192	6.4	229	527	155	.3	8.7	.5	1,202	1.63	21,480	538	351	
Dec. 11-19	5,530	.17		16	.08	131	59	203	6.1	234	545	172	.3	8.2	.5	1,256	1.71	18,750	570	378	
Dec. 21-31	4,680	.11		15	.08	130	59	208	6.4	243	536	185	.1	8.9	.4	1,268	1.72	16,020	567	368	
Jan. 1-10, 1934	6,300	.20		14	.09	128	58	196	8.3	238	510	172	.4	8.9	.9	1,213	1.65	20,630	558	363	
Jan. 11-15,17-20	4,810	.11		17	.04	121	51	199	5.3	261	478	170	.3	8.4	.6	1,179	1.60	15,310	512	298	
Jan. 21-31	5,100	.09		17	.04	124	53	210	4.3	256	485	192	.2	8.9	.6	1,221	1.66	16,810	528	318	
Feb. 1-3,6-10	5,160	.10		14	.04	113	52	203	4.0	224	477	185	.4	6.2	.6	1,165	1.58	16,230	496	312	
Feb. 11-20	6,120	.14		13	.04	112	48	188	3.7	236	456	166	.4	6.1	.6	1,110	1.51	18,340	477	284	
Feb. 21-28	6,020	.15		11	.04	107	48	184	6.9	226	440	160	.3	5.5	.3	1,074	1.46	17,460	464	280	
Mar. 1-9	5,810	.18		9.8	.08	104	48	200	6.1	216	456	170	.3	5.6	.4	1,106	1.50	17,350	457	280	
Mar. 12-14,17,19-20	5,520	.13		21	.02	103	49	202	6.6	222	451	177	.0	5.2	.3	1,124	1.53	16,750	458	276	
Mar. 21-28,30-31	5,810	.14		11	.04	97	44	189	6.6	222	396	165	.3	4.7	.2	1,023	1.39	16,050	423	241	
Apr. 1-2,5-6,8-10	5,670	.12		13	.08	87	41	168	6.9	199	364	159	.3	3.4	.3	941	1.28	14,410	386	222	
Apr. 11-20	6,630	.30		12	.06	87	37	162	5.1	198	345	145	.3	3.4	.6	894	1.22	16,000	369	206	
Apr. 21-30	10,800	.37		15	.44	81	31	126	5.1	186	293	107	.4	3.4	.6	754	1.03	21,990	330	177	
May 1-3,5-10	14,500	.38		8.8	.06	69	22	82	4.3	175	189	68	.5	3.6	.5	533	.72	20,870	262	119	
May 11-20	21,500	.68		9.2	.06	58	19	66	4.5	145	168	51	.3	2.3	.4	450	.61	26,100	222	104	
May 23-29	17,800	.55		22	.15	65	15	60	5.8	176	131	51	.0	.7	.1	437	.59	21,000	224	80	
June 1-4,6-8	15,400	.58		18	.40	90	20	80	7.0	194	218	63	.0	1.6	.2	594	.81	24,700	306	148	
June 11-20	7,910	.09		12	.08	67	22	104	4.3	154	214	92	.0	2.4	.2	594	.81	12,690	258	132	
June 21-25,27-30	4,100	.03		9.4	.07	82	31	144	4.8	180	272	151	.0	4.0	.3	787	1.07	8,710	332	184	
July 1-3,5-10	2,930	.02		9.4	.07	94	41	194	5.0	182	368	203	.0	4.4	.4	1,009	1.37	7,960	403	254	
July 11-15,17-20	2,140	.01		8.6	.07	104	51	243	5.3	194	451	256	.0	6.0	.5	1,221	1.66	7,050	469	310	
July 21-31	2,130	.67		8.6	.12	140	58	284	5.9	225	597	288	.0	5.9	.6	1,498	2.04	8,610	588	404	
Aug. 1-3,5-10	2,020	.89		12	.12	172	64	327	7.5	226	761	296	.2	13	.7	1,764	2.40	9,620	692	508	
Aug. 11-20	2,000	1.17		17	.08	185	69	338	9.8	266	789	310	.4	8.1	.8	1,857	2.53	10,030	745	527	
Aug. 21-31	3,910	2.76		17	.06	201	63	318	11	276	827	265	.5	5.7	.8	1,844	2.51	19,470	760	534	
Sept. 1-4,6-10	3,570	3.73		21	.24	176	49	271	8.7	280	657	224	.1	3.8	.7	1,549	2.11	14,930	640	411	
Sept. 11,13-20	2,150	.51		14	.10	156	57	297	8.7	238	642	288	.3	8.2	.5	1,588	2.16	9,220	624	429	
Sept. 21-30	2,600	.87		13	.20	184	74	339	11	254	826	308	.5	8.5	1.2	1,889	2.57	13,260	764	556	
Average		--		14	0.10	121	47	198	6.5	219	479	175	0.3	6.2	0.52	1,156	1.57		496	316	
Weighted average	6,431	--		15	0.12	105	39	159	6.1	206	392	136	--	5.1	--	960	1.31	16,740	422	254	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934-----	3,120	0.97		11	0.38	171	59	279	9.0	248	695	251	0.1	7.5	1.0	1,605	2.18	13,520	670	466	
Oct. 11-20 ---------	2,600	.16		5.8	.12	151	62	280	9.8	236	634	270	.2	9.4	.8	1,539	2.09	10,800	632	438	
Oct. 21-31 ---------	2,690	.11		2.4	.06	149	65	282	9.1	239	642	280	.2	8.6	.7	1,556	2.12	11,300	640	444	
Nov. 1-3,5-10 ------	2,770	.09		15	.12	150	66	287	9.9	251	645	279	.0	9.5	1.0	1,585	2.16	11,850	646	440	
Nov. 11-18,20 ------	3,230	.10		14	.05	151	67	278	6.7	256	635	260	.4	8.6	.4	1,547	2.10	13,490	652	443	
Nov. 21-30 ---------	3,880	.17		13	.08	148	62	251	6.2	251	607	230	.4	8.6	.3	1,450	1.97	15,190	624	418	
Dec. 1-4,6-10 ------	3,730	.12		13	.10	146	62	249	5.4	258	591	228	.3	8.4	.4	1,430	1.94	14,400	620	408	
Dec. 11-20 ---------	3,660	.14		13	.09	142	60	244	5.4	265	554	230	.3	8.0	.4	1,387	1.89	13,710	601	384	
Dec. 21-31 ---------	4,430	.18		13	.09	143	57	230	5.3	259	547	214	.3	7.5	.4	1,345	1.83	16,090	592	379	
Jan. 1-3,5-10, 1935-	4,300	.46		13	.14	130	52	204	6.7	260	473	197	.4	7.2	1.5	1,212	1.65	14,070	538	326	
Jan. 11-20 ---------	5,920	1.11		12	.16	123	42	211	6.7	255	431	188	.6	6.9	1.0	1,147	1.56	18,330	480	270	
Jan. 21-31 ---------	3,920	.23		14	.05	123	50	217	4.8	264	442	213	.3	7.5	.4	1,202	1.63	12,720	512	296	
Feb. 1-4,6-10 ------	5,420	.27		13	.05	123	47	199	5.1	254	443	186	.3	7.0	.4	1,149	1.56	16,810	500	292	
Feb. 11-19 ---------	5,860	.54		13	.06	111	39	178	4.6	244	373	163	.3	5.2	.4	1,007	1.37	15,930	438	238	
Feb. 20-28 ---------	5,270	.30		13	.04	113	43	186	5.0	247	398	175	.3	6.2	.4	1,061	1.44	15,100	459	256	
Mar. 1-3,5-10 ------	5,440	.33		15	.03	110	41	183	5.3	246	380	170	.5	6.3	.5	1,032	1.40	15,160	443	242	
Mar. 11-20 ---------	6,090	.58		14	.03	107	38	180	5.0	243	371	165	.4	6.3	.5	1,006	1.37	16,540	423	224	
Mar. 21-31 ---------	6,850	.54		15	.03	107	37	169	5.3	241	365	150	.4	6.2	.4	974	1.32	18,010	419	222	
Apr. 1-10----------	10,000	1.12		13	.05	93	29	131	4.5	220	280	113	.4	5.7	.4	778	1.06	21,010	351	170	
Apr. 11-20---------	12,200	1.25		16	.04	84	26	111	5.0	218	238	98	.1	4.6	.5	690	.94	22,730	316	138	
Apr. 21-30---------	14,700	.97		15	.06	77	24	89	4.2	200	208	73	.2	4.5	.4	593	.81	23,540	290	126	
May 1-10----------	15,000	.95		14	.03	72	22	75	3.7	183	191	60	.3	3.8	.3	532	.72	21,550	270	120	
May 11-20---------	19,200	.89		13	.03	66	22	68	4.0	172	178	55	.1	3.8	.4	495	.67	25,700	255	114	
May 21-31---------	31,300	1.09		14	.04	63	18	50	3.7	175	135	36	.3	3.5	.3	410	.56	34,600	231	88	
June 1-10----------	49,600	1.09		14	.05	52	15	37	3.2	154	103	25	.2	2.7	.3	328	.45	43,900	192	66	
June 11-20---------	84,900	.89		17	.02	52	11	27	2.8	160	78	18	.3	2.4	.1	287	.39	65,800	175	44	
June 21-30---------	66,700	.50		15	.04	44	9.4	23	2.2	133	65	16	.3	1.6	.1	242	.33	43,600	148	40	
July 1-10----------	36,600	.26		13	.05	45	12	31	2.9	126	85	26	.3	1.9	.1	279	.38	27,600	162	58	
July 11-20---------	22,700	.11		11	.08	55	14	46	3.7	143	117	37	.3	3.3	.2	358	.49	21,940	195	78	
July 21-31---------	15,500	.35		14	.22	76	21	72	5.6	166	213	59	.4	2.2	.3	545	.74	22,810	276	140	
Aug. 1-10----------	10,800	.64		15	.09	83	24	98	5.4	177	253	86	.5	3.3	.4	655	.89	19,100	306	160	
Aug. 11-19---------	9,010	.93		15	.07	103	27	133	5.1	215	315	104	.5	2.3	.3	811	1.10	19,730	368	192	
Aug. 21-31---------	8,610	1.26		14	.24	138	42	142	3.2	218	464	115	.6	1.8	.3	1,028	1.40	23,900	517	338	
Sept. 1-10---------	9,000	2.08		17	.20	150	39	158	6.6	223	521	120	.5	4.7	.2	1,127	1.53	27,400	535	352	
Sept. 11-20--------	6,260	.49		15	.36	130	41	164	5.1	201	478	136	.5	1.8	.3	1,071	1.46	18,100	493	328	
Sept. 21-30--------	7,680	.67		13	.15	123	41	159	5.8	200	458	138	.7	2.8	.3	1,040	1.41	21,570	476	312	
Average		—		13	0.10	108	39	159	5.3	216	378	143	0.3	5.3	0.4	958	1.30		430	253	
Weighted average	14,110	—		14	0.07	74	22	81	3.9	177	204	69	0.3	3.5	0.3	559	0.76	21,360	275	130	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1935	8,680	--	--	15	0.11	134	38	187	6.7	229	507	126	0.6	4.5	0.4	1,132	1.54	26,500	490	303	
Oct. 11-20	5,210	--	--	11	.05	124	43	169	5.9	207	453	146	.5	5.4	.4	1,060	1.44	14,910	486	317	
Oct. 21-31	5,050	--	--	11	.06	129	49	193	6.2	216	496	170	.5	6.1	.4	1,167	1.59	15,910	524	346	
Nov. 1-10	5,360	0.13	--	15	.05	133	54	201	5.1	233	532	180	.7	7.0	.5	1,243	1.69	17,990	554	363	
Nov. 11-13,15-20	5,780	.09	--	13	.03	126	51	187	5.9	237	483	165	.4	6.8	.3	1,155	1.57	18,020	524	330	
Nov. 21-30	5,770	.07	--	15	.02	119	49	180	5.3	236	450	162	.3	6.0	.3	1,103	1.50	17,180	498	305	
Dec. 1-10	5,750	.10	--	14	.04	116	48	177	5.4	230	439	160	.3	5.9	.3	1,079	1.47	16,750	487	298	
Dec. 11-20	4,860	.05	--	14	.02	122	50	193	5.6	239	461	180	.3	6.2	.4	1,150	1.56	15,090	510	314	
Dec. 21-31	3,640	.03	--	12	.03	127	54	221	5.8	262	469	218	.3	6.4	.3	1,243	1.69	12,220	539	324	
Jan. 1-10, 1936	4,100	.04	--	14	.02	138	58	230	5.8	273	513	230	.3	8.4	.4	1,332	1.81	14,750	583	360	
Jan. 11-20	4,710	.04	--	13	.02	131	53	210	4.8	268	471	202	.3	7.4	.4	1,225	1.67	15,580	545	326	
Jan. 21-31	4,760	.04	--	17	.02	121	49	197	5.9	254	439	186	.4	7.2	.4	1,148	1.56	14,750	504	296	
Feb. 1-10	5,380	.08	--	15	.04	118	47	190	6.1	240	429	177	.3	6.7	.3	1,107	1.51	16,080	488	292	
Feb. 11-20	5,400	.09	--	16	.10	114	46	189	9.3	234	428	180	.3	4.5	.2	1,102	1.50	16,070	474	282	
Feb. 21-29	6,610	.21	--	17	.15	110	44	179	9.1	227	420	160	.4	4.3	.2	1,056	1.44	18,850	456	270	
Mar. 1-10	7,480	.50	--	17	.13	111	41	178	8.0	233	433	138	.4	4.7	.2	1,036	1.41	20,920	446	254	
Mar. 11-20	8,920	.68	--	17	.05	102	33	153	4.8	228	355	125	.2	3.8	.2	906	1.23	21,820	390	203	
Mar. 21-31	8,180	.34	--	17	.03	92	30	127	4.6	219	294	110	.1	4.9	.2	788	1.07	17,400	353	174	
Apr. 1-10	7,390	.34	--	15	.02	97	33	140	4.5	224	323	115	.1	3.8	.2	842	1.15	16,800	378	194	
Apr. 11-20	15,000	.88	--	15	.04	87	29	123	4.6	210	271	105	.2	3.1	.2	741	1.01	30,000	336	164	
Apr. 21-30	43,700	1.19	--	16	.20	63	18	45	8.3	183	130	34	.5	1.2	.2	406	.55	47,900	231	81	
May 1-10	53,000	.73	--	14	.08	54	14	25	8.0	167	80	21	.4	2.7	.3	301	.41	43,100	192	56	
May 11-20	51,900	.50	--	16	.12	56	13	31	4.3	163	82	24	.3	1.6	.3	309	.42	43,300	194	60	
May 21-31	68,900	.46	--	13	.24	50	11	22	5.0	155	62	17	.2	1.3	.2	258	.35	48,000	170	43	
June 1-10	58,800	.31	--	16	.20	47	11	29	3.8	139	78	21	.1	1.4	.2	276	.38	43,800	162	48	
June 11-20	45,200	.22	--	14	.20	50	13	36	3.8	144	94	25	.1	1.3	.3	308	.42	37,600	178	60	
June 21-30	32,500	.13	--	13	.08	49	13	40	4.0	138	95	30	.2	1.6	.3	314	.43	27,600	176	63	
July 1-10	20,000	--	62.7	14	.05	55	17	48	3.7	148	131	41	.4	2.7	.3	385	.52	20,790	208	86	
July 11-20	19,000	--	165	17	.08	201	40	118	10	202	642	74	.4	1.5	.5	1,203	1.64	61,700	666	500	
July 21-31	12,400	.08	--	24	.72	118	31	114	8.5	206	367	78	.5	3.1	.5	846	1.15	28,300	422	253	
Aug. 1-10	18,400	.29	--	27	1.5	145	37	133	10	258	472	82	.2	.1	.5	1,035	1.41	51,400	514	302	
Aug. 11-20	15,800	1.98	127	22	.06	121	30	112	6.9	244	360	69	.4	.2	.2	842	1.15	35,900	426	226	
Aug. 23-31	11,300	2.30	151	18	.06	147	36	138	7.4	250	466	86	.3	1.0	.2	1,023	1.39	31,200	515	310	
Sept. 1-10	15,500	3.92	161	18	.06	183	41	143	8.5	272	580	81	.1	.2	.3	1,189	1.62	49,800	625	402	
Sept. 11-20	8,660	1.26	158	17	.10	151	39	148	8.3	246	490	100	.1	4.9	.3	1,080	1.47	25,300	538	336	
Sept. 21-30	7,330	1.56	163	19	.08	139	38	166	8.8	250	473	119	.3	4.1	.4	1,090	1.48	21,570	503	298	
Average		--	--	16	0.14	111	36	138	6.4	218	369	115	0.3	3.9	0.3	902	1.23		425	246	
Weighted average	16,970	--	--	16	0.18	83	23	79	6.0	186	228	61	0.3	2.4	0.3	591	0.80	27,100	302	149	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1936 to September 1937

