Quality of Surface Waters of the United States, 1968

Parts 9 and 10. Colorado River Basin and The Great Basin

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 2098

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PREFACE

This report was prepared by the U.S. Geological Survey in cooperation with the States of California, Idaho, New Mexico, Utah, Wyoming, U.S. Bureau of Reclamation, and with other agencies, by personnel of the Water Resources Division, E. L. Hendricks, chief hydrologist, G. W. Whetstone, assistant chief hydrologist for Scientific Publications and Data Management, under the general direction of G. A. Billingsley, chief, Reports Section, and B. A. Anderson, chief, Data Reports Unit.

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QUALITY OF SURFACE WATERS OF THE UNITED STATES, 1968

PARTS 9 and 10

INTRODUCTION

The water-quality investigations of the United States Geological Survey are concerned with chemical and physical characteristics of surface- and ground-water supplies of the Nation. The data herein deal with the amounts of matter in solution and in suspension in streams, and represent that portion of the National Water Data System collected by the U.S. Geological Survey in cooperation with State, municipal, and other Federal agencies.

The records of chemical analysis, water temperature, and suspended sediment of surface waters given in this volume serve as a basis for determining the suitability of waters for various uses. The flow and water quality of a stream are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved solids may be expected during periods of high flow than during periods of low flow. Conversely, the suspended solids in some streams may change materially with relatively small variations in flow, whereas for other streams the quality of the water may remain relatively uniform throughout large ranges in discharge.

The Geological Survey has published annual records of chemical quality, water temperature, and suspended sediment since 1941. The records prior to 1948 were published each year in a single volume for the entire country, and in two volumes in 1948 and in 1949. From 1950 to 1958, the records were published in 4 volumes; from 1959 to 1963 in 5 volumes; from 1964 to 1967 in 6 volumes; and since 1968 in 10 volumes. The drainage basins covered by the 10 volumes are shown in Figure 1. The shaded area in Figure 1 represents the section of the country covered in this volume for the water year 1968 (October 1, 1967 to September 30, 1968).

To meet interim requirements, water-quality records have been released by the Geological Survey in annual reports, beginning with the 1964 water year, by State. These reports are entitled, "Water Resources Data for (State), Part 2. Water Quality Records." Distribution of these reports is limited and primarily for local needs. Any revisions or corrections found necessary to the records published in these annual State reports have been made and published in this volume without reference.

The records herein are listed by drainage basins in a downstream direction along the main stream. All stations on a tributary entering above a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. In the list of water-quality stations in the front of this volume, the rank of the tributaries is indicated by an indention. Each indention represents one rank.

As an added means of identification, a station number has been assigned for each stream location where regular measurements of water quantity or quality have been made. The numbers have been assigned to conform with the standard downstream order of listing gaging stations. The numbering system consists of an 8-digit number, such as 09188500. The first 2 digits, "09" identifies the Part or hydrologic region used by the Geological Survey for reporting hydrologic data. The next 6 digits is the

station number which represents the location of the station in the standard downstream order within each of the 16 parts (Fig. 1). The complete number (09188500) appears just to the left of the station name. The assigned numbers are in numerical order but are not consecutive. Gaps are left in the numbers to allow for new stations that may be established.

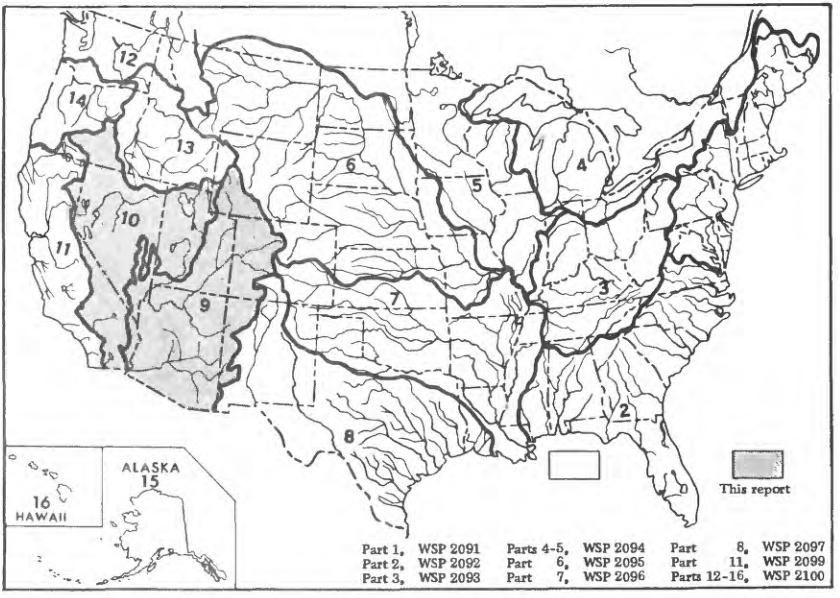

Figure 1.--Map of the United States showing basins covered by the 10 water-supply papers on quality of surface waters in 1968. The shaded part represents the section of the country covered by this volume; the unshaded part represents the section of the country covered by other water-supply papers.

Descriptive statements are given for each sampling station where chemical analyses, temperature measurements, or sediment determinations have been made. These statements include location of the station, drainage area, periods of records available, extremes of dissolved solids, hardness, specific conductance, temperature, sediment loads, and other pertinent data. Records of discharge of the streams at or near the sampling station are included in most tables of analyses.

During the water year ending September 30, 1968, the Geological Survey maintained 93 stations on 57 streams for the study of chemical and physical characteristics of surface water. Samples were collected daily and monthly at 73 of these locations for chemical-quality studies. Samples also were collected less frequently at many other points. Water temperatures were measured continuously at 9 and daily at 55 stations. All surface water samples collected and analyzed during the year have not been included. Single analyses made of daily samples before compositing have not been reported. Specific conductance is determined and reported for almost all daily samples.

At chemical-quality stations where data are continuously recorded at the stream site (monitors), the records consist of daily maximum, minimum, and mean values for each constituent measured. More detailed records (hourly values) may be obtained by writing the district office listed under Division of Work on page 21.

Quantities of suspended sediment are reported for 30 stations during the year ending September 30, 1968. Sediment samples were collected one or more times daily at most stations, depending on the rate of flow and changes in stage of the stream. Particle-size distributions of sediments were determined at 25 stations.

Some of the stations for which data are published in this volume are included in special networks and programs. These stations are identified by their title, set in parentheses, under the station name.

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

International Hydrological Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and the general distribution of water in the principal river basins of the conterminous United States and Alaska.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to water year 1966, these data were published in the annual water-supply paper series, "Quality of Surface Water for Irrigation, Western States."

Pesticide program is a network of regularly sampled water-quality stations where additional monthly samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

Radiochemical program is a network of regularly sampled water-quality stations where additional samples are collected twice a year (at high and low flow) to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

COLLECTION AND EXAMINATION OF DATA

Quality of water stations usually are located at or near points on streams where streamflow is measured by the U.S. Geological Survey. The concentration of solutes and sediments at different locations in the stream-cross section may vary widely with different rates of water discharge depending on the source of the material and the turbulence and mixing of the stream. In general, the distribution of sediment in a stream section is much more variable than the distribution of solutes. It is necessary to sample some streams at several verticals across the channel and especially for sediment, to uniformly traverse the depth of flow. These measurements require special sampling equipment to adequately integrate the vertical and lateral variability of the concentration in the section. These procedures yield a velocity-weighted mean concentration for the section.

The near uniformly dispersed ions of the solute load move with the velocity of the transporting water. Accordingly, the mean section concentration of solutes determined from samples is a precise measure of the total solute load. The mean section concentration obtained from suspended sediment samples is a less precise measure of the total sediment load, because the sediment samplers do not traverse the bottom 0.3 foot of the sampling vertical where the concentration of suspended sediment is greatest and because a significant part of the coarser particles in many streams move in essentially continuous contact with the bed and are not represented in the suspended sediment sample. Hence, the computed sediment loads presented

in this report are usually less than the total sediment loads. For most streams the difference between the computed and total sediment loads will be small, in the order of a few percent.

CHEMICAL QUALITY

The methods of collecting and compositing water samples for chemical analysis are described by Rainwater and Thatcher (1960) and by Brown, Skougstad, and Fishman (1970). No single method of compositing samples is applicable to all problems related to the study of water quality. Composites are made on the basis of dissolved-solids content as indicated by measurements of conductivity of daily samples, supplemented by other information such as chloride content, river stage, weather conditions and other background information of the stream.

TEMPERATURE

Daily water temperatures were measured at most of the stations at the time samples were collected for chemical quality or sediment content. So far as practicable, the water temperatures were taken at about the same time each day. Large streams have a small diurnal temperature change while small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day, and the monthly averages.

SEDIMENT

In general, suspended-sediment samples were collected daily with depth-integrating samplers (U.S. Inter-Agency, 1963). At some stations, samples were collected at a fixed sampling point at one vertical in the cross section. Depth-integrated samples were collected periodically at three or more verticals in the cross section to determine the cross-sectional distribution of the concentration of suspended sediment with respect to that at the daily sampling vertical. In streams where transverse distribution of sediment concentration ranged widely, samples were taken at two or more verticals to define more accurately the average concentration of the cross section. During periods of high or rapidly changing flow, samples generally were taken several times a day and, in some instances, hourly.

Sediment concentrations were determined by filtration-evaporation method. At many stations the daily mean concentration for some days was obtained by plotting the velocity-weighted instantaneous concentrations on the gage-height chart. The plotted concentrations, adjusted if necessary, for cross-sectional distribution were connected or averaged by continuous curves to obtain a concentration graph. This graph represented the estimated velocity-weighted concentration at any time, and for most periods daily mean concentrations were determined from the graph. The days were divided into shorter intervals when the concentration or water discharge were changing rapidly. During some periods of minor variation in concentration, the average concentration of the samples was used as the daily mean concentration. During extended periods of relatively uniform concentration and flow, samples for a number of days were composited to obtain average concentrations and average daily loads for each period. (See Expression of Results, p. 6.)

For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. The estimates were further guided by precipitation records and sediment discharge at other stations in the same or adjacent basins.

In many instances where there were no observations for several days, the suspended-sediment loads for individual days were not estimated, because numerous factors influencing the quantities of transported sediment made it very difficult to make accurate estimates for individual days. However, estimated loads of suspended sediment for missing days in an otherwise continuous period of sampling have been included in monthly and annual totals in order to provide a complete record. For some streams, samples were collected weekly, monthly, or less frequently, and only rates of sediment discharge at the time of sampling are shown.

In addition to the records of quantities of suspended sediment transported, records of particle sizes of sediment are included. The particle sizes of suspended sediment for many of the stations, and the particle sizes of the bed material for some of the stations were determined intermittently.

The size of particles carried in suspension by streams commonly ranges from colloids (finer than about 0.24 microns) to coarse sand (2.0 mm). The common methods of particle-size analysis cannot accommodate such a wide range. Hence, it was necessary to separate most samples into two parts, that part coarser than 0.062 mm and that part finer than 0.062 mm. The separations were made by sieve or by fall velocity technique. The coarse fractions were classified by sieve separation or by visual-accumulation tube (U.S. Inter-Agency, 1957). The fine fractions were classified by the pipet method (Kilmer and Alexander, 1949) or the bottom withdrawal tube method (U.S. Inter-Agency, 1943).

EXPRESSION OF RESULTS

The quantities of solute concentrations analyzed in the laboratory are measured in milligrams per liter. Milligrams per liter (mg/l, MG/L) is a unit which represents the weight of solute per unit volume of water.

Milliequivalents per liter are not reported but they can be converted easily from milligrams per liter data. A milliequivalent per liter (me/l) is one thousandth of a gram equivalent weight of a constituent. Chemical equivalence in milliequivalents per liter can be obtained by (a) dividing the concentration in milligrams per liter by the combining weight of that ion, or (b) by multiplying the concentration (in mg/l) by the reciprocals of the combining weights. Table 1 below, lists the reciprocals of the combining atomic weights based on carbon-12 (International Union of Pure and Applied Chemistry, 1961).

Table 1.--Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})	0.11119	Iodide (I^{-1})	0.00788
Ammonia as NH^{+1}	.05544	Iron (Fe^{+3})	.05372
Arsenic (As^{+3})	.04004	Lead (Pb^{+2})	.00965
Barium (Ba^{+2})	.01456	Lithium (Li^{+1})	.14411
Bicarbonate (HCO_3^{-1})	.01639	Magnesium (Mg^{+2})	.08226
Bromide (Br^{-1})	.01251	Manganese (Mn^{+2})	.03640
Cadmium (Cd^{+2})	.01779	Mercury (Hg^{+2})	.00997
Calcium (Ca^{+2})	.04990	Nickel (Ni^{+2})	.03406
Carbonate (CO_3^{-2})	.03333	Nitrate (NO_3^{-1})	.01613
Chloride (Cl^{-1})	.02821	Nitrite (NO_2^{-1})	.02174
Chromium (Cr^{+6})	.11539	Phosphate (PO_4^{-3})	.03159
Cobalt (Co^{+2})	.03394	Potassium (K^{+1})	.02557
Copper (Cu^{+2})	.03148	Sodium (Na^{+1})	.04350
Cyanide (CN^{-1})	.03844	Strontium (Sr^{+2})	.02283
Fluoride (F^{-1})	.05264	Sulfate (SO_4^{-2})	.02082
Hydrogen (H^{+1})	.99209	Sulfide (S^{-2})	.06238
Hydroxide (OH^{-1})	.05880	Zinc (Zn^{+2})	.03060

The hardness of water is conventionally expressed in all water analyses in terms of an equivalent quantity of calcium carbonate. Such a procedure is required because hardness is caused by several different cations, present in variable proportions. It should be remembered that hardness is an expression in conventional terms of a property of water. The actual presence of calcium carbonate in the concentration given is not to be assumed. The hardness caused by calcium and magnesium (and other cations if significant) equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness in excess of this quantity is called noncarbonate hardness. Hardness or alkalinity values expressed in milligrams per liter as calcium carbonate may be converted to milliequivalents per liter by dividing by 50.

The value usually reported as dissolved solids is the residue on evaporation after drying at 180°C for 1 hour. For some waters, particularly those containing moderately large quantities of soluble salts, the value reported is calculated from the quantities of the various determined constituents using the carbonate equivalent of the reported bicarbonate. The calculated sum of the constituents may be given instead of or in addition to the residue. In the analyses of most waters used for irrigation, the quantity of dissolved solids is given in tons per acre-foot as well as in milligrams per liter.

Specific conductance is given for most analyses and was determined by means of a conductance bridge and using a standard potassium chloride solution as reference. Specific conductance values are expressed in micromhos per centimeter at 25°C. Specific conductance in micromhos is 1 million times the reciprocal of specific resistance at 25°C. Specific resistance is the resistance in ohms of a column of water 1 centimeter long and 1 square centimeter in cross section.

The discharge of the streams is reported in cubic feet per second (see Streamflow, p. 19) and the temperature in degrees Celsius (°C). Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892). A unit of color is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Hydrogen-ion concentration is expressed in terms of pH units. By definition the pH value of a solution is the negative logarithm of the concentration of gram ions of hydrogen.

An average of analyses for the water year is given for most daily sampling stations. Most of these averages are arithmetical, time-weighted, or discharge-weighted; when analyses during a year are all on 10-day composites of daily samples with no missing days, the arithmetical and time-weighted averages are equivalent. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the river each day for the water year. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all of the water passing a given station during the year. A discharge-weighted average is computed by multiplying the discharge for the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. For most streams, discharge-weighted averages are lower than arithmetical averages because at times of high discharge the rivers generally have low concentrations of dissolved solids.

A program for computing these averages by digital computer was instituted in the 1962 water year. This program extended computations to include averages for pH values expressed in terms of hydrogen ion and averages for the concentration of individual constituents expressed in tons per day. Concentrations in tons per day are computed the same as daily sediment loads.

The concentration of sediment in milligrams per liter is computed as 1,000,000 times the ratio of the weight of sediment to the weight of water-sediment mixture. Daily sediment loads are expressed in tons per day and except for subdivided days, are usually obtained by multiplying daily mean sediment concentrations in mg/l by the daily mean discharge in cubic feet per second, and the conversion factor, normally 0.0027.

For those days when the published sediment discharge value differs from the value computed, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method.

Particle-size analyses are expressed in percentages of material finer than classified sizes (in millimeters). The size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Clay:	Smaller than 0.004 mm
Silt:	Between 0.004 and 0.062 mm
Sand:	Between 0.062 and 2.0 mm
Gravel:	Between 2.0 and 64.0 mm

The particle-size distributions given in this report are not necessarily representative of the particle sizes of sediment in transport in the natural stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis of the silt and clay.

Prior to the 1968 water year, data for chemical constituents and concentrations of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967, the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. (See table 2 on page 8.) To convert temperature in degrees Celsius to degrees Fahrenheit see table 3 on page 8.

COMPOSITION OF SURFACE WATERS

All natural waters contain dissolved mineral matter. The quantity of dissolved mineral matter in a natural water depends primarily on the type of rocks or soils with which the water has been in contact and the length of time of contact. Ground water is generally more highly mineralized than surface runoff because it remains in contact with the rocks and soils for much longer periods. Some streams are fed by both surface runoff and ground water from springs or seeps. Such streams reflect the chemical character of their concentrated underground sources during dry periods and are more dilute during periods of heavy rainfall. The dissolved-solids content in a river is frequently increased by drainage from mines or oil fields, by the addition of industrial or municipal wastes, or--in irrigated regions--by drainage from irrigated lands.

The mineral constituents and physical properties of natural waters reported in the tables of analyses include those that have a practical bearing on water use. The results of analyses generally include silica, iron, calcium, magnesium, sodium, potassium (or sodium and potassium together calculated as sodium), carbonate, bicarbonate, sulfate, chloride, fluoride, nitrate, boron, pH, dissolved solids, and specific conductance. Aluminum, manganese, color, acidity, dissolved oxygen, and other dissolved constituents and physical properties are reported for certain streams. Microbiologic (coliforms) and organic components (pesticides, total organic carbon) and minor elements (arsenic, cobalt, cadmium, copper, lead, mercury, nickel, strontium, zinc, etc.) are determined occasionally for some streams in connection with specific problems and the results are reported. The source and significance of the different constituents and properties of natural waters are discussed in the following paragraphs. The constituents are arranged in the order that they appear in the tables.

MINERAL CONSTITUENTS IN SOLUTION

Silica (SiO_2)

Silica is dissolved from practically all rocks. Some natural surface waters contain less than 5 milligrams per liter of silica and few contain more than 50 mg/l, but the more common range is from 10 to 30 mg/l. Silica affects the usefulness of a water because it contributes to the formation of boiler scale; it usually is removed from

Table 2.--Factors for conversion of sediment concentration in parts per million to milligrams per liter *
[All values calculated to three significant figures]

Range of concentration (ppm)	Multiply by	Range of concentration (ppm)	Multiply by
0 - 15,900	1.00	322,000 - 341,000	1.26
16,000 - 46,800	1.02	342,000 - 361,000	1.28
46,900 - 76,500	1.04	362,000 - 380,000	1.30
76,600 - 105,000	1.06	381,000 - 399,000	1.32
106,000 - 133,000	1.08	400,000 - 416,000	1.34
134,000 - 159,000	1.10	417,000 - 434,000	1.36
160,000 - 185,000	1.12	435,000 - 451,000	1.38
186,000 - 210,000	1.14	452,000 - 467,000	1.40
211,000 - 233,000	1.16	468,000 - 483,000	1.42
234,000 - 256,000	1.18	484,000 - 498,000	1.44
257,000 - 279,000	1.20	499,000 - 514,000	1.46
280,000 - 300,000	1.22	515,000 - 528,000	1.48
301,000 - 321,000	1.24	529,000 - 542,000	1.50

* Based on water density of 1.000 g/ml and sediment density of 2.65 g/cc.

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

*C = 5/9 (°F - 32) or °F = 9/5 (°C) + 32.

feed water for high-pressure boilers. Silica also forms troublesome deposits on the blades of steam turbines. However, it is not physiologically significant to humans, livestock, or fish, nor is it of importance in irrigation water.

Aluminum (Al)

Aluminum is usually present only in negligible quantities in natural waters except in areas where the waters have been in contact with the more soluble rocks of high aluminum content such as bauxite and certain shales. Acid waters often contain large amounts of aluminum. It may be troublesome in feed waters where it tends to be deposited as a scale on boiler tubes.

Iron (Fe)

Iron is dissolved from many rocks and soils. On exposure to air, normal basic waters that contain more than 1 mg/l of iron soon become turbid with the insoluble reddish ferric compounds produced by oxidation. Surface waters, therefore, seldom contain as much as 1 mg/l of dissolved iron, although some acid waters carry large quantities of iron in solution. Iron causes reddish-brown stains on porcelain or enameled ware and fixtures and on fabrics washed in the water. Concentrations of more than 0.3 mg/l are not acceptable for drinking and culinary use. (U.S. Public Health Service, 1962).

Manganese (Mn)

Manganese is dissolved in appreciable quantities from rocks in some sections of the country. It resembles iron in its chemical behavior and in its occurrence in natural waters. However, manganese in rocks is less abundant than iron. As a result the concentration of manganese is much less than that of iron and is not regularly determined in many areas. It is especially objectionable in water used in laundry work and in textile processing. Concentrations as low as 0.2 mg/l may cause a dark-brown or black stain on fabrics and porcelain fixtures. Appreciable quantities of manganese are often found in waters containing objectionable quantities of iron.

Calcium (Ca)

Calcium is dissolved from almost all rocks and soils, but the highest concentrations are usually found in waters that have been in contact with limestone, dolomite, and gypsum. Calcium and magnesium make water hard and are largely responsible for the formation of boiler scale. Most waters associated with granite or silicious sands contain less than 10 mg/l of calcium; waters in areas where rocks are composed of dolomite and limestone contain from 30 to 100 mg/l; and waters that have come in contact with deposits of gypsum may contain several hundred mg/l.

Magnesium (Mg)

Magnesium is dissolved from many rocks, particularly from dolomitic rocks. Its effect in water is similar to that of calcium. The magnesium in soft waters may amount to only 1 or 2 mg/l, but water in areas that contain large quantities of dolomite or other magnesium-bearing rocks may contain from 20 to 100 mg/l or more of magnesium.

Sodium and potassium (Na and K)

Sodium and potassium are dissolved from practically all rocks. Sodium is the predominant cation in some of the more highly mineralized waters found in the western United States. Natural waters that contain only 3 or 4 mg/l of the two together are likely to carry almost as much potassium as sodium. As the total quantity of these constituents increases, the proportion of sodium becomes much greater. Moderate quantities of sodium and potassium have little effect on the usefulness of the water for most purposes, but waters that carry more than 50 to 100 mg/l of the two may require careful operation of steam boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

Bicarbonate, carbonate and hydroxide (HCO_3, CO_3, OH)

Bicarbonate, carbonate, or hydroxide is sometimes reported as alkalinity. The alkalinity of a water is produced by anions or molecular species of weak acids which

are not fully dissociated above a pH of 4.5. Since the major causes of alkalinity in most natural waters are carbonate and bicarbonate ions dissolved from carbonate rocks, the results are usually reported in terms of these constituents. Although alkalinity may suggest the presence of definite amounts of carbonate, bicarbonate or hydroxide, there are other ions that contribute to alkalinity such as silicates, phosphates, borates, possibly fluoride, and certain organic anions which may occur in colored waters. The significance of alkalinity to the domestic, agricultural, and industrial user is usually dependent upon the nature of the cations (Ca, Mg, Na, K) associated with it. Alkalinity in moderate amounts does not adversely affect most users.

Hydroxide may occur in water that has been softened by the lime process. Its presence in streams usually can be taken as an indication of contamination and does not represent the natural chemical character of the water.

Sulfide (S)

Sulfide occurs in water as a result of bacterial and chemical processes. It usually is present as hydrogen sulfide. Variable amounts may be found in waters receiving sewage and (or) industrial wastes, such as from tanneries, papermills, chemical plants, and gas manufacturing work (California State Water Quality Control Board, 1963).

Waters containing sulfides, especially hydrogen sulfide, may be considered undesirable because of their odor. The U.S. Public Health Service (1962) states that water on carriers subject to Federal quarantine regulations shall have no objectionable taste or odor. The toxicity to aquatic organisms differs significantly with the species and the nature of associated ions.

Sulfate (SO_4)

Sulfate is dissolved from most sedimentary rocks. Large quantities may be derived from beds of gypsum, sodium sulfate deposits, and some types of shale. Organic material containing sulfur adds sulfate to the water as a phase of the sulfur cycle. In natural waters, concentrations range from a few mg/l to several thousand mg/l.

The U.S. Public Health Service (1962) recommends that the sulfate concentration not exceed 250 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations.

Sulfates are less toxic to crops than chlorides.

Chloride (Cl)

Chloride is dissolved from rock materials in all parts of the country. Surface waters in the humid regions are usually low in chloride, whereas streams in arid or semiarid regions may contain several hundred mg/l of chloride leached from soils and rocks, especially where the streams receive return drainage from irrigated lands or are affected by ground-water inflow carrying appreciable quantities of chloride. Large quantities of chloride in water that contains a high content of calcium and magnesium increases the water's corrosiveness. The presence of abnormal concentrations of chloride and nitrogenous material together in water supplies indicates possible pollution by human or animal wastes.

Fluoride (F)

Fluoride has been reported as being present in some rocks to about the same extent as chloride. However, the quantity of fluoride in natural surface waters is ordinarily very small compared to that of chloride. Investigations have proved that fluoride concentrations of about 0.6 to 1.7 mg/l reduced the incidence of dental caries and that concentrations greater than 1.7 mg/l also protect the teeth from cavities but cause an undesirable black stain (Durfor and Becker, 1964, p. 20). Public Health Service, 1962, states, "When fluoride is naturally present in drinking water, the concentration should not average more than the appropriate upper control limit (0.6 to 1.7 mg/l). Presence of fluoride in average concentration greater than two times the optimum values shall constitute grounds for rejection of the supply." Concentration higher than the stated limits may cause mottled enamel in teeth, endemic cumulative fluorosis, and skeletal effects.

Bromide (Br)

Bromine is a very minor element in the earth's crust and is normally present in surface waters in only minute quantities. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It resembles chloride in that it tends to be concentrated in sea water.

Iodide (I)

Iodide is considerably less abundant both in rocks and water than bromine. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It occurs in sea water to the extent of less than 1 mg/l. Rankama and Sahama (1950) report iodide present in rainwater to the extent of 0.001 to 0.003 mg/l and in river water in about the same amount. Few waters will contain over 2.0 mg/l.

Nitrogen, organic (N)

Organic nitrogen includes all nitrogenous organic compounds, such as amino acid, polypeptides, and proteins. It is present naturally in all surface waters as the result of inflow of nitrogenous products from the watershed and the normal biological life of the stream.

Organic nitrogen is not pathologically significant but is sometimes an indication of pollution.

Nitrogen, ammonia (NH_4, as N)

Ammonia nitrogen includes nitrogen in the forms of NH_3 and NH_4^{+1}. As a component of the nitrogen cycle, it is often present in water, but usually in only small amounts. More than 0.1 mg/l usually indicates organic pollution (Rudolph, 1931).

There is no evidence that ammonia nitrogen in water is physiologically significant to man or livestock. Fish, however, cannot tolerate large quantities.

Nitrite (NO_2)

Nitrite is unstable in the presence of oxygen and is, therefore, absent or present in only minute quantities in most natural waters under aerobic condition. The presence of nitrite in water is sometimes an indication of organic pollution.

Recommended tolerances of nitrite in domestic water supplies differ widely. A generally accepted limit is 2 mg/l, but as little as 0.1 mg/l has been proposed (California State Water Quality Control Board, 1963).

Nitrate (NO_3)

Nitrate in water is considered a final oxidation product of nitrogenous material and may indicate contamination by sewage or other organic matter, such as agricultural runoff, or industrial waste. The quantities of nitrate present in surface waters are generally less than 5 mg/l (as NO_3) and have no effect on the value of the water for ordinary uses.

It has been reported that as much as 2 mg/l of nitrate in boiler water tends to decrease intercrystalline cracking of boiler steel. Studies made by Faucett and Miller (1946), Waring (1949) and by the National Research Council (Maxcy, 1950) concluded that drinking water containing nitrates in excess of 44 mg/l (as NO_3) should be regarded as unsafe for infant feeding. U.S. Public Health Service (1962) sets 45 mg/l as the upper limit.

Phosphorus (P)

Phosphorus is an essential element in the growth of plants and animals. It occurs in water as organically bound phosphorus or as phosphate (PO_4). Some sources that contribute nitrate, such as organic wastes are also important sources of phosphorus. The addition of phosphates in water treatment constitutes a possible source although the dosage is usually small. In some areas phosphate fertilizers may yield some phosphorus to water. Another important source is the use of phosphates in detergents.

Domestic and industrial sewage effluents often contain considerable amounts of phosphorus. Concentrations of phosphorus found in water are not reported to be toxic to man, animal, or fish. However, the element can stimulate the growth of algae, which may cause taste and odor problems in public water treatment and esthetic problems in recreation areas.

Boron (B)

Boron in small quantities has been found essential for plant growth, but irrigation water containing more than 1 mg/l boron is detrimental to citrus and other boron-sensitive crops. Boron is reported in Survey analyses of surface waters in arid and semiarid regions of the Southwest and West where irrigation is practiced or contemplated, but few of the surface waters analyzed have harmful concentrations of boron.

Dissolved solids

The reported quantity of dissolved solids--the residue on evaporation--consists mainly of the dissolved mineral constituents in the water. It may also contain some organic matter and water of crystallization. Waters with less than 500 mg/l of dissolved solids are usually satisfactory for domestic and some industrial uses. Water containing several thousand mg/l of dissolved solids are sometimes successfully used for irrigation where practices permit the removal of soluble salts through the application of large volumes of water on well-drained lands, but generally water containing more than about 2,000 mg/l is considered to be unsuitable for long-term irrigation under average conditions.

Arsenic (As)

Arsenic compounds are present naturally in some waters, but the occurrence of quantities detrimental to health is rare. Weed killers, insecticides and many industrial effluents contain arsenic and are potential sources of water pollution. The U.S. Public Health Service (1962) states that the concentration of arsenic in drinking water on carriers subject to Federal quarantine regulations should not exceed 0.01 mg/l and concentrations in excess of 0.05 mg/l are grounds for rejection of the supply. Concentrations of 2-4 mg of arsenic per liter are reported not to interfere with the self-purification of streams (Rudolfs and others, 1944) but concentrations in excess of 15 mg/l may be harmful to some fish.

Barium (Ba)

Barium may replace potassium in some of the igneous rock minerals, especially feldspar, and barium sulfate (barite) is a common barium mineral of secondary origin. Only traces of barium are present in surface water and sea water. Because natural water contains sulfate, barium will dissolve only in trace amounts. Barium sometimes occurs in brines from oil-well wastes.

The U.S. Public Health Service (1962) states that water containing concentrations of barium in excess of 1.0 mg/l is not suitable for drinking and culinary use because of the serious toxic effects of barium on heart, blood vessels, and nerves.

Cadmium (Cd)

This element is found in nature largely in the form of the sulfide, and as an impurity in zinc-lead ores. The carbonate and hydroxide are not very soluble in water and will precipitate at high pH values; the chloride, nitrate, and sulfate are soluble and remain in solution under most pH conditions.

The extensive use of the element and its salts in metallurgy, electroplating, ceramics, and photography make it a frequent component of industrial wastes.

The U.S. Public Health Service (1962) established as grounds for rejection any water containing more than 0.01 mg/l of cadmium.

Chromium (Cr)

Few if any waters contain chromium from natural sources. Natural waters can probably contain only traces of chromium as a cation unless the pH is very low. When

chromium is present in water, it is usually the result of pollution by industrial wastes. Concentrations of more than 0.05 mg/l of chromium in the hexavalent form constitute grounds for rejection of a water for domestic use on the basis of the standards of the U.S. Public Health Service (1962).

Cobalt (Co)

Cobalt occurs in nature in the minerals smaltite, $(Co,Ni)As_2$, and cobaltite, CoAsS. Alluvial deposits and soils derived from shales often contain cobalt in the form of phosphate or sulfate, but other soil types may be markedly deficient in cobalt in any form (Bear, 1955). Ruminant animals may be adversely affected by grazing on land deficient in cobalt.

For domestic water supplies, no maximum safe concentration has been established.

Copper (Cu)

Copper is a fairly common trace constituent of natural water. Small amounts may be introduced into water by solution of copper and brass water pipes and other copper-bearing equipment in contact with the water, or from copper salts added to control algae in open reservoirs. Copper salts such as the sulfate and chloride are highly soluble in waters with a low pH but in water of normal alkalinity the salts hydrolyze and the copper may be precipitated. In the normal pH range of natural water containing carbon dioxide, the copper might be precipitated as carbonate. The oxidized portions of sulfide-copper ore bodies contain other copper compounds. The presence of copper in mine water is common.

Copper imparts a disagreeable metallic taste to water. As little as 1.5 mg/l can usually be detected, and 5 mg/l can render the water unpalatable. Copper is not considered to be a cumulative systemic poison like lead and mercury; most copper ingested is excreted by the body and very little is retained. The pathological effects of copper are controversial, but it is generally believed very unlikely that humans could unknowingly ingest toxic quantities from palatable drinking water. The U.S. Public Health Service (1962) recommends that copper should not exceed 1.0 mg/l in drinking and culinary water.

Lead (Pb)

Lead seldom occurs in most natural waters, but industrial mine and smelter effluents may contain relatively large amounts of lead which contaminates the streams. Also, atmospheric contamination which is produced from several types of engine exhausts has considerably increased the availability of this element for solution in rainfall, resulting in contamination of lead in streams (Hem, 1970).

Lead in the form of sulfate is reported to be soluble in water to the extent of 31 mg/l (Seidell, 1940) at 25°C. In natural water this concentration would not be approached, however, since a pH of less than 4.5 would probably be required to prevent formation of lead hydroxide and carbonate. It is reported (Pleissner, 1907) that at 18°C water free of carbon dioxide will dissolve the equivalent of 1.4 mg/l of lead and the solubility is increased nearly fourfold by the presence of 2.8 mg/l of carbon dioxide in the solution. Presence of other ions may increase the solubility of lead. Reports on human tolerance of lead vary widely, but the U.S. Public Health Service (1962) states that lead shall not exceed 0.05 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations.

Lithium (Li)

Lithium is present in some minerals but is not abundant in nature. From available information, most fresh waters rarely contain lithium of concentrations exceeding 10 mg/l, but larger quantities may be present in brines and thermal waters. Lithium is used in metallurgy, medicinal water, and some types of glass and storage batteries. Waste from such industries may contain lithium.

Mercury (Hg)

Mercury is the only common metal which is liquid at ordinary temperatures. It occurs free in nature but its chief source is cinnabar (HgS). Mercury compounds are virulent culminative poisons which are readily absorbed through the respiratory and gastrointestinal tracts or through unbroken skin (Weast and Selby, 1967).

The main source of high concentrations of dissolved mercury in water, in the form of highly toxic methyl mercury, $Hg(CH_3)_2$, comes from waste discharges from industrial users of mercury and from mercurial pesticides.

Fish from streams and lakes subject to mercury contamination have been found to contain amounts of mercury above the safe limits for food consumption. The U.S. Public Health Service has proposed that the upper limits of dissolved mercury in water for domestic use should not exceed 5 micrograms per liter (0.005 mg/l).

Nickel (Ni)

Elemental nickel seldom occurs in nature, but its compounds are found in many ores and minerals. Many nickel salts are quite soluble and may contribute to water pollution, especially when discharged from metal-plating industries.

The U.S. Public Health Service (1962) has not placed a limit on nickel concentration in public water supplies.

Strontium (Sr)

Strontium is a typical alkaline-earth element and is similar chemically to calcium. Strontium may be present in natural water in amounts up to a few mg/l much more frequently than the available data indicate. In most surface water the amount of strontium is small in proportion to calcium. However, in sea water the ratio of strontium to calcium is 1:30.

Zinc (Zn)

Zinc is abundant in rocks and ores but is only a minor constituent in natural water because the free metal and its oxides are only sparingly soluble. In most alkaline surface waters it is present only in trace quantities, but more may be present in acid water. Chlorides and sulfates of zinc are highly soluble. Zinc is used in many commercial products, and industrial wastes may contain large amounts.

Zinc in water does not cause serious effects on health, but produces undesirable esthetic effects. The U.S. Public Health Service (1962, p. 55) recommends that the zinc content not exceed 5 mg/l in drinking and culinary water.

PROPERTIES AND CHARACTERISTICS OF WATER

Dissolved solids

Theoretically, dissolved solids are anhydrous residues of the dissolved substances in water.

All solutes affect the chemical and physical properties of the water and result in an osmotic pressure. Water with several thousand mg/l of dissolved solids is generally not palatable, although those accustomed to highly mineralized water may complain that less concentrated water tastes flat. The U.S. Public Health Service (1962) recommends that the maximum concentration of dissolved solids not exceed 500 mg/l in drinking and culinary water on carriers subject to Federal quarantine regulations, but permits 1,000 mg/l if no better water is available. Reported livestock tolerances range from 3,000 mg/l (Colorado Agricultural Experiment Station, 1943) to 15,000 mg/l (Heller, 1933).

Industrial tolerances for dissolved solids differ widely, but few industrial processes will permit more than 1,000 mg/l. The Geological Survey classifies the degree of salinity of these more mineralized bodies of water as follows (Swenson and Baldwin, 1965):

Dissolved solids (mg/l)	Degree of salinity
Less than 1,000	Nonsaline.
1,000 to 3,000	Slightly saline.
3,000 to 10,000	Moderately saline.
10,000 to 35,000	Very saline.

Hardness

Hardness is the characteristic of water that receives the most attention in industrial and domestic use. It is commonly recognized by the increased quantity of soap required to produce lather. The use of hard water is also objectionable because it contributes to the formation of scale in boilers, water heaters, radiators, and pipes, with the resultant decrease in rate of heat transfer, possibility of boiler failure, and loss of flow.

Hardness is caused almost entirely by compounds of calcium and magnesium. Other constituents--such as iron, manganese, aluminum, barium, strontium, and free acid--also cause hardness, although they usually are not present in quantities large enough to have any appreciable effect.

Generally, bicarbonate and carbonate determine the proportions of "carbonate" hardness of water. Carbonate hardness is the amount of hardness chemically equivalent to the amount of bicarbonate and carbonate in solution. Carbonate hardness is approximately equal to the amount of hardness that is removed from water by boiling.

Noncarbonate hardness is the difference between the hardness calculated from the total amount of calcium and magnesium in solution and the carbonate hardness. The scale formed at high temperatures by the evaporation of water containing noncarbonate hardness commonly is tough, heat resistant, and difficult to remove.

Although many people talk about soft water and hard water, there has been no firm line of demarcation. Water that seems hard to an easterner may seem soft to a westerner. In this report hardness of water is classified as follows:

Hardness range (calcium carbonate in mg/l)	Hardness description
0-60	Soft
61-120	Moderately hard
121-180	Hard
More than 180	Very hard

Durfor and Becker, 1964, p. 23-27.

Acidity (H^{+1})

The use of the terms acidity and alkalinity is widespread in the literature of water analysis and is a cause of confusion to those who are more accustomed to seeing a pH of 7.0 used as a neutral point. Acidity of a natural water represents the content of free carbon dioxide and other uncombined gases, organic acids and salts of strong acids and weak bases that hydrolyze to give hydrogen ions. Sulfates of iron and aluminum in mine and industrial wastes are common sources of acidity.

Sodium adsorption ratio (SAR)

The term "sodium adsorption ratio (SAR)" was introduced by the U.S. Salinity Laboratory Staff (1954). It is a ratio expressing the relative activity of sodium ions in exchange reaction with soil and is an index of the sodium or alkali hazard to the soil. Sodium adsorption ratio is expressed by the equation:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{++}+Mg^{++}}{2}}}$$

where the concentrations of the ions are expressed in milliequivalents per liter.

Waters are divided into four classes with respect to sodium or alkali hazard: low, medium, high, and very high, depending upon the SAR and the specific conductance. At a conductance of 100 micromhos per centimeter the dividing points are at SAR values of 10, 18, and 26, but at 5,000 micromhos the corresponding dividing points are SAR values of approximately 2.5, 6.5, and 11. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Specific conductance (micromhos per centimeter at 25°C)

Specific conductance is a convenient, rapid determination used to estimate the amount of dissolved solids in water. It is a measure of the ability of water to transmit a small electrical current (see p. 6). The more dissolved solids in water that can transmit electricity the greater the specific conductance of the water. Commonly, the amount of dissolved solids (in mg/l) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well and it may even vary in the same source with changes in the composition of the water (Durfor and Becker, 1964 p. 27-29).

Specific conductance of most waters in the eastern United States is less than 1,000 micromhos, but in the arid western parts of the country, a specific conductance of more than 1,000 micromhos is common.

Hydrogen-ion concentration (pH)

Hydrogen-ion concentration is expressed in terms of pH units (see p. 6). The values of pH often are used as a measure of the solvent power of water or as an indicator of the chemical behavior certain solutions may have toward rock minerals.

The degree of acidity or alkalinity of water, as indicated by the hydrogen-ion concentration, expressed as pH, is related to the corrosive properties of water and is useful in determining the proper treatment for coagulation that may be necessary at water-treatment plants. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity. The pH of most natural surface waters ranges between 6 and 8. Some alkaline surface waters have pH values greater than 8.0 and waters containing free mineral acid or organic matter usually have pH values less than 4.5.

The investigator who utilizes pH data in his interpretations of water analyses should be careful to place pH values in their proper perspective.

Temperature

Temperature is an important factor in properly determining the quality of water. This is very evident for such a direct use as an industrial coolant. Temperature is also important, but perhaps not so evident, for its indirect influence upon aquatic biota, concentrations of dissolved gases, and distribution of chemical solutes in lakes and reservoirs as a consequence of thermal stratification and variation.

Surface water temperatures tend to change seasonally and daily with air temperatures, except for the outflow of large springs. Superimposed upon the annual temperature cycle is a daily fluctuation of temperature which is greater in warm seasons than in cold and greater in sunny periods than with a cloud cover. Natural warming is due mainly to absorption of a solar radiation by the water and secondarily to transfer of heat from the air. Condensation of water vapor at the water surface is reported to furnish measurable quantities of heat. Heat loss takes place largely through radiation, with further losses through evaporation and conduction to the air and to the streambed. Thus the temperature of a small stream generally reaches a maximum in mid- to late afternoon due to solar heating and reaches a minimum from early to mid-morning after nocturnal radiation.

Color

In water analysis the term "color" refers to the appearance of water that is free from suspended solids. Many turbid waters that appear yellow, red, or brown when viewed in the stream show very little color after the suspended matter has been removed. The yellow-to-brown color of some waters is usually caused by organic matter extracted from leaves, roots, and other organic substances in the ground. In some areas objectionable color in water results from industrial wastes and sewage. Clear deep water may appear blue as the result of a scattering of sunlight by the water molecules. Water for domestic use and some industrial uses should be free from any perceptible color. A color less than 15 units generally passes unnoticed (U.S. Public Health Service, 1962). Some swamp waters have natural color in excess of 300 units.

The extent to which a water is colored by material in solution is commonly reported as a part of a water analysis because a significant color in water may indicate the presence of organic material that may have some bearing on the dissolved solids content. Color in water is expressed in terms of units between 0 and 500 or more based on the above standard (see p. 6).

Turbidity

Turbidity is the optical property of a suspension with reference to the extent to which the penetration of light is inhibited by the presence of insoluble material. Turbidity is a function of both the concentration and particle size of the suspended material. It is reported in terms of mg/l of silica or Jackson turbidity units (JTU).

Turbid water is abrasive in pipes, pumps, and turbine blades. Although turbidity does not directly measure the safety of drinking water, it is related to the consumer's acceptance of the water. A level of 5 JTU of turbidity becomes objectionable to a considerable number of people (U.S. Public Health, 1962).

Density at 20°C

Density is the mass of any substance per unit volume at a designated standard temperature. Density should not be confused with specific gravity, which is a mass-to-mass relation.

The density value has some use in industries that utilize brines and whose basic unit of concentration of dissolved material is density. Density is used primarily by the chemist in the computation of milligrams per liter for highly mineralized waters.

Dissolved oxygen (DO)

Oxygen dissolved in water is derived from the air and from the oxygen given off in the process of photosynthesis by aquatic plants.

Dissolved oxygen in water has no adverse physiological effect and actually increases the palatability of the water. No minimum concentration of dissolved oxygen required to support fish life has been listed because the oxygen requirements of fish vary with the species and age, with temperature, and with concentration of other substances in the water.

Dissolved oxygen is responsible for many of the corrosion problems in industry.

Chemical Oxygen demand (COD)

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

Biochemical oxygen demand (BOD)

Biochemical oxygen demand is a measure of the oxygen required to oxidize the organic material usable as a source of food by aerobic organisms.

Biological and microbiological information

Biological and microbiological information is an important aspect in the evaluation of water quality. The kinds and amount of aquatic biota in a stream or lake can be useful "indicators" of environmental conditions and particularly of the degree of pollution of water with organic wastes (Doudoroff and Warren, 1957). Biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms.

Chlorophyll (plant pigment).--The concentrations of photosynthetic pigments in natural waters vary with time and changing aquatic conditions. Concentrations of chlorophyll a, b, and c (spectrophotometric determination) are used to estimate the biomass and photosynthetic capacity of phytoplankton (blue-green algae). Ratios between the different forms of chlorophyll are thought to indicate the taxonomic composition or the physiological state of the algae community (Slack, 1970).

Plankton.--Plankton is the floating (or weakly swimming) animal or plant life in a body of water consisting, chiefly of minute plants (as diatomes and blue-green algae) and of minute animals (as protozoan, entomostracans and various larvae). Algae are known to cause tastes and odor in water supply.

Plankton population in water is obtained by count level (the number of organisms per milliliter).

Coliform bacteria.--Coliform organisms have long been used as indicators of sewage pollution, although the group includes bacteria from diverse natural sources and habitats. For example, members of the coliform group are indigenous to soil and vegetation as well as feces. Standards for drinking-water quality provide definite minimums as to number of samples examined and the maximum number of coliform organisms allowable per 100 milliliters (ml) of finished water (Slack, 1970). The coliform population of water is determined either by the most probable number (MPN), or by the incubation membrane filter method, a direct count of coliform colonies per plate.

Fecal coliform bacteria.--Fecal coliform is that portion of the coliform group that is present in the intestinal tract of warm-blooded animals and is capable of producing gas from lactos in suitable culture medium at 44.5°C. Organisms from other sources generally cannot produce gas in this manner. (American Public Health Assoc. and others, 1965). Thus, in general, the presence of fecal coliform organisms indicates recent pollution (Slack, 1970).

Organics

Phenols.--Phenolic material in water resources is invariably the result of pollution. Phenols are widely used as disinfectants and in the synthesis of many organic compounds. Waste products from oil refineries, coke areas, and chemical plants may contain high concentrations. Fortunately, phenols decompose in the presence of oxygen and micro-organisms, and their persistence downstream from point of entry is relatively short lived. The rate of decomposition is dependent on the environment.

Very low concentrations impart such a disagreeable taste to water that it is highly improbable that harmful amounts could be consumed unknowingly. Reported thresholds of detection of taste and odor range from 0.001 to 0.01 mg/l.

Cyanide (CN).--Cyanides are not found free in nature, but may become contaminants of water supplies by means of effluents from gasworks, coke ovens, steel mills, electro-plating processes, and chemical industries. In natural streams and organic soils, simple cyanides are decomposed by bacterial action, whereas the metal-cyanide complexes are often quite stable and more resistant to degradation. The U.S. Public Health Service (1962) set a recommended limit of 0.01 mg cyanide per liter and a mandatory limit of 0.2 mg/l for waters subject to interstate regulations.

Detergents (methylene blue active substance, MBAS).--Anionic surfactants in detergents resist chemical oxidation and biological breakdown. Soap is an example of this class and the synthetic members are sodium salts of organic sulfonates or sulfates (Rose, 1966). Their persistence in water over long periods of time contributes to pollution of both ground water and surface water. Some of the effects produced from detergent pollution are unpleasant taste, odor, and foaming (Wayman, and others, 1962). Although the physiological implications of MBAS to human beings is unknown, prolonged ingestion of this material by rats is believed to be nontoxic (Paynter, 1960). The U.S. Public Health Service (1962) recommends that MBAS should not exceed 0.5 mg/l in drinking and culinary waters.

Total Organic Carbon (TOC).--Total organic carbon is a measure of the organically related carbonaceous content of water. It includes all natural and manmade organic compounds which are combustable at a temperature of 950°C.

Sediment

Fluvial sediment generally is regarded as that material which is transported by, suspended in, or deposited by water. Suspended sediment is that part which remains in suspension in water owing to the upward components of turbulent currents or by

colloidal suspension. Much fluvial sediment results from the natural process of erosion, which in turn is part of the geologic cycle of rock transformation. This natural process may be accelerated by agricultural practices. Sediment also is contributed by a number of industrial and construction activities. In certain sections, waste materials from mining, logging, oil-field, and other industrial operations introduce large quantities of suspended material.

The quantity of sediment, transported or available for transportation, is affected by climatic conditions, form or nature of precipitation, character of the solid mantle, plant cover, topography, and land use. The mode and rate of sediment erosion, transport, and deposition is determined largely by the size distribution of the particles or more precisely by the fall velocities of the particles in water. Sediment particles in the sand size range (larger than 0.062 mm) do not appear to be affected by flocculation or dispersion resulting from the mineral constituents in solution. In contrast, the sedimentation diameter of clay and silt particles in suspension may vary considerably from point to point in a stream or reservoir, depending on the mineral matter in solution and in suspension and the degree of turbulence present. The size of sediment particles in transport at any point depends on the type of erodible and soluble material in the drainage area, the degree of flocculation present, time in transport, and characteristics of the transporting flow The flow characteristics include velocity of water, turbulence, and the depth, width, and roughness of the channel. As a result of these variable characteristics, the size of particles transported, as well as the total sediment load, is in constant adjustment with the characteristics and physical features of the stream and drainage area.

STREAMFLOW

Most of the records of stream discharge, used in conjunction with the chemical analyses and in the computation of sediment loads in this volume, are published in the Geological Survey water-supply paper series, "Surface Water Supply of the United States, 1966-70." The discharge reported for a composite sample is usually the average of daily mean discharges for the composite period. The discharges reported in the tables of single analyses are either daily mean discharges or discharges obtained at the time samples were collected and computed from a stage-discharge relation or from a discharge measurement.

PUBLICATIONS

Reports giving records of chemical quality and temperatures of surface waters and suspended-sediment loads of streams in the area covered by this volume for the water years 1941-68, are listed below:

Numbers of water-supply papers containing records for Part 9 and 10, 1941-68

Year	WSP	Year	WSP	Year	WSP	Year	WSP
1941	942	1948	1133	1955	1403	1962	1945
1942	950	1949	1163	1956	1453	1963	1951
1943	970	1950	1189	1957	1523	1964	1958
1944	1022	1951	1200	1958	1574	1965	1965
1945	1030	1952	1253	1959	1645	1966	1995
1946	1050	1953	1293	1960	1745	1967	2015
1947	1102	1954	1353	1961	1885	1968	2098

Geological Survey reports containing chemical quality, temperature, and sediment data obtained before 1941 are listed on next page. Publications dealing largely with the quality of ground-water supplies and only incidentally covering the chemical composition of surface waters are not included. Publications that are out of print are preceded by an asterisk.

PROFESSIONAL PAPER

*135. Composition of river and lake waters of the United States, 1924.

BULLETINS

*479. The geochemical interpretation of water analyses, 1911.
770. The data of geochemistry, 1924.

WATER-SUPPLY PAPERS

*108. Quality of water in the Susquehanna River drainage basin, with an introductory chapter on physiographic features, 1904.
*161. Quality of water in the upper Ohio River basin and at Erie, Pa., 1906.
*193. The quality of surface waters in Minnesota, 1907.
*236. The quality of surface waters in the United States, Part 1, Analyses of waters east of the one hundredth meridian, 1909.
*237. The quality of the surface waters of California, 1910.
*239. The quality of surface waters of Illinois, 1910.
*273. Quality of the water supplies of Kansas, with a preliminary report on stream pollution by mine waters in southeastern Kansas, 1911.
*274. Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses, 1911.
*339. Quality of the surface waters of Washington, 1914.
*363. Quality of the surface waters of Oregon, 1914.
*418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917.
*596-B. Quality of water of Colorado River in 1925-26, 1928.
*596-D. Quality of water of Pecos River in Texas, 1928.
*596-E. Quality of the surface waters of New Jersey, 1928.
*636-A. Quality of water of the Colorado River in 1926-28, 1930.
*636-B. Suspended matter in the Colorado River in 1925-28, 1930.
*638-D. Quality of water of the Colorado River in 1928-30, 1932.
*839. Quality of water of the Rio Grande basin above Fort Quitman, Tex., 1938.
*889-E. Chemical character of surface water of Georgia, 1944.
*998. Suspended sediment in the Colorado River, 1925-41, 1947.
1048. Discharge and sediment loads in the Boise River drainage basin, Idaho, 1939-40, 1948.
1110-C. Quality of water of Conchas Reservoir, New Mexico, 1939-49, 1952.

Many of the reports listed are available for consultation in the larger public and institutional libraries. Copies of Geological Survey publications still in print may be purchased at a nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, who will, upon request, furnish lists giving prices.

COOPERATION

Many Municipal, State and Federal agencies assisted in collecting records for these quality-of-water investigations. Many of the investigations were supported by funds appropriated directly to the U.S. Geological Survey. Chemical-quality and sediment-load investigations in the Colorado River basin in Arizona, Colorado, New Mexico, and Utah have been a continuing project since 1925. State, local, and Federal agencies that cooperated in these quality-of-water investigations are as follows:

Arizona--Bureau of Reclamation, U.S. Department of the Interior; Soil Conservation Service, U.S. Department of Agriculture.

California--California Department of Water Resources; California Water Control Board; Metropolitan Water District of Southern California; Sierra Pacific Power Company.

Colorado--Bureau of Reclamation, U.S. Department of the Interior.

Idaho--Idaho Department of Reclamation, R. K. Higgison, State reclamation engineer.

Nevada--Bureau of Reclamation, U.S. Department of the Interior; Soil Conservation Service, U.S. Department of Agriculture.

New Mexico--New Mexico State Engineer, S. E. Reynolds; New Mexico Interstate Stream Commission, S. E. Reynolds, secretary; New Mexico Institute of Mining and Technology, S. A. Colgate, president; Bureau of Reclamation, U.S. Department of the Interior; Corps of Engineers, U.S. Army; Soil Conservation Service, U.S. Department of Agriculture.

Utah--Utah Department of Natural Resources, Jay Bingham, succeeded by Gordon Harmston, executive director; Division of Water Rights, H. C. Lambert, State engineer; Division of Water Resources, D. F. Lawrence, director; Bureau of Reclamation, U.S. Department of the Interior.

Wyoming--Wyoming Department of Agriculture, G. J. Hertzler, commissioner; Wyoming State Engineer, F. A. Bishop; Wyoming Natural Resource Board, M. W. Goodson, chief of water development; Bureau of Land Management and Bureau of Reclamation, U.S. Deparment of the Interior.

DIVISION OF WORK

The quality-of-water work was performed by the Water Resources Division of the Geological Survey, E. L. Hendricks, chief hydrologist, and under the direction of the district chiefs listed in the preface.

Correspondence regarding the records in this report or any additional information should be directed to the district chief of the appropriate Geological Survey-Water Resources Division district office as indicated in the following table.

State	District Office	Address
Arizona	Tucson 85717	P. O. Box 4070 2555 E. First Street
California	Menlo Park 94025	713 Santa Cruz Avenue
Colorado	Denver 80225	Bldg. 25, Denver Federal Center
Idaho	Boise 83702	Room 365, Federal Bldg. 550 W. Fort Street
Nevada	Carson City 89701	Room 229, Federal Bldg. 705 North Plaza Street
New Mexico	Albuquerque 87106	P. O. Box 4369
Oregon	Portland 97208	P. O. Box 3202 830 N. E. Holladay St.
Utah	Salt Lake City 84111	8002 Federal Bldg. 125 South State Street
Wyoming	Cheyenne 82001	P. O. Box 2087 215 East Eighth Avenue

LITERATURE CITED

Bartsch, A. F., 1948, Biological aspects of stream pollution: Sewage Works Jour., vol. 20, p. 292-302.

Bear, F. E., 1955, Chemistry of the soil: New York, Reinhold Co., 373 p.

Brown, Eugene, Skougstad, M. W., and Fishman, M. J., 1970, Methods for collection and analysis of water samples for dissolved minerals and gases: U.S. Geol. Survey Techniques of Water-Resources Inv., book 5, chap. A1, 160 p.

California State Water Quality Control Board, 1963, Water quality criteria: Pub. 3-A, p. 226.

Colorado Agriculture Experiment Station, 1943, Mineral tolerances in livestock drinking water: 56th Ann. Rept.

Doudoroff, Peter and Warren, C. E., 1957, Biological indices of water pollution with special reference to fish populations; Biological problems in water pollution: Cincinnati, U.S. Pub. Health Service, Robert A. Taft Sanitary Eng. Cent., p. 144-163.

Durfor, C. N. and Becker, E., 1964, Public water supplies of the 100 largest cities in the United States; 1962: U.S. Geol. Survey Water-Supply Paper 1812, p. 20.

Faucett, R. L. and Miller, H. C., 1946, Methemoglobinemia occuring in infants fed milk diluted with well waters of high nitrate content: Jour. Pediatrics, v. 29, p. 593.

Hazen, Allen, 1892, A new color standard for natural waters: Am. Chem. Jour. v. 12, p. 427-428.

Heller, V. G., 1933, The effect of saline and alkaline waters on domestic animals: Oklahoma Agr. Mech. Coll. Expt. Sta. Bull. 217.

Hem, J. D., 1970, Study and interpretation of chemical characteristics of natural water, revised edition: U.S. Geol. Survey Water-Supply Paper 1473, 363 p.

International Union of Pure and Applied Chemistry, 1961, Table of Atomic weights based on carbon-12: Chem. and Eng. News, v. 39, no. 42, Nov. 20, 1961, p. 43.

Kilmer, V. J. and Alexander, L. T., 1949, Methods of making mechanical analyses of soils: Soil Sci., v. 68, p. 15-24.

Lane, E. W., and others, 1947, Report of the Subcommittee on sediment terminology: Am. Geophys. Union Trans., v. 28, no. 6, p. 936-938.

Magistad, O. C., and Christiansen, J. E., 1944, Saline Soils, their nature and management: U.S. Dept., Agriculture Circ. 707, p 8-9.

Maxcy, K. F., 1950, Report on the relation of nitrate concentrations in well waters to the occurrence of methemoglobinemia: Natl. Research Council, Bull. Sanitary Eng. and Environment, App. D., p 271.

Paynter, O. E., 1960, The chronic toxicity of dodecylbenzene sodium sulfonate: U.S. Public Health Conference on Physiological Aspects of Water Quality Proc., Washington, D.C., Sept. 8-9, 1960, p. 175-179.

Pleissner, M., 1907, Uber die Löslichkeit eimiger Bleiverbindungen in wasser: Arb. Kais. Gesundeitsamt. v. 26, p. 384-443.

Rainwater, F. H., and Thatcher, L. L., 1960, Methods for collection and analysis of water samples: U.S. Geol. Survey Water-Supply Paper 1454, 301 p.

Rankama, K., and Sahama, T. G., 1950, Geochemistry: Chicago Univ. Press, Chicago, Ill., p. 767

Riffenburg, H. B., 1925, Chemical character of ground waters of the northern Great Plains: U.S. Geol. Survey Water-Supply Paper 560-B, p. 31-52.

Rose, Arthur and Elizabeth, 1966, The condensed chemical dictionary: Reinhold Pub. Corp., New York, 7th ed., p. 285.

Rudolfs, Willem, and others, 1944, Critical review of the literature of 1943: Sewage Works Jour., v. 16, p. 222.

Rudolph, Z, 1931, Principles of the determination of the physical and chemical standards of water for drinking, industrial, and domestic purposes: Water Pollution Abs. 4 (March).

Seidell, Atherton, 1940, Solubilities of inorganic and metal organic compounds, 3d ed., v. 1, D. van Nostrand, New York. p. 1409.

Slack, K. V., 1970, Selected interim procedures for biological and microbiological investigations: U.S. Geol. Survey, Water Resources Division, preliminary rept. by WRD Committee on Biology and Microbiology, 80 p. (open file).

Swenson, H. A. and Baldwin, H. L., 1965, A Primer on water quality: Washington, U.S. Govt. Printing Office, 27 p.

U.S. Inter-Agency Committee on Water Resources, Subcommittee on Sedimentation, A study of methods used in measurement and analysis of sediment loads in streams. Published by the St. Anthony Falls Hydraulic Laboratory, Minneapolis, Minn.

_____1943, A study of new methods of size analysis of suspended-sediment samplers, Rept. 7.

_____1957, The development and calibration of visual-accumulation tube: Rept 11.

_____1957, Some fundamentals of particle-size analysis: Rept. 12.

_____1959, Federal Inter-agency sedimentation instruments and reports: Rept. AA.

_____1963, Determinations of fluvial sediment discharge: Rept. 14.

U.S. Public Health Service, 1962, Drinking water standards: U.S. Dept. Health, Education, and Welfare, Public Health Service: Pub. no. 956.

U.S. Salinity Laboratory Staff, 1954, Diagnosis and improvement of saline and alkali soils: U.S. Dept. Agriculture, Agriculture Handb. 60, p. 1-160.

Waring, F. H., 1949, Significance of nitrates in water supplies: Am. Water Works Assoc. Jour., v. 41, no. 2., p. 147-150.

Wayman, C. H., 1962, Limitations of the methylene blue method for ABS determinations: U.S. Geol. Survey, Prof. Paper 450-B, art. 49, p. B117-B120.

Wayman, C. H., Robertson, J. B., and Page, H. G., 1962, Foaming characteristics of synthetic-detergent solutions: U.S. Geol. Survey, Prof. Paper 450D, art. 178, p. D198.

Weast, R. C. and Selby, S. M., 1967, Handbook of chemistry and physics: Cleveland, The Chem. Rubber Co., 48th ed., p. B-120-121.

WATER-QUALITY STATIONS IN DOWNSTREAM ORDER

PART 9. COLORADO RIVER BASIN

COLORADO RIVER MAIN STEM

09034500 COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.

LOCATION.--Lat 40°04'27", long 106°06'24", Grand County, at bridge at Hot Sulphur Springs, 1 mile downstream from gaging station and 3.5 miles upstream from Beaver Creek.
DRAINAGE AREA.--825 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: April 1947 to September 1968.
Water temperatures: April 1949 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 116 mg/l Apr. 1-30; minimum, 73 mg/l June 1-24.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
OCT.											
01-31	86	11	20	3.2	6.7	--	82	7.0	1.5	--	.3
NOV.											
01-21	92	12	20	3.4	6.9	--	84	15	2.5	--	.3
22-30	73	12	21	3.2	7.1	--	85	15	2.5	--	.3
DEC.											
01-31	65	12	19	3.1	7.2	--	84	8.2	1.4	.3	.7
JAN.											
01-23	61	14	18	2.4	7.9	--	78	8.2	1.9	--	.1
24-25	63	13	17	4.1	13	--	92	10	3.6	--	.1
26-31	63	13	17	3.2	7.6	--	78	8.0	2.3	--	.3
FEB.											
01-29	64	16	18	2.7	9.2	--	81	8.8	2.5	--	.2
MAR.											
01-31	75	13	18	4.9	10	--	84	9.0	3.9	--	.8
APR.											
01-30	148	12	21	3.9	7.8	--	88	9.0	3.0	--	.6
MAY											
01-18	284	12	14	3.2	5.5	--	61	7.5	2.5	--	.3
19-31	340	12	13	2.7	4.7	1.2	54	6.8	2.4	.2	.6
JUNE											
01-24	514	16	14	1.9	3.9	--	54	4.5	2.1	--	.6
25-30	277	18	23	3.4	6.6	--	90	9.8	2.3	--	.3
JULY											
01-18	239	13	21	3.6	6.7	--	90	6.2	2.4	--	.3
19-20	210	9.4	16	2.9	4.0	--	54	5.8	1.5	--	.1
21-31	230	12	22	3.6	6.4	--	88	4.8	2.2	--	.2
AUG.											
01-09	182	13	23	3.2	6.8	--	95	5.0	2.3	--	.2
10-31	131	12	21	3.2	6.1	--	85	6.2	3.0	--	.2
SEPT.											
01-30	80	11	19	2.9	6.2	1.5	82	6.2	1.7	.3	.2
WTD. AVG. TIME	--	13	18	3.0	6.1	--	74	7.0	2.4	--	.4
WTD. AVG. TONS PER DAY	152	13	19	3.2	7.0	--	80	8.0	2.4	--	.4
	--	5.4	7.3	1.2	2.5	--	30	2.9	1.0	--	.2

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	146	144	152	144	156	155	118	88	143	---	138
2	153	143	151	152	144	155	155	118	100	148	---	150
3	152	141	156	152	146	156	169	165	80	148	---	150
4	124	147	154	149	145	159	173	121	79	152	163	148
5	154	146	153	144	164	159	176	106	85	159	164	146
6	142	146	156	144	165	161	154	113	85	162	158	151
7	141	147	154	144	165	162	170	110	89	156	162	145
8	144	144	153	150	163	162	160	106	86	151	162	146
9	129	145	152	144	162	161	160	107	89	156	159	146
10	143	147	139	150	165	169	165	111	---	155	144	138
11	131	147	141	152	164	169	---	113	---	156	150	140
12	129	149	140	145	162	169	155	111	---	162	156	141
13	138	148	141	146	164	162	155	106	---	160	149	140
14	143	146	145	150	146	146	155	110	---	154	150	138
15	144	145	153	139	146	145	155	116	101	159	147	150
16	145	144	155	145	146	144	146	114	101	153	150	104
17	146	145	151	151	145	152	153	113	94	153	147	137
18	142	146	149	150	144	145	152	112	102	157	148	131
19	143	146	147	114	145	169	154	108	101	---	144	144
20	143	144	148	144	147	144	152	---	105	98	145	134
21	142	142	148	145	146	140	143	108	96	149	143	140
22	144	162	0	144	145	153	159	110	102	151	144	142
23	144	143	147	145	146	153	158	99	109	150	150	140
24	143	147	149	171	145	153	151	86	120	150	149	142
25	145	143	156	171	145	153	160	101	149	---	148	138
26	144	143	148	144	158	156	153	101	150	---	145	145
27	145	143	148	143	145	153	155	95	164	---	143	133
28	147	143	148	143	144	153	154	98	155	---	142	143
29	145	143	148	143	144	154	154	106	144	---	145	141
30	149	158	149	144	---	153	152	92	157	---	144	144
31	146	---	147	145	---	153	---	90	---	---	150	---
AVERAGE	142	147	144	147	151	155	157	109	109	---	150	141

09034500 COLORADO RIVER AT HOT SULPHUR SPRINGS, COLO.--Continued

EXTREMES.--1967-68:--Continued
Hardness: Maximum, 72 mg/l June 25-30; minimum, 43 mg/l May 19-31.
Specific conductance: Maximum daily, 176 micromhos Apr. 5; minimum daily, 79 micromhos June 4.
Water temperatures: Maximum, 21.0°C Aug. 8; minimum, freezing point on many days during November to March.
Period of record:
Dissolved solids (1947-50, 1952-68): Maximum, 167 mg/l Jan. 25-28, 1967; minimum, 38 mg/l June 21-30, 1947.
Hardness (1947-50, 1952-68): Maximum, 98 mg/l Feb. 12-16, 1967; minimum, 20 mg/l June 21-30, 1947.
Specific conductance: Maximum daily, 254 micromhos Jan. 28, 1967; minimum daily, 48 micromhos June 27, 1947.
Water temperatures (1949-68): Maximum, 24.0°C Aug. 8, 1957, July 6, 11, 14, 21, 1966; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	pH
OCT.										
01-31	.01	--	100	.14	23.2	62	0	.4	142	7.8
NOV.										
01-21	.09	--	107	.15	26.6	64	0	.4	145	7.8
22-30	.01	--	109	.15	21.5	66	0	.4	149	7.8
DEC.										
01-31	.22	.00	98	.13	17.2	60	0	.4	150	7.6
JAN.										
01-23	.04	--	92	.13	15.2	56	0	.5	147	7.4
24-25	.27	--	105	.14	17.9	60	0	.7	171	7.2
26-31	.04	--	92	.13	15.6	56	0	.4	146	7.4
FEB.										
01-29	.04	--	94	.13	16.2	56	0	.5	153	7.5
MAR.										
01-31	.04	--	107	.15	21.7	64	0	.5	156	7.4
APR.										
01-30	.04	--	116	.16	46.4	68	0	.4	157	7.4
MAY										
01-18	.02	--	85	.12	65.2	49	0	.3	115	7.5
19-31	.01	.05	80	.11	73.4	43	0	.3	101	7.2
JUNE										
01-24	.00	--	73	.10	101	44	0	.3	95	7.3
25-30	.00	--	103	.14	77.0	72	0	.3	154	7.5
JULY										
01-18	.03	--	99	.13	63.9	68	0	.4	152	7.5
19-20	--	--	72	.10	40.8	52	8	.2	98	7.5
21-31	.01	--	98	.13	60.9	69	0	.3	150	7.5
AUG.										
01-09	.00	--	103	.14	50.6	70	0	.4	162	7.5
10-31	.03	--	95	.13	33.6	66	0	.3	149	7.6
SEPT.										
01-30	.02	.04	84	.11	18.1	60	0	.3	141	7.3
WTD. AVG. TIME	.52	--	91	--	--	57	0	--	131	7.4
WTD. AVG. TONS PER DAY	.54	--	96	--	--	60	0	.4	143	7.5
	.51	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	6.0	0.0	0.0	0.0	1.0	6.0	13.0	14.0	18.0	---	16.0
2	9.0	3.0	1.0	0.0	0.0	0.0	6.0	11.0	14.0	17.0	---	14.0
3	9.0	3.0	1.0	0.0	0.0	1.0	6.0	12.0	14.0	17.0	---	14.0
4	9.0	3.0	1.0	0.0	0.0	1.0	6.0	11.0	14.0	17.0	17.0	16.0
5	11.0	4.0	1.0	0.0	1.0	0.0	6.0	10.0	14.0	18.0	18.0	14.0
6	11.0	6.0	0.0	0.0	1.0	1.0	6.0	6.0	14.0	17.0	20.0	14.0
7	11.0	6.0	0.0	0.0	1.0	1.0	6.0	6.0	14.0	19.0	20.0	14.0
8	13.0	6.0	0.0	0.0	1.0	0.0	6.0	6.0	14.0	17.0	21.0	16.0
9	7.0	6.0	0.0	0.0	2.0	0.0	6.0	7.0	14.0	18.0	18.0	17.0
10	6.0	7.0	0.0	0.0	2.0	1.0	7.0	6.0	---	19.0	18.0	16.0
11	10.0	5.0	0.0	0.0	2.0	1.0	---	7.0	---	18.0	18.0	16.0
12	11.0	6.0	0.0	0.0	2.0	1.0	6.0	7.0	---	20.0	20.0	16.0
13	11.0	6.0	0.0	0.0	2.0	1.0	6.0	6.0	---	19.0	17.0	14.0
14	9.0	6.0	0.0	0.0	2.0	2.0	6.0	11.0	---	18.0	14.0	14.0
15	9.0	6.0	0.0	0.0	2.0	1.0	9.0	9.0	16.0	19.0	16.0	14.0
16	7.0	6.0	0.0	0.0	1.0	1.0	6.0	6.0	17.0	18.0	20.0	14.0
17	6.0	6.0	0.0	0.0	2.0	1.0	6.0	6.0	17.0	18.0	17.0	12.0
18	7.0	6.0	0.0	0.0	2.0	1.0	6.0	11.0	17.0	19.0	14.0	14.0
19	6.0	4.0	0.0	0.0	1.0	1.0	6.0	12.0	17.0	---	17.0	17.0
20	7.0	3.0	0.0	0.0	2.0	1.0	6.0	---	18.0	19.0	20.0	14.0
21	7.0	2.0	0.0	0.0	2.0	1.0	6.0	12.0	17.0	19.0	18.0	11.0
22	5.0	2.0	0.0	0.0	1.0	1.0	6.0	12.0	17.0	20.0	18.0	11.0
23	6.0	2.0	0.0	0.0	1.0	1.0	6.0	13.0	18.0	20.0	19.0	14.0
24	6.0	2.0	0.0	0.0	1.0	1.0	6.0	13.0	17.0	16.0	17.0	14.0
25	6.0	1.0	0.0	0.0	0.0	1.0	6.0	14.0	17.0	---	14.0	14.0
26	6.0	2.0	0.0	0.0	1.0	1.0	6.0	14.0	18.0	---	17.0	14.0
27	6.0	1.0	0.0	0.0	3.0	1.0	6.0	14.0	18.0	---	17.0	14.0
28	6.0	0.0	0.0	0.0	3.0	1.0	6.0	14.0	18.0	---	16.0	13.0
29	6.0	0.0	0.0	0.0	3.0	1.0	7.0	15.0	17.0	---	17.0	13.0
30	5.0	3.0	0.0	0.0	---	3.0	11.0	14.0	17.0	---	17.0	14.0
31	6.0	---	0.0	0.0	---	5.0	---	14.0	---	---	17.0	---
AVERAGE	8.0	4.0	0.0	0.0	1.5	1.0	6.5	10.5	16.0	---	17.5	14.5

EAGLE RIVER BASIN

09069000 EAGLE RIVER AT GYPSUM, COLO.

LOCATION.--Lat 39°39'00", long 106°57'06", Eagle County, at bridge at Gypsum, about 400 ft upstream from Gypsum Creek, about 520 ft upstream from bridge on U.S. Highways 6 and 24, and about 550 ft upstream from gaging station.
DRAINAGE AREA.--844 sq mi.
PERIOD OF RECORD.--Chemical analyses: April 1947 to September 1968.
Water temperatures: April 1949 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 702 mg/l Dec. 1-15; minimum, 100 mg/l June 13-25.
Hardness: Maximum, 418 mg/l Dec. 1-15; minimum, 88 mg/l June 13-25.
Specific conductance: Maximum daily, 1,140 micromhos Nov. 28, 29; minimum daily, 181 micromhos June 18.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SiO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)
OCT.											
01-31	259	8.8	117	22	72	--	174	240	108	--	.2
NOV.											
01-30	203	8.6	121	24	68	--	176	270	98	--	.8
DEC.											
01-15	182	9.4	127	25	66	--	184	281	88	--	.8
16-31	186	9.6	113	24	51	2.3	178	254	71	.5	1.2
JAN.											
01-31	161	5.9	108	29	49	--	174	277	64	--	.2
FEB.											
01-29	164	9.4	109	24	47	--	174	243	65	--	.0
MAR.											
01-31	162	9.4	103	26	42	--	160	236	57	--	.1
APR.											
01-30	214	8.5	86	20	33	--	142	190	46	--	.2
MAY											
01-23	557	7.9	42	18	15	--	122	82	20	--	.1
24-31	1061	7.6	32	13	8.0	1.1	112	45	9.7	.3	.2
JUNE											
01-12	2488	6.1	37	2.2	4.2	--	93	36	5.7	--	.2
13-25	2637	5.7	30	3.2	4.2	--	73	29	5.6	--	.2
26-30	1826	5.2	32	4.4	7.4	--	78	39	11	--	.2
JULY											
01-10	1083	10	46	8.0	14	--	96	68	22	--	.1
11-31	578	10	61	13	25	--	118	104	37	--	.1
AUG.											
01-06	540	11	67	16	30	--	125	122	44	--	.1
07-10	1012	11	48	14	16	--	82	90	25	--	.4
11-31	551	12	70	20	33	--	142	136	47	--	.2
SEPT.											
01-24	295	4.5	88	27	42	--	160	176	64	--	.5
25-30	252	4.2	91	29	55	--	168	205	78	--	.7
WTD. AVG. TIME	--	7.7	59	12	23	--	116	106	32	--	.2
WTD. AVG. TONS PER DAY	508	8.3	87	20	40	--	149	186	57	--	.3

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	1010	944	920	987	860	692	545	229	315	530	765
2	1060	984	1130	866	994	876	756	496	225	345	548	770
3	1050	1020	980	934	886	852	702	446	257	333	560	833
4	1010	1010	1130	1000	892	881	723	429	212	356	542	741
5	1080	962	1070	874	944	850	749	355	195	366	591	761
6	987	1040	1000	953	897	854	737	375	312	365	635	721
7	1010	1090	1020	928	947	857	773	379	193	371	405	741
8	975	1070	1040	977	897	859	794	387	189	387	420	767
9	981	1050	1040	897	976	862	742	404	204	382	414	780
10	972	1020	955	910	858	836	819	392	226	375	400	779
11	997	997	1030	900	879	875	675	387	240	405	514	815
12	990	1030	1020	966	859	846	730	394	237	415	482	842
13	1030	1010	965	900	916	894	770	376	202	421	510	843
14	1040	994	1030	966	910	864	641	380	189	437	541	829
15	1040	997	1060	911	913	836	662	375	189	450	419	810
16	1050	987	965	908	927	871	660	399	191	456	468	773
17	1060	987	935	885	887	865	698	386	186	476	600	776
18	1020	990	929	888	950	844	629	420	181	510	544	826
19	1070	1000	924	916	861	851	616	428	193	526	587	772
20	1010	997	901	905	863	881	634	323	186	541	622	739
21	1020	978	926	905	831	868	679	421	195	568	690	785
22	1010	947	965	903	852	861	675	327	183	585	705	808
23	1020	968	888	903	849	895	689	325	188	584	693	821
24	1040	968	901	890	864	879	721	302	195	594	759	837
25	1030	1010	883	891	841	859	667	305	201	583	758	866
26	1020	994	904	901	838	823	696	295	251	612	738	874
27	1030	1120	883	888	852	864	715	316	236	595	718	893
28	1060	1140	885	878	838	854	681	244	223	440	690	906
29	987	1140	891	868	870	861	679	317	225	473	702	905
30	981	1000	923	898	---	748	678	242	254	517	764	915
31	984	---	935	943	---	864	---	229	---	514	737	---
AVERAGE	1020	1020	969	913	892	858	703	368	213	461	590	808

09069000 EAGLE RIVER AT GYPSUM, COLO.--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 18.0°C July 17; minimum, freezing point on many days during November to February.
Period of record:
Dissolved solids: Maximum, 1,370 mg/l Aug. 11, 12, 1952; minimum, 100 mg/l June 13-25, 1968.
Hardness (1947-50, 1957-68): Maximum, 600 mg/l Dec. 7-9, 1964; minimum, 70 mg/l June 23, 1957.
Specific conductance: Maximum daily, 1,850 micromhos Aug. 6, 1949; minimum daily, 155 micromhos May 23, 1958.
Water temperatures (1949-68): Maximum, 24.5°C Aug. 24, 1949; minimum, freezing point on many days during winter periods.
REMARKS.--Records of discharge are given for Eagle River below Gypsum (Station 09070000).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-31	.01	--	689	.94	482	382	239	1.6	1020	7.7
NOV.										
01-30	.01	--	699	.95	383	400	256	1.5	1020	7.7
DEC.										
01-15	.00	--	702	.95	345	418	267	1.4	1030	7.8
16-31	.01	.06	621	.84	312	382	236	1.1	914	7.8
JAN.										
01-31	.01	--	656	.89	285	388	245	1.1	918	7.8
FEB.										
01-29	.00	--	607	.83	269	372	229	1.1	891	7.7
MAR.										
01-31	.01	--	608	.83	266	364	233	1.0	861	7.8
APR.										
01-30	.01	--	453	.62	262	296	180	.8	706	7.7
MAY										
01-23	--	--	252	.34	379	180	80	.5	400	7.5
24-31	.00	.08	188	.26	539	134	42	.3	291	7.4
JUNE										
01-12	.01	--	123	.17	826	102	26	.2	229	7.5
13-25	.00	--	100	.14	712	88	28	.2	193	7.5
26-30	.00	--	134	.18	661	99	41	.3	241	7.6
JULY										
01-10	.00	--	225	.31	658	149	70	.5	359	7.9
11-31	.00	--	323	.44	504	205	108	.8	506	8.1
AUG.										
01-06	.00	--	363	.49	529	232	130	.9	573	7.8
07-10	.00	--	263	.36	719	178	111	.5	418	6.9
11-31	.00	--	407	.55	605	258	142	.9	633	8.1
SEPT.										
01-24	.01	--	518	.70	413	310	179	1.0	788	7.8
25-30	.01	--	595	.81	405	344	206	1.3	894	7.8
WTD. AVG. TIME	.00	--	305	--	--	198	103	--	477	7.7
WTD. AVG. TONS PER DAY	.01	--	494	--	--	301	179	1.0	736	7.7
	.01	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	8	9	9	9	11	10	9	10	9	9	7	7	8	7	7	6	7	6	--	6	6	5	4	4	5	4	4	4	4	4	3	6
NOVEMBER.	4	3	3	2	2	2	1	5	3	4	3	3	4	3	4	6	5	4	2	2	4	4	1	0	1	1	0	0	0	0	--	2
DECEMBER.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
FEBRUARY.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	1	1	1	1	1	1	2	--	--	--
MARCH....	1	2	2	1	1	2	1	2	2	3	3	4	5	3	3	3	3	3	3	4	6	7	7	7	7	7	8	8	7	7	7	4
APRIL....	7	7	7	6	7	7	7	7	7	8	7	7	7	7	7	7	8	8	8	8	8	8	8	9	8	8	8	8	7	8	--	7
MAY.....	15	14	9	9	10	9	10	12	8	8	8	8	7	9	10	11	11	11	11	12	12	12	13	13	13	13	13	13	13	13	13	11
JUNE.....	13	14	7	7	7	8	7	7	7	7	7	8	8	9	9	9	8	9	13	8	9	9	10	11	9	13	12	13	12	13	--	9
JULY.....	9	10	13	12	12	12	12	14	13	17	12	12	12	13	15	13	18	12	12	14	13	14	14	14	14	14	14	14	14	14	16	13
AUGUST...	13	13	13	14	14	14	14	14	14	14	14	13	13	9	11	10	11	9	12	10	11	11	12	12	12	12	13	13	13	13	13	12
SEPTEMBER	12	12	11	9	9	9	10	11	10	10	10	10	10	9	9	8	8	7	7	8	7	7	7	6	8	7	7	8	8	7	--	8

09071100 COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.
(Irrigation network station)

LOCATION.--Lat 39°34'12", long 107°13'34", Garfield County, at Shoshone powerplant, 6 miles upstream from Glenwood Springs and 6.5 miles upstream from Roaring Fork River.
DRAINAGE AREA.--4,560 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1941 to September 1968.
Water temperatures: May 1949 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 483 mg/l Jan. 5-16; minimum, 178 mg/l June 1-23.
Hardness: Maximum, 222 mg/l Nov. 27-30; minimum, 110 mg/l June 1-23.
Specific conductance: Maximum daily, 861 micromhos Nov. 27; minimum daily, 236 micromhos June 6.
Water temperatures: Maximum, 19.0°C July 29, Aug. 7; minimum, freezing point on many days during December to March.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)
OCT.											
01-15	1276	10	63	12	75	--	138	112	99	--	.2
16-31	1246	10	60	12	73	--	136	102	95	--	.4
NOV.											
01-26	1196	9.4	58	13	62	--	135	95	90	--	.1
27-30	946	9.4	65	15	69	--	134	118	95	--	.1
DEC.											
01-15	938	10	60	13	72	--	140	99	96	--	.2
16-31	995	10	56	13	72	2.2	134	90	99	--	.3
JAN.											
01-04	934	10	55	13	67	--	134	102	98	--	.2
05-16	775	10	57	16	82	--	143	113	117	--	.5
17-31	894	9.5	40	21	68	--	136	96	98	--	.6
FEB.											
01-29	928	11	51	12	65	--	128	98	96	--	.5
MAR.											
01-30	993	11	54	12	70	--	127	93	94	--	.1
31...	1340	9.2	47	14	53	--	128	80	68	--	.1
APR.											
01-30	1602	9.7	46	13	48	2.4	122	86	61	.5	.3
MAY											
01-21	2364	11	42	12	32	--	124	60	42	--	.4
22-31	3619	11	38	11	20	--	116	46	25	--	.7
JUNE											
01-23	6811	9.8	27	13	13	1.2	100	35	15	.2	.3
24-30	4179	8.0	25	17	21	--	98	54	28	--	.3
JULY											
01-13	2544	9.3	52	11	35	--	125	82	49	--	.2
14-31	1887	10	60	13	46	--	139	86	63	--	.3
AUG.											
01-20	2354	9.7	55	14	38	--	128	84	53	--	.5
21-31	1447	9.6	61	14	56	--	136	106	78	--	.6
SEPT.											
01-14	1316	8.9	57	15	59	15	133	102	80	--	.2
15-30	1351	8.7	55	14	57	--	126	96	76	--	.2
WTD. AVG. TIME	--	9	45	13	41	--	121	73	56	--	.3
WTD. AVG. TONS PER DAY	1850	10	51	13	54	--	128	87	74	--	.3
	--	49	227	66	207	--	607	367	279	--	1.7

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	748	689	627	743	672	680	550	572	302	431	574	672
2	735	696	675	706	683	667	502	502	295	456	598	669
3	741	687	743	646	685	662	554	462	284	462	575	706
4	756	662	769	688	689	680	555	439	252	475	553	663
5	744	690	833	756	670	659	565	409	266	505	553	625
6	756	674	695	786	669	654	550	380	236	503	583	625
7	810	677	718	768	680	654	546	389	244	507	548	637
8	713	680	687	780	686	645	547	---	259	533	492	650
9	730	679	696	794	676	654	554	415	271	533	475	661
10	744	679	693	791	681	650	555	409	286	534	505	676
11	749	---	720	757	698	648	546	408	296	538	532	670
12	750	681	665	727	682	704	532	419	308	551	490	672
13	741	634	678	771	674	637	507	408	273	556	497	671
14	719	680	827	842	---	646	534	418	261	570	510	700
15	728	676	791	828	642	648	555	434	271	573	473	628
16	746	670	728	772	660	---	542	432	272	595	475	612
17	710	668	731	725	660	645	521	447	255	591	551	616
18	701	667	728	697	653	665	526	470	243	600	560	598
19	713	674	704	705	645	663	534	473	242	612	553	639
20	702	672	668	748	644	669	540	468	257	621	557	660
21	700	665	692	743	644	675	551	436	246	631	607	---
22	696	670	785	725	639	723	572	386	260	620	621	645
23	698	654	781	713	649	726	587	340	273	629	641	641
24	692	654	723	699	641	733	618	327	303	616	638	638
25	708	643	671	685	654	731	616	350	304	601	665	644
26	712	658	637	671	672	732	623	361	357	663	684	633
27	703	861	659	675	649	731	592	363	372	---	693	640
28	697	776	653	662	655	725	595	359	340	580	698	634
29	746	706	681	652	655	664	603	330	345	586	661	632
30	743	704	696	684	---	673	606	304	377	608	684	614
31	694	---	697	663	---	651	---	288	---	582	695	---
AVERAGE	727	684	711	730	666	675	559	407	285	562	579	646

09071100 COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.--Continued

Period of record:
Dissolved solids: Maximum, 2,030 mg/l Aug. 10, 1947; minimum, 105 mg/l June 1-10, 1942.
Hardness: Maximum, 1,480 mg/l Aug. 10, 1947; minimum, 72 mg/l June 1-20, 1942.
Specific conductance: Maximum daily, 2,260 micromhos Aug. 10, 1947; minimum daily, 153 micromhos May 24, 1948.
Water temperatures: Maximum, 21.5°C July 31, 1954, Aug. 19, 1955; minimum, freezing point on many days during winter periods.

REMARKS.--Discharges obtained by subtracting the daily mean flow in Roaring Fork River at Glenwood Springs (Station 09085000) from the daily mean flow in Colorado River below Glenwood Springs (Station 09085100).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-15	.04	--	446	.61	1540	208	95	2.2	745	7.6
16-31	.09	--	421	.57	1420	197	85	2.3	708	7.7
NOV.										
01-26	.02	--	414	.56	1340	196	85	1.9	671	7.6
27-30	.01	--	466	.63	1190	222	105	2.0	747	8.3
DEC.										
01-15	.00	--	445	.61	1130	205	90	2.2	724	7.8
16-31	.01	.06	425	.58	1140	192	82	2.3	704	7.8
JAN.										
01-04	.02	--	430	.58	1080	190	80	2.1	697	7.8
05-16	.01	--	483	.66	1010	208	91	2.5	788	8.0
17-31	.02	--	431	.59	1040	188	76	2.2	698	7.8
FEB.										
01-29	.01	--	406	.55	1020	170	65	2.1	670	7.7
MAR.										
01-30	.01	--	407	.55	1090	184	80	2.2	680	7.7
31...	.11	--	352	.48	1270	176	71	1.7	591	7.5
APR.										
01-30	.01	.04	338	.46	1460	168	68	1.6	557	7.4
MAY										
01-21	.02	--	289	.39	1860	156	54	1.1	442	7.6
22-31	.02	--	226	.31	2210	140	45	.7	348	7.6
JUNE										
01-23	.03	.09	178	.24	3270	110	28	.5	273	7.7
24-30	--	--	215	.29	2430	132	52	.8	346	7.4
JULY										
01-13	.01	--	308	.42	2120	175	72	1.1	507	7.9
14-31	.02	--	364	.50	1860	202	88	1.4	608	7.8
AUG.										
01-20	.02	--	332	.45	2110	192	87	1.2	537	7.8
21-31	.00	--	409	.56	1600	208	96	1.7	667	7.8
SEPT.										
01-14	.00	--	401	.55	1430	204	95	1.8	668	7.8
15-30	.00	--	376	.51	1370	194	91	1.8	633	7.8
WTD. AVG. TIME	.02	--	314	--	--	164	64	--	509	7.7
WTD. AVG. TONS PER DAY	.10	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	13	13	13	13	13	12	10	9	9	11	11	--	9	8	9	8	8	6	6	6	6	6	6	4	5	6	4	5	5	4	3	8
NOVEMBER.	3	4	2	2	2	2	1	1	1	3	--	4	3	4	4	4	3	3	2	2	3	2	2	1	1	1	1	1	1	2	--	2
DECEMBER.	1	1	1	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	--
FEBRUARY.	0	0	0	1	0	0	0	1	1	0	1	1	1	--	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	--	--	--
MARCH....	1	1	0	1	1	1	1	1	2	1	1	1	1	2	2	--	3	2	2	2	2	3	3	6	7	8	7	6	8	9	10	3
APRIL....	8	7	5	4	5	6	5	4	4	4	5	8	8	7	8	7	8	9	7	7	7	7	8	9	8	9	7	7	9	11	--	6
MAY.....	11	11	12	11	11	9	7	--	10	10	9	9	8	8	10	8	8	9	12	12	12	13	12	10	12	11	13	12	13	13	13	10
JUNE.....	12	13	13	12	12	11	11	11	10	11	11	12	12	12	12	13	12	13	13	13	13	12	13	13	13	13	13	14	14	14	13	--	12
JULY.....	13	14	14	14	14	14	16	17	16	17	17	16	16	18	18	17	18	18	18	18	17	18	18	17	18	18	--	18	19	18	18	16
AUGUST...	17	16	17	17	18	18	19	17	17	17	16	16	16	14	13	13	15	14	14	16	16	17	17	14	14	16	17	17	17	16	16	16
SEPTEMBER	16	14	14	13	13	13	13	13	14	14	14	14	13	13	14	13	11	10	11	12	--	12	11	11	11	11	11	11	11	11	--	12

09095500 COLORADO RIVER NEAR CAMEO, COLO.

LOCATION.--Lat 39°11'20", long 108°16'56", Mesa County, at Grand Valley project diversion dam, 0.4 mile upstream from Plateau Creek, 3.7 miles upstream from Cameo, and 5.9 miles downstream from gaging station.
DRAINAGE AREA.--8,050 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1933 to September 1968.
Water temperatures: April 1949 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 875 mg/l Jan. 1-17; minimum, 190 mg/l June 1-25.
Hardness: Maximum, 354 mg/l Jan. 1-17; minimum, 124 mg/l June 1-25.
Specific conductance: Maximum daily, 1,400 micromhos Jan. 14, 16; minimum daily, 307 micromhos June 21.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
OCT.											
01-31	1871	8.5	75	20	127	--	172	158	175	--	2.8
NOV.											
01-30	1744	9.0	80	19	131	--	180	166	188	--	3.2
DEC.											
01-08	1620	7.6	83	20	161	--	202	184	215	--	7.9
09-17	1636	10	80	21	142	4.4	188	170	190	.6	5.2
18-31	1624	10	77	19	134	--	174	159	185	--	6.2
JAN.											
01-17	1358	7.4	87	33	178	--	200	195	250	--	1.2
18-31	1516	7.3	77	8.3	156	--	180	168	215	--	1.1
FEB.											
01-29	1523	9.4	68	21	146	--	176	163	202	--	3.2
MAR.											
01-30	1549	7.8	71	23	151	--	176	173	205	--	4.1
31...	1810	9.0	64	20	106	--	166	142	165	--	3.2
APR.											
01-11	2201	9.0	62	18	110	--	156	134	142	--	2.8
12-15	2338	9.7	59	16	90	3.5	148	118	118	.5	2.6
16-30	2223	8.2	62	18	105	--	154	131	135	--	2.7
MAY											
01-04	3042	10	57	20	99	--	160	118	126	--	1.9
05-27	5070	12	46	16	54	--	150	78	66	--	2.0
28-31	6892	9.6	38	12	28	1.6	132	46	31	.3	2.0
JUNE											
01-25	13490	8.1	47	15	21	--	117	39	28	--	.6
26-30	8896	6.5	40	--	37	--	112	62	50	--	1.7
JULY											
01-04	6382	11	46	13	44	--	121	68	60	--	.6
05-15	4760	12	55	14	58	--	137	90	76	--	.5
16-31	3233	13	67	17	81	--	158	121	122	--	.8
AUG.											
01-23	4083	11	62	19	74	--	157	112	--	--	1.9
24-31	2359	9.9	74	16	107	--	169	122	158	--	1.6
SEPT.											
01-30	2057	4.3	74	19	116	--	168	143	175	--	3.0
WTD. AVG. TIME	--	9.1	59	17	75	--	147	100	103	--	1.8
WTD. AVG. TONS PER DAY	3324	8.9	67	19	110	--	164	135	155	--	2.5
	--	82	525	151	675	--	1320	895	912	--	17

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1130	1100	1310	1390	1170	1220	983	951	384	481	828	1040
2	1130	1100	1330	1390	1180	1220	983	954	368	518	748	1030
3	1130	1150	1330	1380	1200	1220	997	795	358	517	743	1040
4	1120	1150	1330	1390	1200	1220	988	767	356	532	745	1030
5	1130	1150	1310	1380	1200	1220	944	698	337	556	736	1020
6	1120	1140	1310	1390	1190	1220	941	538	316	583	746	1030
7	1130	1140	1320	1390	1210	1210	939	556	351	603	846	1020
8	1050	1140	1330	1390	1200	1200	950	551	364	620	863	1030
9	1050	1150	1210	1380	1190	1200	942	558	355	620	686	1030
10	1050	1140	1210	1390	1190	1210	942	591	365	624	684	1010
11	1090	1130	1200	1390	1200	1210	941	590	389	633	690	1030
12	1080	1130	1210	1390	1190	1210	835	596	394	648	697	1080
13	1090	1130	1200	1380	1190	1200	830	594	391	668	714	1080
14	1110	1120	1200	1400	1190	1210	828	590	389	703	711	1050
15	1090	1120	1210	1390	1200	1210	829	634	335	708	772	1050
16	1090	1120	1200	1400	1190	1220	903	639	329	773	776	1050
17	1090	1100	1200	1380	1190	1230	910	639	333	775	774	1040
18	1110	1100	1150	1250	1200	1220	910	646	311	773	768	1030
19	1110	1120	1150	1240	1200	1220	910	690	312	798	771	1030
20	1110	1120	1150	1240	1190	1230	915	690	309	823	783	1040
21	1110	1140	1150	1250	1140	1230	916	680	307	824	781	1030
22	1090	1140	1150	1240	1130	1210	914	596	308	865	834	1050
23	1100	1140	1140	1250	1130	1230	914	464	310	863	839	1050
24	1100	1130	1150	1250	1130	1220	911	494	332	866	971	1050
25	1100	1130	1150	1240	1180	1230	911	507	354	848	968	1060
26	1110	1130	1150	1250	1190	1280	952	495	452	851	968	1060
27	1130	1140	1150	1210	1170	1280	955	503	468	851	971	1060
28	1130	1180	1150	1150	1180	1280	955	383	465	849	974	1050
29	1120	1180	1150	1180	1220	1280	955	390	469	851	974	1060
30	1120	1330	1160	1210	---	1290	966	390	460	847	1010	1050
31	1120	---	1140	1170	---	993	---	345	---	832	1010	---
AVERAGE	1100	1140	1210	1310	1180	1220	926	598	366	719	819	1050

09095500 COLORADO RIVER NEAR CAMEO, COLO.--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 20.0°C July 14, 15, 20, 21, Aug. 7; minimum, freezing point on many days during December and January.
Period of record:
Dissolved solids (1933-43, 1950-68): Maximum, 1,080 mg/l Sept. 22, 1962; minimum, 143 mg/l June 11-20, 1935.
Hardness (1933-35, 1957-68): Maximum, 474 mg/l Sept. 22, 1962; minimum, 98 mg/l June 21-30, 1935.
Specific conductance (1941-68): Maximum daily, 1,860 micromhos June 16, 1964; minimum daily, 244 micromhos July 2, 1947, July 3, 1957.
Water temperatures: Maximum, 24.5°C Aug. 16, 1962; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-31	.04	--	673	.92	3400	269	128	3.4	1100	7.8
NOV.										
01-30	.00	--	700	.95	3300	279	131	3.4	1150	7.7
DEC.										
01-08	.00	--	803	1.09	3510	292	126	4.1	1330	7.7
09-17	.09	.06	726	.99	3210	286	132	3.7	1200	7.9
18-31	.32	--	697	.95	3060	272	129	3.5	1150	7.7
JAN.										
01-17	.01	--	875	1.19	3300	354	190	4.1	1390	7.9
18-31	.08	--	773	1.05	3160	226	78	4.5	1240	7.8
FEB.										
01-29	.06	--	720	.98	2960	256	112	4.0	1190	7.8
MAR.										
01-30	.01	--	748	1.02	3130	272	128	4.0	1230	7.9
31...	.01	--	598	.81	2920	242	106	3.0	993	7.7
APR.										
01-11	.00	--	580	.79	3450	228	100	3.2	962	7.7
12-15	.01	.03	505	.69	3190	210	89	2.7	836	7.9
16-30	.00	--	564	.77	3390	226	100	3.0	930	7.6
MAY										
01-04	--	--	527	.72	4330	224	93	2.9	873	7.9
05-27	--	--	362	.49	4960	180	57	1.8	596	7.7
28-31	.03	.02	236	.32	5670	144	36	1.0	387	7.9
JUNE										
01-25	.00	--	190	.26	6920	124	28	.8	347	7.7
26-30	.00	--	255	.35	6130	142	50	1.4	463	7.5
JULY										
01-04	.00	--	304	.41	5240	169	70	1.5	515	7.8
05-15	.00	--	382	.52	4910	194	82	1.8	639	8.0
16-31	.00	--	507	.69	4430	236	106	2.3	837	7.9
AUG.										
01-23	.00	--	472	.64	5200	234	105	2.1	773	7.7
24-31	.00	--	611	.83	3890	250	111	2.9	987	7.7
SEPT.										
01-30	.02	--	635	.86	3600	264	126	3.1	1050	8.0
WTD. AVG. TIME	.02	--	442	--	--	201	80	--	737	7.8
WTD. AVG. TONS PER DAY	.03	--	592	--	--	242	107	3.0	975	7.8
	.15	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	15	15	15	15	15	14	13	13	12	12	12	12	12	11	10	9	8	8	8	8	8	7	6	5	7	7	7	6	6	6	6	9
NOVEMBER.	6	6	6	6	6	5	5	4	4	4	5	5	5	5	5	5	5	5	5	4	4	3	3	2	2	1	1	1	1	--		4
DECEMBER.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		--
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		--
FEBRUARY.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	--	--	--	1
MARCH....	4	4	5	5	5	5	5	6	6	4	4	6	6	6	4	4	4	4	5	6	7	7	7	7	7	8	8	8	8	8		5
APRIL....	9	9	9	9	8	8	8	7	7	7	7	8	8	8	8	8	8	8	8	9	9	7	7	7	7	8	8	9	10	12	--	8
MAY.....	13	13	13	14	13	12	10	9	9	10	10	10	10	10	11	11	11	11	12	12	14	14	12	12	12	12	12	13	13	13	13	11
JUNE.....	12	13	13	12	12	12	11	11	11	10	11	12	12	12	--	13	13	13	13	13	13	13	14	13	13	14	15	15	15	14	--	12
JULY.....	14	16	16	17	16	17	17	18	18	18	19	19	19	20	20	19	19	19	19	20	20	19	19	19	19	19	19	19	19	19	18	18
AUGUST...	18	18	19	19	19	20	19	--	18	18	18	17	18	18	17	17	17	17	17	17	17	17	17	17	17	18	18	18	18	18	18	17
SEPTEMBER	16	16	16	15	15	15	15	16	16	16	16	18	16	16	15	14	14	14	13	13	13	13	13	13	13	13	13	13	13	--		14

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.
(Irrigation network station)

LOCATION.--Lat 38°59', long 108°27', near center of sec.14, T.2 S., R.1 E., Ute Meridian, Mesa County, at gaging station at bridge on State Highway 141, 0.4 mile downstream from Whitewater Creek, 0.5 mile south of Whitewater, and 8 miles southeast of Grand Junction.
DRAINAGE AREA.--7,928 sq mi.
PERIOD OF RECORD.--Chemical analyses: October 1931 to September 1968.
Water temperatures: April 1949 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,570 mg/l July 19-28; minimum, 308 mg/l Dec. 2.
Hardness: Maximum, 835 mg/l July 19-28; minimum, 204 mg/l Dec. 2.
Specific conductance: Maximum daily, 1,990 micromhos Sept. 22; minimum daily, 435 micromhos May 23.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)
OCT.											
01-24	1020	16	188	64	132	--	246	777	16	--	7.5
25-31	1230	15	176	61	124	--	244	709	10	--	7.5
NOV.											
01-05	1300	15	170	62	110	--	244	691	16	--	6.3
06-09	1550	14	136	49	85	--	216	532	12	--	4.2
10-30	1930	12	107	40	68	--	192	398	10	--	3.8
DEC.											
01...	2220	10	84	30	51	--	134	304	7.6	--	2.9
02...	2130	5.9	68	8.3	46	--	100	146	2.2	--	1.3
03-23	2380	12	81	32	57	--	164	300	6.7	--	3.2
24-31	3590	9.8	67	23	40	2.4	164	194	3.8	--	1.8
JAN.											
01-07	3310	9.1	67	23	38	--	164	218	8.5	--	.8
08-26	1580	12	94	40	63	--	206	378	12	--	4.3
27-31	1300	14	153	62	130	--	250	732	24	--	7.3
FEB.											
01-02	2020	12	88	42	74	--	196	415	13	--	4.5
03-12	1580	10	91	34	63	--	184	362	12	--	3.3
13-21	1660	9.5	83	43	78	--	186	405	13	--	3.7
22-23	1840	14	106	52	126	4.5	202	645	21	.4	2.8
24-29	1650	9.8	106	35	78	--	188	376	15	--	3.8
MAR.											
01-06	1370	10	85	41	69	--	184	361	11	--	2.4
07-13	981	10	103	54	93	--	208	488	16	--	4.4
14-24	958	12	115	54	101	--	220	540	17	--	5.2
25-31	1010	12	102	48	85	--	202	460	15	--	4.6
APR.											
01-14	1080	13	87	48	74	--	188	392	16	--	4.5
15-18	1440	12	75	29	51	--	158	289	12	--	4.4
19-30	1120	13	95	40	68	--	178	402	15	--	4.7
MAY											
01-02	2060	12	94	38	62	--	176	333	13	--	4.1
03-20	3710	13	68	24	37	--	148	214	6.2	--	2.1
21-31	5850	13	55	19	26	--	120	157	5.4	--	2.5
JUNE											
01-10	6360	12	61	17	27	--	125	157	5.6	--	.8
11-14	3300	13	86	28	50	--	134	280	8.6	--	2.4
15-25	3940	13	68	22	37	--	116	213	6.5	--	1.6
26-30	1990	13	106	33	60	--	152	357	10	--	3.7
JULY											
01-04	1200	13	124	49	76	--	176	502	10	--	4.2
05-18	824	15	172	56	108	--	194	721	14	--	4.8
19-28	742	15	200	81	136	5.5	212	950	17	.9	2.3
29-31	2080	16	168	52	93	--	232	643	14	--	4.5
AUG.											
01-08	2290	16	158	50	90	--	224	598	16	--	6.4
09-13	2340	17	136	48	80	--	212	518	14	--	4.0
14-23	2020	18	172	54	97	--	226	640	17	--	5.4
21-31	893	17	182	74	123	--	238	790	19	--	8.0
SEPT.											
01-22	1040	8.1	188	71	120	--	222	772	22	--	7.4
23-30	1400	8.3	168	71	100	--	228	708	19	--	7.0
WTD. AVG. TIME	--	12	99	37	63	--	173	375	10	--	3.5
WTD. AVG. TONS PER DAY	1989	13	119	46	80	--	192	480	13	--	4.4
	--	67	534	197	340	--	931	2010	56	--	19

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 22.0°C July 23; minimum, freezing point on many days during December and January.
Period of record:
Dissolved solids: Maximum, 2,820 mg/l Sept. 11-20, 1934; minimum, 203 mg/l May 11-20, 1944, May 22-26, 1964.
Hardness (1931-35, 1943-68): Maximum, 1,370 mg/l Sept. 1-20, 1934; minimum, 130 mg/l May 22-26, 1964.
Specific conductance (1941-68): Maximum daily, 2,730 micromhos Sept. 10, 1956; minimum daily, 280 micromhos May 23, 1948.
Water temperatures: Maximum, 30.0°C Aug. 13, 1958; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-24	.06	--	1410	1.92	3880	735	533	2.1	1650	8.1
25-31	.05	--	1310	1.78	4350	690	490	2.1	1560	7.9
NOV.										
01-05	.02	--	1250	1.70	4390	680	480	1.8	1520	7.7
06-09	.07	--	1000	1.36	4190	540	363	1.6	1240	7.7
10-30	.00	--	768	1.04	4000	430	272	1.4	1010	7.7
DEC.										
01...	.07	--	590	.80	3540	332	222	1.2	791	7.8
02...	.01	--	308	.42	1770	204	122	.5	443	7.8
03-23	.03	.--	595	.81	3820	332	197	1.4	815	7.9
24-31	.02	.08	438	.60	4250	261	126	1.0	631	7.8
JAN.										
01-07	.00	--	461	.63	4120	261	126	1.0	643	8.0
08-26	.04	--	744	1.01	3170	398	229	1.4	957	8.0
27-31	.02	--	1310	1.78	4600	636	431	2.2	1560	8.0
FEB.										
01-02	.01	--	748	1.02	4080	392	231	1.6	994	8.0
03-12	.02	--	679	.92	2900	364	213	1.4	905	8.0
13-21	.00	--	749	1.02	3360	382	229	1.7	990	8.0
22-23	.00	.26	1040	1.41	5170	478	312	2.5	1320	7.9
24-29	.01	--	799	1.09	3560	410	256	1.7	1040	8.0
MAR.										
01-06	.00	--	710	.97	2630	380	229	1.5	952	7.8
07-13	.01	--	918	1.25	2430	476	305	1.8	1180	8.1
14-24	.01	--	1010	1.37	2610	512	332	1.9	1270	7.8
25-31	.01	--	866	1.18	2360	452	286	1.7	1120	7.9
APR.										
01-14	.01	--	750	1.02	2190	414	260	1.6	1030	7.8
15-18	.03	--	566	.77	2200	308	178	1.3	779	7.7
19-30	.06	--	731	.99	2210	400	254	1.5	991	7.9
MAY										
01-02	.00	--	696	.95	3870	392	248	1.4	728	7.8
03-20	.02	--	456	.62	4570	268	147	1.0	632	7.8
21-31	.03	--	359	.49	5670	216	118	.8	507	7.8
JUNE										
01-10	.02	--	309	.42	5310	222	120	.8	527	7.4
11-14	.02	--	573	.78	5110	330	220	1.2	792	8.0
15-25	.01	--	450	.61	4790	262	167	1.0	639	7.9
26-30	.01	--	716	.97	3850	400	275	1.3	951	7.9
JULY										
01-04	.00	--	945	1.29	3060	510	366	1.5	1190	7.7
05-18	.01	--	1240	1.69	2760	660	501	1.8	1510	7.6
19-28	.01	.30	1570	2.14	3150	835	661	2.0	1830	7.7
29-31	.01	--	1130	1.54	6350	635	445	1.6	1400	7.7
AUG.										
01-08	.01	--	1090	1.48	6740	600	416	1.6	1360	8.1
09-13	.02	--	972	1.32	6140	536	362	1.5	1240	7.7
14-20	.01	--	1180	1.60	6440	650	465	1.7	1450	7.7
21-31	.00	--	1430	1.94	3450	760	565	1.9	1700	7.9
SEPT.										
01-22	.01	--	1420	1.93	3990	760	578	1.9	1690	7.8
23-30	.03	--	1270	1.73	4800	710	523	1.6	1550	7.9
WTD. AVG. TIME	.52	--	720	--	--	399	257	--	939	7.8
WTD. AVG. TONS PER DAY	.52	--	897	--	--	485	327	1.5	1130	7.9
	.60	--	--	--	--	--	--	--	--	--

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1650	1490	791	659	1010	944	1080	1070	484	1080	1640	1810
2	1620	1430	443	652	978	951	1020	787	476	1160	1330	1680
3	1631	1280	830	659	912	937	968	667	529	1260	1280	1640
4	1570	1630	786	600	912	956	1010	583	467	1240	1240	1620
5	1620	1770	721	579	918	940	1080	551	480	1320	1300	1620
6	1640	1170	819	676	885	951	1070	602	468	1380	1350	1590
7	1660	1110	835	668	889	1050	994	568	493	1420	1420	1660
8	1640	1150	844	932	884	1220	1010	603	539	1480	1330	1670
9	1600	1500	868	544	901	1180	1020	621	557	1550	1290	1670
10	1610	1100	798	932	911	1150	1090	562	656	1460	1260	1660
11	1630	1090	790	899	914	1190	1110	568	805	1450	1160	1690
12	1620	945	847	---	916	1180	1050	635	785	1510	1220	1700
13	1630	997	842	915	935	1180	1030	645	843	1560	1210	1650
14	1650	1080	786	1060	952	1400	877	620	740	1520	1640	1660
15	1690	994	811	990	975	1160	781	666	667	1580	1430	1710
16	1690	1050	697	1010	975	972	783	703	659	1630	1290	1690
17	1680	984	776	1010	975	1130	766	670	673	1660	1300	1660
18	1680	994	778	950	965	1320	773	702	636	1690	1390	1650
19	1710	1030	844	1060	1000	1340	831	677	628	1800	1460	1650
20	1690	1020	760	993	1040	1120	857	645	648	1880	1560	1630
21	1660	1030	812	1030	1030	1310	879	553	656	1940	1670	1650
22	1630	1020	767	956	1340	1340	941	512	623	1960	1660	1990
23	1640	1060	730	899	1290	1410	930	435	569	1980	1690	1590
24	1630	1050	654	875	1190	1300	999	441	612	1820	1690	1520
25	1590	1020	623	853	1070	1200	990	490	602	1810	1710	1540
26	1580	957	625	953	1070	1040	1020	518	821	1750	1700	1530
27	1580	954	627	1300	997	1030	1040	522	955	1730	1690	1550
28	1580	904	607	1560	945	1230	1080	513	1010	1730	1690	1530
29	1520	909	611	1500	942	1240	1140	540	977	1530	1730	1530
30	1550	978	622	1780	---	1110	1120	495	970	1440	1660	1520
31	1480	---	649	1610	---	933	---	460	---	1240	1710	---
AVERAGE	1620	1120	742	982	991	1140	978	601	668	1570	1470	1640

09152500 GUNNISON RIVER NEAR GRAND JUNCTION, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	7.0	5.0	2.0	2.0	7.0	11.0	12.0	13.0	14.0	18.0	17.0
2	17.0	6.0	2.0	1.0	2.0	7.0	11.0	13.0	14.0	17.0	17.0	17.0
3	17.0	6.0	2.0	2.0	2.0	7.0	7.0	11.0	13.0	18.0	18.0	16.0
4	17.0	6.0	1.0	0.0	2.0	7.0	5.0	11.0	13.0	18.0	19.0	16.0
5	16.0	6.0	1.0	0.0	3.0	7.0	8.0	10.0	13.0	18.0	19.0	15.0
6	16.0	4.0	2.0	0.0	3.0	7.0	8.0	8.0	14.0	19.0	19.0	16.0
7	14.0	5.0	2.0	0.0	3.0	7.0	7.0	7.0	13.0	21.0	18.0	16.0
8	13.0	6.0	2.0	0.0	3.0	8.0	6.0	8.0	12.0	20.0	19.0	16.0
9	13.0	6.0	0.0	0.0	4.0	7.0	7.0	11.0	11.0	20.0	19.0	17.0
10	13.0	6.0	1.0	0.0	4.0	8.0	6.0	10.0	11.0	19.0	19.0	17.0
11	13.0	7.0	1.0	0.0	4.0	9.0	7.0	11.0	13.0	19.0	19.0	16.0
12	13.0	7.0	2.0	---	4.0	7.0	10.0	10.0	14.0	19.0	18.0	17.0
13	13.0	7.0	1.0	0.0	5.0	7.0	10.0	9.0	15.0	19.0	18.0	16.0
14	14.0	7.0	0.0	1.0	5.0	7.0	5.0	9.0	14.0	20.0	18.0	16.0
15	13.0	7.0	1.0	1.0	6.0	7.0	5.0	9.0	16.0	20.0	14.0	16.0
16	9.0	7.0	2.0	2.0	6.0	7.0	10.0	11.0	15.0	20.0	16.0	13.0
17	7.0	7.0	3.0	2.0	6.0	7.0	9.0	10.0	16.0	18.0	17.0	14.0
18	9.0	7.0	1.0	1.0	6.0	7.0	8.0	11.0	16.0	20.0	17.0	13.0
19	9.0	8.0	2.0	1.0	6.0	7.0	7.0	11.0	17.0	21.0	16.0	13.0
20	10.0	7.0	2.0	0.0	6.0	7.0	8.0	12.0	17.0	20.0	17.0	14.0
21	9.0	8.0	2.0	0.0	7.0	7.0	7.0	12.0	19.0	21.0	16.0	13.0
22	10.0	7.0	0.0	1.0	7.0	7.0	7.0	13.0	17.0	21.0	17.0	13.0
23	10.0	8.0	0.0	1.0	7.0	7.0	6.0	11.0	17.0	22.0	16.0	14.0
24	9.0	5.0	0.0	1.0	7.0	7.0	7.0	10.0	16.0	21.0	16.0	14.0
25	9.0	8.0	0.0	2.0	8.0	7.0	8.0	10.0	15.0	21.0	21.0	14.0
26	9.0	7.0	2.0	1.0	7.0	9.0	9.0	12.0	16.0	21.0	18.0	14.0
27	8.0	6.0	1.0	2.0	7.0	7.0	7.0	13.0	17.0	21.0	17.0	14.0
28	9.0	2.0	3.0	2.0	6.0	7.0	8.0	13.0	18.0	19.0	17.0	12.0
29	8.0	6.0	3.0	2.0	7.0	9.0	9.0	13.0	17.0	21.0	19.0	13.0
30	7.0	4.0	3.0	2.0	---	9.0	11.0	13.0	15.0	17.0	17.0	12.0
31	7.0	---	1.0	2.0	---	9.0	---	12.0	---	17.0	17.0	---
AVERAGE	11.5	6.5	1.5	1.0	5.0	7.5	8.0	11.0	15.0	19.5	17.5	15.0

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE

LOCATION (revised).--Lat 39°04'45", long 109°06'15", in NW¼SW¼, sec.12, T.20 S., R.25 E., Grand County, at Westwater, about 4 miles downstream from Colorado-Utah State line and 9.5 miles downstream from gaging station 09163500.
DRAINAGE AREA.--17,900 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: May 1962 to September 1968.
Water temperatures: May 1962 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,290 mg/l Sept. 1-30; minimum, 380 mg/l June 1-30.
Hardness: Maximum, 636 mg/l Sept. 1-30; minimum, 204 mg/l June 1-30.
Specific conductance: Maximum daily, 1,810 micromhos Sept. 7; minimum daily, 464 micromhos June 2.
Water temperatures: Maximum, 28.0°C July 13; minimum, freezing point on many days during December to February.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-31	2840	--	--	--	--	--	190	222	0	649	128
NOV.											
01-30	3662	--	--	--	--	--	139	208	0	437	105
DEC.											
01-31	4174	--	--	--	--	--	111	192	0	317	89
JAN.											
01-31	3314	--	--	--	--	--	160	216	0	420	135
FEB.											
01-29	3442	--	--	--	--	--	125	186	0	340	100
MAR.											
01-31	2835	--	--	--	--	--	155	194	0	396	138
APR.											
01-30	3258	--	--	--	--	--	129	178	0	344	94
MAY											
01-03	3710	--	--	--	--	--	123	182	0	395	100
04-20	7361	--	--	--	--	--	59	164	0	201	48
21-31	12680	--	--	--	--	--	55	170	0	152	40
JUNE											
01-30	16730	--	--	--	--	--	35	135	0	121	31
JULY											
01-07	6510	--	--	--	--	--	69	146	0	249	60
08-18	4451	--	--	--	--	--	110	186	0	412	95
19-31	3630	--	--	--		--	136	202	0	520	106
AUG.											
01-18	6709	--	--	--	--	--	72	180	0	317	65
19-31	3226	--	--	--	--	--	113	206	0	425	102
SEPT.											
01-30	2643	--	--	--	--	--	162	212	0	610	128
WTD. AVG. TIME	--	--	--	--	--	--	93	175	0	300	73
ATC. AVG. TONS PER DAY	5128	--	--	--	--	--	122	191	0	385	98
	--	--	--	--	--	--	1300	2430	0	4160	968

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
17...	A2740	11	132	75	158	4.8	--	220	0	608	128
MAR.											
27...	A3200	8.0	100	41	145	4.3	--	196	0	375	135
JUNE											
02...	A19800	10	50	13	26	2.2	--	128	0	98	20
AUG.											
28...	A2560	12	142	58	137	4.7	--	212	0	552	110

A DISCHARGE AT TIME OF SAMPLING.

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

Period of record:
Dissolved solids: Maximum, 2,610 mg/l Jan. 3-5, 1965; minimum, 243 mg/l June 14-30, 1965.
Hardness: Maximum, 1,080 mg/l Jan. 3-5, 1965; minimum, 150 mg/l June 14-30, 1965.
Specific conductance: Maximum daily, 3,680 micromhos Mar. 19, 1965; minimum daily, 357 micromhos June 22, 1965.
Water temperatures: Maximum, 28.0°C July 30, 1966, July 13, 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Records of discharge are given for Colorado River near Colorado-Utah State line (Station 09163500). Maximum observed during water year: Hardness, 640 mg/l Oct. 17. Minimum observed during water year: Dissolved solids, 304 mg/l, and hardness, 178 mg/l June 2.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH
OCT.										
01-31	--	--	1220	1.66	9350	626	444	3.3	1680	8.0
NOV.										
01-30	--	--	959	1.30	9480	472	301	2.8	1350	8.1
DEC.										
01-31	--	--	745	1.01	8400	372	215	2.5	1100	7.9
JAN.										
01-31	--	--	1030	1.40	9220	456	279	3.3	1400	7.9
FEB.										
01-29	--	--	844	1.15	7840	376	223	2.8	1210	7.9
MAR.										
01-31	--	--	968	1.32	7410	428	269	3.3	1400	7.9
APR.										
01-30	--	--	776	1.06	6830	356	210	3.0	1110	7.9
MAY										
01-03	--	--	915	1.24	9170	434	285	2.6	1250	7.9
04-20	--	--	536	.73	10700	282	148	1.5	772	7.9
21-31	--	--	459	.62	15700	234	95	1.6	680	7.9
JUNE										
01-30	--	--	380	.52	17200	204	93	1.1	547	7.7
JULY										
01-07	--	--	585	1.31	10300	314	194	1.7	872	7.7
08-18	--	--	962	.80	11600	476	323	2.2	1380	7.8
19-31	--	--	1120	1.52	11000	560	394	2.5	1520	7.8
AUG.										
01-18	--	--	772	1.05	14000	412	264	1.6	1070	7.7
19-31	--	--	999	1.36	8700	510	341	2.2	1370	7.7
SEPT.										
01-30	--	--	1290	1.75	9210	636	462	2.8	1700	7.7
WTD. AVG. TIME	--	--	698	--	--	345	203	--	1020	7.8
WTD. AVG. TONS PER DAY	--	--	881	--	--	428	272	2.6	1230	7.9
	--	--	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES										
OCT.										
17...	.9	8.0	1280	1.67	9470	640	460	2.7	1680	7.6
MAR.										
27...	.6	9.1	953	1.30	8230	420	259	3.1	1380	8.0
JUNE										
02...	.4	4.9	304	.41	16300	178	73	.8	464	7.6
AUG.										
28...	.7	8.7	1170	1.54	8090	592	418	2.5	1580	7.7

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1710	1580	1240	1390	1200	---	1230	1310	---	749	1080	---
2	1710	1580	1220	1410	1190	---	1210	1220	---	749	1080	---
3	1710	1550	1240	1400	1180	---	1110	1220	---	934	1080	1680
4	1690	1580	1220	1400	1170	---	1050	880	---	942	1070	1670
5	1690	1590	1240	1410	1180	---	1070	792	---	937	1070	1700
6	1720	1580	1280	1400	1170	---	1130	714	---	958	1080	1680
7	1690	1390	1030	1400	1180	---	1170	725	---	824	1080	1810
8	1680	1270	1040	1390	1240	---	1130	725	---	1280	1070	---
9	1720	1260	1150	1410	1240	---	1130	736	---	1300	1080	1680
10	1660	1250	1270	1400	1260	---	1130	757	566	1300	1300	1670
11	1660	1260	1060	1540	1250	---	1170	733	571	1310	1080	1710
12	1640	1290	1060	1550	1250	---	1190	730	596	1300	1080	1760
13	1650	1290	1150	1540	1250	---	1030	723	600	1300	1080	1760
14	1660	1290	1260	1540	1240	---	1020	757	595	1300	1080	1800
15	1650	1290	1060	1540	1250	---	1030	746	532	1300	1060	---
16	1660	1340	1050	1550	1180	---	987	829	514	1300	1070	1800
17	1690	1330	1120	1550	1180	---	993	814	536	1300	1080	1750
18	1680	1320	1110	1550	1190	---	993	843	502	1340	1080	1700
19	1700	1330	1110	1240	1190	---	1000	816	523	1470	1260	1690
20	1700	1330	1150	1240	1190	---	1000	832	488	1480	1250	1670
21	1660	1330	1100	1230	1190	1400	1030	727	543	1480	1250	1660
22	1670	1350	1150	1240	1190	---	1050	735	504	1470	1250	---
23	1670	1340	1150	1240	1190	---	1080	577	512	1470	1440	1660
24	1660	1310	959	1380	1190	---	1100	---	556	1480	1430	1660
25	1660	1200	938	1400	1190	---	1170	---	549	1490	1430	1660
26	1660	1240	929	1400	1190	---	1170	---	593	1500	1420	1650
27	1620	1240	921	1400	1180	---	1220	---	---	1480	1430	1690
28	1610	1240	926	1400	1180	---	1250	---	---	1490	---	1660
29	1660	1260	937	1400	1190	---	1230	---	---	1560	1430	---
30	1610	1260	929	1400	---	---	1250	---	---	1580	1420	1660
31	1610	---	932	1400	---	---	---	---	---	1720	---	---
AVERAGE	1670	1350	1090	1410	1200	---	1110	---	---	1290	1190	1700

09163530 COLORADO RIVER BELOW COLORADO-UTAH STATE LINE--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	17	18	18	17	17	17	14	14	14	14	13	16	16	13	12	9	9	9	9	8	8	9	9	9	9	9	8	9	8	7	9	11
NOVEMBER.	7	8	6	6	6	6	6	6	6	6	8	8	8	8	7	6	6	5	5	4	4	4	3	3	3	3	5	3	3	3	--	5
DECEMBER.	3	3	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	--
FEBRUARY.	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	4	--	--	2
MARCH....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APRIL....	15	12	11	12	11	10	9	8	11	13	14	14	13	12	11	11	12	11	10	11	11	10	11	11	11	12	11	13	15	16	--	11
MAY.....	13	15	14	18	15	11	12	16	14	14	14	12	13	12	13	14	15	15	16	17	17	17	15	--	--	--	--	--	--	--	--	--
JUNE.....	--	--	--	--	--	--	--	--	--	15	16	19	20	18	19	18	17	17	19	16	19	19	20	19	17	20	--	--	--	--	--	--
JULY.....	19	20	19	19	21	23	24	22	19	19	23	26	28	21	21	23	22	--	--	--	--	--	--	--	27	--	--	26	--	--	--	--
AUGUST...	20	21	19	20	22	20	19	18	19	19	22	19	20	21	18	17	19	18	19	18	20	21	19	19	18	19	17	--	14	15	--	18
SEPTEMBER	--	--	17	19	18	19	17	--	19	17	20	18	19	18	--	19	18	19	19	17	17	--	17	16	17	16	17	17	--	16	--	17

09180000 DOLORES RIVER NEAR CISCO, UTAH

LOCATION.--Lat 38°47'50", long 109°11'40", in SW¼SE¼ sec.18, T.23 S., R.25 E., Grand County, at gaging station 9 miles upstream from mouth, 13.5 miles downstream from Colorado-Utah State line, and 14 miles southeast of Cisco.
DRAINAGE AREA.--4,580 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1968.
Water temperatures: March 1951 to September 1959, October 1964 to September 1968.
Sediment records: March 1951 to September 1964.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 3,980 mg/l Sept. 14-30; minimum, 222 mg/l June 1-5.
Hardness: Maximum, 890 mg/l Sept. 14-30; minimum, 161 mg/l June 15-26.
Specific conductance: Maximum daily, 7,070 micromhos Sept. 30; minimum daily, 337 micromhos June 1.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-31	101	--	--	--	--	--	506	88	0	569	725
NOV.											
01-16	99	--	--	--	--	--	594	94	0	498	862
17-30	103	--	--	--	--	--	836	86	0	529	1310
DEC.											
01-31	109	--	--	--	--	--	1010	142	0	643	1420
JAN.											
01-13	115	--	--	--	--	--	568	134	0	341	800
14-31	128	--	--	--	--	--	834	186	0	418	1250
FEB.											
01-14	160	--	--	--	--	--	799	108	0	467	1190
15-29	220	--	--	--	--	--	711	156	0	388	1060
MAR.											
01-15	194	--	--	--	--	--	650	104	0	388	988
16-31	137	--	--	--	--	--	1010	114	0	480	1550
APR.											
01...	225	--	--	--	--	--	856	110	0	436	1300
02-03	538	--	--	--	--	--	342	176	0	380	462
04-08	546	--	--	--	--	--	145	152	0	264	192
09...	386	--	--	--	--	--	428	132	0	315	638
10-17	1132	--	--	--	--	--	177	152	0	224	245
18-30	1051	--	--	--	--	--	49	130	0	135	61
MAY											
01-04	1972	--	--	--	--	--	44	174	0	98	56
05-18	2319	--	--	--	--	--	29	142	0	84	34
19...	2020	--	--	--	--	--	45	148	0	154	40
20-31	3538	--	--	--	--	--	20	129	0	70	22
JUNE											
01-05	4292	--	--	--	--	--	16	140	0	52	18
06-10	3638	--	--	--	--	--	25	129	0	90	25
11-14	1762	--	--	--	--	--	58	74	0	166	80
15-26	2345	--	--	--	--	--	27	109	0	77	30
27-30	1225	--	--	--	--	--	51	70	0	128	66
JULY											
01-02	858	--	--	--	--	--	82	78	0	160	110
03-06	553	--	--	--	--	--	163	96	0	187	240
07-20	342	--	--	--	--	--	371	106	0	394	440
21-27	263	--	--	--	--	--	411	28	0	442	610
28-31	719	--	--	--	--	--	165	192	0	378	210
AUG.											
01-05	1208	--	--	--	--	--	82	164	0	286	70
06-21	753	--	--	--	--	--	104	158	0	295	120
22-24	290	--	--	--	--	--	284	118	0	290	415
25-26	199	--	--	--	--	--	374	120	0	320	575
27-31	194	--	--	--	--	--	650	124	0	410	1000
SEPT.											
01-02	153	--	--	--	--	--	372	146	0	355	535
03-04	131	--	--	--	--	--	551	152	0	365	850
05-13	103	--	--	--	--	--	784	148	0	562	1160
14-30	57	--	--	--	--	--	1120	108	0	775	1720
WTD. AVG. TIME	--	--	--	--	--	--	136	130	0	168	189
WTD. AVG. TONS PER DAY	688	--	--	--	--	--	517	124	0	391	757
	--	--	--	--	--	--	253	242	0	312	352

ANALYSES OF ADDITIONAL SAMPLES

DEC.											
28...	A125	7.1	136	88	816	29	--	168	0	527	1300
MAR.											
07...	A 201	4.1	104	49	567	30	--	122	0	351	850
MAY											
17...	A1780	6.4	58	15	29	3.3	--	121	0	110	33
AUG.											
27...	A170	7.6	112	51	487	23	--	140	0	386	490

A DISCHARGE AT TIME OF SAMPLING.

09180000 DOLORES RIVER NEAR CISCO, UTAH--Continued

Period of record:
Dissolved solids (1953-66): Maximum, 8,220 mg/l Mar. 4, 1964; minimum, 200 mg/l June 1-10, 1957, May 1-31, 1958.
Hardness (1953-68): Maximum, 1,900 mg/l Sept. 21-30, 1956; minimum, 132 mg/l May 1-31, 1958.
Specific conductance: Maximum daily, 12,800 micromhos Mar. 4, 1964; minimum daily, 254 micromhos May 8, June 6, 1952.
Water temperatures (1951-59): Maximum, 29.5°C Aug. 14, 1958; minimum, freezing point on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-31	--	30	2180	2.96	594	610	538	8.9	3510	7.7
NOV.										
01-16	--	24	2120	2.88	567	540	463	11	3570	7.7
17-30	--	45	3100	4.22	862	688	617	14	5030	7.7
DEC.										
01-31	--	31	3140	4.27	924	614	498	18	5210	7.8
JAN.										
01-13	--	23	1820	2.48	565	378	268	13	3090	7.4
14-31	--	29	2740	3.73	947	560	407	15	4500	7.5
FEB.										
01-14	--	39	2810	3.82	1210	548	459	15	4460	7.5
15-29	--	23	2470	3.36	1470	500	372	14	3990	7.6
MAR.										
01-15	--	39	2340	3.18	1230	502	417	13	3800	7.7
16-31	--	21	3450	4.69	1280	600	507	18	5640	7.6
APR.										
01...	--	34	2820	3.84	1710	544	454	16	4600	7.4
02-03	--	17	1460	1.99	2120	462	318	6.9	2860	7.5
04-08	--	24	908	1.23	1360	374	249	3.3	1360	7.5
09...	--	24	1660	2.26	1730	424	316	9.0	2610	7.4
10-17	--	13	900	1.22	2750	328	203	4.2	1410	7.6
18-30	--	16	403	.55	1140	240	133	1.4	675	7.6
MAY										
01-04	--	8.7	402	.55	2140	234	91	1.3	646	7.5
05-18	--	7.7	317	.43	1990	194	78	.9	505	7.5
19...	--	6.1	472	.64	2570	246	125	1.2	650	7.3
20-31	--	6.4	259	.35	2470	172	66	.6	420	7.5
JUNE										
01-05	--	2.2	222	.30	2570	162	47	.5	363	7.7
06-10	--	7.8	278	.38	2730	186	80	8.1	458	7.5
11-14	--	17	396	.54	1880	235	174	1.6	622	7.1
15-26	--	9.0	258	.35	1630	161	72	.9	423	7.5
27-30	--	20	332	.45	1100	188	131	1.6	599	7.3
JULY										
01-02	--	10	480	.65	1110	216	152	2.4	816	7.2
03-06	--	13	696	.95	1040	268	189	4.3	1240	7.5
07-20	--	13	1150	1.56	1060	322	235	9.0	1950	7.6
21-27	--	21	1710	2.33	1210	466	443	8.3	2770	6.4
28-31	--	23	1040	1.41	2020	506	349	3.2	1560	7.7
AUG.										
01-05	--	18	643	.87	2100	366	232	1.9	941	7.8
06-21	--	20	755	1.03	1540	396	266	2.3	1150	7.8
22-24	--	23	1210	1.65	947	386	289	6.3	1980	7.8
25-26	--	20	1540	2.09	827	445	347	7.7	2540	7.6
27-31	--	25	2300	3.13	1210	545	443	12	3840	7.5
SEPT.										
01-02	--	18	1500	2.04	620	450	330	7.6	2460	7.5
03-04	--	17	2040	2.77	722	520	395	10	3420	7.7
05-13	--	14	2800	3.81	779	650	529	13	4610	7.6
14-30	--	11	3980	5.41	616	890	801	16	6490	6.9
WTD. AVG. TIME	--	12	664	--	--	262	155	--	1070	7.5
WTD. AVG. TONS PER DAY	--	22	1900	--	--	469	367	9.6	3100	7.5
	--	23	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

DEC.										
28...	.6	31	3120	4.11	1050	700	562	13	4890	7.3
MAR.										
07...	.3	37	2080	2.79	1130	460	360	12	3460	7.1
MAY										
17...	.3	19	349	.47	1680	206	107	.9	537	7.3
AUG.										
27...	.7	36	1950	7.65	895	--	375	9.6	3170	7.6

09180000 DOLORES RIVER NEAR CISCO, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3330	---	---	---	---	4070	4660	666	337	770	---	2080
2	---	---	4560	---	4280	4430	2750	657	370	861	---	2840
3	---	---	6060	---	4790	3850	1960	616	377	---	926	3160
4	---	3550	---	---	---	3920	1550	---	352	1140	954	3670
5	---	3390	---	---	---	4220	1270	479	356	1180	942	4550
6	3980	3350	---	---	---	3540	1170	564	523	1410	1200	4860
7	4180	---	4610	---	---	3680	---	467	373	---	1300	---
8	4020	---	5090	---	---	3540	1460	482	435	1790	987	4170
9	---	---	6140	---	---	3540	2610	---	436	---	946	4260
10	---	---	4600	---	4260	3660	1550	457	491	1860	---	4680
11	---	3490	---	---	---	3320	1620	500	551	1820	---	---
12	---	---	---	---	4500	3230	---	526	---	1790	1240	5020
13	---	3710	---	3090	---	3830	---	---	686	1910	1050	---
14	3100	3750	---	5120	---	---	1340	515	630	2050	---	---
15	3200	3610	---	---	---	4240	---	505	---	1860	1200	6570
16	---	3570	---	---	---	4940	1140	519	480	1940	1140	6410
17	---	---	---	---	3790	---	---	529	397	---	1310	6150
18	---	5810	---	---	3760	5220	553	---	387	2060	1330	5950
19	---	5780	---	---	4350	---	545	650	391	2100	934	5710
20	3000	---	---	4220	4020	5910	591	488	387	2130	1230	6580
21	2950	---	---	4160	4220	---	628	---	---	---	975	6630
22	3560	---	---	---	---	5670	715	464	413	2390	---	6780
23	3330	5130	---	---	4460	5590	734	---	---	2450	1910	6720
24	---	---	---	---	4150	5970	---	421	426	2640	2050	6660
25	---	4220	---	---	3330	---	695	---	438	2880	2360	6500
26	---	4220	---	---	3510	5600	730	394	451	---	2730	6310
27	3310	---	---	---	4070	5810	762	416	512	3280	---	6450
28	3690	---	---	---	4090	5830	---	391	585	1700	3440	6740
29	---	---	---	---	---	---	---	407	---	---	3680	---
30	---	---	---	---	---	5560	768	---	699	---	4410	7070
31	3710	---	---	---	---	5730	---	367	---	1430	---	---
AVERAGE	---	---	---	---	---	4600	---	---	459	---	---	5460

09180000 DOLORES RIVER NEAR CISCO, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	21	--	--	--	--	19	18	17	--	--	--	--	--	13	14	--	--	--	--	14	10	11	12	--	--	--	12	10	--	--	11	--
NOVEMBER.	--	--	--	7	6	6	--	--	--	--	10	--	7	8	7	8	--	8	8	--	--	--	6	--	6	6	--	--	--	--	--	--
DECEMBER.	--	2	1	--	--	--	0	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	0	0	--	--	--	--	--	0	0	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	0	0	--	--	--	--	--	--	0	--	0	--	--	--	--	0	0	7	7	8	--	8	9	9	8	7	8	--	--	--	--
MARCH....	10	11	11	10	10	11	10	10	11	9	9	10	9	--	11	9	--	8	--	8	--	8	9	11	--	8	9	12	--	14	9	9
APRIL....	13	9	7	8	8	6	--	7	8	9	12	--	--	7	--	3	--	2	2	2	3	3	--	--	11	11	11	--	--	11	--	--
MAY.....	13	13	13	--	12	11	12	12	--	12	12	12	--	11	12	12	12	--	12	18	--	17	--	14	--	16	18	18	18	--	17	--
JUNE.....	19	18	18	17	18	22	17	16	16	16	16	--	20	20	--	21	21	22	21	21	--	22	--	22	22	23	23	23	--	22	--	19
JULY.....	22	23	--	23	25	25	--	27	--	27	27	28	28	29	27	28	--	29	27	28	--	26	28	28	28	--	24	24	--	--	23	--
AUGUST...	--	--	22	24	23	22	22	23	23	--	--	24	23	--	20	20	19	19	20	20	21	--	21	20	20	21	--	24	24	22	--	--
SEPTEMBER	23	22	20	22	21	22	--	24	23	23	--	22	--	--	19	19	19	19	20	18	17	16	18	17	19	20	18	17	--	19	--	19

09180500 COLORADO RIVER NEAR CISCO, UTAH
(Irrigation network station)

LOCATION.--Lat 38°48'40", long 109°17'35", in NW¼NW¼ sec.17, T.23 S., R.24 E., Grand County, at gaging station 1 mile downstream from Dolores River, 11 miles south of Cisco, 36 miles downstream from Colorado-Utah State line, 97 miles upstream from Green River, and 235 miles upstream from San Juan River.
DRAINAGE AREA.--24,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: August 1928 to September 1968.
Water temperatures: May 1949 to September 1959, October 1964 to September 1968.
Sediment records: May 1930 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,310 mg/l Sept. 1-17; minimum, 289 mg/l June 3-9.
Hardness: Maximum, 620 mg/l Sept. 1-17; minimum, 172 mg/l June 3-9.
Specific conductance: Maximum daily, 1,900 micromhos Sept. 13; minimum daily, 367 micromhos June 7.
Water temperatures: Maximum, 28.0°C July 18, 19; minimum, freezing point on many days during December to February.
Sediment concentrations: Maximum daily, 40,000 mg/l Aug. 15; minimum daily, 43 mg/l Oct. 25, Sept. 12.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT. 1-NOV. 30	3185	12	118	46	--	--	160	206	0	461	135
DEC.											
01-23	3567	11	105	40	--	--	164	200	0	379	160
24-31	4930	11	64	47	--	--	121	182	0	311	100
JAN.											
01-08	4350	9.9	63	38	--	--	101	172	0	258	89
09-31	2937	10	86	48	--	--	149	204	0	379	128
FEB.											
01-17	3191	9.5	88	37	--	--	134	192	0	335	106
18-29	3592	9.3	95	36	--	--	136	184	0	377	168
MAR.											
01-10	3041	8.7	96	36	--	--	136	180	0	389	165
11-14	2568	9.9	97	40	--	--	137	188	0	412	175
15-17	2837	9.1	99	41	--	--	138	184	0	415	180
18-24	2524	9.8	104	41	--	--	221	184	0	434	210
25-31	2741	6.8	80	53	--	--	204	186	0	398	202
APR.											
01-03	3720	--	92	36	--	--	166	192	0	322	180
04-09	3770	--	83	36	--	--	110	172	0	287	102
10-13	3192	--	85	36	--	--	122	174	0	300	117
14-16	5047	--	87	29	--	--	98	174	0	255	95
17-21	4758	--	75	25	--	--	82	160	0	229	68
22-25	3760	--	81	30	--	--	90	158	0	260	80
26-30	3052	--	87	34	--	--	104	164	0	302	90
MAY											
01-04	5152	7.3	83	36	--	--	94	160	0	296	81
05-07	9260	10	67	24	--	--	52	168	0	144	48
08-11	8530	9.6	64	23	--	--	28	154	0	160	42
12-15	10040	8.7	66	22	--	--	53	156	0	171	44
16-20	7916	8.5	63	24	--	--	48	142	0	171	44
21-25	15070	9.6	65	19	--	--	51	154	0	156	41
26-29	14600	8.9	56	18	--	--	37	137	0	138	33
30-31	20200	9.2	52	16	--	--	28	134	0	100	28
JUNE											
01-02	24150	11	43	18	--	--	25	127	0	92	25
03-09	27860	10	40	18	--	--	24	129	0	85	21
10-25	18030	8.4	44	20	--	--	31	127	0	112	29
26-30	11680	7.6	51	24	--	--	42	127	0	145	43
JULY											
01-03	8637	8.1	68	22	--	--	53	136	0	179	54
04-10	5964	7.5	83	31	--	--	79	152	0	249	94
11-16	4813	7.9	99	34	--	--	109	158	0	332	103
17-24	3159	8.1	116	45	--	--	139	164	0	430	135
25-31	4604	9.9	143	61	--	--	116	204	0	485	128
AUG.											
01-09	7262	11	126	40	--	--	103	244	0	368	92
10-17	9311	11	127	37	--	--	87	212	0	355	78
18-21	5368	10	109	35	--	--	83	172	0	315	95
22-31	3056	11	136	52	--	--	162	200	0	492	158
SEPT.											
01-17	2478	10	148	61	--	--	189	176	0	618	168
18-30	2914	9.1	142	61	--	--	178	180	0	590	158
WTD. AVG. TIME	--	9.5	79	32	--	--	98	164	0	258	81
WTD. AVG. TONS PER DAY	5638	10	93	39	--	--	131	181	0	345	118
	--	98	761	305	--	--	846	1590	0	2500	780

ANALYSES OF ADDITIONAL SAMPLES

DEC.											
06...	3530	11	96	54	126	4.8	--	196	0	380	128
MAR.											
14...	2400	8.9	102	41	174	5.4	--	186	0	386	178
MAY											
14...	11100	7.9	58	17	42	3.1	--	134	0	134	38
AUG.											
14...	7250	12	112	26	83	4.7	--	180	0	288	75

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

EXTREMES.--1967-68:--Continued
Sediment loads: Maximum daily, 1,000,000 tons Aug. 15; minimum daily (estimated) 300 tons Jan. 8-10.
Period of record:
Dissolved solids (1928-52, 1953-68): Maximum, 2,670 mg/l Aug. 11-20, 1940; minimum, 202 mg/l June 11-20, 1933, July 1-10, 1957.
Hardness (1928-35, 1943-52, 1953-68): Maximum, 1,090 mg/l Sept. 1-10, 1934; minimum, 131 mg/l June 11-20, 1952.
Specific conductance (1941-52, 1953-68): Maximum daily, 4,820 micromhos Dec. 13, 1957; minimum daily, 291 micromhos May 31, 1958.
Water temperatures (1949-52, 1953-59, 1964-68): Maximum, 29.5°C July 29, 1966; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 69,000 mg/l Oct. 27, 1951; minimum daily, 4 mg/l Aug. 22, 1960.
Sediment loads: Maximum daily, 2,790,000 tons Oct. 14, 1941; minimum daily, 14 tons Aug. 22, 1960.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO-RIDE (F)	NITRATE (NO3)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH
OCT. 1-NOV. 30	--	--	1000	1.39	8600	482	313	3.2	1430	8.0
DEC.										
01-23	--	--	952	1.29	9170	428	264	3.4	1400	8.0
24-31	--	--	701	.95	9330	352	203	2.8	1080	8.0
JAN.										
01-08	--	--	684	.93	8030	316	175	2.5	970	7.9
09-31	--	--	955	1.30	7700	418	251	3.2	1310	7.8
FEB.										
01-17	--	11	827	1.12	7130	374	217	3.0	1190	8.0
18-29	--	9.2	960	1.31	9310	384	233	4.1	1390	7.9
MAR.										
01-10	--	9.4	972	1.32	7990	388	240	4.1	1420	7.9
11-14	--	8.6	1020	1.40	7070	408	254	4.2	1480	7.9
15-17	--	9.9	1050	1.43	8210	414	263	4.2	1500	8.0
18-24	--	11	1110	1.52	7560	428	277	4.6	1610	7.9
25-31	--	9.9	1060	1.44	7850	418	265	4.3	1560	8.1
APR.										
01-03	--	7.8	962	1.31	9660	382	235	3.7	1450	7.8
04-09	--	9.0	761	1.03	7750	352	211	2.6	1120	7.6
10-13	--	8.6	801	1.09	6900	360	217	2.8	1190	7.7
14-16	--	8.4	700	.95	9540	336	193	2.3	1050	7.7
17-21	--	6.4	590	.80	7640	292	161	2.1	884	7.6
22-25	--	9.0	667	.91	6810	324	194	2.2	980	7.5
26-30	--	7.4	752	1.02	6200	356	222	2.4	1090	7.7
MAY										
01-04	--	7.7	718	.98	9990	356	225	2.2	1050	7.8
05-07	--	5.8	493	.67	12300	266	128	1.4	714	7.7
08-11	--	3.7	448	.61	10130	254	128	1.3	685	7.8
12-15	--	4.1	477	.65	12900	256	128	1.4	708	7.8
16-20	--	5.7	440	.60	9400	256	140	1.3	692	7.7
21-25	--	4.7	456	.62	18600	240	114	1.4	635	7.8
26-29	--	3.1	353	.48	13900	213	10	1.1	569	7.6
30-31	--	2.9	321	.44	17500	195	85	.9	512	7.7
JUNE										
01-02	--	.4	310	.42	20200	182	78	.8	460	7.8
03-09	--	.9	289	.39	21730	172	65	.8	440	7.6
10-25	--	.9	336	.45	16400	194	90	1.0	514	7.6
26-30	--	.6	415	.56	13100	224	120	1.2	623	7.6
JULY										
01-03	--	2.1	478	.65	11100	260	148	1.4	738	8.0
04-10	--	2.8	649	.88	10500	332	207	1.9	990	7.8
11-16	--	4.5	797	1.08	10400	388	258	2.4	1170	7.8
17-24	--	7.6	982	1.34	8380	476	342	2.8	1440	7.8
25-31	--	9.3	1100	1.50	13700	508	441	2.0	1550	7.7
AUG.										
01-09	--	5.6	893	1.21	17500	480	280	2.0	1240	7.8
10-17	--	4.9	850	1.16	19100	468	294	1.7	1200	7.7
18-21	--	6.1	778	1.06	11300	414	273	1.8	1150	7.8
22-31	--	8.9	1150	1.56	9520	554	390	3.0	1650	7.8
SEPT.										
01-17	--	8.6	1310	1.75	8770	620	476	3.3	1810	7.6
18-30	--	8.3	1240	1.69	9760	605	457	3.1	1750	7.6
WTD. AVG. TIME	--	--	653	--	--	326	189	--	953	7.8
WTD. AVG. TONS PER DAY	--	--	845	--	--	393	243	2.8	1220	7.8
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

DEC.										
04...	.5	8.0	924	1.26	8810	460	299	2.6	1310	7.6
MAR.										
14...	.5	8.5	992	1.35	6430	424	271	3.7	1520	7.5
MAY										
14...	.4	9.1	384	.52	11530	214	104	1.2	596	7.3
AUG.										
14...	.3	10	729	.99	14300	388	240	1.8	1050	7.5

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25 °C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1670	1380	1020	---	---	1530	1110	477	703	1410	1670
2	---	1640	---	---	---	1400	1520	1060	442	727	1340	1730
3	---	1600	1440	---	1340	1370	1310	981	433	784	1390	1760
4	---	1540	---	765	1230	1420	1150	---	475	865	1190	1810
5	---	1540	1340	993	1200	1420	1080	759	447	911	1130	1770
6	---	1590	1350	1000	1200	1380	1070	702	464	962	1120	1810
7	---	1590	1400	1030	---	1380	1100	681	367	---	1170	---
8	---	1470	1440	980	1190	1400	1170	694	436	1030	1180	1750
9	---	1460	1390	1170	1170	1450	1160	665	446	1040	1270	1760
10	---	---	1490	1360	1160	1490	1160	676	505	1080	1350	1770
11	---	1540	1350	1380	1160	1490	1170	685	544	1120	1340	---
12	---	---	1410	1350	1190	1450	1230	704	---	1110	1040	1780
13	---	1410	1400	1340	1160	1480	---	736	589	1130	1060	1900
14	---	1300	---	1350	1140	1520	1210	687	583	1180	---	1860
15	---	1310	---	1400	1150	1540	1050	693	522	1170	1210	1880
16	---	1350	---	1260	---	1550	898	714	486	1230	1150	1860
17	---	1370	---	1340	1160	1420	---	544	497	---	1170	1840
18	---	1280	---	1320	1360	1550	844	751	504	1290	1090	1770
19	---	1280	---	1320	1330	1650	861	---	473	1330	1090	1730
20	---	---	---	1310	1370	1600	899	745	471	1370	1160	---
21	---	1370	---	1280	1380	---	924	753	489	---	1230	1730
22	---	1370	---	1250	1340	1630	959	675	475	1450	---	1750
23	---	1410	---	1240	1380	1590	974	600	---	1490	1390	1720
24	---	1390	1180	1230	1410	1610	987	527	498	1550	1470	1850
25	---	1380	1030	1240	1380	---	1020	---	517	1570	1510	1730
26	---	1360	---	1220	1390	---	1070	554	518	---	1520	1680
27	---	1300	---	---	1410	1530	1070	578	586	1770	---	1700
28	---	1300	---	---	1410	1540	---	581	652	1650	1620	1740
29	---	1300	---	1380	1360	1580	---	557	671	1460	1800	1720
30	---	1340	---	1240	---	1560	1130	541	677	1420	1870	1700
31	---	---	1020	1380	---	1540	---	484	---	1320	1850	---
AVERAGE	---	1430	---	1230	1280	1500	1100	694	509	1210	1330	1770

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOVEMBER	9	9	7	7	6	6	17	17	6	--	9	--	7	7	8	8	8	8	9	--	8	8	7	6	6	5	4	4	4	4	--	7
DECEMBER	4	--	1	1	1	1	1	1	1	1	1	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	--
JANUARY	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
FEBRUARY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	4	5	6	7	7	8	8	6	7	8	--	--	2
MARCH	--	9	9	9	9	9	8	9	8	8	7	9	8	8	9	8	9	7	7	7	--	8	7	7	--	--	8	10	11	14	14	8
APRIL	--	9	7	7	7	7	7	8	8	11	10	--	9	6	6	--	3	3	3	3	3	--	11	11	11	11	--	--	12	--	--	7
MAY	14	14	14	--	12	12	12	12	12	12	12	12	12	12	12	12	13	--	18	18	17	15	14	--	15	16	19	19	17	17	--	14
JUNE	19	18	19	18	17	18	16	15	14	15	16	--	20	20	20	21	21	21	20	21	21	22	--	21	20	21	22	21	21	21	--	19
JULY	21	22	23	23	24	24	--	25	25	25	25	27	26	27	26	27	--	28	28	26	--	26	26	27	27	--	26	26	26	26	24	25
AUGUST	23	21	22	24	23	24	23	22	23	23	23	23	22	--	19	19	19	19	20	20	21	--	20	19	20	21	--	23	23	19	23	21
SEPTEMBER	22	21	20	21	21	21	--	22	22	22	--	21	22	19	18	19	19	19	19	--	17	17	17	17	18	18	18	16	19	18	--	19

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 11, 1967	1255	14	2940	140	1110	34	48	--			90	97	100	--	--	--	VPWC
NOV 14	1430	8	3520	95	903	34	44	--			96	100	--	--	--	--	VPWC
DEC 6	1340	1	3530	55	524	--	--	--			--	--	--	--	--	--	--
FEB 23, 1968	1800	7	4140	1560	17400	38	55	62			82	96	100	--	--	--	VPWC
MAR 14	1400	6	2340	158	998	40	53	--			95	99	100	--	--	--	VPWC
APR 8	1405	10	3740	689	6960	39	53	70			92	97	100	--	--	--	VPWC
MAY 14	1400	13	11100	1280	38400	32	40	66			99	100	--	--	--	--	VPWC
JUN 7	1920	16	31700	2170	186000	15	20	33			64	85	97	100	--	--	VPWC
JUN 11	1315	23	16100	485	21100	20	27	46			87	100	--	--	--	--	VPWC
JUL 9	1420	22	5250	172	2440	36	44	--			86	93	100	--	--	--	VPWC
AUG 2	0950	21	11300	35800	1090000	29	38	60			97	99	100	--	--	--	VPWC
AUG 14	1050	20	7250	4270	83600	39	48	73			92	98	100	--	--	--	VPWC
SEP 17	1320	17	2630	39	277	25	34	--			90	97	100	--	--	--	VPWC

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	2850	210	1600	3100	220	1800	3900	180	1900
2	2800	220	1700	3230	220	1900	3920	250	2600
3	2750	210	1600	3590	250	2400	3780	170	1700
4	2670	200	1400	3190	210	1800	3440	130	1200
5	2630	180	1300	3030	170	1400	3320	85	760
6	2620	170	1200	3570	190	1800	3520	80	760
7	2680	820	5900	3780	310	3200	3400	150	1400
8	2800	130	980	3480	720	6800	3400	160	1500
9	2920	350	2800	3050	210	1700	3320	140	1300
10	2980	250	2000	3380	220	2000	3310	110	980
11	2940	150	1200	3520	220	2100	3230	100	870
12	2940	130	1000	3720	240	2400	3250	150	1300
13	2920	130	1000	3670	250	2500	3740	--	3000
14	2910	120	940	3610	170	1700	3460	--	2000
15	2770	100	750	3610	190	1900	3320	--	2000
16	2750	73	540	3630	160	1600	3860	--	3000
17	2780	69	520	3650	160	1600	3920	--	4000
18	2800	52	390	3590	180	1700	3820	--	3000
19	2730	49	360	3520	140	1300	3360	--	2000
20	2750	58	430	3500	130	1200	3840	--	3000
21	2850	61	470	3440	110	1000	3920	--	4000
22	2910	54	420	3590	100	970	3690	--	3000
23	2850	63	480	3720	220	2200	3320	--	2000
24	2840	59	450	3820	210	2200	3940	360	3800
25	2820	43	330	3840	180	1900	4600	--	10000
26	2820	49	370	3780	150	1500	5000	--	20000
27	2780	48	360	3820	180	1900	5500	--	30000
28	2750	210	1600	3760	120	1200	5400	--	30000
29	3050	370	3000	3480	95	890	5200	--	20000
30	3140	670	5700	3610	120	1200	5000	--	20000
31	3180	220	1900	--	--	--	4800	980	13000
TOTAL	87980	--	42690	106280	--	57760	121480	--	194070

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	4700	730	9300	3400	--	3000	3250	320	2800
2	4800	--	10000	3300	280	2500	3300	310	2800
3	4800	--	10000	3200	--	2000	3100	410	3400
4	5000	--	20000	3100	--	2000	3070	370	3100
5	5000	--	20000	3100	--	2000	3120	300	2500
6	4500	--	7000	3100	--	2000	3090	260	2200
7	3200	--	800	3100	--	2000	2940	250	2000
8	2800	--	300	3100	210	1800	2850	280	2200
9	2700	--	300	3100	350	2900	2840	320	2500
10	2800	--	300	3150	--	3000	2850	520	4000
11	2900	--	400	3150	--	3000	2750	820	6100
12	3000	--	500	3150	--	3000	2670	520	3700
13	3000	60	490	3150	330	2800	2450	320	2100
14	2900	160	1300	3300	740	6600	2400	170	1100
15	2800	260	2000	3250	--	7000	2800	200	1500
16	2800	310	2300	3300	870	7800	3070	270	2200
17	3000	99	800	3300	--	10000	2820	200	1500
18	3100	--	900	3300	1800	16000	2560	130	900
19	3300	120	1100	3360	1000	9100	2480	120	800
20	3300	--	1000	3380	830	7600	2650	99	710
21	3200	--	1000	3650	1200	12000	2500	78	530
22	3200	140	1200	4000	1700	18000	2480	58	390
23	3300	--	1000	4120	1600	18000	2400	74	480
24	3300	87	780	3800	1400	14000	2600	220	1500
25	3300	--	1000	3700	1200	12000	2550	170	1200
26	3000	210	1700	3550	890	8500	2620	120	850
27	2600	--	2000	3500	790	7500	2840	310	2400
28	2600	--	2000	3350	630	5700	2730	230	1700
29	2800	300	2300	3400	390	3600	2650	180	1300
30	2800	--	2000	--	--	--	2700	89	650
31	3000	380	3100	--	--	--	3100	330	2800
TOTAL	103500	--	106870	97360	--	195400	86230	--	61910

09180500 COLORADO RIVER NEAR CISCO, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	3210	680	5900	3320	1400	13000	23300	3200	200000
2	3670	1000	9900	4400	3300	39000	25000	3100	210000
3	4280	1400	16000	5740	3200	50000	26400	3800	270000
4	4360	1600	19000	7150	3800	73000	28100	2400	180000
5	3820	1000	10000	8450	4400	100000	28200	1800	140000
6	3460	600	5600	9330	5200	130000	28200	2200	170000
7	3590	520	5000	10000	4300	120000	30600	2200	180000
8	3740	610	6200	8760	2800	66000	28400	1700	130000
9	4650	400	3900	7980	1900	41000	25100	1500	100000
10	3360	300	2700	8450	2600	59000	19800	1400	75000
11	4090	240	2000	8930	2200	53000	16100	1200	52000
12	3010	240	2000	9390	2000	51000	14400	1000	39000
13	4310	3700	33000	10200	3300	91000	13700	850	31000
14	4690	7200	91000	10900	1300	38000	16000	1600	69000
15	5290	5900	84000	9660	2300	60000	18600	1400	70000
16	5160	4900	68000	8290	1300	29000	18800	1100	56000
17	5510	4500	67000	7900	1000	21000	16700	1100	56000
18	5280	4200	60000	7680	1100	23000	19800	1100	59000
19	4700	2400	30000	7550	1100	22000	20300	1000	55000
20	4300	1400	16000	8160	1400	31000	20100	820	45000
21	4200	980	11000	9940	2500	67000	18800	640	32000
22	4000	1100	12000	12200	4100	140000	19900	940	51000
23	3960	930	9900	17300	6400	300000	19800	870	47000
24	3700	620	6200	19100	4400	230000	17700	790	38000
25	3460	--	4000	16800	3500	160000	16000	1100	48000
26	3210	--	3000	14800	2600	100000	13800	560	21000
27	3010	--	2000	13800	2300	86000	12100	550	18000
28	3070	--	2000	14200	1900	73000	10900	490	14000
29	3030	--	2000	15600	7300	97000	11000	420	12000
30	2940	--	2000	19100	3500	180000	10600	440	13000
31	--	--	--	21300	3900	220000	--	--	--
TOTAL	116060	--	591300	336380	--	2763000	590200	--	2481000

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	9490	400	10000	6960	7700	140000	2480	230	1500
2	8740	520	12000	9780	18000	520000	2430	130	850
3	7480	340	6900	8080	12000	260000	2420	140	910
4	6910	500	9300	7300	6100	120000	2450	120	790
5	6550	260	4600	6840	2500	46000	2550	91	630
6	6130	210	3500	6080	1100	18000	2600	83	580
7	5760	240	3700	6010	1500	24000	2600	78	550
8	5650	280	4300	7030	4700	89000	2550	74	510
9	5430	340	5000	7280	11000	220000	2510	81	550
10	5320	180	2600	8270	20000	450000	2500	76	510
11	5210	160	2300	7880	14000	300000	2430	60	390
12	5030	170	2300	7930	3900	84000	2340	43	270
13	5140	1600	22000	7930	5500	120000	2430	48	310
14	4780	290	3700	8920	26000	770000	2370	86	550
15	4500	610	7400	9690	40000	1000000	2370	79	510
16	4220	200	2300	8370	8000	180000	2420	61	400
17	3820	180	1900	7500	4000	81000	2670	48	350
18	3590	170	1600	6380	2200	38000	2840	57	440
19	3310	160	1400	5560	1300	20000	2910	140	1100
20	3070	140	1200	5030	630	8600	2920	100	790
21	2940	140	1100	4500	500	6100	2730	89	660
22	2850	140	1100	4040	330	3600	2470	68	450
23	2820	130	990	3610	290	2800	2870	70	540
24	2870	120	930	3380	250	2300	2980	72	580
25	3100	150	1300	3180	200	1700	3030	69	560
26	3270	250	2200	3090	220	1800	3030	75	610
27	3720	500	5000	2750	390	2900	2980	75	600
28	5360	14000	200000	2650	550	3900	2980	65	520
29	5230	8100	110000	2700	120	870	3050	64	530
30	5560	4200	63000	2700	2700	20000	3090	64	530
31	5990	4400	71000	2560	300	2100	--	--	--
TOTAL	154040	--	564620	183980	--	4536670	80000	--	17870

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 2063490
TOTAL LOAD FOR YEAR (TONS) 11613180

09188500 GREEN RIVER AT WARREN BRIDGE, NEAR DANIEL, WYO.

LOCATION.--Lat 43°01'00", long 110°07'20", in sec.8, T.35 N., R.111 W., Sublette County, at bridge on U.S. Highways 187 and 189, 100 ft downstream from gaging station, 3 miles upstream from Beaver Creek, and 12 miles north of Daniel.

DRAINAGE AREA.- 468 sq mi (at gaging station).

PERIOD OF RECORD.--Chemical analyses: May 1962 to September 1964, October 1967 to September 1968. Water temperatures: May 1962 to September 1964.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
04...	1630	240	3.8	.09	51	12	3.0	1.0	101	0	97	1.0
NOV.												
21...	1330	172	4.9	.12	70	22	3.8	1.2	141	0	153	.7
JAN.												
04...	1720	136	4.7	.13	83	20	3.3	1.5	151	0	174	.7
FEB.												
14...	1000	97	7.5	.53	65	14	3.6	2.2	156	0	180	1.8
MAR.												
31...	1715	202	7.0	.18	78	18	3.1	1.2	134	0	159	.7
MAY												
09...	1630	460	5.9	.05	61	13	3.8	1.6	149	0	81	1.0
JUNE												
16...	1550	1320	3.8	.09	31	8.0	1.9	1.1	96	0	38	1.1
JULY												
12...	0700	1500	2.9	.06	21	2.8	1.3	.9	54	0	17	.3
AUG.												
14...	1230	866	2.2	.05	21	4.1	1.4	.7	45	0	33	.8
SEPT.												
14...	1530	408	3.3	--	38	9.1	1.0	1.4	78	0	68	.6

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
04...	.3	.1	.02	219	.32	152	175	92	.1	365	8.1	--
NOV.												
21...	.5	.5	.02	326	.47	159	263	147	.1	514	8.2	2
JAN.												
04...	.5	.2	.04	362	.50	134	250	166	.1	565	8.0	0
FEB.												
14...	.5	.1	.07	372	.57	109	301	173	.1	578	8.1	0
MAR.												
31...	.4	.0	.03	334	.48	194	268	158	.1	524	7.7	1
MAY												
09...	.2	.0	.00	241	.39	355	206	84	.1	419	7.6	7
JUNE												
16...	.3	.2	.03	132	.21	549	111	32	.1	226	8.2	13
JULY												
12...	.2	.1	.00	74	.11	332	64	20	.1	142	7.5	9
AUG.												
14...	.2	.0	.05	85	.13	224	70	33	.1	161	7.8	13
SEPT.												
14...	.3	.0	.02	160	.22	180	134	70	.0	280	7.5	11

09192600 GREEN RIVER NEAR BIG PINEY, WYO.

LOCATION.--Lat 42°34'14", long 109°56'58", in NE¼NE¼NE¼ sec.21, T.30 N., R.110 W., Sublette County, at bridge on Wyoming State Secondary 1801, 1.9 miles upstream from New Fork River and 8.4 miles northeast of Big Piney.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
12...	1145	270	4.1	.10	48	14	6.2	1.5	139	0	74	1.8
NOV.												
24...	1530	263	6.2	.24	69	19	7.5	1.6	185	3	98	1.1
JAN.												
07...	1500	148	7.7	.09	77	21	4.7	1.6	203	0	122	1.1
FEB.												
14...	1200	194	8.0	.10	55	22	4.8	1.7	134	0	127	1.8
MAR.												
30...	1030	499	6.0	.14	63	19	46	2.1	201	0	166	6.4
MAY												
11...	1540	548	6.9	.12	35	25	6.7	1.8	195	0	57	2.8
JUNE												
19...	1345	936	5.7	.22	41	9.7	5.3	1.2	138	2	32	1.4
JULY												
14...	1340	1400	5.6	.02	33	9.0	7.3	1.1	129	0	30	.6
AUG.												
19...	1510	800	3.8	—	38	8.8	5.3	1.3	118	0	44	1.1
SEPT.												
15...	1935	526	3.3	.07	43	12	5.0	1.2	120	0	72	.8

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
12...	.3	.1	.02	218	.31	166	179	65	.2	371	7.9	7
NOV.												
24...	.3	1.0	.02	298	.44	230	250	93	.2	504	8.3	2
JAN.												
07...	.3	.3	.03	336	.46	134	279	112	.1	532	8.0	0
FEB.												
14...	.4	.6	.01	288	.42	161	228	118	.1	479	8.1	0
MAR.												
30...	.4	.0	.04	408	.58	579	234	69	1.3	658	7.7	2
MAY												
11...	.3	.2	.01	236	.39	742	206	46	.2	403	8.0	11
JUNE												
19...	.3	.1	.03	167	.26	485	143	26	.2	291	8.3	17
JULY												
14...	.2	.3	.01	150	.23	627	120	14	.3	283	7.9	16
AUG.												
19...	.3	.1	.02	161	.23	372	131	34	.2	299	7.8	12
SEPT.												
15...	.2	.0	.01	197	.27	278	158	60	.2	332	7.7	11

09201000 NEW FORK RIVER NEAR BOULDER, WYO.

LOCATION.--Lat 42°45', long 109°44', in sec.9, T.32 N., R.108 W., Sublette County, at gaging station 70 ft downstream from highway bridge, 700 ft upstream from Boulder Creek, and 0.5 mile northwest of Boulder.

DRAINAGE AREA.--552 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
12...	1555	197	7.7	.02	26	5.0	8.4	2.4	117	0	9.6	2.6
NOV.												
22...	0700	182	8.4	.07	30	9.0	9.1	2.3	147	0	17	1.1
JAN.												
05...	1640	129	9.1	.32	29	5.5	5.9	1.4	122	0	8.2	1.1
FEB.												
17...	1345	137	9.7	.07	25	6.7	5.9	2.1	110	0	16	1.4
MAR.												
31...	1330	168	12	.22	31	5.4	6.8	3.3	128	0	5.8	2.1
MAY												
08...	1645	246	7.5	.37	22	5.6	6.7	1.7	101	0	6.7	3.2
JUNE												
14...	1630	1300	5.4	.09	12	2.1	3.2	1.0	50	0	7.2	.7
JULY												
13...	1400	1160	7.2	.19	22	4.6	3.9	1.1	93	0	3.3	1.7
AUG.												
12...	1525	516	6.4	.07	19	4.7	5.3	1.4	86	0	4.3	2.0
SEPT.												
12...	1555	375	5.7	.06	17	2.7	7.2	1.3	72	0	15	.8

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
12...	.2	.1	.07	120	.16	63	86	0	.4	207	7.8	9
NOV.												
22...	.2	.3	.04	150	.23	81	113	0	.4	273	7.8	2
JAN.												
05...	.1	.9	.02	122	.16	41	96	0	.3	220	7.5	0
FEB.												
17...	.2	.3	.06	121	.19	51	90	0	.3	214	8.0	0
MAR.												
31...	.2	.0	.03	130	.20	66	100	0	.3	239	7.4	.5
MAY												
08...	.2	.3	.03	104	.16	79	79	0	.3	196	8.0	9
JUNE												
14...	.2	.1	.03	57	.10	260	39	0	.2	98	7.7	12
JULY												
13...	.2	.1	.02	90	.13	301	73	0	.2	165	7.3	14
AUG.												
13...	.1	.1	.04	85	.13	131	67	0	.3	162	7.9	17
SEPT.												
12...	.0	.0	.04	84	.10	76	54	0	.4	135	7.7	14

09205000 NEW FORK RIVER NEAR BIG PINEY, WYO.

LOCATION.--Lat 42°34', long 109°56', in NE¼ sec.22, T.30 N., R.110 W., Sublette County, at gaging station at old highway bridge, 2 miles upstream from mouth and 9.5 miles northeast of Big Piney.
DRAINAGE AREA.--1,230 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968.
Water temperatures: October 1965 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 140 mg/l Feb. 1-10; minimum, 51 mg/l June 1-30.
Hardness: Maximum, 106 mg/l Feb. 1-10; minimum, 35 mg/l June 1-30, Aug. 24-31.
Specific conductance: Maximum daily, 289 micromhos Apr. 15; minimum daily, 58 micromhos June 3.
Water temperatures: Maximum, 21.0°C July 27, Aug. 1, 6, 7; minimum, freezing point on many days during November to March.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	--	440	8.7	--	22	4.7	8.4	1.5	96	0	13	2.5
NOV.												
01-30	--	319	11	--	30	6.3	9.3	1.8	128	0	14	2.5
DEC.												
01-31	--	232	12	--	26	6.1	7.8	1.8	115	0	12	2.1
JAN.												
01-31	--	211	12	--	25	6.6	7.6	.8	113	0	12	2.5
FEB.												
01-10	--	226	12	--	28	8.5	8.3	2.4	133	0	12	2.8
14-29	--	202	11	--	25	6.8	7.5	2.0	115	0	10	2.8
MAR.												
01-31	--	231	8.8	--	26	4.9	7.4	1.4	110	0	8.2	1.4
APR.												
01-30	--	393	9.4	--	31	4.4	14	2.9	126	0	11	3.2
MAY												
01-10	--	400	8.6	--	24	7.2	9.7	1.9	112	0	12	1.4
11-31	--	583	6.3	--	15	3.0	5.6	1.4	62	0	6.2	1.2
JUNE												
01-30	--	3770	6.1	--	12	1.1	4.2	1.3	46	0	1.4	1.8
JULY												
01-31	--	1550	9.2	--	22	5.0	5.1	1.4	98	0	6.7	1.4
AUG.												
01-12	--	824	9.3	--	29	2.7	11	1.9	114	0	12	2.5
13-23	--	1160	7.7	--	20	5.2	7.7	1.5	85	0	9.1	2.1
24-31	--	2110	5.1	--	12	1.0	4.3	1.0	48	0	5.8	1.4
SEPT.												
01-30	--	698	8.2	--	19	4.0	6.8	1.0	76	0	9.1	3.5
WTD. AVG. TIME	--	--	7.7	--	18	3.2	6.1	1.4	76	0	6.3	2.0
WTD. AVG. TONS PER DAY	--	A819	9.3	--	23	4.8	7.8	1.6	99	0	9.7	2.2
	--	--	17	--	41	7.2	14	3.2	169	0	14	4.4

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
02...	1510	B365	9.4	.16	28	5.1	10	2.3	121	0	15	3.2
MAR.												
30...	0900	B344	8.4	.04	26	4.5	8.8	1.7	105	0	12	2.1
JULY												
24...	1300	B1260	9.5	.13	23	6.3	7.9	2.0	109	0	8.2	1.8

A MEAN DISCHARGE BASED ON 366 DAYS. MEAN DISCHARGE BASED ON 363 DAYS OF CHEMICAL ANALYSIS. 824 CFS.
B DISCHARGE AT TIME OF SAMPLING.

09205000 NEW FORK RIVER NEAR BIG PINEY, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 164 mg/l Nov. 1-30, 1966; minimum, 44 mg/l May 22-31, 1966.
Hardness: Maximum, 106 mg/l Feb. 1-10, 1968; minimum, 24 mg/l May 24-31, 1967.
Specific conductance: Maximum daily, 389 micromhos Mar. 7, 1967; minimum daily, 52 micromhos May 28, 1967.
Water temperatures: Maximum, 23.0°C Aug. 4, 1966; minimum, freezing point on many days during winter periods.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01-31	.1	.2	.03	108	.16	135	74	0	.4	197	7.8	--
NOV.												
01-30	.2	.0	.04	138	.18	115	100	0	.4	246	7.4	--
DEC.												
01-31	.2	.3	.02	125	.20	92	90	0	.4	226	7.7	--
JAN.												
01-31	.3	.6	.02	123	.17	70	90	0	.3	223	7.5	--
FEB.												
01-10	.2	.8	.02	140	.20	91	106	0	.4	242	7.8	--
14-28	.2	.5	.04	123	.17	69	90	0	.3	211	7.7	--
MAR.												
01-31	.1	.1	.01	112	.15	69	85	0	.3	218	7.6	--
APR.												
01-30	.2	.2	.01	138	.22	174	96	0	.6	264	7.8	--
MAY												
01-10	.3	.2	.06	120	.18	145	90	0	.4	220	7.7	--
11-31	.2	.0	.01	72	.10	113	50	0	.3	127	7.5	--
JUNE												
01-30	.1	.2	.07	51	.07	509	35	0	.3	89	7.4	--
JULY												
01-31	.1	.3	.08	99	.15	452	75	0	.3	177	7.2	--
AUG.												
01-12	.1	.0	.01	125	.19	311	84	0	.5	216	7.8	--
13-23	.2	.2	.01	96	.15	338	71	1	.4	168	7.7	--
24-31	.2	.2	.01	55	.09	387	35	0	.3	95	7.4	--
SEPT.												
01-30	.2	.2	.06	89	.12	166	63	1	.4	155	7.1	--
WTD. AVG. TIME	.2	.2	.05	83	--	--	59	0	--	148	7.4	--
WTD. AVG. TONS PER DAY	.2	.2	.03	108	--	--	78	0	.4	195	7.5	--
	.4	.5	.11	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
02...	.1	.1	.00	134	.22	158	91	0	.5	231	8.1	12
MAR.												
30...	.2	.2	.03	116	.18	123	83	0	.4	216	8.0	0
JULY												
24...	.2	.1	.01	113	.16	388	84	0	.4	196	7.9	19

09205000 NEW FORK RIVER NEAR BIG PINEY, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	243	---	250	225	---	---	242	259	88	119	207	127
2	232	235	242	222	221	206	---	258	109	136	202	121
3	231	233	---	221	220	204	243	239	58	163	200	---
4	228	239	237	227	211	201	246	234	67	193	200	---
5	223	237	238	232	221	---	254	226	81	177	201	133
6	218	240	233	223	235	205	258	212	66	174	201	135
7	139	239	233	228	249	202	264	204	84	166	202	---
8	134	237	---	227	424	201	---	194	122	161	208	141
9	143	230	---	222	220	211	263	190	120	158	244	142
10	133	231	226	249	237	217	265	190	98	181	234	144
11	134	236	225	225	---	213	247	162	93	176	239	148
12	137	234	225	---	---	205	256	155	89	167	208	---
13	140	233	232	231	---	208	278	151	82	167	192	158
14	157	236	242	227	217	204	283	144	81	165	183	---
15	198	236	236	---	---	206	289	145	---	185	178	175
16	238	240	225	221	226	201	261	137	85	186	169	180
17	207	241	219	215	---	205	269	138	88	189	170	180
18	206	241	217	223	219	203	266	143	79	177	172	180
19	209	238	---	210	214	208	---	149	100	176	164	179
20	211	235	---	215	213	---	---	151	71	180	156	177
21	212	227	208	212	202	211	---	150	99	181	143	179
22	212	234	223	213	220	213	261	150	77	194	---	180
23	212	241	217	205	207	204	257	---	83	195	---	---
24	214	237	212	204	222	202	253	134	83	203	109	181
25	216	244	205	---	250	203	257	150	98	208	91	---
26	218	246	205	---	215	199	---	142	92	211	86	181
27	221	267	207	---	221	217	260	132	96	213	92	---
28	227	268	---	---	226	---	265	139	109	202	92	180
29	227	250	---	219	216	194	263	---	104	200	96	181
30	232	235	212	225	---	205	263	85	114	197	---	174
31	233	---	215	223	---	201	---	74	---	201	106	---
AVERAGE	200	239	---	222	231	206	261	167	90	181	169	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	0.0	0.0	---	---	---	7.0	7.0	16.0	11.0	14.0	---
2	5.0	0.0	0.0	---	---	---	3.0	6.0	---	12.0	14.0	---
3	8.0	0.0	0.0	---	---	---	0.0	7.0	---	---	12.0	18.0
4	7.0	0.0	0.0	---	---	---	7.0	6.0	10.0	---	14.0	---
5	7.0	0.0	0.0	---	---	---	1.0	3.0	9.0	14.0	12.0	12.0
6	4.0	0.0	0.0	---	---	---	---	5.0	6.0	14.0	15.0	---
7	5.0	0.0	0.0	---	---	3.0	1.0	1.0	12.0	14.0	23.0	---
8	6.0	0.0	0.0	---	---	---	1.0	1.0	13.0	13.0	15.0	14.0
9	4.0	0.0	0.0	---	---	---	9.0	3.0	12.0	13.0	14.0	15.0
10	5.0	0.0	---	---	---	---	10.0	7.0	12.0	13.0	14.0	16.0
11	4.0	0.0	---	---	---	---	9.0	4.0	14.0	15.0	12.0	---
12	4.0	0.0	---	---	---	---	6.0	13.0	13.0	12.0	14.0	---
13	3.0	0.0	---	---	---	---	0.0	7.0	12.0	15.0	15.0	13.0
14	2.0	0.0	---	---	---	---	8.0	7.0	13.0	14.0	12.0	---
15	2.0	0.0	---	---	---	---	6.0	2.0	14.0	17.0	11.0	---
16	3.0	0.0	---	---	---	---	6.0	4.0	15.0	13.0	---	12.0
17	2.0	0.0	---	---	---	---	3.0	7.0	14.0	14.0	---	---
18	2.0	0.0	---	---	---	---	0.0	8.0	14.0	18.0	---	13.0
19	2.0	0.0	---	---	---	---	0.0	8.0	---	16.0	---	---
20	2.0	0.0	---	---	---	---	2.0	7.0	14.0	15.0	14.0	---
21	1.0	0.0	---	---	---	---	1.0	7.0	14.0	19.0	15.0	8.0
22	1.0	0.0	---	---	---	---	4.0	7.0	14.0	15.0	---	12.0
23	1.0	0.0	---	---	---	---	2.0	6.0	14.0	14.0	---	11.0
24	0.0	0.0	---	---	---	---	2.0	6.0	16.0	14.0	---	12.0
25	0.0	0.0	---	---	---	1.0	2.0	6.0	14.0	13.0	---	---
26	0.0	0.0	---	---	---	---	3.0	7.0	14.0	14.0	---	11.0
27	0.0	0.0	---	---	---	---	2.0	12.0	13.0	12.0	12.0	10.0
28	0.0	0.0	---	---	---	2.0	1.0	11.0	13.0	13.0	15.0	10.0
29	0.0	0.0	---	---	---	2.0	1.0	9.0	14.0	14.0	---	9.0
30	0.0	0.0	---	---	---	2.0	1.0	17.0	13.0	13.0	9.0	---
31	0.0	---	---	---	---	---	---	16.0	---	14.0	---	---
AVERAGE	3.0	0.0	---	---	---	---	3.5	7.0	13.0	14.0	---	---

09207700 DRY PINEY CREEK NEAR BIG PINEY, WYO.

LOCATION.--Lat 42°23'25", long 110°15'09", in NW¼NE¼ sec.27, T.28 N., R.113 W., Sublette County, at gaging station 16.3 miles southwest of Big Piney and 8.3 miles upstream from mouth.

DRAINAGE AREA.--67 sq mi, approximately.

PERIOD OF RECORD.--Water temperatures: April 1966 to September 1968.
Sediment records: April 1966 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 23.0°C Aug. 7; minimum, freezing point on many days during October to April.
Sediment concentrations: Maximum daily, 4,500 mg/l June 6; minimum daily, 0 mg/l on many days.
Sediment loads: Maximum daily, 150 tons June 6; minimum daily, 0 ton on many days.

Period of record:
Water temperatures: Maximum, 24.5°C Aug. 2, 1967; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 4,500 mg/l June 6, 1968; minimum daily, 0 mg/l on many days.
Sediment loads: Maximum daily, 160 (estimated) tons Apr. 1, 1966; minimum daily, 0 ton on many days.

REMARKS.--Flow affected by ice Oct. 16-21, Oct. 23 to Nov. 3, Nov. 6 to Dec. 10, Mar. 5-8, Mar. 23 to Apr. 2.
No flow Dec. 10 to Mar. 4, Mar. 9-22.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

	DAY																													AVER-
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AGE
OCTOBER..	8	9	8	7	7	4	5	6	4	5	4	4	3	2	2	3	2	2	2	2	1	1	1	0	0	0	0	0	0	0	0	3
NOVEMBER.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	0
DECEMBER.	0	0	0	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	2	2	2	--
APRIL....	7	3	0	7	1	--	1	1	9	10	9	6	0	8	6	6	3	0	0	2	1	4	2	2	2	3	2	1	1	1	--	3
MAY.....	7	6	7	6	3	5	1	1	3	7	4	13	7	7	2	4	7	9	8	7	7	7	6	6	6	7	12	11	9	17	16	7
JUNE.....	16	--	--	10	9	6	12	13	12	12	14	13	12	13	14	15	14	14	--	14	14	14	14	16	14	14	13	13	14	13	--	13
JULY.....	11	12	--	--	14	14	14	13	13	13	15	12	15	14	17	13	14	18	16	15	19	15	14	14	13	14	12	13	14	13	14	14
AUGUST...	14	14	12	14	12	15	23	15	14	14	12	14	15	12	11	--	--	--	--	14	15	--	--	--	--	--	--	12	15	--	9	--	--
SEPTEMBER	--	--	18	--	12	--	--	14	15	16	--	--	13	--	--	12	--	13	--	--	8	12	11	12	--	11	10	10	9	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JUN 5, 1968	1800	12	8.7	3070	72.1	41	67	98	99	100	--	--	--	VPWC
JUN 6.....	1210	18	11	3650	108	54	77	100	--	--	--	--	--	PWC
AUG 9.....	1015	14	11	7090	211	79	94	97	98	100	--	--	--	VPWC

09207700 DRY PINEY CREEK NEAR BIG PINEY, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	.92	230	.60	.45	220	.30	.10	210	.10
2	.84	180	.40	.39	300	.30	.05	210	0
3	.83	125	.30	.34	260	.20	.03	210	0
4	.58	140	.20	.30	350	.30	.04	210	0
5	.51	130	.20	.28	130	.10	.05	210	0
6	.65	110	.20	.32	110	.10	.04	210	0
7	.45	110	.10	.36	120	.10	.03	210	0
8	.47	92	.10	.46	250	.30	.02	210	0
9	.43	150	.10	.47	230	.30	.01	210	0
10	.40	100	.10	.44	230	.30	0	--	0
11	.35	210	.20	.64	230	.40	0	--	0
12	.40	200	.20	.52	220	.30	0	--	0
13	.31	290	.20	.54	200	.30	0	--	0
14	.35	190	.20	.62	180	.30	0	--	0
15	.35	220	.20	.54	180	.30	0	--	0
16	.34	190	.20	.46	170	.20	0	--	0
17	.34	210	.20	.35	170	.20	0	--	0
18	.33	210	.20	.3	220	.20	0	--	0
19	.33	200	.20	.48	210	.30	0	--	0
20	.29	210	.20	.50	210	.30	0	--	0
21	.33	200	.20	.44	200	.20	0	--	0
22	.41	200	.20	.34	200	.20	0	--	0
23	.35	200	.20	.52	210	.30	0	--	0
24	.33	200	.20	.82	170	.40	0	--	0
25	.49	200	.30	.45	210	.30	0	--	0
26	.33	190	.20	.15	220	.10	0	--	0
27	.48	190	.20	.08	200	0	0	--	0
28	.35	190	.20	.11	290	.10	0	--	0
29	.32	200	.20	.12	290	.10	0	--	0
30	.33	170	.20	.13	290	.10	0	--	0
31	.50	170	.20	--	--	--	0	--	0
TOTAL	13.57	--	6.60	12.11	--	6.90	.37	--	.10

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1							0	--	0
2							0	--	0
3							0	--	0
4							0	--	0
5							.05	--	0
6							.03	160	0
7							.10	200	.10
8							.02	--	0
9							0	--	0
10							0	--	0
11							0	--	0
12							0	--	0
13							0	--	0
14							0	--	0
15							0	--	0
16							0	--	0
17							0	--	0
18							0	--	0
19							0	--	0
20							0	--	0
21							0	--	0
22							0	--	0
23							.06	--	0
24							.72	--	.60
25							1.2	--	1.1
26							2.5	300	2.0
27							1.1	--	1.6
28							1.6	--	5.0
29							3.5	2200	21
30							2.5	2500	17
31							2.1	1400	7.9
TOTAL	0	--	0	0	--	0	15.48	--	56.30

09207700 DRY PINEY CREEK NEAR BIG PINEY, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3.1	780	6.5	1.8	300	1.5	.66	31	.10
2	2.1	1500	8.5	1.5	360	1.5	58	--	.10
3	1.3	370	1.4	.91	260	.60	45	--	.10
4	1.3	330	1.4	.74	290	.60	82	680	1.7
5	2.7	400	2.2	.91	260	.60	6.8	2300	54
6	1.6	--	1.2	1.4	260	1.0	12	4500	150
7	.93	230	.40	.99	260	.70	4.2	1100	15
8	.74	290	.60	1.1	290	.90	8.4	1200	33
9	.91	340	.80	1.2	240	.80	7.6	430	9.4
10	1.1	1400	6.7	1.1	260	.80	3.6	210	2.0
11	2.1	2900	16	1.5	440	1.8	3.0	140	1.1
12	2.1	780	4.4	1.8	370	1.8	2.6	130	.90
13	.91	530	1.3	1.7	400	1.8	2.2	76	.50
14	.58	600	.90	1.6	230	1.0	2.1	90	.50
15	.74	520	1.0	1.6	170	.70	2.3	55	.30
16	.83	370	.80	1.4	120	.50	2.3	59	.40
17	.31	650	.50	1.1	160	.50	2.1	98	.60
18	.31	710	.60	1.1	95	.30	2.0	78	.40
19	.45	570	.70	1.1	94	.30	2.0	86	.50
20	.27	500	.40	1.2	270	.90	2.0	80	.40
21	.14	580	.20	1.3	250	1.3	2.0	93	.50
22	.17	590	.30	2.0	120	.60	2.1	110	.60
23	.17	440	.20	2.1	66	.40	2.2	96	.50
24	.20	240	.10	2.1	100	.60	2.2	80	.50
25	.12	280	.10	1.8	96	.40	2.1	100	.60
26	.53	250	.10	1.5	150	.60	2.0	92	.50
27	.13	400	.10	1.2	150	.30	1.8	60	.30
28	.35	970	.30	.99	80	.20	1.5	56	.20
29	1.2	630	2.0	.91	100	.20	1.5	68	.30
30	2.0	620	3.3	.83	56	.10	1.7	52	.20
31	--	--	--	.83	26	.10	--	--	--
TOTAL	77.35	--	63.20	41.91	--	23.40	86.81	--	275.30

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.8	77	.40	.99	32	.10	.12	--	e
2	1.7	64	.30	.91	27	.10	.10	--	e
3	1.5	--	.20	.91	24	.10	.14	--	e
4	1.5	--	.20	.83	47	.10	.17	72	e
5	1.9	58	.30	.74	53	.10	.12	--	e
6	1.7	63	.30	.74	28	.10	.10	--	e
7	1.8	67	.30	.66	50	.10	.08	120	e
8	2.1	58	.30	.74	32	.10	.08	42	e
9	2.2	88	.50	6.3	3800	87	.08	32	e
10	2.2	110	.70	3.1	390	3.3	.08	90	e
11	2.4	1000	7.7	2.2	110	.70	.06	--	e
12	3.7	540	4.4	1.6	46	.20	.06	--	e
13	2.1	96	.50	1.2	25	.10	.05	150	e
14	1.7	84	.40	1.2	16	.10	.05	--	e
15	1.4	78	.30	1.5	16	.10	.08	--	e
16	1.2	91	.30	1.4	--	.30	12	32	e
17	1.2	57	.20	1.5	--	.10	.12	10	e
18	1.1	51	.20	1.5	--	.10	.10	6	e
19	.99	63	.20	1.4	--	.10	.08	--	e
20	1.1	91	.30	1.1	24	.10	.08	--	e
21	.91	41	.10	.91	22	.10	.14	31	e
22	.91	52	.10	2.5	--	6.6	.12	24	e
23	.99	62	.20	2.4	--	.60	.08	24	e
24	.91	27	.10	1.4	--	.40	.06	22	e
25	.91	57	.10	.99	53	.10	.06	--	e
26	1.2	38	.10	.74	19	e	.06	9	e
27	1.2	28	.10	.66	17	e	.06	38	e
28	1.1	29	.10	.91	25	e	.10	42	e
29	.91	29	.10	.17	--	e	.17	21	e
30	1.2	35	.10	.17	69	e	.12	81	e
31	1.2	47	.20	.14	35	e	--	--	--
TOTAL	46.23	--	19.30	40.91	--	101.10	2.82	--	e

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 288.07
TOTAL LOAD FOR YEAR (TONS) 552.20

09209400 GREEN RIVER NEAR LA BARGE, WYO.

LOCATION (revised).--Lat 42°11', long 110°10', in SW¼ sec.33, T.26 N., R.112 W., Lincoln County, at bridge 0.7 mile north of La Barge, 6.5 miles upstream from gaging station, and 9.5 miles upstream from Muddy Creek.
DRAINAGE AREA.--3,910 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1968.
Water temperatures: October 1963 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 356 mg/l Jan. 19-22; minimum, 101 mg/l June 18-30.
Hardness: Maximum, 278 mg/l Jan. 19-22; minimum, 81 mg/l Aug. 25 to Sept. 2.
Specific conductance: Maximum daily, 734 micromhos Jan. 22; minimum daily, 176 micromhos Aug. 27, 28.
Water temperatures: Maximum, 23.0°C Aug. 7; minimum, freezing point on many days during November to April.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	--	907	7.0	--	39	12	13	1.5	146	0	51	3.5
NOV.												
01-25	--	788	8.9	--	46	17	15	1.9	183	0	63	4.1
26-30	--	564	10	--	47	18	16	2.0	182	0	73	2.5
DEC.												
01-05	--	564	10	--	47	18	16	2.0	182	0	73	2.5
06-31	--	560	9.2	--	51	15	13	.6	178	0	65	2.8
JAN.												
01-18	--	455	10	--	50	15	12	1.8	178	0	62	2.8
19-22	--	464	14	--	46	40	19	2.8	262	0	99	5.0
23-31	--	466	10	--	30	27	11	2.2	171	0	70	2.5
FEB.												
01-29	--	480	9.3	--	51	16	12	1.7	177	0	72	2.8
MAR.												
01-25	--	576	7.5	--	53	16	15	2.0	188	0	72	5.0
26-31	--	1030	7.1	--	49	18	32	2.2	192	0	104	8.2
APR.												
01-30	--	1060	8.2	--	51	20	22	2.6	207	0	72	5.2
MAY												
01-29	--	1430	7.9	--	46	14	12	1.8	168	0	51	2.8
30-31	--	5450	7.7	--	30	7.2	6.2	1.4	119	0	21	1.4
JUNE												
01-17	--	5450	7.7	--	30	7.2	6.2	1.4	119	0	21	1.4
18-30	--	6600	5.9	--	24	6.0	4.0	1.3	98	0	10	1.1
JULY												
01-31	--	2830	7.8	--	31	9.0	11	1.8	134	0	26	2.1
AUG.												
01-08	--	1480	4.5	--	31	9.0	11	1.6	122	0	31	2.5
09-12	--	2060	8.4	--	40	11	21	2.3	157	0	51	5.0
13-24	--	2350	6.1	--	29	9.7	10	1.4	114	0	33	2.8
25-31	--	3060	5.3	--	21	7.1	5.8	2.3	83	0	21	1.1
SEPT.												
01-02	--	3060	5.3	--	21	7.1	5.8	2.3	83	0	21	1.1
03-30	--	1410	5.3	--	33	8.6	9.1	2.8	120	0	37	2.6
WTD. AVG. TIME	--	--	7.2	--	35	11	10	1.7	136	0	36	2.4
WTD. AVG. TONS PER DAY	--	1592	7.9	--	41	14	13	1.8	159	0	53	3.2
	--	--	31	--	149	45	44	7.5	586	0	156	11
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
02...	1645	A808	6.5	.08	38	12	15	2.2	149	0	49	4.3
APR.												
04...	1500	A1340	9.9	.12	51	19	28	3.1	190	3	104	6.4
JULY												
24...	1145	A2310	5.6	.05	31	9.1	11	1.5	134	0	28	2.1

A DISCHARGE AT TIME OF SAMPLING.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	346	392	467	412	430	417	473	467	256	216	273	200
2	350	395	457	420	433	421	461	461	234	235	265	265
3	356	404	475	416	436	424	521	426	219	262	264	222
4	361	414	478	413	432	427	517	395	236	294	273	228
5	362	406	460	415	422	423	498	400	280	303	277	238
6	353	413	446	420	421	422	501	399	252	294	283	236
7	342	405	441	414	426	426	491	383	240	285	283	238
8	282	416	444	420	419	430	488	385	254	278	283	237
9	262	419	442	418	433	436	477	390	272	278	340	240
10	268	404	439	418	---	445	480	400	274	285	428	244
11	262	416	429	413	435	446	443	375	268	287	375	247
12	269	419	437	413	433	460	427	369	264	289	344	251
13	267	414	440	414	437	455	437	364	244	282	289	262
14	267	410	453	420	430	452	439	360	232	274	266	268
15	305	423	460	418	---	442	447	351	223	268	265	284
16	338	424	428	417	432	442	455	349	235	265	267	289
17	345	425	414	411	448	442	450	351	230	276	267	293
18	353	427	457	424	429	441	450	357	208	271	279	288
19	359	425	496	480	433	440	484	369	193	272	273	278
20	356	425	401	553	417	437	485	377	193	276	272	277
21	359	425	418	503	422	436	477	375	194	275	269	283
22	362	421	412	734	409	444	472	391	182	280	250	291
23	367	420	415	405	411	440	490	361	180	280	265	292
24	367	430	414	406	435	438	522	387	185	289	215	294
25	383	429	408	406	426	442	507	376	192	290	195	299
26	388	462	404	409	426	453	496	383	196	289	187	299
27	384	462	406	406	430	519	492	376	201	298	176	298
28	387	---	410	409	430	495	483	359	213	296	176	300
29	388	532	418	409	431	533	498	358	212	288	183	304
30	393	480	417	422	---	527	475	305	193	288	195	299
31	394	---	417	429	---	527	---	272	---	280	197	---
AVERAGE	341	425	433	438	428	452	478	377	225	279	264	266

09209400 GREEN RIVER NEAR LA BARGE, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 358 mg/l Mar. 31 to Apr. 3, 1966; minimum, 101 mg/l June 18-30, 1968.
Hardness: Maximum, 278 mg/l Jan. 19-22, 1968; minimum, 81 mg/l Aug. 25 to Sept. 2, 1968.
Specific conductance: Maximum daily, 734 micromhos Jan. 22, 1968; minimum daily, 168 micromhos May 31, 1966.
Water temperatures: Maximum, 23.5°C July 19, 25, 27, Aug. 1, 1966; minimum, freezing point on many days during winter periods.

REMARKS.--Daily samples for chemical analyses composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01-31	.3	.0	.03	199	.29	519	147	27	.5	365	7.8	--
NOV.												
01-25	.3	2.9	.03	249	.34	536	186	36	.5	430	8.0	--
26-30	.3	.2	.09	259	.38	423	190	41	.5	439	8.1	--
DEC.												
01-05	.3	.2	.09	259	.38	423	190	41	.5	439	8.1	--
06-31	.4	.2	.04	245	.35	393	190	44	.4	425	8.1	--
JAN.												
01-18	.3	1.0	.02	243	.33	302	187	41	.4	419	7.9	--
19-22	.4	1.0	.01	356	.50	461	278	63	.5	593	7.9	--
23-31	.3	.5	.02	238	.33	302	185	45	.4	414	7.8	--
FEB.												
01-29	.3	.4	.03	252	.35	334	195	50	.4	416	7.7	--
MAR.												
01-25	.3	.3	.05	263	.37	420	199	45	.5	454	8.0	--
26-31	.4	.2	.07	315	.43	873	198	40	1.0	535	7.7	--
APR.												
01-30	.3	.2	.04	284	.40	836	209	39	.7	467	8.0	--
MAY												
01-29	.3	.3	.07	219	.29	811	--	172	.4	369	7.9	--
30-31	.2	.2	.01	134	.20	2120	104	6	.3	253	7.7	--
JUNE												
01-17	.2	.2	.01	134	.20	2120	104	6	.3	--	--	--
18-30	.2	.3	.00	101	.15	2000	84	4	.2	198	7.6	--
JULY												
01-31	.3	.2	.04	155	.22	1220	115	5	.4	281	7.9	--
AUG.												
01-08	.3	.1	.04	151	.23	663	115	15	.4	278	7.9	--
09-12	.3	.0	.05	216	.30	1240	145	16	.8	368	8.2	--
13-24	.2	.0	.05	148	.22	1030	113	19	.4	266	8.0	--
25-31	.2	.0	.22	105	.15	909	81	13	.3	194	7.1	--
SEPT.												
01-02	.2	.0	.22	105	.15	909	81	13	.3	194	7.1	--
03-30	.2	.0	.08	158	.22	609	119	21	.4	271	7.6	--
WTD. AVG. TIME	.3	.3	.04	171	--	--	127	28	--	314	7.8	--
WTD. AVG. TONS PER DAY	1.1	1.2	.18	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
02...	.4	.0	.03	201	.32	506	144	22	.5	348	8.1	13
APR.												
04...	.3	.4	.06	318	.45	1190	205	44	.8	510	8.3	4
JULY												
24...	.3	.1	.01	155	.21	985	115	5	.4	276	8.1	20

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	13	13	11	12	13	11	9	8	12	13	12	11	6	7	8	7	8	9	8	8	4	8	7	6	6	6	4	4	3	4	5	8
NOVEMBER.	4	2	2	0	0	1	1	1	0	1	3	3	2	3	5	4	3	1	3	1	1	1	1	1	0	0	1	--	0	1	--	1
DECEMBER.	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	1	0	--
FEBRUARY.	0	0	1	1	1	1	1	1	0	--	0	0	0	0	--	0	0	0	1	1	0	0	0	0	0	1	1	1	1	--	--	--
MARCH....	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	--
APRIL....	1	1	1	0	3	2	3	3	6	8	8	7	4	6	7	6	4	8	7	6	7	6	9	9	7	7	7	10	7	9	--	5
MAY.....	14	14	14	13	13	10	8	10	12	13	12	12	13	10	9	11	12	13	15	12	13	14	11	11	11	12	14	17	17	14	14	12
JUNE.....	16	17	18	19	10	12	12	11	12	13	15	16	15	14	14	16	17	17	18	16	17	17	17	16	16	17	17	16	18	14	--	15
JULY.....	13	19	19	17	17	19	19	16	18	19	18	19	20	21	21	19	19	20	19	19	19	20	21	18	18	19	21	21	22	20	21	19
AUGUST...	22	20	19	21	22	22	23	22	18	17	18	18	18	17	16	16	12	13	13	16	16	13	13	14	12	16	18	16	16	17	14	17
SEPTEMBER	16	17	13	13	11	14	14	13	13	13	16	16	13	16	12	11	12	13	13	11	8	9	10	12	12	13	13	10	9	12	--	12

09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WYO.

LOCATION.--Lat 42°01', long 110°03', in NE¼ sec.31, T.24 N., R.111 W., Sweetwater County, at bridge 1 mile east of Fontenelle and 3.6 miles downstream from gaging station.
DRAINAGE AREA.--4,500 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.
Water temperatures: October 1967 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 345 mg/l May 1-5; minimum, 194 mg/l July 1-31.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
02-31	--	985	6.2	--	41	14	16	1.4	153	0	62	4.3
NOV.												
01-14	--	719	7.5	--	48	14	17	1.6	173	0	72	5.0
15-30	--	767	8.4	--	51	17	17	1.6	183	0	76	4.3
DEC.												
01-13	--	795	8.7	--	51	21	21	1.5	200	0	87	6.0
14-31	--	955	14	--	54	26	23	1.9	223	0	100	2.8
JAN.												
01-10	--	957	9.5	--	50	22	23	1.6	189	0	92	6.0
19-31	--	991	9.4	--	56	19	22	1.6	189	0	91	4.3
FEB.												
01-28	--	962	9.7	--	57	20	22	2.1	196	0	109	5.0
MAR.												
01-25	--	993	11	--	61	19	22	2.2	198	0	113	4.6
26-31	--	1340	9.7	--	56	18	15	2.0	190	0	85	3.9
APR.												
01-30	--	970	9.0	--	58	19	30	1.9	190	0	114	4.9
MAY												
01-05	--	971	9.1	--	45	28	32	2.1	189	0	131	5.0
06-31	--	1030	7.2	--	36	30	24	2.1	192	0	103	5.7
JUNE												
01-11	--	3460	7.5	--	53	16	21	2.0	189	0	77	3.7
12-30	--	5190	7.1	--	38	12	14	1.9	146	0	48	2.2
JULY												
01-31	--	1400	7.5	--	36	9.7	17	2.1	120	0	60	2.1
AUG.												
01-31	--	2200	7.5	--	38	11	17	1.7	132	0	61	2.8
SEPT.												
01-30	--	1980	6.5	--	37	11	16	1.2	129	0	58	2.1
WTD. AVG. TIME	--	--	7.5	--	42	14	18	1.8	154	0	67	3.2
WTD. AVG. TONS PER DAY	--	A1196	8.4	--	47	17	20	1.8	170	0	82	4.0
	--	--	75	--	138	47	58	5.8	505	0	222	10

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
03...	1545	B720	8.1	.04	43	12	18	1.9	153	0	66	6.4
MAR.												
27...	1830	B140	8.2	.03	56	14	16	2.0	191	2	88	4.3
JULY												
24...	0930	B1090	6.6	.03	35	11	16	1.6	122	0	62	2.5

A MEAN DISCHARGE FOR 366 DAYS. MEAN DISCHARGE FOR 356 DAYS OF CHEMICAL ANALYSIS, 1220 CFS.
B DISCHARGE AT TIME OF SAMPLING.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	385	488	455	456	517	475	563	509	352	352	335
2	394	401	445	519	444	458	520	559	480	355	355	330
3	394	403	488	530	444	517	532	562	505	340	360	360
4	391	408	489	533	532	510	536	564	477	335	364	339
5	394	418	489	535	464	512	546	569	473	337	365	354
6	396	417	497	---	532	516	545	571	474	329	376	345
7	398	421	503	534	535	518	546	508	448	329	371	342
8	397	418	501	---	527	517	544	506	440	330	374	345
9	398	425	478	536	537	518	553	511	429	327	366	350
10	399	421	503	536	530	517	559	515	416	330	377	350
11	395	424	504	---	521	517	559	510	418	327	382	353
12	397	430	515	---	523	515	561	515	370	325	339	354
13	391	432	514	---	532	524	560	516	385	342	351	358
14	391	428	---	---	520	524	555	516	359	337	354	375
15	375	437	---	---	537	521	560	519	364	340	337	355
16	370	442	530	---	488	521	553	515	360	335	369	353
17	360	432	526	---	523	525	545	514	349	333	375	354
18	349	437	601	---	523	530	541	495	344	327	346	350
19	346	439	544	518	532	525	561	497	346	327	350	356
20	335	439	516	517	497	530	552	500	339	334	368	362
21	335	441	---	520	498	527	559	498	326	332	357	352
22	338	442	545	517	524	530	551	482	325	342	345	354
23	344	444	701	527	531	530	556	485	314	343	351	358
24	347	444	537	526	520	537	558	511	306	335	328	354
25	355	445	538	523	537	536	562	497	297	335	326	354
26	365	447	542	522	532	469	563	485	312	341	319	355
27	369	451	542	525	502	467	557	493	352	351	331	335
28	377	452	544	528	526	461	565	481	313	350	336	336
29	385	463	540	532	530	465	566	482	346	356	382	334
30	390	461	541	498	---	465	566	490	337	358	341	335
31	394	---	538	482	---	452	---	482	---	358	336	---
AVERAGE	375	431	525	---	515	510	550	513	384	338	354	351

09211200 GREEN RIVER BELOW FONTENELLE RESERVOIR, WYO.--Continued

EXTREMES.--1967-68:--Continued
Hardness: Maximum, 240 mg/l Dec. 14-31; minimum, 130 mg/l July 1-31.
Specific conductance: Maximum daily, 701 micromhos Dec. 23; minimum daily, 297 micromhos June 25.
Water temperatures: Maximum, 18.0°C July 28, Aug. 13; minimum, freezing point Nov. 27, Dec. 21, Feb. 1.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
02-31	.3	.0	.05	220	.32	554	160	34	.6	380	7.7	--
NOV.												
01-14	.3	.1	.02	252	.38	536	180	38	.6	433	7.9	--
15-30	.3	.0	.02	266	.39	596	197	47	.5	444	8.1	--
DEC.												
01-13	.3	.2	.03	295	.43	250	212	48	.6	493	8.0	--
14-31	.3	.1	.04	332	.50	251	240	57	.6	553	7.9	--
JAN.												
01-10	.4	.3	.11	298	.45	228	214	59	.7	515	7.8	--
19-31	.4	.2	.07	257	.44	251	215	60	.6	512	7.7	--
FEB.												
01-29	.4	.4	.02	327	.44	229	224	63	.6	516	8.2	--
MAR.												
01-25	.4	.4	.10	330	.46	266	227	65	.6	532	7.9	--
26-31	.4	.1	.03	287	.40	1100	213	57	.4	476	7.9	--
APR.												
01-30	.3	.0	.01	329	.47	344	225	69	.9	550	7.9	--
MAY												
01-05	.5	.7	.04	345	.50	371	226	71	.9	557	8.2	--
06-31	.4	.2	.05	303	.54	1100	213	55	.7	499	8.1	--
JUNE												
01-11	.4	.1	.03	274	.37	2670	196	41	.6	460	7.8	--
12-30	.3	.1	.03	196	.29	2900	144	24	.5	341	7.9	--
JULY												
01-31	.3	.3	.07	194	.29	809	130	32	.6	338	8.0	--
AUG.												
01-31	.3	.4	.06	205	.29	1270	141	33	.6	356	7.6	--
SEPT.												
01-30	.7	.2	.03	196	.27	1070	138	32	.6	349	7.3	--
WTD. AVG. TIME	.4	.2	.04	230	--	--	163	37	--	393	7.8	--
WTD. AVG. TONS PER DAY	.4	.2	.05	266	--	--	187	47	.6	447	7.9	--
	1.2	.6	.14	--	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
03...	.3	.2	.05	228	.33	478	157	31	.6	384	8.1	13
MAR.												
27...	.5	.4	.03	280	.42	116	213	53	.5	489	8.3	3
JULY												
24...	.3	.1	.02	195	.27	577	132	32	.6	335	7.7	17

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	--	15	13	13	13	12	11	11	11	12	11	11	11	9	11	9	9	8	8	8	8	7	7	7	7	6	6	6	4	4	6	9
NOVEMBER.	6	5	3	3	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	1	0	1	1	1	--	2
DECEMBER.	1	1	1	1	1	1	1	1	1	1	1	1	1	--	--	1	1	1	1	1	0	1	1	1	1	2	1	1	1	2	1	1
JANUARY..	1	1	1	1	1	--	1	--	1	1	--	--	--	--	--	--	--	--	1	1	1	1	1	1	1	2	2	1	1	1	1	--
FEBRUARY.	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	4	4	3	3	3	6	4	4	3	3	--	--	1	1
MARCH....	5	5	6	6	6	6	6	5	6	6	6	2	3	5	5	5	5	4	3	3	3	4	4	4	5	4	4	4	4	4	5	4
APRIL....	5	4	2	4	4	4	4	4	4	4	6	6	6	3	4	6	4	3	3	7	3	4	4	4	4	4	4	5	5	7	7	--	4
MAY.....	7	8	8	8	8	6	8	8	8	9	9	8	9	9	9	9	9	9	9	9	10	11	9	11	11	11	11	12	13	12	12	9
JUNE.....	13	12	12	12	12	12	13	13	13	13	14	14	14	14	14	14	14	14	16	16	15	15	15	16	16	16	16	16	14	15	--	14
JULY.....	16	16	17	16	16	17	17	17	17	16	17	17	16	16	16	16	16	16	16	16	16	16	17	17	17	17	17	18	17	17	17	16
AUGUST...	17	17	17	17	17	17	17	17	17	17	17	17	18	17	17	17	17	17	16	17	17	17	17	17	17	17	17	16	16	16	16	16
SEPTEMBER	16	16	16	16	17	17	17	17	17	17	17	14	17	16	15	15	14	14	14	14	14	13	13	13	13	14	13	13	12	13	--	14

09216000 BIG SANDY RIVER BELOW EDEN, WYO.
(Formerly published as Big Sandy Creek)

LOCATION.--Lat 42°00', long 109°35', in SE¼ sec.31, T.24 N., R.107 W., Sweetwater County, at gaging station 0.1 mile downstream from Simpson Gulch, 8.0 miles southwest of Eden, and 8.8 miles downstream from Little Sandy Creek.

DRAINAGE AREA.--1,610 sq mi, approximately.

PERIOD OF RECORD.--October 1961 to September 1964, October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
02...	1130	60	12	.00	198	64	288	4.0	226	0	1100	57
NOV.												
24...	0940	36	12	.24	231	85	328	3.9	251	0	1360	53
JAN.												
10...	1240	19	13	.13	271	91	342	3.6	245	0	1510	60
FEB.												
22...	0930	19	13	.02	239	103	341	3.8	245	0	1480	57
MAR.												
26...	1745	57	9.2	.10	159	70	395	3.3	198	0	1200	58
MAY												
06...	1330	30	11	.31	187	95	426	3.5	262	0	1470	77
JUNE												
14...	1500	216	7.9	.04	52	13	66	1.8	99	0	230	11
JULY												
15...	1815	56	10	.07	150	49	230	3.5	211	0	844	43
AUG.												
22...	1710	46	16	.15	219	69	315	3.4	245	0	1230	59
SEPT.												
10...	1240	48	9.6	--	202	71	272	3.4	231	0	1050	50

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
02...	1.7	1.3	.30	1840	2.61	311	760	575	4.6	2340	7.6	12
NOV.												
24...	1.1	2.3	.32	2200	3.26	233	976	720	4.7	2840	7.8	1
JAN.												
10...	1.1	3.6	.04	2420	3.48	131	1050	849	4.6	3000	7.8	0
FEB.												
22...	1.1	2.5	.32	2360	3.47	131	1020	819	4.6	2870	8.0	1
MAR.												
26...	1.2	.3	.30	1990	2.76	312	685	523	6.6	2590	8.0	3
MAY												
06...	1.6	.1	.39	2400	3.50	208	856	641	6.3	3130	7.9	12
JUNE												
14...	.5	.2	.06	431	.61	261	183	102	2.1	668	8.1	13
JULY												
15...	1.2	.2	.19	1440	2.04	227	578	405	4.2	1900	8.1	22
AUG.												
22...	1.1	1.4	.42	2030	2.88	263	832	631	4.8	2590	8.0	13
SEPT.												
10...	1.1	.6	.29	1770	2.67	254	798	609	4.2	2490	7.7	16

09216300 GREEN RIVER AT BIG ISLAND, NEAR GREEN RIVER, WYO.

LOCATION.--Lat 41°45'52", long 109°44'05" (revised), in SW¼SE¼ sec.26, T.21 N., R.109 W., Sweetwater County, at Big Island bridge, 6.2 miles downstream from Dry Creek, 9.5 miles downstream from Big Sandy River, and 21 miles northwest of Green River.

PERIOD OF RECORD.--Chemical analyses: August 1966 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
02...	1945	774	5.6	.08	56	19	50	1.9	159	0	180	10
NOV.												
25...	1415	654	7.3	.13	71	21	54	3.4	194	0	207	5.0
JAN.												
10...	2040	272	9.3	.17	93	37	92	2.2	244	0	368	11
FEB.												
18...	1525	287	10	.37	78	39	85	2.1	219	0	346	12
MAR.												
26...	1700	1370	12	.05	60	26	47	1.9	190	0	194	6.4
MAY												
06...	1915	806	6.5	.10	69	40	98	2.3	191	4	375	14
JUNE												
14...	1130	5250	6.7	.06	48	11	21	2.0	146	4	78	4.6
JULY												
15...	1010	1280	5.9	.11	42	15	35	1.8	128	0	127	3.6
AUG.												
22...	0700	2600	15	.16	44	12	27	1.4	137	0	96	3.9
SEPT.												
10...	1600	865	4.7	--	42	15	28	1.7	136	0	113	3.8

DATE	FLUC-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
02...	.4	.1	.08	401	.56	861	220	90	1.5	644	7.4	14
NOV.												
25...	.5	.2	.07	465	.65	844	265	106	1.4	738	8.0	1
JAN.												
10...	.5	.1	.09	733	1.02	552	386	186	2.0	1080	7.6	0
FEB.												
18...	.6	.5	.06	682	1.00	569	356	176	2.0	994	8.1	0
MAR.												
26...	.5	.4	.04	441	.62	1680	254	98	1.3	682	8.2	3
MAY												
06...	.6	.2	.04	708	1.03	1650	339	176	2.3	1050	8.3	8
JUNE												
14...	.3	.2	.02	248	.35	3690	166	40	.7	412	8.3	11
JULY												
15...	.4	.3	.03	294	.42	1060	168	63	1.2	481	8.2	18
AUG.												
22...	.3	.0	.11	267	.38	1940	160	48	.9	437	7.5	15
SEPT.												
10...	.3	.0	.05	276	.37	640	164	52	.9	458	7.2	17

09216950 BITTER CREEK NEAR GREEN RIVER, WYO.

LOCATION.--Lat 41°31'25", long 109°25'41", in NE¼SE¼ sec.24, T.18 N., R.107 W., Sweetwater County, 0.3 mile south of U.S. Highway 30, 1.7 miles east of Green River, and 1.9 miles upstream from mouth.

PERIOD OF RECORD.--Chemical analyses: August 1966 to September 1968.
Sediment records: August 1966 to September 1968 (periodic).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
04...	1155	9.3	9.2	.11	57	35	816	28	732	0	340	800
NOV.												
14...	1215	4.0	3.8	.11	136	78	1200	39	740	0	1010	1120
FEB.												
21...	1755	19	8.3	.16	69	32	269	8.3	184	0	408	230
APR.												
09...	0845	7.7	8.6	.30	127	130	772	19	479	0	1190	693
MAY												
08...	1310	4.5	9.2	.12	123	135	988	24	519	0	1330	875
JUNE												
11...	0900	11	8.5	.17	128	85	499	14	354	12	878	399
AUG.												
21...	0850	64	11	--	89	40	209	6.5	231	0	463	136

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
04...	2.1	3.2	3.2	2450	3.35	61	285	0	21	3970	7.7	11
NOV.												
14...	2.0	11	2.7	3970	5.44	43	664	57	20	6050	7.7	16
FEB.												
21...	.7	21	.42	1140	1.60	60	305	154	6.7	1810	7.8	0
APR.												
09...	1.5	16	1.4	3190	4.56	69	850	457	12	4810	8.2	0
MAY												
08...	2.0	16	1.7	3760	5.36	47	862	436	15	5530	7.9	18
JUNE												
11...	1.6	6.0	1.0	2210	3.14	68	668	358	8.4	3350	8.4	10
AUG.												
21...	.8	.8	.37	1070	1.50	190	385	196	4.6	1690	7.5	12

09216950 BITTER CREEK NEAR GREEN RIVER, WYO.--Continued

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 4 1967	1155	11	9.3	6120	150	--	--	--	--	--	--	--					
NOV 14.....	1055	0	4.0	18	.2	--	--	--	--	--	--	--					
FEB 21 1968	1605	0	19	500	26	61	82	100	--	--	--	--	--	--	--	--	PWC
APR 9.....	0840	0	7.7	152	3.2	--	--	--	--	--	--	--					
MAY 8.....	1410	18	4.5	183	2.2	--	--	--	--	--	--	--					
AUG 21.....	0850	12	63.8	23600	4060	69	94	98	100	--	--	--	--	--	--	--	VPWC

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.

LOCATION (revised).--Lat 41°30'59", long 109°26'54", in NW¼NE¼ sec.26, T.18 N., R.107 W., Sweetwater County, at bridge on State Highway 530, 0.8 mile upstream from Bitter Creek at southeast edge of town of Green River, about 1 mile upstream from gaging station, and 5 miles upstream from high waterline of Flaming Gorge Reservoir.
DRAINAGE AREA.--10,000 sq mi, approximately, upstream from gaging station, of which 300 sq mi is probably non-contributing.
PERIOD OF RECORD.--Chemical analyses: May 1951 to September 1968.
Water temperatures: May 1951 to September 1968.
Sediment records: May 1951 to September 1968.
EXTREMES.--1967-68:
Hardness: Maximum, 394 mg/l Feb. 1-29; minimum, 154 mg/l June 14-30.
Specific conductance: Maximum daily, 1,230 micromhos Dec. 16, 17; minimum daily, 319 micromhos June 25.
Water temperatures: Maximum, 22.0°C on several days during July; minimum, freezing point on many days during December to March.
Sediment concentrations: Maximum daily, 710 mg/l Mar. 26; minimum daily, 3 mg/l Oct. 22, 30.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-10	--	964	--	--	57	19	60	--	--	--	--	--
11-18	--	1260	--	--	53	18	41	--	--	--	--	--
19-31	--	866	--	--	52	21	55	--	--	--	--	--
NOV.												
01-08	--	846	--	--	55	22	53	--	--	--	--	--
09-14	--	682	--	--	68	26	78	--	--	--	--	--
15-30	--	877	--	--	66	23	57	--	--	--	--	--
DEC.												
01-31	--	282	--	--	94	37	111	--	--	--	--	--
JAN.												
01-31	--	278	10	--	93	35	107	2.1	250	0	359	15
FEB.												
01-29	--	277	--	--	83	45	98	--	--	--	--	--
MAR.												
01-11	--	316	--	--	123	7.1	111	--	191	0	--	--
12-24	--	343	--	--	114	17	128	--	--	--	--	--
25-27	--	876	--	--	70	26	93	--	--	--	--	--
28-31	--	1540	--	--	69	20	45	--	--	--	--	--
APR.												
01-03	--	1070	--	--	64	22	66	--	187	0	--	--
04-14	--	487	--	--	80	28	123	--	200	0	--	--
15-30	--	432	--	--	75	31	112	--	195	0	--	--
MAY												
01-07	--	386	--	--	79	36	132	--	--	--	--	--
08-18	--	850	--	--	67	24	68	--	--	--	--	--
19-31	--	1230	--	--	63	31	50	--	--	--	--	--
JUNE												
01-13	--	3810	--	--	54	19	34	--	181	4	--	--
14-30	--	5130	--	--	43	11	23	--	141	4	--	--
JULY												
01-31	--	1440	4.8	--	49	11	36	1.5	126	0	130	5.0
AUG.												
01-11	--	1380	3.5	--	49	13	38	1.9	133	0	141	4.7
12-31	--	2650	4.1	--	47	11	30	1.9	140	0	104	4.2
SEPT.												
01-10	--	2680	3.9	--	40	14	27	1.7	136	0	96	3.8
11-30	--	1850	3.4	--	46	14	35	1.7	142	0	122	4.6
WTD. AVG. TIME	--	--	--	--	54	17	44	--	--	--	--	--
WTD. AVG. TONS PER DAY	--	1242	--	--	69	24	71	--	--	--	--	--
	--	--	--	--	182	57	149	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
04...	1800	A854	6.5	.09	57	20	76	2.5	171	0	231	12
APR.												
09...	1240	A434	7.5	.19	78	33	120	2.0	207	0	364	18
JULY												
23...	0900	A1420	4.6	.26	40	15	36	1.9	133	0	122	5.3

A DISCHARGE AT TIME OF SAMPLING.

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

EXTREMES.--1967-68:--Continued
Sediment loads: Maximum daily, 8,800 tons June 8; minimum daily, 3.3 tons Jan. 13.
Period of record:
Dissolved solids (1951-67): Maximum, 855 mg/l Nov. 15-20, 1955; minimum, 156 mg/l May 23-31, 1958.
Hardness: Maximum, 420 mg/l Nov. 15-20, 1955; minimum, 106 mg/l May 23-31, 1958.
Specific conductance: Maximum daily, 1,240 micromhos Dec. 13, 1953, Nov. 19, 1955; minimum daily, 219 micromhos May 22, 1954.
Water temperatures: Maximum, 26.0°C July 8, 22, 1961, July 24, 1962; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 15,000 mg/l Aug. 11, 1963; minimum daily, 0 mg/l Sept. 18, 1962.
Sediment loads: Maximum daily, 110,000 tons Mar. 28, 1962; minimum daily, 0 ton Sept. 18, 1962.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01-10	--	--	--	--	--	--	222	--	1.8	671	--	--
11-18	--	--	--	--	--	--	204	--	1.2	566	--	--
19-31	--	--	--	--	--	--	214	--	1.6	633	--	--
NOV.												
01-08	--	--	--	--	--	--	226	--	1.5	642	--	--
09-14	--	--	--	--	--	--	278	--	2.0	815	--	--
15-30	--	--	--	--	--	--	260	--	1.5	691	--	--
DEC.												
01-31	--	--	--	--	--	--	388	--	2.5	1100	--	--
JAN.												
01-31	.4	.1	.10	745	1.03	569	375	170	2.4	1080	8.1	--
FEB.												
01-29	--	--	--	--	--	--	394	--	2.2	1060	--	--
MAR.												
01-11	--	--	--	--	--	--	336	179	2.6	1050	8.2	--
12-24	--	--	--	--	--	--	356	--	3.0	1170	--	--
25-27	--	--	--	--	--	--	283	--	2.4	896	--	--
28-31	--	--	--	--	--	--	255	--	1.2	655	--	--
APR.												
01-03	--	--	--	--	--	--	252	99	1.8	718	8.2	--
04-14	--	--	--	--	--	--	316	152	3.0	1060	8.1	--
15-30	--	--	--	--	--	--	315	155	2.7	1030	8.1	--
MAY												
01-07	--	--	--	--	--	--	344	--	3.1	1120	--	--
08-18	--	--	--	--	--	--	266	--	1.8	774	--	--
19-31	--	--	--	--	--	--	284	--	1.3	655	--	--
JUNE												
01-13	--	--	--	--	--	--	212	57	1.0	556	8.4	--
14-30	--	--	--	--	--	--	154	32	.8	394	8.4	--
JULY												
01-31	.2	.1	.05	300	.41	1170	168	65	1.2	487	7.7	--
AUG.												
01-11	.2	.1	.03	316	.45	1220	174	65	1.2	510	7.8	--
12-31	.3	.1	.04	272	.38	2000	162	47	1.0	445	7.8	--
SEPT.												
01-10	.2	.1	.05	254	.34	1810	156	44	.9	420	7.7	--
11-30	.2	.1	.04	297	.40	1470	171	55	1.2	476	7.5	--
WTD. AVG. TIME	--	--	--	--	--	--	206	--	--	570	--	--
WTD. AVG. TONS PER DAY	--	--	--	--	--	--	269	--	1.8	774	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
04...	.3	.4	.06	490	.67	1140	223	83	2.2	751	7.8	12
APR.												
09...	.4	.1	.16	725	1.02	877	330	160	2.9	1070	8.1	7
JULY												
23...	.4	.1	.04	291	.42	1180	161	52	1.2	479	7.7	18

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	671	641	730	1090	1060	1030	666	1100	688	505	489	392
2	669	662	686	1120	1060	1030	666	1110	696	495	474	382
3	734	666	799	1170	1050	1030	854	1110	605	523	484	375
4	706	647	800	1120	1050	1030	1050	1090	665	368	485	409
5	725	682	1040	1150	1060	1020	1140	1110	570	466	502	411
6	544	576	1050	1150	1080	1030	1050	1090	577	499	500	423
7	662	667	1190	1170	1130	1030	1050	1260	522	509	492	447
8	661	653	1190	1170	1120	1030	1050	822	484	512	505	445
9	650	765	1190	1160	1090	1090	1070	754	476	498	509	449
10	641	768	1130	1150	1090	1080	1040	751	465	517	528	448
11	596	868	1130	1080	1090	1040	1050	757	429	517	544	501
12	603	855	1140	1070	1090	1140	1130	759	408	504	461	488
13	575	831	1150	1130	1110	1140	1100	742	402	494	481	480
14	595	798	1170	1120	1110	1140	1080	761	359	498	487	486
15	567	635	1220	1080	1090	1150	844	763	406	533	437	478
16	551	640	1230	1070	1080	1130	831	779	403	519	416	484
17	546	640	1230	1070	1080	1210	904	735	391	519	447	488
18	569	637	1180	1070	1070	1200	1020	740	377	492	524	488
19	651	653	1200	1080	1080	1190	1110	649	379	511	446	512
20	660	677	1190	1080	1070	1200	994	648	374	482	445	510
21	629	669	1180	1080	1010	1180	1000	627	356	495	493	510
22	621	650	1160	1020	1030	1160	1080	624	344	500	424	480
23	636	695	1160	1010	1050	1160	1080	621	338	487	424	474
24	626	697	1160	997	1040	1020	1090	665	327	497	438	477
25	636	697	1160	1010	1040	994	1100	664	319	483	385	480
26	635	762	1190	994	1040	970	1100	658	334	563	363	470
27	631	870	1160	991	1040	722	1090	652	374	532	380	482
28	644	840	1100	983	1010	645	1100	646	380	529	382	417
29	653	842	1100	989	1040	640	1100	618	471	508	453	416
30	645	765	1100	1010	---	652	1100	679	478	502	452	417
31	658	---	1190	1020	---	674	---	636	---	489	385	---
AVERAGE	635	701	1116	1070	1060	1030	1020	794	448	501	459	457

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	7.0	1.0	---	0.0	2.0	8.0	14.0	17.0	16.0	17.0	18.0
2	15.0	4.0	1.0	1.0	1.0	2.0	5.0	14.0	19.0	20.0	18.0	17.0
3	12.0	1.0	0.0	0.0	1.0	3.0	2.0	13.0	18.0	21.0	21.0	15.0
4	12.0	1.0	1.0	1.0	1.0	2.0	4.0	12.0	16.0	18.0	21.0	15.0
5	10.0	2.0	1.0	0.0	1.0	3.0	3.0	9.0	14.0	20.0	20.0	16.0
6	9.0	1.0	1.0	0.0	1.0	3.0	4.0	7.0	13.0	22.0	21.0	17.0
7	8.0	1.0	0.0	0.0	0.0	1.0	3.0	9.0	15.0	22.0	21.0	17.0
8	12.0	2.0	0.0	0.0	0.0	1.0	6.0	13.0	12.0	20.0	21.0	17.0
9	14.0	1.0	0.0	0.0	0.0	1.0	8.0	14.0	13.0	20.0	18.0	17.0
10	12.0	3.0	0.0	0.0	0.0	1.0	10.0	13.0	13.0	20.0	18.0	17.0
11	13.0	4.0	0.0	0.0	0.0	0.0	12.0	13.0	16.0	20.0	18.0	17.0
12	12.0	4.0	0.0	0.0	0.0	1.0	8.0	14.0	15.0	20.0	17.0	16.0
13	9.0	2.0	0.0	0.0	0.0	1.0	6.0	12.0	15.0	19.0	18.0	17.0
14	9.0	6.0	0.0	0.0	0.0	1.0	7.0	11.0	14.0	22.0	16.0	14.0
15	9.0	4.0	0.0	1.0	0.0	2.0	6.0	9.0	15.0	21.0	16.0	12.0
16	9.0	4.0	0.0	0.0	0.0	1.0	7.0	11.0	16.0	20.0	14.0	12.0
17	7.0	4.0	0.0	0.0	0.0	1.0	5.0	12.0	17.0	22.0	11.0	13.0
18	8.0	4.0	1.0	0.0	0.0	1.0	3.0	13.0	19.0	22.0	12.0	15.0
19	8.0	4.0	0.0	0.0	1.0	2.0	3.0	13.0	19.0	22.0	16.0	14.0
20	8.0	2.0	1.0	0.0	1.0	1.0	5.0	14.0	17.0	21.0	20.0	12.0
21	8.0	2.0	1.0	1.0	1.0	1.0	8.0	14.0	17.0	20.0	18.0	10.0
22	8.0	2.0	0.0	1.0	1.0	1.0	5.0	13.0	17.0	20.0	15.0	10.0
23	7.0	1.0	1.0	1.0	2.0	1.0	6.0	11.0	17.0	21.0	12.0	11.0
24	6.0	1.0	0.0	1.0	1.0	2.0	6.0	10.0	16.0	19.0	10.0	13.0
25	6.0	1.0	1.0	1.0	1.0	2.0	6.0	12.0	17.0	18.0	11.0	13.0
26	6.0	1.0	1.0	1.0	1.0	2.0	7.0	12.0	17.0	18.0	17.0	14.0
27	5.0	1.0	0.0	1.0	1.0	1.0	9.0	13.0	19.0	17.0	18.0	12.0
28	6.0	1.0	0.0	1.0	1.0	4.0	11.0	16.0	18.0	20.0	16.0	12.0
29	2.0	1.0	1.0	0.0	2.0	8.0	13.0	17.0	10.0	21.0	15.0	13.0
30	2.0	1.0	0.0	0.0	---	7.0	13.0	14.0	15.0	19.0	18.0	13.0
31	2.0	---	1.0	0.0	---	8.0	---	16.0	---	---	18.0	---
AVERAGE	8.5	2.5	0.5	0.5	0.5	2.0	7.0	12.5	16.0	20.0	17.0	14.5

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	855	205	470	898	5	12	310	42	35
2	955	100	260	908	4	9.8	272	33	24
3	969	195	510	938	4	9.8	275	27	20
4	855	220	610	930	8	19	280	23	17
5	917	72	180	900	20	49	300	15	12
6	982	66	170	870	7	16	308	27	22
7	1020	23	63	760	6	12	300	15	12
8	1000	10	27	620	6	10	300	33	27
9	982	10	27	628	7	12	318	39	33
10	1100	16	48	632	7	12	310	24	20
11	1190	20	64	632	12	20	280	24	18
12	1290	26	91	644	9	16	270	26	19
13	1360	20	73	647	14	24	260	30	21
14	1360	16	59	911	18	48	270	38	28
15	1350	13	47	1180	14	45	265	34	24
16	1350	13	47	1250	6	20	280	31	23
17	1230	10	33	1250	5	17	290	31	24
18	981	6	16	1200	4	13	290	25	20
19	831	7	16	1110	5	15	280	25	19
20	825	5	11	1040	11	31	275	25	19
21	827	5	11	1010	12	33	265	21	15
22	821	3	6.7	960	17	44	260	28	20
23	825	6	13	950	16	41	275	29	22
24	843	8	18	950	26	67	290	17	13
25	930	4	9.7	860	25	58	290	22	17
26	894	4	9.7	620	30	50	280	23	17
27	897	4	9.7	540	130	190	270	29	21
28	902	4	9.7	390	57	60	265	18	13
29	838	5	12	370	48	48	275	7	5.2
30	897	3	7.3	350	38	36	270	15	11
31	896	4	9.7	--	--	--	260	21	15
TOTAL	31002	--	2838.5	24888	--	1037.6	8733	--	606.2

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	275	7	5.2	290	10	7.8	290	20	16
2	270	15	11	275	10	7.4	285	18	14
3	285	20	15	290	11	8.6	300	21	17
4	280	17	13	285	12	9.2	310	14	12
5	265	15	11	280	15	11	330	13	12
6	255	17	12	275	15	11	320	30	26
7	255	15	10	270	16	12	335	17	15
8	265	21	15	275	20	15	330	12	11
9	275	11	8.2	280	21	16	330	10	8.9
10	270	13	9.5	275	16	12	325	10	8.8
11	260	11	7.7	285	29	22	320	19	16
12	255	9	6.2	275	26	19	325	29	25
13	245	5	3.3	275	26	19	321	33	29
14	250	5	3.4	260	26	18	322	35	30
15	255	6	4.1	250	22	15	350	47	44
16	270	10	7.3	260	21	15	360	29	28
17	280	9	6.8	265	27	19	343	14	13
18	275	13	9.7	270	29	21	340	22	20
19	290	11	8.6	280	83	63	322	35	30
20	285	11	8.5	285	74	57	320	39	34
21	280	16	12	285	83	64	340	35	32
22	290	17	13	280	100	76	360	47	46
23	305	17	14	275	60	45	365	68	67
24	315	19	16	280	57	43	388	130	140
25	310	24	20	290	48	38	442	300	400
26	300	28	23	285	48	37	435	710	830
27	305	30	25	280	35	26	1750	650	3100
28	295	35	28	275	39	29	1560	190	800
29	280	37	28	285	40	31	1530	130	540
30	285	14	11	--	--	--	1530	120	500
31	300	9	7.3	--	--	--	1550	80	330
TOTAL	8625	--	372.8	9035	--	767.0	16728	--	7194.7

09217000 GREEN RIVER NEAR GREEN RIVER, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1550	57	240	361	13	13	1290	17	59
2	1090	53	160	359	13	13	1120	15	45
3	570	45	69	358	13	13	1330	14	50
4	540	83	120	365	13	13	1190	28	98
5	516	120	170	382	27	28	1810	120	590
6	504	150	200	406	31	34	1960	390	2100
7	468	140	180	474	23	39	3380	440	4000
8	462	110	140	827	45	100	5450	600	8800
9	442	140	170	838	39	88	6490	480	8400
10	418	130	150	838	39	88	6070	230	3800
11	414	77	86	814	32	70	6590	260	4600
12	414	55	61	822	21	47	6790	200	3700
13	469	58	73	854	20	46	6010	140	2300
14	713	460	890	846	16	37	5820	55	860
15	630	540	920	830	16	36	4180	65	730
16	487	320	420	854	25	58	4070	92	1000
17	462	160	200	862	37	86	4520	72	880
18	457	160	200	960	91	260	4840	92	1200
19	458	140	170	1260	110	370	4840	54	710
20	416	100	110	1290	62	220	4850	53	690
21	435	63	74	1410	62	240	5580	110	1700
22	410	34	38	1510	57	230	6490	130	2300
23	409	33	36	1340	39	150	7270	170	3300
24	403	58	63	1200	33	120	9900	220	5300
25	397	48	51	996	23	68	9090	220	5400
26	405	27	30	1140	30	98	6330	130	2200
27	403	21	23	1180	23	73	3580	83	800
28	392	12	13	1190	31	110	2460	29	190
29	379	11	11	1260	32	110	2590	23	160
30	374	11	11	1140	25	77	1660	8	36
31	--	--	--	1120	18	54	--	--	--
TOTAL	15484	--	5079	28076	--	2989	136650	--	65998

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1610	13	57	1370	13	48	3530	84	800
2	1580	14	60	1360	13	48	3570	91	880
3	1490	13	52	1350	8	29	3560	48	460
4	2710	34	270	1360	10	37	2790	30	230
5	1620	30	140	1290	11	38	2760	28	210
6	1470	8	32	1370	9	33	2290	26	160
7	1460	8	32	1370	6	22	1960	20	110
8	1460	10	39	1360	9	33	2030	12	66
9	1460	11	43	1330	140	500	2120	19	110
10	1480	11	44	1510	82	330	2140	42	240
11	1430	9	35	1530	280	1200	1790	23	110
12	1450	8	31	2160	260	1700	1930	14	73
13	1480	7	28	2460	98	650	1570	17	72
14	1310	5	18	1630	42	180	1800	6	29
15	1290	7	24	2320	130	860	1760	6	29
16	1290	9	31	2550	74	510	1760	6	29
17	1320	8	29	1690	34	170	1720	7	33
18	1420	8	31	1820	30	160	1550	4	17
19	1260	7	24	2250	46	280	1600	5	24
20	1410	7	27	1930	32	170	1610	11	48
21	1390	6	23	1650	23	100	1650	9	40
22	1420	6	23	2320	70	440	1800	4	19
23	1400	7	26	2610	170	1200	1800	9	44
24	1140	10	31	2970	150	1200	1760	10	48
25	1180	43	140	3690	160	1700	1760	5	24
26	1170	12	40	4880	250	3300	1760	5	24
27	1380	12	45	3690	150	1500	1930	6	31
28	1370	9	33	3600	97	940	2360	8	51
29	1350	9	33	3690	69	670	2510	14	95
30	1350	10	36	1780	39	200	2520	16	110
31	1320	13	46	3260	62	550	--	--	--
TOTAL	44470	--	1523	68260	--	18798	63660	--	4216

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 454611
TOTAL LOAD FOR YEAR (TONS) 111419.8

09222000 BLACKS FORK NEAR LYMAN, WYO.

LOCATION.--Lat 41°27', long 110°10', in sec.16, T.17 N., R.113 W., Uinta County, at gaging station at bridge on old U.S. Highway 30S, 7 miles downstream from Cottonwood Creek and 11 miles northeast of Lyman.
DRAINAGE AREA.--821 sq mi.
PERIOD OF RECORD.--Chemical analyses: March 1962 to September 1968.
Water temperatures: May 1962 to September 1968
EXTREMES.--1967-68:
Dissolved solids: Maximum, 2,250 mg/l Sept. 12-22; minimum, 373 mg/l June 1-23.
Hardness: Maximum, 894 mg/l Sept. 12-22; minimum, 184 mg/l June 1-23.
Specific conductance: Maximum daily, 3,220 micromhos Sept. 16; minimum daily, 454 micromhos June 4.
Water temperatures: Maximum, 24.0°C July 29-31; minimum, freezing point on many days during October to March.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	--	29	11	--	177	93	326	3.0	242	0	1170	102
NOV.												
01-23	--	39	12	--	141	50	194	2.8	253	0	673	80
24-30	--	35	13	--	173	73	251	3.2	320	0	870	95
DEC.												
01-23	--	42	13	--	80	81	163	2.5	251	0	555	57
24-31	--	28	14	--	89	62	143	2.4	241	0	513	51
JAN.												
01-22	--	24	13	--	81	56	122	1.7	234	0	445	43
23-31	--	36	13	--	77	60	132	2.3	240	0	455	47
FEB.												
01-19	--	55	12	--	31	77	109	1.9	214	0	350	40
20-29	--	119	12	--	79	41	177	3.6	203	0	500	65
MAR.												
01-31	--	106	12	--	98	31	147	3.1	229	0	412	69
APR.												
01-09	--	176	15	--	82	32	183	3.3	236	0	425	89
10-30	--	164	17	--	76	27	138	3.3	239	0	321	64
MAY												
01-31	--	240	15	--	16	52	82	2.9	207	0	204	40
JUNE												
01-23	--	1430	12	--	47	16	54	2.4	151	0	146	21
24-30	--	728	10	--	61	20	56	1.8	149	0	207	17
JULY												
01-14	--	151	13	--	147	54	203	3.5	272	0	683	56
15-31	--	35	14	--	218	72	320	3.9	168	0	1110	94
AUG.												
01-11	--	34	13	--	208	68	288	3.5	232	0	1090	103
12-19	--	72	14	--	175	67	258	3.7	256	0	926	88
20-31	--	102	13	--	140	55	220	2.6	242	0	756	77
SEPT.												
01-11	--	39	12	--	181	72	269	2.8	222	5	1020	46
12-22	--	26	10	--	212	89	368	3.4	244	0	1310	140
23-30	--	--	9.5	--	195	65	308	3.2	231	0	1070	91
WTD. AVG. TIME	--	--	13	--	64	31	98	2.6	184	0	252	38
WTD. AVG. TONS PER DAY	--	180	13	--	111	57	182	2.9	227	0	622	66
	--	--	6.1	--	91	16	46	1.3	89	0	141	18

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
03...	1000	A32	14	.18	190	79	420	5.9	264	0	1320	120
APR.												
07...	1350	A138	16	.04	91	34	192	3.9	256	0	425	100
JULY												
23...	1300	A29	12	.12	230	86	349	3.4	290	0	1310	92

A DISCHARGE AT TIME OF SAMPLING.

09222000 BLACKS FORK NEAR LYMAN, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 4,000 mg/l Jan. 13-30, 1963; minimum, 279 mg/l May 24-29, 1964.
Hardness: Maximum, 1,580 mg/l Jan. 13-30, 1963; minimum, 144 mg/l Sept. 1, 1963.
Specific conductance: Maximum daily, 5,140 micromhos Jan. 26, 1963; minimum daily, 399 micromhos May 26, 1964.
Water temperatures: Maximum, 25.0°C July 5, 7, 1966; minimum, freezing point on many days during winter periods.

REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed: Dissolved solids, 2,280 mg/l Oct. 3; hardness, 928 mg/l July 23.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01-31	1.2	.4	.42	2000	2.77	160	826	627	4.9	2600	7.9	--
NOV.												
01-23	.8	.1	.22	1280	1.86	141	558	350	3.6	1850	8.0	--
24-30	1.0	.4	.28	1640	2.31	161	733	470	4.0	2230	8.1	--
DEC.												
01-23	.8	.2	.12	1120	1.65	105	533	327	3.1	1650	7.9	--
24-31	.8	.3	.18	965	1.44	80	475	277	2.8	1460	8.1	--
JAN.												
01-22	.7	.6	.17	882	1.20	57	435	243	2.6	1280	7.9	--
23-31	.7	.5	.20	906	1.33	95	439	242	2.7	1320	7.7	--
FEB.												
01-19	.6	.3	.16	767	1.13	124	392	216	2.4	1140	8.0	--
20-29	.6	.5	.18	979	1.36	328	365	198	4.0	2470	7.6	--
MAR.												
01-31	.7	.1	.17	885	1.27	268	370	192	3.3	1360	7.9	--
APR.												
01-09	.7	.5	.18	947	1.29	450	335	141	4.3	1400	8.1	--
10-30	.6	.2	.15	765	1.03	341	299	103	3.5	1160	8.0	--
MAY												
01-31	.6	.5	.15	515	.75	155	255	85	2.2	852	8.0	--
JUNE												
01-23	.4	.5	.10	373	.52	1430	184	60	1.7	586	7.9	--
24-30	.4	.1	.12	446	.63	904	233	111	1.6	695	8.0	--
JULY												
01-14	1.0	.5	.30	1300	1.85	554	590	367	3.6	1820	8.0	--
15-31	1.6	.4	.44	1920	2.87	199	842	704	4.8	2650	8.6	--
AUG.												
01-11	1.5	.3	.42	1850	2.76	186	801	611	4.4	2620	7.6	--
12-18	1.4	.2	.33	1660	2.41	344	714	504	4.2	2320	7.9	--
19-31	1.0	.3	.31	1390	2.00	405	575	376	4.0	2010	8.2	--
SEPT.												
01-11	1.5	.2	.35	1720	2.49	193	749	567	4.3	2350	8.3	--
12-22	1.7	.2	.45	2250	3.14	162	894	694	5.4	2910	8.2	--
23-30	1.5	.2	.38	1860	2.62	--	754	565	.5	2510	8.1	--
WTD. AVG. TIME	.6	.4	.15	629	--	--	237	136	--	965	7.9	--
WTD. AVG. TONS PER DAY	.9	.3	.24	1170	--	--	510	324	3.4	1690	8.0	--
	.3	.2	.07	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
03...	2.2	.5	.39	2280	3.28	254	800	583	6.5	3010	8.1	12
APR.												
07...	.7	.5	.18	989	1.39	380	365	155	4.4	1490	7.6	2
JULY												
23...	1.6	.2	.48	2230	3.14	181	928	690	5.0	2830	8.0	25

GREEN RIVER BASIN

09222000 BLACKS FORK NEAR LYMAN, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2570	2010	1950	1300	1230	1350	1070	1120	528	1220	2470	2190
2	1860	2020	1770	1270	1180	1330	1140	1070	492	1420	2520	2300
3	2890	1730	1840	1250	1210	1280	1570	930	513	1620	2610	2410
4	2600	1780	1900	1200	1220	1270	1710	879	454	1770	2760	2480
5	3150	1970	1830	1270	1170	1220	1390	826	744	1840	2790	2460
6	2860	1930	1810	1250	1210	1150	1540	822	765	1870	2700	2470
7	2790	1630	1760	1260	1220	1130	1370	810	532	1940	2760	2550
8	2590	1820	1710	1250	1210	1220	1400	871	506	2100	2630	2520
9	2390	1660	1700	1310	1220	1300	1350	900	594	2170	2800	2570
10	2490	1580	1650	1300	1240	1530	1210	888	652	2220	2630	2650
11	2490	1780	1580	1300	1250	1510	1180	822	713	2300	2650	2670
12	2470	1720	1600	1310	1240	1610	1000	791	691	2570	2370	2900
13	2670	1790	1540	1330	1240	1550	1030	994	640	2340	2420	2590
14	2670	1770	1550	1420	1180	1290	1020	954	521	2350	2420	3090
15	2700	1640	1600	1440	1210	1430	1090	874	515	---	2470	3110
16	2690	1710	1710	1440	1180	1440	1130	853	546	2570	2370	3220
17	2730	1850	1690	1420	1230	1450	1120	910	538	2590	2300	3140
18	2750	1890	1700	1390	1210	1450	1120	912	531	2580	2230	3010
19	2690	1880	1670	1390	1150	1500	1250	1030	525	---	1920	2890
20	2700	1930	1630	1370	1190	1430	1410	982	486	2790	2110	2800
21	2700	1890	1590	1390	1590	1520	1420	1000	464	2950	1940	2920
22	2740	1960	1560	1350	1440	1560	1220	935	462	2980	1930	3180
23	2760	1930	1520	1310	1580	1510	1320	767	508	3000	2160	2760
24	2870	2200	1680	1290	1500	1260	1130	807	561	3000	2070	2730
25	2720	2350	1580	1340	1640	1160	1190	859	592	2710	1960	2590
26	2530	2290	1410	1470	1550	1170	1140	898	610	2580	2010	2460
27	2410	2200	1450	1440	1380	1310	1110	979	720	2580	1990	2440
28	2410	2200	1500	1360	1410	1430	1220	920	769	2640	2040	2510
29	2350	2210	1440	1350	1320	1380	1140	874	889	2670	2150	2500
30	2520	2110	1340	1320	---	1320	1110	838	923	2610	2160	2610
31	2630	---	1310	1300	---	1150	---	564	---	2490	2210	---
AVERAGE	2640	1930	1630	1340	1300	1360	1240	893	599	2360	2340	2710

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	1.0	0.0	0.0	0.0	1.0	4.0	10.0	12.0	11.0	22.0	13.0
2	6.0	1.0	0.0	0.0	0.0	1.0	4.0	8.0	13.0	11.0	21.0	11.0
3	11.0	0.0	0.0	0.0	1.0	2.0	3.0	9.0	15.0	15.0	23.0	13.0
4	12.0	0.0	0.0	0.0	1.0	1.0	3.0	10.0	14.0	16.0	15.0	16.0
5	9.0	0.0	0.0	0.0	1.0	1.0	4.0	11.0	11.0	14.0	17.0	16.0
6	8.0	0.0	0.0	0.0	0.0	1.0	2.0	6.0	11.0	17.0	22.0	17.0
7	3.0	0.0	0.0	0.0	0.0	1.0	1.0	5.0	12.0	17.0	21.0	17.0
8	4.0	0.0	0.0	0.0	0.0	0.0	1.0	5.0	12.0	22.0	22.0	10.0
9	11.0	1.0	0.0	0.0	0.0	1.0	1.0	6.0	10.0	20.0	21.0	11.0
10	15.0	0.0	0.0	0.0	0.0	1.0	4.0	6.0	11.0	20.0	23.0	12.0
11	13.0	1.0	0.0	0.0	0.0	1.0	12.0	5.0	12.0	22.0	21.0	14.0
12	9.0	2.0	0.0	0.0	0.0	1.0	5.0	8.0	12.0	23.0	20.0	12.0
13	10.0	2.0	0.0	0.0	0.0	1.0	3.0	9.0	12.0	23.0	17.0	17.0
14	5.0	1.0	0.0	0.0	0.0	0.0	1.0	9.0	13.0	16.0	15.0	14.0
15	2.0	2.0	0.0	0.0	0.0	0.0	4.0	6.0	12.0	16.0	11.0	9.0
16	9.0	3.0	0.0	0.0	0.0	1.0	6.0	6.0	13.0	16.0	11.0	6.0
17	12.0	1.0	0.0	0.0	0.0	1.0	2.0	8.0	14.0	17.0	11.0	4.0
18	11.0	6.0	0.0	0.0	0.0	0.0	6.0	8.0	16.0	17.0	9.0	11.0
19	10.0	2.0	0.0	0.0	1.0	0.0	2.0	13.0	17.0	17.0	9.0	16.0
20	11.0	1.0	0.0	0.0	1.0	1.0	2.0	10.0	15.0	16.0	16.0	9.0
21	3.0	0.0	0.0	1.0	1.0	1.0	1.0	14.0	14.0	17.0	21.0	4.0
22	6.0	0.0	0.0	1.0	1.0	1.0	3.0	9.0	15.0	17.0	16.0	3.0
23	4.0	0.0	0.0	1.0	1.0	2.0	5.0	9.0	16.0	16.0	9.0	5.0
24	0.0	0.0	0.0	1.0	1.0	2.0	6.0	6.0	16.0	16.0	11.0	5.0
25	2.0	0.0	0.0	1.0	1.0	2.0	3.0	7.0	16.0	22.0	12.0	4.0
26	4.0	0.0	1.0	1.0	1.0	1.0	6.0	7.0	14.0	19.0	11.0	4.0
27	0.0	0.0	0.0	1.0	1.0	1.0	8.0	9.0	15.0	19.0	19.0	5.0
28	3.0	0.0	0.0	0.0	1.0	2.0	3.0	12.0	16.0	17.0	18.0	6.0
29	0.0	0.0	0.0	0.0	1.0	3.0	7.0	17.0	14.0	24.0	20.0	9.0
30	0.0	0.0	0.0	0.0	---	4.0	9.0	9.0	16.0	24.0	21.0	5.0
31	2.0	---	0.0	0.0	---	3.0	---	11.0	---	24.0	22.0	---
AVERAGE	6.5	1.0	0.0	0.0	0.5	1.0	4.0	8.5	13.5	18.0	17.0	10.0

09224450 HAMS FORK NEAR GRANGER, WYO.

LOCATION.--Lat 41°35'56", long 109°59'28", in center of sec.30, T.19 N., R.111 W., Sweetwater County, at railroad bridge 1.2 miles northwest of Granger and 1.7 miles upstream from mouth.

DRAINAGE AREA.--670 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
03...	1100	18	4.1	.10	56	20	38	2.0	162	0	146	17
NOV.												
15...	1510	22	3.8	.00	76	30	39	1.6	212	0	188	20
JAN.												
18...	0940	6.2	3.6	.06	76	37	60	2.1	192	0	277	26
FEB.												
18...	1700	9.8	2.5	.27	79	46	42	2.4	266	0	232	23
APR.												
10...	1240	78	2.8	.12	80	34	36	2.0	215	0	208	17
MAY												
16...	1210	39	4.7	.08	61	29	30	2.2	237	0	122	12
JUNE												
06...	1400	1420	8.6	.11	56	22	18	2.0	220	0	81	6.4
JULY												
12...	1650	39	5.1	.02	75	32	60	1.8	273	0	210	14
AUG.												
18...	1505	3.4	4.5	--	50	26	42	1.5	186	0	140	12
SEPT.												
14...	1445	48	2.1	.04	43	20	24	1.3	143	0	101	8.9

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
03...	.5	.2	.08	364	.55	19.8	220	87	1.1	597	8.1	13
NOV.												
15...	.5	.3	.15	463	.63	27.4	315	141	1.0	744	7.9	7
JAN.												
18...	.5	.2	.09	577	.79	9.71	341	183	1.4	874	7.4	0
FEB.												
18...	.5	.3	.08	559	.85	16.6	387	169	.9	884	8.2	0
APR.												
10...	.5	.4	.00	487	.72	112	338	162	.8	795	8.2	7
MAY												
16...	.4	.3	.05	379	.57	44.0	270	76	.8	631	8.0	4
JUNE												
06...	.4	.3	.01	303	.45	1260	230	50	.5	505	8.1	13
JULY												
12...	.5	.2	.12	532	.71	55.0	316	92	1.5	840	7.9	22
AUG.												
18...	.5	.1	.07	368	.52	3.51	231	78	1.2	627	8.0	12
SEPT.												
14...	.3	.0	.07	261	.39	36.8	189	72	.8	483	7.9	--

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.

LOCATION.--Lat 41°32'46", long 109°41'34", in NE¼NE¼ sec.15, T.18 N., R.109 W., Sweetwater County, at gaging station 200 ft upstream from bridge on U.S. Highway 30, 4.5 miles upstream from Spider Creek, and 12 miles east of Little America.
DRAINAGE AREA.--3,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1968.
Water temperatures: March 1951 to September 1963, December 1964 to September 1968.
Sediment records: October 1967 to September 1968.
EXTREMES.--1967-68:
Hardness: Maximum, 581 mg/l July 21-31; minimum, 176 mg/l Feb. 1-22.
Specific conductance: Maximum daily, 3,810 micromhos Feb. 20; minimum daily, 504 micromhos June 23.
Water temperatures: Maximum, 26.0°C July 28, 29; minimum, freezing point on many days November to February.
Sediment concentrations: Maximum daily, 6,500 mg/l June 6; minimum daily, 6 mg/l Jan. 26.
Sediment loads: Maximum daily, 52,000 tons June 6; minimum daily, 0.8 ton Jan. 26.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DISCHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.												
01-31	--	53	--	--	120	51	261	--	--	--	--	--
NOV.												
01-16	--	62	--	--	134	49	219	--	--	--	--	--
17-27	--	60	--	--	118	52	219	--	--	--	--	--
28-30	--	41	--	--	--	--	--	--	--	--	--	--
DEC.												
01-31	--	41	--	--	--	--	--	--	--	--	--	--
JAN.												
01-31	--	33	12	--	29	42	409	3.0	562	73	492	60
FEB.												
01-22	--	50	--	--	24	28	337	--	--	--	--	--
23-29	--	149	--	--	50	21	170	--	--	--	--	--
MAR.												
01-15	--	134	--	--	87	15	178	--	--	--	--	--
16-31	--	165	--	--	111	2.2	190	--	--	--	--	--
APR.												
01-11	--	271	--	--	70	36	200	--	301	0	--	--
12-20	--	273	--	--	81	30	119	--	268	0	--	--
21-30	--	264	--	--	92	24	135	--	270	0	--	--
MAY												
01-05	--	238	--	--	79	27	125	--	--	--	--	--
06-31	--	402	--	--	61	21	73	--	--	--	--	--
JUNE												
01-14	--	2170	--	--	56	14	61	--	190	0	--	--
15-27	--	1640	--	--	60	10	40	--	162	0	--	--
28-30	--	554	10	--	86	23	81	2.8	203	0	268	25
JULY												
01-04	--	554	10	--	86	23	81	2.8	203	0	268	25
05-20	--	176	11	--	161	29	200	4.4	272	0	609	62
21-31	--	88	9.8	--	158	45	270	3.0	271	0	828	77
AUG.												
01-20	--	81	6.1	--	132	60	250	2.5	222	0	802	82
21-31	--	149	8.9	--	105	33	200	3.8	234	0	536	65
SEPT.												
01-16	--	75	6.1	--	110	46	180	3.4	210	0	595	58
17-30	--	64	3.7	--	96	43	235	3.2	216	0	665	60
WTD. AVG. TIME	--	--	--	--	72	20	101	--	--	--	--	--
WTD. AVG. TONS PER DAY	--	265	--	--	90	34	210	--	--	--	--	--
	--	--	--	--	54	15	77	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
09...	0800	A84	3.3	.09	94	48	320	4.0	282	0	783	84
APR.												
07...	1720	A259	12	.29	67	35	200	4.8	282	0	369	96
MAY												
09...	1345	A440	12	--	54	21	55	3.3	215	0	120	27
JULY												
23...	0945	A98	12	.22	150	64	280	4.5	263	0	923	83

A DISCHARGE AT TIME OF SAMPLING.