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	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)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1936 ----	5,330	0.37	166	15	0.02	132	44	184	6.4	233	479	153	0.3	5.3	0.2	1,134	1.54	16,320	510	320	
Oct. 11-20----------	5,630	.15	175	14	.02	132	51	197	6.7	222	530	164	.4	6.3	.3	1,211	1.65	18,410	539	357	
Oct. 21-31----------	6,660	.43	176	14	.02	142	52	184	6.4	229	546	150	.3	7.0	.2	1,215	1.65	21,850	568	381	
Nov. 1-10----------	8,790	1.05	160	13	.04	142	47	173	7.2	226	540	123	.4	5.3	.3	1,162	1.58	27,600	548	363	
Nov. 11-20----------	7,250	.32	160	8.8	.12	126	47	171	6.7	231	480	131	.4	6.6	.3	1,091	1.48	21,360	508	318	
Nov. 21-30----------	7,070	.23	153	3.8	.08	117	46	163	5.8	227	436	133	.7	5.4	.3	1,023	1.39	19,530	481	295	
Dec. 1-3,5-10 ------	5,930	.14	156	8.6	.10	115	46	166	6.1	232	425	144	.3	5.2	.2	1,031	1.40	16,510	476	286	
Dec. 12-20----------	4,540	.08	175	6.2	.12	127	53	196	6.1	249	469	184	.3	6.7	.3	1,171	1.59	14,350	535	331	
Dec. 21-31----------	6,660	.15	178	3.8	.12	131	54	195	6.2	251	499	172	.4	7.1	.2	1,192	1.62	21,430	549	344	
Jan. 1-5,7-10, 1937-	4,620	.10	176	2.8	.08	124	53	196	7.4	252	472	162	.2	6.8	.3	1,168	1.59	14,570	528	321	
Jan. 11-15,17,19-20-	2,870	.04	133	1.0	.08	84	37	148	5.8	185	304	152	.1	4.6	.4	828	1.13	6,420	362	210	
Jan. 21-31----------	3,160	.03	165	9.6	.04	109	47	189	6.7	237	408	184	.0	5.6	.4	1,076	1.46	9,180	466	272	
Feb. 1-10----------	7,020	.75	179	15	.06	120	52	207	7.2	279	458	187	.0	5.9	.3	1,190	1.62	22,560	514	285	
Feb. 11-20----------	12,300	1.78	128	8.8	.08	98	29	136	8.0	225	321	109	.0	4.9	.3	826	1.12	27,400	364	179	
Feb. 21-28----------	9,320	1.00	137	11	.10	106	32	153	7.9	214	370	120	.0	4.8	.3	910	1.24	22,900	396	220	
Mar. 1-10----------	8,280	.58	153	16	.06	122	39	164	6.9	239	408	137	.4	5.6	.4	1,017	1.38	22,740	465	269	
Mar. 11-20----------	14,500	1.87	134	14	.12	109	31	146	7.4	243	357	101	.2	4.2	.4	890	1.21	34,800	400	200	
Mar. 21-31----------	16,900	2.22	126	12	.23	101	32	135	7.0	237	349	82	.2	2.3	.4	838	1.14	38,200	384	190	
Apr. 1-10----------	13,100	1.24	121	12	.08	94	31	126	6.2	223	311	88	.3	3.0	.4	781	1.06	27,600	362	179	
Apr. 11-20----------	27,100	2.51	101	11	.20	81	26	95	6.4	217	238	67	.0	.5	.4	632	.86	46,200	309	131	
Apr. 21-30----------	38,800	1.69	70.1	9.2	.21	69	19	56	4.3	196	152	38	.3	.7	.3	445	.61	46,600	250	90	
May 1-10----------	34,300	.76	61.8	8.6	.16	61	17	46	5.3	180	123	32	.4	1.4	.3	384	.52	35,600	222	74	
May 11-20----------	69,600	1.37	50.7	8.4	.16	55	15	31	5.0	173	91	20	.4	.5	.2	311	.42	58,400	199	57	
May 21-31----------	64,700	.90	43.9	7.0	.12	49	12	25	5.8	151	74	19	.1	.6	.1	267	.36	46,600	172	48	
June 1-10----------	54,500	.73	52.8	8.0	.14	53	15	34	7.7	155	106	23	.1	.7	.2	324	.44	47,700	194	67	
June 11-20----------	34,000	.27	58.7	7.4	.08	54	16	43	5.8	152	122	33	.2	1.0	.2	357	.49	32,800	201	76	
June 21-30----------	32,600	.28	62.8	19	.17	60	17	46	4.3	161	135	33	.0	.8	.05	395	.54	34,800	220	88	
July 1-10----------	23,800	.41	76.9	20	.53	70	20	60	4.2	172	176	44	.0	1.4	.05	481	.65	30,900	256	116	
July 11-20----------	27,900	2.33	131	24	.44	122	34	100	6.0	222	387	58	.2	.1	.1	841	1.14	63,400	444	262	
July 21-31----------	15,700	1.25	118	21	.17	99	30	109	8.2	211	313	81	.2	.8	.2	766	1.04	32,500	370	198	
Aug. 1-10----------	10,200	1.41	143	20	.21	127	37	134	9.2	213	429	100	.2	1.5	.1	962	1.31	26,500	469	294	
Aug. 11-20----------	6,160	.61	148	18	.16	118	39	155	8.8	222	403	139	.2	.5	.1	991	1.35	16,480	455	273	
Aug. 21-31----------	4,510	.41	163	17	.08	122	43	196	6.7	234	446	173	.0	5.0	.4	1,124	1.53	13,690	482	290	
Sept. 1-10----------	11,600	3.07	191	19	.1	190	50	186	8.3	259	662	133	.0	2.0	.2	1,378	1.87	43,200	680	467	
Sept. 11-20----------	6,260	1.49	175	15	.16	157	44	186	6.1	235	569	136	.1	2.8	.4	1,232	1.68	20,820	573	380	
Sept. 21-30----------	4,910	.67	177	16	.16	140	46	198	8.5	231	509	177	.0	7.2	.6	1,216	1.65	16,120	538	349	
Average		--	--	12	0.13	107	36	137	6.6	217	364	111	0.2	3.6	0.3	885	1.20		415	237	
Weighted average	17,140	--	--	12	0.17	83	25	85	6.1	193	238	64	--	1.9	--	610	0.83	28,200	310	152	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1937 to September 1938

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1937 ----	10,300	4.70	178	16	0.20	152	38	209	8.2	235	593	125	0.1	3.8	0.4	1,261	1.71	35,200	536	343	
Oct. 11-20----------	5,640	.46	189	12	.12	144	52	214	6.9	222	577	180	.0	7.3	.2	1,303	1.77	19,860	574	392	
Oct. 21-31----------	7,730	.72	183	14	.04	145	51	192	6.9	233	567	148	.2	4.8	.5	1,244	1.69	26,000	572	380	
Nov. 1-10----------	6,770	.33	165	13	.04	125	47	173	6.1	224	479	143	.1	4.7	.5	1,101	1.50	20,130	506	322	
Nov. 11-20----------	6,840	.29	169	11	.04	122	49	177	6.4	227	479	149	.0	4.6	.6	1,110	1.51	20,510	506	320	
Nov. 21-30----------	6,390	.17	168	13	.04	121	49	182	6.4	236	462	160	.1	4.9	.5	1,115	1.52	19,240	504	310	
Dec. 1-10----------	6,270	.15	164	12	.04	114	49	178	7.0	235	445	159	.1	5.0	.4	1,085	1.48	18,370	486	294	
Dec. 11-20----------	7,410	.42	165	13	.04	119	48	173	7.2	226	460	152	.2	4.7	.5	1,088	1.48	21,780	494	310	
Dec. 21-31----------	6,220	.27	176	13	.04	121	50	194	7.7	230	492	157	.2	4.7	.4	1,153	1.57	19,370	508	319	
Jan. 1-10, 1938 ----	5,180	.10	177	14	.08	126	53	207	7.7	251	481	190	.0	4.2	.6	1,207	1.64	16,900	532	327	
Jan. 11-20----------	5,140	.09	176	13	.08	128	53	204	7.0	261	479	191	.1	4.3	.6	1,208	1.64	16,770	538	324	
Jan. 21-31----------	6,110	.19	166	13	.08	122	50	193	7.0	251	451	173	.1	4.3	.5	1,137	1.55	18,760	510	304	
Feb. 1-10----------	5,760	.17	169	15	.04	117	49	187	5.4	248	441	170	.0	5.5	.3	1,112	1.51	17,290	494	290	
Feb. 11-19----------	7,170	.46	163	14	.04	115	47	180	3.8	244	442	153	.1	4.5	.4	1,080	1.47	20,900	480	280	
Feb. 20-28----------	6,550	.34	156	18	.04	109	44	171	5.4	235	424	141	.0	4.9	.4	1,033	1.40	18,270	453	260	
Mar. 1-10----------	19,300	3.78	142	15	.06	106	34	155	7.7	247	367	115	.1	4.9	.4	926	1.26	48,400	404	202	
Mar. 11-20----------	12,500	1.55	123	13	.06	101	32	129	5.4	241	336	85	.1	5.9	.4	826	1.12	27,800	384	186	
Mar. 21-31----------	12,500	1.20	115	13	.08	96	34	127	5.8	227	320	92	.0	3.7	.2	803	1.09	27,100	380	194	
Apr. 1-10----------	11,100	.82	113	16	.07	86	30	119	2.4	218	279	88	.5	3.7	.4	732	1.00	21,930	338	160	
Apr. 11-20----------	15,400	1.22	111	14	.06	91	32	107	2.6	226	281	83	.4	3.8	.3	726	.99	30,100	358	174	
Apr. 21-30----------	51,300	3.99	72.9	14	.06	71	22	59	3.5	212	164	38	.1	.8	.2	477	.65	66,100	268	94	
May 1-10 ----------	55,500	3.25	51.3	14	.06	57	15	31	4.8	187	88	21	.3	1.7	.1	325	.44	48,700	204	50	
May 11-20----------	40,000	1.42	52.6	15	.04	59	17	42	2.4	186	109	28	.1	1.1	.3	365	.50	39,000	217	64	
May 21-31----------	64,500	2.81	48.2	12	.04	54	15	32	2.9	174	86	19	.0	1.0	.3	308	.42	53,600	196	54	
June 1-10----------	95,000	2.61	43.1	16	.02	52	11	24	3.4	168	64	14	.1	.9	.2	268	.36	68,800	175	38	
June 11-20----------	75,600	2.08	41.6	14	.10	50	13	19	4.2	155	69	14	.1	.3	.2	260	.35	53,000	178	52	
June 21-30----------	65,000	2.10	45.0	16	.04	51	10	30	4.0	150	82	17	.1	.8	.2	285	.39	50,000	168	46	
July 1-10----------	49,000	1.27	55.1	16	.06	61	14	37	4.3	156	123	23	.1	.9	.3	356	.48	47,100	210	82	
July 11-20 ---------	23,200	.14	61.4	13	.01	55	17	52	4.3	147	127	40	.1	1.7	.3	383	.52	24,040	208	87	
July 21-31 ---------	14,700	.20	86.5	14	.01	73	23	84	5.1	166	212	68	.2	2.7	.4	564	.77	22,410	276	140	
Aug. 1-10----------	10,200	.24	111	15	.10	90	29	107	7.4	193	270	99	.1	2.1	.3	715	.97	19,720	344	186	
Aug. 11-20 ---------	10,300	1.10	140	16	.10	119	34	144	8.0	212	407	113	.1	1.8	.3	947	1.29	26,200	437	263	
Aug. 21-31 ---------	6,230	.57	155	15	.08	132	39	155	7.4	211	458	130	.0	2.5	.4	1,043	1.42	17,540	490	317	
Sept. 1-10 ---------	16,400	2.51	165	14	.08	154	40	168	7.7	229	543	118	.0	1.9	.4	1,159	1.58	51,300	549	362	
Sept. 11-20---------	20,000	2.66	135	16	.08	137	35	126	8.2	238	454	67	.2	1.8	.4	962	1.31	52,100	486	291	
Sept. 21-30 --------	10,700	.63	125	17	.23	113	33	121	6.7	200	384	84	.1	2.9	.4	860	1.17	24,850	418	254	
Average		--	--	14	0.07	102	35	131	5.8	214	347	104	--	3.3	--	848	1.15		398	223	
Weighted average	21,590	--	--	14	0.06	76	22	73	4.6	189	199	53	--	1.9	--	538	0.73	31,300	280	125	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1938 ----	7,250	0.18	142	15	0.15	111	39	147	7.0	200	400	129	0.1	2.4	0.4	949	1.29	18,580	438	274	
Oct. 11-20----------	11,450	.56	151	14	.21	122	42	153	6.4	199	464	116	.2	2.9	.4	1,019	1.39	31,500	477	314	
Oct. 21-31----------	10,180	.40	133	14	.04	110	40	137	14	207	405	101	.4	4.9	.2	928	1.26	25,500	439	270	
Nov. 1-10----------	8,840	.18	133	12	.04	103	40	137	14	205	388	109	.1	4.2	.4	908	1.23	21,700	422	254	
Nov. 11-20----------	8,840	.13	145	13	.04	106	44	148	11	217	405	122	.1	3.6	.3	960	1.31	22,900	446	268	
Nov. 21-30----------	7,470	.73	148	13	.04	107	44	150	10	222	400	129	.4	3.4	.2	966	1.31	19,500	448	266	
Dec. 1-10----------	6,180	.06	160	15	.04	114	47	166	10	240	421	152	.3	5.0	.2	1,049	1.43	17,500	478	282	
Dec. 11-20----------	8,060	.09	152	16	.08	114	47	161	4.2	238	418	140	.6	5.0	.6	1,023	1.39	22,300	478	283	
Dec. 21-31----------	6,870	.08	144	14	.08	103	44	156	4.3	218	384	140	.4	5.2	.6	958	1.30	17,800	438	260	
Jan. 1-10,1939------	5,010	.04	161	13	.04	112	47	184	4.2	243	410	175	.0	5.6	.6	1,071	1.46	14,500	473	274	
Jan. 11-20----------	6,150	.04	166	13	.04	119	49	187	3.7	256	431	178	.0	6.1	.6	1,113	1.51	18,500	498	288	
Jan. 21-31----------	6,390	.05	154	19	.06	108	46	161	12	246	390	154	.5	3.7	1.0	1,015	1.38	17,500	458	257	
Feb. 1-10----------	5,570	.04	154	19	.02	106	45	163	12	242	378	162	.4	3.8	1.0	1,008	1.37	15,200	450	251	
Feb. 11-19----------	5,610	.05	162	18	.04	110	47	177	10	252	398	173	.4	4.0	1.0	1,062	1.44	16,100	468	262	
Feb. 20-28----------	5,990	.07	159	21	.02	108	45	173	11	247	390	167	.5	4.0	1.0	1,041	1.42	16,800	454	252	
Mar. 1-10----------	6,100	.06	157	17	.06	108	43	169	4.6	235	381	159	.1	4.2	.4	1,002	1.36	16,500	446	254	
Mar. 11-20----------	8,590	.32	153	15	.08	109	41	161	5.0	233	385	148	.0	5.6	.4	984	1.34	22,800	440	250	
Mar. 21-31----------	24,200	2.35	129	16	.08	105	32	130	4.5	246	346	83	.0	4.5	.5	842	1.15	55,000	394	192	
Apr. 1-10----------	23,100	1.87	99.6	14	.08	84	24	94	4.5	223	240	59	.0	3.3	.6	633	.86	39,500	308	125	
Apr. 11-20----------	19,900	.82	83.3	18	.04	74	23	70	4.3	211	177	51	.3	3.5	.4	525	.71	28,200	279	106	
Apr. 21-30----------	18,100	.67	82.3	15	.08	71	24	71	4.3	198	177	55	.3	2.9	.4	518	.70	25,300	276	113	
May 1-10----------	35,900	1.51	67	20	.16	68	19	47	1.4	216	124	33	.4	1.8	.4	421	.57	40,800	248	70	
May 11-20----------	40,100	.82	49	23	.21	51	13	36	2.2	168	82	25	.4	1.6	.4	317	.43	34,300	181	44	
May 21-31----------	41,300	.58	48	18	.44	48	13	33	2.1	154	81	23	.4	1.6	.4	296	.40	33,000	174	48	
June 1-10----------	38,000	.56	52.0	16	.12	54	14	41	4.3	158	99	35	.5	.5	.8	342	.47	35,100	192	63	
June 11-20----------	29,200	.22	54.5	15	.08	54	15	41	4.5	154	107	33	.5	1.0	.8	347	.47	27,400	196	70	
June 21-30----------	17,100	.12	63.8	13	.04	56	17	56	4.3	150	133	50	.5	2.0	.8	406	.55	18,700	210	87	
July 1-10----------	11,100	.06	86.0	14	.04	67	23	83	4.6	164	194	74	.5	2.0	.8	543	.74	16,300	262	127	
July 11-20----------	7,310	.03	104	13	.04	76	28	107	4.6	173	243	102	.6	3.0	.8	662	.90	13,100	304	162	
July 21-31----------	4,730	.02	124	14	.06	81	33	130	6.7	186	268	134	.6	2.7	.7	762	1.04	9,730	338	185	
Aug. 1-10----------	4,160	.12	151	15	.08	102	39	162	8.2	216	351	162	.7	2.9	.7	949	1.29	10,700	415	238	
Aug. 11-20----------	4,800	.02	184	16	.04	132	52	199	8.5	231	520	168	.7	7.0	1.0	1,217	1.66	15,800	544	354	
Aug. 21-31----------	3,040	.06	190	16	.04	127	53	214	8.5	232	507	200	.7	6.5	1.0	1,247	1.70	10,200	535	345	
Sept. 1-10----------	6,920	1.13	176	22	.08	132	48	186	8.7	232	508	157	.7	3.0	1.0	1,180	1.60	22,000	527	337	
Sept. 11-20---------	15,300	3.61	193	16	.12	210	48	183	11	233	756	100	.7	.5	.4	1,440	1.96	59,500	722	530	
Sept. 21-30---------	7,780	.84	160	15	.12	147	42	160	9.3	205	547	108	.5	3.2	.5	1,133	1.54	23,800	540	372	
Average		--	--	16	0.08	100	36	133	6.9	212	342	114	0.4	3.5	0.6	856	1.16		392	218	
Weighted average	13,290	--	--	17	0.13	85	28	96	5.3	198	254	77	0.4	2.7	0.6	662	0.90	23,700	327	164	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1939 to September 1940