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

Period of record:
Dissolved solids (1951-67): Maximum, 4,480 mg/l Oct. 1-3, 1953; minimum, 278 mg/l Feb. 12, 13, 1954.
Hardness: Maximum, 1,980 mg/l Feb. 1-14, 1955; minimum, 48 mg/l Jan. 21, 22, 26, 1953.
Specific conductance: Maximum daily (1951-64, 1965-68), 6,010 micromhos Oct. 1, 1953; minimum daily, 413 micromhos Apr. 11, 1960.
Water temperatures (1951-62, 1966-68): Maximum, 29.0°C July 15, 16, 1955; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 6,500 mg/l June 6, 1968; minimum daily, 6 mg/l Jan. 26, 1968.
Sediment loads: Maximum daily, 52,000 tons June 6, 1968; minimum daily, 0.8 ton Jan. 26, 1968.
REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station. Maximum observed during water year: Hardness, 638 mg/l July 23.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01-31	--	--	--	--	--	--	510	--	5.0	1960	--	--
NOV.												
01-16	--	--	--	--	--	--	536	--	4.1	1820	--	--
17-27	--	--	--	--	--	--	507	--	4.2	1770	--	--
28-30	--	--	--	--	--	--	--	--	--	--	--	--
DEC.												
01-31	--	--	--	--	--	--	--	--	--	--	--	--
JAN.												
01-31	.5	.1	.27	1400	2.01	132	244	0	11	2120	8.1	--
FEB.												
01-22	--	--	--	--	--	--	176	--	11	1690	--	--
23-29	--	--	--	--	--	--	210	--	5.1	1120	--	--
MAR.												
01-15	--	--	--	--	--	--	280	--	4.6	1260	--	--
16-31	--	--	--	--	--	--	286	--	4.9	1340	--	--
APR.												
01-11	--	--	--	--	--	--	323	76	4.8	1420	8.1	--
12-20	--	--	--	--	--	--	324	104	2.9	1480	8.2	--
21-30	--	--	--	--	--	--	328	107	3.2	1170	8.2	--
MAY												
01-05	--	--	--	--	--	--	308	--	3.1	1080	--	--
06-31	--	--	--	--	--	--	240	--	2.1	755	--	--
JUNE												
01-14	--	--	--	--	--	--	198	42	1.9	636	8.2	--
15-27	--	--	--	--	--	--	192	59	1.3	563	8.2	--
28-30	.5	.2	.16	597	.82	903	308	141	2.0	885	8.2	--
JULY												
01-04	.5	.2	.16	597	.82	903	308	141	2.0	885	8.2	--
05-20	.7	.2	.32	1210	1.67	584	519	296	3.8	1660	8.0	--
21-31	.8	.2	.39	1530	2.09	366	581	359	4.9	2050	7.8	--
AUG.												
01-20	.8	.2	.35	1440	2.05	330	578	396	4.5	2000	8.1	--
21-31	.6	.2	.28	1070	1.44	426	396	204	4.4	1520	7.6	--
SEPT.												
01-16	.6	.1	.29	1100	1.54	229	464	292	3.6	1560	7.8	--
17-30	.6	.1	.26	1210	1.74	221	416	239	5.0	1770	7.9	--
WTD. AVG. TIME	--	--	--	--	--	--	260	--	--	906	--	--
WTD. AVG. TONS PER DAY	--	--	--	--	--	--	363	--	5.0	1510	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.												
03...	.7	.2	.37	1480	2.04	340	432	201	6.7	2120	7.7	12
APR.												
07...	.4	.4	.29	923	1.30	670	309	78	4.9	1440	8.0	3
MAY												
09...	.4	.9	.09	400	.54	470	220	44	1.6	654	7.8	12
JULY												
23...	1.2	.2	.40	1650	2.30	447	638	422	4.8	2240	8.1	19

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2090	1880	2180	1890	1700	1470	1450	1190	699	936	1900	1490
2	1740	1940	2520	2110	1550	1700	1470	1150	574	922	1980	1530
3	1740	2010	2370	2100	1810	1550	1390	1130	540	1050	2090	1570
4	2280	2000	2530	2040	1550	1280	1290	1070	560	1190	2150	1580
5	2080	2090	2380	2550	1800	1210	1580	935	602	1330	2180	1580
6	1880	2260	2630	1890	1500	1220	1500	874	792	1370	2170	1520
7	1950	2020	2510	1910	1450	1110	1450	794	808	1510	2090	1590
8	1940	2050	2230	2410	1480	1090	1430	719	626	1550	2130	1620
9	2000	1720	2090	2060	1430	1130	1300	646	581	1580	2140	1630
10	1980	1610	2530	1940	1450	1110	1370	---	600	1680	1770	1640
11	2140	2170	2090	2170	1680	1140	1400	702	609	1700	2100	1660
12	2090	1500	1980	2080	1440	1120	1320	733	638	1830	1680	1600
13	2020	1550	2470	2080	1680	1200	1200	736	619	1790	1860	1520
14	1920	1590	2240	2180	2700	1340	1130	664	623	1900	2220	1640
15	1870	1490	2290	2080	1560	1350	1090	794	575	1940	2040	---
16	1860	1490	2630	2640	1300	1400	1020	791	557	2050	1920	1500
17	1860	2180	2280	2640	1500	1260	977	734	595	2040	1720	1900
18	1880	1650	2640	2640	3790	1250	1020	713	570	2030	1950	1760
19	1810	1630	2510	3400	1630	1350	1020	---	584	2040	1950	1570
20	1810	1660	2710	3420	3810	1320	991	829	569	2070	---	1520
21	1810	1630	2490	3150	1580	1330	1160	863	560	2260	1800	1640
22	1890	1610	2700	2850	1280	1320	1130	872	523	2410	1730	1770
23	1890	1630	2700	1880	1120	1240	1190	778	504	2270	1600	1820
24	1970	1740	2730	1720	1110	1170	1080	741	539	2150	1490	1930
25	2290	1890	2750	1540	1100	1300	1140	684	551	2050	1430	1670
26	2010	1880	2680	1620	1110	1330	1230	718	566	2030	1510	1610
27	1990	1950	2600	1620	1100	1500	1170	736	619	2010	1490	1730
28	2020	2040	2850	1600	1150	1380	1270	776	744	2040	1450	1930
29	2060	2060	2610	1610	1150	1470	1160	786	836	1990	1220	1870
30	2030	2600	2010	1600	---	1490	1260	735	---	1940	1480	1780
31	2020	---	1850	1660	---	1420	---	710	---	1940	1500	---
AVERAGE	1970	1850	2440	2170	1640	1310	1240	814	613	1790	1820	1660

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(ONCE-DAILY MEASUREMENT)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	8.0	0.0	0.0	0.0	2.C	---	14.C	16.0	16.0	22.0	21.0
2	16.0	4.0	1.0	0.0	0.0	2.C	9.0	15.0	18.0	18.0	23.0	16.C
3	14.0	2.0	0.0	0.C	C.C	2.C	7.0	15.C	19.0	20.0	22.0	16.0
4	13.0	2.0	0.0	0.0	1.0	3.0	7.0	14.C	18.0	19.0	24.0	15.0
5	14.0	1.0	0.0	0.C	0.C	2.C	6.0	13.0	17.0	21.0	21.0	16.C
6	12.0	C.0	0.0	C.C	0.0	2.0	7.0	9.0	17.0	22.0	22.0	18.C
7	13.0	C.0	0.0	0.0	C.C	1.C	6.0	8.0	15.0	22.0	23.0	17.0
8	14.0	1.0	0.0	0.0	0.0	1.C	4.0	12.0	13.0	21.0	22.0	19.0
9	13.0	1.0	0.0	0.0	0.0	3.0	7.0	12.0	14.0	21.0	21.0	17.0
10	13.0	2.0	0.0	0.C	0.C	2.C	8.0	---	14.0	21.0	22.0	19.0
11	13.0	1.0	0.0	0.C	0.0	1.C	7.0	13.C	16.0	22.0	21.0	17.C
12	11.0	2.0	0.0	0.0	C.C	2.C	8.0	13.0	16.0	21.0	21.0	18.C
13	9.0	4.0	0.0	0.0	0.0	1.C	7.0	12.C	17.0	23.0	20.0	14.0
14	5.0	6.C	0.0	0.0	C.0	1.0	7.0	11.0	17.0	23.0	19.0	13.C
15	8.0	6.0	0.0	0.0	0.C	1.C	9.0	9.0	17.0	22.0	15.0	---
16	7.0	7.C	0.0	C.C	0.0	2.0	8.0	10.0	18.0	23.0	19.0	1C.C
17	8.0	6.0	0.0	0.C	C.C	2.C	8.0	12.0	18.0	22.0	10.0	12.C
18	8.0	6.C	0.0	0.0	1.0	2.C	4.0	9.0	19.0	24.0	12.0	13.C
19	8.0	5.0	0.0	0.C	0.0	1.C	7.0	---	19.0	22.0	16.0	12.C
20	8.0	5.0	0.0	0.C	C.C	1.C	7.0	17.0	19.0	18.0	---	10.0
21	7.C	1.0	0.0	0.0	0.0	2.C	7.0	16.0	19.0	21.0	19.0	9.C
22	8.0	1.0	0.0	0.0	1.C	2.C	6.0	14.0	19.0	23.0	12.0	13.0
23	7.0	C.0	0.0	0.0	1.0	1.0	9.0	13.0	18.0	21.0	16.0	14.0
24	6.0	1.0	0.0	0.0	1.C	1.C	8.0	11.0	17.0	23.0	16.0	15.0
25	6.0	1.0	0.0	0.0	1.C	2.C	8.0	9.C	17.0	24.0	19.0	15.C
26	4.0	1.0	1.0	0.0	1.C	3.C	7.0	9.0	16.0	24.0	19.0	16.C
27	4.0	0.0	0.0	0.0	2.C	6.C	8.0	14.0	16.0	25.0	19.0	15.0
28	4.C	C.0	0.0	0.0	2.0	6.C	8.0	17.0	17.0	26.C	18.0	12.0
29	2.0	0.0	0.0	C.C	2.C	11.C	12.0	14.0	14.0	26.0	16.0	15.0
30	3.0	0.0	0.0	0.0	---	6.C	12.0	16.C	---	22.0	19.0	14.0
31	6.0	---	0.0	0.C	---	9.0	---	16.0	---	23.0	20.0	---
AVERAGE	9.0	2.5	0.0	0.0	0.5	2.5	7.5	12.5	17.0	22.0	19.0	15.0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
APR B 1968	1655	3	322	1430	1240		76		98		100	--	--	--	--	--	PWC
JUN 8.....	1410	12	4090	3620	40000		32		51		87	94	100	--	--	--	VPWC

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	42	--	3.0	51	91	13	48	44	5.7
2	36	--	5.0	61	81	13	44	65	7.7
3	76	31	6.5	44	87	10	40	66	7.3
4	76	--	5.1	41	85	9.4	41	48	5.3
5	75	--	3.8	40	82	8.9	43	57	6.6
6	74	--	3.0	43	99	11	47	35	4.4
7	67	--	2.3	48	150	19	43	17	2.0
8	63	--	1.7	54	200	29	45	32	3.9
9	62	--	1.4	60	180	29	41	33	3.7
10	60	7	1.1	70	160	30	37	49	4.9
11	57	14	2.2	77	180	37	41	36	4.0
12	55	11	1.6	87	160	38	45	67	8.1
13	52	7	1.0	84	150	43	38	40	4.7
14	50	6	1.1	91	140	31	33	24	2.1
15	48	12	1.5	76	89	19	35	13	1.2
16	46	13	1.7	75	87	18	37	10	1.0
17	46	12	1.5	77	78	16	41	14	1.5
18	47	13	1.6	72	78	15	46	23	2.9
19	46	12	1.5	73	100	20	43	18	2.1
20	47	8	1.0	73	86	17	40	13	1.4
21	46	9	1.2	75	62	13	37	11	1.1
22	48	11	1.4	64	57	9.8	34	13	1.2
23	47	33	4.2	54	65	9.5	40	11	1.2
24	43	53	6.2	48	100	13	52	12	1.7
25	43	74	8.6	46	56	7.0	48	28	3.6
26	43	56	6.4	37	68	8.4	44	14	1.7
27	44	53	6.3	36	67	6.5	39	11	1.2
28	46	53	7.0	41	102	11	34	15	1.4
29	42	81	9.2	45	82	10	37	23	2.3
30	39	66	6.9	52	63	8.8	33	14	1.2
31	43	73	8.5	--	--	--	29	18	1.4
TOTAL	1642	--	116.6	1792	--	524.3	1255	--	98.5

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	30	13	1.1	35	21	2.0	150	700	280
2	32	13	1.1	38	47	4.8	158	580	250
3	30	15	1.2	41	23	2.5	150	600	240
4	28	16	1.2	46	47	5.8	154	580	240
5	30	25	2.0	49	26	3.4	164	550	240
6	32	22	1.9	52	12	1.7	162	570	250
7	30	--	1.7	50	32	4.3	148	530	210
8	27	--	1.6	47	13	1.6	155	540	230
9	26	--	1.8	42	33	3.7	140	420	160
10	30	--	1.3	38	40	4.1	130	370	130
11	32	--	1.7	36	25	2.4	110	390	120
12	30	18	1.2	39	41	4.3	100	330	89
13	27	14	1.0	36	24	2.3	90	430	100
14	25	13	.90	38	15	1.6	85	770	200
15	26	14	1.0	40	22	2.4	105	840	240
16	27	13	.90	43	42	4.9	120	500	160
17	25	11	.80	47	85	11	130	910	320
18	34	13	1.1	56	62	9.4	122	1500	490
19	34	18	1.7	64	220	38	110	830	250
20	31	22	1.8	72	320	62	130	740	260
21	34	23	2.1	83	400	90	120	720	230
22	36	20	1.9	120	220	59	130	820	290
23	38	15	1.5	110	180	53	150	920	370
24	40	14	1.5	130	280	98	175	1200	570
25	43	16	1.8	160	540	230	210	1300	740
26	48	8	.80	170	350	160	230	920	570
27	46	8	1.0	160	510	220	216	910	530
28	43	10	1.2	155	650	280	212	940	540
29	40	13	1.4	155	770	320	198	1100	590
30	36	36	3.5	--	--	--	193	830	430
31	37	22	2.2	--	--	--	200	550	300
TOTAL	1031	--	46.30	2135	--	1682.5	4657	--	9619

09224700 BLACKS FORK NEAR LITTLE AMERICA, WYO.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	21[illegible]	1300	770	208	1300	730	1070	3800	11000
2	231	1300	810	204	1700	940	1040	2800	7900
3	237	1200	770	222	1400	840	1090	2200	5900
4	31[illegible]	--	1090	262	1100	780	1330	2800	10000
5	32[illegible]	--	1300	293	1200	950	1870	4700	24000
6	313	--	1100	326	1400	1200	2980	6500	52000
7	264	--	920	470	1700	2200	4030	4600	50000
8	30[illegible]	1200	730	545	2100	3100	3950	3300	35000
9	268	1900	1400	456	1400	1700	2820	2300	18000
10	248	1100	740	361	--	670	2460	1400	9300
11	24[illegible]	620	420	346	540	500	2040	1500	8300
12	270	1200	870	377	620	630	1990	1300	7000
13	303	1830	1500	431	820	950	1870	1000	5000
14	300	1400	1300	454	1100	1300	1800	880	4300
15	29[illegible]	1500	1200	407	1100	1200	1820	860	4200
16	251	680	660	375	980	870	1730	780	3600
17	235	570	360	317	740	630	1620	660	2900
18	246	530	350	265	700	510	1650	660	2900
19	285	650	500	238	420	270	1680	650	3100
20	271	540	400	214	310	180	1790	770	3700
21	335	800	720	209	330	190	1850	780	3900
22	375	2300	1900	250	430	290	2020	940	5100
23	308	1720	1400	365	880	870	1770	740	3600
24	244	1600	1200	500	2300	3100	1540	570	2400
25	248	1500	1000	553	2200	3300	1510	510	2100
26	234	1100	710	512	1600	2200	1330	350	1400
27	237	1300	1200	426	920	1100	1060	380	1100
28	232	1000	630	378	540	550	828	370	830
29	236	1600	1000	365	480	470	671	400	720
30	228	1100	680	407	580	640	596	340	550
31	--	--	--	737	2000	4500	--	--	--
TOTAL	8274	--	27800	11651	--	38160	53925	--	269500

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	570	190	290	66	46	8.2	100	80	22
2	48[illegible]	140	180	56	14	2.5	93	110	28
3	3[illegible]	120	130	63	8	1.4	84	100	23
4	324	120	100	55	11	1.8	84	130	29
5	274	130	96	57	8	1.2	82	120	27
6	256	120	83	57	8	1.2	78	70	15
7	251	130	88	56	12	2.1	78	70	15
8	229	130	80	72	9	1.7	74	80	16
9	204	120	66	61	12	2.0	72	50	9.7
10	153	65	35	65	31	5.4	68	30	5.5
11	183	74	37	86	22	5.1	70	50	9.4
12	188	65	43	88	15	3.6	70	50	9.4
13	160	330	170	105	16	4.5	66	80	14
14	164	180	82	110	30	12	63	60	14
15	148	150	64	58	42	11	59	--	9.0
16	124	260	87	70	24	5.8	61	32	5.3
17	110	100	30	93	17	4.3	62	42	7.0
18	100	78	21	78	30	7.5	62	35	5.9
19	100	66	18	105	42	12	60	22	3.6
20	93	54	14	113	--	18	64	32	5.5
21	84	79	18	136	72	26	65	45	7.5
22	80	76	16	145	130	51	63	29	4.9
23	95	60	15	176	780	410	66	31	5.5
24	93	42	11	195	830	440	68	21	3.9
25	90	44	11	156	1200	640	67	24	4.3
26	93	50	13	160	500	310	66	12	2.1
27	98	38	10	148	430	170	65	14	2.5
28	98	14	3.7	142	310	120	65	25	4.4
29	90	26	6.3	110	300	89	63	38	6.5
30	82	12	2.7	103	170	53	64	16	3.1
31	88	8	1.1	100	70	19	--	--	--
TOTAL	3582	--	1821.8	3256	--	2437.7	2102	--	316.4

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 96685
TOTAL LOAD FOR YEAR (TONS) 372127.1[illegible]

09229500 HENRYS FORK AT LINWOOD, UTAH

LOCATION (revised).--Lat 41°00'45", long 109°40'20", in NW¼NW¼ sec.23, T.12 N., R.109 W., Sweetwater County, Wyo., 0.4 mile north of Wyoming-Utah State line, approximately 1 mile downstream from gaging station, 2 miles upstream from State Highway 530 at Linwood, 4 miles northeast of Manila, and 7 miles upstream from mouth.
DRAINAGE AREA.--520 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: March 1961 to September 1968.
Water temperatures: March 1951 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,570 mg/l Aug. 11; minimum, 291 mg/l June 9-21.
Hardness: Maximum, 960 mg/l Aug. 11; minimum, 200 mg/l June 9-21.
Specific conductance: Maximum daily, 1,790 micromhos Oct. 2; minimum daily, 385 micromhos June 16.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	FLUORIDE (F)
OCT.										
01-31	21	24	172	100	70	10	296	14	675	.8
NOV.										
01-30	53	22	156	83	57	8.7	286	12	547	.9
DEC.										
01-31	44	19	156	80	59	8.6	284	14	558	1.0
JAN.										
01-31	49	19	146	77	55	7.6	296	8	509	.7
FEB.										
01-29	51	18	140	69	53	8.6	288	0	482	.4
MAR.										
01-31	68	17	124	64	48	7.8	272	0	425	.5
APR.										
01-11	72	20	99	58	49	8.0	232	0	371	.9
12...	118	26	152	77	49	7.2	356	0	488	1.1
13-30	83	21	103	60	52	8.6	252	0	386	.7
MAY										
01-14	87	18	94	53	43	7.2	248	0	318	.8
15...	82	22	150	80	50	7.2	368	0	462	1.0
16-29	71	18	101	54	43	7.2	244	0	340	.8
30-31	102	17	79	35	30	6.3	194	0	226	.7
JUNE										
01-06	717	20	72	25	23	6.8	204	0	154	.8
07-08	1011	13	52	19	14	4.6	160	0	102	.6
09-21	624	13	51	18	14	4.3	152	0	99	.6
22-30	390	13	58	23	17	4.3	160	0	134	.6
JULY										
01-09	133	17	82	40	30	6.5	208	0	243	.8
10-18	104	21	107	49	38	7.8	252	0	332	1.0
19-31	66	22	116	63	46	9.1	252	0	422	1.0
AUG.										
01-10	60	27	148	73	54	11	260	0	520	.9
11...	580	42	289	58	64	27	244	0	959	.9
12-31	116	24	132	67	45	9.6	264	0	442	.6
SEPT.										
01-30	57	24	140	75	54	9.4	268	0	518	1.0
WTD. AVG. TIME	--	18	98	46	35	7.1	221	2	304	.7
WTD. AVG. TONS PER DAY	109	20	128	67	49	8.3	263	4	448	.8
	--	5.3	29	13	10	2.1	65	0	89	.2

ANALYSES OF ADDITIONAL SAMPLES

OCT.									
11... A11	20	186	102	83	12	300	0	764	.7
JAN.									
24... A61	16	148	66	54	7.4	284	0	500	.9
APR.									
17... A85	16	103	57	46	6.7	268	0	341	.5
JULY									
03... A114	16	83	39	28	5.7	212	0	227	.4
SEPT.									
10... A50	18	132	72	53	9.5	236	0	522	.6

A DISCHARGE AT TIME OF SAMPLING.

09229500 HENRYS FORK AT LINWOOD, UTAH--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 29.0°C July 29; minimum, freezing point on several days during December to February.
Period of record:
Dissolved solids: Maximum, 3,700 mg/l Oct. 14, 15, 1961; minimum, 291 mg/l June 9-21, 1968.
Hardness: Maximum,.2,100 mg/l Oct. 14, 15, 1961; minimum, 200 mg/l June 9-21, 1968.
Specific conductance: Maximum daily, 3,750 micromhos Oct. 15, 1961; minimum daily, 385 micromhos June 16, 1968.
Water temperatures: Maximum, 29.0°C July 29, 1968; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NON-CARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-31	.3	--	1290	1.69	73.8	840	574	1.0	1540	8.3
NOV.										
01-30	.3	--	1090	1.43	156	730	476	.9	1340	8.4
DEC.										
01-31	.1	--	1100	1.44	133	720	464	1.0	1360	8.4
JAN.										
01-31	.2	--	1020	1.39	137	680	424	.9	1280	8.3
FEB.										
01-29	1.0	--	987	1.34	138	635	399	.9	1240	7.9
MAR.										
01-31	.4	--	896	1.22	165	572	349	.9	1160	8.2
APR.										
01-11	.7	--	780	1.06	153	488	298	1.0	1040	8.0
12...	3.4	--	1020	1.36	325	696	404	.8	1300	8.1
13-30	1.0	--	813	1.11	183	504	297	1.0	1080	8.1
MAY										
01-14	.7	--	698	.95	164	450	247	.9	953	8.2
15...	3.4	--	1030	1.40	228	702	400	.8	1310	8.0
16-29	1.0	--	739	1.01	142	476	276	.9	990	8.1
30-31	1.3	--	520	.71	143	340	181	.7	738	7.9
JUNE										
01-06	1.0	--	443	.60	858	284	117	.6	630	7.9
07-08	.5	--	310	.42	846	208	77	.4	454	7.6
09-21	.5	--	291	.40	490	200	75	.4	438	7.7
22-30	.3	--	354	.48	373	240	109	.5	519	8.0
JULY										
01-09	.3	--	558	.76	200	368	197	.7	785	8.0
10-18	.6	--	713	.97	200	468	261	.8	960	8.0
19-31	.3	--	860	1.17	153	548	341	.9	1130	8.0
AUG.										
01-10	.6	--	1050	1.43	172	672	459	.9	1320	7.9
11...	2.3	--	1570	2.14	2460	960	760	.9	1780	7.6
12-31	.5	--	923	1.26	289	604	388	.8	1190	7.9
SEPT.										
01-30	.1	--	1050	1.43	162	660	440	.9	1330	7.8
WTD. AVG. TIME	.6	--	665	--	--	433	249	--	878	8.0
WTD. AVG. TONS PER DAY	.5	--	919	--	--	596	374	.9	1170	8.1
	.2	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
11...	.0	--	1470	1.84	43.7	885	639	1.2	1720	7.6
JAN.										
24...	.7	.30	993	1.35	164	640	407	.9	1250	7.8
APR.										
17...	.2	--	766	1.04	176	492	272	.9	1030	7.8
JULY										
03...	.4	--	535	.73	165	368	194	.6	753	8.0
SEPT.										
10...	.1	--	1000	1.36	135	624	430	.9	1260	7.8

09229500 HENRYS FORK AT LINWOOD, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1740	1390	1300	---	1290	1150	1000	918	664	654	1260	1260
2	1790	1320	1350	1240	1250	1320	971	924	627	720	1260	1290
3	1740	1410	1450	1310	1240	1100	974	921	627	---	1220	1400
4	1700	1390	1410	1330	1240	1100	1110	911	541	810	1270	1470
5	1790	1370	1330	1260	1240	1080	1090	892	647	769	1310	1190
6	1460	1390	1310	1260	1240	1040	987	1010	641	786	1270	1210
7	1430	1450	1390	1250	1260	1040	1000	956	477	824	1430	1250
8	1400	1280	1420	1340	1270	1140	1060	1090	432	812	1260	1270
9	1730	1330	1430	1310	1310	1210	1100	987	502	874	1630	1280
10	1390	1360	1400	1270	1230	1220	1160	956	458	1060	1200	1300
11	1680	1300	1360	1250	1310	1200	936	---	503	835	1780	1310
12	1440	1290	1340	1260	1300	1270	1300	962	480	837	1150	1200
13	1400	1280	1330	1320	1300	1140	869	968	411	884	1120	1330
14	1430	1360	1470	1350	1290	1150	1070	953	387	935	---	---
15	1690	1270	1330	1320	1190	1140	1090	1310	422	997	1050	1310
16	1700	1260	1410	1320	1280	1230	1060	997	385	1060	1050	1310
17	1690	1270	1390	1320	---	1200	1020	987	436	1020	1220	1310
18	1650	1260	1400	1280	1200	1240	1160	1010	386	997	1200	1250
19	1420	1310	1380	1280	1200	1300	1140	1020	---	1090	1110	1290
20	1420	1350	1320	1270	1220	1290	1150	1030	421	1060	1100	1280
21	1440	1250	1370	1230	1230	1190	1190	1040	421	1210	1200	---
22	1440	1270	1310	1220	1230	1190	1110	994	449	1160	1250	1310
23	1560	1270	1380	1310	1260	1180	1200	959	471	1070	1260	1330
24	1540	1440	1330	1230	1230	1120	1070	897	468	1010	1200	---
25	1370	1340	1340	1220	1240	1100	1130	944	488	1090	1190	1410
26	1430	1340	1240	1310	1160	1050	---	959	531	1120	---	1320
27	1490	1600	1320	1320	1160	994	968	978	565	1070	1270	1500
28	1440	1480	1280	1210	1120	1080	1080	1000	555	1170	1250	1280
29	1510	1390	1290	1220	1140	924	1040	1030	550	1250	1280	1300
30	1480	1220	1290	1330	---	1320	1010	740	555	1150	---	1490
31	1500	---	1250	1310	---	1010	---	737	---	---	1260	---
AVERAGE	1540	1340	1350	1280	1240	1150	1070	966	500	977	1250	1310

09229500 HENRYS FORK AT LINWOOD, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	9.0	1.0	---	1.0	1.0	9.0	14.0	18.0	20.0	22.0	18.0
2	17.0	4.0	1.0	0.0	2.0	1.0	9.0	13.0	21.0	21.0	21.0	16.0
3	17.0	4.0	0.0	0.0	2.0	3.0	4.0	16.0	18.0	---	22.0	14.0
4	---	3.0	1.0	0.0	1.0	2.0	8.0	16.0	16.0	18.0	21.0	16.0
5	14.0	4.0	0.0	1.0	1.0	3.0	6.0	16.0	13.0	22.0	19.0	18.0
6	15.0	2.0	0.0	1.0	1.0	2.0	6.0	8.0	16.0	23.0	19.0	18.0
7	17.0	3.0	0.0	1.0	1.0	2.0	5.0	9.0	16.0	22.0	18.0	17.0
8	15.0	4.0	0.0	1.0	1.0	3.0	7.0	14.0	13.0	18.0	---	17.0
9	16.0	6.0	0.0	1.0	1.0	3.0	9.0	15.0	12.0	19.0	---	17.0
10	17.0	7.0	0.0	1.0	1.0	---	9.0	14.0	12.0	19.0	18.0	17.0
11	16.0	7.0	0.0	1.0	0.0	5.0	11.0	---	17.0	22.0	19.0	16.0
12	12.0	7.0	1.0	1.0	1.0	6.0	11.0	14.0	18.0	17.0	17.0	16.0
13	13.0	7.0	0.0	1.0	1.0	6.0	7.0	14.0	16.0	24.0	16.0	---
14	16.0	7.0	0.0	1.0	1.0	6.0	9.0	13.0	16.0	24.0	---	---
15	12.0	7.0	0.0	1.0	1.0	6.0	11.0	14.0	16.0	24.0	14.0	12.0
16	---	8.0	1.0	1.0	1.0	6.0	8.0	11.0	16.0	23.0	18.0	11.0
17	11.0	6.0	0.0	1.0	---	6.0	7.0	10.0	19.0	23.0	14.0	13.0
18	11.0	6.0	1.0	1.0	1.0	4.0	7.0	14.0	18.0	24.0	13.0	---
19	12.0	5.0	1.0	1.0	1.0	4.0	8.0	18.0	---	24.0	16.0	15.0
20	12.0	6.0	1.0	1.0	1.0	3.0	9.0	18.0	19.0	24.0	17.0	13.0
21	13.0	4.0	1.0	1.0	1.0	7.0	8.0	18.0	19.0	19.0	17.0	---
22	13.0	4.0	1.0	1.0	1.0	8.0	7.0	13.0	19.0	19.0	16.0	13.0
23	9.0	5.0	1.0	1.0	1.0	9.0	11.0	13.0	18.0	23.0	17.0	12.0
24	8.0	4.0	1.0	1.0	---	9.0	8.0	10.0	18.0	23.0	18.0	---
25	8.0	3.0	2.0	1.0	3.0	9.0	6.0	13.0	---	21.0	18.0	14.0
26	8.0	3.0	1.0	1.0	2.0	9.0	---	13.0	21.0	24.0	---	15.0
27	7.0	2.0	1.0	1.0	1.0	8.0	9.0	18.0	18.0	27.0	18.0	14.0
28	6.0	3.0	1.0	1.0	1.0	12.0	11.0	20.0	21.0	27.0	18.0	13.0
29	6.0	2.0	1.0	1.0	1.0	9.0	7.0	10.0	18.0	29.0	---	17.0
30	6.0	2.0	1.0	2.0	---	9.0	14.0	17.0	16.0	---	---	14.0
31	9.0	---	1.0	1.0	---	9.0	---	18.0	---	---	18.0	---
AVERAGE	12.0	5.0	0.5	1.0	1.0	5.5	8.5	14.0	17.0	22.5	18.0	15.0

09234500 GREEN RIVER NEAR GREENDALE, UTAH
(Irrigation network station)

LOCATION.--Lat 40°54'30", long 109°25'20", NW¼SE¼ sec.15, T.2 N., R.22 E., Daggett County, at gaging station 0.5 mile downstream from Flaming Gorge Dam, 2 miles south of Dutch John, 4 miles northeast of Greendale, 13 miles southeast of Linwood, and 407.0 miles from mouth at mile 289.6 (River Profile Map).
DRAINAGE AREA.--15,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1956 to September 1968.
Water temperatures: October 1956 to September 1959, October 1963 to September 1968.
Sediment records: October 1956 to September 1959.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 649 mg/l Apr. 1-30; minimum, 517 mg/l Jan. 1-31.
Hardness: Maximum, 344 mg/l Oct. 1-31; minimum, 288 mg/l Jan. 1-31.
Specific conductance: Maximum daily, 939 micromhos Apr. 9, 12, 16; minimum daily, 736 micromhos Feb. 2, 5.
Water temperatures: Maximum, 10.0°C on several days during November and December; minimum, 4.0°C on many days during January to June.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.										
01-31	3063	4.9	80	35	76	2.4	194	0	303	24
NOV.										
01-30	2911	4.5	82	33	74	2.3	192	0	300	24
DEC.										
01-31	3203	4.0	68	29	61	2.2	180	0	240	19
JAN.										
01-31	3038	4.7	73	26	60	2.3	182	0	237	19
FEB.										
01-29	2141	6.2	71	28	61	2.7	184	0	237	19
MAR.										
01-31	1230	6.3	76	33	69	2.5	200	0	265	24
APR.										
01-30	1609	8.4	78	35	74	3.0	216	0	289	24
MAY										
01-31	1932	6.9	72	34	67	2.9	200	0	266	22
JUNE										
01-30	1632	5.2	68	33	65	2.3	192	0	240	20
JULY										
01-31	3225	4.7	69	30	62	2.4	188	0	244	20
AUG.										
01-31	3249	4.7	67	34	64	2.4	188	0	254	20
SEPT.										
01-30	3035	4.0	67	30	62	2.3	188	0	242	21
WTD. AVG. TIME	--	5.1	72	31	66	2.4	190	0	259	21
WTD. AVG. TONS PER DAY	2527	5.4	73	32	66	2.5	192	0	260	21
	--	35	493	214	449	17	1300	0	1770	144

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
11...	A3790	4.6	76	34	74	2.6	190	0	281	23
JAN.										
24...	A2430	4.7	72	28	58	2.3	178	0	238	20
APR.										
17...	A 918	8.2	75	36	72	2.7	208	0	282	24
JULY										
03...	A3120	4.6	71	31	63	2.4	188	0	242	21
SEPT.										
10...	A3740	4.5	67	31	62	2.3	184	0	238	20

A DISCHARGE AT TIME OF SAMPLING.

09234500 GREEN RIVER NEAR GREENDALE, UTAH--Continued

Period of record:
Dissolved solids (1956-58, 1959-68): Maximum, 866 mg/l Mar. 18-23, 1961; minimum, 236 mg/l June 1-30, 1961.
Hardness (1956-58, 1959-68): Maximum, 424 mg/l Dec. 1-9, 1960; minimum, 145 mg/l June 1-30, 1961.
Specific conductance (1956-58, 1959-68): Maximum daily, 1,340 micromhos Aug. 30, 1961; minimum daily, 325 micromhos June 2, 1961.
Water temperatures: Maximum, 24.0°C July 24, 25, 1959; minimum, freezing point on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.
Minimum observed during water year: Dissolved solids, 516 mg/l Jan. 24.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-31	.7	10	640	.87	5290	344	185	1.8	897	8.2
NOV.										
01-30	.6	7.5	625	.85	4910	340	183	1.7	885	8.1
DEC.										
01-31	.6	6.2	529	.72	4580	290	142	1.6	750	8.1
JAN.										
01-31	.4	8.0	517	.70	4240	288	139	1.5	741	8.2
FEB.										
01-29	.2	6.1	526	.72	3040	292	141	1.6	766	7.8
MAR.										
01-31	.5	8.5	608	.83	2020	324	160	1.7	863	8.2
APR.										
01-30	.7	8.9	649	.88	2820	336	159	1.8	907	7.9
MAY										
01-31	.7	11	592	.81	3090	318	154	1.6	842	8.1
JUNE										
01-30	.3	8.1	569	.77	2510	304	147	1.6	822	7.9
JULY										
01-31	.3	7.3	553	.75	4820	296	142	1.6	803	7.8
AUG.										
01-31	.5	8.0	554	.75	4860	306	152	1.6	806	7.7
SEPT.										
01-30	.4	6.6	555	.75	4550	292	138	1.6	803	7.7
WTD. AVG. TIME	.5	7.9	572	--	--	309	153	--	818	7.2
WTD. AVG. TONS PER DAY	.5	8.0	576	--	--	311	154	1.6	824	7.4
	3.4	54	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES										
OCT.										
11...	1.0	8.9	653	.89	6680	328	172	1.8	900	7.4
JAN.										
24...	.6	6.1	516	.70	3390	296	150	1.5	747	8.1
APR.										
17...	.4	8.7	637	.87	1580	332	161	1.7	902	7.4
JULY										
03...	.4	9.4	543	.74	4570	304	150	1.6	799	7.8
SEPT.										
10...	.3	9.3	553	.75	5580	292	141	1.6	796	7.7

09234500 GREEN RIVER NEAR GREENDALE, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	894	892	791	753	739	834	927	866	830	825	810	803
2	891	915	816	754	736	823	930	863	833	803	798	802
3	894	915	812	758	739	848	914	863	844	794	796	800
4	897	916	780	753	741	832	916	868	841	805	802	809
5	892	918	778	753	736	841	927	866	837	803	813	796
6	889	915	738	756	743	839	925	818	831	805	802	798
7	905	912	759	754	745	825	925	871	847	816	802	800
8	905	918	738	756	747	851	924	849	805	821	805	797
9	894	915	741	753	455	844	939	854	814	817	803	802
10	895	893	739	758	753	834	---	845	810	806	---	798
11	897	904	740	755	769	841	933	861	809	819	---	801
12	889	904	740	751	762	839	939	---	811	804	---	822
13	897	936	742	753	796	886	916	830	808	801	---	874
14	---	936	746	755	762	853	919	840	810	801	---	804
15	---	936	753	753	772	832	914	835	813	807	---	802
16	897	921	753	749	772	877	939	833	812	795	---	802
17	891	921	757	753	775	844	924	847	815	---	812	802
18	897	918	748	751	753	869	897	824	807	---	814	806
19	897	913	751	752	767	852	887	840	840	---	818	800
20	900	913	750	750	779	869	887	845	815	795	811	792
21	903	904	751	748	775	905	910	836	831	794	809	799
22	900	893	749	742	768	823	905	802	820	794	---	797
23	919	877	755	742	765	869	908	852	823	819	---	797
24	902	872	753	744	786	884	882	830	808	791	807	793
25	894	789	749	744	786	884	889	813	835	---	807	793
26	897	767	751	744	801	891	882	792	822	---	805	791
27	905	809	755	751	807	894	874	854	802	791	803	795
28	900	793	753	744	814	---	889	827	827	791	803	797
29	900	806	759	743	804	931	879	824	840	791	---	821
30	902	819	758	742	---	915	884	822	816	797	---	823
31	907	---	757	---	---	912	---	816	---	797	809	---
AVERAGE	898	888	757	750	757	862	910	840	822	803	---	804

09234500 GREEN RIVER NEAR GREENDALE, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	8	8	8	8	8	8	8	8	8	8	8	8	8	--	--	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	8
NOVEMBER.	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
DECEMBER.	10	10	10	9	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	8
JANUARY..	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5	4	4	5	5	4	5	4	4	5	4	5
FEBRUARY.	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	--	--	4
MARCH....	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4
APRIL....	5	5	5	5	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	4	4	5	5	5	5	5	5	5	5	--	4
MAY.....	5	5	4	4	4	4	5	5	5	5	5	5	5	5	5	5	4	4	4	4	5	5	5	5	5	5	5	5	5	5	4	4
JUNE.....	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	--	4
JULY.....	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	--	--	--	6	6	6	6	6	--	--	6	6	6	6	6	5
AUGUST...	7	7	7	7	7	7	7	7	--	--	--	--	--	--	--	--	7	7	7	8	8	--	--	8	8	8	8	8	--	--	8	--
SEPTEMBER	8	8	8	8	8	8	8	8	8	8	9	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	--	8

09251000 YAMPA RIVER NEAR MAYBELL, COLO.

LOCATION.--Lat 40°32'20", long 108°05'18", Moffat County, at county bridge 1 mile north of Maybell and about 3.5 miles downstream from gaging station.
DRAINAGE AREA.--3,410 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: November 1950 to September 1968.
Water temperatures: November 1950 to September 1968.
Sediment records: December 1950 to May 1958.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 656 mg/l Aug. 11; minimum, 120 mg/l June 11-13.
Hardness: Maximum, 384 mg/l Aug. 11; minimum, 76 mg/l June 11-13.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
OCT.											
01-24	278	7.6	37	17	37	--	176	73	18	--	.2
25-31	257	10	44	19	45	--	204	90	18	--	.3
NOV.											
01-30	246	12	50	25	50	2.6	232	108	25	.6	1.8
DEC.											
01-14	186	11	46	21	50	--	221	96	22	--	.3
15-31	203	13	42	18	44	--	202	81	20	--	.7
JAN.											
01-31	222	12	40	19	42	--	201	87	20	--	.6
FEB.											
01-29	244	13	39	20	44	--	194	98	22	--	.5
MAR.											
01-31	454	12	43	23	49	--	167	136	20	--	1.4
APR.											
01-13	1090	14	45	23	42	--	160	155	11	--	3.1
14-30	1800	12	26	10	11	1.7	106	42	3.0	.3	.8
MAY											
01-10	5280	11	24	12	8.4	--	104	30	3.3	--	.6
11-31	5730	10	22	6.3	5.8	--	80	19	2.8	--	.7
JUNE											
01-05	10180	7.9	14	17	10	--	92	24	4.6	--	.3
06-10	10180	8.9	26	15	21	--	126	43	9.8	--	.4
11-13	6960	7.2	14	9.7	11	--	84	24	5.3	--	.2
14-30	6600	8.3	27	13	21	1.9	132	42	10	.4	.3
JULY											
01-10	2610	4.6	34	18	34	--	169	67	19	--	.2
11-31	1020	5.3	38	17	45	--	176	81	22	--	.2
AUG.											
01-10	600	3.6	32	18	28	--	157	68	16	--	.3
11...	973	5.1	104	30	53	--	218	247	24	--	1.7
12-31	578	2.7	36	19	35	--	178	88	22	--	.2
SEPT.											
01-30	256	7.4	36	21	36	3.2	170	84	16	.5	1.1
WTD. AVG. TIME	--	9.0	27	13	20	--	123	47	9.1	--	.6
WTD. AVG. TONS PER DAY	1575	9.7	37	18	36	--	170	83	17	--	.8
	--	38	114	57	83	--	521	199	39	--	2.4

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	425	550	571	502	506	557	564	275	193	423	343	477
2	423	548	567	499	502	557	562	275	213	431	334	476
3	425	548	568	501	508	588	570	197	186	431	369	475
4	430	585	571	500	511	590	569	196	182	429	367	477
5	454	595	568	495	513	567	311	215	194	431	367	402
6	462	590	570	502	509	565	584	216	292	430	534	477
7	462	596	578	501	505	570	596	217	305	431	540	469
8	462	599	575	497	511	603	584	216	297	424	398	469
9	466	575	582	504	519	601	579	217	313	467	340	471
10	462	576	582	505	518	580	589	227	304	429	585	466
11	461	578	595	502	516	611	608	178	117	509	898	468
12	468	578	555	503	502	558	617	177	222	437	454	469
13	462	577	559	506	513	601	598	178	225	473	359	466
14	462	593	555	505	505	610	244	175	350	484	535	465
15	464	587	509	506	512	617	234	177	313	476	539	469
16	461	601	508	505	513	611	233	187	316	481	541	465
17	464	599	504	502	512	584	233	140	314	485	557	452
18	464	595	521	506	503	580	236	144	314	524	556	450
19	455	570	520	504	505	581	242	132	312	474	552	467
20	466	570	525	504	506	571	243	159	347	515	562	467
21	468	571	513	511	510	558	242	144	272	525	564	468
22	466	572	510	508	510	561	242	131	343	519	423	451
23	465	570	504	505	503	556	244	149	357	492	510	450
24	463	569	502	507	469	611	268	166	267	519	480	453
25	526	569	504	508	544	600	273	142	268	517	478	451
26	526	578	503	---	547	565	273	185	276	491	478	450
27	554	564	502	510	548	563	273	172	342	518	516	450
28	524	570	499	502	548	562	273	149	345	521	479	448
29	526	574	502	498	555	566	274	148	344	525	498	452
30	530	570	501	500	---	563	272	148	343	537	482	451
31	556	---	503	504	---	567	---	148	---	525	476	---
AVERAGE	474	578	535	504	515	581	388	180	282	480	487	461

09251000 YAMPA RIVER NEAR MAYBELL, COLO.--Continued

EXTREMES.--1967-68:--Continued
Specific conductance: Maximum daily, 898 micromhos Aug. 11; minimum daily, 117 micromhos June 11.
Water temperatures: Maximum, 22.0°C on several days during August and September; minimum, 1.0°C on many days during November to March.
Period of record:
Dissolved solids: Maximum, 656 mg/l Aug. 11, 1968; minimum, 64 mg/l June 13, 1964.
Hardness: Maximum, 384 mg/l Aug. 11, 1968; minimum, 43 mg/l June 1-21, 1959.
Specific conductance: Maximum daily, 947 micromhos Sept. 24, 1955; minimum daily, 94 micromhos June 14, 1959.
Water temperatures: Maximum, 29.5°C Aug. 5, 1963; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-24	.03	--	286	.39	215	162	18	1.3	451	7.7
25-31	.02	--	343	.47	238	188	21	1.4	534	7.9
NOV.										
01-30	.02	.08	375	.51	249	228	38	1.4	593	8.1
DEC.										
01-14	.03	--	363	.49	182	202	21	1.5	573	8.0
15-31	.04	--	324	.44	178	179	13	1.4	510	7.9
JAN.										
01-31	.05	--	331	.45	198	178	13	1.4	504	7.9
FEB.										
01-29	.07	--	338	.46	223	178	19	1.4	518	7.9
MAR.										
01-31	.07	--	366	.50	449	201	64	1.5	588	7.6
APR.										
01-13	.11	--	388	.53	1140	208	77	1.3	568	7.6
14-30	.02	.10	175	.24	850	109	22	.5	259	8.0
MAY										
01-10	.04	--	159	.22	2270	108	23	.4	221	7.5
11-31	.06	--	124	.17	1920	80	14	.3	161	7.5
JUNE										
01-05	.06	--	166	.23	4560	104	29	.4	205	7.8
06-10	.05	--	193	.26	5310	124	71	.8	311	7.3
11-13	.01	--	120	.16	2260	76	7	.5	168	7.1
14-30	.01	.06	197	.27	3510	120	12	.8	321	7.8
JULY										
01-10	.00	--	264	.36	1860	160	21	1.2	436	8.0
11-31	.00	--	309	.42	851	166	22	1.5	504	7.8
AUG.										
01-10	.01	--	264	.36	428	156	27	1.0	419	7.5
11...	.01	--	656	.89	1720	384	205	1.2	898	7.0
12-31	.01	--	307	.42	479	168	22	1.2	507	7.5
SEPT.										
01-30	.01	.08	282	.38	195	176	37	1.2	468	7.5
WTD. AVG. TIME	.04	--	201	--	--	122	26	--	304	7.7
WTD. AVG. TONS PER DAY	.04	--	293	--	--	167	29	1.2	459	7.8
	.16	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	14	17	17	14	14	15	14	15	12	15	15	11	14	12	13	12	14	12	14	11	11	11	9	9	9	7	8	7	6	8	4	11
NOVEMBER.	1	4	2	3	1	4	3	4	1	3	1	3	1	4	1	3	1	3	1	2	1	2	1	2	1	2	1	2	1	2	--	2
DECEMBER.	1	2	1	2	1	1	2	1	1	1	1	1	2	1	1	2	1	2	1	1	1	1	1	2	1	1	1	2	1	1	2	1
JANUARY..	1	2	1	2	1	2	1	2	1	1	1	2	1	1	1	2	1	2	1	1	1	2	1	2	--	--	1	--	1	2	1	1
FEBRUARY.	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	--	--	1
MARCH....	1	1	1	1	1	2	1	2	1	2	1	2	1	2	1	2	2	3	2	8	4	8	4	9	2	8	3	9	2	9	2	3
APRIL....	8	3	8	3	8	3	8	8	3	8	3	8	3	8	4	7	4	6	7	7	6	8	5	6	8	6	5	8	4	9	--	6
MAY.....	4	9	5	9	7	9	4	8	4	8	4	4	9	8	9	9	8	9	9	8	9	9	8	8	9	9	9	8	9	9	9	7
JUNE.....	11	14	11	14	11	14	11	14	11	14	11	14	11	14	11	14	11	14	11	14	11	15	12	15	12	15	12	15	13	16	--	12
JULY.....	13	17	13	17	13	17	13	17	13	17	12	17	13	17	13	17	13	17	17	17	14	18	15	18	14	20	14	19	19	21	17	21	16
AUGUST...	16	16	22	22	16	16	22	16	22	21	19	21	16	16	21	16	21	16	21	18	14	17	16	14	18	18	21	16	21	16	21	18
SEPTEMBER	21	15	21	16	15	21	15	21	16	21	15	21	16	21	21	15	14	21	16	21	16	16	21	22	15	21	21	15	22	21	--	18

09259700 LITTLE SNAKE RIVER NEAR BAGGS, WYO.

LOCATION.--Lat 41°00'00", long 107°55'10", in NE¼ sec.24, T.12 N., R.94 W., Carbon County, at gaging station 600 ft upstream from Wyoming-Colorado State line, 0.5 mile upstream from Scandinavian Wash, and 15 miles west of Baggs.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
OCT.												
10...	1030	126	13	35	12	38	2.1	175	0	52	12	.4
NOV.												
01...	1400	63	16	48	12	40	2.9	206	0	70	12	.3
JAN.												
10...	1000	83	20	41	11	23	2.2	188	0	28	6.4	.3
FEB.												
06...	1400	101	21	36	15	24	1.8	192	0	42	6.4	.3
MAR.												
05...	1430	158	17	27	21	34	3.0	192	0	68	6.7	.4
APR.												
02...	1630	645	16	40	13	35	2.2	168	0	89	7.8	.4
MAY												
09...	0900	1630	15	33	8.6	14	2.1	115	0	53	3.9	.2
JUNE												
06...	0800	4770	12	20	4.0	6.2	1.8	79	0	13	2.8	.2
18...	0830	2640	11	15	2.7	5.9	1.3	60	0	17	2.1	.2
JULY												
10...	0715	434	14	32	8.3	22	1.7	142	0	34	5.7	.3
AUG.												
06...	0730	64	6.7	49	19	70	3.2	254	0	121	21	.5

09259700 LITTLE SNAKE RIVER NEAR BAGGS, WYO.--Continued

DRAINAGE AREA.--3,020 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: July 1965 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.											
10...	.3	.05	253	.36	90	138	0	1.4	427	7.5	14
NOV.											
01...	.0	.12	302	.42	52	170	1	1.3	496	7.9	3
JAN.											
10...	.2	.01	224	.33	53	148	0	.8	394	8.0	0
FEB.											
06...	.3	.03	241	.35	70	152	0	.8	395	8.0	0
MAR.											
05...	.6	.02	272	.36	114	155	0	1.2	444	8.0	1
APR.											
02...	1.0	.03	287	.40	515	155	17	1.2	468	8.0	7
MAY											
09...	.3	.02	187	.29	951	118	24	.6	293	8.0	7
JUNE											
06...	.4	.03	99	.14	1340	68	3	.3	161	7.7	11
18...	.2	.05	84	.13	670	50	1	.4	128	8.0	12
JULY											
10...	.1	.05	188	.27	237	113	0	.9	316	7.9	18
AUG.											
06...	.2	.09	416	.60	75	202	0	2.2	716	7.7	16

09259950 LITTLE SNAKE RIVER ABOVE LILY, COLO.

LOCATION.--Lat 40°36'27", long 108°20'11", Moffat County, at bridge on State Highway 318, about 6 miles upstream from gaging station, about 10 miles northeast of Lily, and 16 miles upstream from mouth.
DRAINAGE AREA.--3,730 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1968.
Water temperatures: December 1950 to September 1960, October 1961 to September 1968.
Sediment records: May 1958 to September 1964.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 603 mg/l Sept. 1-30; minimum, 113 mg/l June 1-30.
Hardness: Maximum, 230 mg/l Nov. 26-30; minimum, 77 mg/l June 1-30.
Specific conductance: Maximum daily, 1,110 micromhos Aug. 12; minimum daily, 144 micromhos June 22.
Water temperatures: Maximum, 28.0°C July 25; minimum, freezing point on many days during November to March.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	BICAR-BONATE (HCO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)
OCT.										
01-09	76	12	53	13	90	226	152	29	--	1.7
10-20	84	13	45	11	71	206	105	21	--	.5
21-31	66	12	51	13	77	222	127	24	--	.4
NOV.										
01-09	48	14	55	15	74	238	133	25	--	.2
10-25	79	15	49	13	67	216	99	19	--	.3
26-30	52	16	64	17	87	268	148	29	--	.7
DEC.										
01-18	98	20	63	16	70	273	120	21	--	.3
19-31	112	18	48	16	57	224	95	16	--	.2
JAN.										
01-31	101	17	38	23	58	231	106	18	--	.1
FEB.										
01-25	117	17	45	17	54	217	108	18	--	.4
26-29	195	12	28	8.8	104	175	146	44	--	1.5
MAR.										
01-31	262	13	42	10	81	190	116	32	--	.3
APR.										
01-17	476	14	44	12	56	180	117	19	--	.7
18-30	741	15	42	10	85	193	141	29	--	1.4
MAY										
01-04	1720	15	42	11	36	176	72	7.9	--	2.5
05-11	2610	15	36	8.3	17	136	42	5.0	--	1.7
12-31	3210	15	27	6.1	10	108	22	3.6	.3	.7
JUNE										
01-30	3240	13	24	4.1	8.6	90	14	2.9	--	.4
JULY										
01-09	779	12	26	6.8	19	113	35	6.0	--	.3
10-18	336	15	38	8.0	34	158	63	10	--	.4
19-24	129	15	44	17	60	208	118	22	--	.4
25-31	80	14	49	20	80	236	162	28	--	.3
AUG.										
01-15	100	12	59	19	111	232	205	34	--	1.6
16-26	110	11	50	17	81	228	132	24	--	.4
27-31	43	9.2	53	18	99	236	161	32	--	.2
SEPT.										
01-30	29	8.0	51	22	129	242	225	39	--	.1
WTD. AVG. TIME	--	14	30	7.0	23	124	42	7.8	--	.7
WTD. AVG. TONS PER DAY	661	14	44	14	65	198	112	21	--	.5
	--	25	54	13	42	221	75	14	--	1.2

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	662	629	---	571	586	---	558	---	185	210	---	806
2	675	633	---	561	592	686	557	490	197	205	---	---
3	691	---	---	563	583	580	---	425	181	227	807	---
4	691	---	735	577	---	607	---	366	177	245	796	---
5	699	731	---	---	574	522	487	340	170	265	815	---
6	729	733	705	587	573	520	485	301	173	288	829	---
7	698	735	692	592	579	503	494	314	172	300	---	---
8	---	646	---	600	564	561	593	274	---	303	799	---
9	822	687	644	603	---	---	591	---	161	307	815	893
10	610	---	---	596	---	574	555	287	156	337	845	---
11	---	---	626	590	564	598	---	270	162	353	928	912
12	550	576	649	590	556	695	---	247	170	356	1110	910
13	543	581	620	588	562	654	---	234	169	370	903	---
14	556	562	673	595	575	586	---	217	167	---	743	---
15	---	587	695	607	547	609	---	216	158	403	810	---
16	572	573	709	616	---	638	556	212	---	421	694	993
17	---	---	660	610	---	---	498	215	---	455	697	---
18	592	554	---	610	---	558	816	235	---	493	706	---
19	602	550	---	---	525	656	604	---	---	537	---	---
20	---	547	---	---	533	660	653	235	152	565	618	---
21	627	540	559	---	---	609	771	211	149	594	609	---
22	638	---	---	605	490	699	649	208	144	633	---	---
23	602	577	566	---	504	655	620	213	154	---	646	---
24	649	597	573	---	---	696	586	209	149	653	---	---
25	---	---	576	---	---	663	584	188	156	681	---	---
26	657	---	---	581	658	638	628	191	163	700	700	---
27	660	---	559	572	615	594	---	---	178	709	775	---
28	647	847	545	---	693	---	615	197	189	---	759	---
29	652	785	---	---	606	526	581	173	194	753	770	---
30	---	684	---	577	---	569	591	172	199	763	774	---
31	641	---	555	569	---	572	---	168	---	773	---	---
AVERAGE	---	---	---	---	---	608	---	252	169	461	---	---

09259950 LITTLE SNAKE RIVER ABOVE LILY, COLO.--Continued

Period of record:
Dissolved solids (1950-51, 1952-68): Maximum, 2,330 mg/l July 24, 1955; minimum, 108 mg/l June 1-21, 1964.
Hardness (1950-51, 1952-68): Maximum, 1,340 mg/l July 24, 1955; minimum, 64 mg/l July 1-8, 10, 1957, June 1-14, 1958, Mar. 11, 1960.
Specific conductance (1950-51, 1952-68): Maximum daily, 3,150 micromhos Aug. 16, 1961; minimum daily, 135 micromhos June 10, 1958.
Water temperatures: Maximum, 31.0°C July 17, 1955; minimum, freezing point on many days during winter periods.

REMARKS.--Records of discharge are given for Little Snake River near Lily, Colo. (Station 09260000).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-09	.12	--	457	.62	93	186	1	2.9	716	7.9
10-20	.07	--	359	.49	81	156	0	2.5	575	7.8
21-31	.09	--	404	.55	72	182	0	2.5	644	7.9
NOV.										
01-09	.03	--	457	.62	59	198	3	2.4	682	7.9
10-25	.08	--	371	.50	79	177	0	1.9	563	7.7
26-30	.05	--	520	.71	73	230	10	2.5	772	7.8
DEC.										
01-18	.06	--	451	.61	119	223	0	2.0	674	8.1
19-31	.06	--	364	.50	110	185	1	1.8	560	8.0
JAN.										
01-31	.04	--	400	.54	109	190	1	1.8	591	8.0
FEB.										
01-25	.02	--	363	.49	115	180	2	1.8	558	8.0
26-29	.09	--	424	.58	223	106	0	4.4	651	7.9
MAR.										
01-31	.07	--	387	.53	274	147	0	2.9	615	7.8
APR.										
01-17	.10	--	358	.49	460	159	11	1.9	539	7.8
18-30	.11	--	412	.56	824	146	0	3.1	646	7.6
MAY										
01-04	.12	--	284	.39	1320	152	8	1.3	427	7.8
05-11	.11	--	206	.28	1450	123	11	.7	302	7.9
12-31	.12	.07	157	.21	1360	92	3	.5	218	7.8
JUNE										
01-30	.11	--	113	.15	989	77	3	.4	172	7.4
JULY										
01-09	.07	--	151	.21	318	94	1	.9	261	7.7
10-18	.10	--	237	.32	215	128	0	1.3	401	7.8
19-24	.08	--	374	.51	130	178	7	2.0	598	7.9
25-31	.06	--	463	.63	100	204	10	2.4	733	8.2
AUG.										
01-15	.13	--	577	.78	156	224	34	3.2	859	8.0
16-26	.00	--	433	.59	129	194	7	2.5	676	8.0
27-31	.07	--	505	.69	58	206	12	3.0	774	8.0
SEPT.										
01-30	.03	--	603	.82	47	220	28	3.8	907	8.2
WTD. AVG. TIME	.10	--	194	--	--	105	4	--	291	7.7
WTD. AVG. TONS PER DAY	.07	--	374	--	--	166	6	2.0	572	7.9
	.12	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	17	17	18	17	18	12	--	--	14	16	--	15	12	9	--	6	--	3	9	--	11	12	9	8	--	9	7	6	6	--	2	--
NOVEMBER.	2	3	--	--	1	1	1	3	1	--	--	1	7	1	1	7	--	4	3	4	1	--	0	0	--	--	--	0	0	0	--	--
DECEMBER.	--	--	--	0	--	0	0	--	0	--	0	0	0	0	0	0	0	--	--	--	0	--	0	0	0	--	0	0	--	--	0	--
JANUARY..	0	0	0	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--	--	0	--	--	--	0	0	--	--	0	0	--
FEBRUARY.	0	0	0	--	0	0	0	0	--	--	0	0	0	0	0	--	--	--	0	0	--	0	0	--	--	0	0	0	0	--	--	--
MARCH....	--	0	0	0	0	0	0	--	1	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	9	--	12	12	11	--
APRIL....	9	9	--	--	9	6	5	7	10	11	--	--	--	--	--	9	6	6	9	9	8	4	9	9	8	8	--	15	16	17	--	--
MAY.....	--	14	17	15	14	11	9	11	--	14	15	14	11	10	11	9	10	11	--	14	16	13	12	12	11	13	--	16	16	16	16	13
JUNE.....	15	14	20	17	15	16	13	--	12	13	16	16	17	16	15	--	--	--	--	20	20	20	18	18	19	21	21	20	18	18	--	17
JULY.....	17	22	23	20	21	24	24	24	23	24	23	24	24	--	24	24	25	26	25	27	24	24	--	22	28	24	26	--	26	24	24	23
AUGUST...	--	--	26	25	21	23	--	23	25	20	21	22	17	14	18	19	18	14	--	19	20	--	18	--	--	24	23	21	20	20	--	--
SEPTEMBER	20	--	--	--	--	--	--	--	20	--	19	19	--	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

09261000 GREEN RIVER NEAR JENSEN, UTAH

LOCATION.--Lat 40°24'34", long 109°14'05" (revised), in SW¼SE¼ sec.5, T.5 S., R.24 E., Uintah County, at gaging station 300 ft upstream from highway bridge, 1 mile downstream from Cub Creek and Chew Ranch, 4 miles southeast of Dinosaur National Monument headquarters, 6.5 miles northeast of Jensen, 12 miles upstream from Brush Creek, and 313.9 miles from mouth.
DRAINAGE AREA.--25,400 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: June 1947 to September 1952, April 1962 to September 1968.
Water temperatures: March 1949 to September 1959, October 1961 to September 1968.
Sediment records: May 1948 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 590 mg/l Nov. 1-30; minimum, 134 mg/l June 17-27.
Hardness: Maximum, 312 mg/l Oct. 1-31, Nov. 1-30; minimum, 92 mg/l June 17-27.
Specific conductance: Maximum daily, 898 micromhos Nov. 9; minimum daily, 207 micromhos June 24.
Water temperatures: Maximum, 21.0°C June 28, 29, July 10, 18, 29; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 3,500 mg/l Aug. 15; minimum daily, 29 mg/l Sept. 9.
Sediment loads: Maximum daily, 120,000 tons May 8; minimum daily, 190 tons Sept. 2.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.											
01-31	3609	--	--	--	--	--	83	196	0	284	26
NOV.											
01-30	3438	--	--	--	--	--	83	192	0	285	28
DEC.											
01-31	3587	--	--	--	--	--	78	180	0	249	24
JAN.											
01-31	3542	--	--	--	--	--	64	185	0	239	12
FEB.											
01-29	2660	--	--	--	--	--	63	192	0	208	24
MAR.											
01-31	2190	--	--	--	--	--	71	190	0	206	31
APR.											
01-30	3821	--	--	--	--	--	73	186	0	216	26
MAY											
01-02	5840	--	--	--	--	--	48	188	0	180	24
03-22	9742	--	--	--	--	--	25	141	0	83	11
23-31	11620	--	--	--	--	--	17	127	0	53	8.2
JUNE											
01-16	15340	--	--	--	--	--	19	115	0	53	7.6
17-27	11020	--	--	--	--	--	13	88	0	39	6.2
28-30	9287	--	--	--	--	--	22	103	0	74	4.9
JULY											
01-15	6731	--	--	--	--	--	36	139	0	124	15
16-31	4534	--	--	--	--	--	55	170	0	186	24
AUG.											
01-31	4172	--	--	--	--	--	56	186	0	211	26
SEPT.											
01-30	3401	--	--	--	--	--	64	184	0	217	26
WTD. AVG.	--	--	--	--	--	--	48	158	0	160	18
TIME											
WTD. AVG.	4935	--	--	--	--	--	60	174	0	200	22
TONS											
PER DAY	--	--	--	--	--	--	642	2100	0	2130	236

ANALYSES OF ADDITIONAL SAMPLES

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.											
05...	A 2340	4.7	68	36	71	2.7	--	190	0	269	26
JAN.											
22...	A 2850	5.9	67	26	55	2.5	--	190	0	208	22
APR.											
04...	A 3120	7.9	53	30	60	2.7	--	192	0	182	24
JULY											
19...	A 4840	5.7	53	26	49	2.4	--	164	0	176	18
SEPT.											
12...	A 3580	4.9	64	32	61	2.5	--	186	0	230	22

A DISCHARGE AT TIME OF SAMPLING.

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

Period of record:
Dissolved solids (1947-52, 1962-68): Maximum, 2,150 mg/l Sept. 10, 1963; minimum, 131 mg/l May 15-31, 1963.
Hardness (1947-51, 1962-68): Maximum, 1,250 mg/l Aug. 12, 1963; minimum, 84 mg/l June 1-16, 1963.
Specific conductance (1947-52, 1962-68): Maximum daily, 2,330 micromhos Sept. 10, 1963; minimum daily, 176 micromhos May 24, 1963.
Water temperatures: Maximum (1949-59, 1961-68), 30.0°C July 11, 1958; minimum (1949-59, 1961-64, 1965-68), freezing point on many days during winter periods.
Sediment concentrations (1948-68): Maximum daily, 40,600 mg/l Aug. 23, 1960; minimum daily, 9 mg/l Oct. 7-11, 1953, Nov. 22, 1962.
Sediment loads (1948-68): Maximum daily, 2,500,000 tons Mar. 29, 1962; minimum daily, 10 tons on many days during 1962-63.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Chemical-quality samples and temperature data collected at site 8 miles downstream from gaging station. Maximum observed during water year: Dissolved solids, 615 mg/l and hardness, 316 mg/l Oct. 5.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-31	--	--	588	.80	5730	312	151	2.1	864	8.0
NOV.										
01-30	--	--	590	.80	5480	312	155	2.1	857	8.0
DEC.										
01-31	--	--	506	.69	4900	272	124	2.1	748	7.9
JAN.										
01-31	--	--	479	.65	4580	279	127	1.7	744	8.1
FEB.										
01-29	--	--	512	.70	3680	271	114	1.7	740	8.1
MAR.										
01-31	--	--	523	.71	3090	260	104	1.9	780	8.0
APR.										
01-30	--	--	514	.70	5300	256	103	2.0	741	7.9
MAY										
01-02	--	--	476	.65	7510	272	118	1.3	726	7.7
03-22	--	--	273	.37	7180	164	48	.8	420	7.7
23-31	--	--	212	.29	6650	134	30	.6	329	7.5
JUNE										
01-16	--	--	184	.25	7620	118	24	.8	289	7.5
17-27	--	--	134	.18	3990	92	20	.6	218	7.5
28-30	--	--	146	.27	3660	120	36	.9	306	7.5
JULY										
01-15	--	--	354	.48	6430	185	71	1.2	510	7.6
16-31	--	--	479	.65	5840	247	138	1.5	688	7.8
AUG.										
01-31	--	--	517	.70	5820	286	133	1.5	761	7.7
SEPT.										
01-30	--	--	523	.71	4800	274	123	1.7	777	8.1
WTD. AVG. TIME	--	--	391	--	--	216	86	--	584	7.8
WTD. AVG. TONS PER DAY	--	--	467	--	--	251	108	1.6	691	7.9

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
05...	.9	6.9	615	.84	3890	316	160	1.7	858	7.5
JAN.										
22...	.3	6.0	506	.69	3890	274	118	1.4	736	8.1
APR.										
04...	.4	3.2	480	.65	4040	256	99	1.6	706	8.0
JULY										
19...	.5	5.3	435	.59	5690	238	104	1.4	649	7.9
SEPT.										
12...	.5	7.7	531	.72	5130	292	139	1.6	780	7.8

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	872	780	739	725	769	752	751	343	430	819	---
2	828	880	778	745	---	---	737	702	---	416	721	758
3	863	867	---	741	723	---	717	676	316	444	735	758
4	867	888	796	746	---	735	702	---	310	443	---	778
5	859	---	796	746	---	720	711	---	292	474	---	782
6	849	870	776	751	728	748	---	452	284	470	739	778
7	---	896	778	---	---	710	---	447	260	---	732	778
8	---	882	743	---	731	776	710	431	---	534	746	---
9	847	898	745	755	---	774	710	449	---	550	750	770
10	859	875	---	---	727	---	718	486	286	550	746	780
11	850	893	747	751	---	779	757	483	282	571	---	782
12	859	---	743	---	---	776	774	---	---	---	786	782
13	857	880	749	753	743	792	795	391	268	598	754	780
14	865	879	749	---	---	788	---	389	263	---	842	780
15	---	879	---	---	746	802	737	355	268	592	801	---
16	855	879	749	757	---	804	699	365	---	612	764	776
17	867	879	---	---	739	---	---	374	222	635	765	788
18	856	879	752	741	---	800	663	383	224	633	---	774
19	860	---	744	---	740	804	667	---	222	649	729	803
20	861	869	741	759	---	799	672	384	224	661	724	793
21	866	867	745	---	---	756	---	406	---	---	747	795
22	---	850	751	---	740	756	772	444	212	685	756	---
23	877	852	751	761	---	782	768	336	---	688	756	782
24	877	854	---	---	725	---	770	319	207	713	762	791
25	869	854	631	734	718	754	779	320	212	730	---	785
26	861	---	739	---	733	756	775	---	219	706	769	783
27	867	760	741	734	739	761	793	297	233	718	766	768
28	878	770	744	---	746	765	---	356	290	---	770	768
29	---	784	741	---	747	779	773	312	322	706	777	---
30	841	797	744	734	---	---	775	359	---	736	768	778
31	881	---	---	---	---	---	---	326	---	749	773	---
AVERAGE	861	860	750	---	---	---	739	415	---	604	761	780

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	--	15	14	13	14	14	--	--	14	14	11	12	16	16	--	10	13	11	13	8	12	--	11	7	8	10	12	11	--	8	7	11
NOVEMBER.	8	8	8	7	--	5	6	7	7	9	10	--	8	11	9	10	11	10	--	9	7	7	7	6	7	--	3	3	4	5	--	7
DECEMBER.	6	4	--	1	1	2	3	2	3	--	3	3	0	1	--	1	--	2	2	2	2	0	1	--	3	4	3	4	3	4	--	2
JANUARY..	2	2	2	1	0	1	--	--	1	--	2	--	1	--	--	0	--	0	--	0	--	--	1	--	0	--	1	--	--	1	--	--
FEBRUARY.	1	--	0	--	--	1	--	0	--	2	--	--	3	--	2	--	4	--	6	--	--	6	--	5	5	6	6	6	--	--	--	--
MARCH....	7	--	--	7	8	8	7	6	7	--	6	6	3	7	7	8	--	6	7	6	7	7	9	--	10	10	10	10	9	--	--	--
APRIL....	9	10	8	9	8	--	--	7	9	11	12	12	12	--	11	9	--	7	7	7	--	8	7	8	9	9	9	8	--	10	14	--	9
MAY.....	14	13	12	--	--	10	11	11	12	13	14	--	13	12	11	11	11	12	--	17	16	16	17	14	13	--	16	17	18	17	18	13
JUNE.....	18	--	18	18	18	17	16	--	--	14	14	--	17	18	18	--	19	19	19	19	--	20	--	19	19	19	20	21	21	--	--	--
JULY.....	18	18	18	18	20	20	--	20	19	21	20	--	19	--	18	18	19	21	19	19	--	18	20	17	19	17	19	--	21	18	17	19
AUGUST...	19	17	17	--	--	19	18	18	16	18	--	16	17	14	14	14	--	14	17	14	17	16	16	--	16	16	15	15	16	16		16
SEPTEMBER	--	16	16	15	15	16	16	--	16	14	16	15	14	16	--	13	13	14	13	13	14	--	12	12	13	13	12	13	--	12	--	14

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	3470	--	2000	3830	190	2000	3300	120	1100
2	3110	160	1300	3830	--	2000	3090	--	800
3	3470	--	1000	3850	190	2000	3010	--	600
4	3410	110	1000	4100	--	2000	2970	53	420
5	3520	120	1100	4070	--	2000	3040	--	530
6	3570	580	5600	3780	130	1300	3150	74	630
7	3650	--	5000	3450	--	1000	3090	--	600
8	3210	--	3000	3620	120	1200	3140	63	530
9	2990	240	1900	3800	--	2000	3140	--	540
10	3350	--	2000	3760	190	1900	3130	--	500
11	3750	280	2800	3670	--	2000	3150	66	560
12	3640	--	3000	3710	--	1000	3170	--	480
13	3640	330	3200	3520	110	1000	3120	47	400
14	3800	--	3000	3120	93	780	3100	--	1000
15	3730	--	3000	3230	110	960	3560	--	2000
16	3900	250	2600	3230	--	900	4260	--	3000
17	3510	--	3000	3230	83	720	4300	--	4000
18	3710	290	2900	3230	--	700	4250	430	4900
19	3780	--	2000	3220	--	700	3620	--	3000
20	3820	180	1900	3240	80	700	2910	110	860
21	3830	--	2000	3280	--	800	3120	--	2000
22	4150	--	4000	3270	93	820	4230	430	4900
23	4120	330	3700	3200	--	700	4100	--	4000
24	4030	--	3000	3210	72	620	3870	--	4000
25	3980	200	2100	3250	--	600	4110	290	3200
26	3750	--	2000	3190	--	600	4040	--	3000
27	3810	240	2500	3090	75	630	4130	330	3700
28	3050	--	2000	2970	--	600	4180	--	3000
29	3340	--	2000	3070	74	610	4250	290	3300
30	3150	250	2100	3110	--	800	4290	--	3000
31	3640	--	2000	--	--	--	4390	--	3000
TOTAL	111880	--	78700	103130	--	33640	111210	--	63550

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	4340	290	3400	2820	--	1000	3170	490	4200
2	4370	--	4000	2880	--	1000	2410	--	3000
3	4330	320	3700	2900	--	1000	1970	--	3000
4	3730	--	2000	2900	--	1000	1740	480	2300
5	3460	160	1500	2730	--	900	1440	--	2000
6	4240	--	2000	2320	--	800	1800	430	2100
7	4450	--	2000	2580	--	900	1780	--	2000
8	4450	--	2000	2540	--	900	1910	430	2200
9	4410	--	2000	2300	--	800	2770	--	3000
10	4390	--	2000	2630	--	900	3020	--	2000
11	4390	--	2000	2720	--	900	2430	170	1100
12	4360	--	2000	2470	--	800	2500	--	1000
13	4380	--	2000	2830	--	1000	2710	210	1500
14	4390	--	2000	2720	--	900	2740	--	2000
15	4200	--	2000	2880	--	1000	2770	240	1800
16	3400	--	1000	2880	--	1000	2920	--	2000
17	2850	--	1000	2790	--	1000	2840	--	2000
18	2850	--	1000	2680	--	900	2620	180	1300
19	2850	--	1000	2050	--	600	2760	--	1300
20	2850	--	1000	2380	--	800	2090	180	1000
21	2850	--	1000	2440	--	800	1960	--	900
22	2850	--	1000	2680	--	900	1680	170	770
23	2850	--	1000	2980	--	1000	1650	--	800
24	2850	--	1000	2990	140	1100	1600	--	700
25	2840	--	1000	2860	--	900	1620	170	740
26	2840	--	1000	2590	110	770	1660	--	900
27	2850	--	1000	2760	--	1000	1700	210	960
28	2790	--	1000	3110	260	2200	1870	--	1000
29	2800	--	1000	1740	--	2000	1890	280	1400
30	2740	--	1000	--	--	--	1870	--	2000
31	2860	--	1000	--	--	--	1990	--	2000
TOTAL	109810	--	50600	77150	--	28770	67880	--	52970

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN SEDIMENT CONCEN-TRATION (MG/L)	APRIL SEDIMENT LOAD (TONS PER DAY)	MAY MEAN DISCHARGE (CFS)	MAY MEAN SEDIMENT CONCEN-TRATION (MG/L)	MAY SEDIMENT LOAD (TONS PER DAY)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN SEDIMENT CONCEN-TRATION (MG/L)	JUNE SEDIMENT LOAD (TONS PER DAY)
1	2000	340	1800	5140	--	20000	15900	--	50000
2	2300	--	3000	6540	--	30000	16900	--	60000
3	2620	900	6400	8420	2600	59000	17100	1400	65000
4	2970	990	7900	9650	--	60000	17000	--	50000
5	3000	830	6700	10600	--	70000	17600	840	40000
6	2630	--	3000	11600	2200	69000	17400	--	40000
7	2410	--	2000	12400	--	100000	17900	910	44000
8	2530	380	2600	13100	3400	120000	18500	--	50000
9	2750	--	4000	9680	2000	52000	18200	--	50000
10	2460	590	3900	8340	800	18000	16700	820	37000
11	2300	--	3000	8710	--	20000	14200	--	30000
12	2250	510	3100	9350	--	30000	11300	--	20000
13	2360	--	3000	10200	1700	47000	11300	--	20000
14	3090	--	6000	11300	--	50000	11100	800	24000
15	4050	1200	13000	11000	1800	53000	12000	--	30000
16	4060	--	10000	10200	--	40000	12300	--	30000
17	3710	--	10000	9370	1100	28000	11600	420	13000
18	4330	--	20000	8200	--	10000	12000	--	30000
19	5700	3400	52000	7630	--	10000	11600	830	26000
20	6060	--	50000	7140	370	7100	11600	--	30000
21	6250	--	60000	8370	--	20000	11500	--	20000
22	6200	3300	55000	9590	1200	31000	11300	--	20000
23	5530	--	30000	10500	--	40000	11700	--	30000
24	5270	1800	26000	13800	1700	63000	11000	740	22000
25	4760	--	10000	13200	--	60000	10500	--	20000
26	4510	900	11000	11600	--	40000	9570	540	14000
27	4610	--	10000	9640	1200	31000	8890	--	10000
28	4700	950	12000	9470	--	30000	9010	490	12000
29	4630	--	10000	9790	980	26000	9520	--	10000
30	4600	--	10000	12100	--	30000	9330	--	10000
31	--	--	--	14500	840	33000	--	--	--
TOTAL	114640	--	445400	311130	--	1297100	394520	--	907000

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN SEDIMENT CONCEN-TRATION (MG/L)	JULY SEDIMENT LOAD (TONS PER DAY)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN SEDIMENT CONCEN-TRATION (MG/L)	AUGUST SEDIMENT LOAD (TONS PER DAY)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEPTEMBER SEDIMENT LOAD (TONS PER DAY)
1	9520	530	14000	3080	--	700	2710	--	600
2	8960	--	8000	3690	88	880	2260	31	190
3	7910	160	3400	3820	--	2000	2230	--	200
4	7110	--	5000	3830	--	2000	3570	46	440
5	6590	390	6900	3430	--	2000	4170	--	1000
6	6760	--	7000	3750	--	3000	4120	130	1400
7	6220	--	6000	3700	410	4100	4090	--	1000
8	6220	360	6000	3950	--	3000	4040	--	1000
9	6300	--	6000	4150	140	1600	3280	29	260
10	6160	300	5000	3510	--	1000	3440	--	300
11	5800	--	5000	4560	--	20000	3550	33	320
12	5970	--	4000	4000	1600	17000	3700	150	1500
13	6200	--	4000	4200	--	20000	3610	88	860
14	5700	--	4000	4420	2800	33000	4090	--	1000
15	5540	230	3400	5180	3500	49000	4040	--	1000
16	5630	--	4000	4810	680	8800	3050	42	350
17	5660	270	4100	4670	--	7000	3000	--	300
18	5200	--	3000	4720	--	6000	2920	35	280
19	5150	210	2900	3480	400	3800	2830	--	400
20	4900	--	2000	4180	--	4000	3270	71	630
21	4510	--	2000	4560	250	3100	3770	--	1000
22	3870	130	1400	4500	--	2000	3310	--	400
23	4240	--	2000	4500	120	1500	3120	34	290
24	4840	200	2600	4470	--	1000	3260	--	300
25	4790	--	3000	4430	--	900	3780	48	490
26	3800	190	1900	4360	57	670	3500	--	1000
27	4740	--	3000	4370	--	1000	3300	190	1700
28	3910	--	3000	4370	190	2200	3450	--	2000
29	3470	320	3000	4300	--	2000	3270	--	2000
30	3840	--	2000	4200	180	2000	3310	240	2100
31	3990	--	1000	4150	--	1000	--	--	--
TOTAL	173500	--	128600	129340	--	206250	102040	--	24310

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1806230
TOTAL LOAD FOR YEAR (TONS) 3316890

09261000 GREEN RIVER NEAR JENSEN, UTAH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	SUSPENDED SEDIMENT PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 5, 1967	1100	12	2340	114	720	--	--	--	--	--	--	--	--	--			--
NOV 14.....	1230	15	2680	87	630	33	39				59	73	99	100	--	--	VPWC
FEB 26, 1968	1430	1	2370	108	691	--	--	--			--	--	--	--			--
APR 4.....	1310	7	3120	964	9120	49	57	79			87	95	100	--	--	--	VPWC
MAY 9.....	1220	10	9420	1800	45800	24	30	43			64	79	93	99	100	--	VPWC
JUN 5.....	1350	18	17800	828	39800	30	34		--		83	99	100	--	--	--	VPWC
JUN 28.....	1025	18	8030	423	9170	14	16		--		55	83	99	100	--	--	VPWC
JUL 19.....	1100	16	4840	197	2570	9	10		--		42	81	99	100	--	--	VPWC
AUG 15.....	1200	12	5280	3430	48900	49	63		82		92	96	99	100	--	--	VPWC
SEP 12.....	1400	15	3580	162	1570	8	9		--		35	69	98	100	--	--	VPWC

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH

LOCATION (revised).--Lat 40°12'57", long 109°47'05", in SE¼SE¼ sec.17, T.3 S., R.2 E., Uintah Meridian, Uintah County, at gaging station 0.2 mile downstream from Uinta River, 1.2 miles southeast of Randlett, and 6.5 miles southeast of Fort Duchesne.
DRAINAGE AREA.--3,920 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1951, November 1956 to September 1968.
Water temperatures: December 1950 to September 1951, November 1956 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,920 mg/l Apr. 18-19; minimum, 259 mg/l June 17-21.
Hardness: Maximum, 784 mg/l Oct. 1-6; minimum, 142 mg/l June 17-21.
Specific conductance: Maximum daily, 2,680 micromhos Apr. 18; minimum daily, 317 micromhos June 19.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-06	173	--	--	--	--	--	310	358	0	868	129
07-12	256	--	--	--	--	--	265	352	0	739	106
13-31	184	--	--	--	--	--	268	354	0	762	110
NOV.											
01-20	259	--	--	--	--	--	234	340	0	668	100
21-27	369	--	--	--	--	--	241	354	0	666	84
28-30	463	--	--	--	--	--	185	348	0	536	64
DEC.											
01-04	495	--	--	--	--	--	146	316	0	431	60
05-24	516	--	--	--	--	--	115	292	0	328	44
25-31	574	--	--	--	--	--	85	252	0	244	34
JAN.											
01-31	558	--	--	--	--	--	91	271	0	289	19
FEB.											
01-20	557	--	--	--	--	--	90	260	0	274	43
21-26	630	--	--	--	--	--	118	276	0	351	62
27-29	650	--	--	--	--	--	247	320	0	662	116
MAR.											
01-04	688	--	--	--	--	--	241	332	0	675	100
05-11	779	--	--	--	--	--	168	320	0	500	70
12-18	702	--	--	--	--	--	154	318	0	438	72
19-31	548	--	--	--	--	--	137	314	0	392	66
APR.											
01-08	526	--	--	--	--	--	161	330	0	440	75
09-17	417	--	--	--	--	--	179	306	0	482	74
18-19	740	--	--	--	--	--	370	342	0	966	148
20-21	745	--	--	--	--	--	250	362	0	707	92
22-30	547	--	--	--	--	--	195	328	0	530	80
MAY											
01-12	621	--	--	--	--	--	133	284	0	371	59
13-15	829	--	--	--	--	--	197	296	0	554	77
16-21	587	--	--	--	--	--	206	312	0	544	71
22-29	802	--	--	--	--	--	125	272	0	336	53
30-31	1395	--	--	--	--	--	76	216	0	209	27
JUNE											
01-03	2617	--	--	--	--	--	39	190	0	126	26
04-08	5174	--	--	--	--	--	25	143	0	70	14
09-13	2992	--	--	--	--	--	49	173	0	138	30
14-16	4380	--	--	--	--	--	25	149	0	67	16
17-21	5916	--	--	--	--	--	21	135	0	57	13
22-25	5162	--	--	--	--	--	24	136	0	64	14
26-30	2782	--	--	--	--	--	35	141	0	94	18
JULY											
01-03	1130	--	--	--	--	--	77	184	0	200	32
04-09	565	--	--	--	--	--	134	258	0	379	58
10-16	400	--	--	--	--	--	153	262	0	460	75
17-31	164	--	--	--	--	--	269	330	0	751	115
AUG.											
01-10	347	--	--	--	--	--	177	308	0	505	87
11-14	509	--	--	--	--	--	167	306	0	475	79
15-16	852	--	--	--	--	--	137	298	0	400	70
17-22	513	--	--	--	--	--	126	302	0	372	58
23-31	311	--	--	--	--	--	153	300	0	432	72
SEPT.											
01-14	146	--	--	--	--	--	296	322	0	790	118
15-30	267	--	--	--	--	--	211	326	0	600	90
WTD. AVG. TIME	--	--	--	--	--	--	99	230	0	279	43
WTD. AVG. TONS PER DAY	770	--	--	--	--	--	164	293	0	463	68
	--	--	--	--	--	--	205	478	0	580	90

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
06...	A223	13	132	90	284	5.2	--	356	0	817	150
FEB.											
15...	A1860	11	69	41	77	1.2	--	256	0	225	36
APR.											
05...	A468	11	78	53	112	2.2	--	308	0	323	50
JULY											
15...	A346	9.7	75	47	110	3.1	--	244	0	345	51
SEPT.											
11...	A119	11	123	81	248	4.4	--	332	0	722	118

A DISCHARGE AT TIME OF SAMPLING.

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 27.0°C July 15; minimum, freezing point on many days during November to February.
Period of record:
Dissolved solids: Maximum, 3,330 mg/l Aug. 1-6, 9-26, 29, 30, 1961; minimum, 209 mg/l June 22-24, 1965.
Hardness (1956-68): Maximum, 1,020 mg/l May 1-15, 1959; minimum, 133 mg/l June 22-24, 1965.
Specific conductance (1950-51, 1956-60, 1961-68): Maximum daily, 4,490 micromhos Aug. 24, 1960; minimum daily, 291 micromhos May 29, 1951.
Water temperatures: Maximum, 27.0°C July 15, 1968; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-06	--	--	1740	2.37	813	784	410	5.1	2210	8.0
07-12	--	--	1580	2.15	1090	632	343	4.6	1920	8.0
13-31	--	--	1550	2.11	770	656	366	4.5	2020	8.0
NOV.										
01-20	--	--	1360	1.85	951	606	327	4.1	1840	8.1
21-27	--	--	1230	1.67	1230	578	288	4.4	1700	8.1
28-30	--	--	1050	1.43	1310	532	247	3.5	1470	8.2
DEC.										
01-04	--	--	950	1.29	1270	474	215	2.9	1340	8.0
05-24	--	--	770	1.05	1070	394	155	2.5	1090	8.0
25-31	--	--	611	.83	947	324	117	2.0	887	8.0
JAN.										
01-31	--	--	624	.85	940	353	131	2.1	961	8.1
FEB.										
01-20	--	--	697	.95	1050	362	149	2.1	987	8.0
21-26	--	--	859	1.17	1460	422	196	2.5	1190	8.0
27-29	--	--	1460	1.99	2560	578	316	4.5	1880	8.0
MAR.										
01-04	--	--	1460	1.99	2710	592	320	4.3	1910	8.0
05-11	--	--	1130	1.54	2380	516	254	3.2	1510	8.1
12-18	--	--	1020	1.39	1930	484	223	3.0	1390	8.1
19-31	--	--	967	1.32	1430	460	203	2.8	1320	8.2
APR.										
01-08	--	--	1050	1.43	1490	484	213	3.2	1460	8.0
09-17	--	--	1040	1.41	1170	468	217	3.6	1420	8.0
18-19	--	--	1920	2.61	3840	690	410	6.1	2410	8.0
20-21	--	--	1440	1.96	2900	618	321	4.4	1860	8.1
22-30	--	--	1120	1.52	1650	510	241	3.8	1510	8.2
MAY										
01-12	--	--	844	1.15	1420	412	179	2.9	1200	7.8
13-15	--	--	1120	1.52	2510	500	257	3.8	1500	7.8
16-21	--	--	1030	1.40	1630	474	218	4.1	1420	8.0
22-29	--	--	767	1.04	1660	376	153	2.8	1100	7.9
30-31	--	--	500	.68	1880	268	91	2.0	739	7.7
JUNE										
01-03	--	--	435	.59	3070	238	82	1.1	622	8.0
04-08	--	--	263	.36	3670	156	39	.9	404	7.9
09-13	--	--	428	.58	3460	222	80	1.4	615	8.0
14-16	--	--	275	.37	3250	160	38	.9	412	8.0
17-21	--	--	259	.35	4140	142	31	.8	362	7.9
22-25	--	--	264	.36	3680	146	34	.9	378	7.8
26-30	--	--	297	.40	2230	162	46	1.2	452	7.8
JULY										
01-03	--	--	466	.63	1420	236	85	2.2	701	7.9
04-09	--	--	830	1.13	1270	396	184	2.9	1180	8.2
10-16	--	--	1000	1.36	1080	466	251	3.1	1410	8.2
17-31	--	--	1500	2.04	664	630	359	4.7	2010	8.2
AUG.										
01-10	--	--	1150	1.57	1080	516	263	3.4	1600	7.9
11-14	--	--	1080	1.47	1480	494	243	3.3	1490	7.8
15-16	--	--	476	1.33	1100	462	218	2.8	1370	8.1
17-22	--	--	903	1.23	1250	444	196	2.6	1270	8.2
23-31	--	--	1010	1.37	848	464	218	3.1	1400	8.2
SEPT.										
01-14	--	--	1480	2.01	583	610	346	5.2	1950	7.8
15-30	--	--	1370	1.86	988	560	293	3.9	1720	7.8
WTD. AVG. TIME	--	--	667	--	--	326	137	--	935	8.0
WTD. AVG. TONS PER DAY	--	--	1010	--	--	465	223	3.2	1380	8.0
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
06...	1.2	.4	1770	2.27	1070	700	408	4.7	2270	7.6
FEB.										
15...	.9	1.5	609	.83	3060	340	130	1.8	900	7.7
APR.										
05...	.8	1.2	813	1.11	1030	410	157	2.4	1160	8.1
JULY										
15...	.5	2.0	794	1.08	742	380	180	2.5	1120	8.2
SEPT.										
11...	1.2	.6	1530	2.00	492	640	368	4.3	2030	7.9

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2330	1930	1450	961	937	2190	1250	1420	705	594	1600	1620
2	2150	1900	1360	1020	940	2030	1330	1360	588	664	1760	1800
3	2180	1860	1210	890	987	1780	1560	1260	573	845	1720	1800
4	2200	1960	1310	980	963	1700	1460	1180	406	1040	1520	1970
5	2220	1950	1080	1010	937	1630	1420	1110	393	1110	1600	1990
6	2220	1810	1110	990	946	1540	1420	1110	420	1140	1480	2060
7	2100	1770	1110	1080	949	1510	1660	1090	378	1180	1630	1990
8	1830	1770	1150	1010	978	1430	1510	1080	415	1320	1550	2040
9	---	1580	1150	1010	984	1440	1450	1210	681	1300	1610	1920
10	1850	1620	1170	948	1000	1530	1430	1290	669	1350	1510	1990
11	1860	1790	1070	1050	1010	1470	1410	1150	588	1360	1420	2010
12	1960	1810	1060	933	1000	1450	1440	1160	618	1270	1450	1910
13	1940	1840	891	1000	984	1450	1380	1630	496	1400	---	1980
14	2030	1840	1300	1010	957	1410	1430	1560	403	1480	1590	1990
15	2010	1880	1270	967	960	1360	1340	1310	375	1500	1510	1850
16	2100	1880	1220	933	1020	1390	1390	1320	457	1530	1230	1720
17	1950	1900	1110	954	1060	1340	1410	1350	336	1750	1250	1760
18	1920	1880	1070	970	1040	1340	2680	1410	383	1790	1290	1730
19	1920	1890	---	957	994	1320	2140	1430	317	1970	1310	1880
20	1930	---	893	936	978	1340	1940	1520	408	2100	1240	1730
21	1930	1950	893	930	1120	1340	1770	1480	349	2160	1230	1670
22	1930	1780	1040	912	---	1370	1550	1200	418	2160	1270	1670
23	1940	---	1070	907	1130	1380	1490	1020	404	2100	1270	1640
24	2030	---	1020	896	1170	1300	1460	1020	360	1980	1250	1570
25	2010	---	964	893	1200	1260	1420	954	319	2030	1200	1660
26	2140	1570	896	882	1290	1290	1440	1160	415	2090	1260	1630
27	2140	1470	883	893	1530	1250	1420	1240	399	2050	1330	1690
28	2080	1470	902	888	2000	1340	1660	1210	509	2030	1520	1740
29	2100	1420	933	927	2110	1350	1580	975	452	2090	1540	1700
30	2110	1520	786	986	---	1350	1530	877	466	1940	1570	1710
31	2140	---	845	986	---	1290	---	601	---	1890	1600	---
AVERAGE	2040	1770	1070	958	1110	1460	1550	1220	457	1590	1440	1810

09302000 DUCHESNE RIVER NEAR RANDLETT, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	13	14	14	13	13	12	10	12	10	11	11	11	9	14	7	6	6	6	7	6	6	7	7	6	6	6	4	7	4	3	6	8
NOVEMBER.	4	5	2	1	2	1	0	1	1	3	3	4	4	6	4	6	5	4	4	4	5	4	--	--	--	1	0	0	0	2	--	2
DECEMBER.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEBRUARY.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	0	0	0	0	1	1	1	--	--	0
MARCH....	1	1	1	1	1	2	3	2	2	4	2	2	4	4	3	4	5	3	3	3	3	3	6	6	7	11	4	7	7	9	8	3
APRIL....	9	9	7	4	7	6	6	4	5	7	8	10	9	5	7	9	7	6	7	9	7	7	6	8	8	8	8	8	8	11	--	7
MAY.....	9	11	7	13	14	11	7	9	11	12	13	13	11	11	8	10	10	12	12	15	16	14	13	13	11	11	13	14	16	16	13	11
JUNE....	13	14	16	14	13	13	12	12	11	13	13	15	16	14	13	13	14	14	13	14	14	15	16	16	19	16	17	17	18	13	--	14
JULY....	14	13	17	18	17	18	19	18	19	19	22	20	20	19	27	20	19	20	21	20	19	19	20	21	21	21	21	21	20	21	19	19
AUGUST...	21	19	18	19	21	18	18	21	20	20	20	19	--	17	15	16	17	13	16	16	17	17	13	14	15	15	17	17	17	15	16	17
SEPTEMBER	16	16	14	13	13	14	16	14	15	14	16	16	16	11	13	11	10	13	13	14	10	9	12	10	13	12	12	12	12	11	--	13

09306500 WHITE RIVER NEAR WATSON, UTAH

LOCATION.--Lat 39°59', long 109°11', in sec.2, T.10 S., R.24 E., Uintah County, at bridge on State Highway 45, 350 ft upstream from gaging station, about 1 mile downstream from Evacuation Creek, and 7 miles north of Watson.
DRAINAGE AREA.--4,020 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1968.
Water temperatures: December 1950 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,050 mg/l Aug. 14-15; minimum, 243 mg/l June 1-10.
Hardness: Maximum, 534 mg/l Aug. 14-15; minimum, 154 mg/l June 15-25.
Specific conductance: Maximum daily, 1,660 micromhos Aug. 4; minimum daily, 316 micromhos June 27.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
OCT.											
01-04	330	--	--	--	--	--	220	194	82	--	--
05-09	417	--	--	--	--	--	326	201	78	--	--
14-29	344	--	--	--	--	--	208	183	84	--	--
30-31	368	--	--	--	--	--	220	195	87	--	--
NOV.											
01-14	350	--	--	--	--	--	241	197	83	--	--
15-30	316	--	--	--	--	--	242	195	90	--	--
DEC.											
01-31	296	--	--	--	--	--	256	205	103	--	--
JAN.											
01-31	291	--	--	--	--	--	256	192	100	--	--
FEB.											
01-29	352	--	--	--	--	--	248	180	117	--	--
MAR.											
01-14	394	--	--	--	--	--	240	210	82	--	--
15-19	457	--	--	--	--	--	248	216	88	--	--
20-31	380	--	--	--	--	--	256	240	84	--	--
APR.											
01-30	480	--	--	--	--	--	234	233	78	--	--
MAY											
01-04	589	--	--	--	--	--	224	215	72	--	--
05-11	885	--	--	--	--	--	194	136	46	--	--
12-21	1026	--	--	--	--	--	194	131	42	--	--
22-31	1721	--	--	--	--	--	194	94	26	--	--
JUNE											
01-10	2960	--	--	--	--	--	149	52	20	--	--
11-14	2225	--	--	--	--	--	156	58	20	--	--
15-25	2616	--	--	--	--	--	139	48	18	--	--
26-30	1602	--	--	--	--	--	136	58	21	--	--
JULY											
01-04	1068	--	--	--	--	--	155	78	34	--	--
05-10	772	--	--	--	--	--	183	105	45	--	--
11-14	600	--	--	--	--	--	201	133	62	--	--
15-24	415	--	--	--	--	--	224	157	62	--	--
25-31	453	--	--	--	--	--	266	229	70	--	--
AUG.											
01-13	738	--	--	--	--	--	290	255	72	--	--
14-15	1225	--	--	--	--	--	264	395	120	--	--
16-17	832	--	--	--	--	--	246	187	26	--	--
18-31	554	--	--	--	--	--	234	135	28	--	--
SEPT.											
01-30	362	--	--	--	--	--	224	171	27	--	--
WTD. AVG. TIME	--	--	--	--	--	--	203	138	51	--	--
WTD. AVG. TONS PER DAY	652	--	--	--	--	--	230	177	71	--	--
	--	--	--	--	--	--	359	244	91	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
02...	A299	12	63	29	87	1.2	214	178	78	.8	.0
JAN.											
08...	A270	15	76	29	104	2.1	256	176	109	.5	1.0
APR.											
05...	A419	13	74	30	95	2.2	232	217	74	.5	.2
JULY											
19...	A391	13	60	34	72	2.2	232	166	59	.5	.1
SEPT.											
13...	A287	12	64	28	60	1.9	224	178	29	.6	.6

A DISCHARGE AT TIME OF SAMPLING.

09306500 WHITE RIVER NEAR WATSON, UTAH--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 22.0°C on several days during July and August; minimum, freezing point on many days during November and December.
Period of record:
Dissolved solids (1950-54, 1955-68): Maximum, 2,380 mg/l July 21, 1966; minimum, 209 mg/l May 23-31, 1964.
Hardness (1954-68): Maximum, 1,410 mg/l Aug. 4, 1955; minimum, 144 mg/l Feb. 3, 1965.
Specific conductance: Maximum daily, 4,450 micromhos Aug. 4, 1955; minimum daily, 316 micromhos June 27, 1968.
Water temperatures: Maximum, 31.0°C Aug. 8, 1954; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-04	--	--	566	.77	504	280	100	2.6	904	8.0
05-09	--	--	598	.81	673	304	37	3.2	938	8.0
14-29	--	--	550	.75	511	278	107	2.4	880	8.1
30-31	--	--	560	.76	556	276	96	2.8	903	8.0
NOV.										
01-14	--	--	610	.83	576	290	92	2.7	932	8.1
15-30	--	--	649	.88	554	296	98	2.7	971	8.0
DEC.										
01-31	--	--	704	.96	563	320	110	2.8	1070	8.1
JAN.										
01-31	--	--	672	.91	528	306	96	2.8	1030	8.0
FEB.										
01-29	--	--	676	.92	642	296	93	3.0	1060	7.9
MAR.										
01-14	--	--	660	.90	702	272	75	3.1	998	8.1
15-19	--	--	660	.90	814	294	91	3.0	1030	7.6
20-31	--	--	714	.97	733	328	118	2.8	1060	8.2
APR.										
01-30	--	--	679	.92	880	314	122	2.6	1020	7.8
MAY										
01-04	--	--	629	.86	1030	280	96	2.7	910	8.1
05-11	--	--	461	.63	1100	232	73	1.8	664	8.0
12-21	--	--	437	.59	1210	220	61	1.8	637	8.0
22-31	--	--	356	.48	1650	203	44	1.3	523	7.8
JUNE										
01-10	--	--	243	.33	1940	162	40	.7	404	7.9
11-14	--	--	284	.39	1710	166	38	.8	419	8.0
15-25	--	--	246	.33	1740	154	40	.6	362	7.8
26-30	--	--	268	.36	1160	160	48	.7	394	8.0
JULY										
01-04	--	--	334	.45	963	187	60	1.0	484	7.9
05-10	--	--	474	.64	988	228	78	1.3	612	8.0
11-14	--	--	526	.72	852	252	87	1.8	764	8.1
15-24	--	--	705	.96	790	286	102	1.8	812	8.2
25-31	--	--	610	.83	746	346	128	2.3	1020	7.9
AUG.										
01-13	--	--	762	1.04	1520	376	138	2.4	1120	8.0
14-15	--	--	1050	1.43	3470	534	318	2.3	1460	7.7
16-17	--	--	584	.79	1310	316	114	1.3	856	8.0
18-31	--	--	476	.65	712	276	84	1.2	723	7.9
SEPT.										
01-30	--	--	474	.64	463	268	84	1.6	724	7.9
WTD. AVG. TIME	--	--	475	--	--	243	77	--	713	7.9
WTD. AVG. TONS PER DAY	--	--	582	--	--	281	93	2.2	877	8.0
	--	--	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES										
OCT.										
02...	.02	.05	581	.79	469	274	99	2.3	884	7.5
JAN.										
08...	.00	.06	672	.91	490	310	100	2.6	1030	7.7
APR.										
05...	.03	.07	641	.87	725	308	118	2.3	972	7.9
JULY										
19...	.05	.08	537	.73	567	288	98	1.8	829	8.2
SEPT.										
13...	.05	.05	487	.66	377	276	92	1.6	757	7.7

09306500 WHITE RIVER NEAR WATSON, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	917	1070	---	---	---	1060	1020	---	425	1070	687
2	912	937	949	---	---	---	1030	956	461	---	1320	699
3	896	904	---	---	---	---	1020	886	435	510	1120	702
4	904	899	1000	---	---	977	1030	786	403	517	1660	686
5	1030	915	1150	---	---	1020	972	749	518	570	1070	772
6	990	904	1220	---	---	2000	965	661	411	577	993	713
7	978	972	1270	---	---	---	1020	657	381	604	1320	654
8	826	922	1280	---	---	---	1040	627	380	620	1090	677
9	861	926	---	---	---	---	1030	649	415	631	1150	679
10	810	960	---	---	---	---	1030	665	377	655	1180	739
11	822	894	---	---	---	---	1060	644	408	844	1050	690
12	871	899	1080	---	---	---	1020	740	416	685	1080	711
13	852	933	1070	---	---	---	1050	590	427	---	981	729
14	889	942	952	---	---	---	1030	633	422	---	1540	---
15	---	923	1080	---	---	---	990	591	382	754	1370	736
16	874	928	1070	---	---	1030	944	593	374	762	910	778
17	866	972	---	---	---	---	978	606	372	768	801	815
18	878	975	1100	---	---	---	1030	638	356	834	740	769
19	874	928	1020	---	---	---	994	733	361	847	729	741
20	876	940	997	---	---	---	---	647	346	842	753	792
21	1050	1070	1020	---	---	---	---	610	363	842	710	735
22	876	942	977	---	---	---	1070	589	364	819	711	747
23	876	917	997	---	---	1080	1070	606	330	825	729	687
24	907	893	---	---	---	---	1030	506	336	798	717	730
25	856	951	---	---	---	1050	1030	496	360	1000	729	723
26	902	945	1060	---	---	1040	1050	516	351	1080	712	718
27	913	951	1120	---	---	1060	1010	526	316	917	697	738
28	866	1070	1150	---	---	1030	978	514	398	892	709	699
29	844	978	1000	---	---	1070	971	510	406	997	696	704
30	910	1070	968	---	---	1080	---	---	430	974	751	692
31	996	---	1060	---	---	1060	---	447	---	1220	698	---
AVERAGE	893	946	---	---	---	---	1020	646	390	779	961	722

09306500 WHITE RIVER NEAR WATSON, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	4.0	1.0	---	---	---	9.0	14.0	---	16.0	21.0	17.0
2	14.0	4.0	0.0	---	---	---	8.0	13.0	16.0	---	17.0	17.0
3	14.0	4.0	---	---	---	---	7.0	13.0	16.0	16.0	18.0	17.0
4	14.0	1.0	0.0	---	---	1.0	8.0	13.0	14.0	18.0	19.0	16.0
5	14.0	---	0.0	---	---	1.0	6.0	14.0	14.0	17.0	21.0	16.0
6	13.0	1.0	0.0	---	---	---	6.0	9.0	14.0	19.0	21.0	14.0
7	11.0	2.0	0.0	---	---	---	4.0	7.0	16.0	18.0	21.0	16.0
8	11.0	1.0	0.0	---	---	---	7.0	9.0	16.0	18.0	22.0	14.0
9	10.0	1.0	---	---	---	---	5.0	11.0	13.0	18.0	22.0	16.0
10	10.0	1.0	---	---	---	---	8.0	12.0	14.0	18.0	20.0	16.0
11	11.0	1.0	---	---	---	---	---	13.0	14.0	18.0	21.0	16.0
12	10.0	4.0	0.0	---	---	---	8.0	14.0	14.0	18.0	21.0	17.0
13	10.0	13.0	0.0	---	---	---	11.0	13.0	16.0	---	21.0	16.0
14	10.0	4.0	0.0	---	---	---	8.0	13.0	16.0	---	18.0	---
15	---	5.0	0.0	---	---	---	7.0	14.0	14.0	18.0	16.0	14.0
16	7.0	4.0	0.0	---	---	---	7.0	12.0	14.0	18.0	17.0	11.0
17	7.0	6.0	---	---	---	---	8.0	10.0	16.0	18.0	17.0	12.0
18	7.0	3.0	0.0	---	---	---	6.0	10.0	14.0	21.0	16.0	13.0
19	7.0	6.0	0.0	---	---	---	6.0	11.0	17.0	21.0	16.0	14.0
20	6.0	4.0	0.0	---	---	---	---	11.0	17.0	22.0	17.0	14.0
21	9.0	7.0	0.0	---	---	---	---	13.0	17.0	21.0	17.0	12.0
22	9.0	3.0	0.0	---	---	---	7.0	12.0	17.0	22.0	17.0	12.0
23	7.0	2.0	0.0	---	---	4.0	8.0	13.0	17.0	19.0	16.0	16.0
24	6.0	0.0	---	---	---	---	8.0	11.0	17.0	22.0	17.0	11.0
25	6.0	4.0	---	---	---	6.0	8.0	11.0	16.0	18.0	15.0	11.0
26	6.0	1.0	0.0	---	---	4.0	7.0	11.0	17.0	19.0	16.0	11.0
27	4.0	0.0	0.0	---	---	4.0	7.0	11.0	17.0	21.0	17.0	11.0
28	4.0	0.0	0.0	---	---	5.0	6.0	13.0	17.0	21.0	17.0	12.0
29	4.0	0.0	0.0	---	---	4.0	8.0	16.0	16.0	21.0	17.0	11.0
30	3.0	0.0	0.0	---	---	9.0	---	---	14.0	22.0	17.0	11.0
31	4.0	---	0.0	---	---	9.0	---	14.0	---	21.0	18.0	---
AVERAGE	8.5	3.0	---	---	---	---	7.0	12.0	15.5	19.5	18.5	14.0

09314500 PRICE RIVER AT WOODSIDE, UTAH

LOCATION.--Lat 39°15'50", long 110°20'45", in SE¼ sec.9, T.18 S., R.14 E., Emery County, at gaging station on downstream wingwall of old highway bridge, 200 ft downstream from railroad bridge at Woodside and 20 miles upstream from mouth.
DRAINAGE AREA.--1,500 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1946 to September 1949, February 1951 to September 1968.
Water temperatures: February 1951 to September 1959, November 1961 to September 1963, October 1964 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 5,220 mg/l Dec. 1-7; minimum, 739 mg/l June 1-7.
Hardness: Maximum, 1,880 mg/l Dec. 1-7; minimum, 396 mg/l June 1-7.
Specific conductance: Maximum daily, 6,300 micromhos Dec. 7; minimum daily, 928 micromhos June 7.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-31	45	--	--	--	--	--	766	304	0	2650	69
NOV.											
01-12	45	--	--	--	--	--	771	340	0	2560	66
13-30	34	--	--	--	--	--	1030	332	0	3440	84
DEC.											
01-07	48	--	--	--	--	--	984	434	0	3400	88
08-12	53	--	--	--	--	--	811	426	0	2830	77
13-15	64	--	--	--	--	--	764	448	0	2640	72
16-31	41	--	--	--	--	--	620	416	0	2040	62
JAN.											
01-16	31	--	--	--	--	--	788	506	0	2690	76
17-31	34	--	--	--	--	--	734	464	0	2420	69
FEB.											
01-13	35	--	--	--	--	--	634	460	0	2380	74
14-17	36	--	--	--	--	--	609	404	0	2350	76
18-23	56	--	--	--	--	--	798	368	0	2750	78
24-29	64	--	--	--	--	--	816	332	0	2730	71
MAR.											
01-03	66	--	--	--	--	--	803	380	0	2850	76
04-15	82	--	--	--	--	--	615	368	0	2240	70
16-31	64	--	--	--	--	--	537	338	0	2000	69
APR.											
01-12	105	--	--	--	--	--	459	348	0	1560	52
13-20	133	--	--	--	--	--	321	330	0	1070	41
21-30	95	--	--	--	--	--	405	344	0	1360	48
MAY											
01-03	137	--	--	--	--	--	409	328	0	1330	48
04-13	246	--	--	--	--	--	206	300	0	676	29
14-16	335	--	--	--	--	--	310	314	0	998	33
17-21	246	--	--	--	--	--	204	318	0	681	29
22-25	457	--	--	--	--	--	154	294	0	500	23
26-31	388	--	--	--	--	--	176	308	0	575	26
JUNE											
01-07	756	--	--	--	--	--	120	272	0	389	20
08-09	1078	--	--	--	--	--	138	254	0	495	21
10-13	789	--	--	--	--	--	169	268	0	568	22
14-20	427	--	--	--	--	--	142	266	0	484	22
21-26	218	--	--	--	--	--	216	280	0	718	28
27-30	96	--	--	--	--	--	357	292	0	1240	40
JULY											
01-24	72	--	--	--	--	--	482	262	0	1700	52
25-27	169	--	--	--	--	--	485	272	0	1880	60
28...	361	--	--	--	--	--	228	234	0	1060	28
29-31	284	--	--	--	--	--	391	308	0	1530	46
AUG.											
01-03	844	--	--	--	--	--	199	274	0	1380	37
04-11	341	--	--	--	--	--	370	284	0	1570	48
12-15	599	--	--	--	--	--	293	268	0	1000	31
16-23	133	--	--	--	--	--	418	292	0	1560	50
24-31	53	--	--	--	--	--	493	266	0	1910	61
SEPT.											
01-30	71	--	--	--	--	--	394	278	0	1580	52
WTD. AVG. TIME	--	--	--	--	--	--	333	300	0	1210	40
WTD. AVG. TONS PER DAY	139	--	--	--	--	--	546	338	0	1920	57
	--	--	--	--	--	--	126	113	0	458	15

ANALYSES OF ADDITIONAL SAMPLES

NOV.											
06...	A40	5.9	236	208	600	8.3	--	364	0	2390	68
DEC.											
12...	A71	8.2	184	233	530	9.4	--	408	0	2130	62
MAR.											
11...	A96	6.9	216	219	744	7.8	--	376	0	2610	72
MAY											
13...	A516	11	116	93	229	5.7	--	314	0	869	30
SEPT.											
05...	A70	2.2	152	165	431	7.9	--	266	0	1690	45

A DISCHARGE AT TIME OF SAMPLING.

09314500 PRICE RIVER AT WOODSIDE, UTAH--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 29.0°C July 23; minimum, freezing point on many days during November and December.
Period of record:
Dissolved solids: Maximum, 8,220 mg/l Dec. 11, 1951; minimum, 592 mg/l May 21-30, 1952.
Hardness: Maximum, 3,010 mg/l Dec. 11, 1951; minimum, 353 mg/l June 1-3, 6-10, 1952.
Specific conductance: Maximum daily, 8,540 micromhos Dec. 11, 1951; minimum daily, 814 micromhos June 1, 1952.
Water temperatures: Maximum, 32.0°C July 10, 11, 1954; minimum, freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-31	--	--	4220	5.74	517	1440	1190	8.8	4370	8.0
NOV.										
01-12	--	--	3960	5.39	490	1360	1080	9.1	4160	8.1
13-30	--	--	5210	7.09	480	1740	1470	11	5280	8.1
DEC.										
01-07	--	--	5220	7.10	678	1880	1520	9.9	5310	8.0
08-12	--	--	4360	5.93	626	1640	1290	8.7	4550	8.0
13-15	--	--	4100	5.58	712	1560	1190	8.4	4250	8.0
16-31	--	--	3420	4.65	380	1200	864	7.8	3670	8.1
JAN.										
01-16	--	--	3910	5.32	331	1610	1200	8.5	4370	8.2
17-31	--	--	3490	4.75	327	1400	1020	8.5	4030	8.2
FEB.										
01-13	--	--	4140	5.63	397	1580	1200	6.9	4310	8.1
14-17	--	--	4200	5.71	417	1560	1230	6.7	4400	8.1
18-23	--	--	4580	6.23	692	1540	1240	8.8	4840	8.0
24-29	--	--	4510	6.13	782	1440	1170	9.3	4800	8.0
MAR.										
01-03	--	--	4880	6.64	870	1640	1330	8.6	5120	8.1
04-15	--	--	3810	5.18	851	1400	1090	7.2	4160	8.2
16-31	--	--	3400	4.62	595	1290	1010	6.5	3760	8.2
APR.										
01-12	--	--	2600	3.54	737	985	700	6.4	3000	8.1
13-20	--	--	1810	2.46	650	745	474	5.1	2210	8.1
21-30	--	--	2260	3.07	583	885	603	5.9	2660	8.2
MAY										
01-03	--	--	2140	2.91	792	832	563	6.2	2550	7.9
04-13	--	--	1200	1.63	797	542	296	3.9	1580	8.1
14-16	--	--	1660	2.26	1500	668	411	5.2	2090	8.0
17-21	--	--	1200	1.63	797	566	305	3.7	1640	8.0
22-25	--	--	906	1.23	1120	460	219	3.1	1260	8.1
26-31	--	--	1080	1.47	1130	504	251	3.4	1410	8.2
JUNE										
01-07	--	--	739	1.01	1510	396	173	2.6	1040	8.0
08-09	--	--	866	1.18	2520	452	244	2.8	1190	8.0
10-13	--	--	1010	1.37	2150	474	254	3.4	1360	8.1
14-20	--	--	880	1.20	1020	444	226	2.9	1220	8.1
21-26	--	--	1210	1.65	712	548	318	4.0	1600	8.2
27-30	--	--	2030	2.76	527	810	571	5.5	2410	8.1
JULY										
01-24	--	--	2700	3.67	531	1010	795	6.6	3090	8.2
25-27	--	--	3080	4.19	1410	1210	987	6.1	3430	8.2
28...	--	--	1620	2.20	1580	840	648	3.4	1950	8.2
29-31	--	--	2440	3.32	1870	1060	807	5.2	2770	8.2
AUG.										
01-03	--	--	2520	3.43	5740	1280	1060	2.4	2750	7.8
04-11	--	--	2770	3.77	2550	1130	897	4.8	3080	7.8
12-15	--	--	1730	2.35	2800	865	645	4.3	2050	7.7
16-23	--	--	2680	3.64	962	1020	786	5.7	3040	7.9
24-31	--	--	3340	4.54	485	1220	1000	6.1	3650	7.9
SEPT.										
01-30	--	--	2920	3.97	561	1090	862	5.2	3310	7.9
WTD. AVG. TIME	--	--	2050	--	--	848	602	--	2380	8.0
WTD. AVG. TONS PER DAY	--	--	3140	--	--	1170	897	6.7	3450	8.1
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

NOV.										
06...	.6	5.4	3840	5.03	415	1440	1150	6.9	4200	7.8
DEC.										
12...	.5	10	3620	4.58	694	1420	1090	6.1	3850	7.9
MAR.										
11...	.6	1.1	4320	5.52	1120	1440	1130	8.5	4550	8.1
MAY										
13...	.4	4.6	1580	2.05	2200	672	415	3.8	1950	8.0
SEPT.										
05...	1.4	2.0	2790	3.58	527	1060	842	5.8	3200	7.8

09314500 PRICE RIVER AT WOODSIDE, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4380	4240	5020	3920	4430	5220	3400	2970	1140	2990	3100	3500
2	4670	3390	4480	4120	4420	5240	2820	2610	1090	2850	2220	3500
3	4280	3750	4790	4230	4230	4900	2700	2070	1070	2840	2920	3490
4	4190	3600	5130	4260	4500	4740	3460	1750	1060	2950	3060	3340
5	4070	3820	5590	4230	4560	4430	3590	1470	---	3090	2970	3280
6	4170	4050	5610	4520	4460	4380	3270	1480	931	2810	3180	3100
7	4240	4400	6300	4680	4090	3720	3070	1370	928	3080	3030	3240
8	4080	4450	5380	4730	4090	3910	2890	1460	1080	2690	3090	3200
9	3920	4380	5010	4730	4200	3450	2780	1560	1300	2790	2890	---
10	---	4240	4280	4660	4170	3350	2680	1760	1480	3060	3440	3340
11	4080	4730	4080	4340	4190	4410	2720	1610	1480	2980	2900	3210
12	3980	4590	3870	4280	4200	4870	2670	---	1280	3250	2210	3240
13	3780	4920	4080	4270	4210	4340	2560	1640	1170	3160	1720	3000
14	4140	4850	4250	4220	4260	4200	2390	1990	1180	3060	2270	3170
15	4460	4920	4430	4300	4240	4140	1920	2330	1140	3200	1980	3320
16	4680	4980	3490	4310	4380	3960	2080	1950	1170	3210	2690	3440
17	4850	5220	3420	4140	4600	3940	2060	1680	1180	3200	2840	3500
18	4610	5430	3670	4120	4650	3930	1940	1350	1210	3320	2760	3390
19	4800	5430	3670	4050	4650	3860	2350	1720	1270	3210	3060	3330
20	5090	5280	3590	4030	4660	3720	2370	1700	1310	3170	3100	3350
21	4910	5460	3580	3920	4420	3750	2630	1710	1360	3310	3100	3320
22	4960	5450	3630	4120	5200	3680	2680	1470	1400	3190	3130	3120
23	4470	5450	3210	3880	5220	3840	2660	1260	1530	3160	3340	2950
24	4220	5550	3900	3910	4420	3840	2970	1240	1630	3310	3510	2990
25	4040	5430	3940	3280	4770	3820	2370	1070	1700	3280	4030	3020
26	3920	5270	3920	3870	4680	4100	2390	1330	1910	3760	3530	3070
27	3890	5180	3630	4100	5150	3650	2520	1340	2040	3260	3820	3200
28	4010	5350	3640	4160	4790	3520	2630	1550	2340	1950	3330	3570
29	4380	4830	3570	4160	4900	3290	2780	1460	2540	2630	3630	3530
30	4350	4770	3630	4160	---	3680	2860	1460	2720	3170	3900	3440
31	4700	---	3740	4170	---	3380	---	1280	---	2500	3500	---
AVERAGE	4340	4780	4210	4190	4510	4040	2670	1650	1440	3050	3040	3280

09314500 PRICE RIVER AT WOODSIDE, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	9.0	2.0	1.0	1.0	2.0	10.0	12.0	14.0	12.0	17.0	22.0
2	20.0	10.0	1.0	1.0	1.0	3.0	9.0	13.0	16.0	18.0	19.0	19.0
3	19.0	7.0	1.0	1.0	1.0	3.0	7.0	12.0	18.0	18.0	18.0	21.0
4	23.0	7.0	1.0	1.0	1.0	4.0	6.0	13.0	18.0	19.0	20.0	22.0
5	18.0	7.0	1.0	1.0	1.0	4.0	7.0	13.0	---	18.0	22.0	23.0
6	17.0	0.0	1.0	1.0	1.0	4.0	7.0	10.0	14.0	21.0	17.0	23.0
7	16.0	7.0	0.0	1.0	1.0	5.0	4.0	9.0	13.0	21.0	26.0	24.0
8	20.0	1.0	0.0	1.0	1.0	6.0	4.0	9.0	13.0	20.0	23.0	16.0
9	19.0	2.0	0.0	1.0	1.0	6.0	5.0	12.0	13.0	22.0	26.0	---
10	---	0.0	0.0	1.0	1.0	6.0	7.0	13.0	18.0	27.0	21.0	24.0
11	18.0	2.0	0.0	1.0	1.0	6.0	7.0	12.0	14.0	22.0	19.0	17.0
12	18.0	2.0	0.0	1.0	1.0	3.0	9.0	---	16.0	22.0	18.0	21.0
13	18.0	4.0	0.0	1.0	1.0	6.0	9.0	11.0	18.0	21.0	17.0	23.0
14	16.0	4.0	0.0	1.0	1.0	6.0	6.0	10.0	16.0	21.0	16.0	21.0
15	14.0	3.0	0.0	1.0	1.0	6.0	8.0	9.0	17.0	23.0	16.0	18.0
16	9.0	4.0	0.0	1.0	1.0	6.0	6.0	9.0	20.0	19.0	21.0	18.0
17	4.0	3.0	0.0	1.0	1.0	6.0	8.0	10.0	19.0	21.0	18.0	19.0
18	16.0	4.0	1.0	1.0	1.0	4.0	7.0	12.0	20.0	24.0	22.0	19.0
19	16.0	3.0	1.0	1.0	1.0	3.0	6.0	13.0	19.0	20.0	23.0	21.0
20	13.0	5.0	1.0	1.0	1.0	2.0	8.0	16.0	19.0	22.0	22.0	16.0
21	5.0	7.0	0.0	1.0	1.0	4.0	7.0	16.0	19.0	21.0	22.0	14.0
22	14.0	4.0	0.0	1.0	1.0	6.0	7.0	13.0	20.0	21.0	18.0	16.0
23	7.0	3.0	0.0	1.0	1.0	6.0	7.0	11.0	20.0	29.0	20.0	17.0
24	6.0	2.0	1.0	1.0	1.0	6.0	7.0	12.0	18.0	22.0	21.0	18.0
25	13.0	0.0	0.0	1.0	1.0	6.0	7.0	12.0	18.0	21.0	24.0	10.0
26	11.0	2.0	0.0	1.0	1.0	8.0	7.0	12.0	18.0	24.0	26.0	11.0
27	12.0	0.0	1.0	1.0	1.0	3.0	9.0	13.0	19.0	24.0	23.0	11.0
28	10.0	0.0	1.0	1.0	1.0	4.0	7.0	17.0	20.0	17.0	27.0	13.0
29	7.0	3.0	0.0	1.0	2.0	7.0	9.0	15.0	19.0	28.0	27.0	13.0
30	8.0	2.0	1.0	1.0	---	8.0	11.0	16.0	12.0	26.0	24.0	17.0
31	10.0	---	1.0	1.0	---	9.0	---	15.0	---	21.0	21.0	---
AVERAGE	14.0	3.5	0.5	1.0	1.0	5.0	7.5	12.5	17.0	21.5	21.0	18.0

09315000 GREEN RIVER AT GREEN RIVER, UTAH
(Irrigation network, pesticide, and radiochemical station)

LOCATION (revised).--Lat 38°59'37", long 110°08'35", in NW¼NE¼ sec.15, T.21 S., R.16 E., Emery County, at bridge on U.S. Highways 50 and 6 in town of Green River, 0.7 mile upstream from gaging station.
DRAINAGE AREA.--40,600 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: August 1928 to September 1968.
Water temperatures: May 1949 to September 1959, October 1964 to September 1968.
Sediment records: May 1930 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 3,440 mg/l Dec. 1-3; minimum, 224 mg/l June 13-25.
Hardness: Maximum, 1,880 mg/l Dec. 1-3; minimum, 153 mg/l June 13-25.
Specific conductance: Maximum daily, 3,250 micromhos Dec. 1; minimum daily, 331 micromhos June 22.
Water temperatures: Maximum, 28.0°C July 15; minimum, freezing point on many days during December to February.
Sediment concentrations: Maximum daily, 16,000 mg/l Aug. 4; minimum daily, 41 mg/l Sept. 29.
Sediment loads: Maximum daily, 220,000 tons Aug. 2; minimum daily, 450 tons Dec. 16.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-31	4062	7.6	83	45	--	--	95	216	0	356	36
NOV.											
01-17	4234	7.3	93	40	--	--	118	220	0	403	39
18-30	3895	7.9	77	48	--	--	118	224	0	392	39
DEC.											
01-03	3947	19	507	150	--	--	259	320	0	2090	70
04-19	3225	6.4	75	44	--	--	100	232	0	334	34
20-31	4349	6.4	64	37	--	--	88	204	0	283	31
JAN.											
01-05	4800	7.4	71	32	--	--	82	202	0	268	30
06-31	3900	7.9	71	37	--	--	93	226	0	291	32
FEB.											
01-19	3126	5.5	71	32	--	--	94	216	0	279	32
20-22	3200	6.8	71	36	--	--	98	206	0	311	32
23-29	4256	6.6	77	43	--	--	119	210	0	390	36
MAR.											
01-31	3927	9.0	81	36	--	--	128	234	0	356	48
APR.											
01-07	3270	10	75	43	--	--	121	242	0	353	44
08-18	3620	9.7	71	38	--	--	103	222	0	307	39
19-30	6319	10	69	33	--	--	107	208	0	305	37
MAY											
01-04	5662	13	67	33	--	--	95	214	0	281	31
05-17	11630	15	56	21	--	--	49	172	0	160	18
18-22	10650	14	51	19	--	--	46	167	0	141	17
23-25	12870	15	55	23	--	--	55	186	0	166	19
26-31	15270	14	46	21	--	--	28	156	0	113	12
JUNE											
01-04	21380	11	56	16	--	--	24	188	0	84	11
05-12	26810	9.6	50	14	--	--	23	168	0	80	8.6
13-25	19780	9.3	40	13	--	--	16	134	0	62	8.9
26-30	14360	8.9	42	12	--	--	20	129	0	76	9.3
JULY											
01-03	11770	8.4	51	21	--	--	39	158	0	145	12
04-07	9210	8.2	50	20	--	--	52	155	0	152	26
08-17	6901	8.0	56	26	--	--	63	174	0	198	26
18-25	5366	8.0	64	25	--	--	71	182	0	220	28
26-31	5088	7.4	77	33	--	--	92	207	0	297	35
AUG.											
01-11	5082	9.9	118	22	--	--	157	242	0	462	32
12-31	5913	8.2	80	34	--	--	81	211	0	291	28
SEPT.											
01-30	4043	6.0	77	35	--	--	92	206	0	305	33
WTD. AVG. TIME	--	9.4	66	28	--	--	69	189	0	216	25
WTD. AVG. TONS PER DAY	6407	8.5	75	34	--	--	91	207	0	282	32
	--	164	1140	481	--	--	1200	3290	0	3760	431

ANALYSES OF ADDITIONAL SAMPLES

NOV.											
22...	3850	6.4	84	38	98	2.6	--	220	0	309	38
DEC.											
05...	3600	6.9	80	38	96	2.4	--	226	0	289	37
JAN.											
17...	3800	6.8	72	35	69	2.5	--	208	0	243	29
FEB.											
27...	4330	6.7	75	43	110	2.6	--	212	0	350	34
MAR.											
13...	4820	8.8	61	52	135	3.3	--	248	0	354	65
APR.											
26...	6470	11	64	33	83	3.1	--	202	0	264	30
MAY											
15...	12200	10	51	23	55	2.3	--	164	0	181	18
JUNE											
14...	17900	9.3	38	17	27	1.7	--	132	0	88	10
JULY											
15...	6700	8.0	51	27	59	2.7	--	170	0	172	24
AUG.											
12...	5790	8.8	108	38	84	4.8	--	200	0	368	35
SEPT.											
16...	4000	53	72	37	85	2.9	--	208	0	305	28

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 3,440 mg/l Dec. 3, 1967; minimum, 194 mg/l June 21-30, 1933.
Hardness: Maximum, 1,880 mg/l Dec. 1-3, 1967; minimum, 128 mg/l June 21-30, 1933.
Specific conductance (1941-68): Maximum daily, 3,250 micromhos Dec. 1, 1967; minimum daily, 272 micromhos May 13, 1956.
Water temperatures (1949-59, 1965-68): Maximum, 30.0°C Aug. 13, 1958; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 66,000 mg/l July 11, 1936; minimum daily, 20 mg/l Sept. 27, 1956.
Sediment loads: Maximum daily, 2,230,000 tons July 11, 1936; minimum daily, 54 tons Sept. 27, 1956.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.											
01-31	--	--	--	785	1.07	8610	392	215	2.1	1080	7.9
NOV.											
01-17	--	--	--	745	1.01	8520	398	218	2.6	1100	8.1
18-30	--	--	--	785	1.07	8260	390	206	2.6	1100	8.0
DEC.											
01-03	--	--	--	3440	4.30	36700	1880	1620	2.6	3240	7.9
04-19	--	--	--	775	1.05	6750	368	178	2.3	1030	8.0
20-31	--	--	--	647	.88	7600	314	147	2.2	881	7.9
JAN.											
01-05	--	--	--	599	.81	7760	308	142	2.0	866	7.9
06-31	--	--	--	655	.89	6900	330	145	2.2	936	7.8
FEB.											
01-19	--	--	--	614	.84	5180	308	131	2.3	890	8.1
20-22	--	--	--	679	.92	5870	326	157	2.4	964	8.2
23-29	--	--	--	773	1.05	8890	370	198	2.7	1090	8.1
MAR.											
01-31	--	--	--	771	1.05	8180	352	160	3.0	1090	7.9
APR.											
01-07	--	--	--	775	1.05	6840	364	166	2.8	1080	8.0
08-18	--	--	--	693	.94	6770	332	150	2.5	970	8.0
19-30	--	--	--	667	.91	11400	308	137	2.6	948	8.0
MAY											
01-04	--	--	--	644	.88	9850	304	129	2.4	877	7.9
05-17	--	--	--	443	.60	13900	227	86	1.4	602	7.7
18-22	--	--	--	395	.54	11400	207	70	1.4	561	7.7
23-25	--	--	--	450	.61	15600	232	79	1.6	603	7.9
26-31	--	--	--	333	.45	13700	201	74	.9	471	7.7
JUNE											
01-04	--	--	--	320	.44	18500	204	50	.7	493	7.9
05-12	--	--	--	282	.38	20400	183	45	.7	445	7.7
13-25	--	--	--	224	.30	12000	153	43	.5	362	7.7
26-30	--	--	--	246	.33	9540	154	48	.7	382	7.7
JULY											
01-03	--	--	--	363	.49	11500	212	82	1.2	567	7.7
04-07	--	--	--	383	.52	9520	208	81	1.6	584	7.6
08-17	--	--	--	479	.65	8930	248	105	1.7	710	7.6
18-25	--	--	--	519	.71	7520	264	115	1.9	768	7.6
26-31	--	--	--	665	.90	9140	328	158	2.2	966	7.6
AUG.											
01-11	--	--	--	945	1.29	13000	384	186	3.5	1260	7.7
12-31	--	--	--	660	.90	10500	340	167	1.9	936	7.7
SEPT.											
01-30	--	--	--	682	.93	7450	334	165	2.2	971	7.6
WTD. AVG. TIME	--	--	--	538	--	--	278	123	--	762	7.8
WTD. AVG. TONS PER DAY	--	--	--	664	--	--	330	160	2.2	925	7.8

ANALYSES OF ADDITIONAL SAMPLES

NOV.											
22...	.4	7.6	--	769	1.05	7990	368	188	2.2	1060	7.7
DEC.											
05...	.5	6.3	--	706	.96	6860	356	171	2.0	982	7.5
JAN.											
17...	.4	5.9	--	616	.84	6320	324	153	1.7	863	7.9
FEB.											
27...	.8	4.4	.12	723	.98	8450	364	190	2.5	1080	8.0
MAR.											
13...	.4	3.4	.10	812	1.10	10600	364	161	3.1	1160	7.9
APR.											
26...	.4	6.4	.12	620	.84	10800	294	128	2.1	885	7.8
MAY											
15...	.4	4.4	.09	439	.60	14500	222	88	1.6	650	7.6
JUNE											
14...	.4	1.7	.06	255	.35	12300	164	56	.9	408	7.9
JULY											
15...	.8	4.2	.06	460	.63	8320	240	101	1.7	702	7.6
AUG.											
12...	1.0	5.8	.05	797	1.08	12500	428	264	1.8	1100	2.5
SEPT.											
16...	.4	.7	.04	636	.86	6870	332	161	2.0	928	8.0

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	1140	3250	857	---	1040	1050	953	495	612	1300	899
2	1050	1120	3220	848	---	1070	1080	944	506	566	1300	901
3	1040	1110	3240	853	---	1160	1090	733	497	523	1260	894
4	1080	1110	1070	875	---	1160	1090	---	482	531	1150	960
5	1100	1090	984	877	---	1170	1070	---	440	605	---	886
6	---	1080	987	935	---	1070	---	722	430	589	---	882
7	---	1090	1110	937	---	1100	---	686	430	595	---	889
8	---	[illegible]	1110	---	---	1120	993	575	435	633	---	886
9	1100	[illegible]	1110	---	---	1140	940	571	449	683	---	889
10	1080	1090	1020	---	---	1190	983	591	459	686	---	931
11	1080	1100	1020	---	---	1190	980	604	446	699	---	943
12	1090	1120	1020	---	884	1150	971	573	460	697	---	940
13	1090	1100	1020	---	892	1150	949	611	418	728	---	963
14	1050	1100	1020	---	889	1060	949	568	414	724	---	960
15	1050	1100	1010	---	884	1060	971	596	377	718	---	960
16	1050	1090	1010	---	894	1070	1000	572	378	751	---	1020
17	1080	1080	1010	---	879	1050	993	559	379	743	---	994
18	1080	1110	---	---	879	1050	977	---	346	---	---	987
19	1090	1110	---	---	894	1040	1010	555	339	716	1010	1030
20	1080	1120	---	---	957	1040	1020	534	344	713	1000	1030
21	1090	1110	---	---	966	1010	1000	529	351	781	966	1020
22	1090	1120	---	---	969	1010	1010	598	331	779	937	1020
23	1090	1110	---	---	1030	1020	928	590	342	783	934	1020
24	1080	1110	---	---	1130	1020	919	616	337	---	934	1000
25	1080	1110	---	---	1120	1060	894	---	349	811	931	1010
26	1080	1120	---	---	1120	1090	881	---	368	1050	912	981
27	1070	1040	---	---	1070	1100	911	460	369	1060	901	990
28	1100	1050	882	---	1040	1090	911	446	375	899	871	1020
29	1100	1050	878	---	1060	1090	946	471	391	892	876	1010
30	1100	1050	875	---	---	1080	952	498	403	921	907	1020
31	1100	---	878	---	---	1090	---	471	---	902	907	---
AVERAGE	1080	1100	---	---	---	1090	981	601	405	738	---	965

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	16	16	16	16	16	--	--	--	13	13	13	13	12	12	12	12	12	12	11	11	11	11	11	11	10	10	19	19	8	8	8	12
NOVEMBER.	7	7	6	6	6	6	7	5	5	5	5	6	5	5	5	4	5	5	5	5	5	5	4	4	4	4	4	3	3	3	--	4
DECEMBER.	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEBRUARY.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	--	--	0
MARCH....	1	1	1	1	2	3	3	3	3	3	2	4	3	3	4	3	4	4	4	4	4	4	5	5	5	6	6	6	6	7	8	3
APRIL....	14	14	14	14	9	--	--	8	7	8	9	10	12	13	13	12	12	12	9	9	10	9	10	10	9	9	12	12	12	12	--	10
MAY.....	12	14	16	--	--	16	16	16	16	17	17	17	12	13	14	14	15	--	16	16	16	16	16	17	--	--	17	17	17	17	18	15
JUNE.....	18	18	18	18	18	19	18	18	18	18	18	15	16	16	18	17	18	18	18	18	19	19	19	19	19	20	21	19	19	19	--	18
JULY.....	19	19	20	20	20	20	20	20	22	22	22	22	23	23	28	24	24	--	24	23	24	24	23	--	23	23	22	23	23	22	22	22
AUGUST...	21	21	21	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	18	16	17	16	16	16	15	15	18	19	19	19	--
SEPTEMBER	17	18	18	17	16	16	16	16	16	16	16	16	16	16	16	16	16	20	16	16	16	14	14	14	14	13	13	13	13	14	13	--	15

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	3990	340	3700	3710	240	2400	3910	120	1300
2	4020	340	3700	3740	160	1600	3910	120	1300
3	4020	280	3000	4050	160	1700	4020	79	860
4	3850	1600	17000	4340	160	1900	3990	120	1300
5	3630	1600	16000	4340	140	1600	3690	170	1700
6	3630	--	10000	4370	150	1800	3470	170	1600
7	3910	--	10000	4580	140	1700	3370	200	1800
8	4020	--	10000	4580	120	1500	2370	190	1200
9	4110	860	9500	4400	130	1500	2580	200	1400
10	4190	530	6000	4080	120	1300	2980	100	800
11	3960	910	9700	4250	130	1500	3500	91	860
12	3600	550	5300	4310	140	1600	3850	98	1000
13	3630	550	5400	4370	120	1400	4110	130	1400
14	4020	310	3400	4310	130	1500	3800	71	730
15	4020	300	3300	4280	120	1300	3050	71	580
16	4020	300	3300	4220	87	990	2260	74	450
17	4190	320	3600	4050	86	940	2370	72	460
18	4190	220	2500	3850	110	1100	2820	--	500
19	4340	160	1900	3850	110	1100	3290	--	600
20	3990	160	1700	3850	100	1000	4920	--	2000
21	4110	160	1800	3850	76	790	4900	--	2000
22	4160	160	1800	3850	130	1400	4730	--	2000
23	4280	160	1800	3880	71	740	4250	--	1000
24	4280	170	2000	3990	84	900	3690	--	900
25	4490	180	2200	4050	78	850	3600	--	800
26	4490	170	2100	3940	78	830	3500	--	700
27	4400	150	1800	3850	100	1000	3800	--	900
28	4340	200	2300	3940	69	730	4500	120	1500
29	4140	210	2300	3880	83	870	4700	120	1500
30	4190	210	2400	3850	93	970	4800	100	1300
31	3710	220	2200	--	--	--	4800	100	1300
TOTAL	125920	--	151700	122610	--	38610	115630	--	35700

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4800	240	3100	3200	--	600	4760	540	6900
2	4800	230	3000	3200	--	600	5090	740	10000
3	4800	220	2900	3200	--	600	4660	600	7500
4	4800	85	1100	3200	--	600	4760	600	7700
5	4800	85	1100	3200	--	600	5190	600	8400
6	4800	160	2100	3100	--	500	4890	630	8300
7	4500	140	1700	3000	--	500	4690	560	7100
8	4100	--	1000	3000	--	500	4210	590	6700
9	4600	--	2000	2800	--	400	4240	630	7200
10	4800	--	2000	3000	--	1000	3970	850	9100
11	4800	--	2000	--	--	--	4060	850	9300
12	4800	--	2000	3000	370	3000	4590	960	12000
13	4800	--	2000	2800	530	4000	4760	1200	15000
14	4800	--	2000	3200	680	5900	4060	1100	12000
15	4800	--	2000	3300	480	4300	--	--	--
16	4600	--	2000	3300	350	3100	4090	580	6400
17	4000	--	1000	3300	1100	9800	4150	490	5500
18	3400	--	700	3300	1000	8900	4060	510	5600
19	3400	--	700	3300	1600	14000	4210	500	5700
20	3300	--	600	3300	1000	8900	4150	530	5900
21	3300	--	600	3200	1400	12000	3970	430	4600
22	3300	--	600	3100	1300	11000	3800	420	4300
23	3300	--	600	3600	670	6500	3430	340	3100
24	3300	--	600	4030	1100	12000	3050	350	2900
25	3300	--	600	4030	1100	12000	2820	300	2300
26	3300	--	600	4330	1000	12000	2740	270	2000
27	3300	--	600	4490	840	10000	2670	260	1900
28	3200	--	600	4620	660	8200	2700	260	1900
29	3200	--	600	4690	600	7600	2670	290	2100
30	3200	--	600	--	--	--	2640	330	2400
31	3200	--	600	--	--	--	2700	330	2400
TOTAL	125400	--	41600	95790	--	159100	117780	--	185200

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2820	480	3700	5540	690	10000	18100	1900	93000
2	2950	520	4100	5440	620	9100	21000	1800	100000
3	3100	--	5000	5470	3400	50000	22300	1800	110000
4	3180	560	4800	6200	--	60000	24100	3000	200000
5	3370	580	5300	8290	--	80000	25000	2800	190000
6	3650	--	6000	10300	3400	95000	26200	2500	180000
7	3820	--	6000	11700	4700	150000	27400	2500	180000
8	4030	660	7200	13000	2000	70000	28800	2200	170000
9	3880	640	6700	13800	2000	75000	28800	1900	150000
10	3540	470	4500	13600	1300	48000	28500	2100	160000
11	3400	520	4800	11000	1400	42000	26500	1900	140000
12	3570	530	5100	9950	1500	40000	23300	1200	75000
13	3460	470	4400	9990	1600	43000	19800	1200	64000
14	3210	470	4100	11200	840	25000	18100	1200	59000
15	3180	460	3900	12200	1400	46000	18800	1300	66000
16	3180	480	4100	13100	860	30000	19300	1300	68000
17	3650	490	4800	13000	860	30000	20000	1200	65000
18	4720	870	11000	12200	--	30000	20500	1400	77000
19	5470	2700	40000	11500	840	26000	20400	1300	72000
20	5720	2700	42000	10300	760	21000	21000	1300	74000
21	6200	2800	47000	9910	760	20000	20500	810	45000
22	7190	2700	52000	9330	750	19000	20800	820	46000
23	7400	3000	60000	10600	1300	37000	19900	1100	59000
24	7360	3000	60000	13000	1300	46000	19100	1100	57000
25	6990	1900	36000	15000	--	60000	19000	700	36000
26	6470	2200	38000	18000	--	70000	17500	720	34000
27	6120	1500	25000	17100	1600	74000	15600	690	29000
28	5650	1500	23000	15300	1600	66000	13900	640	24000
29	5650	670	10000	13600	1300	48000	12600	680	23000
30	5610	680	10000	13200	1300	46000	12200	480	16000
31	--	--	--	14400	1900	74000	--	--	--
TOTAL	138540	--	538500	357220	--	1540100	629000	--	2662000

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	12400	750	25000	4530	5100	62000	4850	250	3300
2	11700	710	22000	5790	14000	220000	4720	240	3100
3	11200	240	7300	5650	14000	210000	4530	240	2900
4	10700	230	6600	4760	16000	210000	3600	230	2200
5	9600	420	11000	4790	--	70000	3100	210	1800
6	8720	400	9400	4760	--	70000	2970	210	1700
7	7820	740	16000	4890	--	80000	3570	200	1900
8	7910	530	11000	5020	--	80000	4430	210	2500
9	7490	230	4700	5260	--	90000	4460	210	2500
10	7030	290	5500	5090	--	80000	4430	110	1300
11	7030	270	5100	5360	--	90000	4370	120	1400
12	6960	300	5600	6240	7700	130000	3910	120	1300
13	6820	260	4800	5440	--	100000	3850	81	840
14	6470	270	4700	7590	--	200000	3970	78	840
15	6620	590	11000	6780	--	70000	4210	82	930
16	6540	120	2100	7190	--	90000	4030	200	2200
17	6160	110	1800	7190	--	90000	4490	180	2200
18	5930	--	2000	6940	--	80000	4530	180	2200
19	5930	100	1600	6310	2500	43000	3850	160	1700
20	5790	81	1400	6120	2500	41000	3620	160	1600
21	5440	200	2900	5930	1100	18000	3570	140	1300
22	5360	180	2600	4990	890	12000	3480	150	1400
23	5120	180	2500	5400	640	9300	3820	140	1400
24	4850	--	2000	5750	640	9900	4240	130	1500
25	4490	3800	46000	5540	650	9700	4120	45	500
26	4530	2000	24000	5360	380	5500	3910	90	950
27	5840	3000	S 56000	5330	370	5300	3940	90	960
28	5580	1500	23000	5230	310	4400	4370	45	530
29	4530	600	7300	5020	310	4200	4330	41	480
30	5160	1500	21000	5020	320	4300	4030	420	4600
31	4890	2000	26000	4890	340	4500	--	--	--
TOTAL	214590	--	371900	174160	--	2193100	121300	--	52030

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 2344910
TOTAL LOAD FOR YEAR (TONS) 7970580

S COMPUTED BY SUBDIVIDING DAY.

09315000 GREEN RIVER AT GREEN RIVER, UTAH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (°C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT. 11, 1967	1650	15	3770	1290	58	72	90		95	97	100	--	--	--		VPWC
NOV. 22.....	1250	7	3850	157	--	--	--		--	--	--					--
DEC. 5.....	1440	0	3600	148	38	49	--		98	99	100	--	--	--		VPWC
MAR. 13, 1968	1215	3	4760	1110	46	57	88		99	100	--	--	--	--		VPWC
APR. 26.....	1130	10	6510	2450	44	51	67		82	96	100	--	--	--		VPWC
MAY 15.....	1330	14	12200	1990	28	36	58		91	100	--	--	--	--		VPWC
JUNE 8.....	1340	18	28700	2170	24	31	49		88	100	--	--	--	--		VPWC
JUNE 14.....	1345	28	17900	1280	24	30	49		93	100	--	--	--	--		VPWC
JULY 15.....	1445	28	6740	926	26	35	51		68	86	97	100	--	--		VPWC
AUG. 12.....	1545	24	5750	6820	34	46	76		99	100	--	--	--	--		VPWC
SEPT. 16.....	1440	19	4030	252	21	27	--		69	92	100	--	--	--		VPWC

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH

LOCATION.--Lat 38°52'20", long 110°22'20", in NE¼SW¼ sec.27, T.22 S., R.14 E., Emery County, at gaging station just downstream from bridge on State Highway 24, 15 miles southwest of Green River and 35 miles upstream from mouth.
DRAINAGE AREA.--1,670 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: November 1946 to September 1949, November 1950 to September 1968.
Water temperatures: July to September 1949, October 1950 to September 1962, October 1964 to September 1968.
Sediment records: March 1948 to September 1949, October 1950 to September 1959.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 4,220 mg/l May 15-20; minimum, 716 mg/l June 1-9.
Hardness: Maximum, 1,600 mg/l Nov. 1-12; minimum, 396 mg/l June 1-9.
Specific conductance: Maximum daily, 5,380 micromhos May 16; minimum daily, 912 micromhos June 7.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SiO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-31	34	6.3	236	197	--	--	481	258	0	2070	56
NOV.											
01-12	36	7.9	253	236	--	--	642	312	0	2550	61
13-17	41	6.5	214	167	--	--	580	168	0	2190	45
18-21	35	4.2	192	73	--	--	328	102	0	1320	26
22...	35	5.8	196	144	--	--	636	172	0	2160	54
23-24	34	4.2	220	46	--	--	303	68	0	1270	15
25-30	34	6.6	216	199	--	--	681	168	0	2520	57
DEC.											
01-31	29	8.8	240	170	--	--	789	282	0	2590	63
JAN.											
01...	22	8.8	212	192	--	--	610	220	0	2280	65
02-04	19	8.8	273	73	--	--	351	148	0	1530	20
05-31	27	10	279	191	--	--	694	400	0	2280	64
FEB.											
01-10	34	10	240	175	--	--	469	322	0	1920	54
11-20	47	9.5	204	143	--	--	407	282	0	1620	47
21-26	46	7.5	196	139	--	--	445	296	0	1650	47
27-29	46	7.6	236	179	--	--	613	326	0	2220	56
MAR.											
01-06	46	7.9	224	180	--	--	521	324	0	2010	53
07-18	46	8.5	244	218	--	--	597	324	0	2350	64
19-31	36	8.5	248	215	--	--	562	304	0	2290	67
APR.											
01-16	42	8.7	228	204	--	--	492	298	0	2060	64
17-30	37	7.3	204	180	--	--	482	290	0	1900	59
MAY											
01-08	32	6.8	242	218	--	--	660	268	0	2510	72
09-13	70	8.3	188	150	--	--	558	264	0	1930	52
14...	192	13	132	73	--	--	363	282	0	1100	30
15-20	84	10	244	206	--	--	908	316	0	2950	70
21-23	150	8.9	214	175	--	--	584	292	0	2120	56
24-26	140	11	130	73	--	--	221	264	0	819	26
27-31	175	9.5	172	136	--	--	410	290	0	1520	43
JUNE											
01-09	592	7.5	80	48	--	--	90	224	0	374	13
10-15	480	7.6	123	80	--	--	244	268	0	876	24
16-22	426	7.7	89	50	--	--	114	244	0	438	14
23-30	200	8.3	108	66	--	--	166	264	0	633	19
JULY											
01-09	103	7.7	158	129	--	--	323	264	0	1300	40
10-16	76	9.5	172	140	--	--	282	254	0	1280	55
17-27	53	6.3	170	153	--	--	327	242	0	1440	48
28-31	242	14	451	91	--	--	307	268	0	1800	52
AUG.											
01...	275	9.3	433	66	--	--	399	204	0	1910	44
02-03	744	11	244	68	--	--	213	208	0	1100	27
04-12	143	8.9	240	112	--	--	327	252	0	1450	39
13-15	486	12	457	100	--	--	214	260	0	1680	38
16-31	66	7.8	224	148	--	--	376	254	0	1650	44
SEPT.											
01-14	54	5.3	191	161	--	--	420	222	0	1730	50
15-22	67	6.5	208	170	--	--	433	240	0	1820	50
23-30	80	6.4	200	168	--	--	448	234	0	1830	48
WTD. AVG. TIME	--	8.4	190	114	--	--	323	258	0	1330	37
WTD. AVG. TONS PER DAY	93	8.1	219	162	--	--	481	275	0	1880	51
	--	2.1	48	29	--	--	81	65	0	333	9.7

ANALYSES OF ADDITIONAL SAMPLES

DEC.											
13...	A38	13	337	282	660	11	--	424	0	2910	70
MAR.											
13...	A46	7.7	285	221	663	8.9	--	360	0	2630	65
MAY											
27...	A15	7.2	160	111	300	6.9	--	290	0	1210	35
AUG.											
12...	A101	5.1	196	97	181	8.0	--	256	0	1010	28

A DISCHARGE AT TIME OF SAMPLING.

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 27.0°C July 20; minimum, freezing point on many days during November to February.
Period of record:
Dissolved solids: Maximum, 6,430 mg/l May 22-25, 1967; minimum, 487 mg/l June 21-30, 1957.
Hardness: Maximum, 2,280 mg/l July 11, 13-18, 1954; minimum, 298 mg/l June 21-30, 1957.
Specific conductance: Maximum daily, 7,230 micromhos July 15, 1954; minimum daily, 689 micromhos June 29, 1957.
Water temperatures: Maximum (1949, 1950-61, 1965-68), 35.0°C July 11, 1954; minimum, (1949, 1950-61, 1964-68), freezing point on many days during winter periods.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.
Maximum observed during water year: Dissolved solids, 4,810 mg/l and hardness, 2,000 mg/l, Dec. 13.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.											
01-31	--	--	--	3390	4.61	319	1400	1190	5.6	3750	8.0
NOV.											
01-12	--	--	--	3970	5.40	392	1600	1340	7.0	4190	8.0
13-17	--	--	--	3220	4.38	358	1220	1080	7.2	3380	7.9
18-21	--	--	--	1870	2.54	177	782	698	5.1	2020	7.6
22...	--	--	--	3300	4.48	312	1080	941	8.4	3060	7.9
23-24	--	--	--	1780	2.42	163	740	684	4.8	2040	7.6
25-30	--	--	--	3500	4.76	329	1360	1220	8.0	3880	8.0
DEC.											
01-31	--	--	--	3770	5.13	304	1300	1070	9.5	4080	8.0
JAN.											
01...	--	--	--	3490	4.75	207	1320	1140	7.3	3560	8.0
02-04	--	--	--	2410	3.28	128	980	859	4.9	2580	7.9
05-31	--	--	--	3780	5.14	282	1480	1150	6.8	3930	8.0
FEB.											
01-10	--	--	--	3270	4.45	302	1320	1060	5.6	3500	8.0
11-20	--	--	--	2730	3.71	352	1100	861	5.3	3050	8.0
21-26	--	--	--	2770	3.77	344	1060	817	5.9	3170	8.0
27-29	--	--	--	3720	5.06	462	1320	1060	7.3	4020	7.9
MAR.											
01-06	--	--	--	3460	4.71	430	1300	1030	6.3	3700	8.0
07-18	--	--	--	3980	5.41	494	1500	1240	6.7	4140	7.9
19-31	--	--	--	3910	5.32	388	1500	1260	6.3	4080	8.0
APR.											
01-16	--	--	--	3690	5.02	421	1410	1170	5.7	3900	8.0
17-30	--	--	--	3200	4.35	326	1250	1010	5.0	3530	8.0
MAY											
01-08	--	--	--	3860	5.25	343	1500	1280	7.4	4140	8.1
09-13	--	--	--	2800	3.81	532	1080	869	7.4	3200	8.1
14...	--	--	--	1670	2.27	866	630	399	6.3	2120	7.9
15-20	--	--	--	4220	5.74	966	1460	1200	10	4590	8.2
21-23	--	--	--	3250	4.42	1320	1260	1020	7.2	3600	8.1
24-25	--	--	--	1390	1.89	525	625	409	3.8	1760	8.0
27-31	--	--	--	2430	3.30	1150	990	752	5.7	2740	8.1
JUNE											
01-09	--	--	--	716	.97	1140	396	212	2.0	1040	7.9
10-15	--	--	--	1440	1.96	1870	636	416	4.2	1810	7.9
16-22	--	--	--	840	1.14	965	428	228	2.4	1130	8.0
23-30	--	--	--	1140	1.55	616	542	326	3.1	1460	8.1
JULY											
01-09	--	--	--	2250	3.06	626	925	709	4.6	2540	7.9
10-16	--	--	--	2500	3.40	519	1000	797	3.9	2820	8.0
17-27	--	--	--	2640	3.59	383	1060	857	4.4	2990	7.9
28-31	--	--	--	3020	4.11	1970	1500	1280	3.4	3230	7.7
AUG.											
01...	--	--	--	3020	4.11	2240	1350	1180	4.7	3200	7.8
02-03	--	--	--	1740	2.37	3500	890	719	3.1	2040	7.7
04-12	--	--	--	2420	3.29	934	1060	853	4.4	2750	7.7
13-15	--	--	--	2770	3.77	3640	1550	1340	2.4	2840	7.8
16-31	--	--	--	2710	3.69	484	1170	962	4.8	3020	7.9
SEPT.											
01-14	--	--	--	2740	3.73	406	1140	958	5.4	3190	7.9
15-22	--	--	--	2930	3.98	537	1220	1020	5.4	3320	7.9
23-30	--	--	--	2970	4.04	645	1190	998	5.7	3320	7.8
WTD. AVG. TIME	--	--	--	2190	--	--	941	730	--	2490	7.9
WTD. AVG. TONS PER DAY	--	--	--	3050	--	--	1210	986	5.9	3330	8.0
	--	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

DEC.											
13...	1.2	3.7	--	4810	6.12	494	2000	1650	6.4	4770	7.8
MAR.											
13...	.8	1.3	--	4370	5.52	543	1620	1320	7.2	4460	7.9
MAY											
27...	.4	1.4	.01	2020	2.69	81.8	856	618	4.5	2400	8.1
AUG.											
12...	.7	7.4	--	1720	2.34	469	890	680	2.6	2010	7.6

09328500 SAN RAFAEL RIVER NEAR GREEN RIVER, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3390	3840	3960	3560	3280	3550	4030	3970	1220	2460	3200	2970
2	---	3890	3890	2300	3460	3910	4020	4020	1030	2420	2040	3020
3	3640	---	4170	2610	3620	---	3280	4140	1070	2420	---	3020
4	3490	---	4010	2840	---	3650	3230	4390	1070	2460	2840	3110
5	3490	---	4010	3950	3580	3540	3340	---	926	2620	2870	3030
6	3580	---	4050	3980	3560	3800	3400	4250	980	2620	2790	3150
7	3660	4370	4050	3980	3540	3870	---	3460	912	2690	2840	3230
8	---	4360	4440	4180	3330	3780	4450	4650	976	2690	2770	3230
9	3460	4410	3840	4260	---	3830	4220	3090	1100	2640	2790	3400
10	3630	4350	---	3100	---	---	4040	3170	1930	3330	2810	3410
11	4120	4340	4380	3860	---	3920	4010	3410	1940	2780	2310	3350
12	3820	---	3400	3910	3020	4060	4160	2820	1730	2780	2610	---
13	3720	3830	4540	3980	2870	4420	4070	3460	1620	2710	3000	---
14	3750	---	4450	4080	2520	4530	---	2120	---	2700	2620	3170
15	3810	3450	4240	---	---	4330	4240	4470	---	---	2890	3140
16	3820	2860	4100	3070	2950	4290	---	5380	1120	2760	3290	3110
17	3920	---	3940	4070	3090	4170	3150	4760	1110	2870	---	3350
18	3990	---	3920	---	---	4210	3150	4380	1090	2920	2940	3340
19	3990	1650	3870	4110	3330	4190	3290	4250	1100	2940	2910	3260
20	3960	---	---	4180	3440	4150	3750	4150	1150	2890	2960	3500
21	---	2400	3800	4110	3310	4090	4110	3690	1180	3000	2910	3420
22	---	3060	3340	3920	2690	4040	4160	4060	1210	3130	2960	3420
23	---	1950	3940	3880	3330	4030	3040	3030	1300	3100	2940	3510
24	---	2140	4180	3580	3450	---	3020	1800	1370	2970	---	3400
25	---	3890	4150	3580	---	3970	3290	1620	1460	3060	2940	3310
26	---	3590	3600	3510	2980	4130	---	1840	1560	2950	---	3300
27	3750	---	3940	---	---	4100	---	2380	1710	2970	---	3210
28	3720	3500	4110	3760	4110	4070	3460	2740	1760	3200	3440	3320
29	---	3830	4150	3730	3920	4020	3790	---	2030	---	2990	3350
30	---	3810	3690	3770	---	4040	4030	---	1380	---	3050	3070
31	---	---	3500	3260	---	4050	---	---	---	3260	3020	---
AVERAGE	---	---	3990	3680	---	4030	3710	3540	1320	2830	2870	3250

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	17	--	20	21	19	17	9	--	14	9	10	11	10	10	13	6	16	13	14	13	--	--	--	--	--	--	11	7	--	--	--	--
NOVEMBER.	17	7	--	--	--	--	7	11	3	4	5	--	8	--	5	5	--	--	8	--	6	5	7	3	1	0	0	0	2	2	--	--
DECEMBER.	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FEBRUARY.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	2	--	2	--	3	--	--	--	--	0
MARCH....	4	5	--	3	4	5	7	7	6	--	4	2	6	7	6	8	6	6	6	6	5	6	8	--	10	9	8	7	8	12	11	6
APRIL....	12	10	6	8	9	9	--	7	9	8	10	11	12	--	9	--	10	9	4	10	9	10	16	9	10	--	--	10	11	9	--	9
MAY.....	11	15	13	18	--	11	9	14	14	14	13	13	12	11	9	11	10	14	16	18	18	14	15	13	20	14	17	23	--	--	--	14
JUNE.....	15	18	18	20	20	16	14	14	13	12	14	17	20	--	--	19	24	18	19	20	19	21	22	19	18	22	21	20	19	20	--	18
JULY.....	18	23	21	21	20	21	23	20	23	20	19	23	22	20	--	19	19	23	24	27	24	22	24	23	23	22	23	21	--	--	21	21
AUGUST...	19	21	--	21	20	23	21	24	22	21	21	21	21	19	21	21	--	16	16	24	21	18	13	--	16	--	--	18	18	16	14	19
SEPTEMBER	17	18	21	14	24	21	18	20	21	17	18	--	--	14	17	14	20	14	13	13	11	14	9	17	12	14	12	13	12	11	--	15

09330230 FREMONT RIVER NEAR CAINEVILLE, UTAH

LOCATION.--Lat 38°16'40", long 111°04'00", in NE¼NE¼ sec.20, T.29 S., R.8 E., Wayne County, at gaging station 2 miles downstream from Pleasant Creek, 4.5 miles southwest of Caineville, and 9.8 miles east of Fruita, Utah.

DRAINAGE AREA.--1,190 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: March to September 1967 (miscellaneous).
Water temperatures: March 1967 to September 1968.
Sediment records: March 1967 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 30.0°C July 12; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 26,000 mg/l July 30; minimum daily, 11 mg/l July 23.
Sediment loads: Maximum daily, 10,000 tons July 26, Aug. 11, 12; minimum daily, 1 ton on several days during July.

Period of record:
Water temperatures: Maximum, 31.0°C Aug. 12, 1967; minimum (1967-68), freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 59,000 mg/l July 8, 1967; minimum daily, 11 mg/l July 23, 1968.
Sediment loads: Maximum daily, 29,000 tons Sept. 8, 1967; minimum daily, 1 ton on several days during April 1967 and July 1968.

TEMPERATURE (°C) OF WATER, MARCH TO SEPTEMBER 1967

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
MARCH....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	12	6	8	7	8	7	6	6	7	13	11	--	--	--	7	2	7	
APRIL....	7	7	13	--	9	7	6	4	--	6	14	12	17	9	--	13	17	17	13	10	--	11	8	15	10	11	12	18	13	7		11
MAY.....	--	14	17	13	9	23	--	13	19	11	13	13	18	--	25	17	13	22	17	17	--	30	17	16	18	18	18	14	18	15	12	17
JUNE.....	--	18	16	24	21	16	18	16	17	19	19	20	12	--	13	19	17	25	19	18	--	19	21	13	24	22	23	24	14	22		19
JULY.....	22	23	19	20	22	--	--	17	25	18	19	28	17	19	24	18	23	28	29	21	19	21	--	22	27	26	26	19	29	18	24	22
AUGUST...	--	24	22	18	24	23	19	24	23	--	29	31	--	--	24	22	22	28	--	30	28	29	23	29	17	--	20	17	22	--	17	
SEPTEMBER	16	18	24	24	21	15	21	20	13	14	16	18	10	13	--	21	16	17	20	23	20	16	17	16	13	23	--	18	--	--		18

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	22	--	20	21	17	17	13	13	9	11	19	9	19	16	10	--	7	--	14	9	10	16	7	14	10	11	13	5	7	7	13	12
NOVEMBER.	8	8	6	7	8	9	8	--	4	6	5	9	--	9	5	6	--	11	--	8	6	3	--	7	5	6	3	2	6	4	--	6
DECEMBER.	4	3	1	2	1	0	1	1	1	2	1	2	0	--	--	--	--	--	--	--	--	0	1	0	1	1	0	1	--	0	0	--
JANUARY..	0	0	--	--	--	--	--	--	--	--	--	0	--	0	--	0	0	0	--	0	0	--	0	0	--	0	--	4	6	6	5	6	--
FEBRUARY.	5	2	6	6	6	--	--	3	2	3	6	6	5	6	8	3	6	9	--	6	--	3	7	5	--	6	9	--	8	--	--	5
MARCH....	13	--	13	12	14	8	--	6	7	7	7	--	8	8	10	13	--	--	--	--	--	--	--	--	--	--	--	8	10	16	18	15	--
APRIL....	14	8	12	18	12	10	--	15	19	18	18	15	12	15	14	12	10	13	14	12	--	12	15	10	9	9	12	14	--	18	--	13
MAY.....	16	15	--	18	--	14	18	17	15	--	20	15	12	--	15	20	22	23	20	20	18	17	--	15	20	--	21	23	18	--	28	--
JUNE....	24	23	--	19	19	18	13	12	--	22	--	12	14	18	21	27	18	17	--	25	29	--	28	17	15	19	19	28	--	20	--	19
JULY.....	15	16	25	18	29	--	17	20	19	29	27	30	25	23	19	22	24	26	--	24	--	20	28	--	20	25	--	18	19	20	18	22
AUGUST...	--	22	22	--	18	22	21	24	18	26	--	18	16	20	--	--	22	18	--	15	18	15	23	15	21	--	20	28	20	--	26	--
SEPTEMBER	--	14	15	16	18	22	24	23	--	15	--	16	18	14	18	11	--	10	10	--	10	11	6	8	8	10	15	12	17	19	--	14

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (°C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT. 17, 1967	1025	7	57	145	8	13	--			32	62	99	100	--	--	VPWC
NOV. 14.....	1430	11	87	347	10	15				30	44	76	96	100	--	--	VPWC
DEC. 4.....	1100	0	76	318	12	17				29	45	76	99	100	--	--	VPWC
DEC. 27.....	1240	0	115	3530	6	7				18	47	84	98	100	--	--	VPWC
MAR. 14, 1968	1120	8	93	95	--	--				--	--	--	--				--
APR. 16.....	1220	13	50	77	32	47				--	96	99	100	--	--	--	VPWC
MAY 13.....	1155	12	57	1860	48	64				82	86	95	100	--	--	--	VPWC
JUNE 14.....	1105	19	28	223	3	3				--	14	55	98	100	--	--	VPWC
JULY 16.....	1150	22	36	48	--	--				--	--	--	--	--			--
JULY 30.....	0915	20	55	1910	48	64				93	98	99	100	--	--	--	VPWC
AUG. 6.....	1200	22	76	1990	23	28				41	48	74	98	100	--	--	VPWC
AUG. 14.....	1315	18	158	18000	26	38				58	77	96	100	--	--	--	VPWC
SEPT. 13.....	1145	18	47	143	8	10				--	27	60	98	100	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (°C)	NUMBER OF SAMPLING POINTS	WATER DISCHARGE (CFS)	BED MATERIAL PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .062	.125	.250	.500	1.000	2.000	4.000	8.000	16.00	32.00	64.00	METHOD OF ANALYSIS
DEC. 4, 1967	1100	0		76	2	10	30	43	49	55	65	78	91	100	--	SV
MAY 13, 1968	1155	12		57	1	4	16	27	29	32	40	56	81	99		SV

09330230 FREMONT RIVER NEAR CAINEVILLE, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	67	330	60	68	170	31	93	470	120
2	64	380	66	68	190	35	81	330	72
3	67	430	78	68	130	24	88	490	120
4	65	200	35	68	160	29	81	380	83
5	65	190	33	69	140	26	87	300	70
6	68	170	31	71	130	25	88	380	90
7	68	180	33	71	120	23	98	1400	330
8	69	210	39	76	260	53	90	1400	343
9	68	200	37	79	400	85	87	380	89
10	68	170	31	79	400	85	94	760	190
11	68	180	33	79	330	70	93	1200	320
12	68	220	40	82	290	64	98	580	150
13	68	180	33	84	320	73	84	100	23
14	65	49	9.0	85	340	78	79	--	40
15	63	200	34	84	240	54	87	--	80
16	60	170	28	84	260	59	90	--	100
17	57	130	20	84	230	52	85	--	70
18	57	140	22	84	190	43	85	--	70
19	59	160	25	84	210	48	91	--	100
20	64	110	19	84	230	52	90	--	100
21	64	120	21	85	240	55	87	--	80
22	64	62	11	85	220	50	79	240	51
23	63	110	19	87	220	52	77	140	29
24	61	75	12	85	220	50	76	240	49
25	64	250	43	87	230	54	88	100	24
26	67	210	38	87	260	61	95	3800	970
27	67	100	18	81	310	68	100	3300	890
28	68	210	39	75	490	100	94	2100	530
29	69	210	39	87	340	80	88	1300	310
30	69	180	34	90	470	110	84	570	130
31	69	210	39	--	--	--	84	110	25
TOTAL	2023	--	1019.0	2401	--	1689	2717	--	5645

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	88	360	86	84	320	73	101	240	65
2	88	210	50	94	690	180	98	230	61
3	93	--	80	93	380	95	98	230	61
4	93	--	80	88	340	81	98	190	50
5	93	--	80	96	430	110	100	140	38
6	93	--	80	96	380	98	100	160	43
7	90	--	60	91	330	81	96	150	39
8	90	--	60	90	280	68	94	150	38
9	92	--	70	98	270	71	94	150	38
10	94	--	80	104	310	87	98	140	37
11	94	--	80	106	560	160	93	59	15
12	92	160	40	108	500	150	91	95	23
13	90	220	53	105	340	100	94	130	33
14	96	290	75	109	1200	350	93	98	25
15	96	280	73	108	410	120	93	95	24
16	96	270	70	106	300	86	90	94	23
17	96	27	7.0	90	300	73	88	93	22
18	96	54	14	91	880	220	88	62	15
19	96	130	34	115	1000	310	84	73	17
20	96	220	57	120	1100	360	82	100	22
21	100	160	43	122	990	330	74	55	11
22	100	120	32	124	840	280	71	41	8.0
23	100	93	25	122	490	160	71	42	8.0
24	100	600	160	128	760	260	58	44	8.0
25	100	1100	300	120	580	190	68	46	8.0
26	98	1000	260	106	400	110	67	38	7.0
27	98	970	260	108	320	93	65	38	7.0
28	96	1000	260	106	310	89	65	55	10
29	94	790	200	102	300	83	65	35	6.0
30	90	680	170	--	--	--	63	37	6.0
31	90	970	240	--	--	--	61	42	7.0
TOTAL	2928	--	3179.0	3034	--	4468	2611	--	775.0

09330230 FREMONT RIVER NEAR CAINEVILLE, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	60	44	7.0	47	310	39	68	3100	570
2	57	25	4.0	51	250	34	68	1600	290
3	59	37	6.0	50	71	10	65	2500	440
4	57	64	10	45	87	11	59	3400	540
5	59	65	10	47	110	14	51	1600	220
6	59	91	14	42	130	15	46	2700	340
7	59	69	11	40	74	8.0	41	1100	120
8	55	47	7.0	37	57	6.0	39	640	67
9	50	38	5.0	35	46	4.0	36	600	58
10	50	44	6.0	35	69	7.0	38	570	58
11	60	83	13	39	92	10	37	520	52
12	59	53	8.0	48	560	73	34	470	43
13	56	68	10	57	1100	170	30	220	18
14	57	70	11	50	160	22	28	190	14
15	59	88	14	51	67	9.0	26	130	9.0
16	52	110	15	52	77	11	29	95	7.0
17	51	71	10	38	130	13	27	100	7.0
18	60	160	26	40	120	13	28	91	7.0
19	69	780	150	35	52	5.0	26	79	6.0
20	61	260	43	33	71	6.0	24	67	4.0
21	56	200	30	32	62	5.0	22	42	2.0
22	50	150	20	35	76	7.0	27	60	4.0
23	50	160	22	52	210	29	25	79	5.0
24	48	110	14	48	350	45	32	350	30
25	48	110	14	38	200	21	38	510	52
26	47	110	14	33	110	10	36	180	17
27	46	120	15	29	27	2.0	27	51	4.0
28	45	98	12	33	68	6.0	28	47	4.0
29	45	110	13	44	540	64	30	78	6.0
30	46	130	16	54	2100	310	35	110	10
31	--	--	--	61	3700	610	--	--	--
TOTAL	1630	--	550.0	1331	--	1589.0	1100	--	3004.0

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	38	170	17	68	--	8000	51	380	52
2	40	350	38	60	9600	1600	50	370	50
3	40	120	13	124	13000	4400	51	350	48
4	40	140	15	118	--	1000	51	420	58
5	39	81	9.0	90	1800	440	50	330	45
6	37	81	8.0	76	2000	410	50	220	30
7	38	81	8.0	81	5000	1100	50	190	26
8	39	110	12	80	4800	S1800	50	190	26
9	38	84	9.0	91	10000	2500	52	160	22
10	37	61	6.0	82	4500	1000	50	130	18
11	34	59	5.0	113	--	10000	51	140	19
12	34	40	4.0	103	22000	S10000	52	150	21
13	30	23	2.0	86	11000	2600	48	150	19
14	27	16	1.0	158	19000	S9900	48	200	26
15	30	30	2.0	85	--	2000	47	150	19
16	34	48	4.0	67	--	720	45	100	12
17	33	22	2.0	57	1000	150	44	100	12
18	31	12	1.0	57	1000	150	44	100	12
19	30	14	1.0	56	980	150	40	95	10
20	31	15	1.0	56	930	140	39	76	8.0
21	32	15	1.0	54	790	120	40	57	6.0
22	32	15	1.0	54	780	110	40	51	6.0
23	28	11	1.0	55	630	94	41	88	10
24	27	30	2.0	51	830	110	41	77	9.0
25	33	48	4.0	51	390	54	42	86	10
26	36	72	7.0	54	470	69	42	81	9.0
27	102	--	10000	54	650	95	42	74	8.0
28	38	2000	210	56	830	130	48	180	23
29	48	9300	S2800	50	560	76	50	140	19
30	55	26000	S4600	52	470	66	50	230	31
31	101	22000	S6700	54	380	55	--	--	--
TOTAL	1232	--	24484.0	2293	--	54039	1399	--	664.0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 24699
TOTAL LOAD FOR YEAR (TONS) 101105.0

S COMPUTED BY SUBDIVIDING DAY.

09352900 VALLECITO CREEK NEAR BAYFIELD, COLO.
(Hydrologic bench-mark station)

LOCATION (revised).--Lat 37°28'39", long 107°32'35", in NW¼ sec.16, T.37 N., R.6 W. (projected), La Plata County, at gaging station 60 ft upstream from Fall Creek, 0.8 mile downstream from Bear Creek, 6.7 miles north of Vallecito Dam, and 18 miles north of Bayfield.

DRAINAGE AREA.--72.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1968 (discontinued).
Water temperatures: November 1962 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 12.0°C July 22, 23, Aug. 4; minimum, freezing point on many days during December to February.

Period of record:
Water temperatures: Maximum, 17.0°C July 21, 1963; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)
OCT.										
10...	42	3.2	10	2.4	1.0	.8	33	8.6	1.0	.4
JAN.										
08...	12	3.9	11	3.4	1.2	.4	42	9.2	.8	.3
FEB.										
01...	12	3.9	11	3.1	1.4	.5	40	8.8	.9	.3
MAR.										
01...	13	3.9	12	2.2	1.7	.8	38	10	1.1	.2
APR.										
04...	51	3.8	9.6	2.4	1.0	.4	33	7.8	1.1	.3
MAY										
10...	186	3.9	9.6	2.4	1.0	.4	32	7.5	1.3	.2
JUNE										
01...	1360	2.6	8.0	.5	.5	.3	19	5.5	1.5	.2
JULY										
15...	192	2.5	6.4	1.9	.5	.2	20	5.0	1.2	.3
AUG.										
01...	339	2.4	10	1.2	.5	.3	32	5.0	.9	.3
30...	77	3.5	9.6	3.9	1.0	.4	38	8.5	.9	.2

DATE	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
10...	.8	.01	63	.09	7.14	36	9	.1	78	7.0
JAN.										
08...	.8	.01	54	.07	1.75	42	8	.1	87	7.4
FEB.										
01...	.8	.00	53	.07	1.72	40	7	.1	85	7.5
MAR.										
01...	.1	.01	39	.05	1.37	40	9	.1	84	7.2
APR.										
04...	.5	.02	44	.06	6.06	34	7	.1	71	7.4
MAY										
10...	.8	.00	38	.05	19.1	34	8	.1	68	6.9
JUNE										
01...	.7	.00	25	.03	91.8	22	6	.0	45	7.0
JULY										
15...	.1	.00	17	.02	8.81	24	8	.0	42	7.3
AUG.										
01...	.3	.00	35	.05	32.0	30	4	.0	58	7.2
30...	.1	.02	43	.06	8.94	40	9	.1	77	7.2

09352900 VALLECITO CREEK NEAR BAYFIELD, COLO.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER																																
MAXIMUM	--	--	--	--	--	--	--	--	--	7	6	7	7	6	6	4	4	4	4	4	4	4	4	4	4	3	--	--	--	--	--	--
MINIMUM	--	--	--	--	--	--	--	--	--	6	4	5	4	5	4	3	3	3	3	3	3	3	3	3	3	3	--	--	--	--	--	--
NOVEMBER																																
MAXIMUM	--	3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1	--	1
MINIMUM	--	2	1	1	2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	--	1
DECEMBER																																
MAXIMUM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--
JANUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	--
MINIMUM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	--
FEBRUARY																																
MAXIMUM	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	--	--	--
MINIMUM	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	--	--	--
MARCH																																
MAXIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3		1
MINIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1		1
APRIL																																
MAXIMUM	2	2	2	2	3	3	2	3	3	3	4	3	3	4	3	3	3	2	2	3	3	2	3	3	4	3	3	4	6	6	--	3
MINIMUM	1	2	1	1	1	2	1	1	1	1	2	2	3	1	2	2	2	2	1	1	2	1	2	1	2	2	2	1	2	2	--	1
MAY																																
MAXIMUM	4	4	3	3	3	3	5	6	4	4	4	3	3	4	6	4	6	5	6	6	6	4	4	3	6	6	6	6	4	4	6	4
MINIMUM	2	2	2	2	3	2	1	2	3	3	3	1	2	2	2	2	2	2	2	2	3	3	3	3	2	3	3	3	3	3	3	2
JUNE																																
MAXIMUM	6	6	4	6	6	4	5	4	5	6	8	8	7	7	7	7	7	7	7	8	8	7	8	7	8	8	9	9	8	8	--	6
MINIMUM	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	--	3
JULY																																
MAXIMUM	8	8	8	7	7	9	8	9	9	9	11	9	10	9	11	10	11	11	11	11	11	12	12	11	11	11	11	11	10	10		9
MINIMUM	3	4	6	6	7	7	7	7	7	8	7	7	8	7	7	7	7	8	8	8	8	9	10	9	9	9	9	9	8	9	9	7
AUGUST																																
MAXIMUM	9	9	10	12	11	10	11	10	11	11	10	11	10	10	9	9	9	9	11	10	9	9	9	10	11	10	10	11	11	10	10	10
MINIMUM	9	8	8	8	8	9	9	9	9	9	9	9	8	8	6	6	7	7	7	8	8	8	7	6	7	8	8	8	8	7	7	7
SEPTEMBER																																
MAXIMUM	9	9	9	8	8	8	8	8	8	9	9	8	9	9	8	8	7	8	8	8	7	7	7	7	7	7	7	7	7	8	--	7
MINIMUM	7	7	8	6	6	7	7	7	7	7	8	8	8	7	7	7	4	6	6	6	7	6	6	6	6	6	6	6	7	7	--	6

09355500 SAN JUAN RIVER NEAR ARCHULETA, N. MEX.
(Irrigation network station)

LOCATION.--Lat 36°48'10", long 107°41'55", in NE¼ sec.20, T.30 N., R.8 W., San Juan County, at gaging station at river mile 136.8, 0.5 mile upstream from Gobernador Canyon, 0.8 mile northeast of Archuleta, and 7.2 miles downstream from Navajo Dam.

DRAINAGE AREA.--3,260 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: December 1954 to September 1968.
Water temperatures: December 1954 to September 1968.
Sediment records: December 1954 to September 1965.

EXTREMES.--1967-68:
Dissolved solids: Maximum, 262 mg/l Apr. 1; minimum, 167 mg/l Oct. 1-31.
Hardness: Maximum, 120 mg/l Jan. 26-31, Apr. 1; minimum, 87 mg/l Oct. 1-31.
Specific conductance: Maximum daily, 415 micromhos Mar. 30; minimum daily, 243 micromhos Oct. 8.
Water temperatures: Maximum, 20.0°C Oct. 2; minimum, freezing point Dec. 22.

Period of record:
Dissolved solids (1956-68): Maximum, 472 mg/l Jan. 5, 1960; minimum, 85 mg/l June 14 to July 11, 1957.
Hardness (1956-68): Maximum, 250 mg/l Sept. 19, 1961; minimum, 40 mg/l July 1-11, 1957.
Specific conductance: Maximum daily, 685 micromhos Jan. 5, 1960; minimum daily, 101 micromhos July 2, 1957.
Water temperatures: Maximum, 26.0°C Aug. 19, 1955; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)
OCT.												
01-31	350	--	--	27	4.7	19	--	84	0	--	--	--
NOV.												
01-30	355	--	--	31	4.7	24	--	96	0	--	--	--
DEC.												
01-31	344	14	.01	33	6.2	22	2.1	102	0	63	3.3	.3
JAN.												
01-25	322	--	--	34	5.8	20	--	104	0	--	--	--
26-31	224	--	--	38	6.1	30	--	108	0	--	--	--
FEB.												
01-29	350	--	--	33	6.0	19	--	106	0	--	--	--
MAR.												
01-27	287	--	.00	35	6.2	24	--	108	0	--	--	--
28-31	325	14	.01	36	6.8	38	2.4	106	0	101	4.5	.2
APR.												
01...	534	--	--	35	7.9	38	--	108	0	--	--	--
02-30	1030	--	--	36	4.4	21	--	108	0	--	--	--
MAY												
01-31	792	14	.00	32	7.3	20	2.5	106	0	56	3.2	.3
JUNE												
01-30	474	--	--	32	6.3	19	--	106	0	--	--	--
JULY												
01-31	492	--	--	34	6.1	20	--	108	0	--	--	--
AUG.												
01-31	626	13	.02	34	5.8	19	2.1	114	0	57	2.4	.3
SEPT.												
01-30	790	--	--	33	5.2	17	--	98	0	--	--	--
WTD. AVG. TIME	--	--	--	33	5.7	20	--	104	0	--	--	--
WTD. AVG. TONS PER DAY	515	--	--	33	5.8	21	--	103	0	--	--	--
	--	--	--	46	7.9	28	--	145	0	--	--	--

DATE	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.												
01-31	--	--	--	167	.23	158	87	18	.9	259	7.3	--
NOV.												
01-30	--	--	--	193	.26	185	97	18	1.1	299	8.2	--
DEC.												
01-31	.1	.16	194	204	.28	189	108	24	.9	313	7.6	6
JAN.												
01-25	--	--	--	198	.27	172	109	24	.8	308	7.6	--
26-31	--	--	--	242	.33	146	120	32	1.2	376	7.6	--
FEB.												
01-29	--	--	--	192	.26	181	107	20	.8	302	7.6	--
MAR.												
01-27	--	--	--	206	.28	160	113	24	1.0	328	7.4	--
28-31	.4	.12	255	259	.35	227	118	31	1.5	407	7.2	5
APR.												
01...	--	--	--	262	.36	378	120	32	1.5	400	7.5	--
02-30	--	--	--	199	.27	553	108	20	.9	305	7.3	--
MAY												
01-31	.7	.05	188	192	.26	411	110	23	.9	309	7.2	5
JUNE												
01-30	--	--	--	190	.26	243	106	19	.8	304	7.3	--
JULY												
01-31	--	--	--	204	.28	271	110	22	.8	315	7.7	--
AUG.												
01-31	.2	.06	190	200	.27	338	109	16	.8	310	7.5	--
SEPT.												
01-30	--	--	--	186	.25	397	104	24	.7	288	7.9	--
WTD. AVG. TIME	--	--	--	195	--	--	106	21	--	304	7.5	--
WTD. AVG. TONS PER DAY	--	--	--	196	.27	271	106	21	.9	306	7.5	--
	--	--	--	--	--	--	--	--	--	--	--	--

09355500 SAN JUAN RIVER NEAR ARCHULETA, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	271	317	302	315	299	400	302	297	305	316	298
2	250	271	317	302	306	342	309	307	307	308	328	288
3	253	270	317	299	305	345	309	307	299	315	308	306
4	253	300	317	300	303	341	306	307	302	307	331	294
5	253	300	309	300	303	341	304	307	307	309	311	294
6	251	288	320	300	303	344	304	322	302	309	316	292
7	249	292	309	300	303	344	304	322	307	308	322	292
8	243	288	309	300	296	338	306	319	304	314	316	287
9	261	288	312	300	298	341	312	319	299	312	314	289
10	269	289	312	300	303	348	313	320	302	310	314	285
11	243	289	311	302	303	345	314	322	304	308	322	288
12	246	290	313	302	304	313	299	319	299	309	316	291
13	247	297	325	302	307	341	301	318	302	315	322	291
14	247	313	328	302	314	338	301	312	302	315	319	292
15	295	313	325	302	306	328	301	306	307	309	316	290
16	272	313	319	297	301	348	313	306	304	316	316	285
17	300	308	319	299	301	351	314	309	307	313	316	291
18	249	308	322	297	301	334	311	304	334	322	314	291
19	258	328	322	302	301	344	306	321	304	312	305	289
20	256	335	338	303	306	303	307	307	303	316	300	299
21	256	306	311	304	306	303	307	310	305	324	305	288
22	259	303	311	304	303	312	306	307	303	324	305	284
23	257	292	---	356	296	297	304	307	305	324	305	279
24	256	295	303	347	293	297	304	307	304	324	311	281
25	258	295	300	347	301	303	304	299	302	324	295	286
26	270	292	300	386	293	297	302	307	299	321	295	284
27	270	300	297	383	301	300	302	299	299	325	297	287
28	258	297	300	381	301	399	299	302	311	323	316	280
29	258	303	303	382	303	408	301	297	303	324	292	289
30	263	303	303	361	---	415	301	299	304	312	292	281
31	263	---	303	360	---	405	---	299	---	316	292	---
AVERAGE	259	298	313	320	303	338	309	309	304	315	311	289

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	8.0	6.0	5.0	3.0	4.0	5.0	7.0	8.0	16.0	16.0	13.0
2	20.0	8.0	5.0	5.0	2.0	4.0	5.0	6.0	8.0	16.0	16.0	13.0
3	13.0	7.0	5.0	7.0	3.0	4.0	5.0	5.0	8.0	16.0	16.0	13.0
4	13.0	10.0	5.0	3.0	3.0	5.0	5.0	7.0	13.0	16.0	13.0	12.0
5	12.0	11.0	8.0	2.0	3.0	5.0	4.0	8.0	14.0	16.0	12.0	13.0
6	14.0	14.0	10.0	3.0	3.0	5.0	5.0	8.0	14.0	16.0	12.0	11.0
7	9.0	15.0	9.0	3.0	3.0	5.0	7.0	8.0	14.0	16.0	11.0	13.0
8	9.0	9.0	9.0	3.0	9.0	5.0	9.0	5.0	13.0	16.0	11.0	14.0
9	9.0	9.0	8.0	4.0	8.0	5.0	5.0	5.0	14.0	---	16.0	15.0
10	16.0	9.0	9.0	3.0	7.0	3.0	5.0	5.0	14.0	---	16.0	15.0
11	9.0	12.0	8.0	4.0	7.0	3.0	5.0	12.0	14.0	---	16.0	13.0
12	10.0	12.0	7.0	1.0	4.0	---	8.0	12.0	15.0	16.0	14.0	13.0
13	9.0	12.0	7.0	2.0	8.0	5.0	9.0	12.0	15.0	16.0	13.0	13.0
14	10.0	13.0	6.0	2.0	5.0	5.0	8.0	11.0	15.0	16.0	12.0	13.0
15	9.0	13.0	5.0	2.0	5.0	3.0	9.0	11.0	15.0	16.0	11.0	9.0
16	9.0	13.0	5.0	7.0	4.0	4.0	9.0	12.0	16.0	15.0	10.0	9.0
17	15.0	11.0	4.0	5.0	4.0	4.0	9.0	12.0	16.0	15.0	10.0	14.0
18	11.0	12.0	3.0	5.0	5.0	4.0	9.0	12.0	16.0	15.0	10.0	14.0
19	9.0	13.0	5.0	3.0	4.0	3.0	5.0	12.0	17.0	15.0	11.0	15.0
20	9.0	12.0	9.0	3.0	5.0	5.0	5.0	12.0	16.0	15.0	11.0	12.0
21	9.0	13.0	3.0	5.0	5.0	5.0	5.0	12.0	16.0	16.0	10.0	11.0
22	9.0	10.0	3.0	3.0	5.0	3.0	6.0	12.0	16.0	15.0	10.0	13.0
23	9.0	8.0	---	6.0	5.0	3.0	5.0	8.0	16.0	15.0	13.0	13.0
24	8.0	8.0	3.0	2.0	5.0	3.0	5.0	8.0	16.0	---	15.0	13.0
25	8.0	6.0	5.0	2.0	5.0	4.0	5.0	8.0	16.0	15.0	15.0	13.0
26	15.0	5.0	5.0	4.0	9.0	4.0	5.0	8.0	16.0	15.0	16.0	13.0
27	15.0	6.0	7.0	4.0	5.0	6.0	5.0	8.0	16.0	15.0	16.0	13.0
28	9.0	10.0	8.0	3.0	4.0	5.0	4.0	8.0	16.0	15.0	11.0	12.0
29	9.0	8.0	5.0	4.0	3.0	6.0	5.0	8.0	16.0	15.0	11.0	12.0
30	13.0	9.0	5.0	6.0	---	5.0	5.0	8.0	16.0	16.0	11.0	12.0
31	14.0	---	7.0	6.0	---	5.0	---	8.0	---	16.0	11.0	---
AVERAGE	11.5	10.0	6.0	4.0	5.0	4.5	6.0	9.0	14.5	15.5	13.0	12.5

09357300 SAN JUAN RIVER ABOVE ANIMAS RIVER, AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'10", long 108°12'45", in NE¼SE¼NE¼ sec.20, T.29 N., R.13 W., San Juan County, 100 ft upstream from mouth of Animas River, at south edge of Farmington, and at river mile 99.
DRAINAGE AREA.--5,800 sq mi, approximately.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
NOV.									
07...	1645	210	--	--	--	--	133	0	--
DEC.									
27...	1605	350	--	--	--	--	121	0	--
JAN.									
31...	1715	257	--	--	--	--	156	0	--
MAR.									
13...	0905	236	--	--	--	--	129	0	--
APR.									
22...	--	1440	--	--	--	--	122	0	--
MAY									
24...	2100	590	--	--	--	--	152	0	--
JULY									
03...	0715	440	--	--	--	--	135	0	--
31...	0820	776	--	--	--	--	140	0	--
AUG.									
29...	2000	510	--	--	--	--	137	0	--
SEPT.									
23...	--	633	17	45	8.6	40	114	0	128

09357300 SAN JUAN RIVER ABOVE ANIMAS RIVER, AT FARMINGTON, N. MEX.--Continued

PERIOD OF RECORD.--Chemical analyses: March 1963 to September 1968.
REMARKS.--Daily mean discharges are calculated from the streamflow records for the San Juan River at Farmington (Station 09365000) and Animas River at Farmington (Station 09364500).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
NOV.									
07...	5.9	--	--	198	89	--	619	7.3	12
DEC.									
27...	4.5	--	--	167	68	--	521	7.5	1
JAN.									
31...	13	--	--	267	139	--	884	7.8	--
MAR.									
13...	7.6	--	--	224	118	--	788	8.0	4
APR.									
22...	4.0	--	--	144	44	--	401	6.8	--
MAY									
24...	6.1	--	--	236	111	--	725	7.3	--
JULY									
03...	4.1	--	--	188	77	--	556	7.2	10
31...	2.8	--	--	188	74	--	564	7.2	--
AUG.									
29...	3.6	--	--	158	46	--	464	7.2	22
SEPT.									
23...	2.4	.1	297	148	54	1.4	464	7.8	16

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.

LOCATION (revised).--Lat 36°43'13", long 108°12'07", in SE¼ sec.16, T.29 N., R.13 W., San Juan County, at gaging station at bridge on former State Highway 17, 0.6 mile downstream from bridge on State Highway 17 and 1.3 miles upstream from mouth.
DRAINAGE AREA.--1,360 sq mi, approximately.
PERIOD OF RECORD.- Chemical analyses: June 1940 to September 1968.
Water temperatures: December 1950 to September 1968.
Sediment records: December 1950 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 597 mg/l Sept. 11-30; minimum, 130 mg/l June 14-25.
Hardness: Maximum, 362 mg/l Dec. 1-31; minimum, 90 mg/l June 14-25.
Specific conductance: Maximum daily, 981 micromhos Dec. 23; minimum daily, 197 micromhos June 18.
Water temperatures: Maximum, 27.0°C July 21; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 17,200 mg/l Aug. 11; minimum daily, 13 mg/l Jan. 9, 10, July 7, Sept. 5.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
OCT.												
01-31	168	--	--	114	17	53	--	216	0	--	--	--
NOV.												
01-30	208	--	--	115	17	53	--	218	0	--	--	--
DEC.												
01-31	229	12	.00	112	20	50	4.0	220	0	224	32	.5
JAN.												
01-31	228	--	--	110	16	45	--	214	0	--	--	--
FEB.												
01-29	264	--	--	103	17	47	--	194	0	--	--	--
MAR.												
01-26	320	--	--	96	16	38	--	186	0	--	--	--
27-31	522	9.8	.01	79	13	26	3.0	168	0	137	14	.3
APR.												
01-03	650	--	--	70	10	18	--	156	0	--	--	--
07-13	444	--	--	79	11	24	--	162	0	--	--	--
14-20	684	--	--	68	8.9	16	--	142	0	--	--	--
21-30	372	--	--	77	12	24	--	154	0	--	--	--
MAY												
01-02	508	--	--	76	10	22	--	154	0	--	--	--
04-18	1100	8.2	.01	63	7.8	15	2.1	138	0	90	5.3	.4
20-21	1640	--	--	56	5.7	9.9	--	132	0	--	--	--
22-31	3750	--	--	39	5.2	6.4	--	94	0	--	--	--
JUNE												
01-08	5220	--	--	32	3.9	6.1	--	76	0	--	--	--
12-13	2160	--	--	42	6.6	11	--	96	0	--	--	--
14-25	3590	--	--	29	4.3	5.8	--	66	0	--	--	--
26-30	1950	--	--	36	4.9	9.3	--	78	0	--	--	--
JULY												
01-03	1280	--	--	45	6.2	13	--	96	0	--	--	--
04-14	904	--	--	56	6.4	17	--	112	0	--	--	--
15-20	557	--	--	68	9.4	24	--	138	0	--	--	--
21-27	462	--	--	77	10	28	--	156	0	--	--	--
28-31	1080	--	--	60	9.4	21	--	132	0	--	--	--
AUG.												
01-14	1080	9.0	.06	60	7.4	18	2.2	130	0	94	2.7	.4
15-19	1100	--	--	56	5.7	14	--	126	0	--	--	--
20-24	496	--	--	78	5.7	24	--	156	0	--	--	--
25-31	281	--	--	92	8.4	34	--	188	0	--	--	--
SEPT.												
01-10	146	--	--	105	12	42	--	184	0	--	--	--
11-30	119	--	--	120	12	51	--	220	0	--	--	--
WTD. AVG. TIME	--	--	--	56	7.8	17	--	119	0	--	--	--
WTD. AVG. TONS PER DAY	A752	--	--	89	13	35	--	174	0	--	--	--
	--	--	--	112	15	35	--	238	0	--	--	--
ANALYSIS OF ADDITIONAL SAMPLES												
MAY												
24...	2840	--	--	39	3.8	5.9	--	84	0	--	--	--

A MEAN DISCHARGE FOR 366 DAYS. MEAN DISCHARGE FOR 359 DAYS OF CHEMICAL ANALYSES, 737 CFS.

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

EXTREMES.--1967-68:--Continued
Sediment loads: Maximum daily, 59,900 tons Aug. 11; minimum daily, 4.5 tons Sept. 13.
Period of record:
Dissolved solids (1940-49, 1952-54, 1956-68): Maximum, 1,500 mg/l Aug. 19, 1949; minimum, 111 mg/l June 11-17, 19-20, 1944.
Hardness (1956-68): Maximum, 608 mg/l July 30, 1961; minimum, 80 mg/l July 1-7, 1957.
Specific conductance (1941-68): Maximum daily, 1,980 micromhos Aug. 19, 1944; minimum daily, 170 micromhos June 27, 1944.
Water temperatures: Maximum, 32.0°C Aug. 26, 1966; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 36,800 mg/l July 23, 1954; minimum daily, 1 mg/l on several days during September 1956, 1958.
Sediment loads: Maximum daily, 337,000 tons July 23, 1954; minimum daily, less that 0.50 ton on many days during September 1955, 1956, December 1957, July and September 1959, August and September 1960, and August 1963.
REMARKS.--Additional chemical analyses performed in conjunction with particle size analyses of suspended sediment.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR
OCT.												
01-31	--	--	--	574	.78	260	356	179	1.2	869	7.7	--
NOV.												
01-30	--	--	--	576	.78	323	356	178	1.2	871	7.7	--
DEC.												
01-31	1.4	.26	564	572	.78	354	362	182	1.1	857	7.9	3
JAN.												
01-31	--	--	--	536	.73	330	342	166	1.1	819	8.0	--
FEB.												
01-29	--	--	--	538	.73	383	328	169	1.1	798	7.9	--
MAR.												
01-26	--	--	--	493	.67	426	304	152	.9	728	7.8	--
27-31	2.3	.17	368	393	.53	554	250	112	.7	591	7.5	15
APR.												
01-03	--	--	--	314	.43	551	216	88	.5	489	7.3	--
07-13	--	--	--	370	.50	444	244	111	.7	570	7.5	--
14-20	--	--	--	298	.41	550	206	90	.5	466	7.4	--
21-30	--	--	--	372	.51	374	242	116	.7	565	7.6	--
MAY												
01-02	--	--	--	361	.49	495	232	106	.6	546	7.4	--
03-18	1.4	.03	258	274	.37	814	189	76	.5	429	7.3	5
20-21	--	--	--	224	.30	992	163	55	.3	363	7.3	--
22-31	--	--	--	158	.21	1390	119	42	.3	264	7.2	--
JUNE												
01-08	--	--	--	137	.19	1930	96	34	.3	224	7.0	--
12-13	--	--	--	194	.26	1130	132	54	.4	313	7.2	--
14-25	--	--	--	130	.18	1260	90	36	.3	214	7.0	--
26-30	--	--	--	162	.22	853	110	46	.4	267	7.2	--
JULY												
01-03	--	--	--	208	.28	719	138	60	.5	339	7.4	--
04-14	--	--	--	253	.34	618	166	74	.6	407	7.5	--
15-20	--	--	--	328	.45	493	208	95	.7	518	7.5	--
21-27	--	--	--	374	.51	467	234	106	.8	577	7.3	--
28-31	--	--	--	288	.39	840	184	76	.7	456	7.2	--
AUG.												
01-14	.8	.04	259	280	.38	816	180	74	.6	437	7.7	0
15-19	--	--	--	244	.33	725	163	60	.5	388	7.7	--
20-24	--	--	--	348	.47	466	218	90	.7	529	7.9	--
25-31	--	--	--	433	.59	329	264	110	.9	649	7.9	--
SEPT.												
01-10	--	--	--	518	.70	204	310	159	1.0	766	7.8	--
11-30	--	--	--	597	.81	192	348	168	1.2	871	7.8	--
WTD. AVG. TIME	--	--	--	262	--	--	173	75	--	410	7.3	--
WTD. AVG. TONS PER DAY	--	--	--	435	.59	522	274	131	.9	660	7.7	--
	--	--	--	--	--	--	--	--	--	--	--	--
ANALYSIS OF ADDITIONAL SAMPLES												
MAY												
24...	--	--	--	148	.20	1140	113	44	.2	265	7.1	--

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	843	868	898	865	869	736	496	584	227	298	457	709
2	855	831	---	---	824	783	496	504	220	346	468	729
3	861	852	870	815	798	786	476	444	222	364	405	749
4	867	842	851	849	791	729	---	439	219	380	395	755
5	835	883	863	859	803	715	---	417	249	399	408	764
6	857	838	844	917	798	718	---	422	216	416	405	776
7	---	852	844	912	809	712	560	426	214	---	491	781
8	---	848	836	954	807	668	567	447	225	425	453	802
9	---	866	833	863	787	693	568	448	---	402	430	825
10	845	844	857	828	805	686	578	422	---	413	411	814
11	839	852	882	784	826	713	577	414	---	398	509	839
12	843	862	840	834	812	718	552	---	347	387	438	845
13	854	874	861	844	842	716	576	448	280	416	417	845
14	848	881	857	826	818	737	463	425	217	438	457	---
15	875	887	798	844	811	737	458	432	207	476	363	855
16	885	896	838	812	811	736	456	437	204	494	328	886
17	888	881	811	773	816	750	449	421	199	517	385	868
18	883	866	871	798	865	736	463	407	197	510	408	904
19	890	873	869	---	791	731	482	---	206	549	452	893
20	890	879	931	803	785	722	494	380	205	561	487	882
21	---	881	903	815	777	716	516	346	220	586	524	891
22	883	866	901	781	824	747	541	304	203	612	530	886
23	908	---	981	772	761	753	538	273	216	---	541	865
24	885	874	---	774	765	800	551	267	236	---	575	854
25	881	874	964	765	755	731	571	270	233	563	615	862
26	885	864	854	751	758	696	571	304	263	583	---	858
27	896	885	800	743	775	644	579	277	261	540	649	871
28	858	926	815	804	794	618	575	247	267	485	637	895
29	899	887	815	786	777	595	595	234	265	453	663	891
30	860	928	815	819	---	573	602	236	275	440	660	891
31	850	---	835	815	---	526	---	228	---	444	674	---
AVERAGE	869	871	860	821	802	707	531	376	233	461	488	837

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	13.0	4.0	0.0	5.0	10.0	10.0	19.0	13.0	12.0	19.0	23.0
2	22.0	10.0	---	---	4.0	11.0	8.0	18.0	12.0	15.0	18.0	22.0
3	20.0	10.0	11.0	0.0	5.0	11.0	6.0	12.0	10.0	14.0	18.0	22.0
4	22.0	10.0	6.0	0.0	5.0	11.0	---	11.0	12.0	17.0	19.0	20.0
5	20.0	9.0	6.0	0.0	5.0	12.0	---	14.0	10.0	22.0	22.0	20.0
6	16.0	11.0	5.0	0.0	6.0	11.0	---	13.0	10.0	22.0	23.0	21.0
7	---	11.0	4.0	0.0	6.0	9.0	9.0	14.0	10.0	---	22.0	23.0
8	---	10.0	4.0	0.0	7.0	10.0	5.0	15.0	10.0	22.0	20.0	20.0
9	---	10.0	4.0	0.0	7.0	5.0	14.0	17.0	---	23.0	24.0	23.0
10	20.0	11.0	5.0	0.0	7.0	6.0	15.0	15.0	---	24.0	20.0	23.0
11	20.0	10.0	3.0	0.0	5.0	8.0	16.0	10.0	---	23.0	20.0	26.0
12	21.0	11.0	4.0	0.0	5.0	10.0	15.0	---	14.0	24.0	22.0	25.0
13	21.0	10.0	1.0	0.0	5.0	11.0	10.0	16.0	15.0	18.0	20.0	24.0
14	17.0	10.0	3.0	0.0	6.0	11.0	8.0	10.0	9.0	24.0	22.0	---
15	15.0	10.0	2.0	0.0	6.0	11.0	---	9.0	11.0	25.0	20.0	20.0
16	14.0	10.0	2.0	0.0	7.0	8.0	14.0	11.0	12.0	23.0	20.0	20.0
17	15.0	10.0	2.0	0.0	9.0	5.0	12.0	9.0	12.0	23.0	20.0	20.0
18	15.0	10.0	0.0	0.0	8.0	10.0	14.0	10.0	11.0	25.0	17.0	21.0
19	15.0	11.0	2.0	---	10.0	9.0	11.0	---	13.0	25.0	22.0	20.0
20	15.0	11.0	1.0	0.0	8.0	9.0	5.0	15.0	12.0	26.0	20.0	20.0
21	---	10.0	1.0	0.0	4.0	11.0	12.0	15.0	12.0	27.0	22.0	20.0
22	16.0	10.0	0.0	0.0	9.0	12.0	12.0	10.0	13.0	20.0	24.0	20.0
23	15.0	---	0.0	0.0	10.0	9.0	13.0	8.0	13.0	---	24.0	19.0
24	16.0	8.0	---	0.0	11.0	10.0	14.0	8.0	13.0	---	20.0	20.0
25	16.0	8.0	1.0	0.0	10.0	13.0	15.0	7.0	14.0	24.0	18.0	21.0
26	13.0	7.0	0.0	0.0	10.0	16.0	16.0	9.0	14.0	25.0	---	21.0
27	11.0	5.0	0.0	1.0	9.0	13.0	8.0	9.0	13.0	20.0	24.0	20.0
28	13.0	6.0	0.0	5.0	11.0	15.0	10.0	10.0	---	20.0	22.0	13.0
29	8.0	8.0	0.0	5.0	4.0	16.0	19.0	10.0	15.0	19.0	22.0	18.0
30	13.0	5.0	1.0	6.0	---	9.0	16.0	10.0	17.0	19.0	23.0	20.0
31	10.0	---	0.0	4.0	---	8.0	---	9.0	---	---	25.0	---
AVERAGE	16.5	9.5	2.5	0.5	7.0	10.5	12.0	12.0	12.5	21.5	21.0	21.0

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	152	21	8.6	208	52	29	222	55	33
2	142	21	8.1	210	43	24	220	56	33
3	138	27	10	212	37	21	212	61	35
4	142	27	10	215	37	21	222	55	33
5	146	27	11	195	37	19	225	55	33
6	150	23	9.3	218	66	39	228	55	34
7	160	23	9.9	218	64	38	222	40	24
8	164	23	10	222	50	30	242	40	26
9	170	23	11	212	33	19	232	40	25
10	156	23	9.7	220	32	19	238	48	31
11	154	23	9.6	225	36	22	215	48	28
12	156	25	11	212	21	12	235	60	38
13	168	25	11	208	43	24	242	70	46
14	180	25	12	195	43	23	257	70	49
15	164	23	10	200	43	23	263	83	59
16	164	23	10	205	29	16	306	81	67
17	168	23	10	208	29	16	275	58	43
18	162	20	8.7	212	29	17	232	53	33
19	160	20	8.6	208	31	17	220	65	39
20	172	20	9.3	202	31	17	218	72	42
21	170	20	9.2	200	31	17	215	150	87
22	162	20	8.7	208	28	16	188	114	58
23	162	20	8.7	212	33	19	160	57	25
24	166	20	9.0	222	33	20	200	63	34
25	190	46	24	205	33	18	220	66	39
26	198	62	33	195	33	17	230	83	52
27	190	43	22	192	36	19	220	34	20
28	195	43	23	185	36	18	220	34	20
29	182	43	21	200	36	19	230	28	17
30	200	52	28	212	28	16	256	43	29
31	210	52	29	--	--	--	235	19	12
TOTAL	5193	--	413.4	6236	--	625	7098	--	1144

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	202	18	10	275	130	97	310	310	259
2	222	22	13	248	120	80	300	350	284
3	220	25	15	235	92	58	314	320	271
4	210	22	12	238	100	64	334	360	325
5	195	20	11	238	87	56	326	350	308
6	182	39	19	235	80	51	322	300	261
7	180	21	10	235	73	46	382	480	495
8	200	21	11	248	88	59	440	1300	1540
9	200	13	7.0	254	110	75	414	1180	1320
10	220	13	7.7	251	96	65	414	1060	1180
11	269	17	12	251	275	186	362	470	459
12	205	17	9.4	260	240	168	330	310	276
13	200	17	9.2	275	340	252	314	240	203
14	200	30	16	278	330	248	300	170	138
15	220	30	18	266	270	194	314	190	161
16	230	30	19	254	240	165	306	170	140
17	240	35	23	251	260	176	303	200	164
18	240	35	23	251	520	352	300	200	162
19	240	35	23	266	470	338	296	140	112
20	230	30	19	272	430	316	289	100	78
21	240	24	16	272	390	286	275	98	73
22	240	22	14	286	570	440	251	90	61
23	240	50	32	278	440	330	251	290	197
24	230	95	59	266	320	230	263	590	419
25	240	120	78	266	270	194	292	560	442
26	250	59	40	296	360	288	318	780	670
27	250	140	95	289	340	265	374	920	929
28	266	66	47	306	325	269	394	880	936
29	282	81	62	318	340	292	485	1000	1310
30	251	87	59	--	--	--	625	1400	2360
31	263	180	128	--	--	--	734	1900	3770
TOTAL	7057	--	917.3	7658	--	5640	10932	--	19303

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	740	1900	3800	382	280	289	4750	840	10800
2	640	1600	2760	635	720	1230	5030	470	6380
3	570	710	1090	926	1600	4000	5520	1300	19400
4	500	580	783	1060	1360	3890	5310	570	8170
5	406	500	548	1080	1120	3270	5220	470	6620
6	396	500	521	968	1200	3140	5780	450	7020
7	418	480	542	884	990	2360	5660	340	5200
8	398	320	344	824	900	2000	4530	290	3550
9	390	360	379	884	860	2050	3420	240	2220
10	350	310	293	1120	1300	3930	2410	180	1170
11	410	280	310	1250	1000	3380	1900	140	718
12	485	630	825	1400	1000	3780	1790	130	628
13	660	1200	2140	1390	1140	4280	2530	230	1570
14	758	1400	2870	1320	800	2850	3300	330	2940
15	684	1200	2220	1040	880	2470	3630	320	3140
16	728	830	1630	1030	690	1920	3850	270	2810
17	752	850	1730	1230	1200	3990	4050	270	2950
18	675	790	1440	1210	920	3010	4230	220	2510
19	640	640	1110	1380	1200	4470	4320	230	2680
20	550	480	713	1550	1900	7950	3730	210	2110
21	460	200	248	1740	1400	6580	3590	200	1940
22	440	370	440	2530	1300	8880	3710	170	1700
23	440	370	440	3230	1180	10300	3280	130	1150
24	394	330	351	2840	620	4750	2890	130	1010
25	354	290	277	2280	520	3200	2480	87	583
26	350	260	246	2150	360	2090	2080	83	466
27	354	240	229	2660	380	2730	2030	96	526
28	342	220	203	3360	560	5080	1970	120	638
29	303	170	139	4130	780	8700	1920	87	451
30	286	120	93	4660	770	9690	1740	78	366
31	--	--	--	4700	520	6600	--	--	--
TOTAL	14865	--	28714	55843	--	132859	106650	--	101416

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1480	56	224	1060	1620	6320	190	45	23
2	1230	80	266	1220	3060	10900	170	40	18
3	1120	130	393	1180	500	1590	166	48	22
4	1040	58	163	1130	860	2620	143	25	9.7
5	972	51	134	1000	400	1080	148	13	5.2
6	900	44	107	1100	3450	17900	121	32	10
7	891	13	31	1180	9000	30500	117	27	8.5
8	927	39	98	981	3500	9270	130	23	8.1
9	905	31	76	972	950	2490	143	24	9.3
10	891	45	108	1060	650	1860	130	31	11
11	945	46	117	1200	17200	55900	117	23	7.3
12	900	87	211	1100	3500	10400	109	20	5.6
13	828	31	69	1000	700	1890	105	16	4.5
14	738	34	68	972	380	997	113	20	6.1
15	680	18	33	1400	1240	5030	105	19	5.4
16	648	19	33	1320	840	2990	97	24	6.3
17	632	31	53	1040	400	1120	109	21	6.2
18	552	29	43	1000	280	756	89	39	9.4
19	432	28	33	720	180	350	85	43	9.9
20	400	26	28	608	300	492	97	51	13
21	365	29	29	544	160	235	109	42	12
22	358	28	27	488	110	145	117	38	12
23	312	25	21	448	90	109	200	110	59
24	312	50	42	393	90	95	185	100	50
25	365	100	99	330	70	62	156	40	17
26	568	250	383	306	50	41	125	40	14
27	953	4920	20500	341	453	446	105	40	11
28	1190	8000	25700	282	150	114	113	60	18
29	1100	1050	3120	265	210	150	93	60	15
30	1070	1210	3600	235	110	70	152	100	41
31	954	340	876	205	50	28	--	--	--
TOTAL	24662	--	56685	25080	--	169950	3839	--	447.8

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 275113
TOTAL LOAD FOR YEAR (TONS) 518114.5

09364500 ANIMAS RIVER AT FARMINGTON, N. MEX.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) .002	.004	.008	.016	.031	.062	.125	.250	.500	INDICATED 1.00	2.00	METHOD OF ANALYSIS
FEB 29 1968	0900	4	334	410	370	43	57	--	72	--	93	97	99	100	--	--	SPWC
MAR 10.....	1015	6	418	868	980	45	56	--	82	--	92	96	99	100	--	--	SPWC
APR 1.....	1630	13	640	2120	3660	24	30	--	50	--	77	92	97	100	--	--	VPWC
MAY 23.....	2015	13	3360	1650	15000	12	15	18	26	35	50	67	86	96	100	--	VPWC
MAY 23.....	2015	13	3360	1650	15000	7	12	16	24	34	50	67	86	96	100	--	VPN
JUL 27.....	1730	22	1660	12400	55600	52	60	--	83	--	99	100	--	--	--	--	VPWC
AUG 1.....	2015	20	1090	2370	6970	52	62	--	89	--	98	99	100	--	--	--	SPWC
AUG 8.....	1645	20	963	2980	7750	39	55	--	83	--	96	98	100	--	--	--	SPWC
AUG 11.....	1130	20	1090	18100	53300	56	68	--	92	--	99	100	--	--	--	--	VPWC

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.

LOCATION.--Lat 36°43'25", long 108°13'30", in SE¼ sec.17, T.29 N., R.13 W., San Juan County, at gaging station 360 ft downstream from highway bridge, 4,000 ft downstream from Animas River, and 1 mile west of Farmington.
DRAINAGE AREA.--7,240 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: May 1962 to September 1968.
Water temperatures: June 1962 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,240 mg/l Aug. 6; minimum, 145 mg/l June 1-8.
Hardness: Maximum, 820 mg/l Aug. 6; minimum, 104 mg/l June 14-25.
Specific conductance: Maximum daily, 1,590 micromhos Aug. 6; minimum daily, 210 micromhos June 18.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.									
01-03	349	11	76	8.9	56	146	0	209	8.7
04...	411	15	112	15	96	196	0	363	10
05-31	415	13	72	10	54	144	0	202	8.5
NOV.									
01-30	425	15	71	9.5	54	148	0	197	9.3
DEC.									
01-19	558	15	76	11	52	156	0	198	12
20...	540	16	89	13	76	168	0	270	17
21-27	507	15	75	10	48	158	0	182	14
28...	580	13	107	15	46	208	0	211	28
29-31	547	13	85	9.7	46	168	0	186	15
JAN.									
01-07	520	12	88	11	47	174	0	192	17
08-22	534	12	74	11	44	156	0	175	13
23-27	500	12	87	10	49	164	0	194	17
28-31	557	12	95	13	79	170	0	287	20
FEB.									
01-29	631	12	82	10	58	156	0	211	15
MAR.									
01-09	735	13	75	12	49	156	0	181	14
10-21	585	10	91	13	51	172	0	206	19
22...	616	11	52	7.7	30	130	0	103	14
23-28	634	11	78	12	43	158	0	171	15
29-31	870	9.8	80	9.4	29	160	0	132	13
APR.									
01-10	979	11	68	11	35	144	0	135	8.0
11...	1800	15	54	7.7	30	140	0	100	4.0
12-17	885	8.8	69	10	24	146	0	117	9.2
18-30	1880	12	50	7.5	28	124	0	94	5.4
MAY									
01-20	1920	11	55	8.3	23	132	0	90	5.6
21-28	3220	7.0	49	5.7	12	110	0	62	3.4
29-31	4930	6.3	37	5.2	8.4	90	0	46	2.8
JUNE									
01-08	5970	6.3	35	4.7	8.6	80	0	46	3.0
12-13	2720	7.5	48	5.8	17	102	0	81	5.5
14-25	4380	6.0	34	4.6	10	74	0	56	3.2
26-30	2420	7.1	41	4.5	15	86	0	71	4.4
JULY									
01-05	1630	8.5	54	5.2	24	112	0	101	5.8
06-14	1350	8.9	59	6.6	27	122	0	116	8.4
15-29	1000	10	70	8.4	40	152	0	150	10
30-31	1770	10	65	6.8	28	138	0	121	8.2
AUG.									
01-02	2600	18	110	16	111	239	0	352	7.9
03-05	1800	9.6	63	7.1	30	148	0	117	4.8
06...	2530	23	276	32	64	266	0	706	4.4
07-08	2960	16	91	13	90	193	0	281	8.4
09-10	1720	10	64	7.2	30	136	0	118	8.1
11...	3840	18	114	13	209	292	0	512	7.6
12-14	2070	12	67	6.3	63	172	0	168	5.9
15-19	1650	8.7	59	6.1	24	128	0	102	6.0
20-31	911	12	64	8.4	37	146	0	138	7.1
SEPT.									
01-30	781	13	57	7.5	37	134	0	134	5.1
WTD. AVG. TIME	--	10	59	7.7	32	126	0	124	6.9
WTD. AVG. TONS PER DAY	1256	12	68	9.1	41	143	0	158	9.5
	--	33	196	26	106	422	0	413	23

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 28.0°C July 22; minimum, freezing point on many days during December and January.
Period of record:
Dissolved solids: Maximum, 1,380 mg/l July 12, 1967; minimum, 103 mg/l May 11-15, 1962.
Hardness: Maximum, 820 mg/l Aug. 6, 1968; minimum, 65 mg/l May 11-15, 1962.
Specific conductance: Maximum daily, 1,930 micromhos July 31, 1967; minimum daily, 154 micromhos May 13, 1962.
Water temperatures: Maximum, 33.5°C July 6, 1967; minimum, freezing point on several days during December and January of most years.
REMARKS.--Chemical analyses are composites of samples from right and left banks.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDU-CTANCE (MICRO-MHOS)	PH
OCT.									
01-03	.3	442	.60	416	226	106	1.6	670	7.7
04...	1.0	708	.96	786	340	180	2.3	1010	7.5
05-31	1.8	432	.59	484	222	104	1.6	658	7.8
NOV.									
01-30	2.1	431	.59	495	216	94	1.6	653	7.5
DEC.									
01-19	2.3	443	.60	667	236	108	1.5	676	7.8
20...	2.8	567	.77	827	276	138	2.0	842	7.8
21-27	2.4	424	.58	580	230	100	1.4	651	7.7
28...	4.5	526	.72	824	330	160	1.1	809	7.6
29-31	2.6	440	.60	650	252	114	1.3	676	7.7
JAN.									
01-07	2.8	456	.62	640	266	124	1.3	704	7.7
08-22	2.4	408	.55	588	228	100	1.3	627	7.7
23-27	14	464	.63	626	260	126	1.3	710	7.6
28-31	3.3	593	.81	892	292	152	2.0	885	7.7
FEB.									
01-29	1.9	467	.64	796	246	118	1.6	716	7.6
MAR.									
01-09	2.4	423	.58	839	236	108	1.4	660	7.5
10-21	2.4	477	.65	753	280	139	1.3	744	7.6
22...	1.4	283	.38	471	162	56	1.0	447	7.7
23-28	2.5	410	.56	702	242	112	1.2	641	7.6
29-31	3.4	356	.48	836	238	107	.8	570	7.4
APR.									
01-10	2.3	341	.46	901	214	96	1.0	558	7.9
11...	1.4	281	.38	1370	166	52	1.0	457	7.7
12-17	2.6	313	.43	748	214	94	.7	516	7.7
18-30	1.0	259	.35	1320	156	54	1.0	425	7.8
MAY									
01-20	1.4	259	.35	1340	171	63	.8	430	7.5
21-28	1.6	195	.27	1700	146	56	.4	331	7.4
29-31	1.4	151	.21	2030	114	40	.3	262	7.4
JUNE									
01-08	2.1	145	.20	2340	107	42	.4	252	6.9
12-13	1.4	216	.29	1590	144	60	.6	363	7.1
14-25	.9	151	.21	1790	104	44	.4	252	7.0
26-30	.8	186	.25	1220	121	50	.6	316	7.3
JULY									
01-05	1.2	255	.35	1120	156	64	.8	411	7.6
06-14	1.3	287	.39	1050	174	74	.9	463	7.5
15-29	1.2	365	.50	985	209	84	1.2	572	7.5
30-31	1.4	308	.42	1470	190	77	.9	497	7.5
AUG.									
01-02	.2	733	1.00	5150	340	144	2.6	1000	7.5
03-05	2.1	307	.42	1490	186	64	1.0	497	7.4
06...	.1	1240	1.69	8470	820	602	1.0	1580	6.9
07-08	.1	594	.81	4750	280	122	2.3	874	7.4
09-10	2.4	307	.42	1430	189	78	.9	497	7.5
11...	.1	1020	1.39	10600	340	100	4.9	1430	7.3
12-14	1.6	409	.56	2290	193	52	2.0	643	7.5
15-19	1.8	271	.37	1210	172	67	.8	440	7.4
20-31	1.6	340	.46	836	194	74	1.2	529	7.5
SEPT.									
01-30	1.2	321	.44	677	173	63	1.2	499	7.6
WTD. AVG. TIME	1.6	302	--	--	178	75	--	477	7.4
WTD. AVG. TONS PER DAY	2.0	370	.51	1010	208	90	1.2	576	7.6
	5.4	--	--	--	--	--	--	--	--

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	679	657	715	665	750	658	551	426	267	350	1150	590
2	670	655	---	---	705	670	510	435	245	401	851	514
3	664	628	630	796	705	666	534	425	243	425	520	516
4	1010	636	663	643	692	638	---	422	246	430	453	507
5	710	642	656	636	677	635	---	420	249	446	504	511
6	686	659	663	732	678	663	---	422	240	471	1590	507
7	---	673	653	739	688	678	560	409	236	---	711	495
8	---	666	672	605	699	658	581	390	264	484	1040	479
9	---	648	640	546	707	675	575	424	---	455	520	497
10	659	639	657	628	722	702	584	416	---	460	465	500
11	646	646	634	637	745	745	456	421	---	446	1440	492
12	644	639	670	644	739	785	576	---	399	443	603	---
13	644	642	691	638	813	795	538	499	328	461	513	493
14	653	639	711	626	768	764	499	459	273	475	798	---
15	654	643	697	653	776	751	492	474	256	523	426	490
16	640	644	710	636	761	747	487	463	246	526	405	492
17	641	640	710	634	729	744	495	437	231	536	426	497
18	643	641	714	642	743	740	446	421	210	536	448	501
19	653	665	700	---	707	734	428	---	239	561	486	489
20	649	648	942	640	726	746	420	412	236	---	528	489
21	---	648	669	633	719	741	419	369	251	580	542	492
22	660	674	669	634	782	447	434	356	248	571	551	497
23	658	---	617	695	709	646	485	295	260	613	523	515
24	667	664	---	664	736	664	426	304	274	581	523	497
25	656	658	657	711	728	640	426	312	271	---	518	495
26	686	---	651	756	655	637	415	337	305	640	---	488
27	672	629	633	746	662	610	409	336	309	562	605	486
28	659	635	809	922	744	624	410	312	315	578	521	482
29	669	683	661	871	674	593	402	268	317	631	---	488
30	632	726	658	913	---	573	402	260	327	505	501	500
31	646	---	712	856	---	537	---	252	---	485	493	---
AVERAGE	672	652	682	695	723	674	480	385	270	506	643	500

09365000 SAN JUAN RIVER AT FARMINGTON, N. MEX.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	10.0	5.0	0.0	5.0	10.0	13.0	19.0	12.0	13.0	20.0	23.0
2	22.0	10.0	---	---	4.0	11.0	10.0	18.0	12.0	14.0	18.0	20.0
3	19.0	10.0	0.0	0.0	10.0	10.0	6.0	12.0	12.0	14.0	19.0	22.0
4	21.0	11.0	6.0	0.0	5.0	12.0	---	11.0	10.0	18.0	21.0	20.0
5	20.0	9.0	6.0	---	6.0	13.0	---	14.0	10.0	23.0	23.0	22.0
6	15.0	12.0	5.0	0.0	7.0	12.0	---	13.0	11.0	23.0	24.0	20.0
7	---	12.0	5.0	0.0	7.0	10.0	10.0	14.0	11.0	---	22.0	22.0
8	---	10.0	5.0	0.0	7.0	10.0	14.0	15.0	11.0	23.0	24.0	21.0
9	---	10.0	3.0	0.0	7.0	5.0	9.0	17.0	---	24.0	25.0	22.0
10	20.0	11.0	5.0	0.0	7.0	7.0	16.0	15.0	---	25.0	21.0	21.0
11	20.0	11.0	4.0	0.0	6.0	8.0	17.0	10.0	---	24.0	20.0	24.0
12	22.0	12.0	4.0	0.0	6.0	10.0	15.0	---	15.0	24.0	23.0	---
13	21.0	12.0	1.0	0.0	7.0	12.0	11.0	16.0	15.0	20.0	23.0	22.0
14	21.0	10.0	3.0	0.0	7.0	11.0	8.0	13.0	9.0	24.0	21.0	---
15	16.0	11.0	2.0	0.0	7.0	11.0	13.0	9.0	12.0	25.0	21.0	20.0
16	17.0	10.0	3.0	0.0	9.0	11.0	14.0	14.0	13.0	24.0	20.0	21.0
17	15.0	10.0	2.0	0.0	10.0	6.0	13.0	9.0	15.0	24.0	22.0	19.0
18	15.0	10.0	0.0	0.0	9.0	11.0	14.0	10.0	16.0	26.0	18.0	19.0
19	15.0	12.0	3.0	---	10.0	10.0	11.0	---	12.0	26.0	23.0	21.0
20	15.0	11.0	2.0	0.0	9.0	9.0	5.0	15.0	12.0	---	20.0	19.0
21	---	10.0	1.0	0.0	9.0	11.0	12.0	15.0	13.0	27.0	23.0	19.0
22	17.0	10.0	0.0	1.0	9.0	11.0	11.0	16.0	14.0	28.0	25.0	20.0
23	16.0	---	0.0	1.0	10.0	9.0	13.0	16.0	14.0	25.0	22.0	18.0
24	16.0	11.0	---	1.0	11.0	14.0	15.0	15.0	14.0	23.0	19.0	19.0
25	17.0	8.0	1.0	1.0	10.0	12.0	14.0	8.0	13.0	---	18.0	21.0
26	14.0	---	0.0	2.0	10.0	14.0	16.0	9.0	14.0	26.0	---	20.0
27	16.0	7.0	0.0	2.0	9.0	12.0	8.0	15.0	13.0	20.0	25.0	21.0
28	13.0	6.0	1.0	1.0	10.0	16.0	10.0	16.0	17.0	21.0	22.0	16.0
29	8.0	7.0	1.0	7.0	5.0	16.0	14.0	15.0	17.0	22.0	---	20.0
30	14.0	5.0	1.0	7.0	---	9.0	20.0	11.0	17.0	20.0	22.0	19.0
31	11.0	---	0.0	5.0	---	9.0	---	12.0	---	20.0	23.0	---
AVERAGE	17.0	10.0	2.5	1.0	8.0	10.5	12.5	13.5	13.0	22.5	21.5	20.5

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.

LOCATION.--Lat 36°47'35", long 108°43'55", in SW¼ sec.22, T.30 N., R.18 W., San Juan County, at gaging station 3 miles west of Shiprock, 6 miles downstream from Chaco River, and at river mile 61.0.
DRAINAGE AREA.--12,900 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: February 1941 to September 1945, July 1957 to September 1968.
Water temperatures: December 1950 to September 1968.
Sediment records: December 1950 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,030 mg/l Aug. 11; minimum, 176 mg/l June 1-9.
Hardness: Maximum, 364 mg/l Oct. 1-31; minimum, 118 mg/l June 14-25.
Specific conductance: Maximum daily, 1,430 micromhos Aug. 11; minimum daily, 277 micromhos June 18.
Water temperatures: Maximum, 34.0°C July 20; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 65,400 mg/l Aug. 11; minimum daily, 90 mg/l Dec. 25.
Sediment loads: Maximum daily, 890,000 tons Aug. 11; minimum daily, 146 tons Dec. 25.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	318	12	--	110	22	--	--	89	184	0	349	25
NOV.												
01-30	488	12	--	100	19	--	--	76	170	0	299	24
DEC.												
01-31	634	13	--	93	16	--	--	69	160	0	270	22
JAN.												
01-25	635	12	--	86	15	--	--	59	152	0	239	21
26-31	608	11	--	99	18	--	--	89	156	0	334	25
FEB.												
01-29	753	10	--	91	17	--	--	79	158	0	291	22
MAR.												
01-10	861	13	--	90	15	--	--	63	164	0	252	15
11-27	650	11	--	98	19	--	--	72	172	0	296	17
28-31	788	12	--	86	16	--	--	54	160	0	234	13
APR.												
01-10	920	12	--	84	15	--	--	52	162	0	218	13
11-18	1060	12	--	80	11	--	--	46	162	0	182	11
19-30	1860	13	--	60	6.4	--	--	32	132	0	119	6.4
MAY												
01-10	2150	11	.01	55	10	32	2.9	--	134	0	118	7.7
11-19	1420	9.3	--	73	13	--	--	38	156	0	164	10
20-26	2030	8.7	--	66	10	--	--	24	150	0	113	7.8
23-31	3500	7.1	--	49	6.0	--	--	15	112	0	76	4.7
JUNE												
01-09	5570	6.5	--	40	5.1	--	--	12	90	0	62	4.1
10-13	2700	8.5	--	53	8.8	--	--	23	112	0	110	6.8
14-25	4140	6.5	--	38	5.6	--	--	14	80	0	72	4.2
26-30	2210	7.5	--	48	8.3	--	--	20	98	0	101	6.5
JULY												
01...	1850	7.5	--	50	9.0	--	--	22	108	0	106	4.8
02-05	1320	9.9	--	62	13	--	--	33	122	0	158	9.6
06-18	959	11	--	73	16	--	--	45	136	0	195	17
19-28	899	12	--	100	24	--	--	73	178	0	309	23
29-31	1990	14	--	76	14	--	--	65	160	0	221	17
AUG.												
01...	3390	12	--	84	8.9	--	--	56	168	0	198	14
02-03	2950	18	--	79	8.0	--	--	118	228	0	266	13
04-06	1860	13	--	66	6.7	--	--	72	170	0	182	11
07-08	3280	18	--	110	12	--	--	148	250	0	373	34
09-10	2280	14	--	77	6.8	--	--	83	184	0	219	12
11...	4920	19	--	110	8.6	--	--	224	284	0	494	34
12-14	2540	14	--	70	6.2	--	--	105	197	0	238	11
15-19	1440	10	--	69	7.8	--	--	49	146	0	164	12
20-31	714	13	.00	81	13	59	3.3	--	161	0	224	15
SEPT.												
01-13	588	12	--	85	11	--	--	64	156	0	233	14
14...	499	12	--	79	15	--	--	65	164	0	234	14
15-22	549	12	--	85	13	--	--	67	162	0	243	14
23-30	586	14	--	118	13	--	--	58	158	0	310	13
WTD. AVG. TIME	--	10	--	69	11	--	--	48	139	0	178	12
WTD. AVG. TONS PER DAY	1224	11	--	84	14	--	--	61	155	0	235	17
	--	34	--	227	36	--	--	158	458	0	587	40

ANALYSES OF ADDITIONAL SAMPLES

NOV.												
06...	392	1.9	--	79	23	--	--	76	120	0	310	25
MAR.												
13...	674	11	--	103	19	--	--	77	176	0	305	24
APR.												
23...	1920	12	--	60	6.9	--	--	31	132	0	120	6.4
MAY												
24...	3230	--	--	44	4.4	15	--	--	93	0	--	--
24...	3230	7.7	--	57	8.0	--	--	6.7	128	0	73	3.4
JULY												
02...	1520	7.1	.00	56	12	34	2.1	--	114	0	133	14
30...	1950	13	.00	80	11	68	4.5	--	172	0	217	17
30...	1950	--	--	79	8.0	67	--	--	157	0	--	--
AUG.												
30...	670	12	.00	79	13	63	3.6	--	160	0	233	15
SEPT.												
23...	610	13	--	85	11	--	--	62	158	0	231	12

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

Period of record:
Dissolved solids (1941-45, 1957-68): Maximum, 2,980 mg/l July 30-31, 1959; minimum, 115 mg/l June 21-28, 30, 1944.
Hardness: Maximum, 1,100 mg/l July 30-31, 1959; minimum, 70 mg/l June 21-28, 30, 1944.
Specific conductance (1957-68): Maximum daily, 4,360 micromhos July 31, 1959; minimum daily, 188 micromhos June 6, 1958.
Water temperatures: Maximum, 34.0°C July 20, 1968; minimum, freezing point on many days during winter months of most years.
Sediment concentrations: Maximum daily, 114,000 mg/l Aug. 11, 1967; minimum daily, 2 mg/l May 4, 1963.
Sediment loads: Maximum daily, 2,000,000 tons Aug. 11, 1967; minimum daily, 1 ton on several days during July and September 1959, September 1962, May and July 1963.
REMARKS.--Chemical analysis of Sept. 23, 1968, performed in conjunction with sediment particle-size analysis and is not included in weighted averages.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.											
01-31	.5	7.8	--	705	.96	605	364	213	2.0	1030	7.8
NOV.											
01-30	.4	6.4	--	621	.84	818	326	186	1.8	942	7.5
DEC.											
01-31	.4	3.0	--	565	.77	967	296	165	1.8	852	7.9
JAN.											
01-25	.4	2.9	--	510	.69	874	278	154	1.5	786	7.8
26-31	.4	4.3	--	658	.89	1080	322	194	2.2	994	7.8
FEB.											
01-29	.4	5.4	--	594	.81	1210	298	168	2.0	899	7.7
MAR.											
01-10	.4	5.7	--	535	.73	1240	286	152	1.6	821	7.6
11-27	.4	7.0	--	605	.82	1060	322	181	1.8	919	7.7
28-31	.4	6.3	--	501	.68	1070	282	151	1.4	772	7.5
APR.											
01-10	.3	6.8	--	481	.65	1200	272	139	1.4	744	7.4
11-18	.3	6.4	--	429	.58	1230	244	111	1.3	671	7.3
19-30	.3	2.9	--	305	.41	1530	176	68	1.0	502	7.3
MAY											
01-10	.4	3.4	.03	306	.42	1780	178	68	1.0	492	7.3
11-19	.3	4.8	--	389	.53	1490	235	107	1.1	626	7.4
20-22	.3	6.2	--	310	.42	1700	206	83	.7	516	7.2
23-31	.3	2.6	--	216	.29	2040	147	55	.6	368	7.3
JUNE											
01-09	.3	2.4	--	176	.24	2650	121	47	.5	304	7.3
10-13	.3	2.3	--	268	.36	1950	168	76	.8	441	7.4
14-25	.4	1.6	--	181	.25	2020	118	52	.6	312	7.3
26-30	.3	2.4	--	242	.33	1440	154	74	.7	417	7.3
JULY											
01...	.5	2.0	--	255	.35	1270	162	74	.7	423	7.4
02-05	.5	3.4	--	349	.47	1240	210	110	1.0	572	6.8
06-18	.5	3.8	--	428	.58	1110	246	134	1.2	681	7.1
19-28	.6	5.8	--	635	.86	1540	348	202	1.7	965	7.1
29-31	.7	2.3	--	489	.67	2630	248	117	1.8	762	7.2
AUG.											
01...	.5	4.2	--	461	.63	4220	246	108	1.6	683	7.8
02-03	.7	3.5	--	618	.84	4920	230	43	3.4	912	7.7
04-06	.6	2.2	--	437	.59	2200	192	52	2.3	663	7.9
07-08	.6	.2	--	819	1.11	7250	322	117	3.6	1130	7.5
09-10	.6	2.3	--	505	.69	3110	220	69	2.4	764	7.8
11...	.7	.6	--	1030	1.40	13700	310	78	5.5	1430	7.5
12-14	.6	1.5	--	543	.74	3720	200	38	3.2	816	7.9
15-19	.5	3.5	--	388	.53	1510	204	84	1.5	594	7.9
20-31	.5	4.3	.15	492	.67	948	254	122	1.6	740	8.0
SEPT.											
01-13	.4	4.5	--	501	.68	795	256	128	1.7	749	8.1
14...	.4	4.5	--	505	.69	680	260	126	1.8	906	8.1
15-22	.4	4.5	--	519	.71	769	264	131	1.8	779	8.2
23-30	.4	1.1	--	606	.82	959	346	216	1.4	767	8.1
WTD. AVG. TIME	.4	3.5	--	400	--	--	216	102	--	621	7.5
WTD. AVG. TONS PER DAY	1.3	12	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

NOV.											
06...	.3	.7	--	575	.78	--	292	194	1.9	882	7.8
MAR.											
13...	.3	5.9	--	632	.86	--	334	190	1.8	949	7.7
APR.											
23...	.3	2.0	--	304	.41	--	178	70	1.0	501	7.3
MAY											
24...	--	--	--	--	.27	--	128	52	.6	328	7.0
24...	.7	2.1	--	222	.30	--	175	70	.2	369	7.7
JULY											
02...	.5	1.1	.08	316	.43	--	190	96	1.1	520	6.8
30...	.6	3.2	.12	499	.68	--	246	105	1.9	762	7.2
30...	--	--	--	--	.67	--	230	102	1.9	746	7.4
AUG.											
30...	.5	5.2	.16	503	.68	--	250	119	1.7	748	7.9
SEPT.											
23...	.4	4.2	--	497	.68	--	256	126	1.7	750	8.0

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	960	---	691	968	863	710	504	315	423	683	787
2	1040	963	884	791	869	842	766	523	310	564	920	738
3	1140	957	858	808	872	825	712	521	313	559	903	725
4	1030	923	893	743	820	778	720	481	307	586	633	753
5	1230	942	879	857	900	810	744	493	310	605	608	745
6	1100	968	864	765	866	803	746	511	286	656	742	745
7	979	955	858	860	893	772	774	476	282	729	1120	724
8	974	---	873	837	916	825	753	489	305	664	1140	733
9	1000	---	845	743	893	836	760	487	328	646	853	754
10	1000	930	871	741	916	859	780	509	394	647	666	751
11	1010	960	902	744	916	916	631	651	451	640	1430	743
12	992	963	855	759	852	997	629	691	485	605	922	746
13	1020	891	814	855	893	992	741	639	437	645	769	760
14	1020	1000	812	769	941	989	673	624	335	652	762	906
15	1010	902	803	817	923	975	680	654	322	696	672	775
16	1040	801	827	819	975	962	672	657	299	725	520	807
17	1000	981	850	764	902	962	673	615	282	752	546	779
18	1020	978	795	806	936	957	661	594	277	778	588	770
19	1030	978	860	791	934	947	500	570	289	860	637	776
20	1030	938	931	797	893	886	497	551	291	914	680	773
21	1020	940	949	728	905	915	489	501	323	868	725	774
22	1030	942	853	767	954	852	509	489	---	933	772	759
23	1090	921	943	760	967	852	493	398	305	963	729	787
24	1060	783	895	861	905	861	520	370	350	1050	687	770
25	1060	918	875	806	884	871	494	386	349	986	703	748
26	1010	932	866	897	878	863	505	428	401	933	731	766
27	1030	921	---	884	848	850	502	398	429	1160	717	761
28	1030	916	805	964	862	808	504	335	431	992	874	755
29	1030	930	810	1090	858	794	505	328	422	736	744	771
30	974	992	758	1150	---	749	493	328	413	793	740	775
31	941	---	795	975	---	731	---	326	---	777	755	---
AVERAGE	1030	935	856	827	901	869	628	501	346	759	773	765

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	11.0	5.0	1.0	5.0	12.0	15.0	18.0	18.0	20.0	20.0	22.0
2	5.0	10.0	3.0	2.0	5.0	13.0	12.0	17.0	19.0	24.0	21.0	21.0
3	8.0	9.0	3.0	2.0	4.0	13.0	10.0	18.0	19.0	26.0	21.0	20.0
4	9.0	9.0	5.0	0.0	6.0	13.0	11.0	17.0	18.0	26.0	22.0	20.0
5	9.0	7.0	7.0	0.0	6.0	13.0	13.0	15.0	18.0	24.0	23.0	21.0
6	10.0	10.0	6.0	0.0	7.0	13.0	14.0	15.0	18.0	25.0	23.0	22.0
7	10.0	12.0	5.0	0.0	7.0	11.0	11.0	14.0	15.0	26.0	22.0	23.0
8	10.0	---	3.0	0.0	8.0	11.0	13.0	16.0	16.0	27.0	21.0	22.0
9	9.0	---	3.0	0.0	8.0	10.0	14.0	16.0	17.0	27.0	24.0	23.0
10	8.0	8.0	2.0	1.0	8.0	9.0	17.0	16.0	19.0	28.0	21.0	23.0
11	7.0	12.0	3.0	2.0	5.0	9.0	15.0	18.0	20.0	27.0	19.0	23.0
12	6.0	11.0	4.0	0.0	8.0	11.0	15.0	16.0	23.0	28.0	21.0	22.0
13	6.0	11.0	0.0	0.0	8.0	12.0	14.0	16.0	23.0	27.0	23.0	24.0
14	5.0	10.0	0.0	0.0	8.0	9.0	17.0	16.0	22.0	26.0	21.0	18.0
15	6.0	10.0	1.0	0.0	9.0	12.0	18.0	16.0	21.0	28.0	20.0	19.0
16	6.0	10.0	2.0	0.0	10.0	10.0	15.0	17.0	21.0	28.0	22.0	15.0
17	6.0	10.0	2.0	1.0	8.0	10.0	15.0	18.0	20.0	26.0	22.0	17.0
18	7.0	10.0	2.0	1.0	10.0	11.0	13.0	18.0	21.0	29.0	21.0	19.0
19	5.0	10.0	3.0	1.0	10.0	11.0	11.0	19.0	22.0	28.0	25.0	20.0
20	4.0	10.0	3.0	0.0	10.0	10.0	13.0	20.0	22.0	34.0	19.0	19.0
21	4.0	10.0	0.0	1.0	10.0	10.0	10.0	20.0	20.0	28.0	24.0	19.0
22	4.0	10.0	0.0	1.0	10.0	13.0	11.0	20.0	---	29.0	21.0	18.0
23	4.0	8.0	0.0	1.0	10.0	13.0	12.0	15.0	22.0	30.0	20.0	16.0
24	5.0	8.0	1.0	1.0	12.0	15.0	13.0	15.0	21.0	30.0	22.0	18.0
25	---	7.0	1.0	2.0	12.0	15.0	14.0	15.0	21.0	29.0	22.0	18.0
26	---	7.0	2.0	3.0	12.0	11.0	15.0	16.0	22.0	29.0	22.0	18.0
27	---	5.0	---	3.0	10.0	15.0	14.0	16.0	24.0	28.0	23.0	19.0
28	---	7.0	1.0	3.0	11.0	16.0	14.0	18.0	25.0	28.0	24.0	18.0
29	---	6.0	2.0	5.0	12.0	17.0	16.0	18.0	23.0	29.0	25.0	17.0
30	---	6.0	2.0	4.0	---	17.0	17.0	18.0	22.0	26.0	23.0	18.0
31	---	---	2.0	6.0	---	17.0	---	17.0	---	26.0	15.0	---
AVERAGE	---	9.0	2.5	1.5	8.5	12.5	13.5	17.0	20.5	27.5	21.5	19.5

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	330	1300	1160	396	1800	1920	623	660	1110
2	430	1800	2090	408	1100	1210	616	630	1050
3	262	1700	1200	420	1000	1130	637	1000	1720
4	382	3910	4450	397	1300	1390	630	1100	1870
5	345	7100	6610	375	850	861	595	910	1460
6	316	2500	2130	392	800	847	623	980	1650
7	316	4500	3840	440	1000	1190	658	1200	2130
8	330	4800	4280	436	2200	2590	544	3000	5220
9	338	1700	1550	447	1500	1810	693	2000	3740
10	356	860	827	423	560	640	716	1200	2320
11	374	610	616	466	560	705	590	4000	7450
12	384	500	518	466	550	692	705	3600	6850
13	348	500	470	430	470	546	716	410	793
14	308	490	407	406	400	438	650	1000	1760
15	312	560	472	408	460	507	654	170	300
16	296	2100	1680	418	900	1020	665	1100	1980
17	295	2000	1590	472	610	777	620	1300	2180
18	269	2800	2030	478	930	1200	580	370	579
19	268	2700	1950	497	900	1210	600	200	324
20	284	2000	1530	532	1300	1870	600	490	794
21	253	1600	1090	518	4000	5590	570	1000	1540
22	263	2300	1630	504	1300	1770	540	280	408
23	236	2200	1400	538	1000	1460	530	140	200
24	274	2400	1780	602	1100	1790	560	100	151
25	297	1800	1440	623	1100	1850	600	90	146
26	256	2500	1730	644	830	1440	640	100	173
27	304	4400	3610	630	1100	1870	660	980	1750
28	306	3700	3060	630	4200	7140	670	730	1320
29	356	3100	2980	616	1800	2990	680	410	753
30	407	1700	1870	637	1000	1720	660	350	624
31	365	1300	1280	--	--	--	630	450	765
TOTAL	9860	--	61270	14650	--	50173	19655	--	53110

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	600	500	810	680	1500	2750	891	1600	3850
2	630	490	833	700	1700	3210	865	950	2220
3	650	550	965	700	2100	3970	826	2400	5350
4	650	440	772	710	1300	2490	864	1000	2330
5	650	370	649	720	900	1750	903	2700	5850
6	620	240	402	681	1400	2570	819	3300	7300
7	580	230	360	695	1600	3000	822	820	1820
8	600	220	356	728	1100	2160	888	980	2350
9	650	160	281	726	2000	3920	917	1000	2480
10	700	190	359	689	1700	3160	917	1300	3220
11	700	300	567	705	1200	2280	817	4000	8820
12	680	420	771	748	880	1780	742	2700	5410
13	650	270	474	732	930	1840	674	2000	3640
14	620	250	419	770	870	1810	661	3000	5350
15	640	180	311	730	930	1640	658	1700	3020
16	700	270	510	738	3000	5980	688	910	1640
17	690	310	578	744	940	1890	688	1200	2230
18	670	350	633	788	1500	3190	639	1400	2420
19	650	300	527	814	1700	3740	535	1100	1590
20	630	280	476	763	1400	2880	627	770	1300
21	600	350	567	780	1700	3580	560	520	786
22	600	490	794	874	1500	3540	674	810	1470
23	600	360	583	828	1100	2460	619	620	1040
24	560	200	302	804	1100	2390	634	850	1460
25	560	270	408	767	1100	2280	610	910	1500
26	580	370	579	774	1600	3340	601	700	1140
27	600	480	778	777	1400	2940	645	670	1170
28	620	680	1140	814	1200	2640	742	920	1840
29	640	1100	1900	860	1000	2320	732	1100	2170
30	650	6100	10700	--	--	--	793	1200	2570
31	560	2700	4080	--	--	--	883	1400	3340
TOTAL	19530	--	32884	21839	--	81500	22812	--	90676

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

DAILY SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	916	1400	3460	1640	920	4070	4800	1700	22000
2	1170	3840	13100	1760	1200	5700	5230	1600	22600
3	1130	2300	7020	2000	1500	8100	5900	1800	28700
4	1050	1300	3690	2160	1500	8750	5900	1400	22300
5	937	1500	3790	2350	2000	12700	5660	1000	15300
6	877	1200	2840	2430	1200	7870	6320	1100	18800
7	852	1000	2300	2400	1300	8420	6540	1100	19400
8	776	670	1400	2200	710	4220	5520	850	12700
9	758	2000	4090	2190	1200	7100	4270	800	9220
10	736	2000	3990	2350	1900	12100	3370	660	6010
11	1410	2820	11800	2120	1400	8010	2560	850	5880
12	1230	3200	10600	1490	1300	5230	2150	480	2790
13	872	1500	3530	1610	1800	7820	2730	750	5530
14	975	1000	2630	1430	1800	6950	4010	800	8660
15	885	1300	3110	1410	1200	4570	4480	640	7740
16	931	2000	5030	1130	940	2870	4620	580	7230
17	898	910	2210	1220	900	2960	4720	530	6750
18	1280	1860	8120	1120	770	2330	4670	620	7820
19	1910	2300	11900	1220	1600	5270	4700	530	6730
20	1980	1800	9620	1450	1400	5480	4350	460	5400
21	1840	1800	8940	2070	2300	12900	3830	400	4140
22	1870	1700	8580	2570	2600	18000	3980	430	4620
23	1920	2300	11900	3490	4500	42400	3780	410	4180
24	1930	1200	6250	3230	3600	31400	3480	360	3380
25	1890	1400	7140	2900	2100	16400	3090	300	2500
26	1890	930	4750	2300	1400	8690	2550	530	3650
27	1850	960	4800	2700	2200	16000	2260	470	2870
28	1770	1100	5260	3400	2700	24800	2280	410	2520
29	1740	1000	4700	4040	3500	38200	1990	630	3380
30	1720	920	4270	4750	2700	34600	1970	500	2660
31	--	--	--	4700	2000	25400	--	--	--
TOTAL	39996	--	180820	71830	--	399310	121710	--	275460

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN OISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1850	250	1250	3390	28800	400000	883	6130	15600
2	1520	360	1480	3330	45000	405000	816	5400	11900
3	1350	300	1090	2570	35000	243000	685	3400	6290
4	1240	190	636	2030	16000	87700	610	1800	2960
5	1150	160	497	1760	7700	36600	560	1500	2270
6	1110	970	2910	1780	19000	91300	557	1400	2110
7	1050	2600	7370	3750	49800	538000	607	2800	4590
8	1080	910	2650	2810	40800	323000	516	1600	2230
9	1110	260	775	2370	36800	246000	490	1300	1720
10	1010	240	654	2180	14000	82400	468	1300	1640
11	1010	250	682	4920	65400	890000	481	1600	2080
12	1080	220	642	3250	63000	553000	486	1940	2670
13	994	250	671	2360	28000	178000	483	1330	1730
14	919	220	546	2020	21000	115000	499	1490	2130
15	853	180	415	1750	27000	128000	542	1540	2250
16	788	180	383	1740	9900	46500	541	1600	2340
17	753	700	1420	1470	5900	23400	529	1460	2090
18	708	550	1050	1230	4200	13900	534	1400	2020
19	610	250	412	998	3700	9970	540	1600	2330
20	544	190	279	836	3000	6770	549	1700	2520
21	549	270	400	729	2300	4530	577	2300	3580
22	513	230	319	650	1700	2980	580	1800	2820
23	523	220	311	703	2500	4750	610	1900	3130
24	617	1560	3330	765	4400	9090	604	1900	3100
25	772	3900	8130	744	2300	4620	589	2000	3180
26	834	3000	7710	717	1800	3480	579	1900	2970
27	1750	30900	153000	735	2200	4370	566	1800	2750
28	2280	28000	172000	710	2700	5180	581	1800	2820
29	2160	24000	140000	675	2700	4920	579	1900	2970
30	1950	11700	61600	670	3300	5970	578	1860	2900
31	1870	4700	23700	633	2600	4440	--	--	--
TOTAL	34547	--	506316	54275	--	4471870	17219	--	103690

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	447923
TOTAL LOAD FOR YEAR (TONS)	6397079

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	978	1060	1090	1110	1190	1170	1140	1180	1190	1140	928	890
2	970	997	---	1140	1180	---	1130	1200	---	1180	1030	904
3	1010	997	---	1200	1210	---	1170	---	1230	1120	959	914
4	983	---	---	1080	1280	1150	1190	---	1200	---	1050	899
5	989	994	1090	---	1230	1170	---	1180	---	1180	1090	933
6	981	989	1050	---	1260	1170	---	1190	1190	1150	1100	933
7	970	---	1030	1150	---	1160	---	1200	1220	1190	---	---
8	---	949	1020	---	---	1160	1230	1220	---	1160	---	---
9	1010	---	---	1220	---	---	---	1190	---	1070	978	967
10	1100	---	---	1190	---	1170	1200	1240	---	1050	992	911
11	1010	---	---	1220	1250	1200	1180	---	---	1090	1030	926
12	---	---	1090	---	1220	1210	1210	1220	1210	1040	943	911
13	1010	---	---	---	1220	1150	1200	1220	1210	---	1180	888
14	986	---	1010	1210	1210	1180	1190	1190	1200	---	1000	902
15	---	---	1000	1170	1200	1200	1200	1230	---	---	---	954
16	983	---	983	1140	1230	---	---	1220	---	1040	964	911
17	1080	---	---	1150	1240	1240	1170	1230	1230	1010	921	949
18	---	---	1020	1150	1240	1270	1170	---	1230	986	983	904
19	---	---	978	1140	1230	1260	1220	---	1210	1010	931	909
20	---	---	997	1150	1420	1280	1190	1220	1230	951	1040	902
21	---	---	1050	---	1200	1280	---	1220	1210	---	923	926
22	---	---	1100	1180	1220	1210	1220	1190	---	975	897	964
23	989	---	---	1150	1240	1210	1210	1210	---	966	909	961
24	1030	---	---	1190	1280	---	1210	1220	1190	961	---	949
25	1020	---	1100	1150	1230	1210	1210	1200	1190	940	923	946
26	957	---	1210	1160	1180	1190	1210	1200	1180	951	897	919
27	1040	---	1200	---	1310	1210	1200	1200	1160	923	864	893
28	---	1040	1080	1210	1200	1200	---	1190	---	1010	864	928
29	---	1010	1130	1200	1170	1190	1220	1200	---	1300	868	941
30	970	1060	---	1570	---	---	1200	1180	1190	1080	873	919
31	1120	---	1130	1140	---	---	---	1200	---	994	902	---
AVERAGE	---	---	---	---	1230	---	---	1210	---	1060	964	923

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	21	21	21	21	21	19	19	--	18	18	19	--	19	19	--	18	18	--	--	--	--	--	18	18	18	18	17	--	--	16	15	--
NOVEMBER.	16	16	16	--	16	16	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	12	12	--	--
DECEMBER.	12	--	--	--	10	10	11	11	--	--	--	9	--	8	8	9	--	8	8	8	8	7	--	--	6	6	6	6	7	--	7	--
JANUARY..	8	6	6	7	--	--	4	--	5	6	7	--	--	6	6	6	7	7	7	7	--	7	7	6	7	6	--	7	7	8	8	--
FEBRUARY.	7	7	8	7	7	7	--	--	--	--	8	8	9	8	8	8	8	9	9	10	9	9	9	9	10	9	10	10	9	--	--	8
MARCH....	9	--	--	9	9	9	9	9	--	9	9	8	9	9	10	--	9	9	9	8	8	9	9	--	10	10	10	10	11	--	--	--
APRIL....	11	10	9	9	--	--	--	10	--	10	11	12	12	11	11	--	11	10	9	10	--	10	10	11	11	11	11	--	12	12	--	--
MAY.....	13	13	--	--	13	12	12	12	13	--	13	12	13	12	13	12	--	--	14	14	14	13	13	13	13	13	14	14	15	16		13
JUNE.....	16	--	16	16	--	15	15	--	--	--	--	--	17	16	16	--	--	--	18	19	18	18	18	--	--	18	19	19	18	--	--	18	--	--
JULY.....	19	19	19	--	21	20	21	21	21	20	21	20	--	--	--	--	20	20	20	19	19	--	19	20	20	20	19	20	22	22	22	20	20
AUGUST...	20	20	21	22	21	21	--	--	22	22	21	21	21	21	--	21	21	21	21	20	20	20	19	--	20	21	21	21	22	22	22		20
SEPTEMBER	21	22	22	22	21	21	--	--	23	23	21	21	22	22	21	21	19	20	20	21	20	19	19	19	21	20	20	21	21	20	--	20

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
APR. 12, 1968	1110	12	16700	841	20	23		32		48	71	98	100	--	--	VPWC
MAY 16.....	1110	13	14400	415	13	15		18		25	47	92	100	--	--	VPWC
JUNE 19.....	0650	19	19900	440	--	--		--		6	49	92	100	--	--	VW
JULY 26.....	1310	19	20300	680	19	25		39		55	71	95	100	--	--	VPWC

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	8300	16000	360000	9450	940	27000	9870	260	7400
2	6430	980	20000	9600	720	21000	10000	--	6000
3	8100	680	15000	9080	370	10000	7590	--	3000
4	9160	510	14000	9400	--	7000	8000	150	3400
5	8550	460	12000	6790	100	2100	9650	250	7000
6	8870	460	12000	3820	45	530	10100	300	8700
7	8500	420	11000	7130	180	4000	10200	370	11000
8	6880	--	6000	7760	95	2200	10700	680	22000
9	4850	140	2100	8290	--	2000	11000	--	20000
10	6950	240	5100	8350	--	2000	9500	370	10000
11	7140	140	3100	7720	--	2000	7600	220	4900
12	7780	--	3000	7620	--	2000	10400	320	9600
13	8870	180	4900	3750	--	1000	11100	350	11000
14	8530	170	4400	6040	--	2000	11800	800	27000
15	7780	--	3000	8670	--	4000	13600	1400	55000
16	4920	61	920	10400	--	4000	13800	1900	73000
17	8320	140	3500	9350	--	4000	11800	--	40000
18	8710	--	7000	9980	--	4000	11100	650	21000
19	8100	--	4000	8270	--	6000	13300	1100	42000
20	7040	--	2000	4910	--	3000	11700	670	22000
21	7790	--	4000	9810	--	6000	11100	450	14000
22	5110	--	1000	11000	--	7000	10200	370	11000
23	4240	65	850	10800	--	7000	10500	--	6000
24	7870	200	4900	5100	--	4000	7010	--	3000
25	8760	200	5300	10100	--	9000	4400	110	1400
26	7830	240	5800	8770	--	8000	3650	85	900
27	8720	230	6200	4160	--	3000	7990	220	5100
28	8940	--	7000	10300	380	12000	7760	130	2900
29	6660	--	4000	11400	580	20000	8450	250	6100
30	3800	43	500	11800	390	14000	8780	--	4000
31	7930	410	12000	--	--	--	8390	200	4900
TOTAL	231430	--	544570	249620	--	199830	301040	--	463300

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	5540	76	1300	10500	690	20000	11400	2100	69000
2	5820	75	1300	11200	650	22000	16500	--	200000
3	10000	490	15000	12200	620	23000	15000	--	10000
4	12700	770	29000	11300	3000	100000	14500	1500	62000
5	10300	--	10000	6750	3500	63000	15500	1400	62000
6	10400	--	10000	11100	3800	120000	15600	1500	63000
7	11900	450	16000	10400	--	90000	16900	1400	68000
8	6680	--	2000	11300	--	70000	16500	1400	66000
9	11200	450	16000	12500	--	30000	14600	910	36000
10	12100	450	16000	10900	--	30000	13800	980	39000
11	12000	550	20000	9280	980	27000	11500	1000	33000
12	12200	--	20000	4940	750	10000	14200	1200	47000
13	12500	--	20000	10800	1200	40000	14600	1700	71000
14	11500	570	20000	11600	1500	53000	12600	1700	61000
15	5540	290	5000	11800	1200	39000	10500	1400	42000
16	12800	1100	44000	8500	2300	57000	12200	--	40000
17	13600	810	33000	7060	4800	95000	8170	770	18000
18	12000	450	15000	6360	2800	48000	7780	1100	24000
19	13300	560	23000	3870	1800	19000	13200	1000	43000
20	12500	450	18000	6940	2400	50000	14000	710	29000
21	10300	--	10000	7860	1100	24000	13300	780	30000
22	7140	140	3100	10900	1000	34000	16800	2000	99000
23	13600	1100	49000	6070	640	11000	15700	680	31000
24	14200	950	42000	10000	2000	56000	15000	720	29000
25	13600	800	33000	8630	2000	52000	11900	550	19000
26	13000	550	22000	4840	1300	16000	18300	1700	85000
27	11100	--	10000	9250	2900	85000	18500	970	51000
28	7830	250	6000	10300	2000	58000	20700	1100	65000
29	4580	72	1000	11800	1600	54000	18300	1300	69000
30	9970	1000	34000	--	--	--	18800	1300	70000
31	12000	960	33000	--	--	--	17500	1800	90000
TOTAL	331900	--	577700	268950	--	1396000	453850	--	1721000

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	16200	2500	110000	17700	590	30000	13700	280	11000
2	20000	2900	160000	17400	540	26000	10500	--	3000
3	22400	3300	200000	17200	--	20000	11000	130	4200
4	21800	2300	140000	17800	--	20000	15500	310	14000
5	20600	--	100000	17800	600	30000	16400	270	13000
6	19700	--	60000	15400	590	25000	14400	180	7500
7	18300	--	40000	18100	660	34000	13900	260	10000
8	14000	840	33000	19000	580	31000	12800	--	8000
9	16200	--	40000	16700	460	22000	9880	--	6000
10	18200	1200	61000	12800	460	18000	9180	--	6000
11	19100	1400	73000	12200	--	10000	13700	--	8000
12	16400	870	39000	12000	300	10000	16200	280	13000
13	18900	1200	64000	10300	270	7800	17900	310	16000
14	18000	820	41000	12800	410	14000	19000	480	26000
15	18500	1400	74000	13100	380	14000	18300	--	10000
16	20200	--	70000	13400	340	12000	16000	--	9000
17	19000	930	50000	14600	440	18000	14500	140	5900
18	19800	1400	77000	17000	--	20000	17300	400	20000
19	19900	1300	73000	15500	--	10000	17800	370	20000
20	18400	1400	72000	11400	320	10000	19200	420	23000
21	15900	--	60000	15800	400	18000	19300	540	30000
22	14800	1000	42000	17600	670	34000	18300	--	20000
23	18700	940	49000	17200	520	25000	17600	--	10000
24	18500	890	46000	17500	520	25000	15200	240	11000
25	17300	740	35000	19000	620	34000	17000	270	13000
26	17500	640	31000	18600	460	24000	18100	410	22000
27	17600	530	26000	17900	500	25000	17400	260	13000
28	15400	--	20000	19200	430	23000	17600	--	10000
29	14100	560	22000	17300	410	20000	16100	--	9000
30	18000	990	52000	17200	390	19000	12700	--	8000
31	--	--	--	12500	190	6800	--	--	--
TOTAL	543400	--	1960000	492000	--	635600	466460	--	379600

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	11000	160	5100	15900	3500	150000	12100	440	16000
2	10400	210	6400	14200	2800	120000	10800	330	11000
3	11100	230	7400	12600	2500	91000	10700	360	12000
4	12500	--	9000	9140	4100	110000	12700	590	23000
5	8480	330	8200	6670	7900	140000	13400	680	28000
6	9390	300	8200	11200	7700	250000	14400	950	42000
7	11700	310	11000	9670	--	200000	14100	--	20000
8	11700	380	13000	12700	--	300000	11700	--	20000
9	15000	910	43000	14100	10000	410000	10900	400	13000
10	14900	1500	66000	14200	14000	580000	13700	540	22000
11	14900	500	20000	9860	12000	340000	14100	420	18000
12	16000	550	25000	8270	8900	210000	15700	800	37000
13	16800	--	20000	12000	23000	790000	14400	600	26000
14	14900	--	20000	15000	21000	850000	13200	450	18000
15	11900	--	10000	13500	--	600000	11600	460	16000
16	15000	430	19000	11200	7100	220000	7780	180	3800
17	16100	640	30000	10400	2600	80000	11800	210	7500
18	18300	570	30000	9060	2100	60000	12400	280	11000
19	20200	560	33000	6800	1400	28000	11200	180	6200
20	21600	700	43000	11100	2100	71000	10500	200	6400
21	18200	--	20000	12800	1600	59000	10300	220	6900
22	13000	240	9100	13800	1500	60000	8400	200	5100
23	15600	330	15000	14100	1500	61000	6080	100	1900
24	14600	280	12000	13800	--	60000	8580	120	3100
25	14800	500	22000	13000	1200	44000	10400	330	10000
26	17000	1900	79000	11800	730	26000	11000	330	11000
27	14900	2200	88000	16700	2300	120000	10300	160	4600
28	9780	2100	56000	17700	1500	76000	12000	360	13000
29	7000	16000	300000	18100	1800	94000	8970	190	5200
30	13600	11000	420000	15900	1300	60000	6920	110	2300
31	15600	5400	230000	15600	840	38000	--	--	--
TOTAL	435950	--	1678400	390870	--	6298000	340130	--	420000

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 4505600
TOTAL LOAD FOR YEAR (TONS) 16274000

09403000 BRIGHT ANGEL CREEK NEAR GRAND CANYON, ARIZ.

LOCATION (revised).--Lat 36°06'00", long 112°05'35", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, at gaging station in Grand Canyon National Park, on right bank 1,000 ft upstream from mouth and 4 miles northeast of town of Grand Canyon.

DRAINAGE AREA.--101 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1952 to September 1968.
Sediment records: November 1966 (periodic).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	BICARBONATE (HCO3)	CARBONATE (CO3)	CHLORIDE (CL)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.						
17...	17	218	0	3.9	353	7.8
NOV.						
03...	17	213	0	3.6	340	7.6
33...	18	226	0	4.0	360	7.9
DEC.						
21...	21	230	0	4.3	364	7.9
JAN.						
02...	19	229	0	4.6	359	7.9
17...	17	224	0	4.4	364	7.8
FEB.						
02...	18	226	0	4.3	367	7.8
15...	19	224	0	4.0	367	7.5
29...	18	208	0	3.8	339	7.9
MAR.						
08...	19	206	0	5.7	346	7.9
29...	22	206	0	3.5	336	7.6
APR.						
16...	60	175	0	1.5	283	7.0
29...	65	154	0	1.6	266	6.9
MAY						
27...	202	154	0	1.4	254	6.8
JUNE						
15...	28	176	6	.8	295	8.5
JULY						
25...	20	203	0	2.6	323	7.9
AUG.						
11...	24	232	0	2.0	354	7.5
SEPT.						
20...	16	205	0	2.2	325	7.9
29...	17	192	8	2.0	325	8.4

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.

LOCATION.--Lat 36°50'50", long 112°34'45", in SE¼ sec.14, T.40 N., R.3 W. (unsurveyed), Coconino County, at gaging station in Kaibab Indian Reservation, at Nagles Crossing, 0.2 mile downstream from Johnson Wash and 6.5 miles southwest of Fredonia.

DRAINAGE AREA.--1,085 sq mi.

PERIOD OF RECORD.--Specific conductance: October 1967 to September 1968.
Water temperatures: October 1967 to September 1968.
Sediment records: November 1963 to September 1968.

EXTREMES.--1967-68:
Specific conductance: Maximum daily, 7,000 micromhos Apr. 16, 17, 23, 24; minimum daily, 550 micromhos Feb. 15.
Water temperatures: Maximum, 28.0°C June 8; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 230,000 mg/l July 28; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 240,000 tons July 27; minimum daily, 0 ton on many days.

REMARKS.--No flow May 22 to June 7, June 11 to July 6, July 10-22, Aug. 21-27, Aug. 29 to Sept. 12, Sept. 15-30.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	4900	1400	1000	925	1500	3000	6000	---	---	1100	---
2	---	1900	---	950	975	1500	2700	3000	---	---	1170	---
3	---	4400	---	675	1100	1800	5000	6000	---	---	1570	---
4	---	1800	2500	750	---	1600	5000	6000	---	---	1850	---
5	---	4200	1600	875	850	2200	3000	---	---	---	2000	---
6	---	1700	2400	1300	1000	1500	3000	6000	---	2600	1800	---
7	---	4000	2500	---	1050	1400	---	6000	---	1450	950	---
8	---	1800	2500	900	875	---	5000	6000	6000	2080	1100	---
9	---	3200	2700	825	---	1000	6000	6000	5000	2600	1450	---
10	---	1600	1700	---	825	---	6000	3500	5000	---	1130	---
11	---	---	2500	700	---	1500	3500	6000	---	---	900	---
12	---	---	2800	775	975	1500	6000	---	---	---	1100	---
13	---	---	2500	775	825	1600	4000	4500	---	---	1400	---
14	1800	3500	1400	800	900	1300	---	5000	---	---	1300	---
15	1700	1400	1050	850	550	1200	6000	6000	---	---	1350	---
16	---	1400	1050	850	1200	1300	7000	6000	---	---	1650	---
17	---	3000	1050	825	1300	---	7000	6000	---	---	2500	---
18	3200	3000	---	825	1300	1400	6000	6000	---	---	---	---
19	2000	3000	1050	850	700	1800	6000	---	---	---	4000	---
20	1200	2800	1200	600	1500	1900	6000	6000	---	---	---	---
21	1700	2500	1000	800	1200	4000	---	4500	---	---	---	---
22	---	1400	1000	650	1300	5000	6000	---	---	---	---	---
23	---	2800	950	700	900	2700	7000	---	---	2100	---	---
24	3500	1400	---	850	900	---	7000	---	---	1900	---	---
25	1600	2700	---	650	1100	4000	6000	---	---	1600	---	---
26	1500	2800	850	750	1400	5000	4000	---	---	2200	---	---
27	3200	2800	1050	750	1200	6000	3500	---	---	1800	---	---
28	3600	2700	---	---	1400	5000	---	---	---	1400	---	---
29	2200	1400	775	725	1100	6000	6000	---	---	1600	---	---
30	3200	1400	---	900	---	6000	3500	---	---	1700	---	---
31	2000	---	---	750	---	---	---	---	---	1100	---	---
AVERAGE	---	2570	---	809	1050	2680	5120	---	---	---	---	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	--	--	--	--	--	--	--	--	--	--	--	--	--	7	2	--	--	18	4	3	2	--	--	10	12	13	20	12	2	11	7	--
NOVEMBER.	18	9	9	2	7	4	1	2	8	2	--	--	--	6	11	11	12	10	12	13	7	7	8	2	4	1	6	4	6	4	--	6
DECEMBER.	2	--	--	6	6	7	4	3	1	1	2	1	0	0	0	0	0	--	2	0	0	0	0	--	--	--	1	1	--	0	--	--
JANUARY..	1	0	1	0	0	1	--	0	0	--	1	0	0	0	0	1	0	0	1	0	0	0	1	1	2	0	0	--	1	10	10	1
FEBRUARY.	20	20	20	--	25	10	10	--	20	20	--	20	20	20	10	10	10	15	15	18	21	22	25	18	15	5	7	5	20	--	--	16
MARCH....	11	24	19	5	22	10	13	--	10	--	22	12	12	12	14	10	--	10	8	13	12	17	13	--	15	15	20	19	19	22	--	14
APRIL....	10	9	13	17	13	10	--	15	12	19	13	12	12	--	13	10	11	9	10	8	--	11	18	13	11	12	12	--	14	15	--	12
MAY.....	12	16	19	18	--	12	14	20	16	22	18	--	15	16	18	18	25	20	--	19	14	--	--	--	--	--	--	--	--	--	--	--
JUNE....	--	--	--	--	--	--	--	28	20	24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY....	--	--	--	--	--	--	10	22	27	--	--	--	--	--	--	--	--	--	--	--	--	21	18	17	22	17	20	19	21	16	--
AUGUST...	17	18	16	17	17	16	21	20	17	17	19	17	17	16	12	13	15	--	21	--	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: N, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT, PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC. 15, 1967	1200	0	2.0	3790	12	22	--	34	--	57	68	79	100	--	--	VPWC
JAN. 25, 1968	1615	2	10	5330	35	47	--	70	--	94	99	100	--	--	--	VPWC
FEB. 29.....	1200	15	14	5100	21	29	--	37	--	46	62	85	100	--	--	VPWC
FEB. 29.....	0900	4	11	5810	48	58	--	73	--	82	93	100	--	--	--	VPWC
APR. 9.....	1730	17	1.4	200	--	--	--	--	--	92	97	100	--	--	--	S
JULY 23.....	1735	21	62	93200	19	26	--	44	--	68	93	99	100	--	--	VPWC
AUG. 6.....	0750	16	32	129000	57	70	--	92	--	97	98	100	--	--	--	VPWC
AUG. 16.....	0730	13	2.0	17750	77	84	--	99	--	99	99	100	--	--	--	SPWC

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2.2	--	1.0	.55	490	.80	1.8	240	1.1
2	1.8	--	1.0	.55	250	T	1.4	--	1.0
3	1.6	--	.90	.55	380	.60	.90	--	1.0
4	1.6	--	.90	.55	250	T	.90	530	1.3
5	1.6	--	.90	.55	400	.60	1.1	320	.90
6	1.4	--	.80	.80	300	.70	1.1	450	1.3
7	1.2	--	.70	.80	460	1.0	1.0	470	1.3
8	1.2	--	.70	.80	290	.70	.80	440	.93
9	1.0	--	0	.80	380	.80	.65	270	.53
10	1.0	--	0	.80	240	.60	.90	160	T
11	.80	--	0	.65	--	0	1.0	500	1.3
12	.60	--	0	.65	--	.60	.90	950	2.3
13	.50	--	0	.65	--	.70	2.0	890	4.8
14	.50	130	T	.65	570	1.0	1.5	610	2.4
15	.50	120	T	.65	350	.70	1.0	710	1.9
16	.50	--	0	.65	310	.60	2.0	2800	15
17	.50	--	0	.80	620	1.3	2.0	950	5.1
18	.90	420	1.0	.80	960	1.9	1.5	--	2.0
19	1.4	660	2.7	.90	840	2.0	1.0	--	1.0
20	.80	300	.70	1.2	770	2.4	1.0	800	2.2
21	.80	250	.60	1.2	720	2.3	1.0	630	1.6
22	.90	--	.60	1.4	370	1.4	1.0	520	1.4
23	.65	--	.60	1.1	560	1.6	1.0	540	1.4
24	.65	420	.80	1.2	220	.70	1.0	--	1.0
25	.65	300	.60	1.2	480	2.2	1.0	--	2.0
26	.90	280	.70	1.1	570	1.6	1.0	900	2.4
27	1.0	440	1.2	1.4	550	2.1	1.0	1300	3.5
28	1.0	590	1.5	1.4	530	2.0	1.0	--	3.0
29	1.0	280	.80	1.6	280	1.2	1.0	1600	4.3
30	.65	390	.70	1.2	210	.70	1.0	--	4.0
31	.45	270	T	--	--	--	--	--	--
TOTAL	30.25	--	19.40	27.15	--	32.80	34.45	--	71.90

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.0	640	1.8	16	5200	220	9.1	9400	230
2	1.0	1400	3.8	15	4700	190	7.9	11000	240
3	1.0	2200	6.0	13	8500	300	9.1	7800	180
4	1.0	1100	3.0	13	--	200	9.5	2200	6.9
5	.50	660	.90	12	4300	130	10	2800	97
6	.50	670	.90	10	3700	100	2.6	1600	11
7	.50	--	.90	9.1	3200	78	11	1700	51
8	.50	820	1.1	9.5	1700	43	25	5500	410
9	.50	1400	1.9	11	--	40	21	3900	220
10	.50	--	2.0	11	3200	95	15	--	90
11	1.0	1000	2.6	14	--	200	14	5800	220
12	.50	660	.90	11	5500	160	13	5800	210
13	.50	820	1.1	9.1	4900	120	12	5300	170
14	.50	860	1.1	24	1600	100	21	14000	970
15	.50	840	1.1	1.6	430	1.9	20	17000	1100
16	.50	830	1.1	5.3	1700	24	13	14000	530
17	.50	750	1.0	5.3	3400	49	13	--	300
18	1.0	950	2.5	5.3	2900	42	16	8400	360
19	3.0	920	7.4	5.0	750	10	5.3	3000	43
20	5.0	1600	22	5.3	1000	14	.80	390	.93
21	5.0	2500	33	6.1	2100	34	.90	490	1.2
22	7.0	2700	51	6.8	2800	51	.90	620	1.5
23	9.0	3500	85	13	2600	91	3.0	1100	11
24	10	5000	150	9.5	4000	100	3.2	810	7.0
25	10	4600	120	9.1	2700	6.6	.90	460	1.1
26	15	1900	77	11	4000	120	.55	550	.80
27	20	7800	450	14	5000	220	.55	570	.90
28	24	--	80	15	7500	300	.55	470	.70
29	19	8500	430	11	4400	130	.55	590	.90
30	17	5900	260	--	--	--	.51	800	1.1
31	16	4700	200	--	--	--	.45	--	.90
TOTAL	172.00	--	1999.10	301.0	--	3169.5	261.36	--	5466.90

T LESS THAN 0.50 TON.