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1939-----	5,811	0.38	165	17	0.02	134	45	177	3.4	216	493	142	0.2	6.7	1.0	1,125	1.53	17,650	520	342	
Oct. 11-20 ---------	6,185	.17	178	12	.02	134	52	195	3.8	218	538	155	.2	5.6	1.0	1,203	1.64	20,090	548	370	
Oct. 21-31 ---------	5,310	.15	172	16	.02	126	50	194	3.4	223	501	159	.2	4.7	1.0	1,164	1.58	16,690	520	337	
Nov. 1-10 ----------	5,380	.09	180	7.8	.02	126	54	203	3.5	230	511	171	.2	5.1	1.0	1,195	1.63	17,360	536	348	
Nov. 11-20 ---------	5,940	.09	175	14	.02	126	54	195	3.2	225	512	159	.2	5.0	1.0	1,179	1.60	18,910	536	352	
Nov. 21-30 ---------	5,420	.07	176	16	.01	123	52	197	3.0	242	490	166	.4	5.7	1.0	1,172	1.59	17,150	521	322	
Dec. 1-4, 6-10------	5,340	.07	182	14	.01	127	54	206	2.9	245	511	176	.2	6.5	1.0	1,218	1.66	17,560	539	333	
Dec. 11-20 ---------	5,160	.08	181	15	.01	126	54	207	2.9	252	503	179	.4	5.9	1.0	1,217	1.66	16,960	536	330	
Dec. 21-31 ---------	4,630	.07	186	13	.01	124	54	212	2.9	255	495	187	.4	5.4	1.0	1,219	1.66	15,240	532	322	
Jan. 1-10, 1940-----	4,180	.08	192	12	.02	126	57	228	4.5	250	513	211	.4	4.9	1.0	1,280	1.74	14,450	549	344	
Jan. 11-20 ---------	5,990	.20	177	11	.01	121	52	211	4.5	238	503	181	.4	4.1	1.0	1,205	1.64	19,490	516	321	
Jan. 21-31 ---------	3,680	.05	185	13	.01	120	54	225	3.7	257	479	210	.2	5.1	1.0	1,237	1.68	12,290	521	311	
Feb. 1-10 ----------	6,270	.26	181	14	.01	128	52	214	4.3	262	487	192	.2	6.1	1.0	1,227	1.67	20,770	533	319	
Feb. 11-20 ---------	5,490	.17	167	14	.01	117	48	197	4.3	249	451	172	.4	5.4	1.0	1,132	1.54	16,780	489	285	
Feb. 21-29 ---------	5,140	.07	171	13	.01	114	50	205	4.8	245	455	185	.2	4.9	1.0	1,153	1.57	16,000	490	289	
Mar. 1-10 ----------	7,930	.56	166	15	.14	116	45	187	5.1	249	440	159	.4	5.0	.5	1,095	1.49	23,450	474	270	
Mar. 11-20 ---------	7,790	.35	150	12	.16	106	41	166	5.3	238	402	134	.2	5.0	.5	989	1.35	20,800	433	238	
Mar. 21-31 ---------	7,150	.23	152	17	.14	102	43	171	5.3	229	395	147	.4	3.5	.5	997	1.36	19,250	432	244	
Apr. 1-10 ----------	9,650	.39	133	15	.14	92	37	144	5.8	216	337	123	.4	3.5	.5	864	1.18	22,510	382	204	
Apr. 11-20 ---------	9,040	.33	120	14	.12	85	33	129	5.3	209	293	111	.4	3.5	.5	777	1.06	18,970	348	176	
Apr. 21-30 ---------	16,230	.90	103	17	.06	82	28	101	5.6	208	244	82	.5	1.2	.3	664	.90	29,100	320	149	
May 1-10 ----------	22,460	.88	72.4	15	.12	65	20	56	4.0	184	152	46	.2	1.2	.3	450	.61	27,300	244	93	
May 11-20 ---------	38,800	1.35	58.5	14	.08	58	16	43	4.0	172	113	31	.5	1.2	.3	365	.50	38,200	210	70	
May 21-26, 28-31----	35,400	.67	55.6	16	.39	60	15	37	3.8	169	107	27	.4	1.1	.1	351	.48	33,500	211	72	
June 1-10 ----------	37,200	.72	53.8	15	.62	57	14	33	3.5	162	102	28	.3	.3	.0	334	.45	33,500	200	66	
June 11-20 ---------	23,150	.21	59.8	15	.37	58	16	45	3.7	154	122	38	.3	.5	.0	375	.51	23,440	210	84	
June 21-24, 26, 28-30	16,230	.10	68.6	13	.07	62	18	59	4.0	151	150	52	.4	1.5	.1	434	.59	19,020	228	104	
July 1-4, 6, 8-10---	10,110	.21	93.0	16	.11	79	24	84	4.8	154	234	77	--	2.4	.1	598	.81	16,320	296	170	
July 11-20 ---------	5,940	.08	123	16	.14	91	32	128	5.4	175	297	125	.4	2.5	.1	784	1.07	12,570	358	215	
July 21-31 ---------	5,260	.66	153	16	.13	109	39	169	6.4	203	385	163	.4	3.2	.1	991	1.35	14,070	432	266	
Aug. 1-10 ----------	3,730	.12	185	18	.14	139	44	212	7.5	236	512	186	.4	4.8	.1	1,240	1.69	12,490	528	334	
Aug. 11-20 ---------	2,930	1.35	202	17	.14	119	46	258	7.4	230	479	254	.4	3.5	.1	1,298	1.77	10,270	486	298	
Aug. 21-31 ---------	5,640	.41	207	17	.17	164	47	240	8.3	255	637	187	.4	2.0	.2	1,428	1.94	21,750	603	394	
Sept. 1-10 ---------	5,240	2.04	234	19	.75	215	62	253	11	270	834	184	.6	2.5	.8	1,715	2.33	24,260	792	570	
Sept. 11-20 --------	7,090	3.05	186	20	1.0	162	43	198	8.4	260	568	153	.7	2.6	.8	1,285	1.75	24,600	582	368	
Sept. 21-22, 24-30--	11,820	4.08	192	20	1.3	188	46	198	8.6	245	696	125	.6	.1	.8	1,404	1.91	44,800	658	457	
Weighted average	10,240	--	113	15	0.02	92	31	115	4.6	200	296	95	0.4	2.5	0.4	750	1.02	20,740	357	193	

COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1940 to September 1941

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1940 ----	19,570	0.63	144	18	1.3	134	33	145	7.6	236	470	80	0.6	0.2	0.8	1,006	1.37	53,200	490	276	
Oct. 11-20----------	10,610	1.61	137	15	.12	124	36	132	11	218	431	94	.2	3.7	.3	954	1.30	27,300	458	279	
Oct. 21-31----------	7,270	.65	149	13	.08	119	41	159	9.3	220	424	130	.1	5.0	.3	1,009	1.37	19,810	466	285	
Nov. 1-10----------	7,150	.60	162	13	.12	129	46	172	11	224	487	138	.1	6.1	.4	1,113	1.51	21,490	511	328	
Nov. 11, 12, 14-20--	6,470	.28	161	13	.12	118	48	174	9.0	223	457	152	.1	5.6	.3	1,087	1.48	18,990	492	309	
Nov. 21-26, 28-30---	8,070	.87	150	14	.12	115	41	165	8.7	226	423	135	.2	5.1	.4	1,018	1.38	22,180	456	270	
Dec. 1-10----------	6,220	.28	158	13	.12	119	47	167	6.6	232	438	154	.4	4.9	.4	1,064	1.45	17,870	490	300	
Dec. 11-20----------	6,860	.51	152	12	.12	114	43	161	6.4	236	406	147	.4	4.9	.4	1,011	1.37	18,730	462	268	
Dec. 21-31----------	6,800	1.10	147	12	.08	114	38	159	10	249	376	148	.3	5.7	.3	986	1.34	18,100	440	236	
Jan. 1-6, 8-10, 1941	7,960	1.68	152	14	.08	112	38	170	9.6	251	399	146	.3	5.8	.3	1,018	1.38	21,880	436	230	
Jan. 11-20----------	7,170	2.44	152	13	.08	108	37	186	8.3	256	382	155	.3	6.5	.3	1,022	1.39	19,780	422	212	
Jan. 21-31----------	6,120	.42	162	12	.08	120	45	183	9.0	253	429	166	.3	5.6	.3	1,095	1.49	18,090	484	277	
Feb. 1-10----------	6,340	.36	162	12	.08	114	44	178	7.7	244	407	161	.3	6.0	.3	1,050	1.43	17,970	466	266	
Feb. 11-19----------	7,960	1.62	151	12	.08	110	37	173	7.7	244	377	147	.3	5.4	.3	990	1.35	21,280	426	226	
Feb. 20-28----------	13,820	1.96	137	12	.08	105	31	156	8.0	238	354	107	.3	5.1	.3	896	1.22	33,400	390	194	
Mar. 1-10----------	12,720	1.35	140	12	.08	104	34	155	8.7	226	394	103	.3	4.7	.3	927	1.26	31,800	400	214	
Mar. 12-20----------	12,960	2.64	129	12	.08	89	29	151	7.4	222	324	106	.3	4.5	.3	833	1.13	29,100	341	159	
Mar. 21-24, 27-31---	15,050	2.07	128	18	.08	97	30	141	6.8	244	322	99	.3	1.8	.4	836	1.14	34,000	366	166	
Apr. 1-8, 10--------	18,000	1.84	110	16	.04	90	28	109	4.8	236	267	81	.4	1.5	.2	714	.97	34,700	340	146	
Apr. 11-20----------	21,220	1.97	95.2	14	.04	82	24	85	5.0	215	228	59	.3	3.5	.4	607	.83	34,800	303	127	
Apr. 21-26, 28-30 --	21,800	1.82	94.1	14	.06	82	25	83	4.3	218	226	58	.3	2.5	.3	603	.82	35,500	308	129	
May 1, 2, 4-10 -----	57,400	2.80	78.7	14	.04	78	20	63	5.1	216	180	38	--	1.5	.6	506	.69	78,400	276	100	
May 11-20 ----------	99,200	2.00	52.6	15	.02	58	15	32	3.8	173	105	18	.4	.5	.1	333	.45	89,200	206	64	
May 21-31 ----------	85,800	1.55	51.3	15	.08	56	14	34	3.2	167	106	17	.2	.2	.1	328	.45	76,000	198	60	
June 1-10----------	72,200	1.04	48.1	14	.10	54	13	29	4.2	165	89	19	.2	.2	.1	304	.41	59,300	188	54	
June 11-20----------	63,900	1.26	60.1	15	.06	65	16	40	3.8	168	144	22	.2	.6	.1	389	.53	67,100	228	90	
June 21, 23-30 -----	70,600	.91	50.5	15	.06	58	14	30	3.8	174	91	18	.2	.6	.3	316	.43	60,200	202	60	
July 3-4, 6-8, 10 --	41,200	.28	51.7	13	.06	54	14	35	3.0	154	99	25	.2	.4	.3	320	.44	35,600	192	66	
July 11, 13-15, 18--	25,900	.20	62.5	14	.02	62	16	45	3.2	164	131	35	.2	1.9	.6	389	.53	27,200	220	86	
July 21-22,24,26-28,30-31	19,290	.42	88.9	17	.01	84	23	75	4.6	187	230	51	.3	2.4	.4	579	.79	30,200	304	150	
Aug. 1-4, 6-10 -----	11,110	.18	105	16	.02	87	28	99	4.6	186	272	82	.3	2.4	.4	683	.93	20,500	332	180	
Aug. 12, 16-18, 20--	18,450	3.21	153	19	.08	142	38	151	6.6	230	516	85	.4	.2	.6	1,072	1.46	53,400	510	322	
Aug. 21-25, 28-31 --	12,580	1.08	145	19	.24	129	38	137	7.9	222	454	91	.6	1.6	.6	988	1.34	33,600	478	296	
Sept. 1-5, 8-10 ----	7,030	.53	149	17	.04	118	39	155	8.0	225	423	118	.4	3.0	.4	992	1.35	18,830	455	270	
Sept. 11-19--------	9,010	1.50	161	17	.04	124	39	177	7.8	232	473	125	.4	3.3	.4	1,081	1.47	26,300	470	280	
Sept. 22-25, 27-30--	17,170	1.74	157	14	.02	135	39	157	7.2	214	508	101	.4	1.0	.4	1,068	1.45	49,500	498	322	
Weighted average	23,400	--	85.6	15	0.09	79	22	76	5.1	193	214	53	0.3	1.6	0.3	561	0.76	35,400	288	130	

COLORADO RIVER BELOW HOOVER DAM, ARIZ.-NEV.

Chemical analyses, in parts per million, water year October 1939 to September 1940

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1939	11,100		112	16	0.02	107	27	99	5.3	160	334	76	0.4	3.4	0.5	747	1.02	22,390	378	247	36
Oct. 11-20	10,970		112	16	.02	108	26	98	5.1	157	337	78	.4	2.5	.5	748	1.02	22,160	376	246	36
Oct. 21-31	10,920		111	14	.02	108	26	96	5.6	156	334	74	.2	3.0	.5	738	1.00	21,760	376	248	35
Nov. 1-7	12,030		110	15	.02	110	26	97	5.2	157	335	75	.4	3.3	.5	744	1.01	24,170	382	253	35
Nov. 11-20	12,200		109	12	.02	109	26	94	5.0	155	337	72	.2	3.6	.5	735	1.00	24,210	379	252	35
Nov. 21-30	11,610		111	13	.01	109	26	94	3.8	156	338	71	.2	3.6	.4	736	1.00	23,070	379	251	35
Dec. 1-3, 5-10	11,470		110	13	.01	109	26	94	3.7	155	339	71	.2	3.6	.4	736	1.00	22,790	379	252	35
Dec. 11-20	11,760		110	11	.01	109	26	94	3.7	156	340	72	.2	3.6	.4	736	1.00	23,370	379	251	35
Dec. 21-30	11,080		110	11	.01	110	26	96	3.4	155	343	71	.2	3.6	.4	741	1.01	22,180	382	254	35
Jan. 1-10, 1940	12,060		111	12	.01	110	26	94	3.5	155	344	71	.2	3.6	.4	741	1.01	24,130	382	254	35
Jan. 11-20	11,410		111	11	.01	110	26	94	4.0	155	344	73	.2	3.5	.4	742	1.01	22,860	382	254	35
Jan. 21-26, 28-31	9,910		112	12	.01	110	26	92	6.1	156	341	70	.2	2.7	.6	737	1.00	19,720	382	254	34
Feb. 1-9	8,170		112	11	.01	110	27	94	5.0	155	346	70	.2	4.0	.6	744	1.01	16,410	386	259	34
Feb. 11-20	8,070		112	13	.01	110	27	96	4.2	158	346	73	.0	2.7	.6	750	1.02	16,340	386	256	35
Feb. 21-29	7,990		112	12	.01	110	27	98	4.5	160	347	74	.2	3.6	.6	755	1.03	16,290	386	254	35
Mar. 1-7, 9-10	7,780		113	11	.15	109	27	95	5.4	159	341	78	.2	3.0	.4	748	1.02	15,710	383	253	35
Mar. 11-20	10,310		115	12	.15	110	27	98	4.6	164	347	78	.2	3.0	.4	761	1.03	21,180	386	251	35
Mar. 21-23, 25-30	12,640		117	14	.10	111	29	101	6.9	169	351	83	.5	3.5	.5	783	1.06	26,720	396	258	35
Apr. 1-10	11,090		118	14	.10	111	29	103	6.2	169	354	83	.5	3.5	.5	788	1.07	23,600	396	258	36
Apr. 11-13, 15-20	10,060		117	14	.10	110	29	103	5.6	166	354	85	.5	3.5	.5	786	1.07	21,350	394	258	36
Apr. 22-27, 29-30	10,240		116	16	.06	110	28	99	5.4	164	349	82	.4	2.0	.5	773	1.05	21,370	390	255	35
May 1-4, 6-10	10,300		117	15	.06	110	28	99	5.8	164	353	82	.4	1.8	.4	776	1.06	21,580	390	255	35
May 11, 13-18, 20	10,320		117	13	.06	110	28	99	5.8	162	352	82	.5	1.8	.4	772	1.05	21,510	390	256	35
May 21-25, 27-31	7,620		117	12	.08	110	28	100	5.0	162	351	82	.4	1.0	.4	769	1.05	15,820	390	256	35
June 1, 3-10	9,130		116	12	.07	111	28	100	5.8	160	355	82	.4	4.4	.2	778	1.06	19,180	392	261	35
June 11-18, 20	9,900		116	11	.06	111	28	100	5.6	161	355	80	.4	3.5	.2	774	1.05	20,690	392	260	35
June 21-27, 30	10,320		116	10	.06	111	29	100	5.6	159	356	83	.5	3.0	.2	777	1.06	21,650	396	266	35
July 1-10	11,000		116	12	.08	111	29	102	5.9	162	355	82	.4	2.6	.2	780	1.06	23,170	396	263	35
July 11-19	11,570		117	11	.07	111	29	102	5.9	161	360	82	.4	2.4	.2	784	1.07	24,490	396	264	35
July 21-31	10,330		117	14	.10	111	30	101	5.4	160	358	81	.4	3.3	.1	783	1.06	21,840	400	270	35
Aug. 1-3, 6-10	11,170		116	13	.10	111	30	100	5.1	158	358	78	.4	2.5	.1	776	1.06	23,400	400	271	35
Aug. 11-20 a	10,880		115	12	.12	111	29	97	5.3	155	356	79	.4	2.5	.1	769	1.05	22,590	396	269	34
Aug. 21-31 a	10,930		115	11	.09	110	29	97	5.3	155	355	79	.4	2.3	.1	765	1.04	22,580	394	266	34
Sept. 1-4, 6, 8-10 a	10,680		116	19	.13	112	30	99	5.0	157	358	79	.6	2.2	.1	782	1.06	22,550	403	274	34
Sept. 12-13, 15-20	12,430		117	11	.06	112	28	99	6.6	156	359	80	.2	3.3	.3	776	1.06	26,040	395	266	35
Sept. 21-22, 24-30	11,950		115	12	.06	113	28	98	6.1	155	361	79	.2	3.0	.3	777	1.06	25,070	397	270	34
Weighted average	10,600		114	13	0.06	110	28	98	5.2	159	348	77	0.3	3.0	0.4	761	1.03	21,780	390	259	35

a Upper gates on No. 2 intake tower were used during the period August 12 - September 3, 1940.