09403780 KANAB CREEK NEAR FREDONIA, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCENTRATION (MG/L)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCENTRATION (MG/L)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCENTRATION (MG/L)	JUNE LOAD (TONS)
1	.45	600	.70	.20	1300	.70	0	--	0
2	1.1	470	1.4	.20	840	0	0	--	0
3	1.1	800	2.3	.30	1300	1.1	0	--	0
4	1.1	380	1.1	.38	1400	1.4	0	--	0
5	1.2	820	2.6	.38	--	1.0	0	--	0
6	2.0	650	3.5	.25	1500	1.0	0	--	0
7	1.1	--	2.0	.25	1400	.90	0	--	0
8	.55	730	1.1	.30	1500	1.2	.60	750	2.4
9	.45	930	1.1	.38	1400	1.4	.55	1300	1.9
10	.45	1100	1.3	.38	890	.90	.38	1000	1.0
11	.55	750	1.1	.38	1200	1.2	0	--	0
12	.55	700	1.0	1.4	--	5.0	0	--	0
13	.38	700	.70	1.1	1400	4.2	0	--	0
14	.20	--	0	.38	1000	1.0	0	--	0
15	.30	1100	.90	.30	1100	.90	0	--	0
16	.38	1100	1.1	.25	1300	.90	0	--	0
17	.38	1000	1.0	.15	1300	.60	0	--	0
18	.90	940	2.3	.20	1300	.70	0	--	0
19	.80	910	2.0	.20	--	.60	0	--	0
20	.30	920	.80	.09	940	0	0	--	0
21	.45	--	1.0	.01	490	0	0	--	0
22	.55	980	1.4	0	--	0	0	--	0
23	.09	1200	T	0	--	0	0	--	0
24	.09	1200	T	0	--	0	0	--	0
25	.15	1400	.60	0	--	0	0	--	0
26	.30	1100	.90	0	--	0	0	--	0
27	.20	940	T	0	--	0	0	--	0
28	.02	--	0	0	--	0	0	--	0
29	.01	1600	T	0	--	0	0	--	0
30	.15	1100	T	0	--	0	0	--	0
31	--	--	--	0	--	0	--	--	--
TOTAL	16.25	--	31.90	7.48	--	24.70	1.53	--	5.3

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN CONCENTRATION (MG/L)	JULY LOAD (TONS)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN CONCENTRATION (MG/L)	AUGUST LOAD (TONS)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN CONCENTRATION (MG/L)	SEPTEMBER LOAD (TONS)
1	0	--	0	61	96000	35000	0	--	0
2	0	--	0	64	110000	21000	0	--	0
3	0	--	0	204	63000	67000	0	--	0
4	0	--	0	2.6	7500	53	0	--	0
5	0	--	0	18	52000	18000	0	--	0
6	0	--	0	23	110000	6900	0	--	0
7	19	88000	4500	36	87000	9500	0	--	0
8	1.6	56000	240	7.9	4300	92	0	--	0
9	.05	3000	T	4.4	23000	280	0	--	0
10	0	--	0	6.8	32000	710	0	--	0
11	0	--	0	13	63000	2400	0	--	0
12	0	--	0	9.5	64000	1700	0	--	0
13	0	--	0	10	79000	2400	5.0	--	300
14	0	--	0	13	32000	1200	.10	750	T
15	0	--	0	5.0	30000	410	0	--	0
16	0	--	0	1.4	12000	45	0	--	0
17	0	--	0	.45	1400	1.6	0	--	0
18	0	--	0	.55	870	1.3	0	--	0
19	0	--	0	.45	660	.80	0	--	0
20	0	--	0	.10	--	0	0	--	0
21	0	--	0	0	--	0	0	--	0
22	0	--	0	0	--	0	0	--	0
23	59	13000	8600	0	--	0	0	--	0
24	65	46000	24000	0	--	0	0	--	0
25	42	53000	8500	0	--	0	0	--	0
26	8.3	22000	500	0	--	0	0	--	0
27	143	210000	240000	0	--	0	0	--	0
28	55	230000	43000	.10	--	0	0	--	0
29	12	160000	5100	0	--		0	--	0
30	6.9	70000	1300	0	--		0	--	0
31	133	170000	110000	0	--		--	--	--
TOTAL	544.85	--	445740	481.25	--	166693.70	5.10	--	300

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 1882.67
TOTAL LOAD FOR YEAR (TONS) 623555.20

T LESS THAN 0.50 TON.

09406000 VIRGIN RIVER AT VIRGIN, UTAH

LOCATION.--Lat 37°11'55", long 113°12'25", in NW¼NE¼ sec.28, T.41 S., R.12 W., Washington County, at gaging station 1.1 miles west of Virgin and 2.3 miles downstream from North Creek.

DRAINAGE AREA.--934 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1956.
Water temperatures: October 1950 to September 1956, May 1962 to September 1968.
Sediment records: May 1962 to September 1968.

EXTREMES.--1967-68:
Sediment concentrations: Maximum daily, 82,000 mg/l Aug. 7; minimum daily, 36 mg/l July 4.
Sediment loads: Maximum daily, 180,000 tons Aug. 7; minimum daily, 11 tons July 4.

Period of record:
Sediment concentrations: Maximum daily (partly estimated), 150,000 mg/l Sept. 5, 1965; minimum daily, 21 mg/l May 30, 1966.
Sediment loads: Maximum daily, 1,300,000 tons Dec. 6, 1966; minimum daily, 6 tons May 30, June 4, 1966.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER	21	22	22	--	--	--	--	--	16	--	21	20	15	19	12	17	18	16	16	17	16	17	14	12	14	12	--	19	16	19	19	--
NOVEMBER	13	--	8	11	11	--	9	9	9	11	10	9	--	--	--	--	--	--	--	--	--	9	8	6	8	7	10	--	6	7	10	--	--
DECEMBER	--	9	9	9	9	--	9	10	--	--	10	9	--	--	10	11	--	--	--	--	10	--	--	9	--	--	--	--	9	6	8	6	--	--
JANUARY	--	9	--	--	8	6	7	8	8	--	--	14	--	7	16	16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--
FEBRUARY	7	--	--	--	--	--	--	--	--	--	--	--	--	6	9	11	7	--	8	8	7	--	--	--	--	--	11	10	--	--	--	--	--
MARCH	7	8	--	--	9	9	--	13	11	12	--	7	7	--	--	9	9	11	11	12	--	--	13	--	--	--	--	--	16	14	16	16	--
APRIL	9	7	11	7	8	12	7	9	7	6	10	6	13	14	13	13	16	17	17	16	16	14	10	16	10	17	9	17	5	11	--	11
MAY	9	14	13	12	--	--	10	16	--	--	16	10	18	11	16	10	18	11	18	16	--	13	11	6	12	--	9	18	16	14	16	13
JUNE	18	15	14	18	13	19	--	14	13	17	17	--	22	20	15	12	18	--	24	15	24	--	17	23	20	21	21	24	22	22	--	18
JULY	24	--	24	22	--	24	19	19	24	21	25	22	27	23	23	27	23	23	23	--	20	19	27	20	21	19	--	28	25	28	30	23
AUGUST	22	--	23	--	--	26	--	27	29	28	26	29	26	--	26	26	22	21	24	--	20	24	21	27	--	--	--	--	--	23	28	27	--
SEPTEMBER	26	21	18	17	17	17	--	18	17	17	16	18	20	13	22	13	--	10	11	--	--	20	22	22	--	14	18	--	16	16	--	17

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER	17	13	19	26	--	--	19	21	20	20	18	21	--	16	16	8	11	9	--	17	16	14	4	6	--	--	--	--	--	--	--	--	--
NOVEMBER	--	15	--	--	--	--	--	--	--	--	8	8	--	8	11	--	10	--	--	--	--	--	9	9	8	9	--	--	--	--	--	--	--
DECEMBER	--	--	1	--	--	9	1	--	--	7	8	9	8	8	3	--	7	--	--	--	--	--	1	--	--	--	--	--	--	4	4	3	--
JANUARY	3	--	--	--	1	--	--	6	--	--	8	--	--	8	--	--	--	9	--	--	--	--	--	--	--	8	--	--	--	7	--	--	--
FEBRUARY	2	--	--	7	--	--	--	--	--	--	--	7	--	--	--	6	--	3	--	--	--	--	--	--	--	7	--	--	1	--	--	--	--
MARCH	10	--	--	--	--	--	--	--	--	11	12	13	--	12	14	13	13	--	6	12	13	13	11	11	10	12	--	--	6	13	11	9	--
APRIL	--	--	--	--	14	--	15	16	7	14	--	12	15	12	17	--	13	8	9	12	14	7	9	16	--	16	15	14	--	16	--	--	--
MAY	18	18	16	--	18	19	21	18	--	15	13	18	19	18	13	22	--	23	23	22	22	--	22	24	23	22	--	16	23	24	21	19	--
JUNE	--	21	18	--	26	16	18	14	--	21	18	26	26	17	25	26	25	26	--	--	--	24	--	--	--	--	--	--	--	--	--	--	--
JULY	22	--	--	--	27	--	--	--	--	--	--	24	--	--	--	21	26	--	25	--	--	21	21	--	--	--	--	25	--	21	--	--	--
AUGUST	--	27	22	22	28	--	20	--	--	--	--	--	--	--	--	--	--	22	20	24	20	--	--	23	--	--	--	--	--	--	--	19	--
SEPTEMBER	15	--	--	--	--	--	--	21	--	--	16	--	--	19	--	--	--	--	--	18	23	--	21	--	23	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER	--	--	13	11	20	--	--	--	--	19	19	--	13	12	--	--	12	14	--	14	14	--	--	--	--	--	--	13	16	--	--	--	--
NOVEMBER	13	12	--	12	11	--	--	--	--	9	--	--	--	12	--	--	12	11	--	--	13	--	--	--	--	--	--	--	--	7	--	--	--
DECEMBER	--	--	--	--	--	--	--	--	--	--	--	--	4	--	--	--	--	--	--	--	--	--	--	--	--	6	--	--	--	4	--	--
JANUARY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	--	--	--	--	--	--	3	0	7	--	--	--	9	--	--
FEBRUARY	--	--	9	--	--	--	--	--	--	--	8	--	8	--	--	--	--	8	--	--	--	--	--	--	--	7	--	--	13	--	--	--	--
MARCH	--	12	--	9	8	8	--	12	--	--	12	--	--	--	11	17	--	--	--	14	--	--	13	13	12	--	11	--	--	--	7	--	--
APRIL	--	12	--	--	--	--	12	--	--	9	--	--	12	--	17	16	--	--	--	4	8	--	7	13	--	--	15	4	--	--	--	--	--
MAY	--	--	7	--	--	14	21	18	11	13	--	--	--	--	17	--	--	--	18	18	--	20	--	17	--	--	--	--	--	--	--	--	--
JUNE	--	--	21	--	20	--	20	20	--	18	--	20	--	--	18	--	24	16	--	18	24	29	19	--	--	--	--	--	--	--	--	--	--
JULY	--	--	23	--	--	24	--	--	29	--	24	20	21	24	--	21	21	21	--	27	25	--	21	--	27	--	--	--	--	--	--	24	--
AUGUST	--	--	--	--	--	--	--	--	--	--	25	30	--	32	--	24	22	32	--	--	--	30	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	--	--	--	--	--	--	--	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	--	--
NOVEMBER	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	--	--	--	--	--	5	--	--	--
DECEMBER	--	--	--	--	8	--	--	--	--	8	7	9	--	--	--	0	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--
JANUARY	--	--	--	--	--	0	--	--	--	5	5	--	--	--	6	--	--	--	--	--	--	--	--	--	--	--	6	--	8	--	--	--	--
FEBRUARY	9	--	--	--	--	--	6	--	8	10	--	--	6	--	8	--	12	--	13	--	--	--	--	--	--	--	--	8	10	--	--	--	--
MARCH	15	--	15	--	--	8	10	--	10	--	--	--	--	--	--	11	--	11	--	--	13	--	--	--	--	--	--	--	--	--	--	16	--
APRIL	17	--	11	--	12	--	--	--	--	--	--	--	--	--	8	--	14	8	14	12	--	--	--	--	16	14	--	17	17	11	--	--	--
MAY	13	18	10	11	11	17	14	9	15	--	10	13	10	15	--	--	--	13	9	--	20	19	--	17	--	--	23	--	20	16	--	--	--
JUNE	--	--	--	--	--	--	--	--	--	14	--	--	--	22	--	--	--	--	--	--	--	18	--	29	--	--	--	19	--	--	--	--	--
JULY	17	--	--	--	--	22	23	28	20	25	30	--	--	--	--	--	--	--	--	--	28	--	--	25	--	23	--	26	22	20	28	20	22	--
AUGUST	22	26	21	20	28	--	22	28	21	--	--	--	20	--	23	--	--	15	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--
SEPTEMBER	20	--	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--	--	15	--	--	20	--	--	--	21	--	--	--	--

09406000 VIRGIN RIVER AT VIRGIN, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	124	--	400	103	--	100	166	3200	1400
2	120	--	500	102	--	100	132	1500	530
3	116	1800	560	102	400	110	126	3200	1100
4	117	--	500	100	1200	320	138	--	700
5	119	1100	350	108	--	200	139	1800	680
6	112	--	200	112	--	200	143	--	700
7	99	430	110	112	450	140	136	1800	660
8	94	330	84	111	--	100	146	3100	1200
9	96	--	200	109	240	71	129	240	84
10	97	--	300	110	--	100	122	2100	690
11	100	1000	270	111	--	100	145	--	700
12	95	--	300	110	--	100	146	1900	750
13	98	--	300	117	1400	440	127	--	600
14	99	--	300	119	--	400	109	880	260
15	94	--	300	118	1200	380	128	--	500
16	97	--	300	112	--	300	170	--	2000
17	97	--	300	111	1000	300	156	--	1000
18	96	--	300	115	--	400	138	--	700
19	95	--	300	116	1300	410	170	--	2000
20	93	1100	280	114	--	300	167	--	1000
21	92	--	300	210	1600	910	161	--	1000
22	95	--	500	199	2100	1100	158	--	1000
23	99	--	700	149	--	400	164	2900	1300
24	93	--	300	142	--	200	132	--	1000
25	93	--	300	133	460	170	139	--	1000
26	98	2600	690	125	--	100	153	--	800
27	100	--	700	124	1500	500	169	420	190
28	97	--	500	139	--	400	171	--	200
29	95	--	200	164	460	200	157	280	120
30	95	560	140	146	1200	470	145	490	190
31	103	--	100	--	--	--	130	230	81
TOTAL	3118	--	10584	3743	--	9021	4512	--	24135

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	128	--	70	136	1200	440	184	1200	600
2	128	--	70	136	--	400	186	--	600
3	133	2000	720	137	--	400	189	1000	510
4	130	--	700	135	--	400	186	--	500
5	132	--	700	144	310	120	188	--	500
6	119	2100	670	139	--	200	191	970	500
7	117	--	500	140	--	400	289	--	2000
8	112	--	200	134	1400	510	328	--	3000
9	113	--	200	135	--	400	391	4400	4600
10	121	--	90	143	1100	420	280	--	3000
11	130	190	67	244	2700	1800	230	--	2000
12	130	160	56	171	--	600	220	3200	1900
13	118	1500	480	252	--	2000	230	--	2000
14	128	100	35	373	7500	7600	235	2500	1600
15	133	--	200	220	--	1000	220	--	900
16	130	1100	390	191	1400	720	220	1500	890
17	134	1200	430	167	--	500	210	--	700
18	126	--	300	163	1100	480	190	740	380
19	120	--	100	193	--	1000	175	420	200
20	129	200	70	186	1900	950	160	--	100
21	132	--	200	195	--	1000	155	570	240
22	136	1200	440	214	3500	2000	153	--	200
23	134	--	400	180	--	900	157	330	140
24	132	730	260	189	1300	660	157	--	100
25	136	--	300	193	--	600	174	--	200
26	133	--	300	193	--	600	198	920	490
27	190	4700	2400	194	1100	580	200	--	500
28	194	--	3000	192	1300	670	209	--	700
29	146	1300	510	182	--	600	232	1900	1200
30	150	540	220	--	--	--	277	2000	1500
31	159	--	400	--	--	--	315	2200	1900
TOTAL	4153	--	14478	5271	--	27950	6729	--	33650

09406000 VIRGIN RIVER AT VIRGIN, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	346	1500	1400	452	2100	2600	201	--	50
2	481	1800	2300	471	2900	3700	188	120	61
3	387	1100	1100	457	2800	3500	178	--	60
4	289	--	400	490	3600	4800	170	--	60
5	285	--	400	548	5300	7800	163	160	70
6	285	--	400	509	2800	3800	168	--	80
7	277	--	400	391	1200	1300	160	--	70
8	252	--	300	387	1100	1100	181	--	100
9	254	390	270	378	980	1000	289	850	660
10	272	840	620	359	1100	1100	220	290	170
11	355	2100	2000	396	840	900	180	--	200
12	415	--	4000	415	420	470	163	--	200
13	490	--	8000	462	960	1200	140	320	120
14	429	--	4000	364	1200	1200	126	--	90
15	438	1200	1400	373	350	350	125	--	80
16	481	1800	2300	359	--	500	118	--	50
17	424	1000	1100	350	--	700	116	--	40
18	346	560	520	350	790	750	109	85	25
19	319	510	440	368	270	270	108	--	30
20	302	920	750	387	--	1000	105	--	40
21	268	--	600	391	1100	1200	105	160	45
22	252	--	600	410	200	220	110	--	60
23	213	1200	690	355	--	200	111	260	78
24	244	--	500	319	170	150	115	--	90
25	248	660	440	281	--	100	113	--	70
26	293	1100	870	260	130	91	109	--	50
27	341	--	1000	252	820	560	100	140	38
28	298	1200	970	236	240	150	96	--	30
29	350	1800	1700	230	390	240	94	--	30
30	410	2800	3100	218	370	220	93	--	30
31	--	--	--	205	63	35	--	--	--
TOTAL	10044	--	42570	11423	--	41206	4254	--	2777

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	107	190	55	457	42000	52000	102	2300	630
2	117	--	40	500	42000	57000	105	--	600
3	115	--	30	310	7500	6300	108	--	500
4	112	36	11	147	3500	1400	99	--	400
5	124	--	13	127	3000	1000	106	1200	340
6	187	2000	1000	180	6500	3200	104	--	300
7	150	2300	930	802	82000	180000	105	--	200
8	118	600	190	596	30000	48000	105	680	190
9	131	1200	420	359	36000	35000	95	--	100
10	110	200	59	151	5000	2000	96	--	100
11	110	200	59	236	13000	8300	113	--	200
12	108	370	110	272	--	6000	119	980	310
13	111	--	100	543	4700	6900	121	--	300
14	113	--	100	543	--	7000	123	--	300
15	115	280	87	277	3600	2700	114	--	200
16	114	--	100	111	--	2000	114	--	200
17	109	1200	350	103	--	2000	102	800	220
18	105	--	200	104	6600	1900	102	--	200
19	102	150	41	100	--	1000	102	--	200
20	107	--	100	92	--	800	100	--	100
21	111	--	100	82	1600	350	104	240	67
22	119	780	250	93	--	500	120	--	300
23	140	--	1000	92	--	500	124	--	400
24	206	38000	21000	92	--	500	91	1100	270
25	378	75000	77000	107	3800	1100	87	--	200
26	382	18000	19000	111	--	800	86	--	200
27	396	4000	4300	116	--	500	89	--	200
28	391	12000	13000	121	--	300	87	1000	230
29	252	4500	3100	120	760	250	86	--	200
30	236	17000	11000	107	--	200	101	--	300
31	601	51000	83000	97	--	100	--	--	--
TOTAL	5577	--	236745	7148	--	429600	3110	--	7957

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 69082
TOTAL LOAD FOR YEAR (TONS) 880673

09406000 VIRGIN RIVER AT VIRGIN, UTAH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV. 30, 1967	1540	5	141	1160	3	6	--	17	50	95	100	--	--	VPWC
JAN. 16, 1968	1655	6	134	1000	3	4	--	14	25	92	100	--	--	VPWC
MAR. 9.....	1300	10	364	3600	40	49	67	76	90	100	--	--	--	VPWC
MAR. 21.....	1700	13	160	919	18	23	35	44	58	91	100	--	--	VPWC
MAY 5.....	0800	11	642	5510	12	16	27	46	70	96	100	--	--	VPWC
JUNE 13.....	1320	22	138	198	8	11	--	33	45	90	100	--	--	VPWC
JULY 6.....	2100	22	666	11600	21	28	51	88	96	100	--	--	--	VPWC
JULY 25.....	0900	--	514	133000	39	49	74	97	99	100	--	--	--	VPWC
AUG. 2.....	1540	27	248	17200	37	47	66	79	90	98	100	--	--	VPWC
AUG. 7.....	1720	20	4250	408000	9	12	20	36	55	86	99	100	--	VPWC
AUG. 7.....	1820	--	5570	297000	10	13	22	40	63	90	100	--	--	VPWC
AUG. 8.....	1835	28	125	17200	51	63	91	95	100	--	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	NUMBER OF SAMPLING POINTS	WATER DISCHARGE (CFS)	BED MATERIAL PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .062	.125	.250	.500	1.000	2.000	4.000	8.000	16.00	32.00	64.00	METHOD OF ANALYSIS
NOV. 30, 1967	1540	5		141	0	5	59	94	96	96	96	97	99	100	--	SV
MAR. 21, 1968	1700	13		160	1	5	61	93	98	99	100	--	--	--	--	SV
JUNE 13.....	1320	22		138	1	7	43	72	77	78	79	82	92	100	--	SV
AUG. 8.....	1835	28		125	6	33	72	91	92	93	94	96	100	--	--	SV

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH

LOCATION.--Lat 37°09'45", long 113°23'40", in NE¼SW¼ sec.2, T.42 S., R.14 W., Washington County, at gaging station at bridge on State Highway 17, 1.8 miles downstream from Quail Creek and 6.2 miles west of Hurricane.

DRAINAGE AREA.--1,530 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: March 1967 (miscellaneous).
Water temperatures: October 1967 to September 1968.
Sediment records: March 1967 to September 1968.

EXTREMES.--1967-68:
Sediment concentrations: Maximum daily, 62,000 mg/l Aug. 2; minimum daily, 180 mg/l July 4.
Sediment loads: Maximum daily, 260,000 tons Aug. 7; minimum daily, 40 tons July 4.

Period of record:
Sediment concentrations: Maximum daily, 84,000 mg/l Sept. 23, 1967; minimum daily, 180 mg/l July 4, 1968.
Sediment loads: Maximum daily, 260,000 tons Aug. 7, 1968; minimum daily, 40 tons July 4, 1968.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	17.0	---	---	---	16.0	17.0	13.0	---	28.0	25.0	---
2	23.0	---	8.0	6.0	11.0	---	---	18.0	---	---	25.0	27.0
3	---	---	---	---	---	---	11.0	---	27.0	29.0	25.0	---
4	24.0	13.0	8.0	6.0	---	16.0	---	---	---	---	---	27.0
5	---	---	---	---	11.0	---	15.0	---	23.0	---	29.0	---
6	18.0	16.0	---	7.0	---	12.0	---	16.0	---	---	---	23.0
7	---	---	7.0	---	9.0	---	---	---	20.0	---	24.0	---
8	---	16.0	---	6.0	---	9.0	16.0	15.0	---	29.0	27.0	---
9	19.0	---	5.0	---	12.0	---	---	---	16.0	---	27.0	29.0
10	---	---	---	---	---	---	19.0	19.0	---	29.0	28.0	---
11	21.0	16.0	8.0	6.0	---	7.0	---	---	25.0	---	---	22.0
12	---	---	---	---	13.0	---	18.0	---	---	---	27.0	---
13	21.0	16.0	---	7.0	---	12.0	---	12.0	27.0	28.0	21.0	26.0
14	---	---	0.0	---	7.0	---	---	---	---	---	20.0	---
15	---	14.0	---	8.0	9.0	16.0	17.0	16.0	27.0	27.0	23.0	---
16	16.0	---	1.0	---	---	---	---	---	---	---	---	21.0
17	---	15.0	---	8.0	11.0	---	12.0	---	29.0	21.0	24.0	---
18	14.0	---	1.0	---	---	10.0	---	---	---	---	---	20.0
19	---	---	---	---	13.0	---	14.0	20.0	24.0	27.0	22.0	---
20	20.0	15.0	---	8.0	---	13.0	---	21.0	---	---	---	18.0
21	---	---	2.0	---	12.0	14.0	---	18.0	29.0	---	20.0	---
22	---	11.0	---	10.0	---	15.0	13.0	18.0	25.0	24.0	---	---
23	18.0	---	4.0	---	13.0	---	---	---	---	---	14.0	12.0
24	---	12.0	---	10.0	---	---	14.0	21.0	26.0	28.0	---	---
25	17.0	---	---	---	---	12.0	17.0	---	---	23.0	---	14.0
26	---	---	7.0	9.0	16.0	---	18.0	---	21.0	---	26.0	---
27	18.0	10.0	---	---	---	14.0	---	22.0	---	27.0	---	---
28	---	---	6.0	---	11.0	---	---	---	---	---	---	19.0
29	---	9.0	---	11.0	---	18.0	18.0	26.0	27.0	26.0	18.0	---
30	10.0	---	7.0	---	---	---	---	---	---	---	---	21.0
31	---	---	---	10.0	---	---	---	25.0	---	24.0	18.0	---

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	131	3800	1300	94	790	200	179	1200	580
2	131	2400	850	96	800	210			
3	127	1800	620	96	820	210	161	1300	570
4	127	1200	410	96	830	220	161	1500	650
5	127	1600	550	96	1000	260	148	1300	520
6	120	2000	650	101	1200	330	136	1200	440
7	111	2200	660	105	1000	280	141	1000	380
8	105	2300	650	105	880	250	136	1200	440
9	103	2500	700	105	920	260	131	1400	500
10	101	2000	550	105	960	270	116	1500	470
11	101	1400	380	105	1000	280	144	1500	580
12	101	1600	440	105	1000	280	141	1400	530
13	98	1700	450	107	1100	320	127	1200	410
14	92	1600	400	111	860	260	138	1100	410
15	92	1600	400	118	610	190	148	1800	720
16	92	1500	370	136	920	340	177	2600	1200
17	96	1700	440	141	1200	460	177	2300	1100
18	94	1900	480	141	1100	420	164	2000	890
19	92	1400	350	150	1000	400	188	1800	910
20	92	920	230	160	900	390	199	1700	910
21	92	940	230	188	--	1000	177	1500	720
22	92	960	240	281	10000	7600	151	1600	650
23	92	990	250	174	1900	890	159	1700	730
24	88	1000	240	169	1700	780	169	1700	780
25	85	1000	230	166	1600	720	174	1700	800
26	83	970	220	164	1500	660	185	1600	800
27	85	930	210	156	1400	590	194	1500	790
28	94	1200	300	198	--	1000	199	1400	750
29	83	1600	360	224	2600	1600	194	1400	730
30	92	1900	470	179	970	470	185	1400	700
31	94	1300	330	--	--	--	172	1400	650
TOTAL	3113	--	13960	4172	--	21140	5076	--	21610

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	164	1400	620	199	1200	640	240	2200	1400
2	166	1400	630	179	1300	630	243	2100	1400
3	166	1300	580	188	1400	710	243	2100	1400
4	164	1200	530	191	1400	720	240	2000	1300
5	159	1100	470	188	1500	760	240	2000	1300
6	154	1100	460	191	1500	770	253	2800	1900
7	146	1000	390	191	1500	770	434	--	9000
8	146	970	380	191	1400	720	390	6600	6900
9	148	1200	480	194	1400	730	611	--	20000
10	152	1500	620	202	1500	820	413	--	6000
11	158	1800	770	288	2700	2100	299	3500	2800
12	164	1600	710	260	2400	1700	288	3500	2700
13	164	1600	710	284	--	2000	296	3100	2500
14	166	1500	670	529	7700	11000	314	3300	2800
15	169	1400	640	361	5400	5300	284	3100	2400
16	172	1400	650	277	4300	3200	288	3100	2400
17	172	1300	600	246	3600	2400	284	3100	2400
18	169	1200	550	240	3700	2400	250	2800	1900
19	164	1200	530	288	4400	3400	233	2200	1400
20	166	1100	490	260	3700	2600	211	1500	850
21	169	1100	500	260	3700	2600	194	1500	790
22	172	1000	460	260	3700	2600	185	1400	700
23	177	1100	530	260	3700	2600	182	1400	690
24	185	1200	600	260	3700	2600			
25	185	1300	650	260	3700	2600	191	1800	930
26	185	1400	700	267	3300	2400	208	2500	1400
27	211	1400	800	263	2800	2000	208	2500	1400
28	263	1400	990	260	2400	1700	214	2800	1600
29	208	1400	790	243	2100	1400	240	3100	2000
30	191	1300	670	--	--	--	288	3500	2700
31	202	1200	650	--	--	--	326	3700	3300
TOTAL	5377	--	18820	7280	--	63870	8475	--	88960

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	370	4300	4300	457	2700	3300	161	720	310
2	500	4000	5400	480	2900	3800	158	780	330
3	470	4100	5300	467	3300	4200	150	840	340
4	307	2900	2400	510	3900	5400	145	720	280
5	23	2400	2400	560	5000	7600	158	610	230
6	341	3300	3000	544	4700	6900	135	540	200
7	307	2900	2400	417	2600	2900		480	170
8	299	2500	2000	395	2300	2500	150	3600	1500
9	307	2400	2000	382	2200	2200	170	6700	3400
10	341	2100	1900	372	2200	2200	170	4000	1800
11	430	2400	2800	366	2100	2100	145	1300	510
12	5	00	00	387	2400	2400	130	880	310
13	58	6200	11000	471	2700	3400	120	470	150
14	67	5200	8400	374	2200	2200	111	440	130
15	616	3600	6000	334	2000	1800	109	400	120
16	658	3900	6900	307	1200	990	103	360	100
17	595	3700	5800	277	800	600	98	320	85
18	80	[illegible]	[illegible]	296	1000	800	100	350	94
19	444	3200	3800	303	1100	900	90	390	95
20	404	3100	3400	319	1300	1100	87	340	80
21	[illegible]	[illegible]	[illegible]	330	1500	1300	83	300	67
22	357	2500	2400	330	1500	1300	90	330	80
23	318	2000	1700	284	1200	920	88	270	64
24	263	1300	920	260	1000	700	85	210	48
25	240	1100	710	246	1100	730	83	250	56
26	274	1400	1000	230	1100	680	85	280	64
27	318	1700	1500	221	1100	660	32	260	58
28	266	1600	1300	199	1100	590	80	230	50
29	[illegible]	[illegible]	1700	199	1100	590	80	200	43
30	408	2400	2600	177	880	420	72	240	47
31				154	660	300	--	--	--
TOTAL	12184	--	106540	10659	--	65580	3453	--	10811

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	78	280	59	450	--	70000	74	1700	340
2	87	270	63	430	62000	72000	74	1800	350
3	83	260	58	230	25000	S21000	74	2000	400
4	62	240	40	141	4000	1500	69	2200	410
5	83	210	47	100	3000	810	74	1800	360
6	68	400	95	94	4000	1000	70	1300	250
7	170	--	200	650	60000	S260000	66	1500	270
8	103	1600	440	438	50000	S83000	64	1800	310
9	105	--	500	460	50000	S79000	61	2000	330
10	85	570	130	127	10000	3400	61	2000	330
11	82	330	73	185	13000	S7000	72	2000	390
12	83	360	81	156	8200	S5100	83	2100	470
13	61	320	67	61	35000	S33000	90	2200	530
14	80	320	69	433	54000	S67000	87	2100	490
15	92	330	73	151	14000	5700	87	1900	450
16	80	320	69	116	6500	2000	87	1800	420
17	[illegible]	320	[illegible]	92	3800	940	80	1600	350
18	78	320	67	82	3000	660	74	1300	260
19	73	330	65	88	3200	760	70	1400	260
20	73	280	55	80	3000	650	68	1400	260
21	78	290	61	76	2900	600	70	1400	260
22	85	300	69	92	2900	720	69	1400	260
23	111	400	120	90	3000	730	74	1500	300
24	152	2400	S1100	85	2800	640	73	1600	320
25	95	32	[illegible]	57	2600	610	68	1700	310
26	224	6400	S4100	90	2400	580	65	1500	260
27	124	5300	1800	92	2500	620	70	1400	260
28	98	4600	1200	92	2600	650	68	1200	220
29	113	4900	1500	88	2600	620	73	1700	340
30	140	--	2000	85	2100	480	85	2300	530
31	240	--	40000	76	1600	330	--	--	--
TOTAL	3421	--	65458	5783	--	721100	2200	--	10300

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) T1193
TOTAL LOAD FOR YEAR (TONS) 1208139

S COMPUTED BY DUBDIVIDING DAY.

09408150 VIRGIN RIVER NEAR HURRICANE, UTAH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV. 20, 1967	1640	15	141	931	5	9	18		29	54	96	100	--	--		VPWC
JAN. 31, 1968	1410	10	199	1070	7	12	20		30	60	96	100	--	--		VPWC
FEB. 14.....	0935	7	627	9140	19	23	39		53	74	94	100	--	--		VPWC
MAR. 21.....	1240	14	221	1920	23	30	48		60	76	98	100	--	--		VPWC
APR. 25.....	1645	17	263	1230	5	8	24		49	94	100	--	--	--		VPWC
JUNE 22.....	1110	25	87	316	5	13	--		44	58	95	100	--	--		VPWC
JULY 31.....	0715	21	D240	204000	26	32	50		78	94	100	--	--	--		VPWC
AUG. 2.....	1110	24	404	30400	25	33	52		75	92	98	100	--	--		VPWC
AUG. 2.....	2015	22	585	250000	20	26	37		65	87	99	100	--	--		VPWC
AUG. 7.....	2030	22	3790	297000	13	17	23		42	67	93	100	--	--		VPWC
AUG. 9.....	1140	23	505	56400	24	35	52		72	95	96	100	--	--		VPWC
AUG. 14.....	1000	20	616	75400	30	38	58		78	90	98	100	--	--		VPWC

D DAILY MEAN DISCHARGE.

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	NUMBER OF SAMPLING POINTS	WATER DISCHARGE (CFS)	BED MATERIAL PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .062	.125	.250	.500	1.000	2.000	4.000	8.000	16.00	32.00	64.00	METHOD OF ANALYSIS
NOV. 20, 1967	1640	15		141	0	4	40	64	70	71	74	80	88	100	-	SV
JAN. 31, 1968	1410	10		199	1	5	41	76	80	81	83	86	90	100	--	SV
MAR. 21.....	1240	14		221	0	4	55	93	97	98	99	100	--	--	--	SV
JUNE 22.....	1110	25		87	1	8	52	85	89	90	92	93	96	100	--	SV

09410000 SANTA CLARA RIVER ABOVE WINSOR DAM, NEAR SANTA CLARA, UTAH

LOCATION (revised).—Lat 37°13'05", long 113°46'35", in NW¼SE¼ sec.17, T.41 S., R.17 W., Washington County, at gaging station 1.7 miles above Pahcoon Spring wash, 2.3 miles upstream from Winsor Dam, 3.2 miles north of Shivwitz Indian Village, and 9 miles northwest of Santa Clara.

DRAINAGE AREA.--338 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1951 to September 1956.
Water temperatures: October 1962 to September 1968 (discontinued).
Sediment records: May 1962 to September 1968 (discontinued).

EXTREMES.--1967-68:
Sediment concentrations: Maximum daily, 17,000 mg/l Aug. 6; minimum daily, 8 mg/l July 28.
Sediment loads: Maximum daily, 10,000 tons Aug. 6; minimum daily, less than 0.50 ton on several days.

Period of record:
Sediment concentrations: Maximum daily, 37,000 mg/l Dec. 6, 1966; minimum daily, 3 mg/l Nov. 12, 1965.
Sediment loads: Maximum daily, 540,000 tons Sept. 28, 1962; minimum daily, less than 0.50 ton on many days.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1962 TO SEPTEMBER 1963

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	21	23	--	23	--	19	19	23	--	--	--	19	--	--	--	21	--	--	--	22	20	--	19	--	--	--	--	18	--	18	--	--
NOVEMBER.	--	--	18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER.	--	--	--	--	--	--	--	--	--	11	--	10	--	9	--	10	--	--	--	--	--	--	--	--	--	--	--	6	--	--	--	--
JANUARY..	--	--	4	--	--	3	--	7	--	--	--	--	--	--	--	--	0	--	0	--	--	2	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	--	14	--	--	19	--	--	17	--	--	15	17	--	16	--	--	13	--	19	--	16	17	--	17	--	13	5	--	--	--	--
MARCH....	--	--	16	--	--	15	--	--	13	--	12	--	--	17	15	--	--	19	--	18	--	--	17	--	18	--	14	16	15	--	--	--
APRIL....	16	22	17	--	16	--	--	--	13	--	--	--	21	--	19	--	--	16	--	21	--	--	15	--	--	11	13	--	24	--	--	--
MAY.....	--	--	26	24	19	21	--	--	--	23	--	--	--	26	--	--	29	--	28	30	20	--	24	26	27	21	23	21	22	--	--	--
JUNE.....	24	--	20	--	23	26	--	--	--	22	--	24	--	28	25	--	--	24	--	27	--	24	--	26	--	19	--	--	--	--	--	--
JULY.....	25	28	23	22	23	--	--	21	--	23	--	--	21	--	--	28	--	--	31	--	28	--	25	--	27	--	--	--	29	29	28	--
AUGUST...	--	--	23	25	--	--	--	23	--	--	--	27	--	--	--	--	--	--	29	--	--	--	23	--	--	18	21	--	--	23	--	--
SEPTEMBER	--	--	16	--	--	22	--	--	--	21	21	--	--	18	--	--	--	21	17	--	--	--	--	--	19	--	22	--	--	23	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	22	21	21	--	--	--	21	--	21	22	--	--	20	--	16	--	19	--	--	16	17	17	4	--	17	3	--	18	7	18	--	--
NOVEMBER.	--	--	--	15	--	11	8	--	13	--	--	13	--	--	15	--	6	--	8	11	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER.	2	--	--	6	--	--	--	8	--	--	10	--	9	--	--	8	--	--	9	--	--	9	--	--	8	--	--	7	--	--	8	--
JANUARY..	--	--	6	--	--	4	--	8	--	--	4	--	--	--	6	--	--	2	--	9	3	3	6	--	--	--	--	--	--	--	--	--
FEBRUARY.	8	--	8	--	--	9	--	--	--	13	--	--	11	--	--	7	--	8	--	8	11	--	8	--	8	--	--	10	8	--	--	--
MARCH....	11	--	--	7	--	8	--	--	--	10	--	--	9	--	10	--	--	12	--	11	--	--	--	12	--	--	--	10	--	--	--	--
APRIL....	--	14	--	13	13	--	14	--	16	--	15	--	--	--	--	18	--	--	--	--	14	--	--	16	--	17	--	--	--	--	--	--
MAY.....	17	19	18	14	13	12	--	--	18	--	--	--	--	21	--	--	--	22	--	--	22	--	21	--	18	--	--	--	--	--	--	--
JUNE.....	--	19	--	--	21	--	16	--	--	18	--	22	--	24	--	--	21	--	--	--	24	--	--	--	26	--	--	26	--	--	26	--	--
JULY.....	24	--	26	--	28	--	--	26	--	27	--	--	28	25	27	--	--	27	--	27	27	--	28	--	--	--	28	28	--	27	--	--
AUGUST...	--	28	27	--	26	28	28	--	--	--	--	25	24	29	29	--	27	27	--	24	--	--	--	--	--	--	--	24	--	--	--	--
SEPTEMBER	--	24	--	--	22	--	24	--	--	--	23	--	--	23	--	--	22	--	21	26	12	--	--	24	--	--	--	23	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1964 TO SEPTEMBER 1965

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	--	22	--	--	23	--	24	--	--	21	--	18	--	--	17	--	--	--	16	--	--	17	--	19	--	18	--	--	18	--	12	--
NOVEMBER.	--	--	13	--	14	--	14	--	14	14	--	--	11	--	9	--	9	--	10	--	11	13	11	--	--	--	9	--	--	10	--	--
DECEMBER.	13	--	--	--	10	--	--	6	--	8	--	--	--	2	--	3	--	--	0	--	--	11	--	4	--	12	--	--	2	--	--	--
JANUARY..	--	12	11	--	--	12	--	8	--	--	9	--	--	6	10	--	--	--	--	9	--	12	--	11	--	--	10	--	--	--	11	--
FEBRUARY.	--	12	--	--	8	--	--	--	7	--	--	--	--	11	--	10	--	8	--	15	15	--	--	12	--	--	14	--	--	--	--	--
MARCH....	--	18	--	--	20	--	--	16	--	--	14	--	--	16	--	--	--	11	--	--	13	--	--	13	12	--	--	13	--	16	--	--
APRIL....	--	--	16	11	10	14	13	--	6	7	--	--	7	--	6	12	--	17	--	11	12	--	17	--	17	--	--	18	--	17	--	--
MAY.....	--	16	--	17	--	15	--	16	17	--	--	16	--	--	19	--	19	--	--	19	17	18	--	19	--	--	18	--	--	--	--	--
JUNE.....	20	--	21	--	24	23	24	19	18	--	--	24	--	--	--	21	--	23	--	19	--	22	21	--	--	21	--	--	23	--	--	--
JULY.....	--	21	--	--	24	--	--	23	--	--	25	--	--	--	--	--	24	--	--	21	--	--	26	--	--	--	27	--	25	--	27	--
AUGUST...	--	--	--	25	--	--	--	--	24	--	--	--	26	--	24	--	24	--	--	24	--	--	23	--	--	23	--	--	24	--	--	--
SEPTEMBER	23	--	23	--	--	19	--	--	23	--	23	--	--	22	14	--	19	--	18	--	--	--	18	--	--	19	--	--	19	--	--	--

09410000 SANTA CLARA RIVER ABOVE WINSOR DAM, NEAR SANTA CLARA, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1966--Continued

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	--	19	--	--	18	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	19	--	--	--	--	--	--	--	--	--	--
NOVEMBER.	16	13	11	--	21	--	--	13	14	14	--	--	7	--	12	--	--	--	--	9	--	--	--	10	--	--	--	--	--	--	--	--
DECEMBER.	--	--	11	--	--	9	12	--	11	--	--	--	--	--	5	--	4	--	--	5	--	--	--	7	--	--	--	--	--	5	--	--
JANUARY..	7	--	--	--	--	--	7	--	--	--	8	--	--	--	3	--	--	--	--	1	--	--	--	--	8	--	--	--	--	7	--	--
FEBRUARY.	--	--	7	--	2	--	9	--	3	--	--	--	1	--	--	--	1	--	--	--	10	--	--	12	--	--	--	4	--	--	--	--
MARCH....	--	--	13	--	--	--	14	--	--	--	--	--	--	15	--	--	--	--	--	14	--	--	--	17	--	--	21	--	--	22	--	--
APRIL....	--	--	--	21	--	--	--	--	17	--	--	17	--	--	--	12	--	--	--	10	--	--	--	15	--	--	--	13	--	--	--	--
MAY.....	15	--	--	17	--	--	--	19	--	--	--	19	--	--	--	23	--	22	--	--	--	26	--	--	--	28	--	--	25	--	--	--
JUNE.....	23	--	--	22	--	--	--	--	23	--	--	--	22	--	--	--	22	--	--	--	--	23	--	--	23	--	--	24	--	--	--	--
JULY.....	24	--	--	--	25	--	--	23	--	--	--	23	--	--	--	24	--	--	--	23	--	--	--	24	--	--	--	26	--	--	--	--
AUGUST...	26	--	--	--	24	--	--	--	27	--	--	22	--	--	23	--	--	--	25	--	--	--	--	--	--	--	--	--	--	18	--	--
SEPTEMBER	23	18	--	--	--	21	--	--	--	18	--	--	--	--	--	12	--	--	--	--	--	--	--	21	--	--	19	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1967

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	--	--	17	--	--	--	--	--	--	17	--	--	--	--	--	--	16	--	--	--	--	--	--	--	--	--	--	--	--	--	15	--
NOVEMBER.	--	--	17	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER.	--	--	--	--	12	13	10	9	8	--	9	--	10	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9	--	9	6	--	--	--	--	12	13	13	--
FEBRUARY.	--	11	12	--	--	--	8	--	10	--	--	--	9	9	--	--	--	--	--	--	2	12	10	10	13	13	18	16	--	--	--	--
MARCH....	--	--	16	--	11	--	10	--	16	--	--	13	--	--	16	--	18	--	--	20	--	23	11	--	--	18	--	--	--	--	--	--
APRIL....	17	--	17	14	--	16	14	18	--	17	--	20	21	--	22	--	21	19	--	--	--	--	--	--	--	--	--	--	21	--	--	--
MAY.....	18	19	--	16	16	--	22	--	22	22	--	20	--	21	19	27	--	27	27	21	23	23	26	24	21	26	18	24	--	19	18	--
JUNE.....	22	20	21	24	--	18	--	26	25	--	23	25	18	--	--	--	28	--	26	22	--	23	16	29	29	30	--	20	--	29	--	--
JULY.....	31	--	19	--	28	--	31	21	--	--	29	--	--	--	29	--	27	--	--	28	--	--	--	--	--	--	--	--	26	21	31	32	--
AUGUST...	31	--	21	--	31	--	30	--	20	--	18	31	29	--	32	28	--	26	--	--	29	18	--	26	21	--	20	29	--	18	22	--
SEPTEMBER	--	28	27	--	27	--	20	21	24	--	--	22	17	--	20	22	26	--	22	--	20	18	--	18	16	--	--	23	--	21	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY

MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	--	22	--	--	--	--	--	--	13	23	--	22	--	19	--	19	--	21	--	11	--	18	--	18	18	--	11	--	13	--	17	--
NOVEMBER.	--	16	--	14	--	18	--	16	--	17	16	--	17	--	18	--	18	16	--	14	11	10	13	--	7	--	13	--	--	7	--	--
DECEMBER.	8	--	9	--	13	10	--	7	--	13	--	--	--	--	10	--	--	--	9	--	4	--	7	--	10	--	7	--	10	--	7	--
JANUARY..	7	--	7	--	4	--	10	--	4	--	10	--	9	--	10	--	10	--	11	--	6	--	--	8	--	6	--	10	6	--	--	--
FEBRUARY.	4	--	13	--	10	--	11	13	13	--	11	--	11	9	12	--	10	--	17	10	13	15	7	18	23	13	16	16	16	--	--	13
MARCH....	--	--	18	18	17	--	16	9	9	10	13	14	14	17	10	13	13	14	--	16	--	11	--	20	--	16	19	21	--	18	21	--
APRIL....	--	13	18	--	18	--	18	--	21	23	--	--	22	--	20	--	16	--	18	16	--	19	--	21	--	--	21	--	24	--	--	--
MAY.....	24	--	22	--	24	--	24	--	22	--	16	17	--	--	23	26	--	--	21	--	27	--	24	21	--	24	27	--	27	--	24	--
JUNE.....	--	29	--	27	24	15	--	--	21	--	27	27	27	27	24	--	--	21	24	29	--	--	27	32	--	--	27	21	--	26	--	--
JULY.....	--	27	29	--	24	--	27	--	27	--	21	27	--	24	--	24	--	--	23	--	--	23	--	--	22	--	--	--	--	--	21	--
AUGUST...	--	-	24	--	27	21	27	--	27	21	--	--	--	20	27	--	28	--	21	27	21	--	26	24	--	21	--	24	--	21	--	--
SEPTEMBER	27	--	17	--	18	--	27	--	--	27	--	27	--	26	--	20	21	--	21	21	--	--	18	--	20	16	--	--	--	21	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV. 22, 1967	1220	10	11	77	18	22	--			57	78	100	--	--	--	VPWC
JAN. 30, 1968	1725	10	15	85	9	10	--			32	53	73	94	100	--	VPWC
MAR. 22.....	1750	13	29	190	8	13	--			30	39	69	99	100	--	VPWC
MAY 15.....	1540	24	23	90	5	7	--			13	18	47	98	100	--	VPWC
23.....	1335	27	17	42	15	16	--			38	51	88	100	--	--	VPWC
JULY 19.....	1130	23	16	68	--	--	--			--	--	--	--	--	--	--
JULY 31.....	1130	21	20	5190	57	76	95			98	98	100	--	--	--	VPWC
AUG. 6.....	1715	21	1450	143000	25	29	48			78	89	97	100	--	--	VPWC
AUG. 6.....	2010	21	68	3710C	38	52	80			94	96	98	100	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	NUMBER OF SAMPLING POINTS	WATER DISCHARGE (CFS)	BED MATERIAL PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .062	.125	.250	.500	1.000	2.000	4.000	8.000	16.00	32.00	64.00	METHOD OF ANALYSIS
NOV. 22, 1967	1220	10		11	--	0	7	24	63	73	80	83	90	100	--	SV
JAN. 30, 1968	1725	10		15	0	1	11	38	59	70	78	83	93	100	--	SV
MAR. 22.....	1750	13		29	--	--	0	13	53	75	90	93	95	100	--	SV
JUNE 3.....	1635	27		17	--	0	2	25	50	65	76	84	91	100	--	SV

09410000 SANTA CLARA RIVER ABOVE WINSOR DAM, NEAR SANTA CLARA, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	16	--	10	17	--	10	14	400	15
2	17	320	15	18	270	13	13	--	10
3	16	--	10	17	--	10	13	330	12
4	16	--	10	14	440	17	13	--	10
5	16	--	10	15	--	10	13	290	10
6	16	--	10	14	170	6	13	260	9
7	16	--	10	13	--	9	14	--	10
8	16	--	9	12	370	12	14	480	18
9	16	190	8	13	--	10	13	--	10
10	16	180	8	12	42	1	13	270	9
11	17	--	10	10	45	1	13	420	15
12	17	240	11	9.5	--	2	14	--	10
13	17	--	10	9.7	120	3	13	--	8
14	18	340	17	11	--	4	12	--	6
15	19	--	20	11	180	5	13	150	5
16	18	480	23	11	--	5	12	--	5
17	17	--	20	12	160	5	12	--	5
18	17	220	10	9.8	86	2	11	--	6
19	18	--	20	11	--	2	11	220	7
20	16	140	6	11	84	2	10	--	7
21	16	--	6	12	2000	65	10	260	7
22	16	140	6	11	86	3	11	--	20
23	17	--	7	13	250	9	12	1100	36
24	18	180	9	14	--	7	13	--	20
25	18	170	8	13	120	4	13	150	5
26	18	--	10	13	--	4	13	--	9
27	17	420	19	15	450	18	13	370	13
28	19	--	10	15	--	20	13	--	10
29	20	150	8	14	--	10	13	290	10
30	17	--	5	13	220	8	13	--	10
31	18	130	6	--	--	--	14	230	9
TOTAL	525	--	341	384.0	--	277	392	--	336

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	14	780	29	15	220	9	34	--	60
2	14	--	20	15	--	8	33	550	49
3	14	260	10	15	150	6	32	660	57
4	15	--	10	16	--	4	31	410	34
5	16	240	10	16	44	2	31	800	67
6	15	--	10	16	--	6	30	--	50
7	14	230	9	17	190	9	30	550	45
8	14	--	10	17	43	2	32	1300	110
9	14	320	12	17	120	6	59	2600	410
10	13	--	10	16	--	4	52	2100	290
11	13	210	7	19	1700	87	45	1200	150
12	13	--	5	19	--	50	46	2100	260
13	14	110	4	20	330	18	47	1300	160
14	15	--	6	55	2900	430	48	1800	230
15	15	140	6	45	1600	190	43	1000	120
16	15	--	8	37	--	100	37	860	86
17	15	260	11	35	720	68	33	100	9
18	15	--	10	38	--	100	29	320	25
19	15	240	10	50	1500	200	27	--	20
20	16	--	9	48	2000	260	29	410	32
21	16	180	8	48	1500	190	28	--	30
22	15	--	10	44	1200	140	28	300	23
23	15	270	11	36	1000	97	28	--	20
24	17	320	15	42	1000	110	26	86	6
25	17	--	10	42	1400	160	26	--	10
26	16	49	2	42	1300	150	24	190	12
27	16	--	8	40	890	96	21	110	6
28	16	320	14	40	940	100	19	180	9
29	16	--	9	34	710	65	21	--	10
30	15	100	4	--	--	--	20	80	4
31	13	82	3	--	--	--	19	270	14
TOTAL	461	--	300	894	--	2667	1008	--	2408

09410000 SANTA CLARA RIVER ABOVE WINSOR DAM, NEAR SANTA CLARA, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	1C	--	20	20	180	1C	2C	--	5
2	22	520	31	21	--	1C	2C	52	3
3	42	410	24	24	220	14	2C	--	3
4	23	--	20	24	--	3C	21	71	4
5	22	130	8	25	560	38	19	160	8
6	21	--	7	25	--	3C	21	230	13
7	19	120	6	26	370	26	23	--	1C
8	18	--	5	27	--	3C	24	--	1C
9	16	89	4	26	570	4C	26	110	8
10	15	110	4	22	--	2C	23	--	6
11	17	--	4	25	510	34	17	55	3
12	17	--	3	26	300	21	18	47	2
13	17	46	2	27	--	2C	18	42	2
14	18	--	1C	25	--	1C	19	93	5
15	18	380	18	24	100	6	18	130	6
16	23	--	3C	23	42	3	18	--	5
17	22	380	23	19	--	5	17	--	7
18	22	--	20	2C	--	8	17	150	7
19	22	300	18	21	200	11	17	140	6
2C	23	440	27	22	--	7	18	130	6
21	23	--	2C	23	92	3	18	--	6
22	23	300	19	23	--	3	15	--	3
23	25	--	20	22	47	3	16	100	4
24	23	270	17	23	84	5	16	220	1C
25	21	--	1C	23	--	8	14	--	7
26	21	--	1C	21	210	12	13	--	4
27	2C	210	11	23	28	2	12	25	1
28	22	--	1C	23	--	3	15	120	5
29	2C	130	7	23	53	4	15	--	4
3C	21	--	1C	22	--	6	13	29	1
31	--	--	--	21	160	9	--	--	--
TOTAL	615	--	418	719	--	431	541	--	168

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	13	--	3	15	--	2C	6.1	48	1
2	13	150	5	13	--	1C	5.9	--	1
3	13	36	1	14	180	7	5.5	150	2
4	14	--	2	16	--	2C	4.9	--	1
5	14	47	2	18	4C	2C	6.9	240	4
6	14	--	3	69	17000	S10000	7.4	--	3
7	14	96	4	24	5200	34C	7.4	80	2
8	13	--	2	24	--	1CC	7.0	--	1
9	14	20	1	17	1800	83	6.7	--	1
10	14	--	2	13	2400	84	4.9	30	T
11	14	69	3	12	--	6C	4.8	--	T
12	15	100	4	12	--	4C	5.6	63	1
13	16	--	1C	12	--	3C	6.3	--	1
14	16	160	7	12	370	12	6.5	35	1
15	17	--	8	11	56C	17	6.3	--	1
16	14	160	6	9.8	--	1C	5.6	29	T
17	12	--	5	9.5	36C	9	5.0	33	T
18	13	110	4	10	--	1C	5.6	--	1
19	14	72	3	9.9	400	11	7.5	180	4
2C	14	--	3	10	240	6	7.4	70	1
21	14	--	3	9.7	260	7	7.3	--	1
22	15	88	4	10	--	7	6.7	--	1
23	14	--	2	8.4	150	3	4.9	83	1
24	13	--	1	8.8	290	7	5.0	--	1
25	14	8	T	7.8	--	5	6.0	130	2
26	1C	--	T	8.1	150	3	7.0	140	3
27	13	720	25	8.5	--	3	6.8	--	3
28	14	--	3C	7.2	7C	1	7.3	--	3
29	2C	9000	490	5.2	--	1	7.1	--	2
3C	41	--	6000	5.6	100	2	6.2	47	1
31	21	8000	450	6.3	--	1	--	--	--
TOTAL	472	--	7083	416.8	--	11208	187.6	--	40

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 6619.4
TOTAL LOAD FOR YEAR (TONS) 25683

S COMPUTED BY SUBDIVIDING DAY.
T LESS THAN 0.5 TON.

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.
(Irrigation network station)

LOCATION.--Lat 36°53', long 113°56', in SW¼SW¼ sec.4, T.40 N., R.15 W., Mohave County, at gaging station 0.4 mile downstream from Beaver Dam Wash, 0.4 mile upstream from Littlefield, and 36 miles upstream from waterline of Lake Mead at elevation 1,221 ft above mean sea level.
DRAINAGE AREA.--5,090 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: July 1949 to September 1968.
Water temperatures: October 1947 to September 1968.
Sediment records: October 1947 to September 1968 (discontinued).
EXTREMES.--1967-68:
Dissolved solids: Maximum, 2,790 mg/l July 31; minimum, 1,020 mg/l Mar. 9-11.
Hardness: Maximum, 1,830 mg/l July 31; minimum, 510 mg/l Mar. 9-11.
Specific conductance: Maximum daily, 3,720 micromhos July 7; minimum daily, 1,370 micromhos Mar. 9.
Water temperatures: Maximum, 31.0°C June 21, July 7, 12, 23; minimum, 4.0°C Dec. 14.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.											
01-31	111	--	--	--	--	--	415	246	0	1130	425
NOV.											
01-20	102	--	--	--	--	--	338	288		1030	429
21...	147	--	--	--	--	--	201	246	0	661	264
22-30	267	--	--	--	--	--	286	336	0	775	345
DEC.											
01-31	210	--	--	--	--	--	282	342	0	714	340
JAN.											
01-31	204	--	--	--	--	--	302	340	0	747	33
FEB.											
01-11	193	--	236	75	--	--	271	312	0	744	335
12-16	271	--	204	58	--	--	229	296	0	607	245
15-17	365	--	180	48	--	--	198	268	0	541	212
18-29	283	--	168	74	--	--	213	306	0	641	250
MAR.											
01-08	215	--	--	--	--	--	241	330	0	814	333
09-11	333	--	--	--	--	--	169	246	0	610	170
12-19	251	--	--	--	--	--	208	306	0	684	250
19-31	141	--	--	--	--	--	298	400	0	849	360
APR.											
01-05	276	--	--	--	--	--	192	272	0	564	212
06-12	216	--	--	--	--	--	251	296	0	712	292
13-30	252	--	--	--	--	--	212	290	0	648	256
MAY											
01-04	324	--	--	--	--	--	164	240	0	484	208
05-16	367	--	--	--	--	--	136	260	0	479	215
17-21	265	--	--	--	--	--	210	276	0	566	235
22-25	201	--	--	--	--	--	242	268	0	655	280
26-31	115	--	--	--	--	--	248	256	0	700	345
JUNE											
01-09	84	--	--	--	--	--	400	308	0	1170	455
09-12	172	--	--	--	--	--	294	252	0	902	350
13-30	57	--	--	--	--	--	293	190	0	1160	490
JULY											
01-25	56	--	--	--	--	--	314	208	0	1220	471
26-30	158	--	--	--	--	--	230	300	0	885	370
31...	692	--	--	--	--	--	64	274	0	1540	100
AUG.											
01-04	637	--	--	--	--	--	155	290	0	1060	165
04-08	517	--	--	--	--	--	245	308	0	1280	275
09-10	326	--	--	--	--	--	190	280	0	796	220
11-16	186	--	--	--	--	--	274	316	0	840	315
17-31	69	--	--	--	--	--	369	228	0	1310	425
SEPT.											
01-30	57	--	--	--	--	--	356	240	0	1280	440
WTD. AVG. TIME	--	--	--	--	--	--	261	280	0	796	305
WTD. AVG. TONS PER DAY	177	--	--	--	--	--	292	277	0	901	347
	--	--	--	--	--	--	125	138	0	381	146

ANALYSES OF ADDITIONAL SAMPLES

OCT.											
21...	A114	18	305	112	310	28	--	306	0	1080	435
NOV.											
29...	A440	12	248	45	162	15	--	210	0	705	210
JAN.											
15...	A206	19	240	88	251	20	--	340	0	744	335
30...	A206	15	232	73	221	19	--	330	0	730	302
MAR.											
22...	A143	17	273	89	264	22	--	320	0	842	350
APR.											
13...	A278	13	170	52	140	14	--	276	0	456	168
MAY											
23...	A219	13	190	60	164	14	--	272	0	532	232
JULY											
04...	A53	19	357	134	273	23	--	320	0	1190	380

A DISCHARGE AT TIME OF SAMPLING.

09413000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

EXTREMES,--1967-68:--Continued
Sediment concentrations: Maximum daily, 64,000 mg/l Aug. 8; minimum daily, 340 mg/l Sept. 21.
Sediment loads: Maximum daily, 209,000 tons Aug. 8; minimum daily, 52 tons June 25, Sept. 21.
Period of record)
Dissolved solids (1949-50, 1953-68): Maximum, 4,250 mg/l Aug. 12, 1964; minimum, 524 mg/l Mar. 16, 1958.
Hardness (1949-50, 1953-68): Maximum, 2,250 mg/l Aug. 12, 1964, Aug. 21, 1966; minimum, 334 mg/l Mar. 16, 1958.
Specific conductance: Maximum daily, 4,650 micromhos Aug. 21, 1966; minimum daily, 734 micromhos Apr. 28, 1952
Water temperatures: Maximum, 33.5°C July 7, 1953; minimum, 1.5°C Jan. 4, 1949, Jan. 4, 1950.
Sediment concentrations: Maximum daily, 202,000 mg/l Aug. 13, 1964; minimum daily, 40 mg/l June 16, 20, 1962.
Sediment loads: Maximum daily, 1,800,000 tons Dec. 7, 1966; minimum daily, 6 tons June 16, 20, 1962.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	SUSPENDED SOLIDS (TONS PER DAY)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-31	--	--	2400	3,110	639	1080	873	5.5	3150	8.0
NOV.										
01-30	--	--	2280	3,110	622	1140	929	4.3	3130	8.0
23...	--	--	1220	1,450	484	640	422	3.5	1840	7.7
22-30	--	--	1500	2,430	1370	904	658	4.1	2500	8.1
DEC.										
01-31	--	--	1930	2,640	1040	924	645	4.2	2670	8.1
JAN.										
01-31	--	--	1910	2,650	1060	860	581	4.5	2500	8.0
FEB.										
01-11	--	--	1840	2,445	980	900	644	3.9	2520	8.0
13-14	--	--	1560	2,410	1140	750	507	3.6	2140	8.0
15-17	--	--	1300	1,780	1290	650	430	3.4	1820	8.1
18-28	--	--	1530	1,970	1170	725	472	3.4	2080	8.1
MAR.										
01-02	--	--	1570	2,024	911	770	524	3.8	2170	7.9
03-11	--	--	1040	1,430	917	510	408	3.2	1500	7.9
12-18	--	--	1500	2,094	1020	760	509	3.3	2100	8.0
19-31	--	--	2000	2,720	761	990	744	4.1	2670	7.9
APR.										
01-05	--	--	1370	1,486	1020	710	487	3.1	1950	7.8
06-12	--	--	1720	2,444	1000	850	607	3.7	2350	7.8
13-30	--	--	1460	1,990	933	740	510	3.4	2060	7.9
MAY										
01-04	--	--	1140	1,450	1020	620	407	2.9	1680	7.7
05-16	--	--	1180	1,560	1170	605	392	3.3	1690	7.8
17-21	--	--	1480	2,201	1060	735	525	3.5	2050	7.8
22-25	--	--	1523	2,207	835	770	550	3.9	2140	7.9
26-31	--	--	1960	2,771	618	985	675	3.6	2610	7.8
JUNE										
01-08	--	--	2510	3,441	575	1240	982	5.0	3160	8.1
09-12	--	--	1700	2,553	442	896	688	4.3	2560	8.1
13-30	--	--	2610	3,455	402	1290	1130	3.5	3250	8.1
JULY										
01-25	--	--	2660	3,462	403	1350	1180	3.7	3290	8.0
26-30	--	--	2290	3,111	977	1200	934	2.9	2920	7.9
31...	--	--	2790	3,794	5210	1430	1410	.6	2800	7.7
AUG.										
01-03	--	--	2000	2,772	3440	1200	1000	1.9	2320	7.5
04-08	--	--	2533	3,544	3530	1440	1190	2.8	2970	7.6
09-10	--	--	1710	2,334	1510	940	710	2.7	2250	7.6
11-26	--	--	2390	2,884	1060	1080	826	3.5	2760	7.8
27-31	--	--	2680	3,684	530	1370	1180	4.2	3330	7.7
SEPT.										
01-30	--	--	2650	3,450	411	1370	1170	4.2	3340	7.8
WTD. AVG. TIME	--	--	1850	--	--	930	693	--	2460	7.9
WTD. AVG. TONS PER DAY	--	--	2050	--	--	1020	792	4.0	2700	7.9

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
23...	1.5	.7	2620	3,312	806	1220	969	3.9	3330	7.5
NOV.										
29...	.5	2.8	1530	2,004	1020	801	629	2.5	2020	7.4
JAN.										
16...	1.2	1.4	1880	2,706	1050	960	681	3.5	2580	7.8
30...	1.0	3.3	1810	2,337	1010	880	609	3.7	2410	8.1
MAR.										
22...	1.2	2.6	2130	2,973	822	1040	782	3.4	2790	8.0
APR.										
13...	.8	1.3	1240	1,462	931	640	414	2.6	1770	7.9
MAY										
23...	.6	1.2	1390	1,940	816	696	473	2.7	1940	8.0
JULY										
04...	1.2	1.8	2650	3,658	376	1440	1180	3.1	3270	7.7

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2740	3130	2400	2520	2480	2320	2160	1790	2980	3300	2430	3150
2	2700	3230	2370	2510	2500	2360	---	1750	2950	3230	2570	3270
3	2720	3210	2480	2500	2540	2170	1540	1660	3160	3280	1970	3270
4	2820	3190	2610	2610	2570	2200	1900	1510	3280	3260	2300	3300
5	2910	3130	2570	2610	2540	2220	2160	1490	3260	3310	2790	3360
6	2990	3130	2620	2580	2550	2160	2270	1400	3290	---	3180	3290
7	3100	3110	2670	2580	2580	2160	2260	1570	3240	3720	3080	3290
8	3070	3070	2670	2550	2530	1810	2380	1780	3090	3380	3330	3330
9	3090	3150	2740	2560	2500	1370	2500	1840	2720	3300	2200	3320
10	3060	3140	2740	2520	2510	1390	2520	1710	2210	3250	2300	3310
11	3170	3190	2810	2500	2450	1750	2360	1830	2440	---	2890	3300
12	3300	3160	2790	2520	2030	1960	2140	1750	2790	3270	2870	3310
13	3260	3150	2750	2560	2190	2090	1750	1690	3040	3330	3010	3300
14	3240	3110	2760	2540	2200	1950	1740	1550	3160	3330	2300	3320
15	3200	3130	2560	2520	1510	2060	1740	1720	3190	3330	2340	3300
16	3230	3130	2550	2510	1910	2170	1700	1790	3210	3300	2970	3300
17	3270	3120	2480	2500	2050	2220	1650	1960	3220	3250	3210	3260
18	3260	3050	2500	2460	2140	2220	1770	2070	3160	3230	---	3350
19	3210	2910	2440	2520	2070	2420	1960	2100	3190	3290	3300	3390
20	3190	2910	2450	2540	2030	2610	2020	2040	3230	3260	3290	3400
21	3240	1840	2500	2530	2030	2640	2120	1990	3260	3310	3270	3310
22	3250	2370	2550	2500	1990	2620	2280	2080	3190	2910	3350	3310
23	3220	2540	2550	2480	2120	2840	2380	2030	3300	3270	3390	3470
24	3230	2540	2490	2480	2140	2790	2550	2150	3210	3280	3310	3390
25	3150	2630	2470	2470	2050	2770	2450	2250	3290	3290	3310	3350
26	3180	2630	2460	2440	2060	2840	2330	2360	3280	2570	3330	3320
27	3260	---	2460	2440	2080	2840	2330	2440	3260	2860	3600	3490
28	3200	---	2370	2300	2170	2730	2030	2500	3300	3050	3340	3450
29	3240	2080	2360	2230	2170	2620	2110	2650	3300	3190	3290	3470
30	3280	2460	2490	2400	---	2600	2020	2750	3290	2890	3280	3380
31	3240	---	2500	2420	---	2290	---	3010	---	2800	3270	---
AVERAGE	3130	2910	2550	2500	2230	2290	2110	1970	3120	3210	2970	3340

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVER-AGE
OCTOBER..	24	24	24	24	23	21	22	22	23	24	24	24	24	23	23	23	22	22	22	22	22	22	22	22	22	22	21	17	17	17		22
NOVEMBER.	17	16	17	17	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	13	13	14	14	14	14	--	--	11	11	--		15
DECEMBER.	11	8	11	11	11	12	12	11	12	11	12	10	6	4	6	8	7	7	6	7	6	6	7	7	7	7	7	8	8	8	9	8
JANUARY..	9	9	9	8	--	8	7	7	7	7	7	7	7	7	9	10	8	7	9	10	9	9	10	11	13	13	13	11	11	12	11	9
FEBRUARY.	12	12	12	12	11	11	12	14	13	12	14	14	14	13	13	14	14	14	14	13	13	15	18	18	17	17	17	17	18	--	--	14
MARCH....	19	19	19	18	19	17	16	14	12	12	14	16	15	16	17	20	14	16	15	16	16	17	19	19	18	18	18	18	20	21	23	20	17
APRIL....	18	--	16	18	16	18	18	20	19	20	21	20	18	19	19	18	14	13	16	15	16	17	19	21	21	16	16	20	21	22	--	18
MAY.....	22	23	23	18	18	18	18	19	21	17	18	16	14	13	14	16	15	17	25	19	18	22	22	23	24	24	18	18	27	24	26	19
JUNE.....	25	20	29	27	24	23	21	19	22	26	27	28	29	29	21	21	30	30	30	30	30	31	20	27	29	29	29	29	29	29	27	--	26
JULY.....	29	29	29	29	29	--	31	29	29	29	--	31	29	28	27	27	27	29	30	30	30	26	31	30	29	23	23	27	27	27	22	28
AUGUST...	29	24	27	27	28	28	27	22	28	29	28	28	26	24	24	24	22	--	24	24	24	24	17	17	26	27	28	29	29	29	29	25
SEPTEMBER	29	27	27	27	27	27	27	27	27	27	27	27	26	26	26	24	24	26	24	23	23	24	24	24	24	24	24	23	26	26	--	25

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	150	2700	1100	108	960	280	218	9400	5500
2	145	3100	1200	114	1400	430	198	7200	3800
3	140	2500	940	120	1400	450	190	4100	2100
4	135	2600	950	132	1300	460	182	3300	1600
5	130	1800	630	123	1400	460	182	4200	2100
6	125	2400	810	112	1800	540	178	4200	2000
7	120	1300	420	130	1500	530	174	3500	1600
8	115	1400	430	123	1300	430	166	3400	1500
9	110	1600	480	118	1200	380	174	2700	1300
10	105	1100	310	128	890	310	170	2800	1300
11	100	1000	270	120	870	280	178	3600	1700
12	95	1400	360	99	1200	320	178	4300	2100
13	90	1500	360	90	1200	290	182	2800	1400
14	135	1100	400	78	1000	210	182	3100	1500
15	123	730	240	70	1100	210	190	4100	2100
16	115	740	230	67	1500	270	226	3400	2100
17	107	1100	320	76	1500	310	262	5200	3700
18	99	1500	400	83	1400	310	242	4000	2600
19	88	1300	310	74	1500	300	274	6500	4800
20	118	1000	320	81	1500	330	294	6600	5200
21	114	890	270	147	14000	7300	238	5700	3700
22	110	1300	390	385	19000	20000	234	4800	3000
23	106	910	260	257	6800	4700	230	3600	2200
24	102	760	210	170	3900	1800	222	4300	2600
25	98	1100	290	170	3600	1700	218	5300	3100
26	94	990	250	170	4000	1800	215	5200	3000
27	92	1100	270	170	4000	1800	218	5100	3000
28	90	1300	320	241	---	E5000	224	6200	3700
29	88	1200	290	561	15000	25000	227	5400	3300
30	90	1300	320	282	6100	4600	233	4400	2800
31	103	1400	390	--	--	--	218	5000	2900
TOTAL	3432	--	13740	4599	--	80800	6517	--	83300

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	212	4200	2400	209	5100	2900	239	3000	1900
2	209	4600	2600	209	4000	2300	206	2000	1100
3	206	4800	2700	203	4300	2400	200	4100	2200
4	203	4800	2600	197	3100	1600	221	2400	1400
5	191	4000	2100	188	3100	1600	206	3800	2100
6	185	3400	1700	188	3100	1600	194	2700	1400
7	185	3700	1800	182	4000	2000	191	3000	1500
8	191	4200	2200	182	2800	1400	262	6400	4500
9	194	4400	2300	176	3400	1600	356	12000	12000
10	197	3800	2000	191	2700	1400	328	14000	12000
11	200	4500	2400	203	3600	2000	314	4700	4000
12	194	4100	2100	257	6300	4400	293	4900	3900
13	191	4700	2400	227	5900	3600	284	4300	3300
14	194	4800	2500	328	8500	7500	275	5400	4000
15	203	4200	2300	440	11000	13000	257	3400	2400
16	206	4400	2400	346	6200	5800	227	2100	1300
17	206	4700	2600	308	5800	4800	206	3600	2000
18	209	5400	3000	296	5800	4600	212	3000	1700
19	206	4300	2400	299	6500	5200	203	2600	1400
20	206	4800	2700	305	6500	5400	182	1600	790
21	206	5000	2800	293	4700	3700	158	2100	900
22	209	4900	2800	293	4500	3600	140	1400	530
23	206	3400	1900	293	3900	3100	119	1200	390
24	206	3800	2100	269	4900	3600	125	1800	610
25	203	4500	2500	272	3600	2600	131	1700	600
26	209	4000	2300	272	4900	3600	110	1600	480
27	212	4200	2400	269	4400	3200	121	1300	420
28	233	6400	4000	269	4000	2900	119	1400	450
29	239	5900	3800	269	4100	3000	121	2000	650
30	212	3400	1900	--	--	--	131	2100	740
31	206	4600	2600	--	--	--	170	3300	1500
TOTAL	6329	--	76300	7433	--	104400	6301	--	72160

E ESTIMATED.

09415000 VIRGIN RIVER AT LITTLEFIELD, AR1%.--Continued

SUSPENDED SEDIMENT WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	205	3400	1900	278	4000	3000	59	860	140
2	244	4900	3200	310	5300	4400	59	680	110
3	362	6400	6300	334	5200	4700	62	610	100
4	303	5300	4300	373	4100	4100	64	760	130
5	268	3800	2700	404	4600	5000	74	640	130
6	250	3000	2000	480	6400	8300	103	650	190
7	247	2800	1900	428	4600	5300	119	850	270
8	222	2200	1300	380	3400	3500	134	700	250
9	184	2100	1000	359	2400	2300	219	2000	1200
10	174	1700	800	338	3600	3300	216	3100	1800
11	191	2400	1200	314	2000	1700	155	2100	880
12	247	3700	2500	320	2700	2300	98	940	250
13	300	3800	3100	362	4100	4000	68	720	130
14	352	4100	3900	373	3800	3800	59	740	120
15	334	4400	4000	332	2600	2300	60	640	100
16	366	3500	3500	314	2700	2300	60	680	110
17	380	4600	4700	296	1900	1500	60	620	100
18	356	3700	3600	268	1700	1200	60	760	120
19	314	2700	2300	261	1800	1300	59	550	88
20	278	2200	1700	261	3000	2100	57	640	98
21	236	2100	1300	240	1600	1000	55	600	89
22	212	1700	970	233	1600	1000	53	510	73
23	170	1500	690	222	1400	860	51	520	72
24	143	1500	580	184	1400	700	53	510	73
25	146	1300	510	164	1200	530	55	350	52
26	146	2200	870	152	1300	530	57	370	57
27	167	1900	860	128	1000	350	57	490	75
28	205	2400	1300	125	1400	470	55	600	89
29	194	2200	1200	113	880	270	55	440	65
30	230	2800	1700	102	940	260	53	580	80
31	--	--	--	70	960	180	--	--	--
TOTAL	7426	--	65880	8518	--	72530	2394	--	7061

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	53	520	74	685	39000	72000	57	590	91
2	53	490	57	655	36000	64000	53	560	80
3	53	460	66	570	34000	58000	55	580	86
4	53	500	72	331	21000	22000	55	390	58
5	53	470	67	220	7800	4700	57	360	55
6	55	500	74	266	2200	1700	55	600	89
7	81	12000	2600	417	50000	56000	57	470	72
8	79	7500	1600	1180	64000	200000	57	490	75
9	60	1200	190	459	35000	43000	59	490	78
10	55	620	92	194	23000	12000	59	500	80
11	53	510	73	134	9000	3300	59	450	72
12	53	710	100	119	5500	1800	59	380	61
13	53	550	79	140	10000	3800	57	450	69
14	53	610	87	368	20000	20000	57	400	62
15	53	500	72	251	30000	20000	57	590	91
16	53	500	72	119	10000	3200	57	400	62
17	53	400	57	92	3000	750	57	570	88
18	53	640	92	79	950	200	57	470	72
19	53	380	54	77	960	200	57	520	80
20	55	430	64	74	970	190	55	440	65
21	53	460	66	72	940	180	57	360	52
22	55	780	120	70	1300	250	57	390	60
23	55	600	89	66	940	170	64	760	130
24	53	500	72	77	840	160	64	920	160
25	55	520	77	66	700	120	59	600	96
26	229	36000	S24000	66	720	130	55	610	91
27	149	32000	13000	68	2200	400	55	630	94
28	113	15000	4600	62	900	150	57	820	130
29	102	3800	1000	57	640	98	59	610	97
30	199	13000	S8400	60	580	94	60	530	86
31	692	55000	S110000	57	510	78	--	--	--
TOTAL	2886	--	167066	7314	--	590670	1723	--	2482

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 64872.00
TOTAL LOAD FOR YEAR (TONS) 1334369.00

S COMPUTED BY SUBDIVIDING DAY.

09415000 VIRGIN RIVER AT LITTLEFIELD, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV. 29, 1967	1515	9	440	10800	23	34	49	71	91	99	100	--	--	VPWC
JAN. 30, 1968	1330	12	206	2680	11	15	16	36	87	99	100	--	--	VPWC
MAR. 22.....	1240	16	143	1140	17	26	42	58	88	100	--	--	--	VPWC
MAY 23.....	1300	21	219	1170	9	15	24	39	83	99	100	--	--	VPWC
JULY 31.....	1600	25	810	61300	25	35	63	82	94	99	100	--	--	VPWC
AUG. 1.....	1800	27	700	38800	34	44	66	89	96	100	--	--	--	VPWC
AUG. 4.....	1800	27	353	16500	40	53	79	93	98	100	--	--	--	VPWC
AUG. 8.....	0600	22	1590	119000	27	30	48	82	95	100	--	--	--	VPWC
AUG. 9.....	1800	28	D459	38800	35	42	66	85	92	99	100	--	--	VPWC
AUG. 11.....	1800	28	D134	6970	48	64	82	90	96	100	--	--	--	VPWC

D DAILY MEAN DISCHARGE.

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	NUMBER OF SAMPLING POINTS	WATER DISCHARGE (CFS)	BED MATERIAL PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .062	.125	.250	.500	1.000	2.000	4.000	8.000	16.00	32.00	64.00	METHOD OF ANALYSIS
NOV. 29, 1967	1515	9		440	3	10	53	97	100	--	--	--	--	--	--	SV
JAN. 30, 1968	1330	12		206	1	10	48	86	97	98	99	100	--	--	--	SV
MAR. 22.....	1240	16		143	1	10	51	86	98	99	99	100	--	--	--	SV

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.

LOCATION (revised).--Lat 36°00'58", long 114°44'13", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River Meridian, at gaging station midway between Hoover Dam intake towers on state line between Mohave County, Ariz., and Clark County, Nev.
DRAINAGE AREA.--167,800 sq mi, approximately.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DEPTH (FT)	STAGE (FT ABOVE DATUM)	TEMPERATURE (DEG C)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)
OCT.									
31...	0	1129	22	8.3	80	32	106	5.0	126
31...	5	1124	22	--	--	--	--	--	126
31...	25	1104	22	--	--	--	--	--	126
31...	75	1054	22	8.8	80	32	105	5.0	127
31...	125	1004	17	8.4	86	29	98	5.0	151
31...	175	954	15	--	--	--	--	--	154
31...	225	904	13	8.8	85	28	93	4.0	159
31...	275	854	13	10	83	28	94	4.0	153
31...	325	804	12	--	--	--	--	--	156
31...	375	754	12	9.3	83	28	94	4.0	160
31...	408	721	12	--	--	--	--	--	160
NOV.									
30...	0	1128	18	8.6	83	30	106	5.0	137
30...	5	1123	18	--	--	--	--	--	137
30...	25	1103	18	--	--	--	--	--	137
30...	75	1053	18	8.7	86	29	98	5.0	151
30...	125	1003	16	8.7	83	30	106	5.0	137
30...	175	953	15	--	--	--	--	--	155
30...	225	903	13	9.1	84	28	94	4.0	157
30...	275	853	12	9.2	83	28	94	4.0	157
30...	325	803	12	--	--	--	--	--	157
30...	375	753	12	9.6	83	28	95	4.0	159
30...	407	721	12	--	--	--	--	--	--
JAN.									
02...	0	1130	14	8.9	84	30	94	5.0	144
02...	5	1125	14	--	--	--	--	--	--
02...	25	1105	14	--	--	--	--	--	--
02...	75	1055	14	--	--	--	--	--	--
02...	125	1005	14	--	--	--	--	--	--
02...	175	955	14	8.9	85	30	96	5.0	144
02...	225	905	13	9.4	84	29	93	4.0	155
02...	275	855	13	8.9	83	28	92	4.0	155
02...	325	805	12	--	--	--	--	--	--
02...	375	755	12	9.4	83	28	90	4.0	159
02...	400	730	12	--	--	--	--	--	--
31...	0	1132	13	8.4	85	30	100	5.0	150
31...	5	1127	13	--	--	--	--	--	150
31...	25	1107	13	--	--	--	--	--	149
31...	75	1057	13	--	--	--	--	--	149
31...	125	1007	13	--	--	--	--	--	149
31...	175	957	13	7.6	84	30	100	4.0	149
31...	225	907	13	9.0	84	30	98	4.0	149
31...	275	857	12	8.6	84	30	100	5.0	156
31...	325	807	12	--	--	--	--	--	157
31...	375	757	12	8.0	84	30	100	4.0	159
31...	411	721	12	--	--	--	--	--	--
MAR.									
06...	0	1133	14	7.2	84	30	97	5.0	149
06...	5	1128	14	--	--	--	--	--	--
06...	25	1108	13	--	--	--	--	--	--
06...	75	1058	13	--	--	--	--	--	--
06...	125	1008	13	8.0	84	30	98	5.0	149
06...	175	958	13	7.6	84	30	99	5.0	155
06...	225	908	12	8.0	84	30	99	5.0	161
06...	275	858	12	8.2	84	30	97	5.0	162
06...	325	808	12	--	--	--	--	--	--
06...	375	758	12	--	--	--	--	--	--
06...	411	722	12	--	--	--	--	--	--
29...	0	1132	17	8.0	85	30	99	5.0	150
29...	5	1127	17	--	--	--	--	--	150
29...	25	1107	16	--	--	--	--	--	150
29...	75	1057	14	--	--	--	--	--	150
29...	125	1007	13	--	--	--	--	--	150
29...	175	957	12	8.2	86	30	99	5.0	154
29...	225	907	12	8.5	86	30	100	5.0	159
29...	275	857	12	8.7	84	30	100	5.0	161
29...	325	807	11	--	--	--	--	--	161
29...	375	757	11	8.5	84	30	99	5.0	166
29...	411	721	11	--	--	--	--	--	--

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

PERIOD OF RECORD.--Chemical analyses: October 1940 to September 1968.
REMARKS.--Samples collected by Bureau of Reclamation and analyzed by the Metropolitan Water District of Southern California, LaVerne, Calif.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.									
31...	0	316	96	.7	707	331	228	1230	7.9
31...	0	--	95	--	--	--	--	1220	8.2
31...	0	--	95	--	--	--	--	1230	7.9
31...	0	314	95	.1	703	331	227	1230	7.4
31...	0	289	86	2.3	679	334	210	1200	7.8
31...	0	--	86	--	--	--	--	1190	7.3
31...	0	277	81	1.7	658	327	197	1150	7.6
31...	0	281	83	1.6	662	325	200	1160	7.7
31...	0	--	81	--	--	--	--	1140	7.6
31...	0	273	81	1.2	654	322	191	1140	7.4
31...	0	--	81	--	--	--	--	1140	7.5
NOV.									
30...	0	309	93	1.3	705	333	221	1100	7.9
30...	0	--	93	--	--	--	--	1100	7.8
30...	0	--	93	--	--	--	--	1100	8.0
30...	0	290	87	2.3	682	334	210	1080	8.0
30...	0	309	93	1.4	705	333	221	1100	7.8
30...	0	--	83	--	--	--	--	1060	7.8
30...	0	272	80	2.2	651	323	194	1030	7.7
30...	0	272	80	2.2	650	320	191	1030	7.8
30...	0	--	82	--	--	--	--	1020	7.8
30...	0	272	82	1.9	655	322	192	1020	7.8
30...	--	--	81	--	--	322	--	1030	7.4
JAN.									
02...	0	290	88	1.8	674	335	217	1090	7.7
02...	--	--	86	--	--	--	--	1100	7.7
02...	--	--	86	--	--	--	--	1100	7.8
02...	--	--	86	--	--	--	--	1100	7.8
02...	--	--	84	--	--	--	--	1100	7.7
02...	0	300	84	1.4	682	336	218	1100	7.7
02...	0	280	78	1.8	657	329	202	1050	7.7
02...	1	274	78	1.9	649	324	195	1040	8.2
02...	--	--	78	--	--	--	--	1040	7.6
02...	0	270	78	1.7	644	324	194	1040	7.5
02...	--	--	76	--	--	325	--	1040	7.3
31...	0	295	88	2.2	689	336	213	1090	7.8
31...	0	--	89	--	--	--	--	1080	7.9
31...	0	--	89	--	--	--	--	1080	8.1
31...	0	--	88	--	--	--	--	1080	8.1
31...	0	--	88	--	--	--	--	1080	8.0
31...	0	294	88	1.8	684	333	211	1080	8.0
31...	0	287	88	2.1	677	333	211	1080	8.0
31...	0	288	87	2.6	683	331	203	1080	8.0
31...	0	--	87	--	--	--	--	1080	8.0
31...	0	291	87	2.4	686	333	203	1080	7.8
31...	--	--	87	--	--	332	--	1080	7.7
MAR.									
06...	0	293	89	1.9	682	335	213	1090	7.8
06...	--	--	89	--	--	--	--	1090	8.0
06...	--	--	89	--	--	--	--	1090	7.7
06...	--	--	89	--	--	--	--	1090	7.9
06...	0	294	89	1.5	685	335	213	1090	7.5
06...	0	289	89	1.8	683	333	206	1080	7.7
06...	0	282	88	2.6	679	331	199	1080	7.7
06...	0	279	88	2.4	675	333	200	1080	7.7
06...	--	--	88	--	--	--	--	1080	7.7
06...	--	--	88	--	--	--	--	1080	7.7
06...	--	--	88	--	--	--	--	1080	8.3
29...	0	297	86	1.9	687	336	213	1090	7.9
29...	0	--	87	--	--	--	--	1090	7.9
29...	0	--	87	--	--	--	--	1090	8.1
29...	0	--	87	--	--	--	--	1090	8.0
29...	0	--	86	--	--	--	--	1090	8.1
29...	0	296	86	2.1	689	338	212	1090	8.1
29...	0	295	86	2.4	692	338	208	1090	7.9
29...	0	292	86	2.5	689	333	201	1080	8.0
29...	1	--	87	--	--	--	--	1080	8.4
29...	0	284	85	2.9	681	333	197	1080	8.0
29...	--	--	85	--	--	--	--	1090	7.9

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DEPTH (FT)	STAGE (FT ABOVE DATUM)	TEMPERATURE (DEG C)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)
MAY									
02...	0	1134	19	8.2	86	30	103	4.0	150
02...	5	1129	19	--	--	--	--	--	150
02...	25	1109	19	--	--	--	--	--	148
02...	75	1059	16	--	--	--	--	--	149
02...	125	1009	13	8.0	85	30	102	4.0	150
02...	175	959	13	--	--	--	--	--	151
02...	225	909	12	8.5	85	30	100	4.0	156
02...	275	859	12	8.5	85	30	102	4.0	159
02...	325	809	12	--	--	--	--	--	161
02...	375	759	12	8.7	84	30	102	4.0	155
02...	413	723	12	--	--	--	--	--	163
22...	0	1135	20	8.0	87	30	106	5.0	151
22...	5	1130	19	--	--	--	--	--	--
22...	25	1110	18	8.0	87	29	103	6.0	151
22...	75	1060	15	8.5	87	30	103	5.0	150
22...	125	1010	14	--	--	--	--	--	--
22...	175	960	14	--	--	--	--	--	--
22...	225	910	13	8.0	86	30	105	5.0	151
22...	275	860	13	8.5	86	30	103	5.0	156
22...	325	810	12	--	--	--	--	--	--
22...	375	760	12	8.7	85	29	104	5.0	162
22...	411	724	12	--	--	--	--	--	--
JUNE									
28...	0	1136	22	7.2	88	30	99	5.0	149
28...	5	1131	21	--	--	--	--	--	--
28...	25	1111	21	--	--	--	--	--	--
28...	75	1061	18	--	--	--	--	--	--
28...	125	1011	16	--	--	--	--	--	--
28...	175	961	14	7.0	87	30	99	5.0	153
28...	225	911	13	7.0	87	30	99	5.0	154
28...	275	861	13	7.2	86	30	99	5.0	159
28...	325	811	12	--	--	--	--	--	--
28...	375	761	12	7.2	86	30	99	5.0	161
28...	412	724	12	--	--	--	--	--	--
JULY									
31...	0	1137	29	7.6	79	32	105	4.0	117
31...	5	1132	29	--	--	--	--	--	117
31...	25	1112	29	7.4	79	32	105	4.0	117
31...	75	1062	21	7.2	86	31	101	4.0	146
31...	125	1012	16	--	--	--	--	--	149
31...	175	962	15	--	--	--	--	--	154
31...	225	912	13	7.2	87	30	102	4.0	159
31...	275	862	13	7.4	86	30	99	4.0	159
31...	325	812	13	--	--	--	--	--	157
31...	375	762	12	7.6	85	31	99	4.0	160
31...	412	725	12	--	--	--	--	--	161
AUG.									
27...	0	1137	27	9.5	81	32	109	5.0	124
27...	5	1132	27	--	--	--	--	--	123
27...	25	1112	26	--	--	--	--	--	122
27...	75	1062	21	8.8	87	31	103	4.0	145
27...	125	1012	17	9.2	86	32	103	4.0	151
27...	175	962	15	--	--	--	--	--	154
27...	225	912	14	9.5	88	30	97	4.0	160
27...	275	862	13	8.9	86	30	100	4.0	160
27...	325	812	13	--	--	--	--	--	162
27...	375	762	12	9.2	87	30	96	4.0	162
27...	412	725	12	--	--	--	--	--	155

09421000 LAKE MEAD AT HOOVER DAM, ARIZ.-NEV.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	NITRATE (NO3)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
MAY									
02...	0	304	90	1.3	702	340	217	1080	7.7
02...	0	--	90	--	--	--	--	1090	8.0
02...	0	--	90	--	--	--	--	1090	7.8
02...	0	--	90	--	--	--	--	1090	8.0
02...	0	298	89	1.3	692	336	213	1090	8.0
02...	0	--	89	--	--	--	--	1090	8.1
02...	0	291	88	2.2	687	336	208	1090	7.9
02...	0	293	89	1.7	692	334	204	1090	7.9
02...	0	--	88	--	--	--	--	1080	7.5
02...	0	292	89	1.7	688	331	204	1090	7.8
02...	0	--	88	--	--	--	--	1090	7.5
22...	0	305	92	1.5	710	341	217	1120	7.8
22...	--	--	91	--	--	--	--	1120	7.6
22...	0	303	90	1.1	703	337	213	1120	7.6
22...	0	300	92	1.5	702	339	216	1110	8.0
22...	--	--	90	--	--	--	--	1110	7.5
22...	--	--	90	--	--	--	--	1110	7.5
22...	0	300	90	1.3	700	336	212	1110	7.6
22...	0	293	89	1.9	694	336	208	1100	7.6
22...	--	--	89	--	--	--	--	1100	7.6
22...	0	292	88	2.0	695	332	199	1100	7.6
22...	--	--	88	--	--	--	--	1100	7.5
JUNE									
28...	0	303	90	.8	698	343	221	1040	7.8
28...	--	--	90	--	--	--	--	1040	7.6
28...	--	--	90	--	--	--	--	1040	7.6
28...	--	--	90	--	--	--	--	1030	7.7
28...	--	--	90	--	--	--	--	1020	7.9
28...	0	294	89	1.9	689	341	216	1020	8.2
28...	0	292	89	1.7	687	339	213	1020	7.6
28...	0	292	89	1.6	689	338	208	1020	7.9
28...	--	--	88	--	--	--	--	1020	7.6
28...	0	292	88	1.6	689	338	206	1010	7.8
28...	--	--	88	--	--	--	--	1010	7.7
JULY									
31...	0	321	94	.1	701	329	233	1130	7.8
31...	0	--	94	--	--	--	--	1100	7.8
31...	0	321	93	.0	700	329	233	1110	7.9
31...	0	308	91	.9	702	342	222	1120	7.6
31...	0	--	91	--	--	--	--	1100	7.8
31...	0	--	89	--	--	--	--	1100	7.9
31...	0	296	88	1.6	695	341	211	1100	7.6
31...	0	289	88	1.6	685	338	208	1100	7.7
31...	0	--	88	--	--	--	--	1100	7.9
31...	0	289	88	1.6	685	340	209	1100	7.5
31...	0	--	88	--	--	--	--	1100	7.6
AUG.									
27...	0	326	98	.2	723	336	234	1140	7.5
27...	0	--	97	--	--	--	--	1150	7.7
27...	0	--	97	--	--	--	--	1170	7.9
27...	0	312	92	.5	711	345	226	1140	7.4
27...	0	305	91	1.1	706	344	220	1130	7.5
27...	0	--	91	--	--	--	--	1110	7.6
27...	0	291	90	1.3	691	343	212	1100	7.4
27...	0	291	89	1.9	691	338	207	1100	8.0
27...	0	--	88	--	--	--	--	1100	7.5
27...	0	289	88	1.1	686	343	210	1100	7.3
27...	0	--	90	--	--	--	--	1100	7.2

09421500 COLORADO RIVER BELOW HOOVER DAM, ARIZ.-NEV.
(Irrigation network station)

LOCATION (revised).--Lat 36°00'55", long 114°44'16", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River Meridian, on state line between Mohave County, Ariz., and Clark County, Nev., downstream from gaging station in Hoover Dam powerhouse.

DRAINAGE AREA.--167,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1939 to September 1968.
Water temperatures: October 1941 to September 1965.

REMARKS.--Samples are taken on or about the fifth, fifteenth, and twenty-fifth of each month and composited for analysis. Records of specific conductance and temperature of individual samples available in district office at Tucson, Ariz.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	9365	8.9	--	86	30	--	--	103	160	0	288	90
NOV.												
01-30	9352	8.6	--	86	30	--	--	97	160	0	283	86
DEC.												
01-31	5783	8.6	--	87	28	--	--	99	158	0	286	86
JAN.												
01-31	6437	8.6	--	87	28	--	--	104	154	0	296	89
FEB.												
01-29	8615	8.8	--	86	30	--	--	100	156	0	289	88
MAR.												
01-31	13820	8.9	--	86	31	--	--	101	160	0	289	89
APR.												
01-30	14840	9.2	--	87	28	--	--	102	160	0	283	91
MAY												
01-31	13870	9.3	.00	84	32	107	5.0	--	158	0	286	92
JUNE												
01-30	12640	9.3	--	84	32	--	--	99	152	0	290	92
JULY												
01-31	12310	8.9	--	88	30	--	--	101	160	0	288	92
AUG.												
01-31	11270	9.0	.00	91	27	102	4.6	--	165	0	298	97
SEPT.												
01-30	11150	9.8	--	90	29	--	--	110	166	0	299	95
WTD. AVG. TIME	--	9.0	--	87	30	--	--	102	159	0	289	91
WTD. AVG. TONS PER DAY	10800	9.0	--	87	30	--	--	102	159	0	290	91
	--	262	--	2530	866	--	--	2860	4640	0	8430	2650

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.												
01-31	--	1.3	--	--	686	.93	17300	336	205	2.4	1050	7.9
NOV.												
01-30	--	1.4	--	--	671	.91	16900	338	207	2.3	1050	7.6
DEC.												
01-31	--	1.3	--	--	674	.92	10500	334	204	2.4	1070	7.6
JAN.												
01-31	--	2.0	--	--	692	.94	12000	334	208	2.5	1080	7.6
FEB.												
01-29	--	1.6	--	--	680	.92	15800	338	210	2.3	1090	7.7
MAR.												
01-31	--	2.2	--	--	686	.93	25600	340	209	2.4	1090	7.6
APR.												
01-30	--	2.3	--	--	682	.93	27300	334	203	2.4	1100	7.6
MAY												
01-31	.4	2.1	.14	740	696	1.01	27700	340	210	2.5	1100	7.6
JUNE												
01-30	--	2.1	--	--	683	.93	23300	342	217	2.3	1100	7.4
JULY												
01-31	--	2.1	--	--	689	.94	22900	344	213	2.4	1110	7.6
AUG.												
01-31	.4	2.0	.22	738	712	1.00	22500	340	205	2.4	1110	7.7
SEPT.												
01-30	--	2.4	--	--	716	.97	21600	345	209	2.6	1110	7.9
WTD. AVG. TIME	--	2.0	--	--	690	--	--	339	209	--	1090	7.6
WTD. AVG. TONS PER DAY	--	1.9	--	--	689	--	--	339	208	2.4	1090	7.6
	--	57	--	--	--	--	--	--	--	--	--	--

09424150 COLORADO RIVER AQUEDUCT NEAR PARKER DAM, ARIZ.-CALIF.

LOCATION.--Lat 34°19'00", long 114°09'25", in NW¼SW¼ sec.28, T.3 N., R.27 E., San Bernardino Meridian, San Bernardino County, at gaging station at intake pumping plant of Metropolitan Water District of Southern California on Lake Havasu, 1.8 miles upstream from Parker Dam and 154 miles downstream from Hoover Dam.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)
OCT.											
09...	10	79	30	102	5.0	140	0	295	87	.4	1.0
NOV.											
08...	9.0	82	29	104	4.0	143	0	295	90	.4	.6
DEC.											
06...	9.0	81	30	100	5.0	144	0	293	90	.4	.9
JAN.											
08...	10	83	31	97	5.0	146	1	292	88	.5	1.0
25...	8.0	82	30	--	--	148	--	305	95	--	--
FEB.											
07...	9.0	83	30	100	4.0	149	0	288	90	.4	1.4
MAR.											
06...	9.0	83	30	98	4.0	149	0	288	88	.3	1.3
19...	--	92	31	--	--	144	--	--	93	--	--
APR.											
08...	8.0	85	30	103	5.0	146	2	295	91	.4	1.4
MAY											
08...	--	76	30	106	5.0	117	4	302	93	.4	.9
JUNE											
09...	8.0	85	31	105	5.0	145	4	300	96	.4	1.2
JULY											
08...	8.0	80	32	105	5.0	137	1	301	94	.4	1.0
AUG.											
07...	8.0	78	31	111	5.0	126	2	306	96	.9	.4
SEPT.											
09...	9.0	76	32	105	5.0	121	2	308	94	.5	.9

DATE	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	DISSOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.											
08...	679	668	321	206	.92	40	2.5	115	955	8.1	--
NOV.											
08...	686	675	324	207	.93	41	2.5	117	1140	8.2	20
DEC.											
06...	682	671	326	208	.93	40	2.4	118	1080	8.1	16
JAN.											
08...	681	670	335	214	.93	38	2.3	121	1090	8.3	11
25...	--	706	328	206	.96	42	2.7	121	1110	7.6	9
FEB.											
07...	680	670	331	209	.92	39	2.4	122	1090	8.2	11
MAR.											
06...	676	666	331	209	.92	39	2.3	122	1080	8.2	16
19...	--	660	330	212	.90	--	--	118	1100	7.6	15
APR.											
08...	694	684	336	213	.94	40	2.4	123	1090	8.4	18
MAY											
08...	678	675	313	210	.92	42	2.6	103	1080	8.5	21
JUNE											
09...	708	699	340	214	.96	40	2.5	125	1120	8.5	21
JULY											
08...	695	687	331	217	.95	40	2.5	114	1100	8.4	27
AUG.											
07...	701	692	322	215	.95	42	2.7	107	1100	8.4	27
SEPT.											
08...	692	683	321	218	.94	41	2.5	103	1110	8.5	27

09428000 COLORADO RIVER BELOW PARKER DAM, ARIZ.-CALIF.

LOCATION.--Lat 34°15'30", long 114°09'00", in NE¼SW¼ sec.16, T.2 N., R.27 E., San Bernardino Meridian, San Bernardino County, Calif., at gaging station 3.9 miles downstream from Parker Dam, 10.4 miles upstream from Headgate Rock Dam, and 11 miles northeast of Parker, Ariz.

DRAINAGE AREA (revised).--178,800 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1963 to September 1968.
Water temperatures: February 1954 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 26.0°C on many days during July to September; minimum, 9.0°C on several days during January.

Period of record:
Water temperatures: Maximum, 28.5°C Aug. 12, 13, 18, 1955; minimum (1954-65, 1966-68), 8.5°C Jan. 12, 1964.

REMARKS.--Temperature recorder inoperative Jan. 23 to Feb. 5, May 29 to June 3, July 8-15.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.												
03...	7900	9.1	--	90	31	--	--	101	172	0	291	91
31...	6940	8.9	--	83	31	--	--	103	150	0	294	92
DEC.												
18...	2090	9.3	--	87	30	--	--	106	146	0	307	95
JAN.												
02...	4730	9.0	--	84	30	--	--	105	150	0	296	93
FEB.												
01...	4870	9.4	--	82	28	--	--	98	154	0	271	89
MAR.												
01...	9240	9.1	--	86	29	--	--	103	158	0	287	90
APR.												
01...	14200	8.3	--	87	28	--	--	103	156	0	289	91
MAY												
14...	8830	8.1	.00	88	30	106	5.4	--	164	0	298	96
JUNE												
03...	12000	7.8	--	86	31	--	--	106	158	0	292	96
JULY												
01...	12800	8.2	--	86	31	--	--	107	154	0	298	96
AUG.												
01...	10300	8.7	.00	90	26	106	5.3	--	146	0	290	96
SEPT.												
03...	11600	9.1	--	83	31	--	--	115	160	0	304	98

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.												
03...	--	.3	--	--	698	.95	14900	352	211	2.4	1100	7.5
31...	--	.1	--	--	686	.93	12900	336	213	2.4	1090	7.3
DEC.												
18...	--	.8	--	--	707	.96	3990	342	222	2.5	1120	7.1
JAN.												
02...	--	.1	--	--	691	.94	8830	334	211	2.5	1090	7.5
FEB.												
01...	--	.4	--	--	654	.89	8600	320	194	2.4	1060	7.4
MAR.												
01...	--	1.1	--	--	683	.93	17000	332	202	2.5	1090	7.7
APR.												
01...	--	1.5	--	--	685	.93	26300	334	206	2.5	1100	7.9
MAY												
14...	.4	1.4	.03	757	714	1.03	18000	344	209	2.5	1120	7.0
JUNE												
03...	--	.8	--	--	698	.95	22600	340	210	2.5	1100	7.2
JULY												
01...	--	1.0	--	--	703	.96	24300	340	214	2.5	1110	7.3
AUG.												
01...	.4	1.4	.15	728	696	.99	20200	330	210	2.5	1110	7.0
SEPT.												
03...	--	.6	--	--	720	.98	22600	335	204	2.7	1120	7.5

09428000 COLORADO RIVER BELOW PARKER DAM, ARIZ.-CALIF.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER																																
MAXIMUM	25	24	24	24	24	24	24	24	23	23	23	23	23	23	23	23	23	23	23	23	23	22	22	22	22	22	22	22	21	21	21	22
MINIMUM	24	24	24	23	23	23	23	23	23	23	23	23	23	23	22	22	22	22	22	22	22	22	22	22	22	21	21	21	21	20	20	22
NOVEMBER																																
MAXIMUM	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	19	19	19	19	19	19	19	19	19	18	18	--	19
MINIMUM	21	21	21	21	21	21	21	21	21	20	20	20	20	20	20	20	20	19	19	19	19	19	19	19	19	18	19	18	18	18	--	19
DECEMBER																																
MAXIMUM	19	19	17	17	17	17	16	16	16	16	15	15	14	14	14	13	13	13	12	12	12	12	12	12	12	12	12	12	12	12	12	14
MINIMUM	17	17	17	17	16	16	16	16	16	15	15	14	14	14	13	13	12	12	12	12	12	12	11	11	11	12	12	12	12	12	12	13
JANUARY																																
MAXIMUM	12	11	11	11	11	11	10	10	10	10	10	10	10	10	9	9	9	9	9	9	9	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	11	11	11	11	11	11	10	10	10	10	10	10	10	9	9	9	9	9	9	9	9	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY																																
MAXIMUM	--	--	--	--	--	12	12	12	12	12	12	13	13	13	12	13	13	13	13	13	13	14	14	14	15	15	15	16	16	--	--	13
MINIMUM	--	--	--	--	--	12	12	12	12	12	12	12	12	12	12	13	13	13	13	13	13	14	14	14	15	15	15	16	--	--	--	13
MARCH																																
MAXIMUM	16	16	16	16	16	16	15	16	16	16	16	16	16	16	16	16	16	17	17	16	16	16	16	16	17	16	17	17	17	17	17	16
MINIMUM	16	15	15	15	15	15	14	15	15	15	15	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	17	17	17	17	15
APRIL																																
MAXIMUM	16	17	17	18	18	18	18	18	19	18	19	18	18	18	19	18	18	18	19	18	18	18	19	19	19	19	19	19	19	20	--	18
MINIMUM	16	16	17	17	17	17	17	18	17	17	18	18	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	19	19	19	--	17
MAY																																
MAXIMUM	20	19	19	19	20	19	21	21	21	21	21	21	21	21	22	22	22	22	22	22	22	22	22	22	23	23	23	23	--	--	--	21
MINIMUM	19	19	19	19	19	19	19	20	20	20	21	20	19	19	21	21	21	22	22	22	21	21	21	22	22	23	23	23	--	--	--	20
JUNE																																
MAXIMUM	--	--	--	22	22	22	22	22	22	22	23	23	23	22	22	23	23	23	23	23	23	24	23	23	23	23	23	23	23	24	--	22
MINIMUM	--	--	--	22	21	20	21	22	22	22	22	22	22	22	22	22	23	23	23	23	23	23	23	23	23	23	23	23	22	22	--	22
JULY																																
MAXIMUM	24	24	24	24	24	24	23	--	--	--	--	--	--	--	--	--	24	24	24	25	25	25	25	26	26	25	25	25	25	25	26	--
MINIMUM	23	23	23	23	23	23	23	--	--	--	--	--	--	--	--	--	24	24	24	24	24	24	24	24	24	24	24	24	25	24	25	--
AUGUST																																
MAXIMUM	26	25	25	25	25	26	26	26	26	26	26	25	26	25	25	25	24	24	24	24	24	24	24	24	24	24	25	25	25	25	25	24
MINIMUM	25	25	25	24	24	25	24	25	25	25	26	25	25	24	24	25	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
SEPTEMBER																																
MAXIMUM	25	25	24	25	26	26	26	26	26	25	26	26	26	26	26	24	25	26	26	26	24	25	24	24	24	24	24	24	24	--	--	25
MINIMUM	24	24	24	24	25	25	26	26	26	26	24	25	25	24	24	24	25	25	25	24	24	24	24	23	24	24	24	23	--	--	--	24

09430600 MOGOLLON CREEK NEAR CLIFF, N. MEX.
(Hydrologic bench-mark and radiochemical station)

LOCATION--Lat 33°10'01", long 108°38'58", in SE¼ sec.13, T.13 S., R.18 W., Grant County, at gaging station 12 miles upstream from mouth and 14.2 miles north of Cliff.

DRAINAGE AREA.--89 sq mi.

PERIOD OF RECORD.--Chemical analyses: February 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
NOV.												
01...	1000	2.9	21	.01	16	2.9	6.4	1.0	59	0	15	1.8
DEC.												
06...	1300	5.0	19	.01	14	2.7	6.0	.9	54	0	14	1.7
JAN.												
20...	--	86	19	.00	13	2.6	5.6	.9	33	0	23	.6
FEB.												
20...A	1130	192	19	.03	12	3.9	5.1	.9	31	0	19	1.8
MAR.												
15...	1100	167	19	.01	11	2.6	5.2	.8	31	0	19	1.4
APR.												
10...	1300	176	17	.03	7.2	1.0	4.3	.8	20	0	13	.8
26...	1500	67	18	.02	8.0	1.2	4.5	.8	24	0	13	1.0
MAY												
27...B	1315	31	18	.01	7.3	1.7	4.5	.9	25	0	11	1.1
JUNE												
25...	1300	1.8	22	.00	13	3.0	6.2	1.2	52	0	14	1.3
JULY												
18...	0930	1.6	21	.00	17	3.0	7.5	1.6	64	0	14	1.6
AUG.												
19...	1245	4.8	21	.00	16	2.9	6.6	1.3	60	0	14	1.4
SEPT.												
20...	0930	2.3	18	.06	16	3.4	7.1	1.2	65	0	14	3.6

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	PHOS-PHATE (PO4)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)	COLOR
NOV.												
01...	.4	.0	.33	.38	99	52	4	.4	133	7.3	8	15
DEC.												
06...	.4	.0	.04	.13	94	46	2	.4	122	7.0	6	5
JAN.												
20...	.4	.4	.00	.00	90	43	16	.4	118	6.8	4	20
FEB.												
20...	.4	.3	.00	.10	97	46	21	.3	108	6.7	5	25
MAR.												
15...	.4	.3	.00	.00	83	38	13	.4	104	7.0	4	15
APR.												
10...	.3	.3	.00	.00	68	22	6	.4	70	6.6	9	20
26...	.3	.2	.00	.05	64	25	5	.4	72	6.9	11	20
MAY												
27...	.3	.2	.00	1.4	70	25	4	.4	73	6.6	18	15
JUNE												
25...	.5	.1	.00	.07	102	45	2	.4	120	6.7	23	10
JULY												
18...	.5	.1	.06	.29	108	55	2	.4	143	6.8	20	10
AUG.												
19...	.5	.1	.04	.18	102	52	3	.4	134	7.2	21	15
SEPT.												
20...	.5	.2	.05	.13	98	54	0	.4	143	7.2	14	10

A Includes: <0.4 µg/l uranium (U), <0.1 pc/l radium (Ra), 1.5 µg/l gross alpha as U, 2.0 pc/l gross beta.
B Includes: <0.4 µg/l uranium (U), <0.1 pc/l radium (Ra), 1.2 µg/l gross alpha as U, 1.2 pc/l gross beta.

09431500 GILA RIVER NEAR RED ROCK, N. MEX.

LOCATION.--Lat 32°43'30", long 108°40'30", in W½ sec.23, T.18 S., R.18 W., Grant County, at gaging station 0.2 mile downstream from Copper Canyon, 0.3 mile upstream from lower end of Box Canyon, 4.7 miles northeast of Redrock, and 14 miles downstream from Mangas Creek.

DRAINAGE AREA.--2,829 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1967 to September 1968 (discontinued).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
OCT.												
01...	1000	183	38	--	37	8.1	--	--	33	170	0	32
NOV.												
03...	1200	63	36	--	50	11	--	--	40	228	0	37
DEC.												
07...	1315	88	36	--	46	10	--	--	41	218	0	36
JAN.												
02...	1415	360	31	--	29	7.2	--	--	21	116	0	34
FEB.												
23...	0930	1590	28	--	23	4.0	--	--	12	78	0	25
MAR.												
25...	1030	697	30	--	23	4.3	--	--	15	84	0	27
APR.												
19...	1100	794	28	--	18	3.6	--	--	11	66	0	21
MAY												
03...	1045	483	29	.00	21	4.0	16	1.5	--	86	0	24
JUNE												
20...	1110	80	35	--	38	7.8	--	--	33	180	0	32
JULY												
12...	1045	169	31	--	30	5.6	--	--	24	132	0	25
AUG.												
07...	1100	608	33	.00	38	5.8	13	2.1	--	140	0	22
SEPT.												
30...	0930	51	34	--	46	10	--	--	39	226	0	32

DATE	CHLO-RIDE (CL)	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.											
01...	13	2.3	.2	--	248	126	0	1.3	382	7.1	16
NOV.											
03...	16	2.5	.4	--	305	169	0	1.3	485	7.5	11
DEC.											
07...	16	2.5	.1	--	295	156	0	1.4	468	7.3	7
JAN.											
02...	9.0	1.5	.1	--	190	102	7	.9	297	7.1	5
FEB.											
23...	3.8	1.3	.2	--	135	74	10	.6	193	6.8	5
MAR.											
25...	5.3	1.2	.2	--	147	75	6	.8	221	6.7	6
APR.											
19...	4.0	.9	.1	--	119	60	6	.6	174	6.7	10
MAY											
03...	5.4	1.2	.4	.10	145	69	0	.8	216	7.1	14
JUNE											
20...	8.0	2.1	.1	--	245	127	0	1.3	380	7.5	21
JULY											
12...	7.4	1.6	1.1	--	191	98	0	1.0	288	6.5	22
AUG.											
07...	4.5	.9	1.4	.08	190	119	4	.5	289	7.1	21
SEPT.											
30...	11	2.2	.1	--	285	156	0	1.3	455	7.9	16

09438000 GILA RIVER AT NEW MEXICO-ARIZONA STATE LINE

LOCATION.--Lat 32°41'12", long 109°02'50", in SE¼NW¼NE¼ sec.6, T 1[illegible] S , Hidalgo County, at state line 2.8 miles west of Virden, N. Mex., and 3.5 miles southeast of Duncan, Ariz.

DRAINAGE AREA.--3,349 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

REMARKS.--Sampling is a supplemental effort to obtain a current base for chemical-quality conditions at the state line.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE	TIME	SILICA (SiO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	SODIUM PLUS POTASSIUM (NA+K)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
OCT.												
01...	100	1530	37	--	43	7.7	--	37	--	152	0	34
DEC.												
07...	70	1130	34	--	53	10	--	37	--	242	0	41
31...	500	1100	27	--	38	8.3	--	13	--	136	0	30
JAN.												
19...	275	1200	29	--	31	8.4	--	19	--	124	0	34
MAR.												
04...	2000	1615	30	--	24	4.1	--	16	--	94	0	25
JULY												
08...	50	0945	36	--	49	7.2	--	39	--	214	0	37
AUG.												
12...	200	--	37	.20	29	3.3	22	--	3.1	127	0	24
SEPT.												
05...	100	1430	37	--	43	7.9	--	37	--	199	0	36

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	PERCENT SODIUM	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE
OCT.												
01...	14	2.2	.1	--	259	139	0	1.3	35	424	7.7	7
DEC.												
07...	18	2.3	.1	--	323	173	0	1.5	37	516	7.2	6
31...	6.6	1.1	1.6	--	193	129	18	.5	18	308	7.1	2
JAN.												
19...	9.0	1.4	.6	--	192	112	10	.8	27	295	7.1	5
MAR.												
04...	4.6	.9	.0	--	151	77	0	.8	31	222	7.0	-
JULY												
08...	13	1.9	1.1	--	289	152	0	1.4	33	454	6.8	25
AUG.												
12...	7.8	1.4	.5	.01	191	86	0	1.0	35	289	7.2	24
SEPT.												
05...	13	1.9	.4	--	276	140	0	1.4	36	420	7.4	24

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, N. MEX.

LOCATION.--Lat 33°14'50", long 108°52'45" (revised), in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, at gaging station 0.2 mile upstream from hot springs, 5 miles south of Glenwood, 6 miles downstream from Whitewater Creek, and at mile 64.6.

DRAINAGE AREA.--1,653 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1963 to September 1968.
Sediment records: April 1963 to July 1967 (periodic).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)
OCT.												
18...	1400	26	35	--	38	8.8	--	--	20	184	0	14
NOV.												
02...	1300	27	35	--	36	9.2	--	--	22	184	0	12
DEC.												
12...	1030	22	36	--	39	11	--	--	22	198	0	12
27...	1200	80	32	--	37	8.6	--	--	17	172	0	18
JAN.												
27...	1100	523	31	--	38	7.1	--	--	13	152	0	22
FEB.												
02...	1000	314	30	--	33	7.2	--	--	14	136	0	24
MAR.												
01...	1030	846	30	--	33	6.2	--	--	11	126	0	23
APR.												
25...	0930	220	31	--	30	7.1	--	--	15	138	0	18
MAY												
14...	0930	161	29	.00	24	5.6	13	1.3	--	115	0	17
JUNE												
18...	1330	31	33	--	31	6.4	--	--	19	149	0	14
JULY												
11...	1330	29	32	--	34	6.6	--	--	20	162	0	13
AUG.												
21...	0900	57	34	.00	36	8.0	20	2.2	--	177	0	15
SEPT.												
03...	1420	70	33	--	46	8.5	--	--	18	206	0	13

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.											
18...	5.3	.4	.1	--	212	131	0	.8	328	7.1	20
NOV.											
02...	7.3	.4	.1	--	212	128	0	.8	331	7.3	18
DEC.											
12...	8.3	.4	.8	--	226	141	0	.8	361	7.1	7
27...	3.9	.4	.1	--	202	128	0	.7	319	7.1	8
JAN.											
27...	2.5	.4	.5	--	190	124	0	.5	290	7.0	6
FEB.											
02...	3.7	.3	.2	--	179	112	0	.6	278	7.1	3
MAR.											
01...	2.9	.3	.2	--	169	108	5	.5	253	7.0	5
APR.											
25...	3.6	.3	.2	--	173	104	0	.7	265	7.2	10
MAY											
14...	3.0	.4	.1	.07	150	83	0	.6	219	7.2	11
JUNE											
18...	5.0	.4	.1	--	182	104	0	.8	270	7.5	27
JULY											
11...	5.4	.4	.4	--	192	112	0	.8	293	7.4	28
AUG.											
21...	4.8	.4	.1	.07	208	123	0	.8	315	7.2	17
SEPT.											
03...	4.2	.4	.3	--	224	150	0	.6	349	7.3	23

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.

LOCATION.--Lat 32°52'10", long 109°30'40", in SE¼NE¼ sec.31, T.6 S., R.28 E., Graham County, at gaging station 0.6 mile downstream from intake of Brown Canal, 8 miles northeast of Solomon, and 17 miles downstream from San Francisco River.

DRAINAGE AREA.--7,896 sq mi.

PERIOD OF RECORD.--Specific conductance: January 1965 to September 1968.
Water temperatures: January 1965 to September 1968.
Sediment records: February 1965 to September 1968.

EXTREMES.--1967-68:
Specific conductance: Maximum daily, 1,390 micromhos July 1; minimum daily, 260 micromhos Feb. 15, 28, 29, Apr. 4.
Water temperatures: Maximum, 33.0°C July 22; minimum, 2.0°C Dec. 20, 21.
Sediment concentrations: Maximum daily, 24,000 mg/l Dec. 21; minimum daily, 8 mg/l June 29.
Sediment loads: Maximum daily, 340,000 tons Dec. 20; minimum daily, 1.8 tons June 29.

Period of record:
Specific conductance (1967-68): Maximum daily, 1,390 micromhos July 1, 1968; minimum daily, 260 micromhos Feb. 15, 28, 29, Apr. 4, 1968.
Water temperatures (1967-68): Maximum, 33.0°C July 22, 1968; minimum, 2.0°C Dec. 20, 21, 1967.
Sediment concentrations: Maximum daily, 52,000 mg/l July 28, 1967; minimum daily, 7 mg/l July 8, 1965.
Sediment loads: Maximum daily, 1,900,000 tons Dec. 23, 1965; minimum daily, 1 ton on several days in 1967.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1200	1050	440	310	270	270	480	700	1390	780	500
2	810	1200	1050	490	330	300	270	460	700	1250	540	690
3	840	1200	1050	520	360	300	270	450	720	1200	500	650
4	640	1200	1050	570	400	320	260	420	750	1000	500	---
5	610	1200	1000	570	410	320	340	430	750	900	540	725
6	720	1190	1000	550	440	320	340	430	780	950	450	820
7	850	1190	1000	550	450	320	350	430	800	---	420	900
8	890	1200	1000	550	450	290	350	420	800	1000	390	920
9	910	1190	1000	550	450	290	350	420	800	1000	350	950
10	920	1190	1000	550	450	270	350	460	800	1000	350	990
11	900	1190	1000	550	360	270	350	460	880	1100	390	1000
12	990	1150	1000	540	350	290	350	460	900	1100	440	950
13	1000	1100	1050	490	270	320	350	480	850	950	460	1000
14	990	---	1050	520	270	320	350	510	900	1000	460	1100
15	1000	1190	720	520	260	320	350	510	990	1000	540	1100
16	1100	1150	700	510	280	320	340	530	1000	1200	600	1120
17	1050	1150	780	490	320	320	330	530	1000	1200	650	1120
18	1190	1200	780	460	360	320	330	550	1000	1200	720	1150
19	1190	1200	800	460	360	340	380	590	1000	1300	790	1150
20	1200	1190	310	490	350	340	360	590	1000	1350	400	1050
21	1100	1190	360	530	350	380	370	590	1000	1250	700	1100
22	1150	1190	400	530	320	380	380	600	1050	1200	750	1150
23	1150	1150	500	530	280	400	410	600	1200	1300	850	1100
24	1150	1150	600	460	280	420	440	600	1200	620	900	1200
25	1190	1150	600	480	290	420	490	600	1200	850	950	1200
26	1190	1150	550	480	290	380	480	690	1250	730	500	1250
27	1190	1100	550	460	270	360	510	690	1300	730	620	1200
28	1190	1100	520	340	260	330	510	690	1300	750	620	1200
29	1190	1090	500	280	260	330	510	690	1300	700	690	1200
30	1200	1050	450	270	---	300	510	700	1300	590	700	1250
31	1200	---	360	280	---	280	---	700	---	730	620	---
AVERAGE	1020	1170	767	484	339	327	375	541	974	1020	586	1030

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	11.0	8.0	5.0	9.0	12.0	13.0	19.0	22.0	22.0	27.0	21.0
2	23.0	12.0	8.0	6.0	8.0	13.0	13.0	19.0	22.0	32.0	24.0	25.0
3	22.0	13.0	8.0	8.0	8.0	12.0	13.0	19.0	24.0	21.0	27.0	23.0
4	19.0	13.0	8.0	7.0	8.0	12.0	11.0	19.0	25.0	23.0	28.0	---
5	20.0	12.0	9.0	9.0	10.0	12.0	13.0	19.0	22.0	23.0	24.0	22.0
6	21.0	14.0	9.0	9.0	9.0	13.0	15.0	19.0	20.0	28.0	24.0	23.0
7	17.0	15.0	8.0	7.0	9.0	12.0	16.0	17.0	22.0	28.0	24.0	25.0
8	16.0	16.0	8.0	6.0	9.0	12.0	14.0	18.0	25.0	29.0	25.0	22.0
9	16.0	12.0	7.0	7.0	10.0	12.0	14.0	18.0	18.0	30.0	26.0	22.0
10	17.0	12.0	5.0	7.0	10.0	12.0	14.0	18.0	19.0	32.0	26.0	26.0
11	21.0	12.0	5.0	8.0	10.0	9.0	15.0	17.0	28.0	24.0	25.0	21.0
12	17.0	12.0	6.0	7.0	11.0	11.0	15.0	17.0	24.0	27.0	25.0	22.0
13	17.0	16.0	9.0	7.0	11.0	12.0	15.0	20.0	22.0	23.0	28.0	22.0
14	18.0	---	8.0	8.0	8.0	11.0	15.0	20.0	23.0	23.0	25.0	22.0
15	18.0	17.0	5.0	6.0	7.0	11.0	16.0	17.0	23.0	23.0	22.0	21.0
16	16.0	11.0	5.0	6.0	8.0	12.0	16.0	17.0	23.0	30.0	27.0	20.0
17	20.0	12.0	6.0	10.0	9.0	12.0	16.0	17.0	23.0	23.0	28.0	19.0
18	16.0	12.0	4.0	8.0	9.0	11.0	16.0	17.0	24.0	24.0	28.0	17.0
19	14.0	11.0	5.0	8.0	10.0	13.0	16.0	19.0	24.0	25.0	28.0	20.0
20	14.0	11.0	2.0	8.0	10.0	9.0	13.0	20.0	25.0	25.0	21.0	22.0
21	15.0	12.0	2.0	7.0	11.0	10.0	13.0	20.0	25.0	25.0	28.0	22.0
22	15.0	12.0	3.0	8.0	12.0	11.0	13.0	20.0	23.0	33.0	23.0	21.0
23	14.0	13.0	4.0	9.0	10.0	12.0	12.0	19.0	23.0	26.0	25.0	17.0
24	14.0	11.0	4.0	9.0	10.0	12.0	14.0	20.0	22.0	25.0	24.0	25.0
25	14.0	11.0	5.0	9.0	13.0	12.0	15.0	20.0	22.0	24.0	24.0	18.0
26	14.0	12.0	6.0	8.0	12.0	13.0	14.0	21.0	22.0	24.0	21.0	25.0
27	15.0	13.0	6.0	9.0	12.0	13.0	15.0	21.0	24.0	28.0	21.0	18.0
28	14.0	12.0	6.0	9.0	13.0	13.0	16.0	27.0	25.0	25.0	29.0	18.0
29	13.0	11.0	6.0	8.0	12.0	14.0	20.0	21.0	27.0	23.0	24.0	25.0
30	11.0	8.0	8.0	10.0	---	15.0	18.0	21.0	23.0	---	24.0	19.0
31	11.0	---	6.0	9.0	---	14.0	---	21.0	---	29.0	23.0	---
AVERAGE	16.5	12.5	6.0	8.0	10.0	12.0	14.5	19.5	23.0	26.0	25.0	21.5

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	247	--	800	130	89	31	181	290	140
2	209	550	310	130	99	34	183	200	98
3	186	450	220	130	110	39	174	140	65
4	455	5500	8100	130	89	31	186	140	71
5	402	5600	6100	130	95	33	195	110	58
6	281	2000	1500	130	90	31	200	150	81
7	225	920	550	130	94	33	200	160	86
8	205	590	330	130	76	26	196	150	80
9	190	400	200	130	100	35	191	120	62
10	199	350	190	140	91	34	182	130	64
11	173	270	120	140	75	29	173	130	61
12	157	280	120	140	100	38	173	69	32
13	149	230	93	140	130	49	191	70	36
14	133	200	72	140	--	30	206	100	55
15	136	240	88	140	80	30	435	520	610
16	122	310	100	140	80	30	458	850	1000
17	127	160	55	150	94	38	458	720	900
18	129	98	34	150	120	49	444	480	580
19	127	110	38	150	100	41	466	500	630
20	131	110	39	150	74	30	5340	20000	340000
21	128	170	59	150	70	29	2890	24000	190000
22	128	140	49	160	85	36	1640	5500	24000
23	127	130	44	160	92	40	1150	2500	7700
24	124	96	32	160	110	48	908	2000	4900
25	117	88	28	160	100	43	930	1900	4800
26	124	100	33	160	92	40	1050	1700	4900
27	127	68	23	170	92	42	1270	1700	5900
28	127	68	23	170	110	51	1370	2300	8500
29	124	83	28	172	130	60	1370	1900	7000
30	127	100	34	181	150	73	1540	1700	7100
31	130	78	28	--	--	--	2240	1800	11000
TOTAL	5366	--	19440	4393	--	1153	26590	--	620509

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1500	1400	5600	2810	2500	19000	3500	4800	45000
2	1240	1300	4300	2330	3100	20000	3060	3600	30000
3	1250	1700	5800	1900	2200	11000	2760	1800	13000
4	1200	1400	4500	1730	1300	6100	2530	1600	11000
5	1240	1600	5300	1600	1600	6900	2490	2400	15000
6	1310	1100	3900	1440	1400	5400	2370	3100	20000
7	1270	770	2600	1410	1100	4200	2500	2600	18000
8	1200	1100	3500	1430	1200	4600	2780	4400	33000
9	1200	1300	4200	1480	1200	4800	3010	3200	24000
10	1170	1300	4100	1890	1700	8600	3840	6300	67000
11	1220	1300	4300	2500	2000	13000	4330	6100	71000
12	1490	2200	8800	3080	2300	19000	3620	5100	50000
13	1500	1200	4900	5040	5500	75000	2930	4200	33000
14	1310	1200	4200	5850	7900	120000	2670	3000	22000
15	1300	1300	4500	6240	8100	130000	2670	2200	15000
16	1340	1000	3600	4090	6500	72000	2450	2000	13000
17	1430	1100	4200	3220	3800	33000	2510	1300	8800
18	1540	1500	6200	2760	1700	12000	2450	1700	11000
19	1520	1800	7400	2700	1400	10000	2020	3200	18800
20	1360	1300	4800	3710	2000	20000	1860	1600	8100
21	1270	1200	4100	3850	1600	16000	1790	1600	7700
22	1290	880	3100	3370	2600	23000	1620	1200	5200
23	1270	910	3100	3710	4200	42000	1510	950	3900
24	1300	1000	3500	3410	5100	46000	1510	890	3600
25	1370	1000	3600	3310	3600	32000	1450	500	2000
26	1440	940	3600	3620	4500	44000	1530	750	3100
27	1640	1500	6600	3700	4900	49000	1710	1500	6900
28	3490	5500	56000	3840	4200	43000	1890	1400	7100
29	5180	13000	180000	3940	5700	61000	2030	1500	8200
30	4130	11000	120000	--	--	--	2080	1500	8400
31	3270	6500	58000	--	--	--	2440	2200	14000
TOTAL	52240	--	538300	89960	--	950600	75910	--	596800

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCEN-TRATION (MG/L)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCEN-TRATION (MG/L)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCEN-TRATION (MG/L)	JUNE LOAD (TONS)
1	2560	3000	21000	940	410	1000	341	56	51
2	2710	2500	18000	988	430	1100	329	90	80
3	2920	2200	18000	1060	460	1300	310	150	120
4	2510	2600	18000	1080	470	1300	303	100	82
5	1960	1300	6900	1130	550	1600	303	110	90
6	1630	1400	6200	1180	510	1600	279	200	150
7	1610	1300	5600	1180	490	1500	273	100	74
8	1580	1100	4600	1120	510	1500	261	88	62
9	1460	1200	4800	1040	460	1300	260	72	51
10	1460	1300	5100	966	300	780	254	71	49
11	1520	960	4000	920	360	900	228	73	45
12	1520	890	3600	875	320	750	213	45	25
13	1610	1000	4300	831	250	560	190	53	26
14	1640	640	2900	780	260	540	185	43	21
15	1690	770	3500	740	360	720	176	34	16
16	1770	1100	5300	676	500	910	158	29	12
17	1800	980	4800	624	380	640	161	45	20
18	1770	1000	4800	580	230	350	171	33	15
19	1610	800	3400	528	210	300	171	37	16
20	1450	660	2500	485	260	340	147	29	11
21	1390	680	2500	477	310	400	139	21	7.8
22	1320	680	2400	470	180	230	123	21	7.0
23	1270	650	2200	469	150	190	113	21	6.4
24	1190	500	1500	492	150	200	99	18	4.8
25	1070	430	1200	476	160	200	93	28	7.1
26	978	420	1100	441	110	130	89	41	9.8
27	907	440	1100	419	120	130	77	17	3.5
28	852	440	1000	386	190	200	74	14	2.8
29	872	370	870	367	100	100	83	8	1.8
30	895	520	1200	361	110	107	88	10	2.3
31	--	--	--	347	100	94	--	--	--
TOTAL	47524	--	162370	22428	--	20971	5691	--	1069.3

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN CONCEN-TRATION (MG/L)	JULY LOAD (TONS)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN CONCEN-TRATION (MG/L)	AUGUST LOAD (TONS)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN CONCEN-TRATION (MG/L)	SEPTEMBER LOAD (TONS)
1	91	23	5.6	457	3600	7800	658	11000	20000
2	113	170	74	724	7100	14000	346	8300	7700
3	127	440	150	633	5500	9400	406	3400	3800
4	110	600	180	540	5300	7700	335	--	1000
5	149	780	310	650	5300	9300	309	1700	1400
6	176	870	610	1030	7400	21000	233	770	490
7	274	7400	5400	1480	11000	46000	196	390	210
8	177	1100	530	950	6600	16000	186	330	160
9	168	710	320	1100	9500	29000	166	450	200
10	164	470	210	1630	12000	57000	159	1100	480
11	152	240	98	918	4900	12000	155	1300	540
12	156	1300	640	830	4700	10000	167	3200	1400
13	169	3400	1500	831	2500	5600	138	1900	710
14	141	1500	580	686	2800	5200	130	280	98
15	129	1400	490	516	3200	4400	130	240	84
16	115	870	260	427	1400	1500	126	250	85
17	95	480	120	335	600	540	126	160	54
18	73	270	53	280	390	300	126	160	54
19	69	160	30	270	290	210	126	160	54
20	66	120	21	537	20000	35000	121	75	24
21	72	94	18	320	2000	1800	118	95	30
22	97	110	29	278	310	230	118	58	19
23	287	2100	2200	236	230	140	115	55	16
24	198	2100	1100	215	230	130	103	31	8.6
25	166	820	360	186	210	100	97	31	8.1
26	234	5000	3600	336	8200	9000	94	34	8.6
27	264	5600	4000	372	4300	4300	102	25	6.9
28	230	2500	1500	346	1800	1600	94	25	6.3
29	374	8700	9700	298	2700	2200	88	22	5.2
30	297	5500	4400	347	3000	2800	85	24	5.5
31	218	3100	1800	504	7100	11000	--	--	--
TOTAL	5151	--	40288.6	18262	--	325250	5354	--	38657.2

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 358869
TOTAL LOAD FOR YEAR (TONS) 3315408.1

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC. 20, 1967	0830	2	8930	34500	7	9	19	49	74	91	98	100	--			VPWC
JULY 7, 1968	1928	28	246	5580	57	72	96	100	--	--	--	--	--			SPWC
AUG. 7.....	0730	24	2020	17800	32	42	65	90	93	97	100	--	--			VPWC
AUG. 20.....	0800	21	492	34500	24	28	64	94	96	97	99	100	--			VPWC

09460200 FRYE CREEK AT THATCHER, ARIZ.

LOCATION.--Lat 32°50'00", long 109°45'40", in SW¼ sec.11, T.7 S., R.25 E., Graham County, at gaging station 1,300 ft downstream from Frye Creek detention dam and 1 mile south of Thatcher.