COLORADO RIVER NEAR WILLOW BEACH, ARIZ.

Chemical analyses, in parts per million, July to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
July 1-10, 1934	3,480			12	0.07	85	33	138	5.4	183	276	150	0.1	3.2	0.3	793	1.08	7,450	348	198	46
July 11-20	2,630			12	.13	96	40	171	5.8	173	355	189	.3	2.9	.4	957	1.30	6,800	404	262	47
July 21-31	2,290			13	.04	107	50	207	6.1	170	448	221	.3	3.8	.5	1,140	1.55	7,050	472	333	48
Aug. 1-10	2,600			13	.06	118	54	252	8.7	202	511	265	.4	3.2	.5	1,320	1.80	9,300	516	351	51
Aug. 11-20	2,130			16	.08	102	57	249	8.8	212	715	226	.5	4.2	.7	1,560	2.13	8,990	688	514	44
Aug. 21-31	3,150			15	.07	168	62	300	9.8	223	731	279	.5	5.0	.7	1,680	2.28	14,290	674	492	49
Sept. 1-10	5,250			14	.10	205	58	274	9.9	235	813	220	.4	2.3	.8	1,710	2.33	24,270	750	558	44
Sept. 11-20	2,380			13	.09	173	45	253	8.7	231	679	190	.4	6.6	.8	1,480	2.02	9,530	616	427	47
Sept. 21-30	2,340			14	.08	150	51	274	8.5	229	592	266	.3	7.0	.6	1,480	2.01	9,330	584	396	50

COLORADO RIVER NEAR WILLOW BEACH, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1934	3,540			14	0.11	165	67	308	9.0	232	743	284	0.7	8.8	0.8	1,710	2.33	16,380	688	498	49
Oct. 11-16, 20	2,970			17	.12	161	53	253	9.3	227	646	225	.1	6.1	.6	1,480	2.02	11,880	620	434	47
Oct. 21-31	2,850			14	.07	148	63	276	8.3	226	626	286	--	8.2	.3	1,540	2.10	11,860	628	444	48
Nov. 1-10	3,060			14	.10	142	63	269	7.5	233	594	278	--	7.2	.4	1,490	2.03	12,310	614	422	48
Nov. 11-20	3,340			13	.10	146	67	285	10	235	645	280	.2	7.6	.9	1,570	2.14	14,160	640	448	49
Nov. 21-30	4,160			a 1.8	.08	154	68	281	9.6	239	670	266	.3	9.0	.9	1,580	2.14	17,710	664	468	47
Dec. 1-10	4,330			a 1.6	.08	147	62	255	8.7	244	614	234	.3	8.6	.8	1,450	1.97	16,960	622	422	47
Dec. 11-20	4,000			14	.04	162	65	251	6.7	236	651	243	.8	9.1	.2	1,520	2.07	16,410	672	478	45
Dec. 21-31	4,950			24	.04	145	60	236	5.1	241	570	229	.8	8.9	.4	1,400	1.90	18,680	608	411	46
Jan. 1-10, 1935	4,980			15	.06	141	57	224	6.1	244	541	218	.6	8.0	.6	1,330	1.81	17,900	586	386	45
Jan. 11-20	6,060			13	.12	118	45	207	5.8	228	442	200	.2	6.6	.6	1,150	1.56	18,820	480	292	48
Jan. 21-31	4,920			17	.06	126	43	203	6.1	253	443	190	.4	6.5	.6	1,160	1.58	15,410	492	284	47
Feb. 1-10	3,770			23	.04	122	52	212	5.8	246	460	211	.3	6.3	.5	1,210	1.65	12,360	518	317	47
Feb. 11-19	2,570			19	.04	131	51	204	6.4	244	470	201	.2	6.0	.5	1,210	1.64	8,380	536	336	45
Feb. 20-28	5,130			17	.05	117	44	184	6.4	243	408	178	.2	5.4	.5	1,080	1.47	14,960	472	274	45
Mar. 1-10	6,710			22	.04	118	44	185	5.4	250	406	179	.2	4.8	.5	1,090	1.48	19,710	476	270	45
Mar. 11-20	7,010			21	.03	116	44	188	6.9	249	402	180	.2	4.2	.4	1,080	1.48	20,540	470	266	46
Mar. 21-31	7,380			15	.04	109	40	176	5.6	236	381	168	.2	4.2	.3	1,020	1.38	20,220	436	243	46
Apr. 1-10	7,440			13	.04	103	38	170	5.8	229	366	152	.2	3.8	.4	965	1.31	19,380	413	226	47
Apr. 11-20	7,130			14	.06	100	33	141	6.2	210	325	130	.2	4.2	.4	857	1.17	16,500	385	213	44
Apr. 21-30	7,320			15	.01	83	28	123	4.3	190	268	110	.3	3.5	.5	729	.99	14,410	322	166	45
May 1-10	7,330			12	.04	76	26	106	4.3	174	245	90	.1	3.2	.5	648	.88	12,820	296	154	43
May 11-20	6,890			14	.04	72	25	92	4.2	169	217	80	.2	2.8	.3	591	.80	10,990	282	144	41
May 21-31	13,100			13	.02	68	23	85	4.2	162	210	70	.1	2.8	.3	556	.76	19,670	264	131	41
June 1-10	15,800			14	.06	65	20	65	9.2	146	183	58	.2	1.2	.3	488	.66	20,820	244	124	36
June 11-20	17,600			9.8	.06	58	19	50	8.8	137	161	48	.2	1.5	.3	424	.58	20,150	222	110	32
June 21-30	16,200			10	.06	54	17	42	9.6	124	138	38	.2	1.2	.3	371	.50	16,230	205	104	30
July 1-10	14,400			9.2	.08	50	15	37	5.6	117	121	32	.3	1.0	.3	329	.45	12,790	186	90	29
July 11-20	10,100			11	.07	47	13	39	5.4	123	113	33	.4	2.6	.2	325	.44	8,860	171	70	32
July 21-31	10,100			10	.08	44	12	35	4.5	118	102	27	.4	2.6	.2	296	.40	8,070	160	63	32
Aug. 1-7, 9-10	10,200			10	.09	44	12	33	3.5	114	100	28	.4	2.3	.2	289	.39	7,960	160	66	31
Aug. 11-20	10,200			10	.06	48	12	31	3.0	112	99	26	.5	1.0	.2	286	.39	7,880	170	78	28
Aug. 21-31	10,100			12	.09	44	12	30	1.6	107	98	24	.5	1.3	.2	276	.38	7,530	160	72	29
Sept. 1-10	10,000			12	.07	65	16	30	1.1	139	133	29	.4	1.0	.2	356	.48	9,610	228	114	22
Sept. 11-20	10,000			12	.07	59	15	31	4.0	122	131	29	.5	.6	.2	342	.47	9,230	208	108	24
Sept. 21-30	9,920			9.8	.11	48	12	30	2.9	106	109	24	.5	.1	.1	289	.39	7,740	170	82	27
Weighted average	7,650			13	0.06	82	29	108	5.8	169	268	101	0.3	3.3	0.4	693	0.94	14,300	324	185	42

a Results for silica appear too low.

COLORADO RIVER NEAR WILLOW BEACH, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1935	9,860			15	0.05	70	17	54	3.7	159	172	38	0.2	3.2	0.2	451	0.61	12,010	244	114	32
Oct. 11-20	9,850			14	.03	83	21	83	4.6	155	254	62	.3	3.1	.4	601	.82	15,980	294	166	38
Oct. 21-31	9,800			8.0	.02	63	17	59	4.6	125	182	45	.3	2.2	.3	443	.60	11,720	227	124	36
Nov. 1-10	9,740			9.4	.01	66	18	61	3.4	128	194	48	.6	2.3	.2	466	.63	12,250	238	134	35
Nov. 11-20	9,690			9.8	.02	84	24	89	4.0	146	270	75	.5	2.8	.2	631	.86	16,510	308	188	38
Nov. 21-30	9,420			9.2	.03	97	30	112	4.2	164	329	96	.5	3.3	.3	762	1.04	19,380	366	231	40
Dec. 1-10	4,920			11	.02	103	33	125	5.1	176	355	108	.3	3.9	.3	831	1.13	11,040	392	248	41
Dec. 11-20	4,880			11	.02	103	34	128	5.3	182	358	112	.3	3.8	.3	845	1.15	11,130	397	248	41
Dec. 21-24, 26-31	4,830			12	.02	103	35	129	5.3	186	357	114	.3	3.9	.3	851	1.16	11,100	401	248	41
Jan. 1-10, 1936	4,860			13	.02	100	34	129	5.1	186	347	115	.3	2.5	.3	838	1.14	11,000	390	237	41
Jan. 11-20	4,840			13	.02	102	35	130	5.1	187	346	119	.3	3.4	.4	846	1.15	11,060	398	245	41
Jan. 21-31	4,820			12	.02	102	36	136	4.5	186	357	125	.3	4.0	.3	868	1.18	11,300	402	250	42
Feb. 1-10	4,830			11	.02	106	37	142	4.5	198	361	133	.3	4.2	.3	897	1.22	11,700	416	254	42
Feb. 11-20	6,160			15	.03	103	35	136	5.9	195	347	124	.3	4.5	.4	867	1.18	14,420	401	241	42
Feb. 21-29	6,020			15	.02	103	35	134	5.8	195	343	123	.3	4.7	.4	860	1.17	13,980	401	241	42
Mar. 1-10	7,780			12	.15	100	33	121	8.2	186	333	110	.3	2.6	.2	812	1.10	17,060	385	232	40
Mar. 11-20	9,710			13	.09	95	31	114	7.4	174	319	100	.4	3.6	.2	769	1.05	20,160	364	222	40
Mar. 21-31	9,750			11	.07	95	31	113	7.5	174	320	99	.2	3.6	.2	766	1.04	20,160	364	222	40
Apr. 1-10	9,710			13	.08	95	30	111	8.0	173	312	100	.4	3.3	.2	758	1.03	19,870	360	218	39
Apr. 11-20	9,720			12	.15	85	30	111	8.3	140	315	98	.2	2.2	.3	731	.99	19,180	336	221	41
Apr. 21-30	10,200			13	.12	98	30	106	8.0	196	299	93	.3	3.8	.2	748	1.02	20,600	368	208	38
May 1-10	9,980			12	.08	90	26	96	7.5	157	288	82	.2	2.6	.3	681	.93	18,350	332	203	38
May 11-20	9,060			12	.20	86	26	104	6.6	161	281	85	.4	2.5	.3	683	.93	16,710	322	190	41
May 21-30	8,330			12	.10	79	24	97	5.3	158	249	77	.4	2.5	.3	624	.85	14,030	296	166	41
June 1-10	9,670			11	.36	71	22	82	7.0	149	216	64	.2	2.2	.2	549	.75	14,330	268	146	39
June 11-20	9,790			12	.32	67	20	74	5.4	142	197	56	.0	2.2	.2	504	.69	13,320	249	132	39
June 21-30	11,300			14	.32	62	18	66	5.3	134	174	51	.0	2.0	.2	459	.62	14,000	228	118	38
July 1-10	11,500			13	.04	58	17	52	3.2	132	159	42	.0	2.1	.2	411	.56	12,760	214	106	34
July 11-20	11,400			14	.01	57	16	50	5.4	127	154	38	.2	1.9	.3	399	.54	12,280	208	104	34
July 21-31	11,100			16	.07	57	16	50	6.1	128	151	40	.4	2.0	.2	402	.55	12,050	208	103	33
Aug. 2-10	10,600			16	.05	57	16	50	5.9	125	151	41	.5	2.2	.3	401	.55	11,480	208	106	33
Aug. 11-20	9,710			14	.06	57	15	50	5.4	125	152	41	.6	2.1	.4	400	.54	10,490	208	106	34
Aug. 21-31	9,570			15	.12	57	15	48	5.4	122	151	39	.3	2.4	.5	393	.53	10,150	204	104	33
Sept. 1-10	9,650			14	.05	58	15	48	6.1	123	152	39	.3	2.1	.3	395	.54	10,290	206	105	33
Sept. 11-20	9,680			12	.08	59	15	48	5.6	122	156	38	.4	2.1	.4	396	.54	10,350	208	108	33
Sept. 21-30	8,690			12	.05	59	15	47	5.1	120	156	38	.2	2.0	.5	393	.53	9,220	208	110	32
Weighted average	8,650			13	0.09	78	24	85	5.7	152	242	72	0.3	2.7	0.3	596	0.81	13,900	293	168	38

Chemical analyses, in parts per million, water year October 1936 to September 1937