DRAINAGE AREA.--24.3 sq mi.

PERIOD OF RECORD.--Chemical analyses: July 1963 to September 1967 (miscellaneous). Sediment records: March 1963 to September 1968.

REMARKS.--This station is operated in conjunction with a trap efficiency study of the Frye Creek detention reservoir. Results are published by flow event, as opposed to the normal procedure of reporting daily values.

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO MEAN CONCENTRATIONS ARE REPORTED, LOADS ARE COMPUTED FROM DISCHARGE-SEDIMENT LOAD CURVES)

DATE	FLOW EVENT NO.	FLOW DURATION (HOURS)A	TOTAL OUTFLOW (ACRE-FEET)B	MEAN DISCHARGE FOR PERIOD (CFS)	MEAN CONCEN-TRATION (MG/L)	OUTFLOW SEDIMENT LOAD (TONS)
DEC. 19-21, 1967	57	49	143	35	900	580
FEB. 14, 1968	58	14	.8	.7	-	T
JULY 6-8	59	47	64	16	4000	560
AUG. 26-29	60	44.5	50	13	3000	360

A DURATION OF EVENT IS BASED ON TIME WHEN FLOW IS MORE THAN 0.2 CFS.
B EXCLUDING OUTFLOW BELOW 0.2 CFS.
T LESS THAN 0.50 TON.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC. 20, 1967	0535	1	164	2960	54	68	83	91	99	100	--	--	--	--	--	SPWC
DEC. 20.....	0535	1	164	2960	6	10	28	94	98	100	--	--	--	--	--	SPN
JULY 6, 1968	1425	26	169	9150	48	63	82	93	100	--	--	--	--	--	--	SPWC
JULY 6.....	1425	26	169	9150	--	3	10	92	99	100	--	--	--	--	--	SPN
AUG. 26.....	1940	26	165	9120	38	53	71	89	98	100	--	--	--	--	--	SPWC
AUG. 26.....	1940	27	165	9120	2	12	48	94	99	100	--	--	--	--	--	SPN

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.

LOCATION.--Lat 31°37'40", long 110°10'30", in NE¼NE¼ sec.11, T.21 S., R.21 E., Cochise County, at gaging station in Spanish land grant of San Juan de las Boquillas y Nogales, at county highway bridge, 0.2 mile south of Charleston, 1.5 miles upstream from Charleston Dam site, 8.5 miles upstream from Babocomari River, and 29 miles upstream from Benson.

DRAINAGE AREA.--1,219 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Specific conductance: October 1964 to September 1968.
Water temperatures: July 1963 to September 1968.
Sediment records: July 1963 to September 1968.

EXTREMES.--1967-68:
Specific conductance: Maximum daily, 1,550 micromhos Dec. 22; minimum daily, 220 micromhos Aug. 20.
Water temperatures: Maximum, 36.0°C July 12; minimum, freezing point Dec. 10.
Sediment concentrations: Maximum daily, 27,000 mg/l Dec. 20; minimum daily, 4 mg/l on several days during October, April and May.
Sediment loads: Maximum daily, 220,000 tons Dec. 20; minimum daily, less than 0.05 ton on several days during June.

Period of record:
Specific conductance: Maximum daily, 1,550 micromhos Dec. 22, 1967; minimum daily, 200 micromhos Sept. 5, 1965.
Water temperatures: Maximum, 36.0°C July 12, 1968; minimum, freezing point on several days during 1964-67.
Sediment concentrations: Maximum daily, 31,000 mg/l July 29, 1966; minimum daily, 1 mg/l May 27, 28, 31, June 1, 2, 1966.
Sediment loads: Maximum daily, 410,000 tons Aug. 14, 1964; minimum daily, less than 0.05 ton on many days of most years.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	390	440	500	490	400	420	440	390	360	360	350	310
2	390	390	490	480	420	420	440	390	360	360	350	380
3	420	380	490	---	410	420	440	390	---	360	310	380
4	370	390	480	450	440	420	440	420	---	360	400	340
5	380	400	500	450	410	420	430	400	---	370	350	370
6	400	400	460	460	400	420	430	400	---	360	550	400
7	400	400	470	450	400	420	430	400	---	370	440	370
8	360	380	480	450	400	440	430	400	360	350	390	370
9	400	410	480	460	400	480	420	400	360	370	390	370
10	400	420	470	500	400	480	440	400	360	370	330	370
11	380	430	500	500	440	1200	450	400	360	380	360	370
12	450	430	520	490	410	630	440	400	---	380	360	370
13	370	400	520	480	580	580	440	375	360	360	390	380
14	400	410	520	500	580	620	410	375	360	370	360	380
15	380	420	290	450	800	680	440	390	360	370	360	300
16	390	480	480	460	790	620	440	400	360	370	360	420
17	450	460	550	460	700	---	450	390	360	370	360	400
18	410	450	510	500	650	550	450	390	360	370	360	400
19	---	460	460	470	580	510	450	390	360	280	300	400
20	380	460	480	480	510	490	440	---	370	380	220	400
21	400	490	1300	480	500	490	450	390	370	330	610	440
22	410	460	1550	490	480	480	450	390	390	260	490	440
23	430	500	1070	470	480	500	450	390	400	240	490	430
24	440	---	660	460	480	480	460	400	410	420	460	450
25	430	---	820	470	480	500	440	400	380	430	490	420
26	440	490	640	480	440	500	375	350	360	430	370	370
27	420	500	570	460	420	460	390	390	360	420	430	370
28	380	505	570	---	420	420	---	360	360	440	400	370
29	450	490	550	440	420	440	390	360	360	400	400	370
30	400	480	550	400	---	440	390	360	360	330	300	370
31	400	---	550	400	---	440	---	---	---	360	260	---
AVERAGE	404	440	596	467	491	512	433	389	367	365	387	384

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	14	19	18	17	16	18	17	13	11	14	11	13	12	19	14	13	16	19	--	23	8	11	8	13	9	14	13	10	10	8	18	13
NOVEMBER.	18	7	10	7	10	11	14	7	8	8	6	7	9	6	8	8	18	8	14	7	9	10	--	7	13	12	12	14	17	9	--	9
DECEMBER.	12	3	5	9	10	6	8	4	10	0	2	4	8	7	6	7	7	3	8	8	6	3	6	6	5	7	6	6	5	7	6	6
JANUARY..	3	5	--	6	4	5	5	7	8	8	6	14	7	4	5	6	8	5	3	4	4	5	11	5	4	10	10	--	13	10	9	6
FEBRUARY.	5	5	5	6	6	7	9	9	11	12	12	11	11	16	17	12	10	16	11	10	10	9	9	8	10	14	12	9	11	--	--	10
MARCH....	12	11	12	9	9	12	16	13	10	9	8	12	8	11	8	13	--	11	9	9	7	7	8	10	10	14	11	14	10	16	9	10
APRIL....	14	9	13	19	11	11	13	10	17	12	16	12	16	12	19	12	19	10	8	9	16	10	13	8	20	10	15	--	9	17	--	13
MAY.....	12	17	14	16	22	12	20	12	17	12	--	12	15	13	23	20	23	12	17	--	28	15	17	15	20	13	24	27	25	19	32	18
JUNE.....	15	21	--	--	--	--	--	23	16	17	19	--	23	28	17	21	18	23	17	22	19	34	21	25	24	26	24	24	17	23	--	21
JULY.....	19	24	20	24	21	24	21	26	22	27	29	36	19	25	20	32	22	28	20	34	21	24	21	26	31	28	23	29	23	24	22	24
AUGUST...	23	21	23	21	26	21	25	22	28	21	23	21	24	20	21	17	23	18	21	19	26	23	33	18	32	22	26	22	22	20	19	22
SEPTEMBER	18	21	19	26	26	21	19	22	17	23	18	22	17	23	18	22	18	20	20	17	16	19	14	17	18	19	15	18	15	20	--	19

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	13	90	3.1	6.2	34	.60	13	28	1.0
2	12	51	1.6	6.2	82	1.3	13	38	1.3
3	12	150	4.9	6.2	71	1.2	14	50	1.9
4	11	200	6.0	6.2	25	.40	15	50	2.0
5	9.2	57	1.4	6.5	54	.90	15	44	1.8
6	9.6	42	1.1	6.8	110	2.0	14	58	2.2
7	8.4	10	.20	7.2	39	.80	14	49	1.9
8	7.2	28	.60	8.0	23	.40	14	83	3.1
9	7.2	20	.40	8.0	44	.90	15	64	2.5
10	7.6	17	.30	8.4	37	.90	14	41	1.5
11	8.8	64	1.5	8.8	18	.40	14	49	1.9
12	8.8	61	1.4	8.8	52	1.2	15	32	1.3
13	8.0	62	1.3	8.8	38	.90	16	26	1.1
14	7.6	37	.80	8.8	27	.70	19	41	2.1
15	7.2	35	.70	8.8	29	.70	61	6100	1100
16	7.6	66	1.3	9.2	67	1.6	63	11000	1900
17	7.6	48	1.0	9.6	24	.70	34	5400	490
18	7.2	46	.90	9.6	20	.60	37	1700	160
19	7.2	--	.80	9.6	120	3.1	104	8800	3000
20	7.2	42	.80	9.6	16	.40	2400	27000	220000
21	6.8	42	.80	10	24	.70	1730	20000	110000
22	6.5	16	.30	10	28	.80	376	6700	5800
23	6.8	26	.40	10	21	.60	198	2500	1300
24	7.2	18	.30	10	--	.60	121	1400	450
25	6.8	28	.60	10	--	.60	90	1400	340
26	6.8	4	.10	11	19	.60	74	820	160
27	6.2	52	.90	12	47	1.5	58	610	95
28	5.9	56	.90	12	85	2.8	53	580	83
29	5.6	34	.60	14	20	.80	45	480	59
30	5.6	44	.70	13	46	1.6	39	430	45
31	6.2	65	1.1	--	--	--	37	510	51
TOTAL	244.8	--	36.80	273.3	--	30.30	5725	--	346058.6

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	37	310	31	33	110	9.7	37	90	9.0
2	36	350	34	33	73	6.5	30	80	8.4
3	36	--	30	29	74	5.8	36	80	7.7
4	34	230	21	32	67	5.8	33	100	9.0
5	33	280	24	32	100	8.6	34	120	11
6	32	190	16	30	52	4.2	33	120	11
7	34	190	18	30	58	4.6	32	90	7.7
8	37	210	21	35	97	9.2	33	100	9.0
9	37	250	24	45	78	9.5	34	110	10
10	37	360	35	50	110	14	62	1400	960
11	37	200	20	65	410	72	180	5500	2600
12	36	170	16	70	290	55	180	3000	1400
13	36	200	20	75	620	120	130	2200	770
14	33	150	13	70	990	190	100	1400	380
15	32	140	12	69	1300	240	83	1100	240
16	30	130	10	66	730	130	63	680	110
17	29	110	8.6	66	560	100	58	--	80
18	29	130	10	61	420	69	53	450	64
19	27	120	8.7	58	340	53	50	600	81
20	26	79	5.5	50	240	32	48	320	41
21	27	65	4.8	48	220	29	40	280	30
22	26	73	5.1	45	160	20	40	310	33
23	25	100	6.8	43	140	16	39	150	15
24	26	38	2.6	40	130	14	36	150	14
25	26	60	4.2	43	140	16	33	110	9.7
26	27	52	3.8	40	100	11	32	110	9.5
27	30	65	5.3	39	110	11	29	90	7.1
28	32	120	10	39	150	15	27	66	4.8
29	32	120	10	37	200	20	24	65	4.2
30	33	70	6.2	--	--	--	23	57	3.5
31	34	83	7.6	--	--	--	22	65	3.9
TOTAL	986	--	444.2	1373	--	1290.9	1663	--	5943.5

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	22	52	3.1	10	21	.60	5.6	17	.20
2	21	72	4.1	10	15	.40	5.6	21	.30
3	21	73	4.1	9.6	6	.10	5.3	--	.20
4	19	44	2.2	10	7	.20	5.0	--	.20
5	17	75	3.4	12	10	.30	4.5	--	.20
6	17	91	4.2	11	11	.30	4.5	--	.13
7	16	47	2.0	11	9	.20	4.5	--	.10
8	17	45	2.1	10	10	.20	4.5	10	.13
9	18	26	1.2	9.6	5	.10	4.5	12	.10
10	18	38	1.9	9.2	8	.20	4.1	8	.10
11	17	53	2.4	8.8	10	.20	4.1	10	.13
12	17	36	1.6	8.4	4	.10	3.7	--	.10
13	17	35	1.5	8.4	4	.10	3.7	10	.10
14	17	21	1.0	8.4	8	.20	3.6	13	.10
15	15	0	.30	8.4	6	.10	3.1	11	.10
16	15	11	.40	8.4	4	.10	3.1	12	.10
17	14	6	.20	8.0	17	.30	2.8	8	.10
18	14	6	.20	8.0	11	.20	2.9	15	.10
19	14	5	.20	8.8	12	.20	2.9	14	.10
20	14	4	.10	7.6	--	.20	2.8	13	.10
21	13	5	.20	7.6	10	.20	2.2	9	T
22	13	5	.20	7.6	6	.10	2.2	7	T
23	13	5	.20	7.2	11	.20	1.9	11	.10
24	13	5	.20	7.2	5	.10	1.8	8	T
25	12	4	.10	7.2	6	.10	2.1	8	T
26	12	23	.80	7.0	18	.30	2.2	9	T
27	9.2	18	.40	6.7	22	.40	2.1	25	.10
28	10	--	.20	6.2	28	.40	1.8	7	T
29	10	12	.30	6.2	17	.20	1.6	7	T
30	9.6	10	.40	5.6	12	.20	1.8	10	T
31	--	--	--	5.3	12	.20	--	--	--
TOTAL	454.8	--	39.20	259.4	--	6.70	100.5	--	2.80

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	1.9	14	.10	21	1000	56	29	1200	94
2	2.1	11	.10	21	1500	130	19	260	13
3	2.3	9	.10	23	3100	190	15	170	6.9
4	2.5	12	.10	26	2200	150	17	1500	79
5	30	380	74	16	2800	120	11	310	9.2
6	20	600	40	25	6000	410	10	100	2.6
7	5.0	77	1.0	14	1700	64	9.2	49	1.2
8	3.6	39	.30	9.6	270	7.0	8.4	32	.70
9	3.1	22	.20	9.2	160	4.0	8.0	26	.60
10	2.3	32	.20	46	6200	860	7.2	21	.40
11	2.1	28	.10	15	1400	56	6.8	16	.30
12	1.8	26	.10	8.8	390	9.3	6.5	14	.20
13	1.3	110	.30	7.2	360	7.0	5.9	12	.20
14	1.9	45	.20	5.9	160	2.5	8.3	1900	42
15	1.8	20	.10	5.9	130	2.1	13	1600	56
16	1.5	24	.10	5.0	71	1.0	14	890	33
17	1.4	15	.10	4.8	69	.90	10	200	5.4
18	29	1100	450	4.5	45	.60	8.4	82	1.9
19	33	3200	410	102	4100	4800	7.2	45	.90
20	7.6	630	23	96	12000	3200	6.5	32	.60
21	10	1000	47	70	12000	2400	5.6	20	.30
22	42	3600	460	26	1800	120	5.6	14	.20
23	61	4100	920	16	620	26	5.3	6	.10
24	7.6	630	13	12	140	4.5	5.6	6	.10
25	4.1	58	.70	10	110	3.0	5.3	8	.10
26	3.9	25	.20	8.8	70	1.6	5.0	15	.20
27	6.3	320	20	10	47	1.2	5.0	12	.10
28	7.9	940	29	15	800	32	4.8	10	.10
29	3.4	84	.80	47	2300	1700	4.8	9	.10
30	18	7600	880	198	14000	7600	4.8	9	.10
31	79	7800	2400	404	11000	21000	--	--	--
TOTAL	397.4	--	5770.80	1282.7	--	42958.70	272.2	--	349.53

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 13032.1
TOTAL LOAD FOR YEAR (TONS) 403932.00

T LESS THAN 0.05 TON.

09471000 SAN PEDRO RIVER AT CHARLESTON, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC. 21, 1967	1330	5	1830	20800	40	41		61		86	94	99	100	--	--	VPWC
JULY 22, 1968	1820	24	130	9590	46	60		88		99	99	100	--	--	--	VPWC
JULY 30.....	1750	22	37	16400	47	63		87		95	95	98	100	--	--	VPWC
AUG. 19.....	2215	18	386	18200	46	56		76		91	95	98	99	100	--	VPWC
AUG. 31.....	1540	17	2900	29800	30	42		64		88	95	99	100	--	--	VPWC

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.

LOCATION.--Lat 32°58'38", long 110°46'11", in SE¼SW¼ sec.24, T.5 S., R.15 E., Pinal County, at gaging station 0.5 mile south of Winkelman and 1 mile upstream from mouth.

DRAINAGE AREA.--4,471 sq mi, of which 696 sq mi is in Mexico.

PERIOD OF RECORD.--Chemical analyses: January 1967 (miscellaneous).
Specific conductance: January 1966 to September 1968.
Water temperatures: January 1966 to September 1968.
Sediment records: January 1966 to September 1968.

EXTREMES.--1967-68:
Specific conductance: Maximum daily, 2,000 micromhos Aug. 31; minimum daily, 320 micromhos Feb. 14.
Water temperatures: Maximum, 42.0°C Sept. 10; minimum, 4.0°C Dec. 22.
Sediment concentrations: Maximum daily, 84,900 mg/l Sept. 2; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 961,000 tons Dec. 20; minimum daily, 0 ton on many days.

Period of record:
Specific conductance: Maximum daily, 2,000 micromhos Sept. 24, 1967, Aug. 31, 1968; minimum daily, 320 micromhos Feb. 14, 1968.
Water temperatures: Maximum, 42.0°C Sept. 10, 1968; minimum, 1.5°C Dec. 31, 1966.
Sediment concentrations: Maximum daily, 119,000 mg/l July 8, Sept. 24, 1967; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 961,000 tons Dec. 20, 1967; minimum daily, 0 ton on many days.

REMARKS.--No flow June 3 to July 4, July 7-21, Sept. 30.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	---	1050	1160	1190	1100	1190	1100	1250	---	1160	690
2	440	---	1380	1100	1050	1100	1000	1100	1300	---	940	640
3	1250	---	1100	1000	1190	1100	1140	1180	---	---	1100	780
4	700	---	1110	1060	1190	1190	1100	1100	---	---	960	1050
5	620	---	1150	1090	1190	1050	1100	1150	---	---	1600	1150
6	960	---	1100	1090	1100	1050	1100	1150	---	---	1200	1100
7	750	1200	1090	1090	1190	1050	1100	1150	---	---	1400	1100
8	790	1200	1100	1100	1190	1050	1100	1150	---	---	1600	1100
9	1000	1100	1100	1100	1190	1050	1100	1150	---	---	1250	1100
10	990	1150	1150	1050	1190	670	1150	1150	---	---	850	1100
11	800	1130	1150	1050	1190	480	1150	1100	---	---	750	1100
12	800	1130	1100	1050	560	690	1100	1120	---	---	860	1100
13	1050	1120	1150	1050	370	710	1150	1100	---	---	1000	1150
14	1100	1100	1050	1050	320	850	1150	1100	---	---	1100	1150
15	1100	1100	800	1050	510	900	1100	1150	---	---	1100	1150
16	1100	1120	820	1050	590	950	1100	1150	---	---	1100	1150
17	1190	1190	600	1100	800	950	1100	1150	---	---	1100	1150
18	1190	1120	590	1120	890	990	1150	1180	---	---	1100	1150
19	1100	1100	360	1000	950	990	1150	1180	---	---	1100	1150
20	---	1150	470	1050	1000	1010	1150	1180	---	---	1100	1100
21	1150	1100	710	1050	1000	1010	1150	1200	---	---	1050	1100
22	1100	1130	1380	1100	950	1010	1190	1200	---	970	1100	1100
23	1150	1080	1320	1100	990	1010	1190	1200	---	1620	1000	1100
24	1200	1080	1400	1100	1000	1020	1190	1250	---	---	990	1150
25	1150	1100	1470	1100	1000	1020	1190	1220	---	---	1100	1150
26	1200	1100	1200	1000	1000	1020	1190	1220	---	---	1100	1150
27	1200	1100	1020	1100	1000	1020	1190	1250	---	---	1100	1150
28	1150	1100	980	1100	1050	1100	1190	1280	---	1200	1100	1150
29	1250	1080	1000	1100	1100	1190	1190	1280	---	1000	1100	1200
30	1190	1050	1000	1100	---	1190	1190	1280	---	1100	1150	1200
31	---	---	1070	1140	---	1100	---	1280	---	1150	2000	---
AVERAGE	1020	1120	1030	1080	963	988	1140	1180	---	---	1130	1090

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER	27	24	26	21	25	26	24	19	24	24	25	22	24	29	23	23	21	19	30	--	24	27	21	32	21	21	28	16	16	14	--	23
NOVEMBER	--	--	--	--	--	--	17	--	25	25	19	22	25	24	25	22	23	11	21	19	16	19	15	13	14	21	23	17	16	18	--	--
DECEMBER	17	13	16	16	20	19	19	17	15	15	18	16	13	12	6	6	5	7	7	6	7	4	5	5	6	7	15	7	8	11	8	11
JANUARY	10	10	8	7	8	7	7	7	8	8	7	9	9	9	8	8	8	9	8	7	8	8	8	9	8	9	8	14	12	10	10	8
FEBRUARY	8	12	22	20	23	19	22	20	17	16	14	14	11	9	10	11	21	22	22	23	23	22	24	25	25	24	21	25	24	--	--	18
MARCH	25	21	14	25	24	22	22	20	16	10	9	9	19	21	24	21	17	22	14	20	20	19	20	25	22	25	25	25	27	25	24	19	20
APRIL	29	20	20	28	29	25	27	25	23	23	23	25	20	31	--	26	27	22	18	20	25	20	27	31	31	31	31	31	26	30	--	25
MAY	31	31	27	28	28	31	34	32	30	30	25	18	33	28	27	27	33	34	35	33	33	30	31	30	36	36	38	36	36	29	28	30
JUNE	18	19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
JULY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27	24	--	--	--	--	31	23	23	23	--
AUGUST	23	24	27	25	23	29	22	22	23	23	27	25	24	22	18	19	29	32	22	23	22	21	34	19	21	34	37	36	35	37	26	25
SEPTEMBER	28	25	24	21	19	34	19	38	41	42	35	33	38	33	37	17	15	13	17	18	20	28	12	11	13	15	16	34	15	14	--	24

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	4.5	4500	55	3.0	70	.57	14	670	25
2	23	5560	S710	3.0	60	.49	14	400	15
3	84	10600	S2900	3.0	60	.49	14	410	15
4	162	18000	S8430	3.0	60	.49	14	330	12
5	69	23600	S4400	3.0	50	.41	23	1260	S78
6	34	17000	S1560	3.0	50	.41	18	655	S32
7	8.0	6850	S148	3.1	40	.33	19	410	21
8	3.0	3900	32	2.6	32	.22	19	410	21
9	3.0	2700	22	3.1	61	.51	19	340	17
10	3.0	2700	22	3.8	88	.90	21	370	21
11	3.0	3500	28	3.1	50	.42	19	410	21
12	3.0	3000	24	3.1	72	.60	23	420	26
13	3.0	1200	9.7	3.1	74	.62	32	430	S 37
14	3.0	490	4.0	3.1	63	.53	53	1570	S225
15	3.0	70	.57	3.1	74	.62	156	8800	S3710
16	3.0	84	.68	3.1	62	.52	156	6200	S2610
17	3.0	62	.50	3.1	40	.33	262	16500	S11700
18	3.0	100	.81	3.1	72	.60	286	15500	S 12000
19	3.0	160	1.3	3.1	64	.54	1340	30600	S98400
20	3.0	100	.81	3.1	60	.50	8230	41400	S961000
21	3.0	76	.62	3.1	83	.69	3220	54900	S471000
22	3.0	100	.81	3.8	84	.86	1200	49800	S178000
23	3.0	200	1.6	6.2	180	3.0	500	24900	S33700
24	3.0	240	1.9	6.2	260	4.4	300	13400	S10900
25	3.0	240	1.9	6.2	180	3.0	200	8800	4750
26	3.0	240	1.9	7.2	170	3.3	150	6400	2590
27	3.0	50	.41	11	520	S15	100	4600	1240
28	3.0	42	.34	7.2	440	8.6	80	3400	734
29	3.0	25	.20	14	1030	S39	75	2600	527
30	3.0	71	.58	16	890	38	65	2300	404
31	3.0	70	.57	--	--	--	65	2200	386
TOTAL	456.5	--	18360.20	142.5	--	125.95	16687	--	1794201

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	65	1800	316	50	560	76	8.0	210	4.5
2	60	1300	211	32	650	56	8.0	200	4.3
3	50	1200	162	25	490	33	8.0	170	3.7
4	50	1100	149	25	440	30	8.0	130	2.8
5	50	1000	135	27	500	36	8.0	200	4.3
6	50	930	126	25	430	29	8.0	200	4.3
7	50	1100	149	27	450	33	10	120	3.2
8	50	1200	162	32	310	27	14	170	6.4
9	50	1300	176	37	420	42	25	360	24
10	50	1600	216	48	670	87	858	6320	S18700
11	40	1400	151	53	930	S133	583	4980	S8190
12	40	1500	162	1300	11300	S55100	280	2320	S1800
13	40	1200	130	1200	11700	S40800	248	2870	S1940
14	40	1100	119	1710	13000	67600	190	5150	S2640
15	40	1000	108	347	4700	4400	147	4600	1830
16	30	1200	97	121	2500	817	117	2400	758
17	30	960	78	76	1700	349	101	2400	654
18	30	980	79	53	1200	172	94	2200	556
19	30	940	76	30	1100	89	86	1900	441
20	30	930	75	16	1100	48	83	1400	314
21	30	780	63	14	1400	53	72	1100	214
22	30	860	70	12	1000	32	69	890	166
23	30	800	65	11	740	22	66	860	153
24	30	820	66	11	550	16	59	690	110
25	30	760	62	9.6	460	12	56	570	86
26	50	880	119	8.4	350	7.9	53	480	69
27	50	990	134	8.4	360	8.2	48	280	36
28	50	1000	135	8.4	260	5.9	42	220	25
29	50	990	134	8.0	230	5.0	39	190	20
30	200	800	432	--	--	--	37	190	19
31	75	1500	304	--	--	--	34	150	14
TOTAL	1500	--	4461	5334.8	--	170119.0	3459.0	--	38794.5

S COMPUTED BY SUBDIVIDING DAY.

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCENTRATION (MG/L)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCENTRATION (MG/L)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCENTRATION (MG/L)	JUNE LOAD (TONS)
1	32	120	10	16	71	3.1	.10	63	.02
2	32	160	14	16	59	2.5	.10	60	.02
3	34	130	12	16	44	1.9	0	---	0
4	30	110	8.9	14	84	3.2	0	---	0
5	23	120	7.5	14	87	3.3	0	---	0
6	21	120	6.8	12	65	2.1	0	---	0
7	27	140	10	12	77	2.5	0	---	0
8	30	180	15	12	46	1.5	0	---	0
9	30	140	11	12	64	2.1	0	---	0
10	23	100	6.2	9.6	59	1.5	0	---	0
11	21	86	5.0	11	59	1.8	0	---	0
12	32	140	12	14	65	2.5	0	---	0
13	37	320	32	12	48	1.6	0	---	0
14	32	280	24	8.4	96	2.2	0	---	0
15	27	160	12	6.2	59	.99	0	---	0
16	32	120	10	7.2	68	1.3	0	---	0
17	32	130	11	6.2	52	.87	0	---	0
18	30	110	8.9	5.3	68	.97	0	---	0
19	30	98	7.9	4.5	55	.67	0	---	0
20	32	100	8.6	4.5	44	.53	0	---	0
21	27	93	6.8	3.8	40	.41	0	---	0
22	19	100	5.1	1.6	48	.21	0	---	0
23	19	91	4.7	1.3	92	.32	0	---	0
24	19	91	4.7	.70	70	.13	0	---	0
25	19	82	4.2	.50	49	.07	0	---	0
26	18	120	5.8	.40	51	.06	0	---	0
27	18	52	2.5	.40	49	.05	0	---	0
28	18	54	2.6	.30	44	.04	0	---	0
29	16	41	1.8	.30	86	.07	0	---	0
30	18	76	3.7	.20	100	.05	0	---	0
31	---	---	---	.20	82	.04	---	---	---
TOTAL	778	--	274.7	222.60	--	38.58	.20	--	.04

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN CONCENTRATION (MG/L)	JULY LOAD (TONS)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN CONCENTRATION (MG/L)	AUGUST LOAD (TONS)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN CONCENTRATION (MG/L)	SEPTEMBER LOAD (TONS)
1	0	0	0	25	8500	574	270	44200	S40400
2	0	0	0	100	25500	S6890	228	84900	S52300
3	0	0	0	50	15000	2030	132	37300	S13500
4	0	0	0	250	27900	S18800	25	5200	351
5	6.9	69	S4.7	550	19000	S62800	18	2000	97
6	2.7	33	S1.5	70	6690	S3840	10	770	21
7	0	---	0	329	39600	S39600	6.0	630	10
8	0	---	0	170	20600	S9460	5.0	410	5.5
9	0	---	0	135	8780	S5210	3.0	250	2.0
10	0	---	0	588	65900	S119000	2.0	170	.9.
11	0	---	0	316	64700	S55200	1.0	170	.46
12	0	---	0	150	38700	S15700	.80	150	.32
13	0	---	0	100	12700	S3420	.70	150	.30
14	0	---	0	40	2500	270	.60	100	.16
15	0	---	0	35	1000	95	.50	110	.15
16	0	---	0	20	670	36	.50	140	.19
17	0	---	0	20	610	33	.50	140	.19
18	0	---	0	20	440	24	1.0	3620	S13
19	0	---	0	20	300	16	1.0	4510	S12
20	0	---	0	20	1250	S68	.70	930	1.8
21	0	---	0	20	3600	194	.70	500	.94
22	150	12600	10100	25	29000	S2410	.50	420	.57
23	104	2800	S1620	27	34500	S2520	.40	390	.42
24	16	1000	S43	16	19000	S822	.30	280	.23
25	4.0	500	5.4	5.3	6250	S89	.30	190	.15
26	.50	100	S.14	3.1	2000	17	.20	170	.09
27	48	1580	S1220	13	2850	S152	.20	180	.10
28	280	5400	S4860	5.3	13500	S194	.10	190	.05
29	131	30900	S13000	2.1	11800	S67	.10	110	.03
30	90	29800	S7240	13	9700	S1290	0	0	0
31	60	12000	1940	19	31200	S2130	--	--	--
TOTAL	893.10	--	39734.74	3156.8	--	352951	718.10	--	108818.57

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 33338.60
TOTAL LOAD FOR YEAR (TONS) 2527895.28

S COMPUTED BY SUBDIVIDING DAY.

09473500 SAN PEDRO RIVER AT WINKELMAN, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC. 19, 1967	1330	10	1470	24500	15	22	41	65	80	93	96	100	--			VPWC
DEC. 21.....	1740	8	3280	69800	17	38	59	84	95	90	100	--	--			VPWC
DEC. 22.....	1415	8	980	42700	36	46	65	89	97	100	--	--	--			VPWC
FEB. 12, 1968	0830	14	90	6260	41	55	76	86	92	98	100	--	--			VPWC
FEB 13.....	0815	11	1110	14300	28	29	52	78	94	99	100	--	--			VPWC
JULY 30.....	1700	33	79	54600	64	87	--	--	--	--	--	--	--			SPWC
AUG. 4.....	2215	23	170	14800	38	46	75	92	97	99	100	--	--			VPWC
AUG. 10.....	1600	24	190	6T400	55	69	93	98	99	100	--	--	--			VPWC
SEPT. 2.....	0800	25	300	94600	51	66	91	99	100	--	--	--	--			VPWC

09474000 GILA RIVER AT KELVIN, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 33°06'10", long 110°58'33", in NE¼NW¼ sec.12, T.4 S., R.13 E., Pinal County, at Florence-Kelvin road bridge at Kelvin, 200 ft upstream from Mineral Creek, 700 ft upstream from gaging station, 17 miles downstream from San Pedro River, 19.5 miles upstream from Ashurst-Hayden Dam, and 48 miles downstream from Coolidge Dam.
DRAINAGE AREA.--18,011 sq mi at gaging station, of which 5,125 sq mi is downstream from Coolidge Dam.
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1968.
Water temperatures: December 1950 to September 1968.
Sediment records: January 1958 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,700 mg/l Jan. 10-25; minimum, 339 mg/l Dec. 19-20.
Hardness: Maximum, 1,020 mg/l Jan. 10-25; minimum, 200 mg/l Dec. 19-20.
Specific conductance: Maximum daily, 2,440 micromhos Jan. 20; minimum daily, 513 micromhos Dec. 20.
Water temperatures: Maximum, 27.0°C Oct. 5; minimum, 8.0°C on several days during December and January.
Sediment concentrations: Maximum daily, 38,200 mg/l Dec. 22; minimum daily, 25 mg/l Nov. 16.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	156	40	--	88	26	--	--	175	218	0	183	238
NOV.												
01-30	144	40	--	96	28	--	--	193	224	0	204	268
DEC.												
01-14	298	26	--	92	28	--	--	191	220	0	197	266
15-18	1338	23	--	96	27	--	--	69	146	0	258	79
19-20	12200	26	.01	64	9.8	32	4.3	--	160	0	98	17
21-22	4050	27	--	94	19	--	--	54	240	0	186	29
23-31	647	27	--	164	41	--	--	129	240	0	446	138
JAN.												
01-09	204	39	--	148	37	--	--	162	284	0	355	192
10-25	142	32	--	286	75	--	--	155	296	0	814	188
26-31	182	30	--	148	42	--	--	160	256	0	384	198
FEB.												
01-11	310	28	--	114	41	--	--	141	220	0	270	212
12-15	2160	21	--	80	15	--	--	35	144	0	175	26
16-17	466	30	--	107	21	--	--	83	216	0	250	68
18-29	224	29	--	106	28	--	--	143	236	0	244	170
MAR.												
01-09	638	24	--	80	22	--	--	147	190	0	163	200
10-12	1436	26	.03	68	17	92	4.8	--	170	0	141	105
13-31	538	27	--	83	21	--	--	140	198	0	173	180
APR.												
01-30	477	28	--	82	20	--	--	147	196	0	174	188
MAY												
01-31	483	34	.01	75	19	131	6.1	--	174	0	151	178
JUNE												
01-30	696	31	--	63	17	--	--	123	166	0	122	164
JULY												
01-31	806	34	--	63	13	--	--	115	172	0	106	148
AUG.												
01-31	684	29	.00	75	15	106	5.7	--	188	0	137	136
SEPT.												
01-30	542	29	--	72	13	--	--	113	186	0	122	140
WTD. AVG. TIME	--	29	--	81	19	--	--	122	186	0	165	137
WTD. AVG. TONS PER DAY	576	32	--	94	24	--	--	144	203	0	207	180
	--	46	--	126	29	--	--	160	290	0	257	213

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1530	1580	1570	1720	1250	1250	1190	1070	970	932	949
2	1380	1520	1570	1670	1420	1270	1280	1180	1070	968	---	1030
3	1380	1510	1570	1710	1710	1260	1250	1210	1070	965	952	972
4	1260	1540	1570	1580	1440	1290	1240	1190	1100	---	957	975
5	1230	1570	1570	1690	1440	1340	1250	1200	1100	932	1110	949
6	1350	1560	1570	1700	1580	1240	1270	1160	1080	950	1020	978
7	1370	1570	1550	1720	1470	1230	1280	1170	1070	947	984	972
8	1370	1570	1550	1740	1320	1230	1230	1190	1040	963	1080	957
9	1380	1570	1570	---	1460	1210	1250	1180	1030	957	1010	946
10	1400	1610	1580	2250	1420	934	1270	1140	1040	957	1030	944
11	1460	1590	1580	2240	1450	782	1260	1180	1030	957	950	941
12	1470	1610	1570	2330	772	970	1250	1160	1020	962	992	---
13	1470	1620	1450	2340	546	1100	1240	1190	1040	950	1100	931
14	1470	1630	1490	1750	764	1140	1240	1130	1010	955	1040	929
15	1460	1620	1190	2190	540	1200	1250	1140	1030	942	992	931
16	1490	1620	1040	2360	837	---	1250	1130	997	955	981	924
17	1480	1620	892	2400	1150	1210	1210	1120	1000	932	975	926
18	1470	1560	811	2410	1300	1240	1210	1130	1010	962	965	926
19	1470	1570	525	2430	1500	1220	1220	1130	1030	932	955	936
20	1460	1620	513	2440	1410	1260	1200	1130	1010	923	930	926
21	1470	1630	815	2420	1280	1270	1230	1180	1020	940	950	919
22	1480	1590	---	2420	1370	1250	1230	1140	1020	930	955	931
23	1480	1600	1780	---	1370	1250	1210	1130	1020	935	955	951
24	1500	1570	1530	2350	1380	1240	1250	1140	1010	957	962	994
25	1520	1570	1710	2410	1280	1260	1250	1150	1010	965	940	1010
26	1540	1580	1640	1750	1340	1250	1210	1150	986	---	950	994
27	1520	1540	1460	1700	1310	1260	1200	1110	1020	945	970	980
28	1530	1550	1490	1510	1280	1270	1200	1180	1010	---	981	1030
29	1520	1550	1530	1820	1250	1260	1200	1120	974	968	984	1040
30	1550	1540	1530	1700	---	1220	1200	1100	975	---	970	1010
31	1530	---	1570	1690	---	1270	---	1060	---	960	1070	---
AVERAGE	1450	1580	1390	2010	1280	1210	1240	1150	1030	951	988	962

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

EXTREMES.--1967-68:--Continued
Sediment loads: Maximum daily, 631,000 tons Dec. 20; minimum daily, 7.4 tons Nov. 16.
Period of record:
Dissolved solids: Maximum, 4,330 mg/l Jan. 3, 1966; minimum, 294 mg/l Sept. 24, 1954, Feb. 12, 1963.
Hardness: Maximum, 2,610 mg/l Jan. 3, 1966; minimum, 152 mg/l Sept. 1-30, 1957.
Specific conductance: Maximum daily, 5,120 micromhos May 22, 1961; minimum daily, 407 micromhos Jan. 20, 1952.
Water temperatures: Maximum, 36.5°C July 25, Aug. 20, 1953; minimum, 3.5°C Jan. 13, 1962.
Sediment concentrations: Maximum daily, 153,000 mg/l July 30, 1961; minimum daily, 1 mg/l May 8, 1961.
Sediment loads: Maximum daily, 740,000 tons Dec. 23, 1965; minimum daily, less than 0.50 ton on many days during May to July 1961.
REMARKS.--No appreciable inflow from Mineral Creek between sampling point and gaging station except during periods of heavy local rains. Load figures include sediment load from Mineral Creek.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.												
01-31	--	1.0	.49	--	858	1.17	361	326	147	4.2	1420	8.1
NOV.												
01-30	--	.6	.41	--	940	1.28	365	356	172	4.4	1580	8.1
DEC.												
01-14	--	.6	.25	--	909	1.24	731	346	166	4.5	1550	8.1
15-18	--	4.1	.36	--	628	.85	2270	352	232	1.6	986	7.4
19-20	.5	8.1	.11	374	339	.51	12300	200	69	1.0	519	7.9
21-22	--	.2	.30	--	528	.72	5770	314	117	1.3	815	7.7
23-31	--	2.7	.45	--	1070	1.46	1870	578	381	2.3	1580	7.9
JAN.												
01-09	--	2.4	.40	--	1080	1.47	595	522	289	3.1	1670	8.0
10-25	--	2.2	.33	--	1700	2.31	652	1020	777	2.1	2300	7.9
26-31	--	1.8	.67	--	1090	1.48	536	542	332	3.0	1700	8.0
FEB.												
01-11	--	1.9	.39	--	916	1.25	767	455	275	2.9	1500	8.1
12-15	--	3.4	.11	--	427	.58	2490	262	144	1.0	660	7.5
16-17	--	2.6	.26	--	668	.91	860	354	177	1.9	989	8.0
18-29	--	2.4	.41	--	839	1.14	507	378	184	3.2	1340	8.0
MAR.												
01-09	--	1.7	.36	--	731	.99	1260	288	132	3.8	1260	7.8
10-12	.9	2.2	.17	563	561	.77	2180	238	99	2.6	894	7.7
13-31	--	2.0	.31	--	723	.98	1050	294	132	3.5	1230	8.0
APR.												
01-30	--	2.0	.27	--	737	1.00	949	288	127	3.8	1240	8.0
MAY												
01-31	.9	1.5	.19	722	683	.98	942	264	122	3.5	1150	7.6
JUNE												
01-30	--	1.4	.14	--	604	.82	1140	228	92	3.5	1030	7.7
JULY												
01-31	--	1.1	.13	--	565	.77	1230	212	71	3.4	949	8.0
AUG.												
01-31	.9	1.5	.15	601	598	.82	1110	248	94	2.9	989	7.9
SEPT.												
01-30	--	1.3	.22	--	582	.79	852	232	80	3.2	961	8.0
WTD. AVG. TIME	--	2.4	.22	--	638	--	--	280	128	--	1040	7.9
WTD. AVG. TONS PER DAY	--	1.6	.28	--	778	--	--	335	169	3.4	1270	7.9
	--	3.7	.34	--	--	--	--	--	--	--	--	--

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	26	26	24	26	27	24	26	24	24	24	24	24	24	24	24	24	23	23	23	23	23	24	24	24	24	22	21	21	20	18	17	18	23
NOVEMBER.	17	17	17	18	17	18	18	18	18	18	18	18	18	17	18	18	17	16	15	16	16	16	16	16	16	16	15	14	--				16
DECEMBER.	13	13	12	13	13	11	11	10	12	12	12	12	11	12	10	11	11	10	9	9	8	--	10	10	11	10	10	10	9	9	8		11
JANUARY..	9	8	8	8	8	10	9	10	--	9	8	10	10	9	11	10	10	9	10	11	11	10	--	11	11	10	10	10	10	10	10		9
FEBRUARY.	10	12	12	13	11	11	13	13	11	12	13	12	11	11	11	12	12	12	12	14	13	13	15	16	16	16	16	15	15	--	--		12
MARCH....	13	14	14	14	14	15	15	15	17	11	12	14	15	15	16	--	15	15	15	15	15	15	15	16	15	15	16	16	15	15	16		14
APRIL....	15	15	16	15	15	16	18	17	20	19	--	19	21	21	21	22	20	20	20	20	18	18	19	20	20	19	20	20	20	21	--		18
MAY.....	21	21	20	21	21	22	20	21	21	22	20	20	21	21	21	21	21	21	22	23	23	21	21	21	21	22	22	23	23	23	23		21
JUNE.....	22	22	22	22	21	21	19	19	19	20	20	21	22	22	22	23	24	24	24	--	23	23	22	23	23	23	23	23	21	21	--		21
JULY.....	21	22	22	--	23	21	22	21	21	23	23	23	23	23	22	22	21	21	22	22	22	22	23	23	--	22	--	22	--	23			22
AUGUST...	22	--	21	21	22	22	23	23	23	22	23	23	23	22	23	23	24	25	24	23	23	23	24	23	22	23	22	23	24	22	23		22
SEPTEMBER	23	23	24	23	23	23	23	24	24	24	24	--	24	24	24	22	22	21	21	21	22	21	21	21	21	21	22	23	22	23	--		22

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: P, POTTOK WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
DEC. 19, 1967	1700	9	6300	15000	35	45		82		100	--	--	--	--	--	SPWC
DEC. 22.....	1700	9	3270	42100	37	46		67		92	99	100	--	--	--	VPWC
AUG. 7, 1968	1400	23	955	6500	40	58		77		92	96	99	100	--	--	VPWC
AUG. 11.....	1800	23	785	24800	48	65		88		96	97	98	100	--	--	VPWC
SEPT. 3.....	1800	24	890	11500	54	71		94		100	--	--	--	--	--	SPWC

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCTOBER MEAN DISCHARGE (CFS)	OCTOBER MEAN CONCEN-TRATION (MG/L)	OCTOBER LOAD (TONS)	NOVEMBER MEAN DISCHARGE (CFS)	NOVEMBER MEAN CONCEN-TRATION (MG/L)	NOVEMBER LOAD (TONS)	DECEMBER MEAN DISCHARGE (CFS)	DECEMBER MEAN CONCEN-TRATION (MG/L)	DECEMBER LOAD (TONS)
1	291	1600	1260	117	790	250	195	160	84
2	288	1100	855	118	380	121	193	120	63
3	378	7830	8350	120	850	275	191	120	62
4	363	18100	18200	115	1500	466	191	210	108
5	257	11100	7700	109	1600	471	189	91	46
6	211	4400	2510	109	470	138	182	122	60
7	200	1500	810	108	170	50	184	108	54
8	191	890	459	106	300	86	186	92	46
9	189	560	286	106	350	100	186	94	47
10	168	370	168	105	370	105	182	94	46
11	124	260	87	105	170	48	182	89	44
12	113	410	125	106	110	31	184	84	42
13	109	470	138	106	70	20	345	377	696
14	109	520	153	106	230	66	1590	574	2340
15	108	630	184	108	100	29	1810	1230	6050
16	106	430	123	110	25	7.4	1010	1200	3270
17	106	570	163	124	100	33	1330	7180	27100
18	106	590	169	168	330	150	1200	7100	23000
19	106	300	86	176	250	119	6400	10800	222000
20	105	430	122	176	130	62	18000	13200	631000
21	105	940	266	178	190	91	4300	28400	323000
22	105	500	142	186	370	186	3800	38200	392000
23	105	220	62	193	350	182	1500	20000	81000
24	106	230	66	189	180	92	850	8700	20000
25	108	300	87	196	433	238	750	4500	9110
26	109	160	47	184	170	84	600	2100	3400
27	111	82	25	202	140	76	594	2000	3210
28	115	110	34	195	160	84	482	5100	6640
29	115	840	261	206	160	89	400	3300	3560
30	114	370	114	202	190	104	350	2310	2180
31	115	500	155	--	--	--	300	6840	5540
TOTAL	4836	--	43207	4329	--	3853.4	47856	--	1765798

DAY	JANUARY MEAN DISCHARGE (CFS)	JANUARY MEAN CONCEN-TRATION (MG/L)	JANUARY LOAD (TONS)	FEBRUARY MEAN DISCHARGE (CFS)	FEBRUARY MEAN CONCEN-TRATION (MG/L)	FEBRUARY LOAD (TONS)	MARCH MEAN DISCHARGE (CFS)	MARCH MEAN CONCEN-TRATION (MG/L)	MARCH LOAD (TONS)
1	270	3400	2480	221	310	185	494	1300	1730
2	230	2300	1430	231	430	268	522	590	832
3	209	850	480	231	2130	1330	518	600	839
4	202	430	235	228	620	382	506	290	396
5	197	1150	612	223	830	500	538	710	1030
6	193	800	417	244	590	389	634	1800	3080
7	184	440	219	354	750	717	694	1300	2440
8	180	370	180	407	730	802	762	710	1460
9	175	360	170	410	480	531	1070	850	3830
10	170	440	202	428	570	659	1660	2450	13100
11	165	600	267	428	460	532	1690	9770	45900
12	160	650	281	1960	12900	86600	958	2250	6160
13	155	620	259	2150	12900	78400	780	640	1350
14	150	980	397	3180	11800	112000	718	2100	4070
15	150	1200	486	1350	4300	16200	594	1700	2540
16	145	2400	940	628	2600	4410	482	800	1040
17	145	470	184	303	1800	1470	510	710	978
18	140	1000	378	200	4950	2670	522	720	1010
19	135	3700	1350	142	2550	1020	510	1300	1790
20	135	1000	365	120	990	321	502	790	1070
21	130	2100	737	160	3300	1430	494	310	413
22	130	940	330	209	3800	2140	470	330	419
23	125	700	236	200	1700	918	478	1200	1550
24	120	420	136	189	750	383	470	550	698
25	115	620	195	223	1500	903	470	870	1100
26	125	350	118	251	1300	881	482	450	586
27	130	250	88	276	1300	969	534	140	202
28	160	1100	475	306	1400	1160	538	130	189
29	215	580	337	410	2500	2770	558	160	241
30	220	690	410	--	--	--	578	1000	1560
31	245	990	655	--	--	--	578	610	952
TOTAL	5205	--	15049	15662	--	320940	20274	--	102555

09474000 GILA RIVER AT KELVIN, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	538	300	436	522	120	169	486	92	121
2	530	630	902	518	370	517	526	150	213
3	534	640	923	514	570	791	554	260	389
4	526	310	440	518	540	755	586	500	791
5	474	270	346	526	270	383	642	390	676
6	458	180	223	522	160	226	662	190	340
7	443	140	167	506	250	342	682	170	313
8	439	160	190	494	150	200	682	530	976
9	418	140	158	494	120	160	702	750	1420
10	403	160	174	494	110	147	710	710	1360
11	403	440	479	502	110	149	706	440	839
12	418	690	779	498	110	148	682	490	902
13	403	320	348	494	94	125	654	290	512
14	407	130	143	502	71	96	642	110	191
15	400	180	194	506	80	109	666	100	180
16	396	490	524	498	91	122	674	120	218
17	436	320	377	494	390	520	698	120	226
18	446	170	205	494	740	987	698	120	226
19	443	180	215	470	540	685	710	120	230
20	432	170	198	454	230	282	742	140	280
21	498	330	444	458	110	136	780	140	295
22	522	800	1130	450	190	231	785	140	297
23	522	410	578	446	150	181	780	190	400
24	542	180	263	446	110	132	785	550	1170
25	556	200	300	446	100	120	785	340	721
26	542	600	878	443	120	144	780	130	274
27	554	340	509	432	140	163	785	140	297
28	550	140	208	439	120	142	795	150	318
29	538	700	1020	432	130	152	770	580	1210
30	538	380	552	474	140	179	754	650	1320
31	--	--	--	474	110	141	--	--	--
TOTAL	14309	--	13303	14960	--	8634	20893	--	16705

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	758	660	1350	810	530	1160	683	5060	9430
2	760	340	698	898	1240	3040	720	18000	35200
3	754	130	265	835	1220	2780	638	13200	22700
4	760	130	267	814	1950	4300	606	3800	6220
5	750	130	263	2220	3120	19900	562	540	819
6	750	140	284	966	1130	2950	546	400	590
7	750	130	263	1260	5960	20800	550	320	475
8	740	120	240	852	3490	8320	550	230	342
9	720	110	214	606	1160	1900	550	360	535
10	720	130	253	959	15000	48300	550	340	505
11	720	180	350	1160	26700	85800	550	150	223
12	720	130	253	618	12700	22600	578	200	312
13	720	110	214	294	4300	3410	598	380	614
14	720	130	253	322	1700	1480	606	420	687
15	740	310	619	378	710	725	610	290	478
16	780	170	358	407	490	538	606	410	671
17	800	120	259	407	430	473	610	290	478
18	830	130	291	432	440	513	614	350	580
19	840	150	340	443	400	478	630	500	851
20	840	130	295	526	460	653	598	580	936
21	850	160	367	566	530	810	574	450	697
22	940	270	685	538	540	784	538	300	436
23	890	390	937	550	650	965	510	150	207
24	860	180	418	546	730	1080	494	95	127
25	860	260	604	538	610	886	436	115	135
26	860	170	395	534	530	764	396	110	118
27	900	600	1460	530	1000	1430	382	250	258
28	900	340	826	522	830	1170	364	240	236
29	1000	1600	4320	502	740	1000	309	130	108
30	900	1100	2670	542	950	1390	294	200	159
31	855	890	2050	642	5750	10000	--	--	--
TOTAL	24987	--	22061	21217	--	250399	16252	--	85127

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 210780
TOTAL LOAD FOR YEAR (TONS) 2647629.4

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 33°33'59", long 111°32'08", in sec.33, T.3 N., R.8 E. (unsurveyed), Maricopa County, at Stewart Mountain Dam, 3.5 miles upstream from gaging station and 10 miles upstream from Verde River.

DRAINAGE AREA.--6,232 sq mi, at gaging station, of which 20 sq mi is downstream from Stewart Mountain Dam.

PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1968.
Water temperatures: December 1950 to September 1968.

EXTREMES.--1967-68:
Dissolved solids: Maximum, 541 mg/l Sept. 1-30; minimum, 393 mg/l Dec. 22-23.
Hardness: Maximum, 168 mg/l May 1-31; minimum, 121 mg/l Dec. 22-23.
Specific conductance: Maximum daily, 991 micromhos June 26; minimum daily, 653 micromhos Dec. 23.
Water temperatures: Maximum, 20.0°C on several days during August and September; minimum, 11.0°C on several days during December and February.

Period of record:
Dissolved solids: Maximum, 1,300 mg/l Aug. 21-28, 1951; minimum, 361 mg/l Mar. 21-31, 1953.
Hardness: Maximum, 270 mg/l Nov. 1-30, 1956; minimum, 121 mg/l Dec. 22-23, 1967.
Specific conductance: Maximum daily, 2,490 micromhos Aug. 20, 1951; minimum daily (1950-64, 1965-68), 620 micromhos Mar. 28, 1953.
Water temperatures: Maximum, 29.0°C Aug. 24, 26, 27, 1951; minimum (1950-64, 1965-68), 9.5°C Feb. 14, 1951.

REMARKS.--No flow at sampling point Oct. 28 to Dec. 21, Dec. 24 to Feb. 9. No inflow between sampling point and gaging station except during periods of heavy local rains.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-27	612	21	--	46	12	--	--	129	156	0	44	191
DEC.												
22-23	328	16	--	39	5.7	--	--	97	120	0	36	138
FEB.												
10-29	2883	16	--	41	14	--	--	99	136	0	41	156
MAR.												
01-31	2238	21	--	46	11	--	--	121	150	0	42	181
APR.												
01-30	2566	19	--	47	11	--	--	128	152	0	44	192
MAY												
01-31	1278	18	.00	45	13	125	4.4	--	148	0	45	192
JUNE												
01-30	1236	21	--	46	12	--	--	129	150	0	45	196
JULY												
01-31	1106	18	--	46	11	--	--	132	148	0	46	198
AUG.												
01-31	1177	17	.00	48	10	128	4.4	--	148	0	49	200
SEPT.												
01-30	1775	19	--	50	9.0	--	--	137	156	0	48	200
WTD. AVG. TIME	--	19	--	46	11	--	--	--	149	0	45	188
WTD. AVG. TONS PER DAY	A1156	19	--	46	11	--	--	--	150	0	45	190
	--	82	--	200	49	--	--	--	645	0	193	813

A MEAN DISCHARGE FOR 366 DAYS. MEAN DISCHARGE FOR 253 DAYS OF CHEMICAL ANALYSIS, 1600 CFS.

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.												
01-27	--	.5	.10	--	521	.71	861	163	35	4.4	948	8.0
DEC.												
22-23	--	2.4	.07	--	393	.53	348	121	23	3.8	719	7.6
FEB.												
10-29	--	.5	.14	--	435	.59	3390	159	47	3.4	800	7.8
MAR.												
01-31	--	.6	.31	--	497	.68	3000	160	37	4.2	912	7.8
APR.												
01-30	--	.6	.27	--	517	.70	3580	164	39	4.3	949	7.8
MAY												
01-31	.4	.4	.09	540	516	.73	1860	168	46	4.2	943	7.8
JUNE												
01-30	--	.3	.15	--	523	.71	1750	166	43	4.4	960	7.6
JULY												
01-31	--	.2	.13	--	524	.71	1570	162	40	4.5	963	7.6
AUG.												
01-31	.4	.5	.15	540	530	.73	1720	162	40	4.4	961	7.7
SEPT.												
01-30	--	.4	.17	--	541	.74	2590	162	34	4.7	964	7.6
WTD. AVG. TIME	--	.5	.19	--	508	--	--	163	40	--	927	7.7
WTD. AVG. TONS PER DAY	--	.5	.17	--	514	--	--	163	40	4.3	937	7.7
	--	2.1	.82	--	--	--	--	--	--	--	--	--

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	941	---	---	---	---	841	939	942	947	958	954	970
2	946	---	---	---	---	850	934	947	947	961	---	962
3	941	---	---	---	---	882	931	944	947	961	959	962
4	941	---	---	---	---	882	936	942	947	961	961	967
5	951	---	---	---	---	877	939	944	950	966	959	972
6	943	---	---	---	---	893	941	942	---	961	961	962
7	951	---	---	---	---	904	942	942	953	963	966	970
8	949	---	---	---	---	916	939	939	958	958	956	964
9	951	---	---	---	---	919	944	942	955	958	954	972
10	948	---	---	---	873	921	949	942	958	963	961	970
11	954	---	---	---	875	893	946	939	958	969	964	975
12	951	---	---	---	868	934	946	939	952	960	964	970
13	---	---	---	---	873	936	946	947	963	960	961	970
14	946	---	---	---	866	929	949	939	969	971	961	959
15	954	---	---	---	864	926	951	942	963	963	964	962
16	951	---	---	---	866	924	951	939	958	963	961	962
17	949	---	---	---	833	928	954	942	966	969	964	970
18	943	---	---	---	776	924	951	939	971	986	959	964
19	954	---	---	---	745	919	954	939	963	966	954	964
20	959	---	---	---	731	921	959	941	972	969	954	964
21	948	---	---	---	744	921	962	942	969	966	959	962
22	956	---	786	---	739	919	954	942	963	963	954	959
23	951	---	653	---	748	921	949	942	963	961	954	962
24	948	---	---	---	743	921	957	944	972	963	954	964
25	956	---	---	---	738	921	957	944	966	961	951	959
26	951	---	---	---	753	916	954	950	991	963	956	959
27	961	---	---	---	748	921	959	944	963	961	951	959
28	---	---	---	---	801	---	949	944	969	963	954	964
29	---	---	---	---	833	928	947	944	963	963	952	956
30	---	---	---	---	---	931	944	947	961	963	951	959
31	---	---	---	---	---	931	---	947	---	963	951	---
AVERAGE	950	---	---	---	---	912	948	943	961	964	957	964

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	19	19	19	19	19	19	19	19	19	19	19	--	19	19	19	19	19	19	19	19	19	19	18	18	19	19	18	--	--	--	--	18
NOVEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DECEMBER.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	11	--	--	--	--	--	--	--	--	--	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	--	--	--	--	--	--	--	--	12	12	12	12	12	11	12	12	12	11	11	11	11	11	11	11	12	12	12	--	--		--
MARCH....	12	13	12	12	13	13	13	13	13	12	13	13	13	13	13	13	14	13	13	13	13	13	13	13	13	13	13	--	13	13	13	12
APRIL....	13	12	13	13	13	13	13	13	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	15	15	16	16	--	13
MAY.....	16	16	16	15	15	16	15	15	15	16	16	16	16	16	16	15	16	15	15	16	16	16	17	16	16	16	16	16	16	16	16	15
JUNE.....	16	16	17	17	17	--	17	17	17	17	17	17	17	17	17	17	17	16	17	17	17	17	17	17	18	18	18	18	18	18	--	17
JULY.....	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	19	19	18	--	18	16	19	19	18	19
AUGUST...	19	--	19	19	19	19	19	19	19	18	19	19	19	19	19	19	19	19	19	19	19	19	19	20	19	19	19	19	19	19	19	19
SEPTEMBER	19	19	19	19	19	19	19	19	20	20	20	20	19	20	20	19	19	19	19	19	18	18	18	19	18	18	18	18	18	18	--	18

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 33°49'05", long 111°37'53", in sec.33, T.6 N., R.7 E. (unsurveyed), Maricopa County, at Bartlett Dam, 2.1 miles upstream from gaging station, 6.1 miles upstream from Camp Creek, and 18 miles east of town of Cave Creek.

DRAINAGE AREA.--6,188 sq mi (at gaging station).

PERIOD OF RECORD--Chemical analyses: December 1950 to September 1968.
Water temperatures: December 1950 to September 1968.

EXTREMES.--1967-68:
Dissolved solids: Maximum, 396 mg/l Nov. 1-30; minimum, 178 mg/l June 1-30.
Hardness: Maximum, 274 mg/l Dec. 1-30; minimum, 132 mg/l June 1-30.
Specific conductance: Maximum daily, 672 micromhos Dec. 17; minimum daily, 287 micromhos June 17, 23.
Water temperatures: Maximum, 25.0°C on many days during August and September; minimum, 6.0°C Jan. 10.

Period of record:
Dissolved solids: Maximum, 550 mg/l Dec. 18-21, 1956; minimum, 152 mg/l May 1-31, 1965.
Hardness: Maximum, 413 mg/l Dec. 18-21, 1956; minimum, 102 mg/l May 1-31, 1965.
Specific conductance: Maximum daily, 958 micromhos Nov. 10, 1956; minimum daily, 225 micromhos May 14, 1965.
Water temperatures (1950-65, 1967-68): Maximum, 32.0°C July 18, Aug. 14, 1951; minimum, 5.0°C Jan. 30, 1952.

REMARKS.--No inflow between sampling point and gaging station except during periods of heavy local rains.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.												
01-31	130	24	--	43	32	--	--	39	256	0	75	24
NOV.												
01-30	374	24	--	47	35	--	--	42	278	0	83	27
DEC.												
01-30	298	22	--	48	37	--	--	37	284	0	80	28
31...	897	18	--	39	28	--	--	24	216	0	58	20
JAN.												
01-09	837	18	--	38	25	--	--	30	212	0	57	20
10-31	375	19	--	34	20	--	--	23	180	0	43	16
FEB.												
01-29	197	22	--	39	20	--	--	23	200	0	43	14
MAR.												
01-31	434	21	--	39	20	--	--	22	198	0	42	14
APR.												
01-30	662	21	--	36	17	--	--	21	178	0	38	13
MAY												
01-31	1151	22	.02	31	16	17	2.5	--	156	0	28	7.0
JUNE												
01-30	1639	21	--	30	14	--	--	11	152	0	22	4.8
JULY												
01-31	1445	21	--	36	16	--	--	14	182	0	28	6.5
AUG.												
01-04	1155	19	--	41	18	--	--	21	205	0	38	10
05-09	905	23	--	36	15	--	--	17	177	0	29	8.2
10-31	930	21	.00	44	22	26	3.1	--	229	0	51	14
SEPT.												
01-30	400	23	--	41	21	--	--	31	210	6	51	14
WTD. AVG.	--	21	--	36	19	--	--	20	189	0	38	11
TIME												
WTD. AVG.	686	22	--	39	22	--	--	26	208	0	49	15
TONS PER DAY	--	39	--	67	35	--	--	34	350	1	71	21

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.												
01-31	--	.7	.23	--	364	.50	128	238	28	1.1	599	7.9
NOV.												
01-30	--	.9	.23	--	396	.54	400	262	34	1.1	642	8.2
DEC.												
01-30	--	.2	.34	--	393	.53	316	274	41	1.0	655	7.8
31...	--	1.9	.17	--	295	.40	714	214	37	.7	492	7.9
JAN.												
01-09	--	1.7	.13	--	294	.40	664	198	24	.9	496	8.1
10-31	--	2.2	.14	--	246	.33	249	167	19	.8	409	8.0
FEB.												
01-29	--	1.8	.17	--	261	.35	139	181	17	.7	437	8.0
MAR.												
01-31	--	1.6	.19	--	257	.35	301	180	18	.7	433	8.0
APR.												
01-30	--	2.2	.15	--	236	.32	422	161	15	.7	393	7.8
MAY												
01-31	.4	1.9	.08	210	203	.29	653	144	16	.6	338	7.9
JUNE												
01-30	--	.5	.10	--	178	.24	788	132	8	.4	307	7.7
JULY												
01-31	--	.5	.13	--	211	.29	823	156	7	.5	362	7.6
AUG.												
01-04	--	.6	.17	--	249	.34	777	176	8	.7	417	7.7
05-09	--	.4	.15	--	216	.29	528	151	6	.6	354	8.2
10-31	.4	.6	.16	296	295	.40	743	202	14	.8	480	8.2
SEPT.												
01-30	--	.7	.20	--	291	.40	314	188	6	1.0	464	8.4
WTD. AVG.	--	1.0	.14	--	242	--	--	169	14	--	404	7.9
TIME												
WTD. AVG.	--	1.1	.18	--	277	--	--	190	19	.8	459	8.0
TONS PER DAY	--	1.9	.27	--	--	--	--	--	--	--	--	--

09510000 VERDE RIVER BELOW BARTLETT DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	581	643	606	496	422	451	434	369	288	341	---	486
2	594	638	653	496	420	440	431	370	289	341	---	387
3	633	643	629	492	420	441	419	375	289	341	---	---
4	587	637	651	492	419	443	419	368	292	344	---	474
5	587	640	650	494	420	439	399	370	289	346	---	468
6	577	640	650	494	448	443	399	370	294	341	---	---
7	594	640	653	495	449	442	398	329	289	343	---	480
8	594	644	650	496	453	434	397	326	300	347	---	469
9	568	627	652	494	444	440	396	329	307	349	---	464
10	583	638	651	403	440	434	397	328	302	349	---	465
11	583	578	659	401	445	433	422	377	302	347	---	464
12	583	648	654	400	444	433	426	363	310	347	460	477
13	583	650	655	405	447	435	423	361	294	345	462	477
14	557	632	639	402	444	440	424	365	294	346	462	472
15	592	659	637	398	444	440	374	305	304	344	461	477
16	588	656	663	399	443	436	370	305	294	369	501	468
17	590	654	672	401	440	435	370	305	287	372	495	476
18	605	665	670	402	436	434	396	305	307	366	495	473
19	571	655	---	406	443	436	396	305	302	369	488	479
20	621	656	664	404	451	434	421	305	302	369	494	442
21	634	652	---	403	446	418	405	305	321	371	496	441
22	640	654	---	403	443	421	366	368	319	376	495	475
23	632	652	662	420	440	419	361	363	287	373	493	430
24	651	637	662	418	443	419	361	361	319	386	491	432
25	577	644	662	425	432	420	359	309	319	382	480	435
26	576	647	662	396	443	419	356	320	319	379	480	440
27	578	649	---	402	443	417	359	308	321	390	478	488
28	598	649	664	414	442	435	359	314	341	390	477	486
29	577	650	662	415	449	435	359	365	341	395	480	485
30	642	652	664	433	---	435	362	293	337	401	476	487
31	642	---	492	435	---	434	---	288	---	404	478	---
AVERAGE	597	644	648	433	440	433	392	336	305	363	---	464

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	19	21	22	20	20	16	16	15	15	16	16	16	17	16	14	14	14	14	16	15	16	16	17	17	16	16	16	17	17	18	18	16
NOVEMBER.	18	18	18	18	18	18	18	18	18	20	17	17	16	16	16	16	16	14	14	15	16	15	17	16	16	16	16	16	16	16	--	16
DECEMBER.	12	11	12	13	11	11	11	11	10	10	--	10	10	11	10	--	11	12	--	11	--	--	11	12	--	11	--	10	11	11	11	--
JANUARY..	11	11	11	8	8	8	8	7	7	6	7	7	7	9	10	9	9	9	8	8	8	8	8	8	8	8	8	8	8	9	9	8
FEBRUARY.	9	9	--	8	8	--	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	8	8	9	9	9	11	12	10	--	--	8
MARCH....	10	9	9	9	9	9	8	9	9	9	8	10	10	10	10	10	10	10	10	10	9	9	11	11	11	13	13	9	9	9	9	9
APRIL....	9	9	10	10	10	11	11	11	11	12	9	9	9	9	9	9	--	12	10	12	12	12	12	12	10	10	10	10	10	10	--	10
MAY.....	11	12	12	12	13	13	13	13	13	13	11	11	12	12	12	13	13	13	13	13	13	13	13	13	14	14	14	14	14	13	14	12
JUNE.....	14	14	14	14	14	14	13	16	16	16	16	16	16	16	16	16	16	--	20	20	20	20	20	20	20	20	20	20	20	20	--	17
JULY.....	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	21	21	21	21	21	22	22	22	22	22	22	22	22	22	22	22	20
AUGUST...	19	23	24	24	24	24	24	24	24	24	24	25	25	25	25	25	25	25	25	--	--	75	--	25	25	25	25	25	25	25	25	24
SEPTEMBER	25	25	--	25	25	--	25	25	25	25	25	24	24	24	24	24	24	24	21	22	22	22	22	20	21	22	22	23	22	22	--	23

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.

(Irrigation network station)

(Formerly published as 09519500 Gila River below Gillespie Dam, Ariz.)

LOCATION.--Lat 33°10', long 112°44', in sec.11, T.3 S., R.5 W., Maricopa County, Enterprise Canal near Enterprise Ranch, approximately 4.5 miles downstream from gaging station and approximately 4.7 miles downstream from Gillespie Dam.
DRAINAGE AREA.--49,650 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: December 1950 to September 1968.
Water temperatures: December 1950 to February 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 6,530 mg/l Jan. 13-31; minimum, 144 mg/l Dec. 26-28.
Hardness: Maximum, 1,950 mg/l Jan. 13-31; minimum, 80 mg/l Dec. 26-28.
Specific conductance: Maximum daily, 9,970 micromhos Jan. 15, Feb. 1; minimum daily, 236 micromhos Dec. 28.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-24	18	32	--	330	172	--	--	1240	328	0	1300	1810
25...	16	23	--	234	125	--	--	799	304	0	868	1150
26-30	19	28	--	332	166	--	--	1180	328	0	1220	1750
31...	18	22	--	244	134	--	--	809	300	0	896	1200
NOV.												
01...	21	21	--	211	112	--	--	654	280	0	740	975
02-30	18	28	--	284	137	--	--	942	300	0	1010	1410
DEC.												
01-15	8.4	32	--	279	132	--	--	951	326	0	936	1430
19-20	1490	20	--	91	23	--	--	121	150	0	264	124
21-22	3895	15	--	40	6.3	--	--	32	148	0	33	25
23...	2260	16	--	90	19	--	--	121	152	0	248	120
24-25	1895	17	--	38	7.1	--	--	31	144	0	32	23
26-28	3723	9.6	--	28	2.4	--	--	20	114	0	12	11
29-30	824	14	--	38	6.6	--	--	28	138	0	29	23
JAN.												
01-12	262	31	--	370	167	--	--	1230	370	0	1220	1890
13-31	71	26	--	446	204	--	--	1590	404	0	1580	2390
FEB.												
01-12	41	23	--	427	193	--	--	1520	368	0	1520	2290
13-23	700	18	--	92	33	--	--	245	184	0	235	346
26-28	78	24	--	205	90	--	--	710	260	0	668	1050
MAR.												
13-31	297	25	--	359	171	--	--	1340	374	0	1340	1980
APR.												
01-30	36	26	--	374	162	--	--	1370	362	0	1350	2010
MAY												
25-29	19	33	.06	130	69	590	10	--	112	0	392	925
30...	16	18	--	206	118	--	--	911	128	0	832	1420
JUNE												
01-06	11	15	--	125	53	--	--	545	114	0	360	878
07-16	12	15	--	311	174	--	--	1390	180	0	1410	2040
17...	12	24	--	246	133	--	--	941	232	0	936	1440
18-30	10	15	--	310	177	--	--	1430	196	0	1440	2080
AUG.												
01-31	13	28	.00	251	113	907	12	--	260	0	952	1340
SEPT.												
01-22	14	23	--	292	127	--	--	1160	200	0	1180	1670
23-30	18	26	--	254	113	--	--	918	270	0	932	1320
WTD. AVG. TIME	--	18	--	139	56	--	--	417	203	0	431	610
WTD. AVG. A162 TONS PER DAY	--	25	--	296	139	--	--	1120	287	0	1100	1610
	--	8.7	--	67	27	--	--	227	98	0	208	293

A MEAN DISCHARGE FOR 366 DAYS. MEAN DISCHARGE FOR 291 DAYS OF CHEMICAL ANALYSIS, 178 CFS.

DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	DATE	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.			FEB.		
01-24	7880	8.0	26-28	4730	7.7
25...	5380	8.1	MAR.		
26-30	7630	7.9	13-31	8330	7.8
31...	5570	8.0	APR.		
NOV.			01-30	8450	7.8
01...	4670	7.9	MAY		
02-30	6270	8.0	25-29	3790	7.3
DEC.			30...	5940	7.5
01-15	6220	7.7	JUNE		
19-20	1140	7.6	01-06	3610	7.3
21-22	389	7.6	07-16	8520	7.5
23...	1130	7.5	17...	6260	7.5
24-25	382	7.6	18-30	8650	7.6
26-28	251	7.6	AUG.		
29-30	366	7.4	01-31	5870	7.8
JAN.			SEPT.		
01-12	7960	7.8	01-22	7090	7.9
13-31	9800	8.0	23-30	5870	8.0
FEB.			TIME		
01-12	9460	8.0	WTD. AVG.	6880	7.8
13-23	1890	7.6			

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.--Continued

Period of record:
Dissolved solids: Maximum, 7,720 mg/l Dec. 1-31, 1962; minimum, 144 mg/l Dec. 26-26, 1967.
Hardness: Maximum, 2,220 mg/l July 1-18, 1966; minimum, 80 mg/l Dec. 26-28, 1967.
Specific conductance: Maximum daily, 13,200 micromhos July 10, 11, 1966; minimum daily, 236 micromhos Dec. 28, 1968.
Water temperatures: Maximum (1950-66), 37.0°C July 8, 1958, July 22, 1959, Aug. 5, 8, 1966; minimum (1950-65), 2.0°C Jan. 1, 1951.

REMARKS.--Samples from Enterprise Canal are believed to be representative of total flow passing Gillespie Dam, including spill and amount diverted into Gila Bend Canal.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO-RIDE (F)	NITRATE (NO3)	TOTAL NITRO-GEN (N)	PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO
OCT.												
01-24	--	57	14	2.1	3.3	--	5120	6.96	254	1530	1260	14
25...	--	79	19	4.3	2.3	--	3450	4.69	149	1100	851	10
26-30	--	74	17	2.5	2.7	--	5100	6.94	262	1510	1240	13
31...	--	60	14	3.9	2.3	--	3530	4.80	172	1160	914	10
NOV.												
01...	--	40	9.4	6.4	2.1	--	2910	3.96	165	985	756	9.1
02-30	--	39	11	3.7	2.4	--	4020	5.47	200	1270	1020	11
DEC.												
01-15	--	60	16	5.6	2.2	--	4000	5.44	90	1240	973	12
19-20	--	11	.3	.62	.27	--	729	.99	2930	320	197	2.9
21-22	--	6.2	2.3	1.2	.15	--	233	.32	2450	126	4	1.3
23...	--	18	4.6	.60	.10	--	712	.97	4350	304	180	3.0
24-25	--	8.2	4.0	1.3	.13	--	233	.32	1190	124	6	1.2
26-28	--	3.5	1.7	.82	.26	--	144	.20	1450	80	0	1.0
29-30	--	8.1	20	1.2	.17	--	223	.30	496	122	9	1.1
JAN.												
01-12	--	67	22	3.6	3.0	--	5190	7.06	3670	1610	1310	13
13-31	--	65	22	.77	3.8	--	6530	8.88	1250	1950	1620	16
FEB.												
01-12	--	49	17	.34	3.7	--	6220	8.46	689	1860	1560	15
13-23	--	16	13	2.1	.71	--	1090	1.48	2060	364	213	5.6
26-28	--	43	35	3.1	1.8	--	2960	4.03	626	880	667	10
MAR.												
13-31	--	34	9.5	.62	2.7	--	5450	7.41	4370	1600	1290	15
APR.												
01-30	--	39	9.6	.45	2.6	--	5520	7.51	543	1600	1300	15
MAY												
25-29	3.0	11	3.7	1.1	1.3	2310	2230	3.14	121	608	516	10
30...	--	8.8	2.4	.47	2.3	--	3580	4.87	155	1000	895	13
JUNE												
01-06	--	8.7	5.1	1.3	1.2	--	2060	2.80	63	530	436	10
07-16	--	12	5.6	.72	3.4	--	5460	7.43	186	1490	1340	16
17...	--	12	5.5	3.7	2.4	--	3870	5.26	125	1160	970	12
18-30	--	11	4.8	.83	3.8	--	5570	7.58	158	1500	1340	16
AUG.												
01-31	2.3	41	9.3	1.4	2.5	3920	3780	5.33	140	1090	877	12
SEPT.												
01-22	--	35	7.9	1.6	3.1	--	4590	6.24	178	1250	1090	14
23-30	--	53	--	--	2.5	--	3750	5.10	182	1100	878	12
WTD. AVG. TIME	--	19	7.7	1.3	1.0	--	1800	--	--	575	411	--
WTD. AVG. TONS PER DAY	--	40	12	1.8	2.6	--	4450	6.12	868	1310	1080	13
	--	9.3	3.8	.65	.49	--	--	--	--	--	--	--

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7370	4670	---	7750	9970	---	8560	---	3690	---	5950	7130
2	7660	6760	---	7600	9490	---	8550	---	3810	---	5970	---
3	7960	6810	6240	7700	9890	---	8470	---	3650	---	5970	---
4	7940	6430	6230	7560	9270	---	8550	---	3570	---	5970	---
5	7520	6780	6230	8180	9270	---	8530	---	3430	---	5970	---
6	8000	---	6230	8120	9240	---	8540	---	3540	---	5970	7030
7	7920	6660	6230	8180	9520	---	8580	---	8980	---	5970	---
8	7930	6760	6230	8140	9440	---	8520	---	---	---	5950	---
9	7930	6760	---	8180	9440	---	8390	---	8490	---	5890	7140
10	7950	6750	6230	8130	9340	---	8570	---	7920	---	5980	---
11	7990	---	6240	8150	9390	---	8550	---	8000	---	5950	---
12	7970	6760	6230	8080	9270	---	8310	---	8550	---	5950	7140
13	8030	5590	6230	9780	1980	8230	8240	---	9020	---	5960	---
14	7940	5790	6230	9920	1970	8560	8540	---	9030	---	---	---
15	7990	5520	6250	9970	1980	8230	8240	---	9030	---	5970	6900
16	7950	5220	---	9940	1970	8230	8530	---	7890	---	5950	---
17	7930	5350	---	9860	1960	8560	8220	---	6260	---	5930	---
18	7970	5330	---	9750	1950	8250	8550	---	9020	---	5950	7160
19	7970	5910	1180	9780	1720	8250	8220	---	9020	---	5690	---
20	7950	7210	1130	9940	1710	8230	8560	---	9000	---	5970	---
21	7910	6070	---	9750	1700	8560	8580	---	7960	---	5710	7190
22	7950	6860	389	9750	---	8220	8540	---	7930	---	5710	---
23	7280	5920	1130	9750	1710	8560	8220	---	8540	---	5700	---
24	7930	6030	382	9750	---	8240	8560	---	8350	---	5660	5950
25	5380	---	---	---	---	---	8560	4040	9030	---	5660	---
26	7580	---	270	---	4730	---	8460	3660	9080	---	5730	---
27	7950	---	251	---	---	---	8260	3660	8600	---	5700	---
28	7620	---	236	---	4730	---	8230	3660	8600	---	5510	5820
29	7130	---	365	---	---	---	8230	3930	9010	---	5610	---
30	7950	---	364	---	---	---	8520	5940	8370	---	---	5870
31	5570	---	---	---	---	---	---	---	---	---	---	---
AVERAGE	7680	---	---	---	5900	---	8450	---	7500	---	5850	---

TEMPERATURE (°C) OF WATER, OCTOBER 1967 TO FEBRUARY 1968

DAY	OCT	NOV	DEC	JAN	FEB	DAY	OCT	NOV	DEC	JAN	FEB
1	18.0	13.0	---	7.0	14.0	16	16.0	13.0	---	13.0	14.0
2	18.0	13.0	---	7.0	16.0	17	17.0	13.0	---	13.0	13.0
3	20.0	13.0	12.0	7.0	16.0	18	17.0	13.0	---	13.0	14.0
4	18.0	13.0	12.0	7.0	16.0	19	16.0	13.0	9.0	13.0	14.0
5	18.0	13.0	12.0	7.0	17.0	20	16.0	---	9.0	13.0	14.0
6	18.0	---	11.0	8.0	17.0	21	17.0	11.0	---	13.0	14.0
7	18.0	13.0	13.0	7.0	17.0	22	16.0	13.0	9.0	13.0	---
8	18.0	13.0	14.0	8.0	11.0	23	17.0	12.0	8.0	12.0	14.0
9	18.0	13.0	---	8.0	17.0	24	17.0	12.0	8.0	13.0	---
10	18.0	13.0	12.0	7.0	16.0	25	16.0	---	---	---	---
11	17.0	---	11.0	7.0	16.0	26	16.0	---	8.0	---	14.0
12	17.0	12.0	10.0	8.0	16.0	27	17.0	---	7.0	---	---
13	17.0	12.0	11.0	12.0	16.0	28	16.0	---	8.0	---	14.0
14	17.0	12.0	11.0	13.0	14.0	29	16.0	---	7.0	---	---
15	17.0	12.0	10.0	13.0	16.0	30	17.0	---	8.0	---	---
						31	16.0	---	---	---	---
AVERAGE							17.0	---	---	---	15.0

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, ARIZ.-CALIF.

LOCATION.--Lat 32°52'35", long 114°27'15", in SE¼SW¼ sec.30, T.6 S., R.21 W., Gila and Salt River Meridian, Yuma County, Ariz., temperature recorder at gaging station 0.6 mile (revised) downstream from intake at east end of Imperial Dam.

PERIOD OF RECORD.--Chemical analyses: December 1967 to September 1968 (miscellaneous).
Water temperatures: January 1956 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 32.0°C July 10, 11, Aug. 8; minimum, 9.0°C on several days during December and January.

Period of record:
Water temperatures: Maximum, 32.0°C on many days during July and August of most years; minimum, 7.0°C Jan. 13-17, 1964.

REMARKS.--No flow Nov. 23 to Dec. 1.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	MANGANESE (MN)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	SULFATE (SO4)	CHLORIDE (CL)
DEC. 14...	699	13	.01	.01	102	34	179	192	380	164
SEPT. 12...	1600	9.0	--	--	89	34	136	164	335	123

DATE	FLUORIDE (F)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
DEC. 14...	.5	966	1.32	1830	396	239	3.9	1480	8.1
SEPT. 12...	--	808	1.10	3490	360	226	3.1	1280	7.8

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER																																
MAXIMUM	28	28	28	28	27	27	25	24	24	24	24	24	24	25	25	23	23	22	22	22	22	23	23	23	23	23	23	23	22	21	18	24
MINIMUM	28	27	27	27	27	25	24	23	23	23	23	24	24	24	23	23	22	22	21	22	22	22	23	22	22	22	22	22	21	18	17	23
NOVEMBER																																
MAXIMUM	18	19	19	19	19	19	19	19	19	19	19	19	18	18	18	18	18	18	18	18	18	--	--	--	--	--	--	--	--	--	--	--
MINIMUM	17	17	18	18	19	19	19	19	19	18	18	18	18	18	18	18	18	18	18	18	18	--	--	--	--	--	--	--	--	--	--	--
DECEMBER																																
MAXIMUM	--	14	13	13	13	13	13	13	13	12	11	11	11	11	10	10	10	10	10	10	9	9	9	9	--	10	11	12	12	12	12	11
MINIMUM	--	13	13	13	13	13	13	13	12	11	11	11	11	10	10	10	10	10	10	9	9	9	9	9	--	9	10	11	12	12	12	11
JANUARY																																
MAXIMUM	12	11	10	10	10	10	10	9	9	9	10	10	10	10	10	10	10	11	11	11	11	11	11	11	11	12	12	12	12	12	12	11
MINIMUM	11	10	10	10	10	10	9	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10	11	11	11	11	11	12	12	12	12	10
FEBRUARY																																
MAXIMUM	12	12	12	12	12	12	12	13	13	13	13	14	14	14	14	15	15	16	16	16	16	17	17	18	18	18	18	17	17	--	--	15
MINIMUM	12	12	12	12	12	12	12	12	13	13	13	13	14	13	14	14	14	14	15	16	16	16	16	17	17	17	17	17	17	--	--	14
MARCH																																
MAXIMUM	18	18	19	19	19	19	18	17	17	17	16	17	18	18	19	19	18	18	18	17	17	17	18	18	18	19	20	20	21	21	21	18
MINIMUM	17	17	18	18	19	18	17	17	17	16	16	16	17	17	18	18	18	17	17	16	16	17	17	17	18	18	19	19	19	20	20	18
APRIL																																
MAXIMUM	20	19	18	19	19	19	20	20	19	20	21	21	22	23	23	22	21	19	19	19	19	19	19	19	20	21	22	23	23	23	23	--
MINIMUM	19	18	18	18	19	18	19	19	19	19	20	20	21	21	22	21	19	19	18	18	19	18	18	18	19	19	21	21	21	22	22	--
MAY																																
MAXIMUM	24	24	26	25	25	24	24	24	24	24	25	24	23	23	23	24	25	26	27	27	27	27	26	26	26	27	28	28	29	28	28	26
MINIMUM	23	24	24	24	24	23	24	24	23	23	24	23	22	22	22	23	24	24	25	26	26	25	24	24	24	25	27	27	28	28	27	24
JUNE																																
MAXIMUM	28	29	29	29	28	27	26	25	26	27	27	27	27	28	28	28	28	28	28	29	29	29	29	29	29	29	29	29	29	28	28	--
MINIMUM	27	28	28	28	27	25	24	24	24	24	25	26	26	27	27	27	28	28	28	28	28	28	28	28	28	28	28	28	27	26	--	27
JULY																																
MAXIMUM	28	28	29	29	29	29	29	30	32	32	31	31	29	29	29	29	29	30	31	31	31	31	31	31	31	30	30	31	31	31	30	
MINIMUM	27	27	28	28	28	28	28	29	30	30	30	29	28	28	28	28	28	28	29	29	30	29	29	29	29	30	30	29	29	30	30	29
AUGUST																																
MAXIMUM	31	31	31	31	31	31	31	32	31	31	30	31	31	29	28	28	28	28	28	28	28	28	29	28	28	28	28	28	29	29	30	30
MINIMUM	30	29	30	30	30	30	30	30	30	29	29	29	29	28	27	27	27	27	27	27	27	27	28	27	27	27	27	28	28	29	29	28
SEPTEMBER																																
MAXIMUM	30	30	29	28	29	29	29	30	30	30	30	30	30	30	29	28	27	27	27	26	26	25	24	24	24	24	26	26	26	26	--	28
MINIMUM	29	29	28	28	27	28	28	29	29	29	29	29	29	29	28	27	26	26	26	26	25	24	23	23	23	24	24	25	25	24	--	27

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, ARIZ.
(Irrigation network station)

LOCATION (revised).--Lat 32°43'39", long 114°37'13", in NW¼NE¼ sec.35, T.16 S., R.22 E., San Bernardino Meridian, Yuma County, at gaging station at Colorado River siphon outlet on Arizona side of river, 0.2 mile upstream from bridge on U.S. Highway 80 over Colorado River at Yuma, 0.3 mile west of old Yuma Territorial Prison, and 3.5 miles downstream from siphon-drop powerplant.

PERIOD OF RECORD.--Chemical analyses: September 1926 to September 1928, October 1942 to September 1968.
Water temperatures: May 1961 to September 1968.

EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,010 mg/l Jan. 1-3; minimum, 803 mg/l Apr. 1-30.
Hardness: Maximum, 400 mg/l Dec. 1-31; minimum, 352 mg/l Oct. 1-31.
Specific conductance: Maximum daily, 1,680 micromhos Dec. 5; minimum daily, 1,210 micromhos Mar. 1, Apr. 3.
Water temperatures: Maximum, 30.0°C on several days during July and August; minimum, 8.0°C Dec. 16, 17, 22.

Period of record.--(1943-68):
Dissolved solids: Maximum, 1,010 mg/l Jan. 1-3, 1968; minimum, 532 mg/l Jan. 1-10, 1953.
Hardness: Maximum, 520 mg/l July 7, 1962; minimum, 260 mg/l Jan. 1-10, 1953.
Specific conductance: Maximum daily, 1,680 micromhos Dec. 5, 1967; minimum daily, 795 micromhos Jan. 5, 1953.
Water temperatures (1967-68): Maximum, 30.0°C on several days during July and August 1968; minimum, 8.0°C Dec. 16, 17, 22, 1967.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	450	20	--	88	32	--	--	143	164	0	330	130
NOV.												
01-30	288	16	--	96	33	--	--	161	182	0	350	148
DEC.												
01-31	138	19	--	102	35	--	--	187	200	0	378	176
JAN.												
01-03	155	29	--	101	35	--	--	189	192	0	378	180
04-31	259	20	--	92	31	--	--	150	172	0	329	141
FEB.												
01-29	466	17	--	92	31	--	--	136	176	0	318	125
MAR.												
01-31	465	17	--	93	30	--	--	137	172	0	325	122
APR.												
01-30	481	12	--	96	29	--	--	134	172	0	323	121
MAY												
01-31	516	12	.01	92	32	137	5.2	--	172	0	323	132
JUNE												
01-30	587	14	--	89	33	--	--	135	170	0	320	126
JULY												
01-31	531	15	--	91	32	--	--	146	185	0	330	128
AUG.												
01-31	500	14	.00	90	33	138	5.2	--	180	0	333	129
SEPT.												
01-30	440	14	--	94	32	--	--	153	181	0	342	137
WTD. AVG. TIME	--	15	--	92	32	--	--	144	176	0	330	131
WTD. AVG. TONS PER DAY	425	16	--	93	32	--	--	149	177	0	334	135
	--	18	--	106	36	--	--	159	202	0	379	150

DATE	FLUO-RIDE (F)	NITRATE (NO3)	TOTAL NITRO-GEN (N)	PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO
OCT.												
01-31	--	1.0	.1	.08	--	--	825	1.12	1000	352	217	3.3
NOV.												
01-30	--	.7	.2	.34	--	--	894	1.22	695	374	225	3.6
DEC.												
01-31	--	.4	.3	.06	--	1050	996	1.43	391	400	236	4.1
JAN.												
01-03	--	.6	1.7	.10	--	--	1010	1.37	423	394	236	4.1
04-31	--	1.5	1.0	.12	--	--	851	1.16	595	358	217	3.4
FEB.												
01-29	--	4.5	7.9	.10	--	--	812	1.10	1020	356	212	3.1
MAR.												
01-31	--	1.8	.8	.10	--	--	812	1.10	1020	356	215	3.2
APR.												
01-30	--	1.5	1.3	.08	--	--	803	1.09	1040	358	217	3.1
MAY												
01-31	.5	2.4	2.3	.01	.22	870	829	1.18	1210	360	219	3.1
JUNE												
01-30	--	1.3	2.0	.67	--	--	811	1.10	1290	358	218	3.1
JULY												
01-31	--	1.6	.6	.00	--	--	836	1.14	1200	360	208	3.3
AUG.												
01-31	.5	1.3	.5	.00	.23	852	834	1.16	1150	360	212	3.2
SEPT.												
01-30	--	1.1	.4	.00	--	--	863	1.17	1030	365	216	3.5
WTD. AVG. TIME	--	1.7	1.6	.14	--	--	835	--	--	360	216	--
WTD. AVG. TONS PER DAY	--	1.6	1.4	.13	--	--	849	--	--	363	218	3.3
	--	1.9	1.8	.16	--	--	--	--	--	--	--	--

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, ARIZ.--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR	DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	COLOR
OCT.				MAY			
01-31	1300	8.1	--	01-31	1310	7.9	5
NOV.				JUNE			
01-30	1400	8.2	--	01-30	1290	7.9	--
DEC.				JULY			
01-31	1550	8.2	--	01-31	1280	8.0	--
JAN.				AUG.			
01-03	1570	8.1	--	01-31	1290	8.0	0
04-31	1300	8.0	--	SEPT.			
FEB.				01-30	1320	8.0	--
01-29	1280	7.8	--				
MAR.				TIME			
01-31	1270	8.0	--	WTD. AVG.	1320	8.0	--
APR.							
01-30	1260	8.2	--				

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1290	1410	1550	1610	1350	1210	1220	1320	1310	1290	1310	1340
2	1310	1380	1500	1650	1360	1230	1220	1300	1270	1280	1290	1360
3	1310	1350	1590	1460	1320	1230	1210	1300	1290	1290	1290	1350
4	1220	1340	1640	1320	1320	1260	1220	1310	1290	1290	1290	1330
5	1260	1320	1680	1320	1330	1270	1240	1300	1280	1290	1320	1290
6	1270	1340	1640	1330	1340	1270	1260	1310	1290	1280	1330	1290
7	1300	1380	1620	1330	1280	1260	1250	1310	1290	1250	1280	1290
8	1320	1370	1590	1320	1250	1240	1280	1300	1310	1270	1280	1290
9	1340	1330	1590	1290	1230	1270	1270	1300	1300	1230	1310	1320
10	1350	1340	1610	1300	1240	1300	1250	1270	1330	1280	1310	1300
11	1330	1360	1640	1280	1260	1340	1240	1340	1300	1360	1310	1320
12	1300	1370	1650	1280	1270	1290	1240	1370	1290	1370	1300	1310
13	1270	1380	1650	1280	1260	1380	1260	1390	1260	1340	1300	1300
14	1290	1400	1580	1290	1250	1430	1270	1310	1290	1310	1300	1320
15	1250	1370	1490	1320	1250	1340	---	1310	1290	1280	1250	1330
16	1310	1340	1450	1300	1230	1280	---	1300	1300	1280	1300	1350
17	1300	1340	1420	1300	1270	1260	---	1330	1300	1260	1300	1370
18	1310	1330	---	1280	1360	---	1260	1330	1270	1270	1260	1370
19	1320	---	---	1270	---	---	1280	1350	1280	1260	1290	1360
20	1280	---	1370	1290	---	---	1280	1370	1270	1270	---	1330
21	1290	---	1410	1290	---	1230	1280	1320	1220	1280	---	1330
22	1300	---	1420	1320	1270	1220	1280	1310	1280	1280	1290	1360
23	1290	---	1520	1330	1250	1240	1270	1260	1270	1260	1320	1380
24	1330	---	1550	1290	1260	1250	1290	1270	1270	1280	1310	1340
25	1270	---	1540	1260	1260	1230	1280	1300	1280	1300	1310	1320
26	1280	1520	1570	1270	1260	1220	1290	1300	1280	1290	1310	1310
27	1290	1600	1600	1300	1250	1240	1280	1270	1270	1290	1280	1310
28	1320	1590	1600	1320	1220	1250	---	1290	1270	1300	1270	1320
29	1310	1560	1580	1340	1220	1250	1330	1290	1280	1270	1290	1330
30	1350	1570	1550	1350	---	1250	1290	1290	1290	1290	1300	1370
31	1340	---	1560	1350	---	1250	---	1310	---	1270	1310	---
AVERAGE	1300	---	1560	1330	1280	1270	1260	1310	1280	1290	1300	1330

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.0	17.0	16.0	11.0	12.0	17.0	19.0	23.0	26.0	26.0	30.0	27.0
2	27.0	17.0	14.0	11.0	12.0	19.0	18.0	22.0	26.0	27.0	30.0	28.0
3	27.0	18.0	13.0	11.0	12.0	17.0	18.0	24.0	27.0	28.0	30.0	28.0
4	27.0	18.0	14.0	10.0	12.0	17.0	17.0	22.0	26.0	28.0	29.0	26.0
5	26.0	18.0	12.0	9.0	12.0	17.0	18.0	23.0	26.0	28.0	30.0	26.0
6	26.0	19.0	13.0	9.0	13.0	18.0	17.0	29.0	23.0	27.0	30.0	26.0
7	24.0	19.0	12.0	9.0	13.0	16.0	17.0	22.0	23.0	27.0	29.0	26.0
8	23.0	19.0	13.0	9.0	13.0	16.0	18.0	22.0	23.0	28.0	29.0	27.0
9	24.0	19.0	12.0	9.0	14.0	16.0	18.0	22.0	22.0	28.0	30.0	28.0
10	22.0	18.0	12.0	10.0	14.0	14.0	18.0	22.0	23.0	29.0	29.0	27.0
11	23.0	18.0	11.0	9.0	13.0	14.0	19.0	22.0	24.0	29.0	29.0	27.0
12	23.0	18.0	11.0	11.0	14.0	14.0	20.0	22.0	26.0	29.0	29.0	28.0
13	23.0	18.0	10.0	10.0	14.0	14.0	21.0	21.0	26.0	29.0	29.0	28.0
14	23.0	18.0	9.0	10.0	16.0	15.0	20.0	21.0	26.0	28.0	27.0	28.0
15	23.0	18.0	9.0	10.0	14.0	16.0	---	21.0	26.0	28.0	27.0	26.0
16	22.0	18.0	8.0	9.0	14.0	15.0	---	22.0	26.0	28.0	27.0	27.0
17	21.0	18.0	8.0	9.0	14.0	17.0	---	23.0	27.0	29.0	27.0	26.0
18	21.0	18.0	---	10.0	14.0	---	17.0	22.0	27.0	29.0	27.0	25.0
19	21.0	---	---	10.0	---	---	17.0	24.0	27.0	28.0	27.0	25.0
20	21.0	---	9.0	9.0	---	---	17.0	26.0	27.0	29.0	---	25.0
21	21.0	---	9.0	9.0	---	15.0	18.0	25.0	27.0	29.0	---	23.0
22	22.0	---	8.0	11.0	16.0	16.0	17.0	25.0	28.0	29.0	26.0	24.0
23	22.0	---	9.0	11.0	16.0	15.0	18.0	22.0	28.0	29.0	26.0	22.0
24	22.0	---	9.0	11.0	17.0	16.0	19.0	22.0	28.0	29.0	25.0	22.0
25	22.0	---	9.0	11.0	17.0	17.0	19.0	23.0	28.0	29.0	26.0	22.0
26	22.0	18.0	9.0	12.0	18.0	18.0	20.0	23.0	27.0	29.0	27.0	22.0
27	21.0	17.0	11.0	13.0	17.0	18.0	20.0	25.0	27.0	29.0	27.0	24.0
28	21.0	17.0	11.0	12.0	17.0	18.0	---	26.0	27.0	29.0	27.0	23.0
29	21.0	16.0	12.0	11.0	17.0	18.0	22.0	27.0	27.0	29.0	28.0	25.0
30	19.0	16.0	12.0	11.0	---	19.0	22.0	26.0	26.0	30.0	29.0	24.0
31	18.0	---	11.0	12.0	---	19.0	---	26.0	---	29.0	28.0	---
AVERAGE	23.0	---	11.0	10.5	14.5	16.5	18.5	23.5	26.0	28.5	28.0	25.5

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CALCIUM (CA)	MAGNE-SIUM (MG)	SODIUM (NA)	POTAS-SIUM (K)	SODIUM PLUS POTAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)
COLORADO RIVER MAIN STEM												
09070500 COLORADO RIVER NEAR DOTSERO, COLO. (LAT 39 38 40 LONG 107 04 40)												
NOV,1967												
30...	--	886	9.8	--	60	12	29	2.0	--	138	--	104
APR,1968												
04...	--	1610	9.2	--	45	12	21	--	--	112	--	88
JUNE												
03...	--	7790	8.6	--	34	6.1	7.0	--	--	110	--	29
AUG.												
08...	--	2810	9.5	--	69	12	170	--	--	178	--	84
GUNNISON RIVER BASIN												
09149500 UNCOMPAHGRE RIVER AT DELTA, COLO. (LAT 38 44 30 LONG 108 04 50)												
NOV,1967												
10...	--	163	16	--	282	96	228	4.9	--	286	--	1310
MAR,1968												
18...	--	334	12	--	123	46	92	--	--	204	--	514
JUNE												
05...	--	1220	12	--	111	29	55	--	--	160	--	362
AUG.												
08...	--	750	16	--	138	60	90	--	--	228	--	540
GREEN RIVER BASIN												
09203600 EAST FORK R AB MUDDY C, NR BOULDER, WYO. (LAT 42 39 49 LONG 109 33 20)												
JULY												
10...	1920	41	7.8	.13	10	1.2	2.5	1.0	--	38	0	6.0
09203700 MUDDY C AT BIG SANDY, WYO. (LAT 42 38 00 LONG 109 28 00)												
JULY,1968												
10...	1030	24	16	.21	40	.7	14	1.1	--	144	0	15
09203800 MUDDY C AT MOUTH, NEAR BOULDER, WYO. (LAT 42 39 35 LONG 109 33 15)												
JULY,1968												
10...	1240	28	22	.11	43	2.1	14	1.3	--	149	0	14
SAN JUAN RIVER BASIN												
MANCOS R, 200 YARDS FROM CONFLUENCE WITH SAN JUAN R, N. MEX.												
JUNE,1968												
14...	1000	8.0	17	--	172	99	--	--	101	214	0	804
09367500 LA PLATA R NR FARMINGTON, N. MEX. (LAT 36 44 25 LONG 108 14 52)												
APR,1968												
21...	0845	2.8	12	--	142	41	--	--	129	194	0	582
09367950 CHACO R NR WATERFLOW, N. MEX.												
JUNE,1968												
13...	1030	4.33	6.8	--	540	198	--	--	704	84	0	3140
JULY												
23...	1520	A4.0	13	--	551	140	--	--	641	88	0	2900
AUG.												
27...	1525	A7.0	8.8	--	424	83	--	--	474	72	0	2080

A ESTIMATED.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	ORTHO PHOSPHATE AS PO4	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO
COLORADO RIVER MAIN STEM												
09070500 COLORADO RIVER NEAR DOTSERO, COLO. (LAT 39 38 40 LONG 107 04 40)												
NOV,1967												
30...	36	.4	.4	.02	.02	--	316	.43	756	198	85	.9
APR,1968												
04...	18	--	.5	.02	--	--	250	.34	1090	160	68	.7
JUNE												
03...	5.6	--	.6	.00	--	--	157	.21	3300	111	21	.3
AUG.												
08...	22	--	.3	.00	--	--	306	.42	2320	220	74	5.0
GUNNISON RIVER BASIN												
09149500 UNCOMPAHGRE RIVER AT DELTA, COLO. (LAT 38 44 30 LONG 108 04 50)												
NOV,1967												
10...	23	1.0	21	.00	.24	--	2210	3.00	973	1100	865	3.0
MAR, 1968												
18...	13	--	7.0	.05	--	--	950	1.29	857	494	327	1.8
JUNE												
05	6.5	--	4.7	.00	--	--	684	.93	2250	394	263	1.2
AUG.												
08...	14	--	6.2	.00	--	--	1040	1.41	2110	592	405	1.6
GREEN RIVER BASIN												
09203600 EAST FORK R AB MUDDY C, NR BOULDER, WYO. (LAT 42 39 49 LONG 109 33 20)												
JULY,1968												
10...	1.1	.1	.1	--	.01	49	--	.07	5.76	30	0	.2
09203700 MUDDY C AT BIG SANDY, WYO. (LAT 42 38 00 LONG 109 28 00)												
JULY,1968												
10...	3.6	.3	.2	--	.04	162	--	.23	10.9	103	0	.6
09203800 MUDDY C AT MOUTH, NEAR BOULDER, WYO. (LAT 42 39 35 LONG 109 33 15)												
JULY,1968												
10...	3.5	.4	.2	--	.04	174	--	.26	14.5	116	0	.6
SAN JUAN RIVER BASIN												
MANCOS R, 200 YARDS FROM CONFLUENCE WITH SAN JUAN R, N. MEX.												
JUNE,1968												
14...	24	--	9.9	--	--	1330	--	--	--	835	660	1.5
09367500 LA PLATA R NR FARMINGTON, N. MEX. (LAT 36 44 25 LONG 108 14 52)												
APR,1968												
21...	28	--	.6	--	--	1030	--	--	--	524	365	2.5
09367950 CHACO R NR WATERFLOW, N. MEX.												
JUNE,1968												
13...	190	--	106	--	--	4930	--	--	--	2160	2090	6.6
JULY												
23...	140	--	68	--	--	4500	--	--	--	1950	1880	6.3
AUG.												
27..	120	--	44	--	--	3270	--	--	--	1400	1340	5.5

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	PERCENT SODIUM	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
COLORADO RIVER MAIN STEM				
09070500 COLORADO RIVER NEAR DOTSERO, COLO. (LAT 39 38 40 LONG 107 04 40)				
NOV,1967				
30...	--	522	7.6	--
APR,1968				
04...	--	412	7.5	--
JUNE				
03...	--	242	7.2	--
AUG.				
08...	--	491	7.4	--
GUNNISON RIVER BASIN				
09149500 UNCOMPAHGRE RIVER AT DELTA, COLO. (LAT 38 44 30 LONG 108 04 50)				
NOV,1967				
10...	--	2470	7.5	--
MAR,1968				
18...	--	1210	7.6	--
JUNE				
05...	--	908	7.4	--
AUG.				
08...	--	1310	7.5	--
GREEN RIVER BASIN				
09203600 EAST FORK R AB MUDDY C, NR BOULDER, WYO. (LAT 42 39 49 LONG 109 33 20)				
JULY,1968				
10...	--	76	7.7	14
09203700 MUDDY C AT BIG SANDY, WYO. (LAT 42 38 00 LONG 109 28 00)				
JULY,1968				
10...	--	249	7.8	12
09203800 MUDDY C AT MOUTH, NEAR BOULDER, WYO. (LAT 42 39 35 LONG 109 33 15)				
JULY,1968				
10...	--	285	8.2	14
SAN JUAN RIVER BASIN				
MANCOS R, 200 YARDS FROM CONFLUENCE WITH SAN JUAN R, N. MEX.				
JUNE,1968				
14...	21	1760	7.6	17
09367500 LA PLATA R NR FARMINGTON, N. MEX.. (LAT 36 44 25 LONG 108 14 52)				
APR,1968				
21...	35	1480	7.7	13
09367950 CHACO R NR WATERFLOW, N. MEX.				
JUNE,1968				
13...	41	5620	7.7	16
JULY				
23...	42	5010	8.0	31
AUG.				
27...	42	3790	7.5	29

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
GREEN RIVER BASIN																	
09216560 BITTER C NR POINT OF ROCKS, WYO. (LAT 41 40 32 LONG 108 47 27)																	
AUG 19 1968	1640	12	106	10900	3210	--	63	--	78	--	94	100	--	--	--	--	VPWC
09216700 SALT WELLS C NR ROCK SPRINGS, WYO. (LAT 41 29 12 LONG 108 58 12)																	
AUG 19 1968	1240	14	29.7	40400	3240	--	58	--	88	--	98	100	--	--	--	--	VPWC
GILA RIVER BASIN																	
09480500 SANTA CRUS R NR NOGALES, ARIZ. (LAT 31 20 40 LONG 110 51 05)																	
DEC 27 1967	--	12	109	450	130												
JAN 25 1968	1145	16	35	120	11												
FEB 26.....	--	18	31	58	4.9												
MAR 25.....	--	20	40	123	13												
APR 25.....	1115	22	14	56	2.1												
MAY 23.....	1130	22	5.4	38	.6												
JUN 24.....	1040	27	.50	23	T												
JUL 26.....	1040	25	11	140	4.3												
09482500 SANTA CRUZ R AT TUCSON, ARIZ. (LAT 32 13 15 LONG 110 58 50)																	
OCT 3 1967	1650	22	203	21800	--	--	--	--	--	--	--	--	--	--	--	--	
DEC 23.....	1215	7	176	18700	--	34	42	--	69	--	90	96	99	100	--	--	VPWC
AUG 20.....	1500	21	58.7	12400	--	--	--	--	--	--	--	--	--	--	--	--	
09485850 RILLITO C NR TUCSON, ARIZ. (LAT 32 17 19 LONG 110 52 37)																	
DEC 15 1967	1630	--	60	9230	--	52	67	--	92	--	98	99	100	--	--	--	VPWC
FEB 10 1968	1430	14	215	3720	--	--	--	--	--	--	--	--	--	--	--	--	
FEB 12.....	1125	--	4560	20800	--	--	--	--	--	--	--	--	--	--	--	--	
FEB 14.....	1600	18	250	1440	--	--	--	--	--	--	--	--	--	--	--	--	
AUG 20.....	0300	--	748	25700	--	--	--	--	--	--	--	--	--	--	--	--	

T LESS THAN 0.05 TON.

BEAR RIVER BASIN

10027000 TWIN CREEK AT SAGE, WYO.

LOCATION.--Lat 41°49', long 110°58', in SE¼ sec.7, T.21 N., R.119 W., Lincoln County, at old gaging station site 0.5 mile southwest of Sage and 5 miles upstream from mouth.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
05...	0810	6.9	11	.01	80	46	46	3.8	260	0	235	27
NOV.												
21...	--	9.3	8.7	.18	76	50	60	3.3	276	0	270	25
JAN.												
16...	0945	6.6	12	--	88	47	--	--	308	0	230	27
FEB.												
18...	--	7.9	13	.17	82	45	44	3.0	287	0	217	22
APR.												
10...	--	9.5	10	.06	82	48	66	3.8	285	0	259	31
MAY												
14...	--	12	13	.17	44	65	40	3.7	299	0	197	23
JUNE												
05...	--	14	12	.04	75	44	35	3.5	293	0	167	17
JULY												
10...	--	5.2	6.4	.15	64	37	38	2.8	216	1	172	22
AUG.												
14...	1420	4.7	12	.10	53	37	31	2.5	197	0	147	19
SEPT.												
16...	1230	2.8	8.6	.04	71	42	40	3.7	225	0	221	25

10027000 TWIN CREEK AT SAGE, WYO.--Continued

DRAINAGE AREA.--246 sq mi.
PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
OCT.												
05...	.6	.2	.10	578	.83	11.3	391	178	1.0	914	8.2	0
NOV.												
21...	.6	.5	.09	630	.94	17.3	394	168	1.3	982	8.1	1
JAN.												
16...	--	1.1	--	--	.86	11.3	412	159	1.2	912	8.1	0
FEB.												
18...	.5	.3	.10	568	.81	12.7	389	154	1.0	877	8.0	1
APR.												
10...	.6	.3	.08	641	.94	17.8	404	170	1.4	1020	8.1	9
MAY												
14...	.5	.1	.07	538	.82	19.5	394	149	.9	856	8.1	8
JUNE												
05...	.6	.0	.09	498	.69	19.2	368	128	.8	768	7.8	10
JLLY												
10...	.5	.0	.11	450	.64	6.63	310	131	.9	728	8.3	15
AUG.												
14...	.5	.1	.29	400	.59	5.51	284	122	.8	659	7.6	15
SEPT.												
16...	.5	.0	.10	523	.71	3.53	350	165	.9	816	8.0	7

10039500 BEAR RIVER AT BORDER, WYO.

LOCATION.--Lat 42°11', long 111°03', in NE¼NE¼ sec.15, T.14 S., R.46 E., Bear Lake County (revised), Idaho, at gaging station 0.2 mile west of Wyoming-Idaho State line, 0.5 mile west of Border, and 2.1 miles upstream from Thomas Fork.
DRAINAGE AREA.--2,490 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968.
Water temperatures: October 1965 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 422 mg/l July 20-31; minimum, 268 mg/l June 21-28.
Hardness: Maximum, 298 mg/l July 20-31; minimum, 206 mg/l June 21-28.
Specific conductance: Maximum daily, 726 micromhos July 21; minimum daily, 462 micromhos June 28.
Water temperatures: Maximum, 22.0°C July 16, 17, 28, Aug. 6; minimum, freezing point on many days during November to February.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	TOTAL IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.												
01-31	--	203	8.2	--	55	22	22	1.7	217	0	64	23
NOV.												
01-27	--	226	8.9	--	57	31	24	1.6	253	0	68	24
28-30	--	347	8.5	--	57	21	18	2.1	238	0	48	17
DEC.												
01-07	--	296	8.5	--	57	21	18	2.1	238	0	48	17
08-31	--	274	9.4	--	58	30	21	1.6	262	0	62	21
JAN.												
01-31	--	187	9.7	--	68	25	21	2.0	260	0	61	21
FEB.												
01-29	--	204	9.9	--	58	25	20	2.1	241	0	59	18
MAR.												
01-31	--	348	7.2	--	59	27	25	2.8	252	2	60	28
APR.												
01-30	--	426	9.7	--	50	32	28	2.7	264	0	59	29
MAY												
01-14	--	480	7.6	--	58	21	18	2.1	240	0	48	16
15-31	--	336	7.9	--	62	22	23	2.1	241	0	63	20
JUNE												
01-20	--	1806	11	--	49	26	30	3.6	250	0	54	26
21-28	--	1480	8.7	--	45	23	22	3.0	232	0	33	19
29-30	--	810	10	--	52	26	32	3.0	273	0	53	25
JULY												
01-19	--	765	10	--	52	26	32	3.0	273	0	53	25
20-31	--	523	10	--	61	35	38	2.6	315	0	86	34
AUG.												
01-07	--	206	11	--	50	29	36	2.6	240	0	68	32
08-31	--	255	10	--	47	26	29	2.0	209	0	62	29
SEPT.												
01-30	--	177	8.3	--	58	25	22	1.3	230	0	68	20
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
03...	1345	A208	8.7	.09	56	25	22	2.2	242	0	62	24
JAN.												
19...	1115	A187	9.1	--	67	25	22	1.4	284	0	64	24
APR.												
11...	1005	A444	9.9	.10	53	33	29	2.7	267	0	65	31
MAY												
16...	1845	A405	6.5	--	61	24	23	1.6	248	0	62	24
JULY												
23...	1600	A360	10	.16	64	32	37	3.0	316	0	67	32

A DISCHARGE AT TIME OF SAMPLING.

10039500 BEAR RIVER AT BORDER, WYO.--Continued

Period of record:
Dissolved solids: Maximum, 480 mg/l Mar. 29 to Apr. 6, 1967; minimum, 262 mg/l May 19-31, 1967.
Hardness: Maximum, 298 mg/l July 20-31, 1968; minimum, 188 mg/l May 19-31, 1967.
Specific conductance: Maximum daily, 883 micromhos July 21, 1966; minimum daily, 316 micromhos Nov. 1, 1965.
Water temperatures: Maximum, 22.0°C on several days during 1966 to 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Daily samples for chemical analysis composited by discharge. Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)
OCT.												
01-31	.2	.4	.03	304	.43	173	225	47	.6	530	8.1	--
NOV.												
01-27	.3	.2	.07	339	.46	207	268	60	.6	585	7.8	--
28-30	.2	1.0	.03	290	.40	235	230	35	.5	515	8.1	--
DEC.												
01-07	.2	1.0	.03	290	.40	235	230	35	.5	515	8.1	--
08-31	.3	1.2	.02	334	.46	184	266	51	.6	586	8.1	--
JAN.												
01-31	.2	1.8	.05	338	.48	179	270	57	.6	593	8.0	--
FEB.												
01-29	.3	.8	.04	312	.45	181	248	50	.6	530	8.0	--
MAR.												
01-31	.3	.2	.04	336	.49	338	260	50	.7	612	8.3	--
APR.												
01-30	.2	.6	.10	341	.53	446	259	42	.8	607	8.1	--
MAY												
01-14	.2	.2	.03	289	.42	397	232	35	.5	500	7.9	--
15-31	.2	.0	.05	319	.46	305	244	46	.6	544	7.7	--
JUNE												
01-20	.4	.5	.06	324	.46	1570	231	26	.9	566	8.2	--
21-28	.3	.4	.05	268	.38	1130	206	16	.7	477	8.2	--
29-30	.3	.3	.10	336	.45	717	238	14	.9	570	7.5	--
JULY												
01-19	.3	.3	.10	336	.45	717	238	14	.9	570	7.5	--
20-31	.3	.2	.16	422	.55	356	298	40	1.0	692	7.6	--
AUG.												
01-07	.4	.1	.09	347	.48	195	243	46	1.0	612	7.9	--
08-31	.3	.0	.07	308	.42	215	224	53	.8	558	7.9	--
SEPT.												
01-30	.3	.4	.06	316	.44	155	246	57	.6	548	7.4	--
ANALYSES OF ADDITIONAL SAMPLES												
OCT.												
03...	.3	.3	.09	320	.48	200	245	46	.6	557	8.2	11
JAN.												
19...	.3	1.1	.03	--	.48	178	272	39	.6	578	8.1	0
APR.												
11...	.7	.2	.00	356	.51	453	267	48	.8	633	8.1	7
MAY												
16...	.4	.2	.06	325	.45	359	252	49	.6	551	8.2	10
JULY												
23...	.3	.2	.09	401	.55	393	292	33	.9	707	7.8	22

10039500 BEAR RIVER AT BORDER, WYO.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566	599	500	574	572	535	595	562	533	558	680	597
2	549	591	502	583	570	537	592	562	539	563	646	594
3	550	566	516	---	561	550	590	525	593	573	616	588
4	526	570	541	585	561	561	589	517	571	633	595	553
5	544	559	562	581	557	581	589	504	521	627	677	568
6	558	592	571	585	556	584	599	484	512	635	671	521
7	548	594	574	592	558	595	596	492	534	650	629	569
8	559	583	604	597	581	607	626	496	579	559	611	565
9	562	568	606	590	578	601	628	506	586	580	616	561
10	554	595	591	591	583	612	627	497	593	561	519	561
11	572	575	610	610	587	583	640	484	596	544	641	552
12	572	581	598	606	594	586	646	490	594	531	623	582
13	571	581	633	612	571	592	653	498	611	540	623	580
14	576	579	634	620	573	587	650	499	592	546	583	561
15	578	571	643	573	571	582	659	586	584	544	621	582
16	557	581	599	586	581	599	630	584	576	557	536	567
17	590	598	596	585	572	600	590	587	561	555	634	559
18	583	604	577	596	571	612	573	610	539	605	605	579
19	587	579	595	592	554	614	571	569	522	656	620	584
20	587	573	599	569	554	602	580	568	521	686	623	584
21	588	585	601	583	548	601	583	538	489	726	611	580
22	591	596	599	586	548	602	589	524	490	720	536	569
23	586	597	588	587	536	607	592	517	468	689	582	569
24	584	591	583	583	529	602	598	528	469	697	594	569
25	571	603	567	582	530	597	597	564	464	698	551	579
26	574	604	558	571	524	599	604	561	468	709	608	586
27	573	673	558	570	530	597	610	564	463	721	572	594
28	583	558	557	563	530	604	612	525	462	680	604	591
29	573	496	558	567	536	605	620	522	554	682	595	599
30	584	478	567	586	---	590	611	525	553	676	576	594
31	583	---	570	568	---	578	---	517	---	676	559	---
AVERAGE	570	581	579	586	559	590	608	532	538	625	605	575

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	4.0	1.0	1.0	1.0	2.0	9.0	14.0	14.0	14.0	19.0	17.0
2	13.0	3.0	0.0	1.0	1.0	2.0	7.0	12.0	13.0	18.0	18.0	14.0
3	13.0	2.0	1.0	---	1.0	2.0	6.0	13.0	18.0	12.0	19.0	16.0
4	12.0	2.0	1.0	0.0	2.0	1.0	6.0	13.0	14.0	19.0	21.0	15.0
5	11.0	2.0	0.0	1.0	1.0	2.0	6.0	12.0	12.0	18.0	20.0	15.0
6	9.0	2.0	0.0	1.0	1.0	2.0	4.0	8.0	12.0	21.0	22.0	16.0
7	9.0	2.0	0.0	1.0	1.0	3.0	4.0	11.0	13.0	20.0	21.0	17.0
8	11.0	2.0	1.0	1.0	1.0	2.0	7.0	13.0	13.0	21.0	21.0	13.0
9	12.0	3.0	0.0	2.0	1.0	3.0	8.0	13.0	12.0	21.0	18.0	17.0
10	12.0	3.0	1.0	1.0	1.0	2.0	10.0	13.0	13.0	19.0	18.0	17.0
11	12.0	4.0	1.0	1.0	1.0	2.0	7.0	13.0	13.0	20.0	19.0	16.0
12	10.0	4.0	1.0	0.0	0.0	3.0	10.0	11.0	12.0	18.0	18.0	17.0
13	10.0	4.0	1.0	1.0	1.0	4.0	9.0	12.0	16.0	18.0	17.0	17.0
14	8.0	4.0	1.0	0.0	1.0	2.0	8.0	10.0	16.0	18.0	16.0	16.0
15	6.0	6.0	1.0	1.0	1.0	3.0	9.0	11.0	15.0	21.0	13.0	13.0
16	8.0	6.0	0.0	1.0	1.0	3.0	7.0	11.0	15.0	22.0	15.0	12.0
17	8.0	5.0	1.0	1.0	2.0	3.0	7.0	12.0	16.0	22.0	12.0	13.0
18	8.0	5.0	0.0	1.0	1.0	3.0	7.0	14.0	20.0	20.0	11.0	12.0
19	8.0	4.0	1.0	1.0	2.0	3.0	6.0	11.0	20.0	21.0	11.0	12.0
20	8.0	4.0	0.0	1.0	1.0	5.0	6.0	13.0	19.0	21.0	15.0	10.0
21	8.0	1.0	2.0	1.0	1.0	5.0	6.0	13.0	19.0	19.0	13.0	10.0
22	7.0	3.0	1.0	1.0	2.0	6.0	7.0	12.0	19.0	21.0	14.0	7.0
23	7.0	2.0	1.0	1.0	1.0	8.0	6.0	10.0	19.0	21.0	14.0	10.0
24	6.0	2.0	1.0	1.0	2.0	7.0	7.0	9.0	16.0	21.0	13.0	13.0
25	6.0	1.0	2.0	0.0	2.0	8.0	6.0	13.0	17.0	21.0	16.0	12.0
26	5.0	0.0	1.0	1.0	2.0	5.0	6.0	13.0	19.0	21.0	14.0	13.0
27	4.0	0.0	0.0	1.0	1.0	4.0	8.0	12.0	20.0	20.0	14.0	12.0
28	4.0	0.0	1.0	0.0	1.0	6.0	9.0	13.0	18.0	22.0	15.0	11.0
29	3.0	0.0	1.0	1.0	2.0	7.0	13.0	14.0	15.0	21.0	16.0	9.0
30	3.0	0.0	1.0	1.0	---	9.0	10.0	14.0	17.0	20.0	16.0	8.0
31	4.0	---	1.0	1.0	---	10.0	---	15.0	---	21.0	15.0	---
AVERAGE	8.5	2.5	1.0	1.0	1.0	4.0	7.5	12.0	16.0	19.5	16.5	13.5

10136500 WEBER RIVER AT GATEWAY, UTAH

LOCATION.--Lat 41°08'15", long 111°49'55", in NW¼SW¼ sec.27, T.5 N., R.1 E., Morgan County, at gaging station on left bank, 400 ft downstream from tailrace of Gateway powerplant, 500 ft upstream from Union Pacific Railroad bridge, 1,200 ft downstream from Strawberry Creek, and 3,200 ft east of section house at Gateway.

DRAINAGE AREA.--1,610 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: May 1958 to September 1968.
Water temperatures: October 1958 to September 1959.

REMARKS.--Flow regulated by Rockport, Echo, and East Canyon Reservoirs.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
02...	294	9.1	--	--	--	--	16	249	0	25	21
NOV.											
06...	233	8.7	67	16	19	3.0	--	258	0	33	24
DEC.											
15...	245	--	--	--	--	--	20	282	0	33	24
FEB.											
26...	289	8.4	44	22	18	--	--	213	0	40	26
MAR.											
19...	379	10	62	17	17	2.4	--	242	0	31	22
APR.											
18...	428	--	--	--	--	--	15	183	0	34	20
JUNE											
13...	1700	8.8	51	16	11	1.8	--	208	0	25	15
JULY											
11...	624	--	--	--	--	--	7.2	229	0	21	15
AUG.											
05...	525	9.4	59	15	12	2.5	--	240	0	25	17
SEPT.											
03...	369	--	--	--	--	--	21	242	0	25	22
30...	312	--	--	--	--	--	17	238	0	30	24
WEIGHTED AVERAGE A	506	8.8	57	14	--	--	15	210	0	30	19

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
02...	--	--	286	.39	227	224	20	.5	479	7.7
NOV.										
06...	.3	1.5	281	.38	177	233	21	.5	510	7.8
DEC.										
15...	--	--	312	.42	206	256	25	.5	538	7.9
FEB.										
26...	--	.2	296	.40	231	200	25	.6	448	7.7
MAR.										
19...	.3	1.6	294	.40	301	224	26	.5	485	7.8
APR.										
18...	--	--	232	.32	268	180	30	.5	398	7.5
JUNE										
13...	.2	1.1	229	.31	1050	192	21	.3	392	8.0
JULY										
11...	--	--	268	.36	452	215	27	.2	441	7.4
AUG.										
05...	.3	.1	258	.35	366	210	13	.4	433	7.8
SEPT.										
03...	--	--	268	.36	267	210	12	.6	462	7.7
30...	--	--	221	.30	186	224	29	.5	481	7.7
WEIGHTED AVERAGE A	--	--	265	.36	362	200	28	.5	440	

A INCLUDES ESTIMATED DATA FOR MISSING PERIODS; INCLUDES 100 PERCENT OF RUNOFF FOR WATER YEAR.

10172200 RED BUTTE CREEK AT FORT DOUGLAS, NEAR SALT LAKE CITY, UTAH
(Hydrologic bench-mark station)

LOCATION.--Lat 40°46'48", long 111°48'19", in NW¼ sec.35, T.1 N., R.1 E., Salt Lake County, at gaging station 0.3 mile upstream from spillway of Red Butte Reservoir, 1.5 miles northeast of Fort Douglas, and 5 miles northeast of Salt Lake City.

DRAINAGE AREA.--7.25 sq mi.

PERIOD OF RECORD.--Chemical analyses: April 1964 to September 1966, August 1967 to September 1968.
Water temperatures: April 1964 to September 1968.
Sediment records: October 1966 to September 1968 (periodic).

EXTREMES.--1967-68:
Water temperatures: Maximum, 22.0°C July 28, 29; minimum, freezing point on many days during January and February.

Period of record:
Water temperatures: Maximum (1964-66, 1967-68), 22.0°C July 28, 29, 1968; minimum, freezing point on many days during winter periods.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	MAN-GANESE (MN)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.											
09...	1.3	12	--	97	28	16	1.0	314	0	119	14
20...	1.4	12	--	92	32	13	1.2	314	0	114	15
DEC.											
22...	1.4	11	--	98	28	12	.8	306	0	116	14
FEB.											
01...	1.1	10	--	97	29	17	.8	310	0	126	15
28...	3.1	9.7	--	96	23	12	.8	263	0	123	14
APR.											
03...	2.9	9.4	--	71	24	9.8	.7	246	0	73	11
APR.											
29...	4.6	9.9	--	72	23	11	.7	265	0	67	13
JUNE											
06...	9.8	12	--	72	23	11	.6	268	0	57	10
JULY											
11...	3.2	11	.06	79	27	12	.7	298	0	73	13
AUG.											
01...	2.3	11	--	69	31	12	.9	276	0	78	12
30...	1.9	11	--	80	30	12	1.0	300	0	82	13

DATE	FLUO-RIDE (F)	NITRATE (NO3)	PHOS-PHATE (PO4)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.											
09...	.3	.1	--	434	.59	1.61	358	101	.4	676	8.0
20...	.6	.0	--	458	.62	1.78	360	103	.3	680	7.8
DEC.											
22...	.4	.4	--	439	.60	1.71	360	109	.3	674	8.1
FEB.											
01...	.3	.3	--	493	.67	1.48	362	107	.4	684	8.2
28...	.2	.3	.06	414	.56	3.54	334	118	.3	633	8.0
MAR.											
03...	.1	.4	.08	325	.44	2.58	276	74	.3	510	8.2
APR.											
29...	.2	.2	.06	332	.45	4.12	276	59	.3	530	8.1
JUNE											
06...	.2	.4	.06	315	.43	8.33	276	56	.3	520	8.2
JULY											
11...	.4	.3	.08	358	.49	3.15	308	64	.3	575	8.2
AUG.											
01...	.4	.4	.05	344	.47	2.15	300	74	.3	561	7.8
30...	.4	.3	.06	385	.52	2.01	324	78	.3	613	8.0

10172200 RED BUTTE CREEK AT FORT DOUGLAS, NEAR SALT LAKE CITY, UTAH--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER																																
MAXIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	12	11	9	9	10	11	11	11	11	11	10	9	9	9	8	7	7	7	8	--
MINIMUM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	5	4	5	6	6	6	6	7	8	5	7	5	4	6	6	3	4	--
NOVEMBER																																
MAXIMUM	8	8	5	7	6	6	7	8	6	8	8	9	9	9	8	8	7	7	8	8	7	6	5	4	4	3	2	2	3	3	--	6
MINIMUM	6	5	3	3	3	3	3	4	4	6	5	6	7	7	5	6	4	4	6	7	6	4	3	3	2	2	2	2	2	2	--	4
DECEMBER																																
MAXIMUM	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	2	1	1	1
MINIMUM	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1
JANUARY																																
MAXIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1
MINIMUM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
FEBRUARY																																
MAXIMUM	1	1	2	2	2	2	2	2	2	3	2	3	1	1	1	2	2	3	5	4	3	4	4	7	7	6	7	6	7	--	--	3
MINIMUM	0	0	0	1	1	1	1	0	0	1	1	1	0	1	1	1	1	2	3	3	3	3	3	3	3	3	1	2	2	--	--	1
MARCH																																
MAXIMUM	7	7	7	8	8	6	4	4	2	6	6	6	4	7	8	7	5	3	5	7	7	8	9	9	9	7	9	11	12	11	12	7
MINIMUM	2	2	2	2	3	3	2	2	1	2	1	1	3	2	2	4	2	2	2	2	2	2	3	4	4	3	3	4	5	6	4	2
APRIL																																
MAXIMUM	11	8	6	9	6	6	6	8	9	11	12	11	9	10	9	9	6	9	8	6	7	7	11	8	8	8	9	12	14	14	--	8
MINIMUM	7	4	4	4	3	3	3	2	2	4	4	6	4	2	4	5	4	2	3	3	3	3	3	4	4	4	4	4	6	6	--	3
MAY																																
MAXIMUM	14	14	14	14	11	9	12	12	10	12	10	12	9	7	8	11	12	13	14	15	13	10	8	8	10	11	13	14	14	11	12	11
MINIMUM	6	6	6	6	7	4	3	4	5	6	6	6	6	5	4	4	4	4	6	8	8	6	3	5	5	5	6	6	8	5	6	5
JUNE																																
MAXIMUM	14	15	15	11	11	14	13	11	12	13	16	17	15	14	17	17	17	18	17	18	18	18	18	17	18	18	18	18	14	15	--	15
MINIMUM	6	7	8	8	8	8	8	9	9	9	8	9	9	8	9	9	10	11	11	11	11	11	11	11	9	10	11	11	9	7	--	9
JULY																																
MAXIMUM	17	18	18	16	19	19	19	20	19	17	19	20	20	20	20	20	20	20	20	21	19	18	21	21	21	22	21	22	22	22	21	19
MINIMUM	8	9	11	12	11	12	12	12	13	13	12	13	12	12	12	13	13	13	12	13	13	13	13	13	14	14	14	14	14	14	14	12
AUGUST																																
MAXIMUM	20	19	19	21	20	21	21	19	19	19	20	21	18	16	17	17	13	11	17	18	17	13	15	16	17	18	19	18	17	18	18	18
MINIMUM	14	14	14	14	14	14	15	15	15	14	14	14	14	13	12	11	11	9	10	12	11	10	9	9	10	11	12	12	10	10	11	12
SEPTEMBER																																
MAXIMUM	18	18	16	16	16	17	17	17	17	18	15	18	18	18	13	12	13	16	16	12	11	11	12	13	14	14	13	13	12	14	--	14
MINIMUM	11	12	10	9	9	10	11	11	10	11	13	12	12	13	10	8	8	9	11	9	7	6	6	8	8	8	8	9	9	9	--	9

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
NOV. 19, 1967	1330	8	1.5	17	--	--				--	--					--
DEC. 26.....	1045	2	2.1	83	--	--				--	--					--
FEB. 1, 1968	1130		1.6	71	--	--				--	--					--
FEB. 28.....	1045	2	3.2	42	--	--				--	--					--
APR. 3.....	1540	6	3.0	22	--	--				--	--					--
APR. 29.....	1040	7	4.6	7	--	--				--	--					--
MAY 29.....	1445		12	11	29	41				90	100					VPWC
JUNE 6.....	1000	8	9.7	61	--	--				--	--					--
JULY 11.....	0925		3.3	38	--	--				--	--					--
AUG. 1.....	1405	20	2.3	21	--	--				--	--					--
AUG. 30.....	1235	14	1.9	43	--	--				--	--					--

10191500 SEVIER RIVER BELOW PIUTE DAM, NEAR MARYSVALE, UTAH
(Irrigation network station)

LOCATION.--Lat 38°19'55", long 112°11'15", in NW¼SE¼ sec.34, T.28 S., R.3 W., Piute County, at gaging station 0.8 mile downstream from Piute Dam and 8 miles south of Marysvale.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
19...	162	--	--	--	--	--	35	254	0	33	14
NOV.											
28...	35	14	42	20	32	4.0	--	268	0	32	13
JAN.											
03...	6.5	--	--	--	--	--	28	296	0	24	12
FEB.											
16...	171	--	--	--	--	--	36	295	0	38	14
MAR.											
21...	199	21	46	22	28	3.5	--	284	0	29	11
APR.											
19...	6.5	--	--	--	--	--	31	256	0	29	13
MAY											
15...	392	19	42	23	29	3.5	--	264	0	28	12
JUNE											
20...	82	--	--	--	--	--	31	260	0	33	12
JULY											
23...	449	--	--	--	--	--	26	267	0	22	12
AUG.											
29...	579	--	46	23	29	4.3	--	292	0	27	14
SEPT.											
19...	324	--	--	--	--	--	39	305	0	27	16
WEIGHTED AVERAGE A	171	--	44	22	29	3.7	--	265	0	32	13

A INCLUDES ESTIMATED DATA FOR MISSING PERIODS; INCLUDES 100 PERCENT OF RUNOFF FOR WATER YEAR.

10191500 SEVIER RIVER BELOW PIUTE DAM, NEAR MARYSVALE, UTAH--Continued

DRAINAGE AREA.--2,440 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: March 1958 to September 1959, February 1961 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
19...	--	--	287	.39	126	186	0	1.1	475	7.6
NOV.										
28...	.4	.3	272	.37	25.7	189	0	1.0	474	8.0
JAN.										
03...	--	--	311	.42	5.46	224	0	.8	506	8.0
FEB.										
16...	--	--	335	.46	155	222	0	1.1	510	8.0
MAR.										
21...	.4	.6	295	.40	159	208	0	.8	486	8.0
APR.										
19...	--	--	278	.38	4.88	192	0	1.0	468	7.7
MAY										
15...	.4	.6	283	.38	300	197	0	.9	466	8.0
JUNE										
20...	--	--	357	.49	79.0	198	0	.9	453	8.1
JULY										
23...	--	--	288	.39	349	202	0	.8	474	8.1
AUG.										
29...	.7	2.0	303	.41	474	212	0	.9	496	7.8
SEPT.										
19...	--	--	320	.44	280	215	0	1.2	507	8.1
WEIGHTED AVERAGE A	--	--	290	--	--	200	0	--	480	--

A INCLUDES ESTIMATED DATA FOR MISSING PERIODS; INCLUDES 100 PERCENT OF RUNOFF FOR WATER YEAR.

10224000 SEVIER RIVER NEAR LYNNDYL UTAH
(Irrigation network station)

LOCATION.--Lat 39°30', long 112°24', in SE¼ sec.23, T.15 S., R.5 W., Millard County, at bridge on county road, 1.5 miles upstream from gaging station and about 2 miles south of Lyndyl.
DRAINAGE AREA.--6,270 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: March 1951 to September 1968.
Water temperatures: March 1951 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,890 mg/l Oct. 11-14; minimum, 902 mg/l Aug. 18, 19.
Hardness: Maximum, 724 mg/l Feb. 22-29; minimum, 400 mg/l Dec. 11-31.
Specific conductance: Maximum daily, 3,020 micromhos Oct. 14; minimum daily, 1,200 micromhos Nov. 5, 6.
Water temperatures: Maximum, 27.0°C on several days during June to August; minimum, 1.0°C on many days during November to February.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-04	26	--	--	--	--	--	254	262	0	316	330
05...	26	--	--	--	--	--	375	306	0	475	465
06-10	25	--	--	--	--	--	264	306	0	317	325
11-14	11	--	--	--	--	--	409	312	0	498	525
15-31	23	--	--	--	--	--	228	286	0	281	305
NOV.											
01-06	48	--	--	--	--	--	173	278	0	241	245
07-27	63	--	--	--	--	--	282	282	0	362	355
28-30	33	--	--	--	--	--	167	270	0	228	238
DEC.											
01-10	30	--	--	--	--	--	222	326	0	300	300
11-31	29	--	--	--	--	--	144	258	4	184	215
JAN.											
01-31	33	--	--	--	--	--	158	306	0	210	240
FEB.											
01-12	39	--	--	--	--	--	161	270	0	217	245
13-21	47	--	--	--	--	--	184	272	0	287	285
22-29	60	--	--	--	--	--	271	292	0	475	410
MAR.											
01-04	45	--	--	--	--	--	258	288	0	400	388
05-23	41	--	--	--	--	--	215	288	0	306	325
24-31	34	--	--	--	--	--	353	304	8	460	495
APR.											
01-17	23	--	--	--	--	--	316	290	0	428	440
18-30	200	--	--	--	--	--	258	318	0	335	330
MAY											
01-31	571	--	--	--	--	--	264	324	0	288	350
JUNE											
01-30	366	--	--	--	--	--	302	300	8	362	360
JULY											
01-31	429	--	--	--	--	--	277	294	12	292	350
AUG.											
01-03	139	--	--	--	--	--	259	290	0	272	350
04-17	27	--	--	--	--	--	328	276	0	382	440
18-19	37	--	--	--	--	--	164	280	0	190	245
20-31	127	--	--	--	--	--	287	286	0	328	375
SEPT.											
01-20	148	--	--	--	--	--	289	282	0	331	370
21-30	23	--	--	--	--	--	402	306	0	488	525
WTD. AVG. TIME	--	--	--	--	--	--	272	304	4	317	361
WTD. AVG. TONS PER DAY	159	--	--	--	--	--	254	293	2	316	379
	--	--	--	--	--	--	115	129	2	133	153

ANALYSES OF ADDITIONAL SAMPLES

DEC.											
06...	A24	16	85	78	208	4.6	--	340	0	280	320
MAR.											
27...	A33	11	84	89	238	5.2	--	300	0	342	360
JUNE											
26...	A622	17	76	71	256	5.9	--	320	0	307	320

A DISCHARGE AT TIME OF SAMPLING.

10224000 SEVIER RIVER NEAR LYNNDYL, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 5,980 mg/l Dec. 25-27, 1962; minimum, 275 mg/l Feb. 3-11, 1962.
Hardness: Maximum, 1,970 mg/l Dec. 29, 30, 1962; minimum, 188 mg/l Feb. 3-11, 1962.
Specific conductance: Maximum daily, 8,300 micromhos Dec. 27, 1962; minimum daily, 431 micromhos Feb. 4, 1962.
Water temperatures: Maximum, 29.5°C July 21-23, 1956, Aug. 9, 10, 1963; minimum, 1.0°C on many days during winter periods.

REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station. Discharges are adjusted to compensate for inflow from deep well discharging to the river between the sampling point and the gaging station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-04	--	--	1440	1.96	104	456	241	5.2	1830	8.2
05...	--	--	1780	2.42	125	586	335	6.7	2500	8.2
06-10	--	--	1240	1.69	85.0	466	215	5.3	1830	8.2
11-14	--	--	1890	2.57	57.2	626	370	7.1	2750	8.2
15-31	--	--	1170	1.59	73.9	462	227	4.6	1760	8.1
NOV.										
01-06	--	--	1010	1.37	132	448	220	3.5	1470	8.2
07-27	--	--	1380	1.88	238	496	265	5.5	2040	8.2
28-30	--	--	992	1.35	88.4	432	211	3.5	1450	8.2
DEC.										
01-10	--	--	1240	1.69	103	520	253	4.2	1800	8.2
11-31	--	--	910	1.24	72.7	400	188	3.1	1330	8.3
JAN.										
01-31	--	--	943	1.28	85.5	464	213	3.2	1470	8.1
FEB.										
01-12	--	--	926	1.26	99.3	444	223	3.3	1490	8.2
13-21	--	--	1110	1.51	144	524	301	3.5	1740	8.2
22-29	--	--	1610	2.19	263	724	485	4.4	2400	8.2
MAR.										
01-04	--	--	1450	1.97	179	640	404	4.4	2220	8.1
05-23	--	--	1210	1.65	135	546	310	4.0	1910	8.2
24-31	--	--	1760	2.39	162	672	410	5.9	2680	8.3
APR.										
01-17	--	--	1530	2.08	97.9	616	378	5.5	2370	8.1
18-30	--	--	1260	1.71	680	514	253	4.9	1990	8.0
MAY										
01-31	--	--	1310	1.78	2020	486	220	5.2	2030	8.1
JUNE										
01-30	--	--	1320	1.80	1300	488	229	5.9	2020	8.3
JULY										
01-31	--	--	1220	1.66	1410	456	195	5.6	1950	8.4
AUG.										
01-03	--	--	1110	1.51	417	450	212	5.3	1920	8.0
04-17	--	--	1500	2.04	113	532	306	6.2	2360	8.0
18-19	--	--	902	1.23	90.6	416	186	3.5	1480	7.9
20-31	--	--	1330	1.81	456	482	245	5.7	2100	7.9
SEPT.										
01-20	--	--	1320	1.80	527	470	239	5.8	2080	7.9
21-30	--	--	1810	2.46	115	625	374	7.0	2810	7.9
WTD. AVG. TIME	--	--	1280	--	--	484	228	--	1990	8.2
WTD. AVG. TONS PER DAY	--	--	1270	--	--	502	258	4.9	1950	8.2
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

DEC.										
06...	.5	2.5	1150	1.58	76.7	534	255	3.9	1860	8.3
MAR.										
27...	.5	2.2	1350	1.74	121	576	330	4.3	2090	8.2
JUNE										
26...	.7	2.0	1230	1.65	2070	480	218	5.1	1960	8.2

10224000 SEVIER RIVER NEAR LYNNDYL, UTAH--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	1730	1840	1370	1490	2430	2670	1990	2040	1960	1940	2010
2	1840	1750	1860	1440	1490	2150	2590	2010	2050	1960	1890	2020
3	1830	1740	1860	1480	1490	2150	2600	2030	2050	1970	1940	2030
4	1840	1220	1740	1480	1500	2120	2210	2020	2050	1980	2570	2040
5	2500	1200	1740	1480	1500	1860	2200	2020	2050	1950	2590	2040
6	1830	1200	1730	1480	1500	1840	2170	2010	2050	1940	2590	2030
7	1830	2050	1840	1480	1490	1850	2160	2010	2040	1950	2610	2030
8	1840	2080	1830	1470	1490	1830	2530	1990	2070	1980	2600	2050
9	1840	2030	1810	1420	1490	1770	2520	2010	2070	1970	2190	2030
10	1840	2070	1790	1400	1490	1770	2540	1990	2050	1980	2140	2030
11	2500	2080	1300	1450	1490	1940	2540	1970	2070	1950	2290	2050
12	2520	2030	1310	1440	1490	1940	2660	1990	1990	1980	2300	2030
13	3000	2130	1330	1470	1730	1940	2680	2010	2030	1920	2330	2010
14	3020	2110	1380	1430	1740	1930	2070	2030	2060	1910	2290	2030
15	1970	2140	1310	1420	1720	1940	2050	2030	1970	1930	1970	2030
16	1990	2080	1300	1430	1740	1990	2020	1980	2040	1940	1960	2050
17	1990	2290	1380	1430	1740	1940	2050	2060	2060	1940	2450	2270
18	1840	2290	1290	1430	1740	1940	1960	2060	2070	1940	1500	2280
19	1780	2310	1350	1440	1730	1910	1960	2060	2060	1940	1470	2270
20	1770	2080	1350	1440	1730	1910	1960	2060	2080	1940	2010	2280
21	1820	2000	1310	1520	1740	1910	1980	2060	2030	1930	2030	2940
22	1820	1990	1380	1510	2330	1920	1970	2050	2030	1910	2070	2950
23	1830	2000	1380	1520	2350	1920	1970	2060	1990	1920	2070	2960
24	1660	1720	1380	1510	2350	2630	1970	2060	2100	1920	2070	2970
25	1650	1690	1320	1520	2420	2680	1990	2040	1970	1910	2070	2800
26	1650	1650	1380	1520	2410	2620	1990	2040	1970	1910	2070	2790
27	1650	1640	1290	1520	2410	2660	1990	2040	1960	1920	2070	2800
28	1560	1480	1380	1520	2410	2650	2000	2030	1960	1910	2070	2790
29	1560	1400	1350	1480	2420	2660	1990	2080	1990	1900	2260	2780
30	1480	1470	1290	1520	---	2660	1980	2080	1990	1910	2270	2300
31	1740	---	1310	1510	---	2660	---	2050	---	1920	2030	---
AVERAGE	1930	1860	1490	1470	1810	2130	2200	2030	2030	1940	2150	2320

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	23	23	22	20	19	18	18	18	18	18	19	19	18	15	14	14	14	15	14	14	13	13	13	12	12	12	12	8	8	8	8	15
NOVEMBER.	8	7	7	8	8	8	9	9	10	10	10	10	10	10	10	10	10	10	10	10	8	8	7	6	6	2	2	2	1	1	--	7
DECEMBER.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
JANUARY..	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FEBRUARY.	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	4	4	6	6	8	9	10	10	11	--	--	3
MARCH....	12	12	13	14	13	10	9	9	9	9	10	10	11	11	13	11	10	9	10	11	12	12	13	12	12	12	11	11	11	11	10	11
APRIL....	11	10	10	12	11	11	13	13	16	16	19	16	16	14	12	12	12	13	14	14	14	14	14	14	13	13	13	14	16	17	--	13
MAY.....	17	17	17	16	12	12	13	13	13	13	13	13	13	13	13	16	21	21	21	21	21	21	21	21	21	21	21	21	22	22	21	17
JUNE.....	21	21	21	21	18	18	19	19	19	21	22	22	22	23	23	24	24	25	25	25	27	27	26	25	24	23	23	23	21	18	--	22
JULY.....	20	22	22	22	22	24	24	24	23	23	24	26	24	24	24	24	24	24	24	24	24	24	26	26	27	24	24	24	24	24	24	23
AUGUST...	26	26	26	26	26	26	27	27	27	27	26	26	23	23	23	23	22	22	22	22	23	23	23	23	23	23	23	24	24	24	22	24
SEPTEMBER	22	22	22	22	22	21	21	21	21	21	21	20	20	20	19	19	18	18	18	16	17	18	18	18	18	18	18	18	18	18	--	19

10244950 STEPTOE CREEK NEAR ELY, NEV.
(Hydrologic bench-mark station)

LOCATION.--Lat 39°12'05", long 114°41'15", in NW¼SW¼ sec.32, T.16 N., R.65 E., White Pine County, temperature recorder at gaging station on left bank, 0.1 mile downstream from Clear Creek, 0.6 mile upstream from Cave Creek, and 11 miles east-southeast of Ely.

DRAINAGE AREA.--11.1 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.
Water temperatures: October 1966 to September 1968.
Sediment records: February to July 1968 (periodic).

EXTREMES.--1967-68:
Water temperatures: Maximum, 11.0°C on several days during May; minimum, 3.0°C Feb. 21.

Period of record:
Water temperatures: Maximum, 11.0°C May 7, 1967, and on several days during May 1968; minimum, 3.0°C Jan. 31, Apr. 5, 1967, Feb. 21, 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
MAR. 21...	3.6	6.3	49	10	1.6	.6	190	0	9.0	.7
JUNE 19...	13	7.7	48	9.1	1.5	.3	180	0	7.0	.8
JULY 24...	7.4	6.5	47	9.5	1.7	.6	186	0	8.0	.9
SEPT. 24...	5.1	6.8	49	10	1.7	4.0	196	0	7.0	.8

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
MAR. 21...	.1	--	.03	.23	1.67	164	8	.1	317	7.9
JUNE 19...	.0	--	.00	.22	5.69	145	1	.1	280	7.9
JULY 24...	.1	.4	.00	.11	1.68	156	3	.1	293	7.8
SEPT. 24...	.1	--	.00	.24	2.38	164	3	.1	305	8.0

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	Dissolved Uranium (µg/l)	Radium (pc/l)	Gross α (µg U/l)	Gross β (pc/l)	Total dissolved solids (mg/l)
JUNE 19...	< 0.4	< 0.1	2.2	0.8	168

10244950 STEPTOE CREEK NEAR ELY, NEV.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCT		NOV		DEC		JAN		FEB		MAR	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	9.0	8.0	8.0	6.0	5.0	4.0	5.0	4.0	5.0	4.0	7.0	5.0
2	9.0	8.0	7.0	6.0	6.0	4.0	5.0	4.0	6.0	4.0	7.0	5.0
3	9.0	8.0	7.0	6.0	5.0	4.0	4.0	4.0	6.0	5.0	7.0	4.0
4	9.0	8.0	7.0	6.0	5.0	4.0	4.0	4.0	6.0	4.0	7.0	5.0
5	8.0	7.0	7.0	7.0	6.0	4.0	4.0	4.0	6.0	4.0	7.0	5.0
6	8.0	7.0	8.0	7.0	5.0	4.0	5.0	4.0	6.0	5.0	6.0	6.0
7	8.0	7.0	7.0	6.0	6.0	4.0	5.0	4.0	6.0	5.0	7.0	5.0
8	9.0	7.0	8.0	6.0	4.0	4.0	5.0	4.0	6.0	5.0	6.0	4.0
9	9.0	7.0	7.0	6.0	5.0	4.0	5.0	4.0	6.0	6.0	6.0	5.0
10	9.0	7.0	7.0	6.0	5.0	4.0	5.0	4.0	6.0	6.0	6.0	5.0
11	9.0	7.0	8.0	6.0	5.0	4.0	4.0	4.0	6.0	5.0	7.0	5.0
12	9.0	7.0	8.0	7.0	5.0	4.0	5.0	4.0	6.0	4.0	6.0	5.0
13	9.0	7.0	8.0	7.0	4.0	4.0	5.0	4.0	5.0	4.0	6.0	6.0
14	8.0	7.0	8.0	7.0	5.0	4.0	5.0	5.0	5.0	4.0	7.0	6.0
15	8.0	6.0	8.0	7.0	5.0	4.0	6.0	5.0	6.0	4.0	8.0	6.0
16	8.0	6.0	8.0	6.0	5.0	4.0	6.0	5.0	6.0	4.0	8.0	6.0
17	8.0	7.0	8.0	7.0	4.0	4.0	5.0	4.0	6.0	4.0	6.0	6.0
18	8.0	7.0	8.0	7.0	5.0	4.0	5.0	4.0	6.0	4.0	7.0	6.0
19	8.0	7.0	7.0	7.0	5.0	4.0	6.0	4.0	7.0	6.0	6.0	6.0
20	8.0	7.0	8.0	7.0	4.0	4.0	6.0	5.0	6.0	5.0	7.0	6.0
21	8.0	7.0	7.0	6.0	4.0	4.0	6.0	5.0	5.0	3.0	7.0	4.0
22	8.0	7.0	6.0	5.0	5.0	4.0	6.0	5.0	5.0	4.0	7.0	4.0
23	8.0	7.0	6.0	6.0	5.0	5.0	6.0	4.0	6.0	5.0	7.0	5.0
24	8.0	6.0	7.0	6.0	5.0	4.0	6.0	5.0	6.0	4.0	7.0	4.0
25	8.0	7.0	6.0	6.0	6.0	5.0	6.0	5.0	7.0	4.0	8.0	5.0
26	8.0	6.0	6.0	5.0	6.0	6.0	6.0	5.0	6.0	4.0	7.0	4.0
27	8.0	6.0	6.0	5.0	6.0	6.0	5.0	4.0	6.0	4.0	8.0	4.0
28	7.0	6.0	6.0	4.0	6.0	4.0	5.0	4.0	7.0	4.0	8.0	5.0
29	7.0	6.0	6.0	4.0	4.0	4.0	6.0	4.0	7.0	4.0	9.0	6.0
30	7.0	6.0	5.0	4.0	4.0	4.0	5.0	4.0	---	---	8.0	5.0
31	8.0	6.0	---	---	5.0	4.0	5.0	4.0	---	---	7.0	5.0
AVERAGE	8.0	7.0	7.0	6.0	5.0	4.0	5.0	4.5	6.0	4.5	7.0	5.0

	APR		MAY		JUN		JUL		AUG		SEP	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	4.0	10.0	6.0	9.0	7.0	9.0	7.0	9.0	8.0	9.0	7.0
2	5.0	4.0	8.0	6.0	9.0	7.0	9.0	7.0	9.0	8.0	9.0	7.0
3	6.0	5.0	8.0	6.0	8.0	7.0	9.0	7.0	9.0	8.0	9.0	7.0
4	8.0	4.0	9.0	6.0	8.0	7.0	9.0	7.0	10.0	8.0	9.0	7.0
5	7.0	4.0	8.0	6.0	7.0	7.0	8.0	7.0	10.0	8.0	9.0	7.0
6	7.0	4.0	8.0	5.0	7.0	6.0	8.0	7.0	10.0	8.0	9.0	7.0
7	7.0	4.0	9.0	4.0	7.0	6.0	9.0	7.0	10.0	8.0	10.0	7.0
8	8.0	4.0	9.0	6.0	7.0	6.0	9.0	7.0	9.0	8.0	9.0	7.0
9	8.0	4.0	8.0	6.0	8.0	6.0	9.0	8.0	9.0	8.0	10.0	8.0
10	9.0	5.0	7.0	6.0	7.0	6.0	9.0	8.0	9.0	8.0	9.0	8.0
11	9.0	5.0	7.0	6.0	8.0	6.0	8.0	7.0	9.0	8.0	9.0	8.0
12	8.0	6.0	8.0	6.0	9.0	6.0	9.0	7.0	9.0	8.0	10.0	8.0
13	8.0	4.0	7.0	6.0	8.0	6.0	9.0	7.0	9.0	8.0	9.0	8.0
14	8.0	4.0	8.0	6.0	8.0	6.0	9.0	7.0	8.0	7.0	9.0	7.0
15	8.0	5.0	9.0	6.0	8.0	7.0	9.0	7.0	9.0	7.0	9.0	7.0
16	7.0	4.0	10.0	6.0	8.0	6.0	9.0	7.0	9.0	7.0	8.0	6.0
17	6.0	4.0	11.0	6.0	8.0	6.0	9.0	7.0	9.0	7.0	9.0	6.0
18	7.0	4.0	9.0	7.0	8.0	7.0	9.0	7.0	7.0	7.0	9.0	7.0
19	6.0	4.0	11.0	7.0	9.0	6.0	9.0	7.0	9.0	7.0	9.0	7.0
20	6.0	4.0	11.0	8.0	9.0	7.0	9.0	7.0	9.0	7.0	7.0	7.0
21	6.0	4.0	10.0	7.0	9.0	7.0	9.0	8.0	8.0	7.0	7.0	6.0
22	7.0	4.0	9.0	7.0	9.0	7.0	9.0	8.0	8.0	7.0	8.0	6.0
23	8.0	4.0	9.0	7.0	9.0	7.0	10.0	8.0	9.0	6.0	8.0	6.0
24	7.0	5.0	9.0	7.0	8.0	7.0	9.0	8.0	9.0	7.0	---	---
25	8.0	4.0	11.0	7.0	9.0	7.0	9.0	8.0	8.0	7.0	---	---
26	9.0	5.0	11.0	7.0	9.0	7.0	9.0	8.0	9.0	7.0	---	---
27	8.0	5.0	11.0	7.0	9.0	7.0	10.0	8.0	10.0	8.0	---	---
28	9.0	4.0	11.0	8.0	9.0	7.0	9.0	8.0	9.0	7.0	---	---
29	9.0	5.0	9.0	7.0	8.0	7.0	10.0	8.0	9.0	7.0	---	---
30	10.0	6.0	8.0	7.0	8.0	6.0	9.0	8.0	9.0	7.0	---	---
31	---	---	9.0	7.0	---	---	9.0	8.0	9.0	7.0	---	---
AVERAGE	7.5	4.5	9.0	6.5	8.0	6.5	9.0	7.5	9.0	7.5	---	---

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT CONCENTRATION, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)
FEB. 21, 1968.....	0900	3	4.2	22
JULY 24.....	1145	9	7.4	15

10249300 SOUTH TWIN RIVER NEAR ROUND MOUNTAIN, NEV.
(Hydrologic bench-mark station)

LOCATION.--Lat 38°53'00", long 117°14'35", in SE¼ sec.22, T.12 N., R.42 E., Nye County, temperature recorder at gaging station on right bank, 600 ft upstream from diversion, 3 miles west of State Highway 8A, and 15 miles northwest of Round Mountain.

DRAINAGE AREA.--20 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1967 to September 1968.
Water temperatures: April 1966 to September 1968.
Sediment records: October 1967 to September 1968 (periodic).

EXTREMES.--1967-68:
Water temperatures: Maximum, 16.0°C on several days during July; minimum, freezing point on several days during February.

Period of record:
Water temperatures: Maximum, 17.0°C July 25, 29, 1966; minimum, freezing point on several days during February in 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.										
28...	2.2	19	20	1.3	6.6	1.1	74	0	5.0	2.7
MAR.										
15...	3.1	18	19	1.5	6.2	.7	7[illegible]	[illegible]	7.[illegible]	1.9
APR.										
16...	7.2	18	18	1.5	6.1	.8	65	[illegible]	7.[illegible]	1.8
JUNE										
20...	8.8	20	11	1.0	4.8	.5	47	[illegible]	4.[illegible]	1.2
JULY										
23...	2.4	20	16	1.3	6.2	.9	62	[illegible]	5.0	1.1
AUG.										
15...	3.1	20	17	1.5	6.3	.9	68	0	5.0	1.0
SEPT.										
12...	1.2	21	18	1.5	6.6	.8	72	0	7.[illegible]	1.3

DATE	FLUO-RIDE (F)	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.											
28...	.2	.5	.02	97	.13	.58	56	[illegible]	.4	134	7.6
MAR.											
15...	.2	.1	.00	--	.12	.74	54	[illegible]	.4	137	7.6
APR.											
16...	.2	--	.07	--	.12	1.67	51	[illegible]	.4	136	7.7
JUNE											
20...	.1	--	.00	--	.09	1.67	32	[illegible]	.4	93	7.4
JULY											
23...	.2	--	.00	--	.07	.67	46	[illegible]	.4	113	7.5
AUG.											
15...	.2	.0	.00	--	--	--	48	0	.4	124	7.4
SEPT.											
12...	.1	--	.00	--	.13	.30	51	[illegible]	.4	133	7.5

QUANTITATIVE SPECTROGRAPHIC ANALYSES IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME (24 hr)	Aluminum (Al)	Beryllium (Be)	Bismuth (Bi)	Cadmium (Cd)	Chromium (Cr)	Cobalt (Co)	Copper (Cu)	Gallium (Ga)	Germanium (Ge)	Iron (Fe)	Lead (Pb)	Manganese (Mn)	Molybdenum (Mo)	Nickel (Ni)	Titanium (Ti)	Vanadium (V)	Zinc (Zn)
OCT																		
28...	1115	17	<0.6	<0.3	<1.4	<1.4	<1.4	<1.4	<5.7	<0.3	9.4	14	<1.4	11	1.1	<0.6	<0.6	<5.7
JUNE																		
20...	1010	31	< .6	< .3	<1.4	<1.4	<1.4	26	<5.7	< .3	69	< 1.4	20	< .3	<.3	< .6	< .3	<5.7

PESTICIDE ANALYSES IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME (24 hr)	Aldrin	DDD	DDE	DDT	Dieldrin	Endrin	Heptachlor	Heptachlor Epoxide	Lindane	2, 4-D	Silvex	2, 4, 5-T
OCT													
28...	1115	0.00	0.00	.00	0.00	0.00	0.00	0.00	0.00	0.00			
JUNE													
20...	1010	.00	.00	.00	.00	.00	.00	.00	.00	.00	0.00	0.00	0.00

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	Dissolved Uranium (µg/l)	Radium (pc/l)	Gross α (µg U/l)	Gross β (pc/l)	Total dissolved solids (mg/l)
OCT					
28...	1.5	< 0.1	3.2	4.4	99
JUNE					
20...	.7	< .1	4.2	1.8	67

10249300 SOUTH TWIN RIVER NEAR ROUND MOUNTAIN, NEV.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCT		NOV		DEC		JAN		FEB		MAR	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	11.0	10.0	8.0	6.0	3.0	2.0	1.0	1.0	0.0	0.0	3.0	2.0
2	11.0	9.0	7.0	6.0	2.0	1.0	1.0	1.0	1.0	0.0	4.0	2.0
3	11.0	9.0	7.0	4.0	3.0	2.0	1.0	1.0	1.0	1.0	4.0	2.0
4	11.0	8.0	8.0	6.0	2.0	2.0	1.0	1.0	1.0	1.0	4.0	2.0
5	10.0	8.0	7.0	7.0	3.0	2.0	1.0	1.0	2.0	1.0	4.0	3.0
6	8.0	7.0	7.0	6.0	2.0	2.0	1.0	1.0	2.0	1.0	3.0	2.0
7	10.0	7.0	7.0	6.0	3.0	2.0	1.0	1.0	2.0	1.0	3.0	2.0
8	9.0	8.0	8.0	7.0	2.0	2.0	1.0	1.0	2.0	1.0	4.0	3.0
9	10.0	8.0	7.0	6.0	1.0	1.0	2.0	1.0	2.0	0.0	3.0	2.0
10	10.0	8.0	7.0	6.0	1.0	1.0	2.0	1.0	0.0	0.0	3.0	2.0
11	11.0	9.0	8.0	6.0	2.0	1.0	1.0	1.0	1.0	0.0	3.0	1.0
12	10.0	9.0	8.0	7.0	2.0	1.0	1.0	1.0	1.0	0.0	5.0	2.0
13	10.0	8.0	9.0	8.0	1.0	1.0	1.0	1.0	1.0	1.0	4.0	3.0
14	9.0	7.0	8.0	8.0	1.0	1.0	2.0	1.0	1.0	1.0	4.0	2.0
15	7.0	6.0	8.0	7.0	1.0	1.0	2.0	2.0	1.0	0.0	4.0	2.0
16	8.0	6.0	8.0	7.0	1.0	1.0	2.0	1.0	1.0	0.0	4.0	2.0
17	8.0	8.0	8.0	7.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0
18	9.0	7.0	8.0	7.0	1.0	1.0	1.0	1.0	2.0	1.0	2.0	1.0
19	8.0	7.0	8.0	7.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.0
20	8.0	7.0	8.0	7.0	1.0	1.0	2.0	1.0	2.0	2.0	4.0	1.0
21	9.0	7.0	7.0	5.0	1.0	1.0	2.0	2.0	2.0	2.0	4.0	1.0
22	8.0	7.0	5.0	4.0	2.0	1.0	2.0	2.0	2.0	2.0	4.0	2.0
23	8.0	8.0	5.0	4.0	2.0	2.0	2.0	1.0	3.0	2.0	6.0	2.0
24	8.0	7.0	5.0	4.0	2.0	2.0	2.0	1.0	3.0	2.0	5.0	2.0
25	8.0	7.0	4.0	3.0	2.0	2.0	2.0	1.0	3.0	2.0	6.0	3.0
26	8.0	6.0	4.0	3.0	2.0	2.0	2.0	2.0	3.0	2.0	5.0	2.0
27	8.0	6.0	3.0	2.0	2.0	2.0	2.0	1.0	3.0	2.0	6.0	2.0
28	9.0	7.0	3.0	3.0	2.0	2.0	1.0	1.0	3.0	2.0	7.0	3.0
29	7.0	5.0	3.0	2.0	2.0	2.0	1.0	1.0	3.0	2.0	7.0	4.0
30	7.0	4.0	3.0	3.0	2.0	1.0	1.0	1.0	---	---	7.0	4.0
31	8.0	6.0	---	---	1.0	1.0	1.0	1.0	---	---	7.0	4.0
AVERAGE	9.0	7.5	6.5	5.5	1.5	1.5	1.5	1.0	2.0	1.0	4.5	2.0

	APR		MAY		JUN		JUL		AUG		SEP	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	6.0	4.0	10.0	6.0	12.0	7.0	12.0	8.0	14.0	12.0	14.0	11.0
2	4.0	2.0	9.0	6.0	12.0	8.0	13.0	9.0	14.0	12.0	14.0	12.0
3	6.0	3.0	8.0	6.0	11.0	8.0	11.0	9.0	15.0	12.0	13.0	10.0
4	6.0	3.0	9.0	6.0	10.0	8.0	12.0	10.0	14.0	12.0	13.0	9.0
5	6.0	3.0	9.0	6.0	9.0	7.0	13.0	10.0	15.0	11.0	13.0	10.0
6	5.0	2.0	8.0	4.0	7.0	6.0	12.0	10.0	15.0	11.0	14.0	11.0
7	6.0	2.0	8.0	4.0	7.0	5.0	13.0	11.0	14.0	13.0	14.0	11.0
8	6.0	2.0	8.0	6.0	8.0	7.0	12.0	11.0	13.0	13.0	14.0	11.0
9	7.0	3.0	8.0	6.0	9.0	6.0	12.0	11.0	14.0	12.0	14.0	12.0
10	8.0	4.0	8.0	6.0	9.0	6.0	13.0	11.0	14.0	12.0	13.0	12.0
11	7.0	4.0	7.0	6.0	11.0	7.0	14.0	10.0	14.0	12.0	13.0	11.0
12	7.0	4.0	7.0	6.0	10.0	7.0	14.0	11.0	13.0	12.0	---	---
13	6.0	3.0	6.0	4.0	10.0	7.0	14.0	11.0	12.0	9.0	---	---
14	7.0	3.0	7.0	4.0	11.0	7.0	15.0	11.0	11.0	9.0	---	---
15	7.0	4.0	8.0	4.0	11.0	8.0	15.0	12.0	12.0	9.0	---	---
16	7.0	4.0	8.0	4.0	12.0	8.0	16.0	12.0	12.0	10.0	---	---
17	4.0	3.0	9.0	5.0	12.0	9.0	14.0	11.0	11.0	8.0	---	---
18	6.0	2.0	9.0	7.0	13.0	9.0	15.0	11.0	11.0	9.0	---	---
19	6.0	3.0	9.0	7.0	12.0	9.0	15.0	11.0	13.0	9.0	---	---
20	6.0	3.0	10.0	7.0	12.0	9.0	16.0	12.0	11.0	10.0	---	---
21	4.0	2.0	9.0	6.0	13.0	9.0	16.0	12.0	10.0	8.0	---	---
22	6.0	2.0	8.0	5.0	13.0	9.0	16.0	12.0	9.0	8.0	---	---
23	7.0	3.0	7.0	5.0	13.0	10.0	16.0	11.0	11.0	8.0	---	---
24	8.0	4.0	9.0	5.0	12.0	9.0	16.0	12.0	12.0	8.0	---	---
25	7.0	4.0	9.0	6.0	12.0	9.0	16.0	12.0	12.0	9.0	---	---
26	9.0	4.0	11.0	6.0	13.0	9.0	16.0	13.0	12.0	9.0	---	---
27	8.0	4.0	11.0	7.0	14.0	10.0	16.0	12.0	12.0	9.0	---	---
28	9.0	4.0	12.0	7.0	13.0	10.0	16.0	13.0	13.0	9.0	---	---
29	10.0	5.0	11.0	7.0	11.0	8.0	14.0	13.0	13.0	10.0	---	---
30	9.0	5.0	11.0	7.0	11.0	7.0	14.0	13.0	13.0	10.0	---	---
31	---	---	11.0	7.0	---	---	13.0	13.0	14.0	11.0	---	---
AVERAGE	6.5	3.5	9.0	5.5	11.0	8.0	14.5	11.0	12.5	10.0	---	---

PERIODIC DETERMINATIONS OF SUSPENDED-SEDIMENT CONCENTRATION, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)
OCT. 28, 1967.....	1100	8	2.2	20
DEC. 21.....	1315	1	1.6	4
FEB. 19, 1968.....	1600	3	4.2	44
MAR. 15.....	1145	3	2.9	6
APR. 16.....	1545	7	7.1	8
MAY 23.....	1535	7	14	35
JULY 23.....	1255	14	2.4	6
AUG. 15.....	0930	9	3.2	6
SEPT.12.....	1425	13	1.2	5

10256000 WHITEWATER RIVER AT WHITE WATER, CALIF.

LOCATION.--Lat 33°56'48", long 116°38'24", in NW¼NW¼NE¼ sec.2, T.3 S., R.3 E., Riverside County, at gaging station 1.5 miles north of White Water and 3.5 miles upstream from San Gorgonio River.

DRAINAGE AREA.--57.4 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1968.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	BORON (B)
NOV.												
03...	22	49	12	13	4.0	161	19	31	4.0	1.0	1.5	.02
JAN.												
22...	16	48	13	14	4.0	200	0	34	4.0	.9	1.8	.00
MAR.												
04...	22	46	12	12	4.0	193	0	32	4.0	.9	1.6	.00
MAY												
06...	18	44	13	14	5.0	182	0	34	6.0	1.1	1.2	.00
SEPT.												
09...	8.0	48	13	14	5.0	196	0	37	4.0	1.0	1.7	.00

DATE	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	DISSOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)	DISSOLVED OXYGEN
NOV.												
03...	225	213	172	8	.31	14	.4	163	377	8.4	20	10.0
JAN.												
22...	219	217	173	9	.30	15	.5	164	364	8.2	15	9.0
MAR.												
04...	234	209	169	11	.32	13	.4	158	384	8.2	15	9.0
MAY												
06...	191	207	163	14	.26	15	.5	149	394	8.2	20	8.3
SEPT.												
09...	219	219	173	12	.30	14	.5	161	378	8.1	26	7.2

10261100 MOJAVE RIVER AT THE FORKS, NEAR CEDAR SPRINGS, CALIF.

LOCATION.--Lat 34°20'35", long 117°14'01", in SW¼ sec.18, T.3 N., R.3 W., San Bernardino County, 100 ft downstream from confluence of Deep Creek and West Fork Mojave River and 12 miles south of Apple Valley.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1968.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)
OCT.												
05...	12	5.0	12	2.0	73	0	5.0	9.0	.3	1.5	.04	115
NOV.												
09...	19	5.0	27	2.0	112	0	23	7.0	1.5	.0	.06	160
DEC.												
13...	22	5.0	17	2.0	112	0	15	9.0	.6	.5	.04	148
JAN.												
12...	17	4.0	16	1.0	88	0	12	7.0	.7	.5	.01	114
MAR.												
12...	19	4.0	13	2.0	88	0	9.0	8.0	.4	1.2	.00	136
APR.												
02...	13	4.0	12	1.0	76	0	5.0	6.0	.5	.0	.00	118
JULY												
24...	22	4.0	48	3.0	88	6	56	10	2.4	.0	.00	212

DATE	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	DISSOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)	DISSOLVED OXYGEN
OCT.											
05...	93	50	0	.16	33	.7	60	154	7.2	12	11.2
NOV.											
09...	138	68	0	.22	45	1.4	92	250	8.1	15	8.7
DEC.											
13...	127	80	0	.20	31	.8	92	236	7.9	2	12.5
JAN.											
12...	101	59	0	.16	37	.9	72	180	7.7	7	12.3
MAR.											
12...	100	64	0	.18	30	.7	72	198	7.9	13	9.4
APR.											
02...	79	49	0	.16	34	.7	62	158	7.8	11	14.9
JULY											
24...	183	71	0	.29	52	2.0	82	327	8.9	28	13.0

10261500 MOJAVE RIVER AT LOWER NARROWS, NEAR VICTORVILLE, CALIF.

LOCATION.--Lat 34°34'22", long 117°19'08", in SW¼SW¼SE¼ sec.29, T.6 N., R.4 W., San Bernardino County, at gaging station 1,000 ft upstream from bridge on county road, formerly U.S. Highway 66, 2,500 ft downstream from Atchison, Topeka and Santa Fe Railway bridge, and 3 miles northwest of Victorville.

DRAINAGE AREA.--514 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1968.
Water temperatures: March 1962 to September 1965.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)	NITRATE (NO3)	BORON (B)
OCT.												
05...	19	40	13	56	5.0	224	0	44	32	.6	6.5	.08
NOV.												
09...	29	40	10	52	5.0	217	0	36	29	.6	4.0	.09
DEC.												
13...	42	39	10	44	5.0	205	0	38	24	.5	4.5	.12
JAN.												
12...	39	41	9.0	45	5.0	199	0	38	22	.5	4.5	.07
FEB.												
09...	44	40	9.0	40	4.0	189	0	35	20	.5	5.5	.05
MAR.												
13...	32	42	10	42	4.0	201	0	36	24	.5	4.8	.08
APR.												
02...	28	42	11	48	5.0	211	0	38	25	.6	3.0	.11
MAY												
01...	21	44	11	44	5.0	205	0	40	28	.4	5.0	.10
JUNE												
13...	20	42	10	48	5.0	200	0	44	26	.6	3.7	.11
JULY												
24...	10	45	10	56	6.0	221	0	49	32	.7	2.0	.15

DATE	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	DISSOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)	DISSOLVED OXYGEN
OCT.												
05...	365	307	153	0	.50	43	2.0	184	519	7.8	14	12.5
NOV.												
09...	310	283	141	0	.42	43	1.9	178	493	7.9	18	9.3
DEC.												
13...	287	265	138	0	.39	40	1.6	168	478	7.5	4	11.2
JAN.												
12...	275	262	139	0	.37	40	1.7	163	437	8.1	11	10.6
FEB.												
09...	276	247	137	0	.38	38	1.5	155	451	7.9	11	11.3
MAR.												
13...	298	262	146	0	.41	38	1.5	165	475	7.9	12	8.6
APR.												
02...	317	276	150	0	.43	40	1.7	173	506	8.2	19	10.6
MAY												
01...	293	276	155	0	.40	37	1.5	168	517	8.2	16	10.5
JUNE												
13...	323	277	146	0	.44	41	1.7	164	504	7.1	28	5.6
JULY												
24...	345	309	153	0	.47	43	2.0	181	543	8.1	25	9.3

10263500 BIG ROCK CREEK NEAR VALYERMO, CALIF.

LOCATION.--Lat 34°25'15", long 117°50'19", in NW¼SE¼NE¼ sec.20, T.4 N., R.9 W., Los Angeles County, temperature recorder at gaging station 0.1 mile upstream from Punchbowl Canyon and 1.9 miles southeast of Valyermo.

DRAINAGE AREA.--22.9 sq mi.

PERIOD OF RECORD.--Water temperatures: January 1962 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 21.0°C on many days in July and August; minimum, 4.0°C Jan. 27.

Period of record:
Water temperatures: Maximum, 21.0°C on many days in 1967 and 1968; minimum, 4.0°C Jan. 27, 1968.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	DAY																													AVER-
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AGE
OCTOBER																																
MAXIMUM	19	18	19	19	19	17	17	18	18	18	18	18	18	18	16	16	17	17	17	17	17	17	17	17	17	17	17	17	14	14	16	17
MINIMUM	13	13	13	13	12	11	11	11	12	12	13	13	12	12	11	9	9	10	11	11	11	11	10	11	11	11	11	12	11	10	11	11
NOVEMBER																																
MAXIMUM	17	16	16	16	15	16	16	15	16	14	14	15	15	16	16	14	16	15	12	12	12	13	13	13	13	14	13	12	12	12	--	14
MINIMUM	11	11	11	10	11	12	11	11	10	9	10	11	11	12	10	10	12	12	10	11	11	11	11	10	11	11	10	10	9	10	--	10
DECEMBER																																
MAXIMUM	12	12	12	12	13	12	13	12	11	12	13	11	8	8	9	11	10	9	9	9	8	9	11	11	11	11	11	11	11	10	9	10
MINIMUM	10	9	9	9	9	9	9	9	9	9	9	8	6	6	6	8	8	8	8	7	6	6	7	8	8	9	8	8	8	7	7	7
JANUARY																																
MAXIMUM	11	9	9	9	9	9	8	8	9	10	9	8	8	9	10	10	10	9	10	11	11	9	11	11	10	9	8	9	9	9	10	9
MINIMUM	7	7	6	6	6	6	6	7	7	7	6	6	6	7	7	7	6	6	7	7	7	7	7	9	7	4	6	6	6	7		6
FEBRUARY																																
MAXIMUM	9	12	11	10	11	11	11	10	9	9	9	10	9	11	9	10	11	11	11	12	13	11	12	12	12	11	12	10	11	--	--	10
MINIMUM	7	8	7	7	7	7	7	7	7	6	6	6	7	6	6	8	8	7	7	8	7	7	8	7	7	8	8	7	6	--	--	7
MARCH																																
MAXIMUM	11	11	12	12	12	11	9	11	10	11	11	9	10	12	11	12	11	9	11	11	12	12	12	13	13	13	13	14	14	14	13	11
MINIMUM	6	7	7	7	7	7	7	7	7	7	6	7	6	6	6	7	6	6	6	6	6	7	6	6	8	8	7	7	7	7	8	6
APRIL																																
MAXIMUM	12	13	13	14	13	13	14	14	14	14	14	15	14	16	14	13	13	13	14	14	14	14	14	16	16	16	16	16	16	16	--	14
MINIMUM	7	7	7	7	8	7	7	7	7	7	8	8	7	8	8	8	8	7	7	7	7	7	7	8	8	9	9	9	8	9	--	7
MAY																																
MAXIMUM	16	12	15	17	16	16	15	13	16	17	16	13	15	16	17	17	18	18	18	18	18	17	17	17	18	18	19	19	19	18	18	16
MINIMUM	9	9	9	9	9	9	9	9	9	9	9	9	8	8	8	9	9	10	11	11	9	9	9	9	10	11	11	11	11	11	11	9
JUNE																																
MAXIMUM	19	19	19	18	17	17	17	17	17	18	18	18	19	19	19	19	18	19	19	19	19	19	19	19	20	20	20	19	19	19	--	18
MINIMUM	11	11	11	12	11	11	11	10	11	11	11	10	11	11	11	11	11	12	11	11	11	12	12	12	13	13	12	11	11	--		11
JULY																																
MAXIMUM	19	19	19	20	20	17	19	17	19	20	21	21	20	20	21	21	21	21	20	19	21	20	19	19	20	20	17	17	18	21	21	19
MINIMUM	12	12	11	12	13	13	13	13	13	12	12	13	13	12	13	13	12	12	13	13	13	13	13	14	13	13	14	14	14	14	14	12
AUGUST																																
MAXIMUM	21	21	21	21	21	21	19	20	21	20	20	19	18	19	19	17	17	17	18	18	17	17	17	17	17	17	17	17	17	17	18	18
MINIMUM	14	13	13	13	14	14	15	14	13	13	13	13	13	12	11	14	14	14	14	14	14	13	13	14	14	14	14	14	14	14	14	13
SEPTEMBER																																
MAXIMUM	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	17	19	18	16	16	16	17	17	18	18	18	17	17	17	--	17
MINIMUM	15	14	14	14	15	15	15	15	15	15	14	14	14	14	14	14	14	12	12	11	11	11	11	11	12	12	12	12	12	12	--	13

10278300 LOS ANGELES AQUEDUCT AT OUTLET, AT SAN FERNANDO, CALIF.

LOCATION.--Lat 34°18'46", long 118°29'32" (unsurveyed), Los Angeles County, in Mission de San Fernando substation at Los Angeles Aqueduct outlet at upper end of Van Norman Lake at San Fernando.

PERIOD OF RECORD.--Chemical analyses: October 1966 to September 1968.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
OCT.									
17...	495	19	21	4.0	30	4.0	28	12	.4
NOV.									
14...	464	19	22	5.0	31	4.0	28	13	.5
DEC.									
19...	405	18	24	6.0	31	4.0	33	14	.4
JAN.									
16...	409	19	24	6.0	34	4.0	28	14	.5
FEB.									
20...	439	21	25	6.0	36	4.0	30	16	.7
MAR.									
19...	442	23	25	6.0	43	4.0	36	16	.6
APR.									
22...	485	23	27	7.0	41	4.0	30	17	.6
MAY									
21...	495	23	25	6.0	44	4.0	30	17	.6
JUNE									
18...	497	22	26	5.0	36	4.0	26	15	.6
JULY									
16...	492	22	24	5.0	33	4.0	26	14	.6
AUG.									
20...	502	22	24	5.0	31	4.0	24	13	.5
SEPT.									
17...	502	22	23	6.0	33	4.0	22	14	.6

DATE	NITRATE (NO3)	BORON (B)	HARD-NESS (CA,MG)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN
OCT.									
17...	.5	.48	69	47	1.6	291	8.2	18	8.4
NOV.									
14...	.4	.40	75	46	1.6	322	8.3	15	9.6
DEC.									
19...	.2	.39	85	43	1.5	335	8.5	9	11.2
JAN.									
16...	.4	.40	85	45	1.6	339	8.2	5	12.0
FEB.									
20...	.5	.49	87	46	1.7	348	8.4	7	11.6
MAR.									
19...	.5	.79	87	50	2.0	368	8.4	10	10.8
APR.									
22...	.3	.52	91	47	1.8	372	8.2	13	9.8
MAY									
21...	.4	.45	87	51	2.1	363	8.1	--	10.1
JUNE									
18...	.5	.51	85	46	1.7	345	8.2	19	8.4
JULY									
16...	.4	.40	80	46	1.6	329	8.1	22	8.0
AUG.									
20...	.5	.50	80	44	1.5	320	8.4	22	8.4
SEPT.									
17...	1.1	.45	82	45	1.6	313	8.3	21	8.2

10309000 EAST FORK CARSON RIVER NEAR GARDNERVILLE, NEV.

LOCATION.--Lat 38°50'50", long 119°42'10", in SW¼NE¼ sec.2, T.11 N., R.20 E., Douglas County, temperature recorder at gaging station on left bank, 0.1 mile downstream from Horseshoe Bend, 2 miles east of Mud Lake Reservoir, 4.5 miles downstream from Bryant Creek, and 7 miles southeast of Gardnerville.

DRAINAGE AREA.--341 sq mi.

PERIOD OF RECORD.--Water temperatures: July 1955 to September 1968.

EXTREMES.--1967-68:
Water temperatures: Maximum, 19.0°C on several days during July.

Period of record:
Water temperatures: Maximum (1955-65, 1966-68), 29.5°C Aug. 7, 1960; minimum (1955-63, 1963-67), freezing point on many days during winter months of most years.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCT		NOV		DEC		JAN		FEB		MAR	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	14.0	13.0	7.0	6.0	3.0	2.0	---	---	---	---	7.0	6.0
2	13.0	12.0	8.0	7.0	2.0	2.0	---	---	---	---	8.0	6.0
3	12.0	11.0	8.0	6.0	2.0	2.0	---	---	---	---	8.0	6.0
4	12.0	9.0	7.0	7.0	2.0	2.0	---	---	---	---	8.0	6.0
5	11.0	9.0	8.0	7.0	3.0	2.0	---	---	---	---	8.0	7.0
6	11.0	9.0	8.0	7.0	3.0	2.0	---	---	---	---	8.0	6.0
7	11.0	9.0	8.0	7.0	2.0	2.0	---	---	---	---	7.0	6.0
8	11.0	9.0	8.0	7.0	2.0	2.0	---	---	---	---	6.0	4.0
9	11.0	10.0	8.0	7.0	2.0	2.0	---	---	---	---	6.0	4.0
10	11.0	10.0	7.0	6.0	2.0	1.0	---	---	---	---	7.0	4.0
11	11.0	10.0	7.0	6.0	2.0	1.0	---	---	---	---	6.0	4.0
12	11.0	11.0	7.0	6.0	2.0	2.0	---	---	---	---	6.0	4.0
13	12.0	11.0	7.0	7.0	---	---	---	---	---	---	6.0	5.0
14	12.0	11.0	8.0	7.0	---	---	---	---	---	---	7.0	4.0
15	11.0	9.0	8.0	7.0	---	---	---	---	---	---	6.0	4.0
16	9.0	8.0	8.0	7.0	---	---	---	---	---	---	6.0	4.0
17	9.0	8.0	7.0	7.0	---	---	---	---	---	---	5.0	3.0
18	9.0	8.0	7.0	7.0	---	---	---	---	---	---	5.0	4.0
19	9.0	8.0	7.0	7.0	---	---	---	---	---	---	6.0	3.0
20	9.0	8.0	7.0	7.0	---	---	---	---	---	---	6.0	3.0
21	9.0	8.0	7.0	6.0	---	---	---	---	---	---	6.0	4.0
22	9.0	8.0	6.0	4.0	---	---	---	---	---	---	6.0	5.0
23	9.0	9.0	5.0	4.0	---	---	---	---	8.0	7.0	7.0	5.0
24	9.0	8.0	5.0	3.0	1.0	1.0	---	---	8.0	5.0	7.0	6.0
25	9.0	8.0	4.0	3.0	1.0	0.0	---	---	7.0	6.0	8.0	6.0
26	9.0	8.0	4.0	3.0	1.0	0.0	---	---	8.0	6.0	8.0	6.0
27	9.0	7.0	4.0	4.0	---	---	---	---	8.0	7.0	8.0	5.0
28	9.0	8.0	3.0	3.0	---	---	---	---	8.0	6.0	9.0	7.0
29	9.0	8.0	3.0	3.0	---	---	---	---	8.0	6.0	9.0	7.0
30	8.0	7.0	3.0	3.0	---	---	---	---	---	---	9.0	7.0
31	7.0	6.0	---	---	---	---	---	---	---	---	8.0	6.0
AVERAGE	10.0	9.0	6.5	5.5	---	---	---	---	---	---	7.0	5.0

10309000 EAST FORK CARSON RIVER NEAR GARDNERVILLE, NEV.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968--Continued

	APR		MAY		JUN		JUL		AUG		SEP	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	8.0	7.0	11.0	6.0	14.0	9.0	17.0	14.0	18.0	17.0	16.0	16.0
2	7.0	6.0	11.0	6.0	15.0	10.0	17.0	16.0	18.0	17.0	16.0	16.0
3	7.0	4.0	9.0	6.0	15.0	11.0	17.0	16.0	18.0	18.0	16.0	16.0
4	7.0	6.0	11.0	6.0	13.0	10.0	18.0	16.0	18.0	18.0	16.0	15.0
5	7.0	7.0	11.0	6.0	13.0	9.0	18.0	17.0	18.0	17.0	16.0	15.0
6	7.0	6.0	9.0	6.0	10.0	8.0	17.0	16.0	18.0	17.0	16.0	16.0
7	8.0	6.0	11.0	6.0	10.0	8.0	18.0	16.0	18.0	17.0	16.0	16.0
8	8.0	6.0	11.0	7.0	11.0	8.0	18.0	17.0	18.0	17.0	16.0	16.0
9	8.0	6.0	9.0	7.0	12.0	9.0	19.0	17.0	18.0	17.0	16.0	16.0
10	9.0	7.0	11.0	6.0	13.0	11.0	19.0	17.0	18.0	17.0	16.0	16.0
11	9.0	7.0	11.0	6.0	13.0	12.0	18.0	17.0	17.0	17.0	16.0	14.0
12	8.0	6.0	9.0	5.0	14.0	12.0	18.0	18.0	17.0	17.0	15.0	14.0
13	8.0	6.0	7.0	6.0	14.0	12.0	18.0	17.0	18.0	17.0	15.0	14.0
14	8.0	6.0	8.0	4.0	14.0	12.0	19.0	17.0	17.0	16.0	14.0	14.0
15	8.0	7.0	10.0	6.0	15.0	13.0	19.0	18.0	16.0	15.0	14.0	13.0
16	8.0	6.0	11.0	7.0	15.0	13.0	19.0	18.0	16.0	16.0	14.0	13.0
17	7.0	5.0	11.0	8.0	16.0	14.0	18.0	17.0	16.0	14.0	14.0	13.0
18	6.0	3.0	13.0	8.0	16.0	14.0	19.0	18.0	15.0	14.0	14.0	13.0
19	7.0	5.0	13.0	9.0	16.0	14.0	19.0	18.0	14.0	13.0	14.0	13.0
20	8.0	7.0	13.0	8.0	16.0	14.0	18.0	17.0	14.0	13.0	13.0	12.0
21	8.0	6.0	11.0	7.0	17.0	14.0	18.0	17.0	14.0	12.0	12.0	11.0
22	7.0	4.0	11.0	6.0	17.0	16.0	18.0	17.0	13.0	12.0	11.0	9.0
23	8.0	6.0	9.0	6.0	17.0	16.0	17.0	17.0	13.0	12.0	11.0	9.0
24	9.0	7.0	10.0	6.0	17.0	15.0	17.0	17.0	13.0	12.0	11.0	10.0
25	9.0	7.0	12.0	8.0	17.0	15.0	18.0	17.0	13.0	12.0	---	---
26	9.0	8.0	13.0	8.0	18.0	16.0	18.0	17.0	13.0	12.0	---	---
27	9.0	8.0	14.0	9.0	18.0	17.0	18.0	18.0	14.0	13.0	---	---
28	9.0	7.0	14.0	9.0	18.0	16.0	18.0	17.0	14.0	14.0	---	---
29	11.0	7.0	14.0	9.0	17.0	14.0	18.0	17.0	15.0	14.0	---	---
30	11.0	7.0	13.0	8.0	16.0	14.0	18.0	18.0	16.0	15.0	---	---
31	---	---	13.0	8.0	---	---	18.0	18.0	16.0	15.0	---	---
AVERAGE	8.0	6.0	11.0	7.0	15.0	12.5	18.0	17.0	16.0	15.0	14.5	14.0

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.
(Irrigation network station)

LOCATION.--Lat 39°17'35", long 119°15'05", in NE¼SE¼ sec.35, T.17 N., R.24 E., Lyon County, on U.S. Highway 95 alternate at Weeks Bridge, 4.5 miles downstream from gaging station at Fort Churchill and approximately 8.5 miles south of Silver Springs.
DRAINAGE AREA.--1,480 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1962 to September 1968.
Water temperatures: October 1962 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 376 mg/l July 1-31; minimum, 114 mg/l Dec. 1-3.
Hardness: Maximum, 190 mg/l July 1-31; minimum, 60 mg/l May 21 to June 8.
Specific conductance: Maximum daily, 607 micromhos July 28, 29; minimum daily, 141 micromhos Dec. 3.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.										
01-03	111	23	40	9.3	36	4.5	155	0	75	9.0
04-13	152	--	35	8.2	32	4.4	141	0	--	--
14-31	108	--	38	8.6	34	4.1	144	0	--	--
NOV.										
01-30	157	--	35	7.8	30	3.5	130	0	--	--
DEC.										
01-03	173	--	25	2.0	7.4	1.0	46	11	--	--
04-07	210	--	29	6.4	25	2.9	66	20	--	--
08-31	142	--	31	6.6	28	31	114	0	--	--
JAN.										
01-31	210	23	30	7.2	28	4.0	119	2	53	7.5
FEB.										
01-02	179	--	29	7.7	27	3.8	124	0	--	--
03-20	280	--	29	7.7	26	3.8	124	0	--	--
21-29	682	--	29	7.7	27	3.7	122	0	--	--
MAR.										
01-04	511	--	19	4.8	15	2.4	78	0	--	--
05-13	451	--	22	5.3	18	2.4	92	0	--	--
14-31	353	--	24	5.9	20	2.5	98	0	--	--
APR.										
01-20	398	18	19	4.6	16	2.2	78	0	32	4.4
21-30	146	--	33	7.7	30	--	126	0	--	--
MAY										
01-10	502	--	19	4.7	16	--	86	0	--	--
11-20	737	--	18	4.8	16	--	83	0	--	--
21-31	671	--	17	4.4	14	--	72	0	--	--
JUNE										
01-08	608	--	17	4.4	14	--	76	0	--	--
09-13	333	--	26	6.4	22	--	108	0	--	--
14-24	182	--	37	9.0	35	--	154	0	--	--
25-30	50	--	49	11	44	--	178	0	--	--
JULY										
01-31	2.6	28	55	13	48	5.0	190	0	122	13
AUG.										
01-14	.80	--	51	13	49	--	174	0	--	--
15-31	.60	--	31	7.0	29	--	112	0	--	--
SEPT.										
01-30	.80	--	32	7.0	30	--	112	0	--	--
WTD. AVG. TIME	--	--	25	6.1	22	--	101	0	--	--
WTD. AVG. TONS PER DAY	224	--	32	7.1	29	--	122	0	--	--
	--	--	15	3.7	13	--	61	0	--	--

ANALYSES OF ADDITIONAL SAMPLES

MAY										
15...	896	--	20	5.2	21	--	96	0	--	--
JUNE										
15...	238	--	38	9.0	35	--	154	0	--	--
JULY										
15...	2.2	27	56	12	48	4.9	190	0	122	12
AUG.										
15...	.40	--	31	7.0	29	--	112	0	--	--
SEPT.										
15...	.90	--	31	7.0	29	--	112	0	--	--

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.--Continued

EXTREMES.--1967-68.--Continued
Water temperatures: Maximum, 22.0°C July 24, 25, 27.
Period of record:
Dissolved solids: Maximum, 472 mg/l Nov. 1-13, 1966; minimum, 70 mg/l June 22-30, 1967.
Hardness: Maximum, 224 mg/l Aug. 1-31, 1963; minimum, 28 mg/l June 22-30, 1967.
Specific conductance: Maximum daily, 685 micromhos Aug. 17, 1963; minimum daily, 81 micromhos July 3, 1967.
Water temperatures: Maximum, 22.0°C July 24, 25, 27, 1968; minimum (1962-67), freezing point on many days during winter periods.
REMARKS.--Records of discharge given for Carson River near Fort Churchill (Station 10312000). No appreciable inflow between gaging station and sampling point.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-03	.5	.15	312	.42	93.5	138	11	1.3	440	7.8
04-13	--	--	252	.34	103	121	5	1.3	383	7.3
14-31	--	--	188	.26	54.8	130	12	1.3	409	7.7
NOV.										
01-30	--	--	260	.35	110	120	13	1.2	381	7.7
DEC.										
01-03	--	--	114	.16	53.2	70	14	.4	165	9.1
04-07	--	--	202	.27	115	99	12	1.1	303	9.3
08-31	--	--	226	.31	86.6	104	11	1.2	336	8.1
JAN.										
01-31	.4	.14	225	.31	128	104	5	1.2	336	8.4
FEB.										
01-02	--	--	225	.31	109	104	2	1.1	334	8.0
03-20	--	--	220	.30	166	104	2	1.1	334	7.9
21-29	--	--	209	.28	385	104	4	1.1	333	8.1
MAR.										
01-04	--	--	150	.20	207	67	3	.8	209	7.6
05-13	--	--	170	.23	207	77	2	.9	243	7.6
14-31	--	--	128	.17	122	84	4	.9	261	8.1
APR.										
01-20	.2	.00	153	.21	164	66	20	.9	204	7.9
21-30	--	--	230	.31	90.7	114	11	1.2	357	7.9
MAY										
01-10	--	--	147	.20	199	67	0	.9	204	8.0
11-20	--	--	128	.17	255	64	0	.9	204	7.7
21-31	--	--	130	.18	236	60	1	.8	181	7.7
JUNE										
01-08	--	--	136	.18	223	60	0	.8	188	7.6
09-13	--	--	181	.25	163	92	3	1.0	277	8.0
14-24	--	--	270	.37	133	130	4	1.3	415	8.1
25-30	--	--	344	.47	46.4	168	22	1.5	525	8.0
JULY										
01-31	.8	.32	376	.51	2.64	190	34	1.5	576	8.1
AUG.										
01-14	--	--	360	.49	.78	180	37	1.6	560	7.9
15-31	--	--	235	.32	.38	106	14	1.2	348	7.6
SEPT.										
01-30	--	--	220	.30	.48	109	17	1.2	347	7.6
WTD. AVG. TIME	--	--	179	--	--	87	6	--	273	7.9
WTD. AVG. TONS PER DAY	--	--	--	--	--	--	--	--	--	--
ANALYSES OF ADDITIONAL SAMPLES										
MAY										
15...	--	--	165	.22	399	72	0	1.1	230	7.5
JUNE										
15...	--	--	292	.40	188	132	6	1.3	414	7.7
JULY										
15...	1.0	.27	378	.51	2.25	189	33	1.5	576	8.0
AUG.										
15...	--	--	244	.33	.26	106	14	1.2	348	7.4
SEPT.										
15...	--	--	226	.31	.55	106	14	1.2	346	7.2

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	435	384	185	---	---	---	195	311	173	567	596	345
2	431	379	166	---	---	---	174	232	189	580	596	344
3	430	383	141	---	---	---	163	188	191	578	591	344
4	393	384	330	---	---	---	174	186	180	574	596	345
5	393	385	239	---	---	---	195	182	171	574	594	345
6	345	385	311	---	---	---	209	179	182	572	594	344
7	358	396	328	---	---	---	219	179	223	578	558	345
8	359	397	340	---	---	---	220	213	223	577	535	346
9	379	394	340	---	---	---	236	215	261	576	358	345
10	379	385	340	---	---	---	251	215	262	574	596	345
11	378	384	341	---	---	---	253	205	269	578	343	344
12	377	384	338	---	---	---	231	219	311	575	343	343
13	389	385	340	---	---	---	190	219	310	573	344	344
14	428	385	341	---	---	---	193	250	428	570	344	343
15	428	385	340	---	---	---	194	231	420	576	---	---
16	428	357	340	---	---	---	208	230	418	575	345	347
17	428	356	340	---	---	---	206	221	419	578	349	347
18	425	357	342	---	---	---	205	154	422	574	348	345
19	426	357	335	---	---	---	215	153	421	576	346	345
20	426	357	340	---	---	---	244	153	418	577	346	345
21	415	357	340	---	---	---	304	152	422	572	345	345
22	388	358	340	---	---	---	306	152	421	573	345	345
23	387	358	339	---	---	---	333	167	418	578	343	346
24	387	357	338	---	---	---	347	169	421	580	345	349
25	387	357	339	---	---	---	387	200	472	579	345	347
26	388	358	338	---	---	---	384	228	464	606	343	347
27	389	357	341	---	---	---	421	230	569	606	343	346
28	390	357	341	---	---	---	399	192	568	607	344	346
29	389	358	341	---	---	---	399	193	570	607	345	346
30	399	357	246	---	---	---	351	160	575	604	343	347
31	389	---	334	---	---	---	---	159	---	---	345	---
AVERAGE	398	372	315	---	---	---	260	198	360	580	417	345

10312020 CARSON RIVER NEAR SILVER SPRINGS, NEV.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	14	15	14	15	14	12	11	11	11	12	12	12	11	12	11	12	11	11	11	11	9	9	10	9	9	9	9	9	8	7		10
NOVEMBER.	8	8	7	8	8	7	7	8	8	8	7	7	7	7	7	7	7	6	5	5	4	8	4	4	4	3	3	2	2	2	--	5
DECEMBER.	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	2	2	--
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APRIL....	10	8	9	7	7	--	7	8	8	8	9	10	9	8	9	8	7	8	8	8	7	7	7	8	8	9	9	9	9	--		8
MAY.....	10	11	11	12	11	10	11	11	11	11	10	11	11	9	10	11	11	11	11	11	11	12	11	11	11	12	11	12	12	12	12	11
JUNE.....	12	13	13	13	15	13	14	14	15	16	18	16	16	16	17	17	17	17	18	18	18	18	18	18	19	18	18	18	18	18	--	16
JULY.....	18	19	18	18	18	19	19	19	19	20	19	20	19	19	20	19	19	21	21	21	21	21	21	22	22	21	22	21	20	21	--	19
AUGUST...	20	21	21	21	21	21	20	21	21	21	20	18	19	19	19	20	19	20	19	19	18	18	18	18	18	18	18	17	18	17	17	19
SEPTEMBER	18	17	17	17	17	17	17	17	17	17	15	15	16	16	16	16	15	14	15	14	14	14	14	13	14	13	13	13	13	13	--	15

10321000 HUMBOLDT RIVER AT CARLIN, NEV.
(Irrigation network station)

LOCATION.--Lat 40°42'34", long 116°06'00", in sec.21, T.33 N., R.53 E., Elko County, at Carlin, 2,500 ft upstream from Carlin sewage disposal plant, 4,000 ft downstream from Maggie Creek, and 8 miles downstream from gaging station.
DRAINAGE AREA.--4,310 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: October 1965 to September 1968 (discontinued).
Water temperatures: October 1965 to September 1968 (discontinued).
EXTREMES.--1967-68:
Dissolved solids: Maximum, 444 mg/l Oct. 9-16; minimum, 194 mg/l June 1-6.
Hardness: Maximum, 207 mg/l Dec. 9-18; minimum, 112 mg/l Feb. 1-10.
Specific conductance: Maximum daily, 656 micromhos Dec. 14; minimum daily, 209 micromhos Apr. 30.
Water temperatures: Maximum, 29.0°C July 26, 28, 29; minimum, freezing point on several days during December to February.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.										
01-08	19	24	47	15	45	8.2	255	7	32	16
09-16	27	--	53	15	57	11	281	7	--	--
17-31	23	--	53	15	49	8.3	290	0	--	--
NOV.										
01-30	36	--	55	14	50	7.8	278	6	--	--
DEC.										
01-08	43	--	50	12	53	8.2	292	0	--	--
09-18	41	--	60	14	57	8.7	330	0	--	--
19-31	45	--	54	12	51	8.3	294	0	--	--
JAN.										
01-31	49	28	45	13	50	7.9	238	14	41	16
FEB.										
01-10	70	--	27	11	40	6.6	173	0	--	--
11-29	221	--	44	11	43	6.3	232	3	--	--
MAR.										
01-08	259	--	45	11	46	6.9	241	4	--	--
09-31	221	--	44	10	40	6.4	227	3	--	--
APR.										
01-30	169	27	36	10	38	5.8	192	0	35	18
MAY										
01-31	160	--	38	8.6	33	5.5	193	3	26	--
JUNE										
01-06	498	--	37	5.8	20	--	168	0	--	--
07-30	914	--	42	8.5	31	--	212	0	--	--
JULY										
01-31	140	24	44	10	37	5.7	238	0	21	11
AUG.										
01-23	20	--	45	13	49	--	240	10	--	--
24-31	44	--	45	11	42	--	226	12	--	--
SEPT.										
01-30	29	--	45	13	48	--	256	6	--	--
WTD. AVG. TIME	--	--	42	9.6	36	--	218	2	--	--
WTD. AVG. TONS PER DAY	158	--	45	12	43	--	239	4	--	--
	--	--	18	4.1	15	--	93	1	--	--

ANALYSES OF ADDITIONAL SAMPLES

JAN.										
15...	48	30	57	13	52	8.6	298	4	43	16
MAR.										
15...	229	--	44	12	41	6.4	238	0	--	--
MAY										
15...	164	19	33	8.7	36	5.8	188	0	26	12
JUNE										
15...	985	--	45	9.2	33	--	224	0	--	--
AUG.										
15...	12	--	50	14	52	--	282	0	--	--
SEPT.										
15...	28	--	47	13	49	--	274	0	--	--

10321000 HUMBOLDT RIVER AT CARLIN, NEV.--Continued

Period of record:
Dissolved solids: Maximum, 444 mg/l Oct. 9-16, 1967; minimum, 194 mg/l June 1-6, 1968.
Hardness: Maximum, 207 mg/l Dec. 16-31, 1966, Dec. 9-18, 1967; minimum, 112 mg/l May 10-13, 1967, Feb. 1-10, 1968.
Specific conductance: Maximum daily, 677 micromhos Dec. 21, 22, 1966; minimum daily, 209 micromhos Apr. 30, 1968.
Water temperatures: Maximum, 29.0°C July 26, 28, 29, 1968; minimum, freezing point on many days during winter periods.

REMARKS.--Records of daily discharge data given for Humboldt River near Carlin, Nev. (Station 10321000). No appreciable inflow between gaging station and sampling point except during periods of heavy local runoff.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.										
01-08	.6	.04	352	.48	18.8	179	0	1.5	556	8.4
09-16	--	--	444	.60	32.5	194	0	1.8	612	8.4
17-31	--	--	348	.47	21.9	194	0	1.5	586	8.2
NOV.										
01-30	--	--	348	.47	34.0	194	0	1.6	582	8.4
DEC.										
01-08	--	--	348	.47	40.9	174	0	1.7	565	8.2
09-18	--	--	388	.53	43.4	207	0	1.7	626	8.2
19-31	--	--	344	.47	42.4	184	0	1.6	553	8.2
JAN.										
01-31	.6	.23	318	.43	42.8	166	0	1.7	519	8.6
FEB.										
01-10	--	--	236	.32	44.7	112	0	1.6	406	7.8
11-29	--	--	302	.41	180	155	0	1.5	480	8.3
MAR.										
01-08	--	--	306	.42	214	158	0	1.6	503	8.4
09-31	--	--	306	.42	183	151	0	1.4	471	8.3
APR.										
01-30	.5	.00	266	.36	121	131	0	1.4	415	8.2
MAY										
01-31	--	--	234	.32	101	130	0	1.3	381	8.4
JUNE										
01-06	--	--	194	.26	261	116	0	.8	311	7.8
07-30	--	--	278	.38	686	140	0	1.1	394	8.2
JULY										
01-31	1.1	.17	284	.39	107	151	0	1.3	436	8.2
AUG.										
01-23	--	--	240	.33	13.0	166	0	1.7	520	8.6
24-31	--	--	342	.47	40.6	158	0	1.5	473	8.6
SEPT.										
01-30	--	--	324	.44	25.4	166	0	1.6	512	8.4
WTD. AVG. TIME	--	--	280	--	--	144	0	--	428	8.2
WTD. AVG. TONS PER DAY	--	--	302	--	--	159	0	1.5	486	8.3
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

JAN.										
15...	.6	.18	404	.55	52.4	196	0	1.6	590	8.3
MAR.										
15...	--	--	322	.44	199	160	0	1.4	479	8.0
MAY										
15...	.4	.12	--	.32	104	118	0	1.4	380	8.0
JUNE										
15...	--	--	284	.39	755	150	0	1.2	424	7.7
AUG.										
15...	--	--	374	.51	12.1	182	0	1.7	566	8.2
SEPT.										
15...	--	--	340	.46	25.7	171	0	1.6	536	8.1

10321000 HUMBOLDT RIVER AT CARLIN, NEV.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	515	563	556	---	503	299	243	215	318	389	521	496
2	522	566	576	---	516	305	301	215	318	426	494	518
3	521	555	565	---	506	317	286	217	310	404	503	525
4	523	554	571	---	506	311	278	226	304	428	505	525
5	527	546	547	---	489	392	254	224	325	392	503	529
6	521	548	553	---	479	346	299	248	332	433	516	536
7	518	555	583	---	447	397	277	321	382	446	512	536
8	542	561	560	---	496	396	267	339	381	446	521	530
9	614	562	613	---	471	457	264	334	411	450	529	522
10	583	560	616	---	486	425	257	393	444	456	550	523
11	635	561	621	---	480	440	247	317	465	452	557	519
12	604	564	620	---	482	439	279	318	475	449	567	512
13	590	566	653	---	444	446	268	302	469	455	576	516
14	585	565	656	---	488	449	257	267	453	469	571	530
15	583	571	---	---	489	---	251	275	449	471	573	---
16	577	568	636	---	437	478	257	253	401	488	534	540
17	573	563	636	---	427	476	258	252	399	482	538	540
18	569	568	636	---	481	474	237	249	382	492	556	539
19	569	561	597	---	441	475	235	240	355	500	557	538
20	568	564	598	---	464	483	275	263	361	494	548	543
21	569	566	587	---	457	---	225	249	360	482	549	538
22	568	562	552	---	449	492	226	303	370	504	540	534
23	568	572	555	---	454	494	225	305	370	493	594	533
24	567	571	556	---	456	489	220	283	368	506	480	528
25	575	571	553	---	424	493	220	268	387	507	473	---
26	569	569	529	---	451	486	212	248	389	511	474	---
27	567	582	556	---	428	466	212	247	389	507	481	---
28	565	569	553	---	426	497	211	252	409	517	476	---
29	568	582	573	---	426	450	212	259	403	517	476	---
30	569	563	573	---	---	---	209	300	407	521	507	---
31	564	---	569	---	---	467	---	338	---	522	508	---
AVERAGE	564	564	585	---	466	434	247	272	386	471	525	---

10321000 HUMBOLDT RIVER AT CARLIN, NEV.--Continued

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	11.0	1.0	---	0.0	11.0	14.0	20.0	21.0	22.0	24.0	24.0
2	15.0	9.0	0.0	---	0.0	11.0	12.0	19.0	22.0	23.0	26.0	22.0
3	15.0	9.0	1.0	---	0.0	11.0	11.0	21.0	19.0	22.0	22.0	22.0
4	16.0	9.0	1.0	---	0.0	11.0	11.0	18.0	17.0	19.0	24.0	22.0
5	11.0	8.0	0.0	---	1.0	9.0	11.0	17.0	14.0	26.0	26.0	23.0
6	13.0	9.0	1.0	---	1.0	9.0	12.0	16.0	11.0	26.0	27.0	23.0
7	15.0	10.0	1.0	---	1.0	9.0	12.0	17.0	11.0	26.0	27.0	22.0
8	16.0	10.0	0.0	---	1.0	8.0	13.0	19.0	12.0	26.0	24.0	24.0
9	17.0	7.0	0.0	---	1.0	8.0	14.0	17.0	13.0	23.0	25.0	23.0
10	17.0	8.0	0.0	---	2.0	8.0	14.0	17.0	16.0	26.0	25.0	21.0
11	16.0	9.0	0.0	---	2.0	9.0	14.0	15.0	18.0	26.0	25.0	22.0
12	17.0	9.0	0.0	---	3.0	9.0	13.0	19.0	19.0	26.0	26.0	22.0
13	15.0	8.0	0.0	---	3.0	7.0	13.0	13.0	18.0	26.0	21.0	21.0
14	14.0	11.0	0.0	---	5.0	8.0	12.0	13.0	19.0	27.0	19.0	19.0
15	14.0	9.0	0.0	---	6.0	9.0	11.0	14.0	21.0	27.0	18.0	---
16	13.0	9.0	0.0	---	6.0	8.0	8.0	17.0	22.0	27.0	17.0	18.0
17	13.0	9.0	0.0	---	7.0	7.0	7.0	18.0	23.0	27.0	15.0	19.0
18	13.0	9.0	0.0	---	7.0	6.0	12.0	22.0	23.0	28.0	15.0	19.0
19	13.0	10.0	0.0	---	7.0	7.0	12.0	20.0	22.0	26.0	19.0	18.0
20	13.0	9.0	0.0	---	8.0	9.0	12.0	19.0	22.0	26.0	17.0	13.0
21	12.0	7.0	0.0	---	6.0	---	12.0	18.0	22.0	26.0	14.0	14.0
22	12.0	6.0	0.0	---	6.0	12.0	12.0	17.0	22.0	27.0	16.0	16.0
23	12.0	6.0	0.0	---	7.0	12.0	13.0	14.0	22.0	27.0	21.0	17.0
24	12.0	6.0	0.0	---	8.0	12.0	14.0	14.0	22.0	27.0	22.0	19.0
25	10.0	5.0	0.0	---	9.0	12.0	14.0	18.0	22.0	28.0	21.0	---
26	10.0	3.0	0.0	---	9.0	12.0	16.0	19.0	23.0	29.0	22.0	---
27	10.0	1.0	0.0	---	10.0	12.0	16.0	21.0	23.0	27.0	22.0	---
28	10.0	2.0	0.0	---	10.0	13.0	16.0	21.0	23.0	29.0	23.0	---
29	9.0	2.0	1.0	---	10.0	15.0	19.0	21.0	17.0	29.0	24.0	---
30	9.0	2.0	0.0	---	---	---	16.0	21.0	20.0	26.0	26.0	---
31	11.0	---	0.0	---	---	14.0	---	19.0	---	26.0	26.0	---
AVERAGE	13.0	7.5	0.0	---	4.5	10.0	13.0	18.0	19.5	26.0	22.0	---

10335000 HUMBOLDT RIVER NEAR RYE PATCH, NEV.
(Irrigation network station)

LOCATION.--Lat 40°28'00", long 118°18'20", in SE¼NE¼ sec.18, T.30 N., R.33 E., Pershing County, at gaging station 1,000 ft downstream from Rye Patch Dam and 1.5 miles northwest of Rye Patch.
DRAINAGE AREA.--16,100 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: December 1951 to September 1968, October 1959 to September 1961, May 1962 to September 1968.
Water temperatures: December 1951 to September 1958, October 1959 to September 1961, May 1962 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 620 mg/l Feb. 22-29; minimum, 448 mg/l Aug. 1-31.
Hardness: Maximum, 196 mg/l Nov. 1-30; minimum, 140 mg/l Sept. 1-30.
Specific conductance: Maximum daily, 1,240 micromhos May 15; minimum daily, 718 micromhos Aug. 20.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)
OCT.										
01-31	189	52	39	18	103	3.7	301	0	54	62
NOV.										
01-30	.50	--	49	18	115	10	304	0	--	--
DEC.										
01-31	.76	--	50	16	120	9.3	294	8	--	--
JAN.										
01-31	.95	45	37	16	123	9.8	271	7	73	98
FEB.										
01-12	1.1	--	48	17	120	9.2	292	6	--	--
13-21	2.4	--	37	16	103	11	256	8	--	--
22-29	2.7	--	44	19	123	12	308	8	--	--
MAR.										
01-31	16	--	43	19	122	14	317	4	--	--
APR.										
01-30	287	20	42	20	123	15	314	4	79	88
MAY										
01-31	364	--	42	19	115	--	310	0	--	--
JUNE										
01-30	224	--	40	18	108	--	294	0	--	--
JULY										
01-31	281	37	39	18	108	14	292	0	74	80
AUG.										
01-31	67	--	33	16	101	--	255	0	--	--
SEPT.										
01-30	67	--	28	17	106	--	244	0	--	--
WTD. AVG. TIME	--	--	40	18	112	--	298	1	--	--
WTD. AVG. TONS PER DAY	125	--	40	18	113	--	290	3	--	--
	--	--	13	6.3	38	--	101	0	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
17...	198	--	--	--	--	--	--	--	--	--
NOV.										
30...	.40	--	--	--	--	--	--	--	--	--
DEC.										
15...	.60	42	48	17	118	10	306	0	73	94
JAN.										
01...	1.0	--	--	--	--	--	--	--	--	--
FEB.										
01...	1.0	--	--	--	--	--	--	--	--	--
MAR.										
01...	2.7	--	44	19	124	13	325	0	--	--
APR.										
30...	315	38	38	19	120	14	300	0	77	80
JUNE										
01...	310	--	38	18	110	--	276	8	--	--
AUG.										
01...	78	--	38	17	98	--	268	8	--	--
15...	55	--	39	17	101	--	272	0	--	--
SEPT.										
15...	80	--	45	18	119	--	290	0	--	--

10335000 HUMBOLDT RIVER NEAR RYE PATCH, NEV.--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 22.0°C Aug. 6-15.
Period of record:
Dissolved solids: Maximum, 2,190 mg/l Sept. 1-5, 1954; minimum, 253 mg/l June 24, 1956.
Hardness: Maximum, 482 mg/l Sept. 1-5, 1954; minimum, 86 mg/l Jan. 25, 1958.
Specific conductance: Maximum daily, 4,010 micromhos Sept. 2, 1954; minimum daily, 384 micromhos June 24, 1956.
Water temperatures (1951-54, 1956-58, 1959-61, 1962-68): Maximum, 25.5°C Sept. 21, 1958; minimum (1951-54, 1956-58, 1959-61, 1962-67), 0.5°C on many days during winter periods.
REMARKS.--Flow completely regulated by Rye Patch Reservoir.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUO-RIDE (F)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH
OCT.										
01-31	.9	.42	560	.76	286	172	0	3.4	787	8.2
NOV.										
01-30	--	--	572	.78	.77	196	0	3.6	948	8.1
DEC.										
01-31	--	--	524	.71	1.08	191	0	3.8	897	8.4
JAN.										
01-31	.6	.40	548	.75	1.41	158	0	4.2	879	8.3
FEB.										
01-12	--	--	596	.81	1.77	190	0	3.8	921	8.3
13-21	--	--	500	.68	3.24	158	0	3.6	770	8.4
22-29	--	--	620	.84	4.52	188	0	3.9	928	8.4
MAR.										
01-31	--	--	584	.79	26.5	186	0	3.9	918	8.3
APR.										
01-30	.9	.45	576	.78	446	188	0	3.9	898	8.3
MAY										
01-31	--	--	552	.75	543	183	0	3.7	857	8.2
JUNE										
01-30	--	--	588	.80	356	174	0	3.6	828	8.2
JULY										
01-31	1.1	.51	536	.70	407	172	0	3.6	828	8.0
AUG.										
01-31	--	--	448	.61	81.0	148	0	3.6	752	7.8
SEPT.										
01-30	--	--	460	.63	83.2	140	0	3.9	766	7.9
WTD. AVG. TIME	--	--	551	--	--	176	0	--	838	8.2
WTD. AVG. TONS PER DAY	--	--	543	--	--	174	0	3.7	853	8.2
	--	--	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

OCT.										
17...	--	--	--	--	--	--	--	--	--	--
NOV.										
30...	--	--	--	--	--	--	--	--	--	--
DEC.										
15...	.6	.40	608	.83	.98	190	0	3.7	902	8.2
JAN.										
01...	--	--	--	--	--	--	--	--	--	--
FEB.										
01...	--	--	--	--	--	--	--	--	--	--
MAR.										
01...	--	--	600	.82	4.37	188	0	3.9	929	8.2
APR.										
30...	.9	.41	364	.50	310	173	0	4.0	867	7.9
JUNE										
01...	--	--	444	.60	372	169	0	3.7	816	8.4
AUG.										
01...	--	--	500	.68	105	165	0	3.3	770	8.4
15...	--	--	476	.65	70.7	168	0	3.4	780	7.5
SEPT.										
15...	--	--	528	.72	114	186	0	3.8	906	7.5

10335000 HUMBOLDT RIVER NEAR RYE PATCH, NEV.--Continued

PESTICIDE ANALYSES IN MICROGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME (24 hr)	Aldrin	DDD	DDE	DDT	Dieldrin	Endrin	Heptachlor	Heptachlor Epoxide	Lindane	2, 4-D	Silvex	2, 4, 5-T
FEB 1...	0800	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MAR 1...	0830	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.02	.00
APR 1...	1300	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
APR 30..	--	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
JUNE 1...	--	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
JULY 1...	0930	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.21	.00
AUG 1...	0900	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.13	.00
SEPT 3...	1000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	786	829	888	---	---	---	1120	1160	839	858	751	787
2	778	874	901	---	---	---	1120	1180	---	875	773	783
3	769	876	896	---	---	---	1120	1180	840	867	785	786
4	786	882	896	---	---	---	1130	1170	---	869	769	789
5	778	899	898	---	---	---	1120	1170	841	873	771	792
6	780	883	909	---	---	---	1120	1180	---	870	774	799
7	784	886	893	---	---	---	1120	1180	837	860	775	800
8	780	886	909	---	---	---	1130	1180	---	874	772	800
9	786	884	916	---	---	---	1130	1190	837	866	771	806
10	785	891	909	---	---	---	1130	1180	---	863	770	804
11	782	891	911	---	---	---	1130	1200	838	866	771	806
12	781	882	891	---	---	---	1130	1190	---	869	771	814
13	783	889	930	---	---	---	1130	1200	839	860	773	819
14	782	882	964	---	---	---	1130	1210	---	854	768	818
15	780	860	---	---	---	---	1130	1240	849	853	767	822
16	787	860	888	---	---	---	1150	1210	---	843	769	833
17	774	872	906	---	---	---	1140	1200	841	835	765	833
18	774	884	898	---	---	---	1140	1190	---	830	765	827
19	787	872	898	---	---	---	1140	1210	839	826	766	829
20	788	899	898	---	---	---	1140	1220	---	810	718	847
21	783	896	901	---	---	---	1140	1230	839	807	832	846
22	770	891	896	---	---	---	1150	1220	---	809	835	865
23	782	891	903	---	---	---	1140	1230	845	809	840	838
24	786	891	898	---	---	---	1140	1210	---	814	839	836
25	786	888	874	---	---	---	1150	1230	860	813	799	841
26	787	889	886	---	---	---	1160	1230	---	805	770	841
27	790	906	883	---	---	---	1150	1230	---	810	773	847
28	786	893	896	---	---	---	1150	1230	---	806	787	848
29	778	895	898	---	---	---	1160	1230	859	807	784	854
30	786	896	898	---	---	---	1160	1230	---	791	781	874
31	786	---	906	---	---	---	---	1220	---	792	777	---
AVERAGE	782	884	901	---	---	---	1140	1200	---	838	779	823

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	17	17	17	16	16	16	14	13	12	14	13	13	14	13	13	13	13	13	12	12	12	12	12	12	12	12	12	11	11	10		13
NOVEMBER.	8	7	4	7	8	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	6	6	6	6	6	6	5	5	--		6
DECEMBER.	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2
JANUARY..	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FEBRUARY.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MARCH....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
APRIL.....	9	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	8	9	8	8	8	8	8	8	8	8	9	9	10	10	--	8
MAY.....	10	11	11	11	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13	14	14	14	15	16		12
JUNE.....	16	--	16	--	16	--	16	--	17	--	16	--	16	--	17	--	17	--	17	--	17	--	17	--	17	--	--	--	17	--	--	--
JULY.....	18	18	18	19	19	19	19	19	19	19	20	20	20	20	20	20	20	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20
AUGUST....	21	21	21	21	21	22	22	22	22	22	22	22	22	22	22	22	21	20	20	19	18	18	18	18	18	18	18	18	18	18	18	20
SEPTEMBER	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	18	17	16	11	11	14	14	14	14	14	15	14	13	10	16

09368000 SAN JUAN RIVER AT SHIPROCK, N. MEX.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE: PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT 5, 1967	1720	21	320	5830	5040	61	73	--	91	--	99	100	--	--	--	--	SPWC
DEC 8.....	1700	3	658	4940	8780	4	4	--	6	--	52	97	100	--	--	--	VPWC
JAN 30, 1968	1700	4	623	9020	15200	17	20	--	24	--	54	96	100	--	--	--	VPWC
FEB 3.....	1230	4	748	2400	4850	7	9	--	12	--	23	68	93	100	--	--	VPWC
APR 2.....	1700	12	1140	4040	12400	21	26	--	40	--	69	91	99	100	--	--	VPWC
MAY 24.....	0800	10	3300	4840	43100	6	8	10	13	18	34	68	96	99	100	--	VPWC
MAY 24.....	0800	10	3300	4940	43100	3	6	8	12	17	34	68	96	99	100	--	VPN
JUL 29.....	1600	29	2750	8900	66100	45	55	--	74	--	93	97	99	100	--	--	VPWC
JUL 30.....	1730		2880	12200	94900	43	51	54	58	62	66	73	80	95	100	--	VPWC
JUL 30.....	1730		2880	12200	94900	4	5	14	60	62	66	73	80	95	100	--	VPN
AUG 7.....	1600	22	3580	52100	504000	42	58	--	73	--	94	97	100	--	--	--	VPWC
AUG 11.....	1130	20	10200	62700	1730000	34	42	--	57	--	91	97	100	--	--	--	VPWC
AUG 13.....	1355	22	3000	25400	206000	50	56	--	67	--	84	95	99	100	--	--	VPWC
AUG 30.....	0910	18	651	3620	6360	44	49	--	53	--	65	70	79	95	100	--	VPWC

09378700 COTTONWOOD WASH NEAR BLANDING, UTAH

LOCATION.--Lat 37°33'40", long 109°34'40", in NE¼NW¼ sec.23, T.37 S., R.21 E., San Juan County, at gaging station about 2 miles downstream from Brush Basin Canyon and 7 miles southwest of Blanding.

DRAINAGE AREA.--205 sq mi.

PERIOD OF RECORD.--Water temperatures: March to September 1968.
Sediment records: March to September 1968.

EXTREMES.--March to September 1968:
Sediment concentrations: Maximum daily, 110,000 mg/l July 26; minimum daily, 15 mg/l Aug. 26.
Sediment loads: Maximum daily, 1,800,000 tons Aug. 1; minimum daily, less than 0.05 ton on many days in June to August.

REMARKS.--No flow July 6-22, 25, Sept. 1-30.

TEMPERATURE (°C) OF WATER, MARCH TO SEPTEMBER 1968

	DAY																													AVER-
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AGE
MARCH....	2	2	2	1	2	2	7	5	--	--	2	--	10	--	--	13	--	--	--	1	--	13	--	--	--	16	--	--	20	--	--	--
APRIL....	13	13	--	5	--	--	--	16	--	--	23	--	--	--	16	--	13	10	--	--	--	14	--	--	22	--	--	17	--	--	--	--
MAY.....	--	20	--	17	--	--	21	--	--	18	--	13	12	--	--	11	--	--	--	23	--	--	--	20	--	26	--	--	--	--	29	--
JUNE.....	--	--	--	29	--	--	--	--	--	27	--	--	29	--	--	--	32	--	--	30	--	--	--	--	--	--	--	--	--	--	--	--
JULY.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	21	--	22	20	18	21	20	20	--
AUGUST...	20	--	--	--	--	26	--	--	--	--	--	--	--	8	14	--	--	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, MARCH TO SEPTEMBER 1968

(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (°C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
FEB. 28, 1968	1115	6	13	1500	21	27	40	58	93	100	--	--	--	VPWC
MAR. 7.....	1540	8	18	5450	27	35	54	74	96	100	--	--	--	VPWC
APR. 17.....	1515	13	11	1620	28	36	54	70	95	100	--	--	--	VPWC
MAY 12.....	0905	21	30	10100	14	19	30	64	96	100	--	--	--	VPWC
MAY 12.....	1235	13	1020	447000	5	5	7	23	61	93	100	--	--	SPWC
MAY 12.....	1350	13	152	83100	12	16	21	49	91	100	--	--	--	VPWC
MAY 13.....	0600	9	8.0	4680	41	50	69	79	97	100	--	--	--	VPWC
MAY 23.....	1535		2.2	2560	71	90	99	100	--	--	--	--	--	VPWC
JULY 26.....	0315	21	29	91600	49	62	89	95	98	100	--	--	--	VPWC
JULY 26.....	2300	23	159	100000	21	27	48	70	95	100	--	--	--	VPWC
JULY 29.....	0630	21	1.7	6120	88	100	-	--	--	--	--	--		SPWC
AUG. 1.....	1004		14700	210000	10	11	16	33	76	98	100	--	--	VPWC
AUG. 1.....	1215		14200	193000	10	11	15	38	86	100	--	--	--	VPWC
AUG. 2.....	1510		4760	392000	6	7	9	25	68	96	100	--	--	VPWC
AUG. 2.....	1615		1350	146000	15	16	24	53	92	100	--	--	--	VPWC
AUG. 2.....	1715		763	82300	19	24	36	70	94	100	--	--	--	VPWC
AUG. 6.....	1715	26	21	1200	76	92	98	100	--	--	--	--	--	VPWC
AUG. 6.....	2000		827	107000	18	22	34	57	87	99	100	--	--	VPWC
AUG. 6.....	2100		440	53000	20	23	35	61	93	100	--	--	--	VPWC
AUG. 15.....	0955	14	8.6	7340	65	82	97	99	100	--	--	--	--	VPWC

SUSPENDED SEDIMENT, MARCH TO SEPTEMBER 1968

MARCH

DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCENTRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	9.3	1100	28	11	8.6	740	17	21	4.5	--	5
2	10	1000	27	12	8.0	--	10	22	3.5	320	3
3	10	1000	27	13	7.3	490	10	23	2.6	--	2
4	8.6	510	12	14	7.3	--	10	24	3.1	--	3
5	8.6	400	9	15	6.8	--	10	25	2.4	--	3
6	7.3	470	9	16	6.4	760	13	26	2.4	420	3
7	16	4300	S260	17	6.4	--	10	27	3.5	--	5
8	19	6100	S1100	18	5.6	--	10	28	3.1	--	4
9	23	--	500	19	5.2	--	8	29	3.1	480	4
10	12	--	80	20	4.5	420	5	30	4.5	--	8
								31	4.0	--	6
TOTAL									226.6	--	2201

S COMPUTED BY SUBDIVIDING DAY.

09378700 COTTONWOOD WASH NEAR BLANDING, UTAH--Continued

SUSPENDED SEDIMENT, MARCH TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN SEDIMENT CONCEN-TRATION (MG/L)	APRIL SEDIMENT LOAD (TONS PER DAY)	MAY MEAN DISCHARGE (CFS)	MAY MEAN SEDIMENT CONCEN-TRATION (MG/L)	MAY SEDIMENT LOAD (TONS PER DAY)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN SEDIMENT CONCEN-TRATION (MG/L)	JUNE SEDIMENT LOAD (TONS PER DAY)
1	6.8	930	17	6.4	--	10	1.8	--	.5
2	8.0	1900	41	7.3	610	12	1.8	--	.5
3	8.0	--	40	6.4	--	10	1.7	--	.5
4	5.9	1000	16	6.8	600	11	1.6	180	.8
5	5.4	--	10	7.3	--	12	1.5	--	.8
6	5.0	--	8	6.4	--	10	1.4	--	.8
7	4.5	--	5	5.9	560	9	1.3	--	.7
8	4.5	420	5	5.9	--	10	1.2	--	.7
9	4.0	--	4	5.9	--	20	1.1	--	.7
10	2.4	--	2	5.9	1300	21	1.1	220	.7
11	3.1	360	3	6.4	--	30	1.1	--	.6
12	4.5	--	9	95	49000	S49000	1.1	--	.4
13	9.3	--	60	8.0	3400	73	1.1	66	.2
14	10	--	70	6.4	--	30	1.0	--	.2
15	9.3	2400	60	5.5	--	10	.90	--	.2
16	9.3	--	50	5.0	340	5	.80	--	.2
17	10	1800	49	4.5	--	4	.80	73	.2
18	8.6	1400	33	4.0	--	3	.70	--	.1
19	7.3	--	20	3.6	--	2	.70	--	.1
20	6.8	--	20	3.4	180	2	.70	57	.1
21	6.4	--	20	3.2	--	2	.50	--	.1
22	11	1300	39	3.1	--	2	.70	--	.1
23	5.9	--	20	2.9	--	3	.20	--	T
24	5.9	--	10	2.8	380	3	.30	--	T
25	5.9	440	7	2.6	--	2	.20	--	T
26	5.0	--	7	2.5	180	1	.10	--	T
27	5.4	--	8	2.4	--	10	.10	--	T
28	5.4	550	8	2.2	3000	18	.10	--	T
29	4.5	--	6	2.1	--	10	.10	--	T
30	5.4	--	8	2.1	--	6	.10	--	T
31	--	--	--	2.0	220	1	--	--	--
TOTAL	193.5	--	655	233.9	--	49342	25.70	--	10.4

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN SEDIMENT CONCEN-TRATION (MG/L)	JULY SEDIMENT LOAD (TONS PER DAY)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN SEDIMENT CONCEN-TRATION (MG/L)	AUGUST SEDIMENT LOAD (TONS PER DAY)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEPTEMBER SEDIMENT LOAD (TONS PER DAY)
1	.10	--	T	4340	86000	S1000000	--	--	--
2	.10	--	T	583	49000	S170000	--	--	--
3	.10	--	T	156	11000	S6600	--	--	--
4	.10	--	T	16	3000	130	--	--	--
5	.10	--	T	24	2900	1000	--	--	--
6	0	--	--	158	22000	S27000	--	--	--
7	0	--	--	34	18000	1700	--	--	--
8	0	--	--	2.4	2000	13	--	--	--
9	0	--	--	15	6100	S1100	--	--	--
10	0	--	--	1.7	6500	30	--	--	--
11	0	--	--	.10	800	.2	--	--	--
12	0	--	--	8.0	12000	260	--	--	--
13	0	--	--	.20	2100	1	--	--	--
14	0	--	--	13	12000	S1400	--	--	--
15	0	--	--	10	8000	220	--	--	--
16	0	--	--	1.5	--	4	--	--	--
17	0	--	--	1.0	260	.7	--	--	--
18	0	--	--	.60	--	.2	--	--	--
19	0	--	--	.40	33	T	--	--	--
20	0	--	--	.20	--	T	--	--	--
21	0	--	--	.20	59	T	--	--	--
22	0	--	--	.10	--	T	--	--	--
23	10	4100	S790	.10	--	T	--	--	--
24	12	6800	S500	.10	--	T	--	--	--
25	0	--	--	.10	--	T	--	--	--
26	72	110000	S23000	.10	15	T	--	--	--
27	43	26000	3200	.10	1800	.5	--	--	--
28	12	13000	420	.10	3000	2	--	--	--
29	33	4800	430	.10	2100	.6	--	--	--
30	22	13000	S2200	.10	--	.3	--	--	--
31	33	26000	S4000	.10	--	.1	--	--	--
TOTAL	237.50	--	34540.1	5366.30	--	2009463.9	0	--	0

TOTAL DISCHARGE FOR PERIOD MARCH TO SEPTEMBER (CFS DAYS) 6283.50
TOTAL LOAD FOR PERIOD MARCH TO SEPTEMBER (TONS) 2096212.4

S COMPUTED BY SUBDIVIDING DAY.
T LESS THAN 0.05 TON.

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH
(Irrigation network station)

LOCATION (revised).--Lat 37°09'04", long 109°52'00", in SE¼NW¼ sec.7, T.42 S., R.19 E., San Juan County, at bridge on State Highway 47, 1,800 ft downstream from gaging station, 20 miles southwest of Bluff, and 114 miles upstream from mouth.
DRAINAGE AREA.--23,000 sq mi, approximately (at gaging station).
PERIOD OF RECORD.--Chemical analyses: February to June 1927, October 1929 to September 1968.
Water temperatures: May 1944 to September 1961, October 1964 to September 1968.
Sediment records: August to September 1928, July 1929 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 1,390 mg/l July 26; minimum, 248 mg/l June 1-9.
Hardness: Maximum, 632 mg/l Oct. 3-6; minimum, 158 mg/l May 29-31.
Specific conductance: Maximum daily, 2,020 micromhos July 26; minimum daily, 346 micromhos June 8.
Water temperatures: Maximum, 29.0°C July 21; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 150,000 mg/l Aug. 12; minimum daily, 1,100 mg/l July 18.
Sediment loads: Maximum daily, 3,000,000 tons Aug. 12; minimum daily, 2,400 tons July 18.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.											
01-02	444	13	131	41	--	--	127	210	0	540	29
03-06	709	15	184	42	--	--	135	236	0	648	40
07-26	450	11	133	47	--	--	115	204	0	543	30
27-31	554	11	131	48	--	--	115	204	0	540	33
NOV.											
01-30	633	11	120	41	--	--	103	200	0	469	29
DEC.											
01-11	719	11	118	39	--	--	95	200	0	461	27
12-18	603	11	112	38	--	--	92	200	0	416	27
19-31	583	12	112	45	--	--	99	208	0	449	29
JAN.											
01-07	540	12	109	39	--	--	122	204	0	474	28
08-12	566	13	135	47	--	--	140	244	0	561	34
13-28	597	12	99	47	--	--	114	206	0	458	28
29-31	600	9.8	74	33	--	--	112	178	0	347	38
FEB.											
01-02	800	11	88	35	--	--	139	192	0	447	31
03-07	830	13	96	41	--	--	127	192	0	466	31
08-17	989	10	90	50	--	--	128	188	0	492	30
18-21	906	9.7	117	50	--	--	135	196	0	560	32
22-24	1044	10	102	55	--	--	134	194	0	546	31
25-29	929	12	97	68	--	--	134	198	0	582	30
MAR.											
01-08	881	11	111	41	--	--	118	190	0	488	28
09-11	1050	10	102	43	--	--	116	182	0	477	28
12-15	790	11	99	59	--	--	129	196	0	544	30
16-27	698	10	104	53	--	--	124	192	0	525	30
28-31	853	10	90	46	--	--	108	174	0	451	26
APR.											
01-12	1090	11	96	31	--	--	85	184	0	356	22
13-19	1113	11	80	27	--	--	66	164	0	280	21
20-24	2052	12	65	17	--	--	49	149	0	189	14
25-30	1790	12	63	18	--	--	50	145	0	191	14
MAY											
01-04	1858	11	66	15	--	--	45	145	0	179	13
05-12	2346	11	60	15	--	--	40	141	0	161	11
13-21	1543	11	80	26	--	--	56	162	0	262	17
22-23	2670	8.4	61	18	--	--	37	136	0	169	12
24-28	3118	8.4	53	14	--	--	24	120	0	126	9.5
29-31	4473	6.8	47	9.7	--	--	17	105	0	94	7.8
JUNE											
01-09	5631	--	43	15	--	--	12	126	0	81	6.3
10-15	3053	8.5	59	15	--	--	29	132	0	143	11
16-25	4100	7.0	46	11	--	--	20	108	0	101	6.3
26-30	2262	7.2	51	15	--	--	27	120	0	132	8.5
JULY											
01-05	1550	6.1	67	15	--	--	37	130	0	177	13
06-10	1236	10	92	22	--	--	54	174	0	254	22
11-20	962	7.5	84	24	--	--	61	152	0	275	23
21-25	570	7.6	99	30	--	--	82	152	0	368	30
26...	966	13	144	44	--	--	233	224	0	388	325
27-31	2774	17	135	29	--	--	111	244	0	435	30
AUG.											
01-02	8535	16	126	24	--	--	101	248	0	380	24
03-04	5120	15	115	20	--	--	128	260	0	370	34
05-07	3027	13	93	16	--	--	75	200	0	257	20
08-11	3600	14	111	19	--	--	104	214	0	362	21
12-13	6085	15	103	32	--	--	146	246	0	452	23
14-19	2422	12	97	19	--	--	79	182	0	302	21
20-31	945	12	103	26	--	--	65	178	0	315	24
SEPT.											
01-03	954	12	107	31	--	--	82	204	0	361	22
04-20	630	12	104	33	--	--	86	188	0	380	22
21-30	718	12	91	30	--	--	82	172	0	344	22
WTD. AVG. TIME	--	11	84	26	--	--	70	170	0	289	19
WTD. AVG. TONS PER DAY	1401	11	98	34	--	--	88	182	0	376	24
	--	38	318	97	--	--	264	641	0	1090	72

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

Period of record:
Dissolved solids: Maximum, 1,860 mg/l July 21-31, 1934; minimum, 152 mg/l June 11-20, 1952.
Hardness: Maximum, 874 mg/l July 21-31, 1934; minimum, 102 mg/l July 1-6, 8-10, 1957.
Specific conductance (1941-68): Maximum daily, 2,790 micromhos Sept. 19, 1959; minimum daily, 208 micromhos June 17, 1952.
Water temperatures: Maximum, 33.5°C July 31, 1959; minimum (1944-61, 1965-68), freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 383,000 mg/l Sept. 21, 1929; minimum daily, 0 mg/l on several days during July 1934 and August 1939.
Sediment loads: Maximum daily, 12,000,000 tons Oct. 14, 1941; minimum daily, 0 ton on several days during July 1934 and August 1939.
REMARKS.--Additional samples were collected for more comprehensive definition of water quality at this station.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.											
01-02	--	--	--	1030	1.40	1240	498	326	2.5	1340	7.8
03-06	--	--	--	1230	1.60	2360	632	438	2.3	1550	7.7
07-26	--	--	--	1040	1.41	1260	524	357	2.2	1340	7.9
27-31	--	--	--	1050	1.43	1570	526	359	2.2	1340	7.9
NOV.											
01-30	--	--	--	930	1.26	1590	470	306	2.1	1220	7.8
DEC.											
01-11	--	--	--	887	1.21	1720	454	290	1.9	1170	7.8
12-18	--	--	--	846	1.15	1380	436	272	1.9	1120	7.9
19-31	--	--	--	908	1.23	1430	464	293	2.0	1200	7.8
JAN.											
01-07	--	--	--	883	1.20	1290	434	267	2.6	1110	7.9
08-12	--	--	--	1070	1.43	1640	528	328	2.6	1320	7.9
13-28	--	--	--	884	1.20	1430	438	269	2.4	1110	8.0
29-31	--	--	--	732	1.00	1190	318	172	2.7	978	7.8
FEB.											
01-02	--	--	--	824	1.12	1780	364	207	3.2	1140	7.9
03-07	--	--	--	867	1.18	1940	410	253	2.7	1140	8.0
08-17	--	--	--	902	1.23	2410	430	276	2.7	1180	7.9
18-21	--	--	--	1050	1.36	2570	496	335	2.6	1320	8.1
22-24	--	--	--	1010	1.37	2850	480	321	2.7	1270	8.0
25-29	--	--	--	1050	1.43	2630	520	358	2.6	1320	8.1
MAR.											
01-08	--	--	--	897	1.22	2130	446	290	2.4	1150	7.9
09-11	--	--	--	879	1.20	2490	432	283	2.4	1130	7.9
12-15	--	--	--	1000	1.36	2130	490	329	2.5	1270	8.0
16-27	--	--	--	966	1.31	1820	478	321	2.5	1230	8.0
28-31	--	--	--	834	1.13	1920	414	271	2.3	1080	7.9
APR.											
01-12	--	--	--	694	.94	2040	368	217	1.9	936	7.7
13-19	--	--	--	601	.82	1810	312	178	1.6	827	7.8
20-24	--	--	--	441	.60	2440	232	110	1.4	626	7.7
25-30	--	--	--	438	.60	2120	229	110	1.4	623	7.7
MAY											
01-04	--	--	--	437	.59	2190	226	107	1.3	620	8.0
05-12	--	--	--	396	.58	2510	212	96	1.2	568	7.5
13-21	--	--	--	588	.80	2450	308	175	1.4	790	7.9
22-23	--	--	--	401	.55	2890	225	113	1.1	576	7.6
24-28	--	--	--	327	.44	2750	190	92	.8	469	7.7
29-31	--	--	--	278	.38	3360	158	72	.6	401	7.5
JUNE											
01-09	--	--	--	248	.34	3770	171	68	.4	386	7.6
10-15	--	--	--	343	.47	2830	209	101	.9	523	7.5
16-25	--	--	--	261	.35	2990	160	71	.7	394	7.4
26-30	--	--	--	335	.46	2050	190	92	.8	495	7.4
JULY											
01-05	--	--	--	376	.51	1570	230	123	1.0	592	7.7
06-10	--	--	--	573	.78	1910	320	177	1.3	824	7.8
11-20	--	--	--	568	.77	1480	310	185	1.5	820	7.9
21-25	--	--	--	726	.99	1120	372	247	1.9	1000	7.8
26...	--	--	--	1390	1.89	3630	540	356	4.4	2020	7.6
27-31	--	--	--	922	1.25	6910	454	254	2.3	1230	7.8
AUG.											
01-02	--	--	--	880	1.20	20300	412	209	2.2	1170	7.8
03-04	--	--	--	834	1.13	11500	368	155	2.9	1150	7.6
05-07	--	--	--	634	.86	5180	296	132	1.9	895	7.7
08-11	--	--	--	775	1.05	7530	356	181	2.4	1060	7.6
12-13	--	--	--	873	1.19	14300	388	186	3.2	1290	7.6
14-19	--	--	--	645	.88	4220	322	173	1.9	899	7.7
20-31	--	--	--	640	.94	1630	366	220	1.5	951	7.8
SEPT.											
01-03	--	--	--	734	1.00	1890	396	229	1.8	1020	7.6
04-20	--	--	--	765	1.04	1300	394	240	1.9	1040	7.8
21-30	--	--	--	683	.93	1320	352	211	1.9	968	7.8
WTD. AVG. TIME	--	--	--	612	--	--	316	177	--	838	7.7
WTD. AVG. TONS PER DAY	--	--	--	--	--	--	--	--	--	--	--
	--	--	--	753	--	--	384	234	1.9	1010	7.8

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
ANALYSES OF ADDITIONAL SAMPLES											
DEC.											
15...	572	11	112	36	83	2.9	--	200	0	408	21
MAR.											
04...	834	10	116	39	96	3.8	--	191	0	449	28
MAY											
09...	2190	11	56	16	37	2.7	--	124	0	157	10
AUG.											
14...	2610	13	90	12	114	5.0	--	256	0	265	222

DATE	FLUORIDE (F)	NITRATE (NO3)	PHOSPHATE (PO4)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
DEC.											
15...	.9	7.0	--	809	1.10	1250	430	266	1.7	1080	7.6
MAR.											
04...	.3	6.3	.13	869	1.18	1960	450	293	2.0	1150	7.6
MAY											
09...	.7	4.0	--	365	.50	2160	206	104	1.1	544	7.6
AUG.											
14...	1.1	1.5	--	695	.93	4830	272	62	3.0	976	7.6

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1360	1230	1160	980	1140	1190	954	601	407	512	954	976
2	1330	1240	1170	1110	1130	1170	986	625	391	543	1390	1100
3	1480	1230	1240	1170	1240	1170	877	653	391	587	1200	970
4	1250	1220	1180	1150	1190	1160	866	589	388	624	1100	1140
5	1590	1220	1180	1130	1120	1170	866	569	386	679	921	1040
6	1420	1230	1160	1140	1080	1140	933	567	376	701	861	1030
7	1410	1200	1160	---	1070	1080	933	593	386	794	904	1050
8	1440	1210	1160	1390	1090	1140	973	564	346	866	1220	1070
9	1370	1210	1170	1410	1100	1080	954	548	381	879	898	1020
10	1340	1210	1130	1300	1080	1130	964	564	427	868	1170	1030
11	1300	1230	1090	1260	1140	1170	980	67	480	822	961	1020
12	1270	1220	1160	1250	1150	1210	954	558	550	809	1320	1000
13	1280	1230	1210	1110	1210	1220	755	683	583	802	1070	1020
14	1310	1240	1100	1070	1190	1340	796	890	566	777	930	997
15	1300	1220	1090	1100	1220	1310	901	832	504	780	1060	1060
16	1320	1210	1070	1170	1250	1300	844	781	409	809	1080	1030
17	1310	1230	1100	1220	1240	1320	828	802	411	818	813	1030
18	1320	1240	1100	1210	1270	1280	818	816	376	829	753	1010
19	1310	1220	1080	1210	1260	1290	837	789	366	861	791	1030
20	1310	1220	1120	1150	1360	1280	689	762	372	871	830	1030
21	1330	1230	1080	1100	1330	1230	618	727	396	906	875	1030
22	1330	1220	1310	1100	1220	1220	597	613	396	934	927	997
23	1330	1220	1270	1100	1250	1250	607	539	397	961	977	970
24	1350	1220	1390	1070	1340	1180	616	495	394	1170	1020	973
25	1360	1210	1340	1060	1350	1130	615	420	375	1030	924	945
26	1400	1180	1200	1050	1370	1140	620	453	441	2020	915	928
27	1370	1170	1270	1070	1330	1150	627	490	468	1260	904	942
28	1340	1150	1180	1060	1340	1130	627	470	513	1450	987	934
29	1330	1150	1120	1040	1230	1120	619	432	524	1390	997	939
30	1330	1160	1100	923	---	1080	611	400	511	1010	977	942
31	1290	---	1020	971	---	1000	---	370	---	1060	1010	---
AVERAGE	1360	1210	1160	1140	1220	1190	796	589	430	917	992	1010

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	20	21	19	20	21	17	17	17	16	18	18	18	14	14	14	14	14	14	14	9	13	14	14	15	13	13	14	12	9	6	8	14
NOVEMBER.	9	9	6	6	7	6	9	8	8	7	7	7	7	4	4	5	4	4	4	4	5	4	4	6	1	2	1	1	2	1	--	5
DECEMBER.	0	1	0	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JANUARY..	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	1	1	0	0	1	1	0	1	1	1	1	1	0
FEBRUARY.	2	1	1	2	1	1	2	2	2	3	4	5	6	6	6	5	7	8	8	9	7	8	11	12	11	10	9	9	9	--	--	5
MARCH....	8	11	11	11	11	9	9	9	8	9	9	10	10	10	8	11	9	9	9	7	10	10	9	10	10	11	11	11	9	9	11	9
APRIL....	9	9	8	9	9	11	11	11	13	14	14	15	13	15	15	14	12	11	10	10	11	--	11	12	14	14	12	15	16	17	--	12
MAY.....	17	15	16	16	16	15	15	16	17	15	16	16	15	15	16	16	14	16	19	20	20	19	18	15	18	18	19	21	21	20	20	17
JUNE....	20	21	20	20	19	18	17	15	17	18	20	22	23	22	19	24	24	24	23	24	24	20	24	22	23	22	24	24	23	21	--	21
JULY.....	23	24	24	25	25	24	25	25	26	26	26	27	26	26	26	27	27	27	28	28	29	27	28	27	27	26	26	26	25	26	24	26
AUGUST...	24	23	24	25	24	25	25	25	25	24	25	24	23	23	22	23	21	21	21	20	21	20	18	20	20	22	22	25	24	21	24	22
SEPTEMBER	24	25	23	20	21	21	23	22	23	23	24	22	23	23	21	19	18	19	18	17	18	18	18	18	18	18	18	18	17	17	--	20

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	437	--	20000	645	3500	6100	767	3800	7900
2	452	12000	15000	601	--	5000	745	--	6000
3	648	--	30000	613	2700	4500	718	--	5000
4	1170	34000	110000	632	--	20000	690	2400	4500
5	515	--	20000	613	--	10000	684	--	4000
6	504	9500	13000	613	6200	10000	704	3000	5700
7	447	--	8000	601	--	8000	731	--	7000
8	386	--	5000	607	3900	6400	724	3200	6300
9	409	4800	5300	626	--	6000	745	--	7000
10	414	--	6000	607	2900	4800	724	--	8000
11	452	7900	9600	601	--	5[illegible]	677	[illegible]	8000
12	468	--	10000	589	--	4000	650	--	9000
13	433	3100	3600	601	3400	5500	620	5400	9000
14	452	--	6000	583	--	4000	590	--	6000
15	428	--	5000	607	2700	4400	589	2300	3700
16	418	4200	4700	578	--	4000	590	--	4000
17	442	--	4000	578	2400	3700	590	--	4000
18	462	2600	3200	589	--	4000	590	--	4000
19	452	--	3000	607	--	4000	590	--	4000
20	457	2000	2500	613	2700	[illegible]	590	--	4000
21	473	--	4000	613	--	[illegible]	590	--	4000
22	483	--	6000	664	2700	4800	590	--	4000
23	488	5000	6600	651	--	[illegible]	580	--	4000
24	483	--	5000	657	--	4000	580	--	4000
25	468	[illegible]	[illegible]	677	2700	4900	580	--	4000
26	488	--	3000	711	--	5000	580	--	4000
27	526	--	3000	704	2400	4600	580	--	4000
28	542	2300	3400	738	--	5000	580	--	4000
29	548	--	3000	711	2600	[illegible]	580	--	4000
30	548	2300	3400	767	--	8000	580	--	4000
31	607	--	5000	--	--	-	580	--	4000
TOTAL	15500	--	329100	18997	--	[illegible]	19708	--	161100

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)	MEAN DISCHARGE (CFS)	MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEDIMENT LOAD (TONS PER DAY)
1	540	--	3000	800	--	10000	897	3300	8000
2	540	--	3000	800	--	[illegible]	897	--	8000
3	537	--	3000	800	--	10000	850	--	7000
4	540	--	3000	800	--	10000	866	4300	10000
5	540	--	3000	800	--	10000	873	--	10000
6	540	--	3000	800	--	10000	873	[illegible]	12000
7	540	--	3000	950	--	30000	873	--	10000
8	540	--	3000	1000	12000	32000	922	4400	11000
9	540	--	3000	990	3700	9900	1090	--	20000
10	570	--	3000	947	--	[illegible]	1020	--	10000
11	590	--	4000	881	--	[illegible]	1040	5000	14000
12	590	--	4000	939	3500	8900	906	--	10000
13	580	--	4000	955	--	[illegible]	827	4000	8900
14	570	--	3000	1130	4300	13000	745	--	7000
15	580	--	4000	1140	--	10000	684	2500	4600
16	600	--	4000	990	4900	13000	684	--	5000
17	610	--	4000	914	--	10000	684	--	6000
18	610	--	4000	881	--	10000	657	3800	6700
19	600	--	4000	881	5500	[illegible]	664	--	4000
20	600	--	4000	922	--	10000	664	2800	5000
21	600	--	4000	939	4300	11000	724	--	8000
22	600	--	4000	1130	--	30000	664	3700	6600
23	600	--	4000	1030	7600	21000	711	--	8000
24	600	--	4000	972	--	10000	745	--	9000
25	600	--	4000	947	--	10000	718	4200	8100
26	600	--	4000	955	4700	12000	745	--	9000
27	600	--	4000	930	--	10000	718	2600	5000
28	600	--	4000	906	4500	11000	782	--	7000
29	600	--	4000	906	--	10000	842	3800	8600
30	600	--	4000	--	--	--	850	--	9000
31	600	--	4000	--	--	--	939	--	10000
TOTAL	17957	--	113000	27035	--	[illegible]	25154	--	[illegible]

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN SEDIMENT CONCEN-TRATION (MG/L)	APRIL SEDIMENT LOAD (TONS PER DAY)	MAY MEAN DISCHARGE (CFS)	MAY MEAN SEDIMENT CONCEN-TRATION (MG/L)	MAY SEDIMENT LOAD (TONS PER DAY)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN SEDIMENT CONCEN-TRATION (MG/L)	JUNE SEDIMENT LOAD (TONS PER DAY)
1	1020	58D0	16000	1690	4900	22000	5080	--	70000
2	1120	--	2000D	1750	--	20000	5140	--	80000
3	1550	11000	46000	1890	5100	26000	5440	7600	110000
4	1280	8500	29000	2100	--	30000	5820	--	200000
5	1180	7300	23000	2330	--	40000	5600	11000	170000
6	1020	--	20000	2420	6500	42000	5690	--	200000
7	947	--	20000	2440	--	50000	6300	11000	190000
8	922	4500	11000	2430	7500	49000	6330	--	200000
9	889	--	10000	2220	7700	46000	5280	--	100000
10	819	5400	12000	2220	4300	26000	4170	5000	56000
11	789	--	10000	2460	--	30000	3090	--	40000
12	1540	--	60000	2250	--	30000	2460	3400	23000
13	1280	6700	23000	1690	4400	20000	2090	--	20000
14	866	--	10000	2000	--	30000	2750	6200	46000
15	1100	5300	16000	1660	5300	24000	3760	--	80000
16	990	--	10000	1390	--	20000	4230	--	100000
17	964	3800	9900	1280	3200	11000	4460	9800	120000
18	981	--	100D0	1390	--	20000	4510	--	100000
19	1610	8800	S44000	1360	--	20000	4620	9300	120000
20	2100	--	50000	1470	6400	25000	4680	--	100000
21	2090	--	50000	1650	--	30000	4170	--	80000
22	2090	8100	46000	2320	6700	42000	3880	6900	72000
23	2000	--	40000	3020	--	80000	3920	--	80000
24	1980	6600	35000	2820	10000	76000	3430	3800	35000
25	1860	--	30000	3430	--	100000	3100	--	30000
26	1820	5600	28000	2930	--	80000	2790	4400	33000
27	1780	--	20D00	2450	5200	34000	2300	--	20000
28	1760	--	2000D	2960	--	50000	2130	--	20000
29	1770	4900	23000	3710	8300	83000	2070	330D	18000
30	1750	--	20000	4510	--	80000	2020	--	20000
31	--	--	--	5200	5900	83000	--	--	--
TOTAL	41867	--	761900	74440	--	1319000	121310	--	2533000

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN SEDIMENT CONCEN-TRATION (MG/L)	JULY SEDIMENT LOAD (TONS PER DAY)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN SEDIMENT CONCEN-TRATION (MG/L)	AUGUST SEDIMENT LOAD (TONS PER DAY)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN SEDIMENT CONCEN-TRATION (MG/L)	SEPTEMBER SEDIMENT LOAD (TONS PER DAY)
1	1960	3100	16000	6070	--	1000000	827	--	20000
2	1790	--	20000	11000	71000	2100000	1080	8600	25000
3	1490	4400	18000	6200	--	700000	955	--	30000
4	1290	--	10000	4040	--	300000	753	12000	24000
5	1220	29D0	9600	313D	25000	210000	651	--	10000
6	1200	--	1D000	2420	--	100000	589	5300	8400
7	1250	--	20000	3530	27000	260000	589	--	8000
8	1190	5000	16000	4420	--	1000000	651	--	10000
9	1240	--	10000	4000	74000	800000	607	5700	9300
10	1300	3600	13000	3010	--	400000	607	--	9000
11	1100	--	7000	2970	--	400000	583	5400	8500
12	1060	210D	6000	7410	150000	3000000	566	2600	4000
13	1150	--	10000	4760	--	1000000	566	5600	8600
14	1120	--	9000	3040	40000	330000	677	--	10000
15	1030	2900	8100	3170	--	400000	589	--	9000
16	955	--	8000	2630	31000	220000	632	6100	10000
17	881	4000	9500	2370	--	200000	657	--	10000
18	804	1100	2400	1790	--	60000	645	--	9000
19	796	2000	4300	1530	9000	37000	664	4400	7900
20	724	--	4000	1310	--	30000	684	--	10000
21	632	--	40D0	1170	76D0	24000	690	6400	12D00
22	578	2200	3400	981	--	20000	711	--	10000
23	548	--	8000	858	6500	15000	697	5800	11000
24	542	6600	9700	782	--	10000	724	--	10000
25	548	--	10000	964	--	20000	738	5000	10000
26	966	12000	31000	881	6300	15000	718	--	9000
27	2640	--	300000	850	--	10000	731	--	9000
28	3720	--	500000	1070	5900	17000	711	3700	7100
29	2650	31000	220000	906	--	20000	711	--	7000
30	2360	--	200000	811	6400	14000	753	6100	12000
31	2500	28000	190000	760	--	10000	--	--	--
TOTAL	41234	--	1687000	88833	--	12722000	20756	--	337800

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 512791
TOTAL LOAD FOR YEAR (TONS) 20772400

S COMPUTED BY SUBDIVIDING DAY.