Date of collection	Mean discharge (second-feet)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulphate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1936	7,940		--	12	0.09	60	15	47	5.3	119	160	38	0.3	1.9	0.3	398	0.54	8,530	211	114	32
Oct. 11-20	7,220		64.8	a 3.8	.10	64	15	48	4.2	121	165	39	.1	1.9	.2	401	.55	7,820	221	122	32
Oct. 21-31	7,010		65.8	a 2.8	.08	66	15	51	4.3	125	171	41	.5	1.9	.0	415	.56	7,850	226	124	32
Nov. 1-10	6,340		67.7	a 6.0	.10	68	16	48	4.2	123	177	41	.0	1.9	.2	423	.58	7,240	236	134	30
Nov. 11-20	6,240		72.6	a 4.2	.12	72	17	57	4.5	127	194	46	.0	2.0	.2	459	.62	7,730	250	146	33
Nov. 21-25, 27-30	5,590		79.8	a 5.2	.08	77	19	67	5.1	133	216	55	.0	2.2	.2	512	.70	7,730	270	161	34
Dec. 1-10	5,060		89.0	8.6	.06	84	21	76	7.0	142	244	62	.0	2.5	.2	575	.78	7,860	296	180	35
Dec. 11-20	5,140		95.2	11	.06	90	22	82	6.7	151	267	66	.6	2.6	.4	622	.85	8,630	315	191	36
Dec. 21-31	5,190		104	9.4	.06	98	25	91	7.4	156	299	74	.6	3.0	.4	684	.93	9,580	348	220	36
Jan. 1-10, 1937	4,710		113	10	.06	104	27	102	8.3	163	333	81	.7	3.5	.4	750	1.02	9,540	370	237	37
Jan. 11-20	4,820		112	8.8	.08	103	27	101	8.2	162	326	80	.7	3.2	.2	738	1.00	9,600	368	235	37
Jan. 21-31	4,750		113	8.6	.10	105	28	102	8.7	165	332	82	.3	3.6	.4	752	1.02	9,640	377	242	36
Feb. 1-10	5,140		114	a .8	.06	105	30	103	5.8	165	337	83	.2	3.4	.3	750	1.02	10,410	366	250	36
Feb. 11-20	5,630		113	a 1.0	.06	104	30	102	6.6	163	336	83	.3	3.2	.3	746	1.01	11,340	383	250	36
Feb. 21-28	6,200		113	11	.04	105	28	104	7.2	165	337	84	.2	3.8	.2	762	1.04	12,760	377	242	37
Mar. 1-10	7,390		113	11	.04	105	28	102	6.2	165	339	83	.2	3.9	.2	760	1.03	15,160	377	242	37
Mar. 11-20	9,280		116	11	.04	109	29	103	6.9	165	343	85	.3	3.0	.4	772	1.05	19,340	391	256	36
Mar. 21-31	8,420		116	10	.05	110	28	101	8.3	166	344	83	.4	2.9	.3	769	1.05	17,480	390	254	35
Apr. 1-10	9,080		116	10	.04	110	28	102	7.2	164	347	85	.3	3.0	.4	773	1.05	18,950	390	255	36
Apr. 11-20	9,260		116	9.0	.04	110	28	103	6.6	165	346	83	.3	2.8	.4	770	1.05	19,250	390	254	36
Apr. 21-30	9,600		118	8.4	.04	111	28	103	6.6	165	348	85	.5	3.0	.4	775	1.05	20,090	392	257	36
May 1-10	9,590		116	8.8	.04	112	28	103	6.1	165	350	84	.4	3.2	.4	777	1.06	20,120	394	260	36
May 13-20	8,830		113	10	.04	112	28	103	6.4	164	353	84	.5	3.2	.4	781	1.06	18,620	394	260	36
May 21-31	8,330		117	9.2	.04	113	28	103	6.6	163	353	83	.5	2.9	.4	780	1.06	17,540	397	264	36
June 1-10	8,870		117	9.0	.04	112	27	102	6.7	164	353	82	.5	3.2	.4	776	1.06	17,450	390	256	36
June 11-19	9,910		116	14	.10	111	27	105	3.4	166	354	81	.5	3.3	.6	781	1.06	20,900	388	252	37
June 21-30	10,800		117	13	.20	112	27	106	2.6	167	353	81	.5	3.2	.6	781	1.06	22,770	390	254	37
July 1-3, 5-10	10,900		116	12	.02	111	27	104	3.7	165	351	80	.3	3.2	.6	774	1.05	22,780	388	253	36
July 11-17, 19-20	10,900		115	12	.03	111	27	104	3.8	165	349	81	.3	3.4	.6	773	1.05	22,750	388	253	36
July 21-31	10,800		113	13	.04	110	27	104	3.4	165	348	80	.3	3.2	.5	770	1.05	22,450	386	250	37
Aug. 1-10	10,800		112	12	.12	109	28	96	4.0	164	336	77	.0	4.0	.1	747	1.02	21,780	387	252	35
Aug. 11-20	11,000		105	12	.15	104	26	91	3.4	156	317	72	.0	4.0	.1	706	.96	20,970	366	238	35
Aug. 21-31	10,700		107	11	.13	106	26	92	4.4	159	321	73	.0	3.5	.1	715	.97	20,660	372	241	35
Sept. 1-10	10,300		106	12	.14	106	25	92	4.0	157	319	73	.0	3.6	.1	712	.97	19,800	368	239	35
Sept. 11-20	9,230		106	10	.08	105	25	97	5.6	155	328	72	.0	3.6	.4	723	.98	18,020	365	238	36
Sept. 21-30	8,560		104	10	.08	104	25	91	5.0	154	317	70	.1	2.9	.2	701	.95	16,200	362	236	35
Weighted average	8,050		--	9.7	0.08	102	25	93	5.4	157	314	74	--	3.1	--	703	0.96	15,300	358	229	36

a Results for silica appear too low.

COLORADO RIVER NEAR WILLOW BEACH, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1937 to September 1938

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1937	8,480		104	11	0.04	103	24	90	5.3	154	315	70	0.2	3.0	0.6	697	0.95	15,970	356	230	35
Oct. 11-20	8,420		104	10	.04	104	25	94	4.8	150	328	71	.0	3.3	.6	714	.97	16,240	362	240	36
Oct. 21-31	7,780		109	10	.08	103	24	90	6.4	149	310	72	.0	3.1	.2	692	.94	14,530	356	234	35
Nov. 1-10	7,370		109	10	.08	103	24	89	6.1	150	311	70	.0	3.2	.2	690	.94	13,730	356	232	35
Nov. 11-20	6,820		110	10	.06	104	24	90	6.1	149	316	71	.1	2.9	.4	698	.95	12,850	358	236	35
Nov. 21-30	6,660		106	11	.04	103	24	92	4.8	154	310	75	.0	3.8	.4	700	.95	12,590	356	230	36
Dec. 1-10	6,820		106	11	.04	104	25	89	5.1	150	316	73	.1	3.6	.3	701	.95	12,900	362	240	34
Dec. 11-20	6,520		106	10	.06	102	25	91	5.1	152	315	73	.0	3.9	.4	700	.95	12,330	358	233	35
Dec. 21-31	6,530		96.7	8.6	.04	94	22	80	4.0	142	281	64	.1	2.7	.2	626	.85	11,030	325	208	35
Jan. 1-10, 1938	6,130		100	8.6	.04	96	23	83	7.2	146	295	66	.0	2.7	.2	653	.89	10,810	334	214	34
Jan. 11-20	6,540		94.4	10	.04	99	22	82	3.7	145	286	66	.0	3.5	.2	644	.88	11,370	338	218	34
Jan. 21-31	6,260		96.7	10	.02	100	23	85	4.5	147	289	69	.1	3.6	.3	657	.89	11,100	344	224	35
Feb. 1-10	6,680		103	12	.04	106	24	92	3.4	155	315	75	.0	3.5	.2	707	.96	12,750	363	236	35
Feb. 11-19	6,400		106	12	.04	103	24	87	5.4	153	313	72	.1	3.0	.2	695	.95	12,010	356	230	34
Feb. 20-28	6,420		103	12	.04	102	24	88	4.5	150	312	70	.0	2.8	.2	689	.94	11,940	353	230	35
Mar. 1-10	6,070		107	10	.04	105	24	97	5.4	159	315	74	.2	3.2	.2	712	.97	11,670	360	230	36
Mar. 11-20	7,460		107	11	.04	104	25	91	5.1	154	321	70	.0	3.3	.2	706	.96	14,220	362	236	35
Mar. 21-31	9,030		107	11	.06	106	26	98	5.1	160	330	73	.0	2.7	.2	731	.99	17,830	372	240	36
Apr. 1-10	9,300		111	9.0	.06	105	26	96	6.4	157	330	73	.1	2.7	.2	726	.99	18,230	369	240	36
Apr. 11-20	10,300		109	10	.04	106	25	100	5.4	157	334	75	.0	3.2	.2	736	1.00	20,440	368	239	37
Apr. 21-30	9,500		111	11	.06	107	26	98	5.6	158	335	75	.0	3.1	.3	739	1.01	18,950	374	244	36
May 1-10	9,780		108	10	.04	108	26	99	4.5	158	333	74	.3	3.2	.4	736	1.00	19,440	376	247	36
May 11-20	8,590		108	9.4	.04	108	26	100	4.0	157	335	74	.3	3.0	.4	737	1.00	17,100	376	248	36
May 21-31	8,700		108	9.4	.04	110	26	100	4.2	155	339	74	.3	2.9	.5	742	1.01	17,440	382	254	36
June 1-10	9,460		112	11	.07	111	26	95	6.1	158	334	73	.0	2.4	.4	736	1.00	18,790	384	254	34
June 11-20	9,520		111	12	.01	110	25	98	5.8	158	335	71	.0	2.6	.4	737	1.00	18,940	376	248	36
June 21-30	12,400		109	13	.01	107	25	94	6.2	155	327	70	.0	2.8	.4	721	.98	24,140	370	243	35
July 1-10	11,600		106	11	.01	104	25	93	5.1	155	320	68	.0	2.8	.4	705	.96	22,120	362	236	35
July 11-20	10,800		104	12	.01	102	25	92	8.0	153	315	68	.2	3.0	.4	701	.95	20,500	358	232	35
July 21, 23-29, 31	10,900		101	13	.01	99	24	87	8.8	152	303	62	.1	2.8	.4	675	.92	19,880	346	221	35
Aug. 1-10	11,000		98	12	.0	96	24	81	7.0	149	292	64	.2	2.8	.4	652	.89	19,360	338	216	34
Aug. 11-20	10,400		99	12	.0	97	23	85	6.6	149	295	63	.2	2.2	.4	657	.89	18,540	336	214	35
Aug. 21-31	9,780		98	12	.0	96	24	83	6.6	149	292	62	.2	2.2	.4	651	.89	17,200	338	216	34
Sept. 1-9	9,490		97.6	11	.08	98	23	77	6.4	145	292	63	.0	1.8	.2	644	.88	16,500	339	220	33
Sept. 11-20	9,470		98.5	13	.02	98	25	80	7.0	150	292	63	.2	1.5	.2	654	.89	16,720	348	224	33
Sept. 21-30	8,990		98.0	10	.02	96	23	81	5.8	147	291	62	.2	1.5	.2	643	.87	15,610	334	214	34
Weighted average	8,520		--	11	0.04	103	25	90	5.7	153	314	69	--	2.8	--	696	0.95	16,000	360	234	35

COLORADO RIVER NEAR WILLOW BEACH, ARIZ.--Continued

Chemical analyses, in parts per million, water year, October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1938	9,848		96.5	10	0.02	96	23	79	6.4	148	288	62	0.2	1.6	0.2	639	0.87	17,000	334	212	33
Oct. 11-18, 20	13,350		96.0	12	.04	94	22	73	12	142	290	57	.3	2.6	.2	633	.86	22,700	325	208	32
Oct. 21-31	14,380		94.3	12	.04	93	22	73	10	140	286	54	.4	2.5	.2	622	.85	24,200	322	208	32
Nov. 1-10	17,550		91.5	13	.04	91	21	69	11	138	276	51	.3	2.6	.3	603	.82	28,200	314	200	31
Nov. 11-20	12,687		88.9	13	.04	88	20	67	10	133	263	49	.3	2.5	.4	578	.79	19,800	302	192	32
Nov. 21-30	7,534		88.2	12	.04	88	20	66	10	133	263	51	.3	2.6	.3	578	.79	11,800	302	192	31
Dec. 1-10	6,714		89.6	9.6	.04	92	21	76	6.1	138	269	58	.1	2.5	.6	602	.82	10,900	316	203	34
Dec. 11-20	7,042		94.8	12	.04	96	22	83	5.6	141	291	65	.2	2.8	.6	647	.88	12,300	330	214	35
Dec. 21-28, 30-31	5,762		95.0	11	.04	97	22	80	5.3	142	292	65	.1	2.9	.6	645	.88	10,000	332	216	34
Jan. 1-10, 1939	5,740		95.8	9.8	.04	98	23	80	4.8	142	296	64	.1	2.5	.6	648	.88	10,000	339	222	34
Jan. 11-20	7,772		95.8	9.2	.04	98	22	80	4.5	143	295	64	.1	2.4	.6	646	.88	13,500	335	218	34
Jan. 21-31	23,050		105	11	.04	106	26	98	4.3	158	331	72	.1	2.7	.6	729	.99	45,200	372	242	36
Feb. 1-10	23,040		108	12	.04	105	27	97	4.5	162	332	75	.0	2.8	.6	735	1.00	45,600	373	240	36
Feb. 11-19	21,600		112	13	.08	105	27	101	5.6	166	330	78	.0	3.0	.6	744	1.01	43,200	373	237	37
Feb. 20-28	24,630		111	14	.08	105	27	102	5.1	166	329	75	.1	5.0	.3	744	1.01	49,300	373	237	37
Mar. 1-10	11,150		112	12	.10	105	27	98	4.6	164	329	75	.0	2.9	.4	734	1.00	22,100	373	238	36
Mar. 11-20	9,506		112	12	.08	105	26	99	4.6	164	329	75	.1	3.2	.5	735	1.00	18,800	369	234	36
Mar. 21-31	9,596		110	11	.06	105	27	100	4.6	164	330	80	.1	3.1	.6	742	1.01	19,600	373	238	36
Apr. 1-10	10,603		113	12	.06	105	27	99	4.5	164	330	81	.1	3.6	.4	743	1.01	21,200	373	238	36
Apr. 11-20	10,430		113	13	.08	105	27	105	5.6	167	330	80	.3	3.5	.6	752	1.02	21,100	373	236	38
Apr. 21-25, 27-30	10,690		113	13	.06	104	28	101	5.6	166	329	79	.5	3.8	.6	746	1.01	21,400	374	238	36
May 1-10	10,160		114	15	.02	104	27	98	5.3	167	330	79	.2	3.1	.4	744	1.01	20,300	370	234	36
May 11-20	9,491		114	14	.02	104	27	99	3.5	170	329	79	.2	3.4	.4	743	1.01	19,000	370	231	36
May 21-31	10,940		114	16	.02	105	27	98	2.7	167	330	79	.2	3.1	.4	743	1.01	19,200	373	236	36
June 1-10	9,917		112	15	.04	106	27	99	4.8	166	329	79	.6	4.0	.8	746	1.01	19,800	376	240	36
June 12-20	11,040		111	14	.04	106	27	101	5.6	166	331	83	.6	4.0	.8	754	1.03	22,300	376	240	36
June 21-30	11,150		111	14	.04	105	27	102	5.8	165	331	78	.6	4.0	.8	749	1.02	22,300	373	238	37
July 1-10	11,260		111	14	.04	106	27	102	5.8	164	330	82	.6	4.0	.8	752	1.02	22,700	376	241	36
July 11-20	11,360		112	12	.04	106	27	104	5.4	166	333	82	.6	4.0	.8	756	1.03	23,200	376	240	37
July 21-31	11,350		112	31	.04	107	28	98	6.4	164	341	74	.6	3.5	.7	752	1.02	22,500	382	248	35
Aug. 1-10	11,910		112	14	.02	107	28	98	6.1	163	340	75	.6	3.4	.7	752	1.02	24,100	382	248	35
Aug. 11-20	11,790		113	14	.02	106	27	98	6.4	163	337	75	.6	3.6	.7	748	1.02	23,800	376	242	36
Aug. 21-31	11,290		112	13	.02	106	27	98	6.1	163	337	76	.6	3.4	.7	747	1.02	22,900	376	242	36
Sept. 1-10	9,829		113	14	.04	107	27	98	5.9	163	339	76	.6	3.4	.7	751	1.02	19,900	378	244	36
Sept. 11-20	9,532		112	12	.06	107	26	101	8.0	162	338	79	.6	3.4	.4	755	1.03	19,400	374	241	36
Sept. 21-30	11,290		112	13	.06	107	26	101	7.0	159	340	78	.5	3.1	.4	754	1.03	23,000	374	244	36
Weighted average	11,700			13	0.05	102	26	93	6.1	158	321	72	0.3	3.2	0.5	712	0.97	22,500	362	232	35

COLORADO RIVER NEAR TOPOCK, ARIZ.

Chemical analyses, in parts per million, August 1925 to September 1926

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Aug. 14-20, 1925	9,970			25	0.17	103	30	113		161	343	94		3.6		791	1.08	21,300	380	248	39
Aug. 22-27	10,500			18	.24	106	35	148		166	417	103		4.7		914	1.24	25,900	408	272	44
Aug. 28, Sept. 3	18,900			12	.22	143	39	159		199	530	108		1.7		1,090	1.48	55,600	518	354	40
Sept. 4-10	24,300			21	.31	151	34	169		188	587	79		1.2		1,140	1.54	74,400	517	363	42
Sept. 11-17	14,900			21	.20	138	31	130		172	484	79		2.8		971	1.32	39,000	472	331	37
Sept. 18-24	18,600			19	.24	140	34	130		171	486	85		.7		979	1.33	49,100	490	350	37
Sept. 25, Oct. 1	19,700			21	.25	146	33	132		166	530	69		1.0		1,010	1.38	53,800	500	364	36
Oct. 2-8	15,700			17	.13	119	32	126		170	425	84		2.6		889	1.21	37,700	428	289	39
Oct. 9-15	22,300			13	.13	150	35	129		176	528	72		1.2		1,020	1.38	61,000	518	374	35
Oct. 16-22	18,300			26	.42	161	38	132	5.9	178	572	80		2.4		1,100	1.50	54,500	558	412	34
Oct. 23-29	14,100			24	.41	114	30	102	7.4	171	371	78		2.1		813	1.11	30,900	408	268	35
Oct. 30, Nov. 5	11,800			22	.38	103	31	108	5.6	178	342	86		4.9		791	1.08	25,200	384	238	38
Nov. 6-12	11,900			17	.24	101	32	119		178	350	94		5.6		807	1.10	25,900	384	238	40
Nov. 13-19	10,800			16	.20	102	31	133		187	357	96		2.9		830	1.13	24,200	382	229	43
Nov. 20-26	9,400			13	.16	104	37	121		192	361	105		4.1		840	1.14	21,300	412	254	39
Nov. 27, Dec. 3	8,480			14	.14	102	38	132	8.7	203	365	116		4.7		881	1.20	20,200	410	244	40
Dec. 4-10	8,410			17	.10	107	41	139	11	211	379	127		8.9		934	1.27	21,200	436	262	40
Dec. 11-17	8,160			24	.11	110	42	149	12	210	399	132		11		983	1.34	21,600	447	275	41
Dec. 18-24	7,240			20	.11	108	43	158	8.2	210	416	134		4.7		995	1.35	19,400	446	274	43
Dec. 25-29, 31	5,980			18	.20	111	37	165	11	221	387	142		11		991	1.35	16,000	429	248	45
Jan. 1-7, 1926	6,750			18	.20	112	46	157	11	229	399	156		14		1,030	1.40	18,700	468	281	41
Jan. 8-14	6,810			16	.22	115	44	161	14	231	414	156		13		1,050	1.42	19,200	468	278	42
Jan. 15	6,360			--	--	--	--	--	--	227	413	145		--		--	--	--	--	--	--
Jan. 16	6,230			--	--	--	--	--	--	217	395	160		--		--	--	--	--	--	--
Jan. 22, 24-28	5,560			20	.21	116	46	175	8.3	232	410	175		8.2		1,070	1.46	16,100	478	288	44
Jan. 29, Feb. 4	5,300			21	.23	115	46	182	9.1	235	408	174		6.9		1,080	1.47	15,400	476	284	45
Feb. 5-11	5,740			17	.21	118	47	197	8.7	242	428	189		8.6		1,130	1.54	17,500	488	290	46
Feb. 12-18	6,510			21	.25	113	45	184	8.5	240	399	176		16		1,080	1.47	19,000	467	270	46
Feb. 19-25	6,910			15	.22	111	43	175		224	390	164		10		1,020	1.39	19,000	454	270	46
Feb. 26, Mar. 4	6,610			12	.18	110	42	179		223	402	158		9.0		1,020	1.39	18,200	447	264	47
Mar. 5-11	6,420			14	.16	111	44	176		221	412	152		7.4		1,020	1.39	17,700	458	277	46
Mar. 12, 14-16, 18	8,290			21	.16	107	41	176	8.2	223	409	159		1.6		1,030	1.40	23,100	436	253	46
Mar. 20-25	10,900			19	.20	98	38	154	8.5	212	374	138		1.5		936	1.27	27,500	400	227	45
Mar. 26, Apr. 1	14,700			18	.12	95	34	129	8.0	203	338	109		1.6		833	1.13	33,000	377	210	42

COLORADO RIVER NEAR TOPOCK, ARIZ.--Continued

Chemical analyses, in parts per million, August 1925 to September 1926--Continued

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 2-8, 1926	15,100			13	0.24	82	30	105	6.2	193	269	86		0.8		687	0.93	28,000	328	170	40
Apr. 9-15	19,300			14	.23	74	29	121	6.7	181	302	86		1.4		724	.98	37,700	304	155	46
Apr. 16-22	25,200			15	.27	84	27	103	7.5	183	286	76		1.9		691	.94	47,000	320	170	40
Apr. 23-29	40,400			8.2	.17	70	21	73	6.6	177	206	48		.0		520	.71	54,200	260	115	37
Apr. 30, May 6	50,900			8.0	.27	60	18	42	4.2	162	134	32		.0		378	.51	51,900	224	90	29
May 7-13	60,100			9.4	.19	50	13	40	5.8	152	111	27		.0		331	.45	53,600	178	54	32
May 14-19	43,900			19	.19	42	16	38	5.0	146	99	24		.0		315	.43	37,300	171	52	32
May 21-27	41,700			15	.26	50	14	46	4.5	156	117	32		.4		356	.48	40,000	182	54	35
May 28, June 3	74,500			21	.26	50	15	35	4.3	140	114	23		.5		332	.45	66,700	186	72	28
June 4-10	71,800			20	.41	42	13	31	2.7	139	88	20		.7		286	.39	55,400	158	44	29
June 12, 14-17	75,100			15	.27	43	9.5	25	3.0	135	72	19		.6		253	.34	51,200	146	36	27
June 18-24	55,400			14	.34	46	10	29	2.6	146	80	18		.6		272	.37	40,600	156	36	28
June 25, July 1	34,600			14	.25	48	12	39	1.9	143	91	30		.5		307	.42	28,600	170	52	33
July 2-8	26,700			24	.24	48	13	42	3.5	134	109	36		.8		343	.47	24,700	174	64	34
July 9-15	26,800			10	.16	61	17	47	6.7	144	146	40		.6		399	.54	28,800	222	104	31
July 16-22	29,300			17	.21	67	18	70	5.9	149	196	52		.6		500	.68	39,500	241	119	38
July 23-29	16,600			14	.28	78	22	77	7.1	160	248	54		.6		580	.79	26,000	285	154	36
July 30-Aug. 5	11,800			8.4	.17	78	23	87	6.4	165	231	74		.9		590	.80	18,800	289	154	39
Aug. 6-12	9,300			6.0	.14	89	26	102	8.2	167	285	90		.8		689	.94	17,300	329	192	39
Aug. 13-19	10,400			7.4	.20	107	31	127	7.9	184	347	114		1.0		833	1.13	23,400	394	244	41
Aug. 20-26	9,440			17	.31	137	36	157	8.3	207	486	113		1.9		1,060	1.44	27,000	490	320	41
Aug. 27, Sept. 2	6,120			22	.21	98	32	145	4.8	209	354	102		2.9		864	1.18	14,300	376	204	45
Sept. 3-9	5,520			26	.23	98	34	157	4.3	212	364	121		3.0		912	1.24	13,600	384	211	47
Sept. 10-16	4,520			28	.25	107	40	184	4.8	201	408	150		3.2		1,020	1.39	12,500	432	267	48
Sept. 17-23	6,160			19	.38	124	42	195	4.8	199	488	166		4.1		1,140	1.55	19,000	482	319	46
Sept. 24-30	5,670			19	.25	129	46	200	6.4	217	538	144		.8		1,190	1.62	18,200	511	333	46
Weighted Average	19,150			16	0.25	72	22	81		165	214	59		1.7		546	0.74	29,400	270	135	39

COLORADO RIVER NEAR TOPOCK, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1926 to September 1927

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1926	8,460			15	0.25	125	33	232	8.7	242	514	154		5.1	--	1,210	1.64	27,500	448	249	52
Oct. 11-20	8,060			14	.15	148	48	211	9.6	217	620	150		4.2	--	1,310	1.78	28,500	567	389	44
Oct. 21-31	6,790			15	.20	144	48	192	8.8	217	569	138		5.4	--	1,230	1.67	22,500	557	379	42
Nov. 1-10	5,490			12	.15	127	48	180	8.3	215	500	147		6.4	--	1,140	1.54	16,800	514	338	43
Nov.11-20	5,600			20	.22	132	49	193	14	228	507	174		11	--	1,210	1.65	18,300	531	344	43
Nov.21-30	5,800			21	.18	131	51	200	9.2	233	510	171		13	--	1,220	1.66	19,100	536	346	44
Dec. 1, 3-5, 7-10	6,760			21	.22	124	49	192	4.6	224	497	169		18	--	1,180	1.61	21,600	511	328	45
Dec. 11-20	8,350			24	.18	119	47	166	13	222	469	148		9.8	--	1,100	1.50	24,900	490	308	42
Dec. 21-28, 31	5,440			20	.17	122	44	177	15	203	490	146		9.8	--	1,120	1.53	16,500	486	319	43
Jan. 1-7, 9-10, 1927	3,890			10	.17	122	49	188	9.0	244	448	178		6.2	--	1,130	1.54	11,900	506	306	44
Jan. 11-20	6,180			16	.21	141	59	234	7.4	272	532	222		6.1	--	1,350	1.84	22,500	594	372	46
Jan. 21-31	7,370			10	.20	124	50	175	6.4	253	405	182		5.7	--	1,080	1.47	21,500	515	308	42
Feb. 1-10	6,610			17	.30	113	47	182	5.9	222	450	157		9.4	--	1,090	1.48	19,400	476	294	45
Feb. 11-19	8,840			17	.27	119	46	161	10	229	422	168		6.0	--	1,060	1.44	25,300	486	298	41
Feb. 20-28	12,950			15	.28	104	34	160	9.6	212	361	134		2.7	--	925	1.26	32,300	400	226	46
Mar. 1-10	11,700			22	.24	108	34	156	8.5	223	369	126		4.5	--	938	1.28	29,600	410	227	45
Mar. 11-20	11,600			18	.20	111	37	153	6.1	221	398	122		7.0	--	961	1.31	30,100	429	248	43
Mar. 21-31	9,510			16	.16	107	38	157	6.6	222	393	120		5.5	--	953	1.30	24,400	423	241	44
Apr. 1-10	16,200			18	.24	101	37	154	6.4	221	365	121		5.1	--	917	1.25	40,100	404	223	45
Apr. 11-20	25,000			19	.12	78	26	96	5.1	201	238	66		2.4	--	630	.86	42,500	302	137	40
Apr. 21-30	18,100			19	.20	69	23	80	6.4	183	205	62		2.6	--	557	.76	27,200	266	116	39
May 1-10	40,500			17	.18	63	19	59	4.6	172	154	44		1.9	--	447	.61	58,400	235	94	35
May 11-20	53,200			17	.24	46	14	34	4.8	146	91	24		2.2	--	305	.42	43,800	172	53	49
May 21-31	76,000			23	.22	47	12	26	5.9	149	81	21		.7	--	290	.39	59,400	167	45	25
June 1-10	53,800			19	.19	45	11	31	6.1	135	81	18		1.0	--	279	.38	40,500	158	47	29
June 11-20	58,600			19	.19	46	12	31	6.1	128	90	23		.7	--	291	.40	46,000	164	60	28
June 21-30	65,000			17	.22	51	13	35	6.9	138	113	20		1.0	--	325	.44	57,000	181	68	29
July 1-7, 9-10	76,800			19	.31	70	16	52	2.6	166	171	25		1.3	0.2	439	.60	90,900	240	104	32
July 11-20	39,700			25	.24	74	19	49	4.3	160	189	31		1.3	.2	472	.64	50,500	262	132	28
July 21-31	20,200			20	.32	68	19	60	4.0	159	177	47		1.2	.4	475	.65	25,900	248	117	34
Aug. 1-10	18,100			19	.21	96	26	91	6.7	170	311	67		1.0	.3	702	.95	34,300	346	207	36
Aug. 11-20	19,100			18	.22	125	32	109	6.7	179	421	66		1.0	.8	867	1.18	44,600	444	297	34
Aug. 21-31	11,900			20	.22	111	28	105	5.8	174	350	77		3.0	.4	786	1.07	25,200	392	250	36
Sept. 1-10	13,600			23	.18	125	30	129	3.8	185	419	90		2.6	.2	914	1.24	33,500	436	284	39
Sept. 11-20	82,000			21	.52	169	40	144	6.6	200	605	73		.8	.8	1,160	1.57	194,000	586	422	34
Sept. 21-30	30,000			17	.23	108	24	93	4.2	167	359	47		.7	.6	735	1.00	59,500	368	231	35
Weighted average	23,500			19	0.24	83	23	82	5.9	172	249	58		2.3	—	608	0.83	38,600	302	160	37

COLORADO RIVER NEAR TOPOCK, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1933	7,230			16	0.06	144	45	172	14	218	545	126	0.4	7.1	--	1,180	1.60	22,980	544	366	40
Oct. 11-20	9,510			16	.08	166	46	181	13	224	618	129	.5	3.6	--	1,280	1.74	32,900	604	420	39
Oct. 21-31	5,850			16	.07	152	46	186	9.9	220	570	142	.6	11	--	1,240	1.69	19,620	568	388	41
Nov. 1-10	4,790			14	.07	143	51	190	11	214	562	166	.4	9.4	--	1,250	1.70	16,190	566	391	42
Nov. 11-20	5,430			13	.05	145	56	205	14	221	579	184	.2	9.6	--	1,320	1.79	19,280	592	412	42
Nov. 21-30	5,840			12	.05	144	58	209	12	228	606	182	.3	8.8	--	1,340	1.83	21,190	598	411	43
Dec. 1-10	6,960			13	.08	140	59	199	11	235	572	178	.2	8.2	--	1,300	1.76	24,350	592	400	42
Dec. 11-20	6,480			13	.10	144	60	190	6.2	219	573	166	.2	7.5	0.8	1,270	1.72	22,180	606	426	40
Dec. 21-31	5,820			13	.10	141	60	194	5.4	232	552	176	.4	7.5	.8	1,260	1.72	19,860	598	408	41
Jan. 1-10, 1934	6,520			13	.09	145	57	206	5.9	238	554	188	.2	7.3	1.0	1,290	1.76	22,780	596	402	43
Jan. 11-20	6,210			13	.12	136	58	197	5.8	237	530	181	.2	7.7	.6	1,250	1.69	20,890	578	384	42
Jan. 21-31	5,120			11	.12	128	57	193	5.6	241	489	178	.3	7.0	.5	1,190	1.62	16,420	554	356	43
Feb. 1-10	5,760			20	.05	128	54	212	4.6	246	487	201	.3	8.0	.3	1,240	1.68	19,220	542	340	46
Feb. 11-20	6,380			16	.06	114	49	198	4.6	222	456	177	.3	5.4	.3	1,130	1.54	19,470	486	304	47
Feb. 21-28	6,570			19	.05	120	49	197	5.0	235	457	179	.3	5.6	.4	1,150	1.56	20,360	501	308	46
Mar. 1-10	6,680			17	.07	112	47	190	4.5	229	439	168	.3	5.8	.4	1,100	1.49	19,770	473	286	46
Mar. 11-20	5,830			18	.07	126	52	206	5.0	240	480	194	.4	5.8	.4	1,200	1.64	18,970	528	332	46
Mar. 21-31	6,140			16	.07	110	48	200	4.5	221	448	180	.4	4.7	.4	1,120	1.52	18,580	472	291	48
Apr. 1-10	5,760			16	.05	101	44	182	5.1	223	401	170	.2	3.4	.6	1,030	1.40	16,070	433	250	47
Apr. 11-20	5,960			17	.06	97	41	172	5.0	218	373	160	.3	3.4	.8	976	1.33	15,710	410	232	47
Apr. 21-30	9,290			17	.06	95	38	162	5.0	210	360	148	.3	3.5	.8	932	1.27	23,380	393	221	47
May 1-10	14,400			18	.07	74	27	106	4.5	176	250	88	.4	3.2	.4	658	.89	25,600	296	152	43
May 11-20	19,700			16	.08	69	23	79	5.8	177	195	64	.2	4.0	.4	543	.74	28,900	266	122	39
May 21-31	18,800			13	.06	61	17	54	5.1	168	139	46	.1	3.2	.2	421	.57	21,370	222	84	34
June 1-10	17,200			12	.10	69	20	65	6.4	163	176	55	.2	3.2	.3	487	.66	22,620	254	120	35
June 11-20	10,000			12	.08	68	20	77	5.0	152	195	64	.1	3.2	.7	519	.71	14,010	252	127	39
June 21-30	5,190			15	.07	74	25	100	3.2	158	226	98	.2	3.4	.7	623	.85	8,730	288	158	44
July 1-10	3,150			13	.08	83	30	130	3.5	169	272	140	.2	3.4	.7	758	1.03	6,450	330	192	46
July 11-20	2,340			13	.04	95	37	166	5.6	162	348	183	.2	2.5	.3	930	1.26	5,880	389	256	48
July 21-31	1,900			11	.06	89	44	202	5.4	133	411	217	.2	2.5	.5	1,050	1.43	5,380	403	294	52
Aug. 1-10	2,240			12	.12	114	46	236	6.6	168	471	259	.3	4.4	.8	1,230	1.68	7,450	474	336	52
Aug. 11-20	1,840			14	.16	160	56	267	6.6	195	670	256	.2	8.7	.9	1,540	2.09	7,630	630	470	48
Aug. 21-31	2,530			14	.14	170	58	282	9.1	203	700	267	.3	10	.7	1,610	2.19	11,000	663	496	48
Sept. 1-10	5,130			15	.16	205	61	282	9.0	247	796	245	.3	8.3	1.0	1,740	2.37	24,170	762	569	44
Sept. 11-20	2,220			14	.14	176	45	264	7.5	234	706	196	.3	8.9	.9	1,530	2.08	9,190	624	432	48
Sept. 21-30	2,020			15	.08	167	51	270	7.8	245	636	256	.3	4.7	.5	1,530	2.08	8,340	626	426	48
Weighted average	6,727			15	0.08	110	40	155	6.7	204	402	137	0.3	5.4	0.5	972	1.32	17,700	439	272	43

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.

Chemical analyses, in parts per million, December 1928 to September 1929

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	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)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids [a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Dec. 22, 1928	21			37	0.04	41	14	91	5.9	238	69	74		1.2	0.7	[b] 450	0.61	26	160	0	54
Jan. 30, 1929	18			43	.05	42	14	92	5.4	241	60	73		1.1	.4	449	.61	22	162	0	54
Feb. 16	19			32	.04	40	13	91	3.7	240	57	74		1.5	.7	[b] 430	.58	22	154	0	56
Mar. 6	19			37	.08	36	13	94	4.5	227	64	74		1.1	.8	435	.59	22	144	0	58
Mar. 24	19			35	.10	41	13	87	6.6	240	56	72		.9	--	430	.58	22	156	0	53
Apr. 18	16			--	.02	42	14	87	12	246	58	75		1.3	.4	411	.56	18	162	0	52
May 20	16			38	.02	36	13	95	5.9	229	57	77		1.1	.4	436	.59	19	144	0	58
June 17	17			36	.24	40	14	94	9.1	243	60	91		.4	.6	454	.62	21	158	0	55
July 14	14			43	.17	41	15	84	9.9	239	59	76		.4	.2	446	.61	17	164	0	51
Aug. 23	87			34	.80	42	16	92	4.3	245	60	86		.8	.2	457	.62	107	171	0	53
Aug. 24	70			24	.11	144	41	133	10	846	68	46		.1	1.5	883	1.20	167	528	0	35
Sept. 22	19			30	3.6	42	17	63	9.9	241	7.9	75		.8	.3	368	.50	19	175	0	42

a Residue by evaporation.

b Sum of constituents.

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1929 to September 1930

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 23, 1929	16			30	0.06	46	17	72	4.6	248	56	58		1.1	0.3	407	0.55	18	185	0	45
Nov. 17	18			34	.08	43	14	98	6.6	260	60	79		1.5	.4	464	.63	23	155	0	55
Dec. 21	19			35	.04	41	14	90	5.9	244	59	70		1.3	.3	436	.59	22	160	0	54
Jan. 13, 1930	18			27	.09	46	15	69	7.5	252	55	56		1.2	.4	401	.55	19	176	0	45
Jan. 26	18			27	.08	42	15	91	7.5	246	61	75		1.7	.8	441	.60	21	166	0	53
Feb. 9	17			29	.08	40	14	92	9.3	236	60	74		1.4	.6	436	.59	20	158	0	54
Feb. 23	18			30	.04	40	13	93	7.2	236	60	75		.6	.8	435	.59	21	154	0	55
Mar. 9	16			28	.06	40	14	90	4.8	238	65	76		1.3	.7	436	.59	19	156	0	55
Mar. 20	784			31	.12	41	12	31	5.8	190	32	24		.4	.7	271	.37	574	152	0	30
Mar. 21	412			19	.12	42	11	30	4.6	192	29	22		.4	.5	253	.34	281	150	0	29
Mar. 23	82			31	.10	47	14	64	6.9	235	50	56		1.3	.7	386	.52	85	175	0	43
Apr. 26	11			24	.06	47	15	68	6.6	249	58	54		.9	.6	396	.54	12	179	0	44
June 22	14			54	.04	39	9.1	136	7.4	204	75	134		1.8	.2	557	.76	21	135	0	67
July 20	15			38	.04	41	13	97	6.6	242	61	81		2.4	.6	459	.62	19	156	0	56
July 21	16			47	.22	60	22	100	6.6	427	11	73		5.4	.2	535	.73	23	240	0	47
Aug. 21	12			44	.06	41	15	99	5.8	242	60	84		2.0	.8	470	.64	15	164	0	56
Sept. 29	17			33	.06	41	13	90	5.0	243	57	69		2.0	.9	430	.58	20	153	0	55

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1930 to September 1931

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 16, 1930	17			40	0.08	46	14	70	4.5	254	51	49		2.4	0.9	402	0.55	18	172	0	46
Nov. 16	15			42	.06	41	15	83	8.0	236	57	68		1.7	.7	432	.59	17	164	0	51
Nov. 22	14			38	.08	45	15	88	6.1	249	58	72		2.1	.8	444	.60	17	174	0	51
Dec. 20	15			30	.02	42	14	87	5.3	242	56	68		4.0	.6	426	.58	17	162	0	53
Jan. 11, 1931	16			29	.02	40	13	89	5.0	236	55	71		3.9	.7	422	.57	18	154	0	55
Feb. 3	14			26	.06	39	14	89	4.5	233	56	68		2.5	.5	414	.56	16	155	0	55
Feb. 9	40			32	.10	50	15	82	5.6	268	54	62		5.5	.3	438	.60	47	186	0	48
Feb. 16	2,470			23	.14	43	9.0	20	3.5	180	20	12		3.6	.2	223	.30	1,490	144	0	23
Feb. 17	926			23	.12	42	9.6	28	3.5	178	27	20		2.9	.4	244	.33	610	144	0	29
Feb. 26	19			34	.08	45	13	89	4.6	245	56	71		2.8	.7	436	.59	22	166	0	53
Mar. 17	18			28	.08	41	13	61	5.3	227	44	41		2.3	.5	347	.47	17	156	0	45
Apr. 19	19			28	.06	40	13	96	5.1	228	58	80		9.0	.8	441	.60	23	154	0	57
Apr. 25	28			27	.14	57	14	83	5.1	287	55	61		6.8	.7	450	.61	34	200	0	47
Apr. 29	90			27	.52	54	15	74	5.1	347	5.9	52		.5	.4	405	.55	98	196	0	44
May 23	18			34	.08	44	14	101	6.1	245	60	88		10	.8	478	.65	23	168	0	56
July 17	16			38	.04	39	13	97	7.2	236	58	77		2.5	.3	448	.61	19	151	0	57
July 27	11			40	.08	43	15	96	5.8	246	59	82		2.5	.8	465	.63	14	169	0	54
Aug. 8	584			36	.02	45	11	60	7.7	228	41	46		2.8	.2	362	.49	571	158	0	44
Aug. 21	56			28	.36	49	13	85	6.6	263	54	66		1.2	1.5	433	.59	65	176	0	50
Sept. 3	1,310			25	.06	56	13	34	4.8	286	8.2	19		.2	.2	301	.41	1,060	194	0	27

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, December 1931 to August 1932

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Dec. 9, 1931	20			34	0.04	46	13	65	5.1	262	41	41		1.0	0.9	375	0.51	20.2	168	0	45
Dec. 12	174			18	.06	51	14	66	5.6	270	44	44		2.4	.4	378	.51	178	185	0	43
Jan. 7, 1932	99			25	.10	46	14	66	4.3	253	46	44		1.1	.4	371	.50	99.2	172	0	45
Jan. 17	41			26	.10	48	14	75	4.8	264	51	52		1.1	.3	402	.55	44.5	178	0	47
Feb. 4	233			28	.06	46	14	64	5.8	257	44	38		2.0	.6	368	.50	232	172	0	44
Feb. 19	9,250			20	.22	26	6.1	19	2.9	126	15	8		1.0	.4	160	.22	4,000	90	0	31
Mar. 23	77			28	.06	46	14	65	6.7	249	47	48		1.2	.5	379	.52	78.8	172	0	44
Apr. 24	24			25	.08	41	13	68	5.8	238	46	48		1.0	.3	355	.50	23.7	156	0	48
May 7	19			31	.04	41	13	67	5.4	234	46	47		2.4	.7	368	.50	18.9	156	0	47
May 18	20			29	.06	41	13	67	5.8	235	46	47		1.6	.4	336	.50	19.8	156	0	47
June 21	17			34	.10	39	12	68	5.8	234	45	45		1.9	.7	366	.50	16.8	147	0	49
July 6	18			33	.08	41	12	70	5.4	241	45	46		1.5	.6	373	.51	18.1	152	0	49
Aug. 8	17			32	.06	39	12	69	5.5	228	44	45		2.0	.3	361	.49	16.6	147	0	49
Aug. 21	18			34	.08	39	12	68	6.2	230	45	44		1.6	.3	363	.49	17.6	147	0	49

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1932 to September 1933

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1, 1932	20			27	0.08	42	12	66	5.0	234	44	44	--	2.3	0.4	358	0.49	19.3	154	0	47
Oct. 18	19			33	.08	45	14	95	4.5	246	59	78	--	2.0	.4	452	.61	23.2	170	0	54
Nov. 6	22			37	.01	42	14	94	6.6	242	60	76	--	1.0	.5	450	.61	26.7	162	0	55
Nov. 25	24			35	.01	42	12	68	5.9	239	44	44	--	2.3	.4	371	.50	24.0	154	0	48
Dec. 6	21			34	.01	43	14	87	6.2	240	55	70	1.3	1.6	.5	429	.58	24.3	165	0	52
Dec. 21	21			29	.06	43	12	68	5.8	233	48	46	--	2.0	.6	369	.50	20.9	157	0	47
Jan. 7, 1933	21			29	.06	42	13	87	6.4	233	58	69	--	1.8	.8	421	.57	23.9	158	0	53
Jan. 20	22			27	.11	42	12	63	6.1	228	47	44	--	1.6	.6	355	.48	21.1	154	0	46
Feb. 6	21			26	.08	42	12	68	5.3	233	45	46	--	1.9	.3	361	.49	20.5	154	--	48
Feb. 21	19			25	.10	41	12	67	5.9	233	44	44	--	2.2	.2	356	.48	18.3	152	--	48
Mar. 5	49			42	.12	51	16	64	7.7	279	45	45	--	1.5	.5	410	.56	54.2	194	0	41
Mar. 22	18			30	.11	41	12	62	7.0	234	44	42	--	3.6	.5	357	.49	17.4	152	0	46
Apr. 4	16			38	.09	41	12	61	7.0	233	44	42	--	3.9	.5	364	.50	15.7	152	0	45
Apr. 19	17			32	.07	41	12	60	6.2	233	44	41	--	3.5	.5	355	.48	16.3	152	0	45
May 9	15			27	.12	40	13	69	5.3	229	46	48	1.2	3.3	.5	365	.50	14.8	154	0	48
May 18	18			31	.06	40	13	81	3.5	233	53	60	1.5	1.3	.8	398	.54	19.3	154	0	53
June 1	17			31	.08	42	13	77	4.2	240	48	50	1.6	1.8	.6	385	.52	17.7	158	0	51
June 20	15			32	.08	40	12	85	5.1	232	56	64	1.6	1.6	.7	410	.56	16.6	150	0	54
July 1	15			42	.04	41	13	79	5.9	240	52	58	1.6	2.2	.5	411	.56	16.6	156	--	51
July 18	14			33	.06	38	12	68	6.9	227	46	44	1.6	2.9	.3	363	.49	13.7	144	0	49
Aug. 2	14			39	.07	39	12	67	5.9	227	42	43	1.4	2.9	.3	364	.50	13.8	147	0	48
Aug. 17	13			35	.06	38	12	66	6.4	227	43	42	1.1	2.6	.3	357	.49	12.5	144	0	49
Sept. 4	14			32	.04	40	14	79	4.8	233	51	55	1.3	1.8	.4	392	.53	14.8	158	0	51
Sept. 19	12			32	.16	43	14	88	5.6	242	57	68	1.8	2.1	.6	431	.59	14.0	165	0	53

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1933 to September 1934

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Oct. 4, 1933	14			35	0.12	43	13	96	3.3	242	63	84	1.9	0.5	0.8	462	0.63	17.5	161	0	55
Oct. 18	13			32	.12	42	15	77	8.0	237	56	56	1.8	1.0	.7	404	.55	14.2	163	0	49
Nov. 2	13			30	.12	41	14	76	7.7	238	64	56	1.4	.6	.8	407	.55	14.3	160	0	49
Nov. 16	13			--	--	--	--	--	--	230	50	57	--	--	--	412	.56	14.5	-	--	--
Dec. 1	13			--	--	--	--	--	--	240	61	57	--	-	--	424	.58	14.9	--	--	--
Jan. 4, 1934	13			--	--	--	--	--	--	223	42	38	--	--	--	355	.48	12.5	--	--	--
Feb. 2	13			26	.02	41	13	82	7.9	237	53	58	1.3	2.9	.5	402	.55	14.1	156	0	52
Mar. 1	13			24	.02	36	13	82	8.2	225	53	59	1.3	2.9	.5	390	.53	13.7	144	0	54
Apr. 4	13			35	.09	40	12	76	12	238	51	61	1.3	1.3	.4	407	.55	14.3	150	0	50
May 3	11			33	.14	39	11	68	8.7	232	41	43	1.1	5.5	.5	365	.50	10.8	142	0	49
June 5	11			33	.14	40	12	82	3.9	238	51	63	1.4	1.1	.6	408	.55	12.1	150	0	53
July 6	9			38	.04	40	12	64	6.7	238	42	38	.8	2.8	.2	382	.49	8.8	150	0	47
Aug. 3	10			37	.04	34	13	82	7.0	218	54	59	1.4	1.3	.3	396	.54	10.7	138	0	55
Sept. 11	10			36	.06	43	13	68	7.5	241	45	48	1.1	2.6	.4	383	.52	10.3	161	--	45

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1934 to September 1935

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 10, 1934	9			37	0.10	42	12	69	7.4	241	45	48	1.1	2.6	0.4	383	0.52	9.3	154	0	48
Nov. 3	10			33	.07	40	12	66	5.4	236	45	43	.9	2.7	.6	364	.50	9.9	150	0	48
Dec. 10	10			33	.07	41	13	65	5.4	234	46	38	1.0	2.2	.6	360	.49	9.7	156	0	46
Jan. 12, 1935	69			31	.10	43	13	67	5.9	236	49	43	1.0	3.0	.6	372	.51	70	161	0	46
Feb. 8	7,120			29	.09	39	8.6	20	5.3	178	17	9.0	.8	.7	.1	217	.30	4,230	133	0	24
Mar. 4	837			30	.04	48	11	51	6.7	241	39	29	1.1	2.6	.2	337	.46	762	165	0	39
May 23	25			42	.06	46	15	65	9.6	243	45	48	1.1	1.1	.7	393	.53	26	176	0	43
June 27	21			32	.04	44	14	66	10	233	50	53	1.1	.8	.6	386	.52	22	168	0	44
July 24	20			41	.02	42	14	76	6.1	246	52	53	1.3	2.8	.5	409	.56	22	162	0	49
Aug. 28	20			39	.04	44	14	81	6.2	247	59	61	1.3	1.4	.5	429	.58	23	168	0	50
Sept. 27	111			32	.62	59	18	64	5.3	355	11	46	1.2	.1	.5	412	.56	123	221	0	38

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1935 to September 1936

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 25, 1935	18		--	34	.02	45	15	77	4.8	245	57	56	1.5	1.8	0.4	413	0.56	20.1	174	0	48
Nov. 26	19		--	36	.02	45	15	77	5.8	245	55	56	1.2	1.8	.4	414	.56	21.2	174	0	48
Dec. 26	18		--	32	.02	44	14	68	5.8	239	49	47	1.0	3.1	.4	382	.52	18.6	168	0	46
Feb. 26, 1936	17		--	37	.12	43	14	63	11	243	45	44	.9	3.3	.6	381	.52	17.5	165	0	43
Mar. 28	16		--	36	.06	43	14	63	11	244	45	43	1.0	3.6	.6	380	.52	16.4	165	0	43
Apr. 30	15		--	35	.03	43	14	64	11	244	44	45	1.0	3.3	.5	381	.52	15.4	165	0	44
May 29	13		--	34	.05	42	14	64	12	241	44	45	1.3	4.5	.5	380	.52	13.3	162	0	44
June 27	13		62.6	24	—	39	14	68		239	32	46	2.6	1.2	--	344	.47	12.1	155	0	49
July 29	288		70.1	38	—	67	12	84		411	4.6	32	4.0	1.1	--	445	.61	346	216	0	46
Aug. 29	23		61.0	22	—	43	15	68		248	44	42	2.8	1.4	--	360	.49	22.4	169	0	47
Sept. 23	30		60.5	26	—	44	15	63		238	44	43	2.4	1.9	--	356	.48	30.8	172	0	45

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1936 to September 1937

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 29, 1936	14		60.0	19	.06	43	14	66	7.4	247	41	44	1.2	4.0	0.2	361	0.49	13.6	165	0	45
Nov. 24	16		64.5	--	--	44	16	66		244	51	48	--	--	--	380	.52	16.4	176	0	45
Dec. 23	18		58.6	16	.08	43	14	64	7.2	241	42	43	1.4	5.5	.2	355	.48	17.3	165	0	44
Jan. 29, 1937	17		--	--	--	--	--	--	--	245	--	--	--	--	--	378	.51	17.4	--	--	--
Mar. 2	166		--	--	--	62	22	75		271	76	76	--	--	--	506	.69	227	245	23	40
Mar. 26	215		--	--	--	58	23	106		287	92	98	--	--	--	569	.77	330	239	4	49
Apr. 29	22		--	--	--	47	19	81		252	63	71	--	--	--	455	.62	27	196	0	47
May 28	24		--	--	--	--	--	--	--	255	--	--	--	--	--	449	.61	29.1	--	--	--
June 25	18		--	--	--	--	--	--	--	257	--	--	--	--	--	451	.61	21.9	--	--	--
July 28	21		--	--	--	--	--	--	--	256	--	--	--	--	--	448	.61	25.4	--	--	--
Aug. 31	18		70.0	--	--	44	14	80		245	53	61	--	--	--	440	.60	21.4	168	0	51
Sept. 30	17		69.6	--	--	45	14	82		251	54	61	--	--	--	437	.59	20.1	170	0	51

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1937 to September 1938

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 22, 1937	19		70.4			45	14	82		248	56	61				a 458	0.62	23	170	0	51
Nov. 26	17		67.7			44	14	78		245	53	58				a 440	.60	20	168	0	50
Dec. 31	19		67.6			44	15	83		260	51	61				b 382	.52	20	172	0	51
Jan 29, 1938	17		67.2			43	14	84		256	53	59				b 379	.52	18	165	0	53
Feb. 28	21		66.4			43	14	80		249	52	58				b 370	.50	21	165	0	51
Mar. 24	27		67.2			46	15	80		266	47	59				b 378	.51	27	176	0	50
Apr. 20	24		66.0			45	15	80		269	49	55				b 376	.51	24	174	0	50
May 18	15		65.6			44	14	78		255	51	54				b 367	.50	15	168	0	50
June 4	16		79.8			41	15	104		259	63	80				b 431	.59	19	164	0	58
July 7	19		66.8			42	14	79		246	51	57				b 364	.50	19	162	0	51
July 20	17		69.1			44	16	78		239	58	63				b 377	.51	17	176	0	49
Aug. 19	14		60.8			40	14	69		242	44	45				b 331	.45	12	158	0	49
Sept. 14	16		60.3			42	13	69		244	43	45				b 332	.45	14	158	0	49

a Residue on evaporation.

b Sum of reported constituents.

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, water year October 1938 to September 1939

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 23, 1938	15		61.1			41	14	66		241	44	42				a326	0.44	13	160	0	47
Nov. 22	16		60.1			41	15	63		242	42	41				a321	.44	14	164	0	45
Dec. 16	17		61.8			42	14	68		251	45	41				a334	.45	15	162	0	48
Jan. 18, 1939	17		67.7			41	15	78		243	55	56				a366	.50	17	164	0	51
Feb. 16	18		57.9			39	15	63		240	41	40				b363	.49	17	159	0	46
Mar. 16	12		58.1			40	14	65		243	42	40				b363	.49	17	158	0	47
Apr. 24	15		58.5			--	--	--	--	251	--	39				b371	.50	15	--	--	--
June 3	13		64.0			--	--	--	--	241	--	54				b400	.54	14	--	--	--
July 6	13		62.9			--	--	--	--	233	--	54				b396	.54	14	--	--	--
July 19	12		58.3			--	--	--	--	246	--	40				b360	.49	12	--	--	--
Aug. 18	11		57.0			--	--	--	--	241	--	39				b356	.48	10	--	--	--
Sept. 9	1,020		69.7			--	--	--	--	253	--	61				b428	.58	1,170	--	--	--

a Sum of reported constituents.

b Residue by evaporation.

BILL WILLIAMS RIVER NEAR PLANET, ARIZ.--Continued

Chemical analyses, in parts per million, October 1939 to August 1940

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids[a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Oct. 20, 1939	30		69.4							256		60				423	0.58	34			
Nov. 16	22		68.5							253		58				415	.56	24			
Dec. 22	27		59.3							237		41				--	--	--			
Jan. 25, 1940	27		75.2							267		69				--	--	--			
Feb. 4	1,250		53.0							261		26				--	--	--			
Mar. 21	29		66.5							225		57				--	--	--			
Apr. 19	22		61.4							224		48				--	--	--			
May 19	23		61.4							233		46				--	--	--			
June 21	22		64.5							237		53				--	--	--			
July 18	20		63.9							234		54				--	--	--			
Aug. 21	25		73.1							273		63				--	--	--			

a Residue by evaporation.

GILA RIVER NEAR CALVA, ARIZ.

Chemical analyses, in parts per million, August to September 1937

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids[a] Parts per million	Dissolved solids[a] Tons per acre-foot	Dissolved solids[a] Tons per day	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Non-carbonate	Percent sodium
Aug. 6-10, 1937	40.0		382			170	47	576		329	230	965				a2,150	2.92	232	618	348	67
Aug. 11-19	18.6		348			159	42	519		279	257	852				a1,970	2.68	99	570	340	66
Aug. 21-22, 24-31	35.2		270			124	31	391		298	213	582				a1,490	2.03	142	437	193	66
Sept. 1-10	6		445			192	53	669		283	381	1,080				a2,510	3.41	41	697	465	68
Sept. 11-20	284		116			77	17	132		294	64	172				a607	.83	465	262	21	52
Sept. 21-30	267		175			96	22	233		282	123	338				a951	1.29	686	330	99	61

a Sum of reported constituents.

SAN CARLOS RIVER NEAR PERIDOT, ARIZ.

Chemical analyses, in parts per million, August to September 1937

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance (K x 10^6 at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids[a] Parts per million	Dissolved solids[a] Tons per acre-foot	Dissolved solids[a] Tons per day	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Non-carbonate	Percent sodium
Aug. 1-10, 1937	79		70.8			52	19	78		262	24	98				a400	0.54	85	208	0	45
Aug. 11-20	40.2		69.9			55	17	73		266	20	91				a387	.53	42	207	0	44
Aug. 21-31	27.3		77.8			61	18	78		289	18	99				a416	.57	31	226	0	43
Sept. 1-10	7.8		90.2			61	22	100		311	23	129				a488	.66	10	243	0	47
Sept. 11-20	13.3		86.6			57	20	97		291	21	124				a462	.63	17	224	0	48
Sept. 21-30	4.5		92.8			58	21	97		300	20	125				a469	.64	6	231	0	48

a Sum of reported constituents.

GILA RIVER BELOW COOLIDGE DAM, ARIZ.

Chemical analyses, in parts per million, August to September 1937

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids[a]			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Aug. 1-10, 1937	1,108		96.8			52	15	121		187	67	162				a 510	0.69	1,526	192	36	58
Aug. 11-20	810		98.0			47	15	129		171	64	180				a 519	.71	1,135	179	39	61
Aug. 21-26, 31	292		99.1			47	15	132		177	69	176				a 526	.72	415	179	34	62
Sept. 1-4, 6-9	478		100			46	11	145		168	72	187				a 544	.74	702	160	22	66
Sept. 11-20	424		102			48	16	133		170	73	184				a 538	.73	616	186	46	61
Sept. 21-30	461		101			45	16	138		169	70	190				a 542	.74	674	178	40	63

a Sum of reported constituents.

GILA RIVER AT GILLESPIE DAM, ARIZ.

Chemical analyses, in parts per million, February 1926 to June 1927

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																Parts per million	Tons per acre-foot	Tons per day	Total	Non-carbonate	
Feb. 27, 1926	37			28	0.09	162	71	753		312	408	1,170		5.2		2,750	3.74	275	696	441	70
Apr. 16	3,460			22	.24	66	23	136	8.5	194	101	220		1.3		674	.92	6,300	259	100	54
Dec. 12	1,240			28	.15	102	36	290	11	259	185	463		.7		1,240	1.69	4,160	402	190	62
Jan. 17, 1927	360			21	.18	152	62	632	12	304	315	862		14		2,120	2.88	2,060	634	386	65
June 25	0			37	.22	149	80	766	12	140	471	1,280		1.6		2,860	3.89	--	701	586	71

COLORADO RIVER AT YUMA, ARIZ.

Chemical analyses, in parts per million, water year October 1926 to September 1927

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1926	9,810			21	0.33	131	39	224	9.8	227	486	210		2.4	—	1,240	1.68	32,700	487	301	49
Oct. 11-20	8,690			17	.17	135	38	213	8.5	216	506	187		2.3	—	1,210	1.65	28,400	493	316	48
Oct. 21-22, 25-31	5,570			24	.20	148	48	196	8.2	205	579	170		3.7	—	1,280	1.74	19,200	567	399	42
Nov. 1-10	4,260			27	.21	133	47	187	11	207	518	157		3.7	—	1,190	1.61	13,600	525	356	43
Nov. 11-20	3,950			15	.17	129	50	187	9.9	215	500	164		5.5	—	1,170	1.59	12,400	528	351	43
Nov. 21-30	4,630			11	.17	133	49	208	6.1	224	519	178		5.1	—	1,220	1.66	15,200	533	350	45
Dec. 1-10	7,540			12	.21	128	47	191	5.3	214	483	178		3.9	—	1,150	1.57	23,500	513	337	44
Dec. 11, 13-20	9,630			12	.18	118	43	200	7.7	222	411	202		8.0	—	1,110	1.51	28,900	471	289	47
Dec. 21-31	5,980			13	.18	115	41	196	6.1	218	396	206		3.2	—	1,080	1.47	17,500	456	277	48
Jan. 1-10, 1927	3,490			14	.17	118	43	222	8.2	237	394	252		4.8	—	1,170	1.60	11,000	471	277	50
Jan. 11-20	4,220			18	.25	128	52	239	9.6	256	447	278		6.3	—	1,300	1.77	14,800	533	323	49
Jan. 21-31	5,780			18	.21	129	54	227	7.8	256	482	236		4.8	—	1,280	1.75	20,000	544	334	47
Feb. 1-10	4,980			9.4	.20	114	46	186	7.0	224	414	182		5.6	—	1,070	1.46	14,400	474	290	46
Feb. 11-19	21,100			22	.26	89	36	150	6.4	204	311	144		5.1	—	864	1.18	49,200	370	203	46
Feb. 20-28	33,200			15	.28	78	26	145	7.7	195	235	150		4.3	—	757	1.03	67,800	302	142	50
Mar. 1-8, 10	14,000			23	.16	92	30	152	6.7	214	284	153		3.6	—	850	1.16	32,100	353	178	48
Mar. 11-20	12,700			18	.17	102	34	164	7.7	217	339	158		2.8	—	933	1.27	32,000	394	217	47
Mar. 21-31	8,830			19	.24	112	37	171	8.3	211	384	160		2.4	—	998	1.36	23,800	432	259	46
Apr. 1-10	12,800			26	.18	105	38	163	8.2	217	367	150		2.3	—	957	1.30	33,000	418	240	45
Apr. 11-20	22,200			16	.21	85	29	120	6.7	196	287	89		2.1	—	732	1.00	43,800	331	171	43
Apr. 21-26, 28-30	15,200			19	.21	69	24	82	7.4	178	203	69		2.0	—	563	.77	23,100	271	125	39
May 1-8, 10	34,000			17	.25	74	22	78	5.0	179	194	60		1.3	—	540	.73	49,500	275	128	38
May 11-16, 18-20	52,000			14	.24	46	14	48	4.6	154	104	32		1.4	—	340	.46	47,700	172	46	37
May 21-29, 31	58,700			15	.13	49	14	37	2.2	143	95	31		1.3	—	315	.43	49,900	180	63	31
June 1-10	61,400			20	.26	47	12	30	5.6	146	75	25		.5	—	287	.39	47,500	167	47	27
June 11-20	49,900			22	.23	45	13	38	5.9	133	89	30		.7	—	309	.42	41,600	166	57	32
June 21-30	62,700			17	.32	51	16	40	3.8	135	117	28		.6	—	340	.46	57,500	193	82	31
July 1-10	66,600			15	.20	60	16	52	4.5	143	162	33		.7	—	414	.56	74,300	216	98	34
July 11-20	45,500			23	.11	59	18	55	4.8	152	161	35		1.1	0.2	432	.59	53,000	221	96	34
July 21-31	20,400			21	.10	69	20	68	3.5	154	200	46		1.0	.4	504	.69	27,700	254	128	36
Aug. 1-10	16,700			28	.10	84	24	87	2.6	165	254	64		1.1	.4	626	.85	28,200	308	173	37
Aug. 11-19	17,400			26	.10	114	30	107	6.4	174	390	76		1.2	.4	836	1.18	39,200	408	265	36
Aug. 21-31	10,800			23	.10	111	29	108	3.5	178	378	74		2.2	.6	816	1.11	23,800	396	250	37
Sept. 1-10	12,000			18	.10	113	29	110	5.1	176	369	90		2.5	1.0	823	1.12	26,600	401	257	37
Sept. 11-20	41,800			22	.31	159	39	130	5.9	199	537	80		1.0	1.0	1,070	1.46	121,000	558	394	33
Sept. 21-30	36,800			23	.25	123	27	109	6.1	171	432	56		.8	1.0	861	1.17	85,400	418	278	36
Weighted average	22,130			19	0.21	79	24	89	5.4	169	238	73	--	1.7	--	612	0.83	36,900	296	157	39

COLORADO RIVER AT YUMA, Ariz.--Continued

Chemical analyses, in parts per million, water year October 1927 to September 1928

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Oct. 1-10, 1927	23,100			16	0.28	109	26	102	5.6	169	360	360		5.5	0.9	768	1.04	47,900	379	240	36
Oct. 11-20	16,400			14	.32	81	26	102	5.1	162	300	69		9.3	.9	687	.93	30,400	309	176	41
Oct. 21-30	12,100			13	.33	94	25	97	4.0	182	285	74		2.6	.4	685	.93	22,400	338	189	38
Nov. 10	12,800			--	--	--	--	--	--	--	385	98		--	--	--	--	--	--	--	--
Nov. 11-20	11,800			16	.23	137	39	128	5.0	182	477	91		2.9	.8	986	1.34	31,400	502	353	35
Nov. 21-30	10,900			13	.26	109	34	128	5.3	193	377	113		2.6	.8	877	1.19	25,800	412	254	40
Dec. 1-10	9,880			12	.14	103	34	130	5.4	202	359	103		1.6	.8	848	1.15	22,600	397	231	41
Dec. 11-20	7,660			10	.26	107	38	131	8.6	215	359	112		4.6	.7	876	1.19	18,100	423	247	40
Dec. 21-26, 31	5,260			14	.38	109	39	143	7.2	218	368	127		6.7	1.0	922	1.25	13,100	432	253	41
Jan. 1-10, 1928	5,700			9.0	.28	117	44	159	8.8	230	400	154		9.0	.9	1,010	1.38	15,600	473	284	42
Jan. 11-16, 18-20	6,300			11	.27	120	45	164	7.0	234	419	151		6.5	1.0	1,040	1.41	17,700	484	292	42
Jan. 22-31	7,180			17	.33	110	42	146	8.2	225	383	134		5.8	.8	957	1.30	18,500	447	263	41
Feb. 1-6, 8-10	7,300			14	.26	105	40	142	8.3	213	367	131		5.4	.9	918	1.25	18,100	426	251	41
Feb. 11-20	9,270			14	.42	106	40	143	5.9	208	375	134		4.6	1.0	925	1.26	23,100	429	259	42
Feb. 21-27, 29	6,550			13	.37	105	38	154	8.0	217	362	144		4.8	1.0	936	1.27	16,500	418	240	44
Mar. 1-10	6,960			13	.13	108	38	156	4.8	221	370	137		4.4	.7	940	1.28	17,600	426	245	44
Mar. 11-20	10,200			15	.13	101	39	159	4.0	221	370	138		4.0	.7	939	1.28	25,800	412	231	45
Mar. 21-31	9,600			14	.15	95	33	139	4.6	208	343	105		3.8	.7	840	1.14	21,700	373	202	44
Apr. 1-7, 9-10	17,600			8.2	.14	89	32	122	5.6	200	316	92		4.2	.8	768	1.04	36,500	354	190	42
Apr. 11-20	13,100			13	.12	69	26	87	4.8	167	224	66		2.7	.7	575	.78	20,300	279	142	40
Apr. 21-30	9,890			19	.25	75	27	94	3.7	192	225	80		1.8	.5	620	.84	16,500	298	141	40
May 1-10	32,100			--	--	--	--	--	--	194	--	62		--	--	--	--	--	--	--	--
May 11-20	61,600			15	.54	55	16	39	2.6	159	112	28		.6	.4	347	.47	57,600	203	73	29
May 21-31	64,600			13	.25	53	16	39	2.2	148	116	27		.7	.3	340	.46	59,200	198	78	30
June 1-10	74,400			14	.27	45	14	37	4.3	147	92	23		.2	.2	302	.41	60,600	170	49	31
June 11-16, 18-20	77,700			15	.25	44	13	35	3.2	146	79	23		.4	.2	285	.39	59,700	163	44	31
June 21-30	40,800			14	.09	48	14	41	3.0	141	108	28		1.2	.2	327	.44	36,000	177	62	33
July 1-10	36,300			6.6	.12	48	15	43	2.7	134	113	31		2.0	.2	327	.44	32,000	182	72	34
July 11-20	23,800			16	.06	46	13	45	2.4	132	105	34		.9	--	327	.44	21,000	168	60	36
July 21-31	17,200			23	.11	58	18	64	2.7	143	154	54		2.1	--	446	.61	21,000	219	102	38
Aug. 1-10	11,700			9.2	.12	75	22	83	3.7	152	236	65		4.4	--	573	.78	18,100	278	153	39

Chemical analyses, in parts per million, water year October 1927 to September 1928--Continued

Date of collection	Mean discharge (cfs)	Suspended matter (percent)	Specific conductance ($K \times 10^6$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_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
Aug. 11-20, 1928 -----	8,930			14	0.04	78	25	95	5.0	164	255	80		4.3	0.3	637	0.87	15,300	298	163	40
Aug. 21-31 ----------	5,930			19	.09	106	31	116	5.0	168	367	98		7.6	.3	833	1.13	13,300	392	254	39
Sept. 1-10 ----------	6,010			28	.15	107	34	138	9.6	187	383	115		6.7	1.0	914	1.24	14,700	407	254	42
Sept 11-17, 19-20 -----	3,900			20	.09	152	44	167	7.4	193	557	131		7.5	3.5	1,180	1.61	12,400	560	402	39
Sept. 21-30----------	2,630			15	.04	129	42	186	7.0	195	503	157		10	1.2	1,140	1.56	8,120	495	335	45
Weighted average	19,140			14	0.24	68	22	72	4.0	163	195	55		2.3	--	513	0.70	26,100	260	127	37

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