09379500 SAN JUAN RIVER NEAR BLUFF, UTAH--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
OCT. 4, 1967	1500		638	23200	46	56	69	86	98	100	--	--	--	--	--	VPWC
NOV. 13.....	1420	8	613	2830	7	7	13	39	88	99	100	--	--	--	--	VPWC
DEC. 15.....	1350	0	589	405	--	--	--	--	--	--	--	--	--	--	--	--
MAR. 4, 1968	1500	7	834	4200	15	17	22	38	84	99	100	--	--	--	--	VPWC
APR. 4.....	1410	8	1320	9040	12	14	21	44	81	91	98	100	--	--	--	VPWC
MAY 9.....	1405	15	2190	7780	4	5	7	26	79	96	100	--	--	--	--	VPWC
JUNE 7.....	1945	17	6310	11100	4	5	7	19	54	93	100	--	--	--	--	VPWC
JUNE 12.....	1310	18	2440	787	24	30	44	86	100	--	--	--	--	--	--	VPWC
JULY 18.....	1810	27	834	1270	4	6	--	20	53	80	98	100	--	--	--	VPWC
AUG. 2.....	1720	23	11700	72600	43	53	71	85	97	100	--	--	--	--	--	VPWC
AUG. 5.....	1730	24	2830	22500	49	59	72	88	99	100	--	--	--	--	--	VPWC
AUG. 14.....	1450	21	2610	31600	47	57	74	88	98	100	--	--	--	--	--	VPWC
SEPT. 12.....	1000	19	572	2690	14	15	22	48	90	99	100	--	--	--	--	VPWC

PARTICLE-SIZE DISTRIBUTION OF BED MATERIAL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	NUMBER OF SAMPLING POINTS	WATER DISCHARGE (CFS)	BED MATERIAL PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .062	.125	.250	.500	1.000	2.000	4.000	8.000	16.00	32.00	64.00	METHOD OF ANALYSIS
OCT. 4, 1967	1500			638	47	94	100	--	--	--	--	--	--	--	--	SV
MAR. 4, 1968	1500	7		834	4	26	55	92	100	--	--	--	--	--	--	SV
APR. 4.....	1410	8		1320	7	27	53	85	99	99	100	--	--	--	--	SV
MAY 9.....	1405	15		2190	4	22	57	86	98	99	100	--	--	--	--	SV
JUNE 12.....	1310	18		2440	16	66	99	100	--	--	--	--	--	--	--	SV
AUG. 14.....	1450	21		2610	12	72	99	100	--	--	--	--	--	--	--	SV
SEPT. 12.....	1000	19		572	7	31	61	93	99	99	99	100	--	--	--	SV

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.
(Irrigation network station)

LOCATION.--Lat 36°51'55", long 111°35'15", in NE¼SE¼ sec.13, T.40 N., R.7 E., Coconino County, at gaging station at head of Marble Gorge at Lees Ferry, 0.8 mile (revised) upstream from Paria River, 16 miles downstream from Glen Canyon Dam, 28 miles downstream from Utah-Arizona State line, and 61.5 miles upstream from Little Colorado River.
DRAINAGE AREA.--107,900 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: January to July 1926, October 1926 to June 1927, October 1928 to September 1930, November 1942 to October 1945, October 1947 to September 1968.
Water temperatures: July 1949 to September 1968.
Sediment records: October 1928 to December 1933, November 1942 to September 1944, October 1947 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 752 mg/l Apr. 1-30; minimum, 504 mg/l Aug. 1-31.
Hardness: Maximum, 384 mg/l Apr. 1-30; minimum, 260 mg/l Aug. 1-31, Sept. 1-30.
Specific conductance: Maximum daily, 1,230 micromhos Apr. 17; minimum daily, 772 micromhos Aug. 12.
Water temperatures: Maximum, 21.0°C Oct. 1, Sept. 5, 6, 13; minimum, 7.0°C on many days during January and February.
Period of record:
Dissolved solids (1928-30, 1942-45, 1947-68): Maximum, 1,940 mg/l Sept. 26, 1962; minimum, 209 mg/l June 11-20, 1929.
Hardness (1928-30, 1942-45, 1947-68): Maximum, 960 mg/l Oct. 15, 1960; minimum, 132 mg/l June 11-20, 1944.
Specific conductance (1942-45, 1947-68): Maximum daily, 2,430 micromhos Oct. 15, 1960; minimum daily, 318 micromhos June 9, 1948.
Water temperatures (1949-64, 1965-68): Maximum, 29.5°C July 26, 1959; minimum (1949-64, 1966-68), freezing point on many days during winter months of most years.
REMARKS.--Flow completely regulated by Glen Canyon Dam since Mar. 13, 1963.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.												
01-31	6745	10	--	68	24	--	--	75	146	0	235	48
NOV.												
01-30	7726	10	--	71	26	--	--	78	148	0	245	52
DEC.												
01-31	8980	11	--	75	29	--	--	84	156	0	269	56
JAN.												
01-31	10300	11	--	86	32	--	--	95	172	0	303	66
FEB.												
01-29	8066	12	--	92	31	--	--	101	178	0	315	70
MAR.												
01-31	13950	11	--	94	32	--	--	110	180	0	334	75
APR.												
01-30	16270	10	--	97	35	--	--	104	186	0	336	74
MAY												
01-31	15330	11	.00	94	33	105	4.6	--	182	0	331	72
JUNE												
01-30	15030	9.1	--	89	31	--	--	113	182	0	323	75
JULY												
01-31	13450	8.8	--	76	27	--	--	87	170	0	253	59
AUG.												
01-31	11140	9.4	.01	66	23	68	3.5	--	151	0	208	48
SEPT.												
01-30	10670	10	--	66	23	--	--	74	155	0	213	49
WTD. AVG. TIME	--	10	--	83	29	--	--	95	170	0	288	64
WTD. AVG. TONS PER DAY	11500	10	--	81	29	--	--	92	167	0	280	62
	--	316	--	2570	913	--	--	2850	5270	0	8910	1980

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.												
01-31	--	2.9	--	--	535	.73	9740	270	150	2.0	844	7.5
NOV.												
01-30	--	3.3	--	--	558	.75	11600	284	163	2.0	872	7.4
DEC.												
01-31	--	3.6	--	--	605	.82	14700	308	180	2.1	940	7.5
JAN.												
01-31	--	4.8	--	--	683	.93	19000	346	205	2.2	1070	7.8
FEB.												
01-29	--	4.6	--	--	714	.97	15600	356	210	2.3	1110	7.8
MAR.												
01-31	--	5.0	--	--	750	1.02	28200	366	218	2.5	1150	7.7
APR.												
01-30	--	5.0	--	--	752	1.02	33000	384	232	2.3	1180	7.5
MAY												
01-31	.4	4.7	.11	772	745	1.05	32000	372	223	2.4	1150	7.6
JUNE												
01-30	--	4.7	--	--	734	1.00	29800	350	201	2.6	1120	7.5
JULY												
01-31	--	4.3	--	--	599	.81	21800	300	161	2.2	938	7.5
AUG.												
01-31	.4	3.6	.16	513	504	.70	15400	260	136	1.8	799	7.4
SEPT.												
01-30	--	3.6	--	--	515	.70	14800	260	133	2.0	804	7.4
WTD. AVG. TIME	--	4.3	--	--	657	--	--	328	189	--	1020	7.6
WTD. AVG. TONS PER DAY	--	4.2	--	--	641	--	--	321	184	2.2	998	7.5
	--	134	--	--	--	--	--	--	--	--	--	--

09380000 COLORADO RIVER AT LEES FERRY, ARIZ.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	861	850	912	997	1100	1080	1160	---	---	---	---	---
2	865	989	---	994	1140	---	1190	1150	---	---	821	---
3	874	878	962	---	1130	---	1210	1150	---	1050	---	---
4	867	941	---	1040	1120	1140	1220	---	---	---	---	---
5	867	---	---	1030	1100	---	1190	---	---	1030	793	813
6	861	822	905	1040	1100	1130	1200	1180	1150	---	835	810
7	859	832	907	1060	1110	1130	---	1150	1150	---	791	---
8	823	826	919	1060	1110	1130	---	1150	---	992	802	---
9	823	846	957	1080	1120	1140	1170	1150	---	978	813	---
10	819	846	944	1080	---	---	1150	1170	---	992	---	---
11	833	848	---	1080	1120	1140	1160	---	---	980	---	---
12	823	846	---	---	1090	1120	1160	---	---	956	772	---
13	846	856	959	1070	1100	1130	1170	1160	---	---	797	821
14	861	859	895	1070	1100	1160	---	1150	---	---	---	---
15	856	859	921	1060	1110	1160	1180	1190	---	959	779	869
16	821	873	900	1080	1080	1160	1190	1160	---	944	799	811
17	832	884	893	1090	---	1150	1230	1160	---	949	---	821
18	836	---	909	1080	1070	1210	1210	1150	1160	936	---	779
19	836	---	921	1080	1080	1180	1200	1140	1160	902	---	797
20	826	---	---	1080	1110	1150	---	1140	1170	---	---	813
21	836	882	---	1080	1130	1170	---	1140	1150	---	---	---
22	838	882	962	1080	1090	1140	---	1160	1140	898	---	---
23	856	---	---	1090	1140	1160	1190	1170	---	884	---	811
24	844	905	---	1090	1110	---	1160	1150	1120	888	---	800
25	867	---	---	1090	1120	1140	1180	---	1110	---	---	781
26	852	---	931	1080	---	1140	1170	---	1100	---	---	797
27	815	914	983	---	---	1160	---	1140	1080	---	---	795
28	850	919	994	---	1140	1160	---	1140	1070	---	---	---
29	854	---	997	1080	1100	1150	1150	1140	---	814	---	808
30	848	905	1000	1100	---	1160	1150	---	---	831	---	793
31	852	---	1010	1120	---	1150	---	---	---	---	---	---
AVERAGE	845	---	---	1070	1110	1150	---	---	---	---	---	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

MONTH	DAY 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	AVERAGE
OCTOBER..	21	20	20	20	19	20	19	19	19	19	20	20	19	19	19	19	19	19	19	19	19	19	18	18	18	18	17	16	16	14	16	18
NOVEMBER.	16	10	16	10	--	16	16	15	16	16	16	16	16	14	14	14	14	--	--	--	14	14	--	14	--	--	13	13	--	12	--	--
DECEMBER.	11	--	11	--	--	11	11	10	9	9	--	--	9	9	10	10	9	9	9	--	--	8	--	--	--	--	9	8	8	8	8	8
JANUARY..	8	8	--	8	7	7	7	7	7	7	7	--	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	--	--	7	7	7
FEBRUARY.	7	7	7	7	7	7	7	7	7	--	7	7	7	8	8	8	--	8	8	8	8	8	8	8	8	--	--	8	8	--	--	7
MARCH....	8	--	--	8	--	8	9	9	9	--	8	9	9	9	9	9	8	8	8	8	8	9	9	--	9	9	10	9	--	9	9	8
APRIL....	9	9	9	9	9	--	--	--	9	9	10	9	10	--	10	9	9	9	8	--	--	--	9	10	10	11	--	--	12	12	--	--
MAY.....	--	13	13	--	--	11	12	13	--	13	--	--	13	15	18	14	15	18	16	13	13	13	13	13	--	--	--	14	14	--	--	--
JUNE....	--	--	--	--	--	14	13	--	--	--	--	--	--	--	--	--	--	19	19	19	17	17	--	18	17	18	18	18	--	--	--	--
JULY....	--	--	18	--	18	--	--	19	19	19	20	20	--	--	19	19	--	--	--	--	--	--	19	19	19	--	--	--	--	20	20	--
AUGUST...	--	20	--	--	20	20	20	20	--	--	20	20	--	20	20	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SEPTEMBER	--	--	--	--	21	21	--	--	--	--	--	--	21	--	20	20	20	20	19	20	--	--	19	19	19	20	20	--	20	19	--	--

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS PER DAY)
OCT 8, 1967	1045	1°	3310	6	54
OCT 18.....	0720	19	3660	5	49
OCT 25.....	1625	18	9840	2	53
NOV 9.....	1630	16	9350	3	76
NOV 13.....	0930	16	1630	6	26
NOV 24.....	1000	14	1820	7	34
DEC 6.....	1330	11	12200	10	330
DEC 16.....	1330	10	14500	10	390
DEC 20.....	1430	9	13400	10	360
DEC 30.....	1430	8	9170	3	74
JAN 1, 1968	1400	7	6540	3	53
JAN 10.....	1045	7	9540	1	26
JAN 19.....	1000	7	11400	2	62
JAN 24.....	1400	7	15200	3	120
FEB 7.....	1445	7	12800	2	69
FEB 16.....	1300	7	11000	6	180
FEB 23.....	0930	8	2790	6	45
FEB 29.....	1145	10	9610	7	180
MAR 9.....	1600	8	14400	39	1500
MAR 27.....	1545	10	23600	89	5700
APR 4.....	1515	12	21500	145	8400
APR 11.....	1345	10	18500	36	1800
APR 19.....	1500	13	15200	23	940
APR 25.....	1445	10	22500	34	2100
MAY 8.....	1200	13	16800	10	450
MAY 19.....	1500	13	9840	32	850
MAY 23.....	1410	14	14500	4	160
MAY 29.....	1445	14	20100	11	600
JUN 21.....	0820	17	9620	6	160
JUL 3.....	1600	18	17200	3	140
JUL 24.....	1300	19	11600	4	120
AUG 2.....	1415	23	15800	2	85
AUG 8.....	1600	20	16700	3	140
AUG 15.....	1600	20	13200	2	71
AUG 30.....	1500	21	19300	6	310
SEP 6.....	1545	21	18700	6	300
SEP 15.....	1030	20	3530	2	19
SEP 23.....	1530	19	8920	3	72

09382000 PARIA RIVER AT LEES FERRY, ARIZ.

LOCATION.--Lat 36°52'20", long 111°35'40", in NW¼NE¼ sec.13, T.40 N., R.7 E., Coconino County, at gaging station 0.5 mile upstream from mouth and 1 mile northwest of Lees Ferry.
DRAINAGE AREA.--1,410 sq mi.
PERIOD OF RECORD.--Chemical analyses: October 1947 to February 1950.
Specific conductance: October 1964 to September 1968.
Water temperatures: October 1956 to September 1968.
Sediment records: October 1947 to September 1968.
EXTREMES.--1967-68:
Specific conductance: Maximum daily, 3,000 micromhos July 7, 26; minimum daily, 450 micromhos Dec. 19.
Water temperatures: Maximum, 34.0°C July 3, 14; minimum, freezing point on many days during December and January.
Sediment concentrations: Maximum daily, 780,000 mg/l Aug. 9; minimum daily, 10 mg/l Oct. 26, 30.
Sediment loads: Maximum daily, 1,100,000 tons Aug. 9; minimum daily, 0.10 ton Oct. 24, 26, 28, July 4.
Period of record:
Specific conductance: Maximum daily, 3,500 micromhos July 26, 1966; minimum daily, 320 micromhos May 21, 1967.
Water temperatures (1956-61, 1965-68): Maximum, 35.5°C Aug. 11, 1958, July 29, 1960; minimum, freezing point on many days during winter periods.
Sediment concentrations: Maximum daily, 780,000 mg/l Aug. 9, 1968; minimum daily, 1 mg/l June 1-10, 1950.
Sediment loads: Maximum daily, 5,100,000 tons Sept. 12, 1958; minimum daily, less than 0.05 ton on many days of most years.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1200	---	1250	1200	980	800	1400	---	---	---	2600	---
2	1300	---	1200	1100	1000	---	1050	940	---	---	2200	---
3	1200	600	1250	---	1050	---	1200	850	---	500	---	900
4	1150	---	1000	1000	800	800	1200	---	---	---	1800	1000
5	1150	---	---	1100	800	---	1200	---	540	470	1500	650
6	1200	950	1100	1100	800	800	---	800	570	---	2100	600
7	1000	1000	1100	1100	800	750	---	1200	550	3000	1500	---
8	1000	1100	1100	1300	750	700	1100	1200	---	2200	1300	---
9	1100	1100	1100	1050	800	900	1100	1000	---	2200	2200	500
10	1000	1000	1300	1000	---	---	1050	1000	---	2500	2000	---
11	1000	1000	1000	950	800	900	950	---	---	1300	---	---
12	1100	1000	770	1050	850	---	1000	---	---	1400	2500	---
13	1000	1000	1300	1050	850	870	---	1200	---	1000	1200	550
14	900	1100	1000	1050	920	800	1000	---	---	850	1800	---
15	900	960	---	1150	820	800	950	1400	---	750	2000	---
16	---	880	580	1100	950	850	1000	1200	---	600	1600	1200
17	850	900	600	1100	---	800	950	1100	---	600	1300	1200
18	850	860	600	1200	1000	800	950	1000	480	600	---	1000
19	700	---	450	1200	950	800	1000	1000	500	550	---	600
20	700	840	480	1100	1000	1200	---	800	550	550	1400	600
21	700	800	500	1200	1000	1150	---	780	550	500	1400	---
22	700	800	500	1200	---	1150	---	620	540	950	1400	---
23	700	1400	500	1150	800	1150	1300	550	---	2500	800	550
24	650	900	---	1100	850	---	1200	540	520	750	900	500
25	650	1600	---	1100	900	1200	1200	---	500	2300	800	500
26	650	---	---	1050	---	1300	1100	---	500	3000	800	---
27	620	1200	1000	---	---	---	---	540	500	2500	900	500
28	600	1000	1000	---	850	1300	---	530	500	2400	1200	500
29	620	---	980	1100	800	1200	1000	530	---	2000	1400	500
30	620	1200	900	---	---	1200	700	540	---	1600	1300	500
31	680	---	1100	1000	---	1250	---	---	---	---	1200	---
AVERAGE	883	---	910	1100	880	---	---	---	---	1450	1520	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	---	6.0	0.0	---	7.0	12.0	---	---	---	23.0	---
2	23.0	---	6.0	0.0	1.0	---	14.0	17.0	---	---	22.0	---
3	24.0	9.0	4.0	---	1.0	---	15.0	18.0	---	34.0	---	19.0
4	24.0	---	0.0	0.0	1.0	13.0	13.0	---	---	---	23.0	16.0
5	20.0	---	---	0.0	1.0	---	10.0	---	24.0	29.0	25.0	27.0
6	22.0	9.0	0.0	0.0	2.0	7.0	---	19.0	28.0	---	23.0	27.0
7	22.0	14.0	0.0	0.0	2.0	8.0	---	10.0	23.0	21.0	24.0	---
8	19.0	8.0	1.0	7.0	3.0	18.0	15.0	12.0	---	20.0	25.0	---
9	13.0	15.0	0.0	0.0	3.0	7.0	9.0	11.0	---	20.0	23.0	21.0
10	24.0	11.0	0.0	0.0	---	---	21.0	11.0	---	22.0	25.0	---
11	21.0	13.0	0.0	1.0	3.0	7.0	15.0	---	---	20.0	---	---
12	23.0	8.0	1.0	1.0	3.0	---	15.0	---	---	29.0	27.0	---
13	24.0	7.0	0.0	1.0	6.0	15.0	---	12.0	---	30.0	24.0	28.0
14	24.0	7.0	0.0	1.0	6.0	7.0	25.0	16.0	---	34.0	23.0	---
15	16.0	11.0	---	1.0	5.0	11.0	14.0	18.0	---	26.0	23.0	---
16	---	9.0	0.0	1.0	7.0	11.0	13.0	16.0	---	25.0	20.0	20.0
17	23.0	7.0	1.0	0.0	---	9.0	14.0	25.0	---	26.0	21.0	16.0
18	17.0	8.0	0.0	1.0	5.0	5.0	12.0	26.0	32.0	26.0	---	20.0
19	19.0	---	0.0	0.0	7.0	6.0	11.0	31.0	22.0	30.0	---	22.0
20	20.0	12.0	0.0	1.0	8.0	5.0	---	26.0	22.0	27.0	22.0	23.0
21	18.0	11.0	0.0	0.0	9.0	6.0	---	20.0	24.0	28.0	21.0	---
22	21.0	8.0	0.0	0.0	6.0	7.0	---	21.0	31.0	29.0	22.0	---
23	14.0	6.0	0.0	1.0	6.0	8.0	8.0	23.0	---	24.0	22.0	25.0
24	17.0	4.0	---	1.0	9.0	---	14.0	16.0	25.0	23.0	18.0	19.0
25	10.0	4.0	---	1.0	15.0	12.0	21.0	---	21.0	24.0	20.0	22.0
26	10.0	---	---	1.0	---	10.0	13.0	---	23.0	24.0	22.0	---
27	19.0	3.0	0.0	---	---	16.0	---	29.0	25.0	24.0	19.0	17.0
28	10.0	10.0	0.0	---	10.0	10.0	---	18.0	29.0	19.0	22.0	20.0
29	7.0	---	0.0	3.0	6.0	18.0	15.0	27.0	---	17.0	22.0	20.0
30	6.0	3.0	0.0	3.0	---	11.0	18.0	29.0	---	20.0	21.0	17.0
31	13.0	---	0.0	1.0	---	18.0	---	---	---	---	21.0	---
AVERAGE	18.0	---	0.5	1.0	5.0	10.0	---	---	---	25.0	22.5	---

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	16	920	40	5.8	--	.40	22	890	53
2	14	680	25	5.5	--	.60	26	1100	77
3	13	540	19	6.0	51	1.0	20	890	48
4	12	390	12	8.0	--	.90	14	520	20
5	11	330	9.8	9.0	--	1.0	17	--	20
6	11	280	8.3	9.4	40	1.0	22	390	23
7	10	250	6.8	12	84	2.8	25	640	43
8	9.4	220	5.5	11	83	2.4	25	1100	74
9	9.8	270	7.2	12	110	3.5	25	640	43
10	9.8	290	7.6	12	100	3.2	14	300	11
11	9.8	260	6.9	12	78	2.5	14	210	8.0
12	9.0	150	3.6	12	100	3.2	18	220	11
13	7.6	160	3.3	11	100	3.0	19	410	21
14	7.2	130	2.5	9.0	62	1.5	20	390	21
15	6.6	140	2.5	9.0	36	.90	25	--	40
16	6.2	--	2.0	9.0	35	.90	19	1100	56
17	6.2	110	1.9	8.6	41	1.0	13	310	11
18	6.2	95	1.5	9.0	27	.70	9.0	140	3.4
19	5.9	16	.20	9.0	--	.80	13	340	12
20	6.2	13	.20	9.0	30	.80	9.4	160	4.1
21	6.2	15	.20	9.4	16	.40	7.6	95	2.0
22	5.8	21	.30	27	10000	1500	10	99	2.6
23	4.8	19	.20	32	16000	1300	18	95	4.6
24	4.8	11	.10	25	3200	220	25	--	10
25	5.5	16	.20	22	1000	60	27	--	20
26	5.5	10	.10	19	--	30	34	--	40
27	5.8	14	.20	18	400	20	36	510	50
28	5.5	11	.10	17	460	21	30	290	23
29	6.2	21	.30	17	--	30	22	420	24
30	6.6	10	.20	20	950	51	20	700	38
31	5.8	11	.20	--	--	--	18	400	20
TOTAL	249.4	--	167.90	395.6	--	3264.50	617.0	--	833.7

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	29	240	19	41	2900	320	37	9500	950
2	25	310	21	39	2800	300	37	--	800
3	27	--	20	37	2900	290	35	--	600
4	24	270	18	37	1700	160	34	5200	480
5	24	280	18	44	1900	220	33	--	400
6	25	210	14	49	4300	560	33	4000	350
7	25	320	22	59	5100	810	44	4400	520
8	24	300	20	63	5100	860	53	9100	1300
9	22	340	20	67	5100	920	73	17000	3700
10	21	350	20	74	--	1000	50	--	2000
11	21	440	25	85	11000	2500	40	5300	580
12	22	430	25	100	16000	4300	35	--	300
13	20	570	31	73	12000	2300	30	4100	330
14	20	730	40	85	14000	3300	31	4300	350
15	20	300	16	86	12000	2800	30	--	400
16	22	190	11	70	7100	1300	28	3300	240
17	21	220	12	60	--	1000	23	2900	180
18	20	230	12	56	11000	1600	23	2300	140
19	25	270	18	65	12000	2100	22	2600	150
20	27	560	41	74	14000	2800	21	2700	150
21	28	270	20	74	16000	3400	21	1200	68
22	28	260	20	73	26000	5100	20	980	53
23	28	260	20	59	13000	2100	20	820	44
24	24	260	16	60	12000	2000	19	--	60
25	24	250	16	68	21000	3900	20	4800	260
26	27	230	16	57	--	3000	22	7000	420
27	28	--	20	53	--	3000	23	5000	310
28	37	--	50	60	16000	2500	24	4300	280
29	44	2000	240	48	10000	1300	23	3900	240
30	48	3200	420	--	--	--	24	4000	250
31	42	3200	350	--	--	--	25	4500	300
TOTAL	822	--	1611	1816	--	55740	953	--	16205

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	APRIL MEAN DISCHARGE (CFS)	APRIL MEAN CONCEN-TRATION (MG/L)	APRIL LOAD (TONS)	MAY MEAN DISCHARGE (CFS)	MAY MEAN CONCEN-TRATION (MG/L)	MAY LOAD (TONS)	JUNE MEAN DISCHARGE (CFS)	JUNE MEAN CONCEN-TRATION (MG/L)	JUNE LOAD (TONS)
1	23	8200	510	8.3	--	10	2.8	--	.80
2	27	11000	800	7.2	960	19	3.0	--	.80
3	33	13000	1100	5.8	500	7.7	3.2	--	.90
4	24	8900	580	5.0	--	6.0	3.0	--	.80
5	22	3400	200	5.5	--	4.0	2.8	120	.90
6	20	--	100	4.5	180	2.2	3.5	120	1.1
7	19	--	100	11	7300	230	3.2	150	1.3
8	17	1700	77	14	8600	320	5.0	--	1.0
9	15	1100	44	16	7000	300	5.8	--	1.0
10	14	750	29	14	5300	200	5.8	--	1.0
11	12	550	18	14	--	200	4.0	--	1.0
12	13	550	19	19	--	200	3.5	--	.90
13	12	--	20	33	14000	1500	3.2	--	.93
14	11	650	19	51	34000	4700	2.8	--	.80
15	9.8	1400	36	37	19000	1900	2.8	--	.83
16	9.4	1700	43	20	15000	1200	2.8	--	.80
17	8.0	1500	32	20	6100	330	2.8	--	.80
18	9.0	990	24	16	2200	95	2.7	110	.83
19	19	4200	300	11	880	26	2.7	110	.80
20	30	--	900	6.9	530	9.8	2.5	65	.40
21	37	--	1000	6.2	290	4.9	2.3	52	.30
22	26	--	700	4.5	220	2.6	2.3	82	.60
23	18	7800	380	4.2	180	2.0	2.0	--	.20
24	13	4900	180	4.8	180	2.3	2.0	47	.20
25	13	4400	150	4.5	--	2.0	2.0	45	.20
26	13	6700	230	4.0	--	1.0	2.2	44	.20
27	11	--	100	3.8	140	1.4	2.3	40	.20
28	9.4	--	80	3.2	120	1.0	2.0	50	.20
29	8.0	1600	34	2.8	130	1.0	2.0	--	.20
30	8.0	650	14	2.8	110	.90	1.8	--	.20
31	--	--	--	2.5	--	.70	--	--	--
TOTAL	503.6	--	7819	371.5	--	11279.50	88.8	--	20.10

DAY	JULY MEAN DISCHARGE (CFS)	JULY MEAN CONCEN-TRATION (MG/L)	JULY LOAD (TONS)	AUGUST MEAN DISCHARGE (CFS)	AUGUST MEAN CONCEN-TRATION (MG/L)	AUGUST LOAD (TONS)	SEPTEMBER MEAN DISCHARGE (CFS)	SEPTEMBER MEAN CONCEN-TRATION (MG/L)	SEPTEMBER LOAD (TONS)
1	2.2	--	.30	322	420000	660000	6.2	--	7.0
2	1.8	--	.20	279	300000	400000	4.2	--	6.0
3	1.6	42	.20	454	--	900000	3.0	640	5.2
4	1.3	--	.10	85	91000	21000	3.0	1600	13
5	1.6	40	.20	117	160000	250000	3.8	650	6.6
6	3.3	59000	1100	105	290000	220000	4.0	130	1.4
7	48	150000	31000	51	100000	15000	4.5	--	1.0
8	102	260000	79000	104	160000	44000	4.0	--	1.0
9	25	120000	8400	391	780000	1100000	4.2	130	1.4
10	12	130000	4300	132	460000	180000	4.2	--	1.0
11	4.2	44000	500	80	390000	85000	4.0	--	1.0
12	3.0	7500	61	211	210000	180000	4.2	--	2.0
13	2.2	2600	15	275	100000	110000	4.2	170	1.9
14	2.0	1100	6.0	404	120000	130000	4.0	--	2.0
15	1.5	560	2.2	147	120000	48000	6.9	--	6.0
16	1.5	360	1.4	52	71000	10000	4.8	550	7.1
17	1.5	270	1.1	22	30000	1800	4.0	270	2.9
18	1.3	240	.90	12	--	300	4.2	160	1.8
19	1.3	170	.60	9.4	--	100	4.5	75	.93
20	1.5	140	.60	9.0	1100	26	4.2	85	1.0
21	1.8	140	.70	9.4	1000	25	3.8	--	.70
22	8.9	32000	920	8.6	980	23	4.0	--	.80
23	23	45000	4700	9.0	1400	34	3.2	60	.60
24	88	130000	31000	15	990	40	4.5	140	1.6
25	570	460000	860000	10	2100	56	4.2	360	4.1
26	350	380000	370000	8.0	6000	130	4.8	--	6.0
27	786	260000	800000	8.0	3600	680	4.0	500	5.4
28	305	150000	130000	9.0	3500	84	3.5	95	.90
29	66	100000	18000	9.0	530	13	4.0	52	.60
30	53	77000	11000	9.0	420	10	3.2	46	.40
31	106	180000	52000	7.2	300	5.9	--	--	--
TOTAL	2576.5	--	2402010.50	3453.6	--	4356326.9	125.3	--	91.30

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	11972.3
TOTAL LOAD FOR YEAR (TONS)	6855369.40

09382000 PARIA RIVER AT LEES FERRY, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (°C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JAN 30, 1968	1230	3	71	4120	790	26	30	--	48	--	68	90	100	--	--	--	VPWC
FEB 14.....	1430	6	106	17500	5010	53	69	--	77	--	86	95	100	--	--	--	VPWC
FEB 29.....	1215	10	46	8450	1050	54	64	--	93	--	94	98	100	--	--	--	VPWC
MAR 27.....	1230	18	27	5070	370	64	78	--	94	--	96	98	100	--	--	--	SPWC
APR 8.....	1445	15	17	1780	82	69	82	--	96	--	99	100	--	--	--	--	SPWC
MAY 14.....	1145	16	49	34100	4510	52	65	--	90	--	96	100	--	--	--	--	VPWC
JUL 28.....	1000	19	311	27400	23000	51	70	--	90	--	100	--	--	--	--	--	SPWC
AUG 27.....	1145	19	4.8	185000	2400	26	30	--	46	--	74	92	99	100	--	--	VPWC
SEP 16.....	0930	20	5.8	613	9.6	84	96	--	100	--	--	--	--	--	--	--	SPWC

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.

LOCATION (revised).--Lat 35°52'40", long 111°24'40", in NE¼SE¼ sec.22, T.29 N., R.9 E. (unsurveyed), Coconino County, at bridge on U.S. Highway 89 at Cameron, in Navajo Indian Reservation, 2.5 miles upstream from Moenkopi Wash, 9 miles upstream from Coconino damsite, 12 miles upstream from gaging station near Cameron (Station 09402000), and 57.5 miles upstream from mouth.
DRAINAGE AREA.--26,500 sq mi, approximately, at gaging station.
PERIOD OF RECORD.--Chemical analyses: October 1950 to September 1958.
Specific conductance: October 1964 to September 1968.
Water temperatures: October 1951 to September 1968.
Sediment records: October 1947 to September 1968.
EXTREMES.--1967-68:
Specific conductance: Maximum daily, 1,500 micromhos Aug. 28, 29; minimum daily, 300 micromhos Jan. 29, Mar. 1, 2.
Sediment concentrations: Maximum daily, 170,000 mg/l Aug. 7; minimum daily, 0 mg/l on many days.
Sediment loads: Maximum daily, 720,000 tons Aug. 13; minimum daily, 0 ton on many days.
Period of record:
Specific conductance: Maximum daily, 2,220 micromhos July 13, 1965; minimum daily, 250 micromhos Dec. 20, 1966.
Sediment concentrations: Maximum daily, 230,000 mg/l Aug. 30, 1966; minimum daily, 0 mg/l on many days each year.
Sediment loads: Maximum daily, 2,580,000 tons Sept. 21, 1952; minimum daily, 0 ton on many days each year.
REMARKS.--Appreciable inflow, mostly from Moenkopi Wash, may occur between sampling site and gaging station during periods of local storm runoff. Sediment loads are computed using discharge at gaging station and include estimated loads from Moenkopi Wash. No flow Oct. 9 to Dec. 21, Dec. 26 to Jan. 26, May 25 to July 7, July 13-25, Sept. 3-30.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	900	---	---	---	350	300	375	350	---	---	825	---
2	600	---	---	---	1000	300	350	350	---	---	975	---
3	900	---	---	---	675	325	400	370	---	---	1000	---
4	900	---	---	---	675	---	350	380	---	---	1350	---
5	875	---	---	---	700	---	350	355	---	---	1100	---
6	1000	---	---	---	700	---	350	400	---	---	950	---
7	1100	---	---	---	725	350	350	390	---	---	1300	---
8	1200	---	---	---	725	350	375	390	---	---	875	---
9	---	---	---	---	750	325	400	390	---	---	950	---
10	---	---	---	---	775	390	425	390	---	---	725	---
11	---	---	---	---	775	425	425	360	---	---	900	---
12	---	---	---	---	775	425	450	400	---	---	825	---
13	---	---	---	---	750	575	450	420	---	---	950	---
14	---	---	---	---	700	600	420	425	---	---	900	---
15	---	---	---	---	700	650	400	450	---	---	900	---
16	---	---	---	---	600	575	375	470	---	---	900	---
17	---	---	---	---	600	550	365	510	---	---	975	---
18	---	---	---	---	525	550	400	530	---	---	1000	---
19	---	---	---	---	---	550	450	550	---	---	1000	---
20	---	---	---	---	650	500	450	580	---	---	1000	---
21	---	---	---	---	725	450	440	600	---	---	1000	---
22	---	---	---	---	700	425	510	650	---	---	1050	---
23	---	---	---	---	650	425	500	650	---	---	975	---
24	---	---	---	---	450	450	450	---	---	---	1200	---
25	---	---	---	---	400	475	450	---	---	---	1100	---
26	---	---	---	---	375	500	450	---	---	---	1100	---
27	---	---	---	---	350	500	450	---	---	900	1400	---
28	---	---	---	---	325	475	460	---	---	1400	1500	---
29	---	---	---	300	325	400	395	---	---	1100	1500	---
30	---	---	---	325	---	400	375	---	---	950	800	---
31	---	---	---	350	---	375	---	---	---	950	1350	---
AVERAGE	---	---	---	---	623	451	413	---	---	---	1040	---

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0	---	---	---	6.0	11.0	9.0	20.0	---	---	19.0	---
2	22.0	---	---	---	3.0	14.0	9.0	21.0	---	---	19.0	---
3	21.0	---	---	---	3.0	5.0	12.0	13.0	---	---	19.0	---
4	25.0	---	---	---	2.0	---	13.0	22.0	---	---	28.0	---
5	22.0	---	---	---	3.0	---	14.0	18.0	---	---	20.0	---
6	19.0	---	---	---	2.0	---	10.0	18.0	---	---	27.0	---
7	19.0	---	---	---	3.0	13.0	11.0	17.0	---	---	20.0	---
8	17.0	---	---	---	6.0	12.0	12.0	18.0	---	---	20.0	---
9	---	---	---	---	6.0	9.0	13.0	20.0	---	---	21.0	---
10	---	---	---	---	7.0	3.0	6.0	11.0	---	---	21.0	---
11	---	---	---	---	8.0	3.0	8.0	18.0	---	---	21.0	---
12	---	---	---	---	9.0	9.0	10.0	18.0	---	---	21.0	---
13	---	---	---	---	7.0	12.0	9.0	11.0	---	---	20.0	---
14	---	---	---	---	8.0	10.0	7.0	19.0	---	---	18.0	---
15	---	---	---	---	9.0	12.0	12.0	19.0	---	---	14.0	---
16	---	---	---	---	9.0	13.0	10.0	9.0	---	---	15.0	---
17	---	---	---	---	9.0	11.0	15.0	9.0	---	---	14.0	---
18	---	---	---	---	9.0	10.0	4.0	11.0	---	---	14.0	---
19	---	---	---	---	6.0	11.0	4.0	23.0	---	---	14.0	---
20	---	---	---	---	12.0	8.0	14.0	14.0	---	---	15.0	---
21	---	---	---	---	12.0	3.0	12.0	24.0	---	---	15.0	---
22	---	---	---	---	13.0	12.0	12.0	12.0	---	---	14.0	---
23	---	---	---	---	10.0	13.0	13.0	9.0	---	---	11.0	---
24	---	---	---	---	10.0	12.0	15.0	9.0	---	---	24.0	---
25	---	---	---	---	10.0	8.0	21.0	---	---	---	24.0	---
26	---	---	---	---	7.0	15.0	12.0	---	---	---	20.0	---
27	---	---	---	---	13.0	14.0	17.0	---	---	28.0	24.0	---
28	---	---	---	---	7.0	15.0	12.0	---	---	20.0	24.0	---
29	---	---	---	3.0	13.0	14.0	19.0	---	---	28.0	26.0	---
30	---	---	---	3.0	---	17.0	20.0	---	---	26.0	26.0	---
31	---	---	---	4.0	---	9.0	---	---	---	26.0	25.0	---
AVERAGE	---	---	---	---	7.5	10.5	12.0	---	---	---	20.0	---

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(WHERE NO CONCENTRATIONS ARE REPORTED, LOADS ARE ESTIMATED)

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	100	38000	11000	0	--	0	0	--	0
2	50	37000	5000	0	--	0	0	--	0
3	30	31000	2500	0	--	0	0	--	0
4	20	24000	1300	0	--	0	0	--	0
5	10	19000	510	0	--	0	0	--	0
6	10	12000	320	0	--	0	0	--	0
7	5.0	340	4.6	0	--	0	0	--	0
8	2.0	220	1.2	0	--	0	0	--	0
9	0	--	0	0	--	0	0	--	0
10	0	--	0	0	--	0	0	--	0
11	0	--	0	0	--	0	0	--	0
12	0	--	0	0	--	0	0	--	0
13	0	--	0	0	--	0	0	--	0
14	0	--	0	0	--	0	0	--	0
15	0	--	0	0	--	0	0	--	0
16	0	--	0	0	--	0	0	--	0
17	0	--	0	0	--	0	0	--	0
18	0	--	0	0	--	0	0	--	0
19	0	--	0	0	--	0	0	--	0
20	0	--	0	0	--	0	0	--	0
21	0	--	0	0	--	0	0	--	0
22	0	--	0	0	--	0	26	--	1000
23	0	--	0	0	--	0	18	--	1000
24	0	--	0	0	--	0	10	--	500
25	0	--	0	0	--	0	5.0	--	100
26	0	--	0	0	--	0	0	--	0
27	0	--	0	0	--	0	0	--	0
28	0	--	0	0	--	0	0	--	0
29	0	--	0	0	--	0	0	--	0
30	0	--	0	0	--	0	0	--	0
31	0	--	0	--	--	--	0	--	0
TOTAL	227.0	--	20635.8	0	--	0	59.0	--	2600

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	--	0	290	14000	11000	1400	19000	72000
2	0	--	0	414	16000	24000	1320	14000	50000
3	0	--	0	1300	35000	120000	969	14000	37000
4	0	--	0	1560	30000	120000	860	--	20000
5	0	--	0	948	22000	56000	836	--	20000
6	0	--	0	590	17000	27000	872	--	20000
7	0	--	0	460	17000	21000	902	11000	27000
8	0	--	0	405	17000	18000	914	15000	37000
9	0	--	0	485	18000	24000	884	12000	29000
10	0	--	0	545	22000	32000	794	13000	28000
11	0	--	0	500	26000	35000	740	15000	29000
12	0	--	0	535	30000	43000	1200	21000	71000
13	0	--	0	668	28000	50000	1130	26000	79000
14	0	--	0	644	26000	45000	614	21000	35000
15	0	--	0	1290	32000	120000	430	19000	22000
16	0	--	0	1260	44000	150000	342	16000	15000
17	0	--	0	540	33000	48000	370	13000	13000
18	0	--	0	338	28000	26000	445	12000	14000
19	0	--	0	234	28000	18000	465	11000	14000
20	0	--	0	186	19000	9500	680	13000	24000
21	0	--	0	186	16000	8000	668	13000	23000
22	0	--	0	266	16000	11000	540	9400	14000
23	0	--	0	782	17000	36000	460	8100	10000
24	0	--	0	914	16000	39000	356	7200	6900
25	0	--	0	920	17000	42000	284	10000	7700
26	0	--	0	910	16000	39000	238	7000	4500
27	200	--	5000	920	12000	30000	333	7800	7000
28	700	--	40000	908	13000	32000	1000	11000	30000
29	400	9100	9800	1300	15000	53000	1230	17000	55000
30	302	10000	8200	--	--	--	1640	26000	120000
31	385	8100	8400	--	--	--	1860	27000	140000
TOTAL	1987	--	71400	20298	--	1287500	24746	--	1074100

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	2070	26000	140000	692	8900	17000	0	--	0
2	2060	28000	160000	602	8300	13000	0	--	0
3	1840	28000	140000	578	8100	13000	0	--	0
4	2310	26000	160000	535	7500	11000	0	--	0
5	1900	18000	92000	490	8600	11000	0	--	0
6	1500	15000	61000	420	6100	6900	0	--	0
7	1100	11000	33000	385	5800	6000	0	--	0
8	900	11000	27000	360	6800	6600	0	--	0
9	800	10000	22000	385	5700	5900	0	--	0
10	850	9100	21000	356	4900	4700	0	--	0
11	900	10000	24000	292	5000	3900	0	--	0
12	950	11000	28000	230	5000	3700	0	--	0
13	1000	13000	35000	160	7600	3300	0	--	0
14	1100	15000	44000	145	8600	3400	0	--	0
15	1500	17000	69000	130	3700	1300	0	--	0
16	1700	24000	110000	110	2600	770	0	--	0
17	1600	17000	75000	75	1900	380	0	--	0
18	1500	17000	70000	70	1900	360	0	--	0
19	1300	16000	56000	64	2800	480	0	--	0
20	1100	14000	42000	60	1900	310	0	--	0
21	900	14000	34000	40	590	64	0	--	0
22	700	9800	18000	20	590	32	0	--	0
23	560	7900	12000	5.0	350	4.7	0	--	0
24	500	7800	10000	2.0	160	.90	0	--	0
25	450	6000	7300	0	--	0	0	--	0
26	370	5100	5100	0	--	0	0	--	0
27	306	4900	4000	0	--	0	0	--	0
28	583	8100	13000	0	--	0	0	--	0
29	716	8500	16000	0	--	0	0	--	0
30	770	8000	18000	0	--	0	0	--	0
31	--	--	--	--	--	--	--	--	--
TOTAL	33835	--	1546400	6206.0	--	113101.60	0	--	0

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	LOAD (TONS)
1	0	--	0	430	61000	71000	.50	--	70
2	0	--	0	375	65000	68000	.20	--	10
3	0	--	0	279	78000	59000	0	--	0
4	0	--	0	209	61000	34000	0	--	0
5	0	--	0	390	77000	90000	0	--	0
6	0	--	0	444	84000	120000	0	--	0
7	0	--	0	780	170000	350000	0	--	0
8	13	--	20	2420	98000	630000	0	--	0
9	19	--	20	2020	98000	530000	0	--	0
10	3.4	--	2.0	1380	100000	400000	0	--	0
11	.80	--	0	495	93000	120000	0	--	0
12	.10	--	0	1780	81000	430000	0	--	0
13	0	--	0	2350	110000	720000	0	--	0
14	0	--	0	2100	94000	530000	0	--	0
15	0	--	0	1000	84000	230000	0	--	0
16	0	--	0	400	71000	77000	0	--	0
17	0	--	0	80	73000	16000	0	--	0
18	0	--	0	50	69000	9300	0	--	0
19	0	--	0	30	70000	5700	0	--	0
20	0	--	0	10	71000	1900	0	--	0
21	0	--	0	7.0	72000	1400	0	--	0
22	0	--	0	7.0	76000	1400	0	--	0
23	0	--	0	6.0	77000	1200	0	--	0
24	0	--	0	5.0	71000	960	0	--	0
25	0	--	0	5.0	61000	820	0	--	0
26	9.8	54000	1400	10	62000	1700	0	--	0
27	262	70000	60000	20	59000	3200	0	--	0
28	873	140000	370000	20	66000	3600	0	--	0
29	490	71000	94000	8.2	83000	1800	0	--	0
30	1120	81000	270000	4.0	82000	880	0	--	0
31	523	66000	98000	1.8	70000	340	--	--	--
TOTAL	3314.10	--	893442.0	17116.0	--	4509200	.70	--	80

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 137788.80
TOTAL LOAD FOR YEAR (TONS) 9518459.40

09401200 LITTLE COLORADO RIVER AT CAMERON, ARIZ.--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; D, DECANTATION; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE OF COLLECTION	TIME	WATER TEMPERATURE (C)	WATER DISCHARGE (CFS)	SEDIMENT CONCENTRATION (MG/L)	SUSPENDED SEDIMENT PERCENT FINER THAN SIZE INDICATED, IN MILLIMETERS .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
FEB. 29, 1968	1510	--	995	13300	34	46	58	78	92	99	100	--	--	VPWC
MAR. 1.....	0935	7	1190	20100	26	32	48	70	87	99	100	--	--	VPWC
MAR. 22.....	1430	10	592	8600	33	42	57	78	93	100	--	--	--	VPWC
APR. 26.....	1300	--	400	5780	33	43	54	79	93	99	100	--	--	VPWC
MAY 17.....	1220	--	76	1050	71	81	90	93	96	100	--	--	--	SPWC
AUG. 28.....	1240	21	17	52800	91	97	--	--	--	--	--	--	--	SPWC

09402500 COLORADO RIVER NEAR GRAND CANYON, ARIZ.

LOCATION.--Lat 36°06'05", long 112°05'10", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, at gaging station in Grand Canyon National Park at Kaibab Bridge, 0.2 mile upstream from Bright Angel Creek, 4 miles northeast of town of Grand Canyon, 26 miles downstream from Little Colorado River, 104 miles downstream from Glen Canyon Dam, and 267 miles upstream from Hoover Dam.
DRAINAGE AREA.--137,800 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: August 1925 to November 1942, September 1943 to September 1968.
Water temperatures: October 1936 to October 1942, September 1943 to September 1968.
Sediment records: October 1925 to November 1942, September 1943 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 948 mg/l Jan. 30; minimum, 587 mg/l Sept. 1-30.
Hardness: Maximum, 438 mg/l July 29; minimum, 269 mg/l Sept. 1-30.
Specific conductance: Maximum daily, 1,570 micromhos Jan. 30; minimum daily, 864 micromhos Aug. 27, 28.
Water temperatures: Maximum, 23.0°C Sept. 9, 10; minimum, 4.0°C Jan. 7.
Sediment concentrations: Maximum daily, 23,000 mg/l Aug. 13; minimum daily, 43 mg/l Oct. 30.
Sediment loads: Maximum daily, 850,000 tons Aug. 14; minimum daily, 500 tons Oct. 30.
Period of record:
Dissolved solids: Maximum, 1,890 mg/l Sept. 21-30, 1934; minimum, 225 mg/l June 11-20, 1942.
Hardness: Maximum, 965 mg/l Sept. 13, 1961; minimum, 127 mg/l June 11-17, 1926.
Specific conductance (1937-42, 1943-68): Maximum daily, 2,900 micromhos Sept. 6, 1940; minimum daily, 341 micromhos June 15, 1942.
Water temperatures (1936-42, 1943-66): Maximum, 31.0°C July 17, 1944; minimum, freezing point on several days during January and February 1948, December 1955.
Sediment concentrations: Maximum daily, 152,000 mg/l Sept. 13, 1927; minimum daily, 4 mg/l Nov. 7, 1966.
Sediment loads: Maximum daily, 27,600,000 tons Sept. 13, 1927; minimum daily, 55 tons Nov. 7, 1966.
REMARKS.--Flow regulated by Glen Canyon Dam since Mar. 13, 1963.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	DISSOLVED IRON (FE)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	SODIUM PLUS POTASSIUM (NA+K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)
OCT.												
01-31	7465	14	--	64	31	--	--	106	168	0	238	92
NOV.												
01-30	8321	11	--	76	25	--	--	96	166	0	225	91
DEC.												
01-31	9711	11	--	83	26	--	--	104	172	0	257	92
JAN.												
01-29	10690	11	--	87	32	--	--	115	180	0	298	97
30...	9970	13	--	96	34	--	--	189	216	0	287	220
31...	12000	10	--	90	31	--	--	117	188	0	306	92
FEB.												
01-29	9274	11	--	92	31	--	--	126	204	0	294	110
MAR.												
01-31	14640	10	--	95	31	--	--	118	194	0	312	96
APR.												
01-30	18110	12	--	96	33	--	--	108	186	0	315	90
MAY												
01-31	15870	11	.03	94	35	120	4.8	--	182	0	325	92
JUNE												
01-30	15550	9.5	--	89	35	--	--	118	186	0	312	96
JULY												
01-28	14280	8.9	--	80	26	--	--	116	178	0	278	86
29...	7000	14	--	122	32	--	--	138	208	0	432	84
30-31	14600	11	--	86	25	--	--	96	186	0	245	82
AUG.												
01-31	12610	12	.01	78	22	95	4.2	--	196	0	228	76
SEPT.												
01-30	11340	10	--	69	24	--	--	98	168	0	220	80
WTD. AVG. TIME	--	11	--	85	30	--	--	111	183	0	282	91
WTD. AVG. TONS PER DAY	12300	11	--	84	29	--	--	111	182	0	275	92
	--	361	--	2840	988	--	--	3580	6080	0	9370	3040

DATE	FLUORIDE (F)	NITRATE (NO3)	BORON (B)	DISSOLVED SOLIDS (RESIDUE AT 180 C)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS)	DISSOLVED SOLIDS (TONS PER AC-FT)	DISSOLVED SOLIDS (TONS PER DAY)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	SODIUM ADSORPTION RATIO	SPECIFIC CONDUCTANCE (MICROMHOS)	PH
OCT.												
01-31	--	3.0	--	--	631	.86	12700	287	149	2.7	1000	7.8
NOV.												
01-30	--	3.0	--	--	609	.83	13700	292	156	2.5	1010	7.8
DEC.												
01-31	--	3.2	--	--	661	.90	17300	314	173	2.6	1060	7.8
JAN.												
01-29	--	4.2	--	--	733	1.00	21200	348	200	2.7	1160	7.9
30...	--	3.5	--	--	948	1.29	25500	378	201	4.2	1570	8.0
31...	--	4.3	--	--	742	1.01	24000	352	198	2.7	1140	7.9
FEB.												
01-29	--	3.9	--	--	768	1.04	19200	356	189	2.9	1230	8.0
MAR.												
01-31	--	4.3	--	--	761	1.03	30100	366	207	2.7	1200	8.1
APR.												
01-30	--	4.3	--	--	749	1.02	36600	376	224	2.4	1190	7.6
MAY												
01-31	.4	4.2	.13	818	776	1.11	35100	378	229	2.7	1210	7.6
JUNE												
01-30	--	9.6	--	--	760	1.03	31900	364	212	2.7	1200	7.7
JULY												
01-28	--	3.9	--	--	687	.93	26500	308	162	2.9	1050	7.7
29...	--	.7	--	--	925	1.26	17500	438	268	2.9	1300	7.7
30-31	--	2.3	--	--	638	.87	25200	316	164	2.4	1040	7.6
AUG.												
01-31	.4	3.9	.16	598	616	.81	20400	287	126	2.4	966	7.7
SEPT.												
01-30	--	3.4	--	--	587	.80	18000	269	132	2.6	925	7.8
WTD. AVG. TIME	--	4.4	--	--	705	--	--	335	185	--	1110	7.8
WTD. AVG. TONS PER DAY	--	4.2	--	--	696	--	--	329	180	2.7	1100	7.8
	--	147	--	--	--	--	--	--	--	--	--	--

10343500 SAGEHEN CREEK NEAR TRUCKEE, CALIF.

LOCATION.--Lat 39°25'50", long 120°14'10", in NE¼NE¼ sec.7, T.18 N., R.16 E., Nevada County, at gaging station on left bank, 0.1 mile upstream and 0.1 mile downstream from two unnamed right bank tributaries, 2.2 miles upstream from bridge on State Highway 89, and 7.5 miles north of Truckee.

DRAINAGE AREA.--10.8 sq mi.

PERIOD OF RECORD.--Chemical analyses: May to September 1968.
Sediment records: May to September 1968 (periodic).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, MAY TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	DIS-SOLVED IRON (FE)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
MAY												
16...	19	8.6	.03	7.0	2.3	3.0	.9	38	0	1.0	.1	.0
23...	16	--	--	--	--	--	--	--	--	--	--	--
30...	13	--	--	--	--	--	--	--	--	--	--	--
JUNE												
07...	13	--	--	--	--	--	--	--	--	--	--	--
13...	8.4	--	--	--	--	--	--	--	--	--	--	--
20...	6.0	--	--	--	--	--	--	--	--	--	--	--
27...	4.9	27	.05	11	3.8	4.8	1.6	67	0	.0	.4	.0
JULY												
04...	4.2	--	--	--	--	--	--	--	--	--	--	--
11...	3.3	--	--	--	--	--	--	--	--	--	--	--
19...	3.1	--	--	--	--	--	--	--	--	--	--	--
25...	2.9	--	--	--	--	--	--	--	--	--	--	--
AUG.												
06...	3.0	--	--	--	--	--	--	--	--	--	--	--
09...	2.3	--	--	--	--	--	--	--	--	--	--	--
17...	3.0	--	--	--	--	--	--	--	--	--	--	--
21...	3.0	--	--	--	--	--	--	--	--	--	--	--
21...	3.2	29	--	13	4.7	5.8	2.3	80	0	1.0	.4	--
29...	2.3	--	--	--	--	--	--	--	--	--	--	--
SEPT.												
05...	2.4	--	--	--	--	--	--	--	--	--	--	--
11...	2.4	--	--	--	--	--	--	--	--	--	--	--
19...	2.4	--	--	--	--	--	--	--	--	--	--	--
28...	2.3	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3	SPECI-FIC CON-DUCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)
MAY											
16...	.1	.00	42	27	0	19	.3	31	64	7.2	10
23...	--	--	--	--	--	--	--	--	69	--	5
30...	--	--	--	--	--	--	--	--	73	--	5
JUNE											
07...	--	--	--	--	--	--	--	--	79	--	9
13...	--	--	--	--	--	--	--	--	86	--	10
20...	--	--	--	--	--	--	--	--	105	--	10
27...	1.0	.00	83	43	0	19	.3	55	108	7.9	12
JULY											
04...	--	--	--	--	--	--	--	--	114	--	15
11...	--	--	--	--	--	--	--	--	119	--	11
19...	--	--	--	--	--	--	--	--	130	--	9
25...	--	--	--	--	--	--	--	--	134	--	8
AUG.											
06...	--	--	--	--	--	--	--	--	128	--	17
09...	--	--	--	--	--	--	--	--	135	--	15
17...	--	--	--	--	--	--	--	--	131	--	--
21...	--	--	--	--	--	--	--	--	129	--	13
21...	--	--	95	52	0	19	.4	66	120	7.7	17
29...	--	--	--	--	--	--	--	--	132	--	16
SEPT.											
05...	--	--	--	--	--	--	--	--	138	--	11
11...	--	--	--	--	--	--	--	--	137	--	14
19...	--	--	--	--	--	--	--	--	142	--	10
28...	--	--	--	--	--	--	--	--	138	--	12

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT, MAY TO SEPTEMBER 1968

DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY)	DATE	TIME	WATER TEM-PERA-TURE (C)	DISCHARGE (CFS)	CONCEN-TRATION (MG/L)	SUSPENDED-SEDIMENT DISCHARGE (TONS/DAY)
MAY 20, 1968	0710	4	18	3	.15	JUL 29.....	1555	19	2.3	1	.01
MAY 27.....	0940	9	14	5	.19	AUG 6.....	1520	19	2.3	10	.06
JUN 3.....	0920	9	11	5	.15	AUG 12.....	1315	16	2.3	2	.01
JUN 10.....	0835	9	10	3	.08	AUG 19.....	1355	11	6.7	26	.47
JUN 17.....	0945	12	6.0	4	.06	AUG 26.....	1720	14	2.3	3	.02
JUN 24.....	0920	10	4.6	2	.02	AUG 29.....	--	16	2.4	2	.01
JUL 1.....	1000	11	4.4	1	.01	SEP 9.....	1440	14	2.3	4	.02
JUL 7.....	1000	13	3.9	3	.03	SEP 16.....	1745	11	2.3	1	.01
JUL 16.....	0710	10	3.2	2	.02	SEP 23.....	1600	11	2.3	1	.01
JUL 24.....	0745	8	2.7	1	.01	SEP 30.....	1550	10	2.4	9	.06

10345900 TRUCKEE RIVER AT FLORISTON, CALIF.
(Irrigation network station)

LOCATION.--Lat 39°23'40", long 120°01'25", in NW¼SW¼ sec.30, T.18 N., R.18 E., Nevada County, at bridge at Floriston, 0.2 mile upstream from flume diversion, 1.8 miles upstream from Farad, and 2.5 miles upstream from gage at Farad.
DRAINAGE AREA.--932 sq mi (at gaging station).
PERIOD OF RECORD.--Chemical analyses: January 1964 to September 1968.
Water temperatures: January 1964 to September 1968.
EXTREMES.--1967-68:
Dissolved solids: Maximum, 70 mg/l Nov. 1-30, Jan. 9-31; minimum, 47 mg/l Oct. 1-31.
Hardness: Maximum, 38 mg/l Dec. 7-13, Jan. 9 to Feb. 19; minimum, 26 mg/l May 1-31.
Specific conductance: Maximum daily, 123 micromhos Feb. 6; minimum daily, 60 micromhos May 28.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	SILICA (SIO2)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	FLUORIDE (F)
OCT.											
01-31	652	16	8.0	2.4	3.9	1.5	42	0	3.0	.8	.0
NOV.											
01-30	486	--	9.6	3.0	5.0	1.8	55	0	3.0	1.2	--
DEC.											
01-06	406	--	9.7	2.8	5.8	1.6	52	0	3.0	1.8	--
07-13	420	--	10	3.0	6.5	1.7	56	0	3.0	1.8	--
14-31	604	--	9.9	2.7	6.0	1.7	54	0	3.0	1.2	--
JAN.											
01-08	495	15	8.7	2.1	3.9	1.1	42	0	2.0	1.4	.1
09-31	422	--	10	3.2	6.1	1.6	55	0	5.0	2.0	--
FEB.											
01-19	437	--	9.8	3.2	6.9	1.6	51	0	4.0	4.9	--
20-29	1470	--	7.3	2.4	3.7	1.2	36	0	3.0	2.7	--
MAR.											
01-11	968	--	7.8	2.5	4.3	1.3	38	0	3.0	2.7	--
12-31	634	--	8.9	2.9	5.2	1.4	46	0	5.0	3.2	--
APR.											
01-31	623	17	8.7	2.6	4.4	1.2	40	0	5.0	1.8	.0
MAY											
01-31	849	--	7.0	2.0	3.3	.9	34	0	3.0	1.5	.1
JUNE											
01-31	596	--	7.6	2.2	3.7	1.1	38	0	3.0	1.2	--
JULY											
01-31	568	16	9.3	2.6	5.8	1.6	50	0	4.0	2.2	.1
AUG.											
01-31	535	--	8.8	2.7	5.6	1.6	50	0	4.0	2.0	--
SEPT.											
01-30	513	--	8.4	2.7	5.2	1.5	46	0	4.0	1.8	--
WTD. AVG. TIME	--	--	8.5	2.6	4.7	1.4	44	0	3.6	1.9	--
WTD. AVG. TONS PER DAY	611	--	8.7	2.6	4.9	1.4	46	0	3.7	1.9	--
	--	--	14	4.2	7.8	2.3	73	0	6.0	3.1	--

ANALYSES OF ADDITIONAL SAMPLES

MAR.											
15...	559	--	9.7	3.1	5.5	1.5	50	0	4.0	4.4	--
APR.											
15...	581	16	8.7	2.6	4.1	1.1	40	0	5.0	1.6	.0
MAY											
15...	745	--	7.4	2.2	3.2	1.0	36	0	3.0	1.2	.0
JUNE											
15...	534	--	7.5	2.2	3.6	1.1	38	0	3.0	1.2	--
JULY											
15...	574	--	9.1	2.7	5.6	1.7	49	0	4.0	2.1	--
AUG.											
15...	523	--	8.3	2.7	5.5	1.6	48	0	4.0	1.8	--
SEPT.											
15...	524	--	8.2	2.6	4.8	1.5	45	0	3.0	2.0	--

10345900 TRUCKEE RIVER AT FLORISTON, CALIF.--Continued

EXTREMES.--1967-68:--Continued
Water temperatures: Maximum, 18.5°C Aug. 12; minimum, freezing point on several days in December.
Period of record:
Dissolved solids: Maximum, 85 mg/l Dec. 1-21, 1964; minimum, 45 mg/l Dec. 22-31, 1964.
Hardness: Maximum, 43 mg/l Mar. 1-31, 1964; minimum, 18 mg/l Dec. 22-31, 1964.
Specific conductance (1964-66, 1967-68): Maximum daily, 141 micromhos Feb. 3, 1964; minimum daily, 39 micromhos Dec. 23, 1964.
Water temperatures: Maximum, 20.0°C July 24, 1964; minimum, freezing point on several days during winter periods.
REMARKS.--Records of daily discharge data given for Truckee River at Farad, Calif. (Station 10346000).

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH
OCT.										
01-31	.02	.00	47	.08	82.7	30	0	.3	83	7.0
NOV.										
01-30	--	.00	70	.10	91.9	36	0	.4	103	7.1
DEC.										
01-06	--	.00	65	.09	71.3	36	0	.4	99	7.7
07-13	--	.00	66	.09	74.8	38	0	.5	106	7.8
14-31	--	.00	63	.09	103	36	0	.4	100	7.7
JAN.										
01-08	--	.04	55	.08	73.5	30	0	.3	74	7.6
09-31	--	.05	70	.10	79.8	38	0	.4	101	7.6
FEB.										
01-19	--	.00	69	.09	81.4	38	0	.5	106	7.7
20-29	--	.04	60	.08	238	28	0	.3	75	7.5
MAR.										
01-11	--	.04	62	.08	162	30	0	.4	81	6.4
12-31	--	.05	68	.09	116	34	0	.4	94	7.6
APR.										
01-31	.00	.00	62	.09	104	32	0	.3	83	7.7
MAY										
01-31	--	.00	55	.07	126	26	0	.3	68	7.2
JUNE										
01-31	--	.04	57	.08	91.7	28	0	.3	74	7.0
JULY										
01-31	--	.04	68	.09	104	34	0	.4	94	7.2
AUG.										
01-31	--	.05	64	.09	92.4	33	0	.4	92	7.8
SEPT.										
01-30	--	.04	64	.09	88.6	32	0	.4	91	7.2
WTD. AVG. TIME	--	.52	62	--	--	32	0	--	87	7.3
WTD. AVG. TONS PER DAY	--	.53	--	--	--	--	--	--	--	--

ANALYSES OF ADDITIONAL SAMPLES

MAR.										
15...	--	.30	--	.11	127	37	0	.4	102	7.4
APR.										
15...	--	.00	64	.09	100	32	0	.3	81	7.4
MAY										
15...	--	.00	53	.07	107	28	0	.3	70	7.2
JUNE										
15...	--	.04	50	.07	72.1	28	0	.3	73	7.1
JULY										
15...	--	.04	72	.10	112	34	0	.4	92	7.2
AUG.										
15...	--	.03	62	.08	87.6	32	0	.4	89	7.2
SEPT.										
15...	--	.04	60	.08	84.9	31	0	.4	84	7.2

10348900 TRUCKEE RIVER AT FLORISTON, CALIF.--Continued

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	94	93	---	104	77	82	69	72	98	93	90
2	81	98	98	---	103	81	83	69	63	94	95	90
3	83	93	103	---	106	81	87	69	61	93	92	90
4	81	105	98	---	109	81	87	70	64	93	92	90
5	82	106	96	---	114	81	86	70	64	93	93	86
6	82	105	98	---	123	81	86	70	74	94	94	85
7	73	104	126	---	103	81	88	66	72	93	95	85
8	79	100	103	---	107	82	87	70	73	94	94	85
9	73	102	104	---	115	93	87	66	75	92	94	87
10	75	97	103	---	116	83	84	65	74	93	97	89
11	76	99	103	---	113	82	80	65	74	92	94	86
12	79	97	104	---	109	101	79	70	70	93	95	86
13	73	98	106	---	113	91	82	70	73	95	94	86
14	73	99	98	---	112	92	83	74	74	93	92	87
15	73	99	98	---	116	101	80	70	73	93	91	88
16	73	98	97	---	113	95	78	70	74	93	91	86
17	74	97	98	---	115	93	82	70	74	93	96	86
18	74	97	99	---	109	95	85	63	73	94	91	86
19	74	97	98	---	109	95	85	63	74	94	93	85
20	75	97	100	---	72	95	84	65	75	93	93	85
21	74	106	101	---	77	97	82	63	77	95	91	85
22	74	100	100	---	78	98	87	66	76	121	91	85
23	74	98	100	---	77	98	88	69	77	93	92	85
24	75	87	101	---	77	96	93	64	78	95	94	85
25	73	93	98	---	77	97	84	64	80	102	93	85
26	76	93	99	---	77	97	85	64	84	102	94	86
27	81	93	99	---	77	96	82	65	74	---	92	85
28	92	92	101	---	77	96	92	60	83	---	89	86
29	93	92	101	---	77	94	76	61	84	---	93	85
30	93	92	100	---	---	92	71	63	84	---	90	85
31	93	---	100	---	---	86	---	64	---	---	90	---
AVERAGE	78	97	101	---	99	90	83	67	74	95	93	86

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	9.0	1.5	---	0.5	3.5	5.5	7.0	10.0	15.5	15.5	14.5
2	11.5	8.5	0.0	---	4.0	5.5	6.0	7.5	10.0	15.5	15.5	16.5
3	12.0	10.0	1.5	---	2.0	5.5	5.5	7.5	10.5	15.5	17.0	14.0
4	10.0	9.5	2.0	---	1.5	5.5	5.5	7.5	10.0	15.5	16.5	14.0
5	10.5	8.5	0.5	---	1.0	2.5	5.0	7.5	10.0	15.5	14.5	14.0
6	10.5	9.0	0.0	---	2.0	3.5	7.5	7.5	10.0	15.5	15.5	14.0
7	10.5	8.5	1.0	---	2.5	3.5	5.5	7.5	5.0	15.5	15.5	14.0
8	9.5	9.0	0.0	---	3.5	4.5	5.5	8.5	10.0	15.5	15.5	14.0
9	9.5	8.5	0.0	---	2.0	4.5	6.0	8.5	9.5	15.5	16.0	14.0
10	11.0	7.5	1.0	---	2.0	3.5	6.5	7.5	10.0	15.5	15.5	14.0
11	13.5	7.0	1.0	---	2.5	2.0	7.0	6.5	10.0	15.5	15.5	13.5
12	10.5	7.0	0.0	---	3.5	5.5	5.5	6.5	10.5	16.0	18.5	13.5
13	11.5	7.0	0.0	---	2.0	2.0	5.0	6.0	10.0	15.5	15.5	13.5
14	13.5	6.5	0.0	---	1.0	2.0	5.5	5.5	13.5	15.5	14.0	15.0
15	10.0	5.5	0.0	---	2.0	5.5	5.5	7.5	13.5	15.5	12.5	15.0
16	10.0	5.0	0.0	---	1.5	2.0	4.5	7.5	13.5	15.5	14.5	15.0
17	10.0	5.5	0.0	---	4.0	1.5	2.5	9.5	13.5	15.5	13.5	15.0
18	10.0	6.0	0.0	---	2.5	4.0	4.5	7.5	14.5	15.5	13.5	15.0
19	10.0	6.0	0.0	---	1.5	2.0	6.5	5.5	13.5	15.0	13.5	12.0
20	10.0	6.0	0.0	---	2.5	2.0	6.0	9.0	13.5	16.0	13.5	12.0
21	10.5	4.0	0.0	---	4.0	4.0	5.0	10.0	12.5	17.0	12.5	12.0
22	10.5	4.0	0.0	---	2.0	5.0	5.0	10.5	13.5	16.5	11.5	12.0
23	10.0	4.0	0.0	---	3.5	5.0	6.0	5.0	12.5	14.0	12.5	12.0
24	10.0	3.5	0.0	---	3.5	7.0	5.5	11.0	12.5	14.0	13.5	12.0
25	10.5	2.5	2.0	---	2.0	5.0	5.5	10.0	12.5	15.0	13.5	12.0
26	9.0	2.0	2.0	---	4.0	5.0	5.5	10.0	14.5	15.5	13.5	12.0
27	8.5	2.0	2.5	---	4.0	5.5	4.5	8.5	13.5	---	13.5	12.0
28	10.0	1.5	2.5	---	1.5	7.0	6.0	9.5	14.0	---	15.5	12.0
29	9.5	1.5	2.0	---	1.5	8.5	6.0	9.0	13.5	---	15.5	14.0
30	10.5	1.5	2.5	---	---	6.5	7.0	9.5	15.0	---	15.5	14.0
31	10.0	---	2.0	---	---	5.0	---	9.5	---	---	15.5	---
AVERAGE	10.5	6.0	1.0	---	2.5	4.5	5.5	8.0	11.5	15.0	14.5	13.5

10346000 TRUCKEE RIVER AT FARAD, CALIF.

LOCATION.--Lat 39°25'41", long 120°01'59", in NE¼ sec.12, T.18 N., R.17 E., at gaging station on left bank, 0.5 mile upstream from Mystic Canyon, 0.7 mile downstream from Farad powerplant, 2.5 miles north of Floriston, 3.4 miles downstream from Bronco Creek, and 3.5 miles upstream from California-Nevada State line.

DRAINAGE AREA.--932 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1961, November 1967 to September 1968.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	POTASSIUM (K)	BICARBONATE (HCO3)	CARBONATE (CO3)	SULFATE (SO4)	CHLORIDE (CL)	NITRATE (NO3)	BORON (B)	PHOSPHATE (PO4)
NOV.												
14...	424	9.2	3.2	5.0	1.7	54	0	4.9	.7	.3	.00	.08
DEC.												
06...	390	9.2	3.2	5.4	1.8	49	0	4.8	2.4	.0	.12	--
JAN.												
02...	532	10	3.2	5.1	1.8	55	0	.5	2.2	1.4	.00	--
FEB.												
07...	451	10	3.4	5.0	1.2	54	0	2.3	3.4	.0	.06	--
MAR.												
05...	932	8.3	2.8	3.9	1.0	39	0	8.4	2.8	.5	.08	.01
APR.												
03...	914	8.4	4.9	3.6	1.0	45	0	2.3	1.8	.3	.06	--
MAY												
08...	944	7.2	2.2	4.2	1.1	36	0	1.3	2.3	.1	.04	--
JUNE												
12...	593	7.4	2.1	4.0	.9	39	0	3.8	1.7	.1	.09	.07
JULY												
10...	587	9.8	2.8	6.0	--	53	0	--	2.3	--	--	--
AUG.												
07...	523	9.0	3.0	6.3	1.4	52	0	2.6	2.0	.1	.04	--
SEPT.												
04...	548	9.0	2.8	4.8	1.3	49	0	1.6	1.5	.1	.04	--

DATE	DISSOLVED SOLIDS (RESIDUE AT 180 C)	HARDNESS (CA,MG)	NONCARBONATE HARDNESS	DISSOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	ALKALINITY AS CACO3	SPECIFIC CONDUCTANCE (MICROMHOS)	PH	TEMPERATURE (DEG C)	DISSOLVED OXYGEN
NOV.											
14...	70	36	0	.10	22	.4	44	100	7.4	8	9.7
DEC.											
06...	79	36	0	.11	23	.4	40	100	7.5	0	12.0
JAN.											
02...	65	38	0	.09	22	.4	45	106	7.6	2	10.4
FEB.											
07...	78	39	0	.11	21	.3	44	108	7.9	3	10.7
MAR.											
05...	76	32	0	.10	20	.3	32	83	7.6	6	9.8
APR.											
03...	63	31	0	.09	16	.2	37	88	7.9	4	11.7
MAY											
08...	46	27	0	.06	24	.4	30	75	7.7	7	9.4
JUNE											
12...	50	27	0	.07	24	.3	32	75	7.8	11	8.9
JULY											
10...	--	36	0	--	27	.4	43	94	7.4	14	8.0
AUG.											
07...	74	35	0	.10	27	.5	43	97	7.9	16	9.1
SEPT.											
04...	49	34	0	.07	23	.4	40	90	7.7	16	8.9

10351650 TRUCKEE RIVER AT WADSWORTH, NEV.

LOCATION.--Lat 39°38'19", long 119°16'09", in SW¼SW¼ sec.34, T.21 N., R.24 E., Washoe County, temperature recorder at gaging station on right bank, 0.5 mile downstream from U.S. Highway 40 bridge and 0.2 mile northeast of Wadsworth.
DRAINAGE AREA.--1,719 sq mi.
PERIOD OF RECORD.--Water temperatures: July 1965 to September 1968.
EXTREMES.--1967-68:
Water temperatures: Maximum, 28.0°C July 28; minimum, 1.0°C Dec. 13-15.
Period of record:
Water temperatures: Maximum, 28.0°C June 14, Aug. 3, 1966, July 31, 1967, July 28, 1968; minimum, 1.0°C Jan. 2, 3, 21, 22, 1966, Dec. 13-15, 1967.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	OCT		NOV		DEC		JAN		FEB		MAR	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	17.0	15.0	12.0	11.0	6.0	4.0	4.0	3.0	4.0	3.0	8.0	7.0
2	16.0	14.0	12.0	10.0	6.0	4.0	4.0	3.0	6.0	3.0	8.0	7.0
3	17.0	12.0	12.0	9.0	7.0	4.0	4.0	2.0	7.0	5.0	8.0	6.0
4	17.0	12.0	11.0	9.0	8.0	6.0	3.0	2.0	7.0	6.0	8.0	7.0
5	15.0	13.0	12.0	11.0	8.0	6.0	2.0	2.0	7.0	6.0	10.0	7.0
6	16.0	12.0	12.0	9.0	6.0	4.0	2.0	2.0	8.0	6.0	9.0	8.0
7	17.0	12.0	12.0	10.0	6.0	5.0	3.0	2.0	9.0	7.0	8.0	7.0
8	16.0	13.0	13.0	11.0	6.0	4.0	3.0	2.0	9.0	7.0	8.0	7.0
9	16.0	13.0	12.0	11.0	5.0	3.0	4.0	3.0	9.0	8.0	8.0	7.0
10	16.0	13.0	12.0	9.0	5.0	3.0	5.0	4.0	8.0	7.0	8.0	7.0
11	16.0	14.0	11.0	9.0	5.0	3.0	4.0	4.0	8.0	7.0	8.0	7.0
12	17.0	14.0	11.0	9.0	5.0	3.0	3.0	2.0	9.0	8.0	9.0	7.0
13	17.0	14.0	12.0	11.0	3.0	1.0	3.0	3.0	9.0	8.0	9.0	7.0
14	16.0	14.0	13.0	11.0	1.0	1.0	4.0	3.0	8.0	7.0	9.0	7.0
15	14.0	12.0	13.0	11.0	1.0	1.0	7.0	4.0	9.0	7.0	9.0	7.0
16	14.0	11.0	12.0	11.0	2.0	2.0	7.0	6.0	8.0	7.0	9.0	8.0
17	14.0	12.0	12.0	10.0	2.0	2.0	6.0	5.0	10.0	8.0	10.0	7.0
18	14.0	12.0	12.0	11.0	2.0	2.0	5.0	4.0	10.0	8.0	9.0	7.0
19	14.0	12.0	11.0	10.0	2.0	2.0	5.0	4.0	10.0	8.0	9.0	7.0
20	14.0	12.0	10.0	9.0	2.0	2.0	6.0	4.0	10.0	9.0	11.0	7.0
21	13.0	12.0	10.0	9.0	3.0	2.0	6.0	5.0	8.0	7.0	11.0	8.0
22	13.0	11.0	8.0	7.0	3.0	2.0	7.0	5.0	8.0	7.0	10.0	8.0
23	14.0	12.0	8.0	7.0	3.0	2.0	7.0	6.0	9.0	7.0	12.0	8.0
24	14.0	12.0	8.0	7.0	3.0	2.0	7.0	6.0	9.0	7.0	12.0	9.0
25	14.0	12.0	8.0	7.0	3.0	2.0	7.0	6.0	7.0	6.0	12.0	9.0
26	13.0	12.0	7.0	6.0	5.0	2.0	6.0	4.0	8.0	7.0	12.0	8.0
27	13.0	11.0	6.0	5.0	6.0	5.0	4.0	4.0	8.0	7.0	12.0	8.0
28	13.0	12.0	6.0	6.0	6.0	6.0	4.0	3.0	8.0	6.0	14.0	10.0
29	12.0	11.0	6.0	6.0	6.0	5.0	3.0	3.0	8.0	6.0	16.0	12.0
30	11.0	9.0	6.0	5.0	5.0	4.0	4.0	3.0	---	---	16.0	13.0
31	12.0	10.0	---	---	4.0	3.0	4.0	3.0	---	---	15.0	13.0
AVERAGE	14.0	12.0	10.0	8.0	4.0	3.0	4.0	3.0	8.0	6.0	10.0	7.0

	APR		MAY		JUN		JUL		AUG		SEP	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	11.0	21.0	14.0	24.0	17.0	24.0	17.0	23.0	19.0	23.0	18.0
2	11.0	9.0	21.0	15.0	24.0	19.0	24.0	18.0	25.0	20.0	22.0	17.0
3	11.0	8.0	21.0	15.0	22.0	18.0	26.0	17.0	26.0	20.0	22.0	17.0
4	12.0	9.0	21.0	15.0	20.0	16.0	26.0	18.0	24.0	19.0	21.0	17.0
5	11.0	10.0	18.0	14.0	18.0	16.0	26.0	19.0	24.0	19.0	22.0	17.0
6	13.0	8.0	18.0	11.0	18.0	13.0	24.0	19.0	25.0	18.0	22.0	18.0
7	14.0	9.0	20.0	12.0	17.0	14.0	26.0	19.0	25.0	19.0	22.0	17.0
8	16.0	10.0	21.0	14.0	20.0	14.0	27.0	19.0	26.0	19.0	22.0	18.0
9	17.0	11.0	19.0	14.0	21.0	14.0	26.0	18.0	24.0	19.0	22.0	18.0
10	18.0	12.0	20.0	14.0	22.0	17.0	26.0	18.0	24.0	19.0	22.0	18.0
11	18.0	14.0	19.0	13.0	22.0	17.0	24.0	18.0	25.0	19.0	22.0	18.0
12	14.0	12.0	16.0	13.0	20.0	17.0	25.0	18.0	25.0	19.0	22.0	17.0
13	16.0	10.0	14.0	12.0	21.0	14.0	25.0	17.0	21.0	18.0	22.0	17.0
14	17.0	11.0	18.0	11.0	23.0	17.0	26.0	17.0	19.0	15.0	21.0	16.0
15	14.0	12.0	19.0	13.0	24.0	17.0	26.0	18.0	21.0	14.0	19.0	15.0
16	12.0	9.0	21.0	13.0	25.0	18.0	25.0	18.0	20.0	17.0	19.0	14.0
17	12.0	8.0	20.0	14.0	26.0	19.0	25.0	17.0	20.0	14.0	20.0	15.0
18	16.0	9.0	22.0	15.0	26.0	19.0	26.0	18.0	19.0	16.0	21.0	16.0
19	17.0	12.0	19.0	17.0	26.0	19.0	26.0	19.0	20.0	16.0	19.0	15.0
20	16.0	11.0	18.0	14.0	25.0	18.0	25.0	18.0	19.0	14.0	16.0	13.0
21	14.0	11.0	20.0	14.0	25.0	18.0	26.0	18.0	17.0	14.0	16.0	12.0
22	17.0	10.0	17.0	13.0	28.0	19.0	25.0	18.0	19.0	13.0	17.0	12.0
23	16.0	11.0	18.0	13.0	26.0	19.0	26.0	18.0	20.0	14.0	17.0	13.0
24	18.0	11.0	19.0	13.0	26.0	18.0	26.0	18.0	22.0	16.0	19.0	13.0
25	18.0	13.0	20.0	13.0	25.0	18.0	26.0	19.0	20.0	16.0	19.0	14.0
26	19.0	13.0	22.0	14.0	27.0	19.0	26.0	19.0	21.0	16.0	20.0	15.0
27	18.0	13.0	23.0	17.0	25.0	19.0	27.0	20.0	21.0	16.0	19.0	16.0
28	19.0	12.0	24.0	18.0	25.0	18.0	28.0	21.0	22.0	16.0	19.0	15.0
29	20.0	14.0	23.0	17.0	22.0	14.0	26.0	21.0	22.0	17.0	18.0	14.0
30	20.0	15.0	22.0	16.0	22.0	14.0	23.0	20.0	22.0	17.0	17.0	13.0
31	---	---	23.0	16.0	---	---	22.0	19.0	23.0	17.0	---	---
AVERAGE	15.0	10.0	19.0	14.0	23.0	16.0	25.0	18.0	22.0	16.0	20.0	15.0

10356500 SUSAN RIVER AT SUSANVILLE, CALIF.

LOCATION.--Lat 40°25'05", long 120°40'15", in SW¼NE¼ sec.31, T.30 N., R.12 E., Lassen County, at gaging station 0.5 mile west of Susanville and 1.1 miles upstream from Piute Creek.

DRAINAGE AREA.--184 sq mi.

PERIOD OF RECORD.--Chemical analyses: October 1958 to September 1968.

REMARKS.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DIS-CHARGE (CFS)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	NITRATE (NO3)	BORON (B)
OCT.											
16...	10	--	--	6.0	--	104	0	--	1.6	--	.00
NOV.											
06...	11	--	--	5.8	--	107	0	--	2.0	--	.00
DEC.											
14...	9.5	--	--	7.3	--	111	0	--	2.2	--	.04
JAN.											
04...	10	--	--	5.2	--	105	0	--	.8	--	.01
FEB.											
08...	38	--	--	4.0	--	86	0	--	1.6	--	.01
MAR.											
08...	125	--	--	3.4	--	57	0	--	.0	--	.01
APR.											
03...	156	--	--	2.8	--	56	0	--	.0	--	.00
MAY											
07...	88	9.2	4.1	3.7	1.0	56	0	1.2	1.4	.1	.01
JUNE											
10...	99	--	--	2.3	--	42	0	--	.8	--	.00
JULY											
04...	79	--	--	1.8	--	42	0	--	.7	--	.00
AUG.											
09...	2.0	--	--	6.4	--	108	2	--	1.6	--	.00
SEPT.											
05...	2.3	17	10	6.9	2.5	119	0	.0	1.4	.0	.06

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	DIS-SOLVED SOLIDS (TONS PER AC-FT)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	ALKA-LINITY AS CACO3	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	TEMP-ERATURE (DEG C)	DISS-OLVED OXYGEN
OCT.											
16...	--	72	0	--	15	.3	85	169	8.1	8	9.8
NOV.											
06...	--	75	0	--	14	.3	88	171	8.2	8	10.5
DEC.											
14...	--	77	0	--	17	.4	91	186	8.2	0	12.1
JAN.											
04...	--	74	0	--	13	.3	86	171	8.2	2	12.1
FEB.											
08...	--	63	0	--	12	.2	71	150	7.8	4	12.1
MAR.											
08...	--	41	0	--	15	.2	47	98	8.0	2	11.7
APR.											
03...	--	39	0	--	14	.2	46	94	7.9	4	11.5
MAY											
07...	68	40	0	.09	16	.3	46	94	8.0	12	9.2
JUNE											
10...	--	31	0	--	14	.2	34	76	7.8	13	9.7
JULY											
04...	--	30	0	--	12	.1	34	69	8.0	24	7.4
AUG.											
08...	--	80	0	--	15	.3	92	181	8.4	24	8.3
SEPT.											
05...	131	86	0	.18	15	.3	98	193	8.2	22	8.8

ABERT LAKE BASIN

10386850 CHEWAUCAN RIVER NEAR VALLEY FALLS, OREG.

LOCATION.--Lat 42°30'57", long 120°15'03", in sec.20, T.35 S., R.21 E., Lake County, downstream from dam at Clark and Johnson Ranch, and 2.7 miles northeast of Valley Falls.

PERIOD OF RECORD.--Chemical analyses: October 1964 to September 1968.

CHEMICAL ANALYSES IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	SODIUM (NA)	CHLO-RIDE (CL)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)
DEC.			
12...	11	2.0	145
JAN.			
17...	13	3.0	134
FEB.			
21...	12	3.0	131
MAR.			
25...	41	24	342
APR.			
18...	52	43	434
MAY			
29...	166	172	1070
JULY			
10...	155	122	884
AUG.			
13...	140	128	1010
SEPT.			
23...	78	57	497

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN THE GREAT BASIN

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
						BEAR RIVER BASIN						
10014000 BEAR R AB SULPHUR C, NR EVANSTON, WYO. (LAT 41 10 06 LONG 110 52 38)												
JAN 1968												
15...	0920	53	7.4	47	13	3.1	.6	206	0	6.0	1.9	.2
MAY												
13...	0920	565	5.0	32	8.5	2.8	.7	133	0	8.8	4.2	.2
JULY												
22...	1745	62	5.7	33	7.7	2.0	.8	141	0	4.5	1.4	1.7
10015700 SULPHUR C AB RESERVOIR, NR EVANSTON, WYO. (LAT 41 09 00 LONG 110 48 00)												
JAN 1968												
16...	1445	5.1	12	70	28	--	--	340	0	23	12	--
MAY												
14...	1500	90	8.6	45	23	--	--	236	0	18	14	--
JULY												
22...	1720	1.9	10	59	27	--	--	352	0	26	14	--
10015900 SULPHUR C BL RESERVOIR, NR EVANSTON, WYO. (LAT 41 09 00 LONG 110 49 00)												
MAY 1968												
14...	1630	115	8.1	46	27	--	--	252	0	33	14	--
JULY												
22...	1940	8.4	8.4	54	21	--	--	273	0	28	5.1	--
10018400 YELLOW C BL DIVERSION, NR EVANSTON, WYO. (LAT 41 15 05 LONG 111 00 24)												
JAN 1968												
15...	1125	3.3	21	74	33	--	--	382	0	28	40	--
MAY												
13...	1045	55	9.3	59	28	--	--	272	0	40	20	--
JULY												
23...	0850	8.3	17	72	31	--	--	386	0	17	20	--
10019000 BEAR R NR EVANSTON, WYO. (LAT 41 18 50 LONG 111 00 42)												
JAN 1968												
15...	1410	66	8.8	55	17	7.8	1.0	246	0	11	5.8	.3
MAY												
13...	1450	725	5.1	40	14	6.9	1.2	176	0	16	7.0	.2
JULY												
23...	1020	19	10	59	25	17	2.5	296	0	14	15	.2
10020300 BEAR R BL RESERVOIR, NR WOODRUFF, WYO. (LAT 41 30 20 LONG 111 00 50)												
JAN 1968												
17...	1410	46	7.3	48	20	--	--	246	0	17	19	--
MAY												
15...	--	613	5.5	48	20	--	--	236	0	23	14	--
JULY												
23...	1250	66	7.0	35	7.5	--	--	161	0	9.2	3.6	--
10028500 BEAR R BL PIXLEY DAM, NR COKEVILLE, WYO. (LAT 41 56 20 LONG 110 59 05)												
MAY 1968												
15...	1730	137	9.0	58	34	34	2.7	306	0	56	33	.5
JULY												
24...	0920	208	8.9	70	37	51	3.3	380	0	56	50	.4
10032000 SMITHS FORK NR BORDER, WYO. (LAT 42 17 00 LONG 110 52 00)												
JAN 1968												
18...	1455	69	5.6	56	17	3.1	.7	192	0	54	1.6	.3
MAY 16												
16...	1015	246	4.8	58	10	3.0	.4	192	0	32	2.4	.2
JULY												
24...	1025	227	5.3	55	11	2.2	.5	178	0	35	1.9	.6

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	BORON (B)	DIS-SOLVED SOLIDS (SUM OF CONSTIT-UENTS)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPE-CIFIC CONDUCT-ANCE (MICRO-MHOS)	PH	TEMPER-ATURE (DEG C)
BEAR RIVER BASIN											
10014000 BEAR R AB SULPHUR C, NR EVANSTON, WYO. (LAT 41 10 06 LONG 110 52 38)											
JAN 1968											
15...	1.0	.02	181	.25	26.3	172	3	.1	321	7.8	0
MAY											
13...	.4	.04	128	.18	203	114	5	.1	222	7.8	4
JULY											
22...	.4	.03	126	.16	19.4	114	0	.1	217	7.5	22
10015700 SULPHUR C AB RESERVOIR, NR EVANSTON, WYO. (LAT 41 09 00 LONG 110 48 00)											
JAN 1968											
16...	.7	--	--	--	--	290	11	.4	558	7.9	0
MAY											
14...	.6	--	236	.32	57.8	208	14	.3	405	7.9	7
JULY											
22...	.7	--	346	.49	1.84	258	0	1.0	587	8.0	23
10015900 SULPHUR C BL RESERVOIR, NR EVANSTON, WYO. (LAT 41 09 00 LONG 110 49 00)											
MAY 1968											
14...	.3	--	267	.37	85.4	228	21	.4	463	7.9	7
JULY											
22...	.7	--	269	.40	6.60	221	0	.5	478	7.9	17
10018400 YELLOW C BL DIVERSION, NR EVANSTON, WYO. (LAT 41 15 05 LONG 111 00 24)											
JAN 1968											
15...	.8	--	--	--	--	320	7	.9	705	7.8	0
MAY											
13...	.3		306	.43	47.1	260	37	.4	530	7.9	9
JULY											
23...	.8	--	374	.51	8.34	307	0	.6	633	8.1	14
10019000 BEAR R NR EVANSTON, WYO. (LAT 41 18 50 LONG 111 00 42)											
JAN 1968											
15...	1.0	.03	228	.31	40.6	204	2	.2	398	7.7	0
MAY											
13...	.3	.04	178	.25	362	156	12	.2	313	8.1	9
JULY											
23...	.5	.07	289	.38	14.4	250	7	.5	494	7.7	17
10020300 BEAR R BL RESERVOIR, NR WOODRUFF, WYO. (LAT 41 30 20 LONG 111 00 50)											
JAN 1968											
17...	.4	--	--	--	--	202	0	.6	443	7.7	3
MAY											
15...	.2	--	242	.33	402	204	10	.5	423	7.9	9
JULY											
23...	.4	--	155	.22	29.2	118	0	.5	266	7.4	18
10028500 BEAR R BL PIXLEY DAM, NR COKEVILLE, WYO. (LAT 41 56 20 LONG 110 59 05)											
MAY 1968											
15...	.6	.07	378	.52	141	284	33	.9	649	8.2	10
JULY											
24...	.7	.10	464	.62	257	328	16	1.2	793	8.2	19
10032000 SMITHS FORK NR BORDER, WYO. (LAT 42 17 00 LONG 110 52 00)											
JAN 1968											
18...	.2	.00	233	.32	44.2	208	50	.1	383	8.2	0
MAY											
16...	.0	.03	205	.28	137	186	29	.1	352	8.1	5
JULY											
24...	.3	.02	200	.26	115	182	36	.1	337	7.6	11

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES IN THE GREAT BASIN

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	MEAN DISCHARGE (CFS)	CALCIUM (CA)	MAGNESIUM (MG)	SODIUM (NA)	BICARBONATE (HCO3)	CARBONATE (CO3)	CHLORIDE (CL)	BORON (B)
WALKER LAKE BASIN								
10293000 EAST WALKER R NR BRIDGEPORT, CALIF. (LAT 38 19 40 LONG 119 12 50)								
NOV.1967								
15...	17	--	--	11	105	0	3.0	.02
JAN 1968								
03...	69	29	--	9.2	118	0	.5	--
MAR.								
06...	52	24	--	14	105	0	1.6	--
MAY								
08...	166	24	4.4	14	116	0	3.1	--
JULY								
16...	245	29	--	15	107	9	2.7	--
SEPT.								
18...	151	32	--	16	135	0	3.0	--
CARSON RIVER BASIN								
10308200 EAST FORK CARSON R NR MARKLEEVILLE, CALIF. (LAT 38 42 50 LONG 119 45 50)								
NOV 1967								
15...	88	--	--	8.3	62	0	3.0	.05
JAN 1968								
03...	100	14	--	7.8	68	0	2.2	--
MAR.								
06	251	12	--	7.5	57	0	3.8	--
MAY								
08...	761	7.6	1.4	3.8	34	0	2.3	--
JULY								
16...	148	11	--	6.0	52	0	1.9	--
SEPT.								
18...	48	14	--	8.9	69	0	3.1	--
10310000 WEST FORK CARSON R AT WOODFORDS, CALIF. (LAT 38 46 10 LONG 119 49 55)								
NOV 1967								
15...	46	--	--	3.7	42	0	1.3	.05
JAN 1968								
03...	28	8.1	--	3.4	43	0	--	--
MAR.								
06...	102	7.4	--	2.5	35	0	1.1	--
MAY								
08...	250	5.7	1.2	2.1	26	0	.1	--
JULY								
16...	55	8.5	--	3.0	40	0	.8	--
SEPT.								
18...	12	9.1	--	4.3	47	0	.9	--
PYRAMID AND WINNEMUCCA LAKES BASIN								
10337000 LAKE TAHOE AT TAHOE CITY, CALIF. (LAT 39 10 04 LONG 120 08 23)								
NOV 1967								
14...	--	--	--	6.4	51	0	2.4	.03
JAN 1968								
02...	--	8.7	--	5.1	52	0	1.1	--
MAR.								
05...	--	9.2	--	5.2	52	0	1.1	--
MAY								
08...	--	9.5	1.6	5.4	52	0	2.3	--
JULY								
16...	--	9.8	--	6.4	53	0	1.9	--
SEPT.								
04...	--	10	--	6.3	44	0	1.8	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	ALKA-LINITY AS CACO3	SPE-CIFIC CONDUCT-ANCE (MICRO-MHOS)	PH	TEMPER-ATURE (DEG C)	DIS-SOLVED OXYGEN
WALKER LAKE BASIN							
10293000 EAST WALKER R NR BRIDGEPORT, CALIF. (LAT 38 19 40 LONG 119 12 50)							
NOV 1967							
15...	77	0	86	197	8.0	8	9.3
JAN 1968							
03...	90	0	97	230	8.1	0	9.4
MAR.							
06...	77	0	86	210	8.1	6	9.7
MAY							
08...	78	0	95	222	8.2	14	9.5
JULY							
16...	88	0	103	233	9.0	--	7.1
SEPT.							
18...	101	0	111	247	8.1	16	7.2
CARSON RIVER BASIN							
10308200 EAST FORK CARSON R NR MARKLEEVILLE, CALIF. (LAT 38 42 50 LONG 119 45 50)							
NOV 1967							
15...	44	0	51	129	7.9	6	10.3
JAN 1968							
03...	57	1	56	148	7.9	0	9.4
MAR.							
06...	42	0	47	126	7.9	1	10.3
MAY							
08...	25	0	28	77	--	9	10.1
JULY							
16...	36	0	43	97	7.8	--	9.0
SEPT.							
18...	55	0	57	137	8.0	24	9.0
10310000 WEST FORK CARSON R AT WOODFORDS, CALIF. (LAT 38 46 10 LONG 119 49 55)							
NOV 1967							
15...	29	0	34	81	7.6	6	10.2
JAN 1968							
03...	30	0	35	80	7.8	0	8.8
MAR.							
06...	26	0	29	68	7.4	1	10.3
MAY							
08...	19	0	21	50	7.5	8	10.6
JULY							
16...	28	0	33	72	7.4	--	8.9
SEPT.							
18...	32	0	39	84	7.7	12	9.3
PYRAMID AND WINNEMUCCA LAKES BASIN							
10337000 LAKE TAHOE AT TAHOE CITY, CALIF. (LAT 39 10 04 LONG 120 08 23)							
NOV 1967							
14...	31	0	42	95	7.9	9	9.0
JAN 1968							
02...	32	0	43	96	7.8	0	10.5
MAR.							
05...	32	0	43	96	8.0	7	9.4
MAY							
08...	30	0	43	97	8.0	7	9.3
JULY							
15...	33	0	43	94	7.8	--	7.9
SEPT.							
04...	34	0	36	122	7.7	16	8.4

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
BEAR RIVER BASIN--CONTINUED												
10041000 THOMAS FORK NR WYOMING-IDAHO STATE LINE (LAT 42 24 10 LONG 111 01 30)												
SEP., 1967												
14...	23	5.9	57	17	--	--	--	228	0	48	160	--
JAN., 1968												
19...	15	10	72	23	--	--	--	260	0	63	260	--
MAY												
17...	78	6.0	59	18	--	--	49	244	0	28	70	--
JULY												
23...	23	7.0	55	13	--	--	93	224	0	40	119	--
10042700 THOMAS FORK NR BORDER WYO (LAT 42 12 56 LONG 111 04 17)												
SEP., 1967												
13...	30	6.4	61	27	--	--	--	250	0	56	110	--
JAN., 1968												
16...	24	10	77	24	--	--	--	300	0	56	103	--
MAY												
14...	74	9.6	71	24	--	--	72	284	0	51	104	--
JULY												
24...	33	10	69	25	--	--	88	272	0	52	132	--
10044000 BEAR R AT HARER IDAHO (LAT 42 11 50 LONG 111 10 05)												
SEP., 1967												
11...	186	7.0	60	26	32	1.6	--	248	0	68	40	.3
JAN., 1968												
14...	220	9.7	74	25	31	1.3	--	288	0	68	38	.4
MAY												
14...	623	6.9	58	22	22	1.5	--	246	0	45	25	.3
JULY												
23...	363	11	68	32	41	2.4	--	312	0	59	45	.5
10046000 RAINBOW INLET CA NR DINGLE IDAHO (LAT 42 13 00 LONG 111 17 30)												
SEP., 1967												
11...	226	8.1	60	29	33	1.6	--	258	0	72	40	.3
JAN., 1968												
15...	155	9.7	72	26	31	1.3	--	288	0	68	34	.4
MAY												
14...	312	6.5	56	23	22	1.5	--	250	0	46	25	.3
JULY												
23...	350	11	68	32	39	2.6	--	324	0	58	41	.3
10046500 BEAR R BL STEWART DAM NR MONTPELIER IDAHO (LAT 42 15 30 LONG 111 17 30)												
SEP., 1967												
11...	9.6	--	--	--	--	--	--	--	--	--	--	--
JAN., 1968												
15...	2.0	--	--	--	--	--	--	--	--	--	--	--
MAY												
14...	6.2	--	--	--	--	--	--	--	--	--	--	--
JULY												
23...	6.2	--	--	--	--	--	--	--	--	--	--	--
10047500 MONTPELIER C AT IRRIGATOR'S WEIR, NR MONTPELIER, IDAHO (LAT 42 20 00 LONG 111 14 00)												
SEP., 1967												
15...	13	10	58	21	--	--	--	234	0	46	3.5	--
JAN., 1968												
19...	8.2	10	66	19	--	--	--	248	0	54	3.6	--
MAY												
17...	29	8.8	58	17	--	--	8.6	232	0	34	3.7	--
JULY												
23...	17	10	65	15	--	--	8.6	221	0	57	1.5	--
10054600 ST. CHARLES C AB DIVERSIONS, NR ST. CHARLES, IDAHO (LAT 42 06 35 LONG 111 27 30)												
SEP., 1967												
13...	43	2.9	45	24	--	--	--	258	0	4.0	2.0	--
JAN., 1968												
17...	31	5.9	50	23	--	--	2.9	264	0	5.0	3.2	--
MAY												
15...	77	2.2	36	19	--	--	.4	196	0	3.8	3.0	--
JULY												
25...	50	4.7	51	17	--	--	6.7	248	0	3.2	2.6	--
10058600 BLOOMINGTON C AT BLOOMINGTON IDAHO (LAT 42 11 05 LONG 111 25 30)												
SEP., 1967												
15...	22	5.0	44	16	--	--	--	232	0	3.5	3.0	--
JAN., 1968												
19...	15	5.8	45	19	--	--	--	232	0	1.8	1.9	--
MAY												
17...	24	5.0	35	13	--	--	4.8	177	0	3.8	1.3	--
JULY												
23...	23	5.2	46	15	--	--	1.1	210	0	4.0	1.7	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR	TEMP-ERATURE (DEG C)
BEAR RIVER BASIN--CONTINUED												
10041000 THOMAS FORK NR WYOMING-IDAHO STATE LINE (LAT 42 24 10 LONG 111 01 30)												
SEP., 1967												
14...	.0	.00	--	521	.71	212	25	3.5	930	7.8	-	15
JAN., 1968												
19...	.1	.01	--	739	1.01	276	63	4.5	1290	8.0	--	0
MAY												
17...	.3	.03	--	353	.48	220	20	1.4	629	8.0	--	7
JULY												
23...	.1	.02	--	447	.61	190	7	2.9	802	7.9	--	19
10042700 THOMAS FORK NR BORDER WYO (LAT 42 12 56 LONG 111 04 17)												
SEP., 1967												
13...	1.0	.00	--	488	.66	260	55	2.0	823	8.0	--	7
JAN., 1968												
16...	5.2	.00	--	526	.72	292	46	1.9	904	8.0	--	0
MAY												
14...	2.1	.00	--	483	.66	276	43	1.9	836	8.0	--	9
JULY												
24...	2.8	.06	--	508	.69	275	52	2.3	887	8.0	--	23
10044000 BEAR R AT HARER IDAHO (LAT 42 11 50 LONG 111 10 05)												
SEP., 1967												
11...	.1	.00	.05	364	.50	254	51	.9	618	7.9	--	16
JAN., 1968												
14...	.7	.00	.02	393	.53	288	52	.8	650	8.0	--	--
MAY												
14...	.5	.01	.05	303	.41	236	34	.6	522	8.1	--	--
JULY												
23...	1.1	.01	.06	402	.55	301	45	1.0	694	7.9	--	--
10046000 RAINBOW INLET CA NR DINGLE IDAHO (LAT 42 13 00 LONG 111 17 30)												
SEP., 1967												
11...	.1	.00	.05	387	.53	270	58	.9	626	7.9	--	16
JAN., 1968												
15...	1.2	.00	.04	394	.54	288	52	.8	647	8.2	--	--
MAY												
14...	.7	.00	.05	309	.42	236	31	.6	529	8.1	--	11
JULY												
23...	1.0	.02	.07	405	.55	301	35	1.0	692	7.8	--	22
10046500 BEAR R BL STEWART DAM NR MONTPELIER IDAHO (LAT 42 15 30 LONG 111 17 30)												
SEP., 1967												
11...	--	--	--	--	--	--	--	--	617	--	--	12
JAN., 1968												
15...	--	--	--	--	--	--	--	--	646	--	--	--
MAY												
14...	--	--	--	--	--	--	--	--	530	--	--	11
JULY												
23...	--	--	--	--	--	--	--	--	682	--	--	23
10047500 MONTPELIER C AT IRRIGATOR'S WEIR, NR MONTPELIER, IDAHO (LAT 42 20 00 LONG 111 14 00)												
SEP., 1967												
15...	.1	.00	--	280	.38	230	38	2.0	438	7.9	--	8
JAN., 1968												
19...	.4	.00	--	286	.39	244	41	.3	465	8.1	--	0
MAY												
17...	.1	.00	--	237	.32	212	22	.3	402	7.9	--	9
JULY												
23...	.0	.00	--	278	.38	224	43	.2	442	7.7	--	14
10054600 ST. CHARLES C AB DIVERSIONS, NR ST. CHARLES, IDAHO (LAT 42 06 35 LONG 111 27 30)												
SEP., 1967												
13...	.1	.00	--	213	.29	210	0	.1	378	8.0	--	6
JAN., 1968												
17...	.4	.01	--	212	.29	220	4	.1	392	8.1	--	1
MAY												
15...	.1	.00	--	157	.21	168	7	.0	297	7.9	--	4
JULY												
25...	.4	.00	--	207	.28	196	0	.2	370	7.8	--	7
10058600 BLOOMINGTON C AT BLOOMINGTON IDAHO (LAT 42 11 05 LONG 111 25 30)												
SEP., 1967												
15...	.1	.00	--	194	.26	176	0	.3	348	7.8	--	8
JAN., 1968												
19...	.6	.11	--	187	.25	190	0	.1	346	8.1	--	3
MAY												
17...	.5	.01	--	158	.21	141	0	.2	271	7.5	--	11
JULY												
23...	.3	.01	--	179	.24	176	4	.0	320	7.9	--	14

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
BEAR RIVER BASIN--CONTINUED												
10059500 BEAR LAKE OUTLET CA NR PARIS IDAHO (LAT 42 13 00 LONG 111 20 30)												
SEP., 1967												
11...	1200	7.6	27	66	42	4.5	--	344	0	82	50	.3
JAN., 1968												
15...	10	10	36	61	41	4.2	--	352	0	76	48	.5
MAY												
14...	5.0	5.0	55	55	50	3.3	--	362	0	91	58	.5
JULY												
23...	918	11	44	52	39	4.0	--	336	0	67	44	.7
10068500 BEAR R AT PESCADERO IDAHO (LAT 42 24 30 LONG 111 21 30)												
SEP., 1967												
11...	--	--	--	--	--	--	--	--	--	--	--	--
13...	1150	6.1	29	62	--	--	--	340	0	72	49	--
JAN., 1968												
17...	108	11	59	39	--	--	--	328	0	63	32	--
MAY												
15...	121	8.7	57	31	--	--	33	258	0	76	35	--
JULY												
24...	942	--	--	--	--	--	--	--	--	--	--	--
10070500 GEORGETOWN C BL DIV AT GEORGETOWN IDAHO (LAT 42 28 40 LONG 111 22 15)												
SEP., 1967												
11...	20	6.4	63	12	--	--	--	220	0	42	2.5	--
JAN., 1968												
18...	32	6.9	60	17	--	--	--	224	0	41	2.2	--
MAY												
14...	37	7.1	57	15	--	--	6.3	220	0	33	1.5	--
10072800 EIGHTMILE C NR SODA SPRINGS IDAHO (LAT 42 32 15 LONG 111 34 20)												
SEP., 1967												
11...	7.5	6.0	46	13	--	--	--	196	0	4.8	4.0	--
MAY , 1968												
17...	28	5.8	42	6.4	--	--	6.8	167	0	6.2	1.7	--
JULY												
23...	11	5.7	53	6.4	--	--	.5	186	0	4.8	1.5	--
10075000 BEAR R AT SODA SPRINGS IDAHO (LAT 42 36 50 LONG 111 35 00)												
SEP., 1967												
11...	1270	7.6	33	57	40	4.5	--	340	0	72	47	.3
JAN., 1968												
16...	269	17	55	40	25	3.2	--	322	0	51	30	.4
MAY												
13...	288	3.6	55	25	19	1.8	--	244	0	52	24	.3
JULY												
23...	887	11	50	43	36	3.5	--	316	0	60	38	.3
10076400 SODA C AT FIVEMILE MEADOWS NR SODA SPRINGS IDAHO (LAT 42 43 45 LONG 111 36 55)												
SEP., 1967												
11...	3.5	25	59	46	8.0	3.2	--	400	0	25	6.5	.3
JAN., 1968												
19...	5.9	--	--	--	--	--	--	--	--	--	--	--
MAY												
17...	8.9	--	--	--	--	--	--	--	--	--	--	--
JULY												
23...	8.5	--	--	--	--	--	--	--	--	--	--	--
10077300 SODA CA NR SODA SPRINGS IDAHO (LAT 42 41 17 LONG 111 36 30)												
SEP., 1967												
12...	51	36	58	75	--	--	27	572	0	25	12	--
JAN., 1968												
16...	46	47	76	79	--	--	26	648	0	24	9.9	--
MAY												
13...	40	35	53	75	--	--	19	544	0	27	5.0	--
JULY												
23...	55	39	87	67	--	--	34	646	0	26	5.4	--
10077580 SODA CA NR ALEXANDER IDAHO (LAT 42 38 06 LONG 111 45 50)												
SEP., 1967												
12...	7.5	34	59	81	--	--	34	596	0	43	16	--
JULY, 1968												
22...	3.4	--	--	--	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH	COLOR	TEMP-ERATURE (DEG C)
BEAR RIVER BASIN--CONTINUED												
10059500 BEAR LAKE OUTLET CA NR PARIS IDAHO (LAT 42 13 00 LONG 111 20 30)												
SEP., 1967												
11...	.1	.00	.09	448	.61	338	56	1.0	766	7.9	--	18
JAN., 1968												
15...	.4	.00	.08	460	.63	340	51	1.0	757	8.1	--	--
MAY												
14...	.8	.02	.09	511	.69	364	67	1.1	847	8.1	--	11
JULY												
23...	.6	.01	.09	415	.56	324	48	.9	722	8.1	--	22
10068500 BEAR R AT PESCADERO IDAHO (LAT 42 24 30 LONG 111 21 30)												
SEP., 1967												
11...	--	--	--	--	--	--	--	--	753	--	--	--
13...	.1	.00	--	449	.61	328	49	1.0	752	8.1	--	13
JAN., 1968												
17...	1.2	.00	--	405	.55	308	39	.8	660	7.8	--	0
MAY												
15...	1.3	.11	--	390	.53	270	58	.9	633	8.0	--	10
JULY												
24...	--	--	--	--	--	--	--	--	740	--	--	22
10070500 GEORGETOWN C BL DIV AT GEORGETOWN IDAHO (LAT 42 28 40 LONG 111 22 15)												
SEP., 1967												
11...	.1	.03	--	250	.34	206	26	.3	410	7.9	--	9
JAN., 1968												
18...	.2	.01	--	251	.34	220	36	.1	405	7.7	--	2
MAY												
14...	.9	1.9	--	237	.32	204	24	.2	394	7.8	--	7
10072800 EIGHTMILE C NR SODA SPRINGS IDAHO (LAT 42 32 15 LONG 111 34 20)												
SEP., 1967												
11...	.1	.00	--	179	.24	170	9	.0	309	7.8	--	9
MAY , 1968												
17...	.3	.00	--	163	.22	131	0	.3	272	7.5	--	8
JULY												
23...	.0	.00	--	173	.24	159	6	.0	293	7.6	--	14
10075000 BEAR R AT SODA SPRINGS IDAHO (LAT 42 36 50 LONG 111 35 00)												
SEP., 1967												
11...	.2	.00	.08	428	.58	316	37	1.0	744	8.1	--	17
JAN., 1968												
16...	5.6	.23	.03	403	.55	300	36	.6	642	7.7	--	--
MAY												
13...	.3	.08	.04	308	.42	240	40	.5	519	7.9	--	12
JULY												
23...	1.0	.07	.07	385	.52	302	43	.9	673	7.8	--	20
10076400 SODA C AT FIVEMILE MEADOWS NR SODA SPRINGS IDAHO (LAT 42 43 45 LONG 111 36 55)												
SEP., 1967												
11...	2.6	.00	.02	355	.48	336	8	.2	619	7.8	--	12
JAN., 1968												
19...	--	--	--	--	--	--	--	--	655	--	--	7
MAY												
17...	--	--	--	--	--	--	--	--	608	--	--	14
JULY												
23...	--	--	--	--	--	--	--	--	699	--	--	22
10077300 SODA CA NR SODA SPRINGS IDAHO (LAT 42 41 17 LONG 111 36 30)												
SEP., 1967												
12...	.1	.00	--	505	.69	454	0	.5	841	7.8	--	11
JAN., 1968												
16...	4.0	.00	--	584	.79	516	0	.5	925	7.9	--	--
MAY												
13...	1.1	.01	--	473	.64	440	0	.4	813	8.1	--	14
JULY												
23...	1.0	.02	--	560	.76	492	0	.7	937	8.0	--	18
10077580 SODA CA NR ALEXANDER IDAHO (LAT 42 38 06 LONG 111 45 50)												
SEP., 1967												
12...	.1	.00	--	542	.74	482	0	.7	893	8.1	--	10
JULY, 1968												
22...	--	--	--	--	--	--	--	--	935	--	--	23

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
BEAR RIVER BASIN--CONTINUED												
10079500 BEAR R AT ALEXANDER IDAHO (LAT 42 38 45 LONG 111 41 55)												
SEP., 1967												
12...	2010	2.2	36	59	39	4.4	--	356	0	71	46	.3
JAN., 1968												
16...	624	17	67	58	31	4.0	--	444	0	67	34	.4
MAY												
14...	58	9.4	65	48	21	3.6	--	372	0	59	24	.4
JULY												
22...	1110	10	54	40	34	3.5	--	320	0	55	36	.3
10079710 TURNER CA AT TURNER IDAHO (LAT 42 35 17 LONG 111 49 42)												
SEP., 1967												
12...	17	8.0	36	59	--	--	45	354	0	74	46	--
JULY, 1968												
22...	38	--	--	--	--	--	--	--	--	--	--	--
10080100 BEAR R AB GRACE POWER PLANT NR TURNER IDAHO (LAT 42 32 20 LONG 111 47 45)												
SEP., 1967												
12...	75	12	41	55	39	5.1	--	362	0	68	43	.4
JAN., 1968												
17...	50	21	51	59	37	5.2	--	400	0	67	40	.5
MAY												
14...	42	18	40	51	35	5.3	--	336	0	61	34	.4
JULY												
22...	75	20	52	47	38	4.9	--	342	0	62	39	2.2
10080450 WHISKEY CREEK NEAR LAGO IDAHO (LAT 42 26 56 LONG 111 43 21)												
SEP., 1967												
12...	.50	17	61	52	--	--	39	394	0	65	40	--
JAN., 1968												
17...	--	24	69	45	--	--	35	376	0	59	38	--
MAY												
14...	11	21	61	44	--	--	39	348	0	68	37	--
JULY												
22...	12	21	74	31	--	--	60	388	0	60	40	--
10081600 TROUT C AT THATCHER IDAHO (LAT 42 24 40 LONG 111 43 30)												
SEP., 1967												
13...	39	11	41	31	18	3.1	--	258	0	38	20	.2
JAN., 1968												
17...	--	13	70	24	--	--	14	308	0	25	14	--
MAY												
14...	28	18	78	28	--	--	12	318	0	41	17	--
JULY												
22...	26	18	75	20	--	--	35	348	0	36	13	--
10083200 BEAR R AT CLEVELAND IDAHO (LAT 42 20 50 LONG 111 42 55)												
SEP., 1967												
12...	1330	11	45	55	39	4.8	--	370	0	73	46	.3
JAN., 1968												
16...	615	15	58	57	36	4.5	--	396	0	88	40	.5
MAY												
17...	335	8.4	65	41	29	5.3	--	364	0	54	31	.4
JULY												
23...	958	15	61	40	36	4.3	--	344	0	57	37	2.3
10084500 COTTONWOOD C NR CLEVELAND IDAHO (LAT 42 20 00 LONG 111 46 00)												
SEP., 1967												
11...	4.3	12	50	8.8	--	--	10	196	0	8.5	9.0	--
MAY , 1968												
17...	68	9.4	34	5.5	--	--	7.0	138	0	6.2	2.1	--
JULY												
23...	7.8	12	52	8.9	--	--	2.8	190	0	7.0	6.6	--
10086500 BEAR R BL UTAH POWER & LIGHT CO. TAILRACE, AT ONEIDA, IDAHO (LAT 42 16 00 LONG 111 45 00)												
SEP., 1967												
12...	2740	--	--	--	--	--	--	--	--	--	--	--
JAN., 1968												
16...	40	--	--	--	--	--	--	--	--	--	--	--
MAY												
14...	155	9.0	46	31	--	--	37	264	0	52	36	--
JULY												
23...	1890	13	72	33	--	--	40	346	0	59	40	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC CONDUCTANCE (MICRO-MHOS)	PH	COLOR	TEMP-ERATURE (DEG C)
BEAR RIVER BASIN--CONTINUED												
10079500 BEAR R AT ALEXANDER IDAHO (LAT 42 38 45 LONG 111 41 55)												
SEP., 1967												
12...	.2	.00	.09	436	.59	332	40	.9	746	8.2	--	17
JAN., 1968												
16...	.2	.00	.05	500	.68	408	44	.7	821	7.8	--	--
MAY												
14...	.1	.02	.06	420	.57	358	53	.5	706	8.0	--	11
JULY												
22...	1.6	.08	.07	382	.52	299	37	.9	665	7.7	--	21
10079710 TURNER CA AT TURNER IDAHO (LAT 42 35 17 LONG 111 49 42)												
SEP., 1967												
12...	.2	.00	--	446	.61	334	44	1.1	752	8.1	--	12
JULY, 1968												
22...	--	--	--	--	--	--	--	--	660	--	--	22
10080100 BEAR R AB GRACE POWER PLANT NR TURNER IDAHO (LAT 42 32 20 LONG 111 47 45)												
SEP., 1967												
12...	.1	.00	.08	438	.60	328	31	.9	746	8.1	--	12
JAN., 1968												
17...	2.9	.02	.07	490	.67	368	40	.8	790	8.0	--	--
MAY												
14...	.7	.00	.08	400	.54	308	32	.9	694	8.1	--	11
JULY												
22...	3.0	.10	.08	418	.57	323	43	.9	717	8.1	--	17
10080450 WHISKEY CREEK NEAR LAGO IDAHO (LAT 42 26 56 LONG 111 43 21)												
SEP., 1967												
12...	1.4	.00	--	471	.64	364	41	.9	776	8.0	--	13
JAN., 1968												
17...	11	.37	--	469	.64	356	48	.8	757	7.9	--	6
MAY												
14...	11	.35	--	460	.63	333	48	.9	757	8.0	--	12
JULY												
22...	7.1	.29	--	470	.64	312	0	1.5	772	8.0	--	15
10081600 TROUT C AT THATCHER IDAHO (LAT 42 24 40 LONG 111 43 30)												
SEP., 1967												
13...	.2	.01	.05	282	.38	230	18	.5	497	7.6	--	8
JAN., 1968												
17...	5.9	.06	--	320	.44	272	19	.4	533	7.7	--	--
MAY												
14...	12	.76	--	375	.51	310	49	.3	613	7.8	--	10
JULY												
22...	6.1	.40	--	383	.52	270	0	.9	622	8.0	--	16
10083200 BEAR R AT CLEVELAND IDAHO (LAT 42 20 50 LONG 111 42 55)												
SEP., 1967												
12...	.2	.00	.08	455	.62	340	37	.9	772	7.8	--	15
JAN., 1968												
16...	1.3	.04	.07	473	.64	380	55	.8	781	8.0	--	4
MAY												
17...	.8	.00	.09	414	.56	332	34	.7	710	8.2	--	11
JULY												
23...	2.2	.18	.09	413	.56	316	34	.9	709	7.9	--	21
10084500 COTTONWOOD C NR CLEVELAND IDAHO (LAT 42 20 00 LONG 111 46 00)												
SEP., 1967												
11...	.1	.00	--	196	.27	160	0	.4	326	8.2	--	12
MAY , 1968												
17...	.2	.00	--	136	.18	107	0	.3	230	7.4	--	7
JULY												
23...	.1	.00	--	188	.26	166	11	.1	315	7.6	--	14
10086500 BEAR R BL UTAH POWER & LIGHT CO. TAILRACE, AT ONEIDA, IDAHO (LAT 42 16 00 LONG 111 45 00)												
SEP., 1967												
12...	--	--	--	--	--	--	--	--	811	--	--	18
JAN., 1968												
16...	--	--	--	--	--	--	--	--	785	--	--	2
MAY												
14...	.7	.03	--	337	.46	242	26	1.0	597	7.5	--	12
JULY												
23...	1.9	.14	--	434	.59	315	31	1.0	729	8.1	--	22

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

BEAR RIVER BASIN--CONTINUED

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
10087900 MINK C AT MINK C IDAHO (LAT 42 13 50 LONG 111 43 59)												
SEP., 1967												
13...	31	4.6	47	11	--	--	5.2	200	0	5.2	4.0	--
JAN., 1968												
15...	29	6.1	42	12	--	--	1.7	182	0	3.8	2.8	--
MAY												
14...	200	.8	34	9.9	--	--	5.2	158	0	5.0	1.5	--
JULY												
23...	40	5.9	47	8.0	--	--	4.1	186	0	3.8	1.5	--
10088100 TWIN LAKES INLET CA NR CLIFTON IDAHO (LAT 42 11 20 LONG 111 56 40)												
SEP., 1967												
13...	24	.0	36	33	--	--	32	246	6	40	29	--
MAY , 1968												
13...	132	--	--	--	--	--	--	--	--	--	--	--
JULY												
22...	100	--	--	--	--	--	--	218	0	--	20	--
10088200 TWIN LAKES OUTLET CA AT DAYTON IDAHO (LAT 42 06 30 LONG 111 58 20)												
SEP., 1967												
13...	22	5.4	33	13	--	--	12	162	0	12	11	--
MAY , 1968												
13...	25	3.4	32	12	--	--	8.9	166	0	7.8	2.9	--
JULY												
22...	25	--	--	--	--	--	--	168	0	--	2.4	--
10088520 PRESTON-RIVERDALE AND MINK CR CNL NR PRESTON ID (LAT 42 09 22 LONG 111 49 18)												
SEP., 1967												
13...	3.8	9.2	51	14	--	--	7.7	228	0	5.5	5.5	--
10090450 WEST CACHE CA AT CORNISH UTAH (LAT 41 59 10 LONG 111 57 14)												
SEP., 1967												
11...	125	8.8	48	54	--	--	64	378	0	75	67	--
MAY , 1968												
13...	115	--	--	--	--	--	--	--	--	--	--	--
JULY												
22...	124	--	--	--	--	--	--	--	--	--	--	--
10090500 BEAR RIVER NEAR PRESTON IDAHO (LAT 42 10 00 LONG 111 51 00)												
SEP., 1967												
14...	1750	--	--	--	--	--	--	--	--	--	--	--
OCT.												
17...	2610	13	51	53	42	6.1	--	368	0	71	42	.2
DEC.												
19...	120	14	57	41	30	4.4	--	341	0	52	32	.2
JAN., 1968												
16...	770	--	--	--	--	--	--	--	--	--	--	--
MAY												
16...	72	--	--	--	--	--	--	--	--	--	--	--
JULY												
23...	641	--	--	--	--	--	--	--	--	--	--	--
10091100 BATTLE C AT MOUTH NR PRESTON IDAHO (LAT 42 08 30 LONG 111 54 55)												
SEP., 1967												
12...	2.6	15	30	43	--	--	102	316	0	76	94	--
JAN., 1968												
15...	2.5	34	75	45	--	--	161	468	0	104	160	--
MAY												
13...	.74	19	46	36	--	--	154	346	0	103	145	--
JULY												
22...	.22	23	80	36	--	--	131	480	0	76	112	--
10091200 DEEP C NR CLIFTON IDAHO (LAT 42 12 10 LONG 111 59 20)												
SEP., 1967												
13...	2.0	15	51	121	--	--	631	432	0	275	960	--
JAN., 1968												
17...	1.9	19	74	47	--	--	251	328	0	134	360	--
MAR.												
05...	53	17	66	34	--	--	133	262	0	100	195	--
MAY												
13...	6.3	12	88	94	--	--	423	386	0	218	695	--
JULY												
22...	2.5	21	83	141	--	--	829	432	0	368	1310	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR	TEMP-ERATURE (DEG C)
BEAR RIVER BASIN--CONTINUED												
10087900 MINK C AT MINK C IDAHO (LAT 42 13 50 LONG 111 43 53)												
SEP., 1967												
13...	.3	.00	--	173	.24	164	0	.2	312	7.9	--	12
JAN., 1968												
15...	.8	.04	--	174	.24	154	5	.1	287	7.4	--	5
MAY												
14...	.2	.00	--	143	.19	126	0	.2	254	7.4	--	7
JULY												
23...	.8	.08	--	163	.22	150	0	.1	285	7.7	--	15
10088100 TWIN LAKES INLET CA NR CLIFTON IDAHO (LAT 42 11 20 LONG 111 56 40)												
SEP., 1967												
13...	.5	.00	--	296	.40	224	12	.9	518	8.3	--	14
MAY , 1968												
13...	--	--	--	--	--	--	--	--	264	--	--	10
JULY												
22...	--	--	--	241	.33	188	9	--	418	7.8	--	22
10088200 TWIN LAKES OUTLET CA AT DAYTON IDAHO (LAT 42 06 30 LONG 111 58 20)												
SEP., 1967												
13...	.2	.00	--	160	.22	134	1	.5	294	7.8	--	17
MAY , 1968												
13...	.3	.00	--	149	.20	129	0	.3	281	7.4	--	13
JULY												
22...	--	--	--	159	.22	138	0	--	289	7.7	--	22
10088520 PRESTON-RIVERDALE AND MINK CR CNL NR PRESTON ID (LAT 42 09 22 LONG 111 49 18)												
SEP., 1967												
13...	.4	.00	--	212	.29	184	0	.2	358	8.1	--	15
10090450 WEST CACHE CA AT CORNISH UTAH (LAT 41 59 10 LONG 111 57 14)												
SEP., 1967												
11...	.3	.01	--	506	.69	344	34	1.5	848	8.2	--	17
MAY , 1968												
13...	--	--	--	--	--	--	--	--	783	--	--	13
JULY												
22...	--	--	--	--	--	--	--	--	710	--	--	22
10090500 BEAR RIVER NEAR PRESTON IDAHO (LAT 42 10 00 LONG 111 51 00)												
SEP., 1967												
14...	--	--	--	--	--	--	--	--	803	--	--	18
OCT.												
17...	1.2	--	.06	474	.64	34	0	1.0	753	7.9	0	12
DEC.												
19...	1.9	--	.06	393	.53	310	31	.7	692	8.2	0	0
JAN., 1968												
16...	--	--	--	--	--	--	--	--	764	--	--	2
MAY												
16...	--	--	--	--	--	--	--	--	623	--	--	10
JULY												
23...	--	--	--	--	--	--	--	--	707	--	--	20
10091100 BATTLE C AT MOUTH NR PRESTON IDAHO (LAT 42 08 30 LONG 111 54 55)												
SEP., 1967												
12...	.5	.04	--	527	.72	250	0	2.8	878	8.1	--	15
JAN., 1968												
15...	5.9	.18	--	820	1.12	372	0	3.6	1320	7.6	--	0
MAY												
13...	3.2	.23	--	700	.95	263	0	4.1	1150	7.9	--	15
JULY												
22...	3.4	.30	--	698	.95	348	0	3.0	1150	8.1	--	21
10091200 DEEP C NR CLIFTON IDAHO (LAT 42 12 10 LONG 111 59 20)												
SEP., 1967												
13...	.7	.01	--	2330	3.17	624	270	11	3820	8.0	--	15
JAN., 1968												
17...	5.9	.23	--	1020	1.39	376	107	5.6	1700	7.7	--	0
MAR.												
05...	.8	.00	--	705	.96	304	90	3.3	1190	7.8	--	8
MAY												
13...	1.9	.09	--	1840	2.34	606	289	7.5	3020	7.9	--	13
JULY												
22...	1.7	.25	--	3070	4.04	785	431	13	5020	8.0	--	25

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
BEAR RIVER BASIN--CONTINUED												
10091250 DEEP C AT MOUTH NR PRESTON IDAHO (LAT 42 07 20 LONG 111 55 50)												
SEP., 1967												
13...	6.6	11	45	53	--	--	79	342	16	72	85	--
JAN., 1968												
15...	9.6	26	63	34	--	--	97	384	0	44	100	--
MAY												
13...	1.1	14	45	38	--	--	176	300	0	60	242	--
JULY												
22...	2.3	15	43	38	--	--	136	296	0	66	175	--
10093000 CUB R NR PRESTON IDAHO (LAT 42 08 00 LONG 111 41 00)												
SEP., 1967												
13...	40	3.6	43	13	--	--	2.1	196	0	3.8	1.5	--
JAN., 1968												
17...	19	5.0	42	16	--	--	.5	198	0	3.0	2.6	--
MAY												
16...	113	2.9	35	9.0	--	--	5.8	160	0	3.8	1.3	--
JULY												
23...	65	4.6	48	9.2	--	--	2.6	192	0	3.8	1.2	--
10095800 WEST BRANCH CUB R CA NR FAIRVIEW IDAHO (LAT 41 59 56 LONG 111 54 51)												
SEP., 1967												
13...	15	9.3	38	36	--	--	29	280	0	33	28	--
MAY , 1968												
13...	12	4.6	33	9.3	--	--	8.0	151	0	11	1.5	--
JULY												
22...	24	14	64	26	--	--	75	340	0	56	64	--
10095900 EAST BRANCH CUB R CA NR LEWISTON UTAH (LAT 41 59 39 LONG 111 51 58)												
SEP., 1967												
13...	50	4.1	25	38	--	--	34	256	0	37	32	--
MAY , 1968												
13...	59	8.7	34	12	--	--	9.0	170	0	7.2	2.8	--
JULY												
22...	60	14	58	22	--	--	95	320	0	51	89	--
10098900 CUB R AB SUGAR REFINERY NR LEWISTON UTAH (LAT 41 58 34 LONG 111 49 37)												
SEP., 1967												
11...	--	5.4	17	21	--	--	30	176	10	11	16	--
JAN., 1968 ,												
17...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
17...	115	10	44	13	--	--	13	214	0	9.5	2.7	--
JULY												
25...	--	--	--	--	--	--	--	--	--	--	35	--
10119000 LITTLE MALAD R AB ELKHORN RESERVOIR, NR MALAD CITY, IDAHO (LAT 42 20 00 LONG 112 26 00)												
SEP., 1967												
13...	15	21	51	21	--	--	21	234	0	13	38	--
JAN., 1968												
12...	3.9	29	53	25	--	--	19	236	0	19	45	--
MAY												
15...	18	21	46	20	--	--	21	202	0	15	43	--
JULY												
16...	29	20	57	21	--	--	14	228	0	14	41	--
10120350 LITTLE MALAD R AB ST. JOHN CANAL DIVERSION, NR MALAD CITY, IDAHO (LAT 42 14 30 LONG 112 21 15)												
SEP., 1967												
13...	--	19	49	26	--	--	18	248	0	11	38	--
JAN., 1968												
12...	.00	--	--	--	--	--	--	--	--	--	--	--
MAY												
15...	5.8	--	--	--	--	--	--	--	--	--	--	--
JULY												
16...	15	--	--	--	--	--	--	--	--	--	--	--
10120700 MALAD RIVER NR MALAD CITY IDAHO (LAT 42 09 25 LONG 112 18 10)												
SEP., 1967												
13...	1.5	25	212	155	--	--	372	372	0	1280	240	--
JAN., 1968												
12...	1.5	29	216	111	--	--	243	516	0	800	190	--
MAY												
15...	1.0	26	175	147	--	--	331	332	0	1040	285	--
JULY												
16...	.92	28	219	142	--	--	313	370	0	1110	248	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR	TEMP-ERATURE (DEG C)
BEAR RIVER BASIN--CONTINUED												
10091250 DEEP C AT MOUTH NR PRESTON IDAHO (LAT 42 07 20 LONG 111 55 50)												
SEP., 1967												
13...	.2	.00	--	526	.72	330	23	1.9	895	8.3	--	16
JAN., 1968												
15...	5.5	.13	--	569	.77	296	0	2.4	945	7.7	--	3
MAY												
13...	1.1	.03	--	733	1.00	269	23	4.6	1310	7.9	--	14
JULY												
22...	.8	.05	--	630	.86	262	19	3.7	1110	8.0	--	26
10093000 CUB R NR PRESTON IDAHO (LAT 42 08 30 LONG 111 41 00)												
SEP., 1967												
13...	.0	.00	--	160	.22	162	1	.1	300	7.9	--	10
JAN., 1968												
17...	1.0	.00	--	172	.23	168	6	.0	299	7.9	--	1
MAY												
16...	.1	.00	--	144	.20	124	0	.2	251	7.5	--	9
JULY												
23...	.3	.03	--	167	.23	158	0	.1	291	7.8	--	14
10095800 WEST BRANCH CUB R CA NR FAIRVIEW IDAHO (LAT 41 59 56 LONG 111 54 51)												
SEP., 1967												
13...	.1	.00	--	310	.42	240	10	.8	542	8.1	--	12
MAY , 1968												
13...	.8	.01	--	144	.20	121	0	.3	249	7.5	--	10
JULY												
22...	1.5	.15	--	469	.64	266	0	2.0	790	7.9	--	23
10095900 EAST BRANCH CUB R CA NR LEWISTON UTAH (LAT 41 59 39 LONG 111 51 58)												
SEP., 1967												
13...	10	.00	--	305	.41	220	10	1.0	533	8.2	--	13
MAY , 1968												
13...	3.8	.36	--	176	.24	134	0	.3	294	7.4	--	10
JULY												
22...	1.6	.20	--	492	.67	235	0	2.7	837	7.9	--	23
10098900 CUB R AB SUGAR REFINERY NR LEWISTON UTAH (LAT 41 58 34 LONG 111 49 37)												
SEP., 1967												
11...	.2	.01	--	200	.27	130	0	1.1	352	8.6	--	16
JAN., 1968												
17...	--	--	--	--	--	--	--	--	464	--	--	1
MAY												
17...	2.6	.27	--	211	.29	163	0	.4	367	7.6	--	10
JULY												
25...	--	.51	--	374	.51	252	--	--	648	--	--	28
10119000 LITTLE MALAD R AB ELKHORN RESERVOIR, NR MALAD CITY, IDAHO (LAT 42 20 00 LONG 112 26 00)												
SEP., 1967												
13...	.1	.00	--	296	.40	214	22	.6	475	8.2	--	13
JAN., 1968												
12...	.7	.00	--	307	.42	236	42	.5	530	7.9	--	10
MAY												
15...	.3	.00	--	279	.38	197	31	.6	465	7.5	--	14
JULY												
16...	.4	.03	--	286	.39	228	42	.4	491	7.7	--	20
10120350 LITTLE MALAD R AB ST. JOHN CANAL DIVERSION, NR MALAD CITY, IDAHO (LAT 42 14 30 LONG 112 21 15)												
SEP., 1967												
13...	.1	.01	--	304	.41	228	25	.5	498	8.1	--	11
JAN., 1968												
12...	--	--	--	--	--	--	--	--	522	--	--	3
MAY												
15...	--	--	--	--	--	--	--	--	497	--	--	11
JULY												
16...	--	--	--	--	--	--	--	--	532	--	--	19
10120700 MALAD RIVER NR MALAD CITY IDAHO (LAT 42 09 25 LONG 112 18 10)												
SEP., 1967												
13...	.3	.01	--	2610	3.55	1170	863	4.7	3070	7.9	--	11
JAN., 1968												
12...	1.5	.13	--	1900	2.58	996	573	3.4	2450	8.0	--	0
MAY												
15...	6.5	.07	--	2300	2.95	1040	769	4.5	2920	7.7	--	11
JULY												
16...	3.3	.01	--	2380	3.06	1130	827	4.0	2980	7.7	--	20

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	DIS-CHARGE (CFS)	SILICA (SIO2)	CAL-CIUM (CA)	MAG-NE-SIUM (MG)	SODIUM (NA)	PO-TAS-SIUM (K)	SODIUM PLUS PO-TAS-SIUM (NA+K)	BICAR-BONATE (HCO3)	CAR-BONATE (CO3)	SULFATE (SO4)	CHLO-RIDE (CL)	FLUO-RIDE (F)
BEAR RIVER BASIN--CONTINUED												
			1D1255D0 MALAD R AT WOODRUFF IDAHO (LAT 42 02 00 LONG 112 14 30)									
SEP., 1967												
13...	13	13	127	60	--	--	1390	414	0	4.5	2300	--
JAN., 1968												
12...	39	26	127	57	--	--	543	460	0	13	950	--
MAY												
15...	37	23	117	76	--	--	767	464	0	244	1160	--
JULY												
16...	18	22	152	52	--	--	1530	408	0	78	2480	--
			10125600 MALAD R NR PLYMOUTH UTAH (LAT 41 50 19 LONG 112 08 49)									
SEP., 1967												
13...	16	--	--	--	--	--	--	--	--	--	--	--
JAN., 1968												
17...	47	--	--	--	--	--	--	--	--	--	--	--
MAR.												
04...	259	24	92	68	--	--	432	414	0	292	570	--
MAY												
14...	44	--	--	--	--	--	--	--	--	--	--	--
24...	50	--	160	61	1010	91	--	464	0	249	1640	--
JUNE												
17...	43	--	108	81	626	58	--	372	25	302	978	--
JULY												
22...	18	24	156	56	--	--	1790	368	0	104	2900	--
27...	21	--	144	63	1870	--	--	300	22	376	2970	--

CHEMICAL ANALYSES, IN MILLIGRAMS PER LITER, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	NITRATE (NO3)	ORTHO PHOS-PHATE (PO4)	BORON (B)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	HARD-NESS (CA,MG)	NON-CAR-BONATE HARD-NESS	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH	COLOR	TEMP-ERATURE (DEG C)
BEAR RIVER BASIN--CONTINUED												
			10125500	MALAD R AT WOODRUFF IDAHO (LAT 42 02 00 LONG 112 14 00)								
SEP., 1967												
13...	.5	.01	--	4380	5.96	562	222	26	7190	7.8	--	17
JAN., 1968												
12...	1.3	.01	--	2160	2.94	552	175	10	3730	7.9	--	4
MAY												
15...	2.1	.03	--	2720	3.56	604	224	14	4560	7.9	--	17
JULY												
16...	1.3	.01	--	4690	6.15	593	258	27	7810	7.7	--	28
			10125600	MALAD R NR PLYMOUTH UTAH (LAT 41 50 19 LONG 112 08 49)								
SEP., 1967												
13...	--	--	--	--	--	--	--	--	8220	--	--	21
JAN., 1968												
17...	--	--	--	--	--	--	--	--	4740	--	--	4
MAR.												
04...	.5	.18	--	1720	2.28	509	170	8.3	2840	7.8	--	--
MAY												
14...	--	--	--	--	--	--	--	--	6370	--	--	14
24...	--	--	--	4120	5.60	650	270	17	5390	8.2	--	--
JUNE												
17...	--	--	--	2310	3.14	603	256	11	3710	8.3	--	--
JULY												
22...	1.9	.14	--	5440	7.09	620	318	31	9010	7.8	--	29
27...	--	--	--	5500	7.48	619	336	33	9600	8.3	--	--

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSES: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
JORDAN RIVER BASIN																	
10167500 LITTLE COTTONWOOD C NR SALT LAKE CITY, UTAH (LAT 40 34 40 LONG 111 47 50)																	
NOV 9 1967	1105	3	17	1	.05												
DEC 20.....	1010	1	14	1	.04												
JAN 23 1968	1300	2	12	1	.03												
FEB 21.....	--	3	15	1	.04												
MAR 14.....	1330	3	17	2	.09												
APR 11.....	0950	5	24	1	.06												
MAY 17.....	1410	8	74	2	.40												
JUN 18.....	1100	6	470	41	52.0												
JUL 3.....	1500	10	197	4	2.13												
AUG 2.....	1010	12	60	2	.32												
SEP 30.....	--	7	26	1	.07												
10168500 BIG COTTONWOOD C NR SALT LAKE CITY, UTAH (LAT 40 37 07 LONG 111 46 52)																	
NOV 9 1967	1330	4	29	2	.16												
DEC 20.....	1035	1	21	13	.74												
JAN 23 1968	1330	1	20	4	.22												
FEB 21.....	--	4	34	6	.55												
MAR 14.....	1400	4	29	3	.23												
APR 11.....	1020	4	54	4	.58												
MAY 17.....	1245	7	98	4	1.06												
JUN 18.....	1140	8	328	23	20.4												
JUL 3.....	1530	11	154	6	2.49												
AUG 2.....	1100	13	55	4	.59												
SEP 30.....	--	10	32	3	.26												
10170000 MILL C NR SALT LAKE CITY, UTAH (LAT 40 41 20 LONG 111 46 55)																	
NOV 9 1967	1030	4	9.5	12	.31												
DEC 20.....	1130	3	9.2	59	1.47												
JAN 23 1968	1410	3	8.9	52	1.25												
FEB 21.....	--	4	9.7	51	1.34												
MAR 14.....	1445	7	9.5	41	1.05												
APR 11.....	1110	8	12	28	.91												
MAY 17.....	1140	7	20	12	.65												
MAY 28.....	1415	8	40	38	4.10												
JUN 18.....	1305	9	40	32	3.46												
JUL 5.....	1332	12	22	20	1.19												
AUG 2.....	1220	12	15	18	.73												
SEP 30.....	--	12	11	2	.06												
10171600 PARLEYS C AT SUICIDE ROCK, NR SALT LAKE CITY, UTAH (LAT 40 42 35 LONG 111 47 48)																	
NOV 9 1967	1005	7	2.2	16	.10												
DEC 21.....	0905	4	2.3	15	.09												
JAN 23 1968	1430	6	1.7	73	.34												
FEB 21.....	--	6	3.3	42	.37												
MAR 14.....	1500	9	4.2	43	.49												
APR 11.....	1130	11	6.9	39	.73												
MAY 17.....	1125	9	9.6	15	.39												
JUN 18.....	1340	12	11	12	.36												
JUL 5.....	1340	15	6.1	7	.12												
AUG 2.....	1245	15	3.5	8	.08												
10172000 EMIGRATION C NR SALT LAKE CITY, UTAH (LAT 40 45 00 LONG 111 48 45)																	
NOV 9 1967	0930	6	1.3	33	.12												
DEC 21.....	1010	4	1.2	31	.10												
FEB 21 1968	--	3	5.0	432	5.83												
MAR 14.....	1515	6	4.1	84	.93												
APR 11.....	1210	9	16	177	7.65												
MAY 17.....	1055	7	14	192	7.26												
MAY 28.....	1445	9	22	542	32.2												
JUN 18.....	1400	13	12	197	6.38												
JUL 5.....	1400	13	7.1	47	.90												
AUG 2.....	1310	14	3.5	46	.43												
SEP 30.....	--	9	1.8	38	.18												
10172400 CITY C AB WASATCH DRIVE, NR SALT LAKE CITY, UTAH (LAT 40 47 35 LONG 111 52 34)																	
NOV 9 1967	0850	6	1.2	7	.02												
DEC 21.....	1045	3	1.3	6	.02												
FEB 21 1968	0900	5	2.1	19	.11												
MAR 14.....	1600	7	1.4	6	.02												
APR 11.....	1255	11	2.2	14	.08												
MAY 17.....	1020	7	20	17	.92												
MAY 29.....	1405	--	33	20	1.78												
JUN 18.....	1430	13	19	12	.62												
JUL 5.....	1420	13	3.0	43	.35												
AUG 2.....	1330	14	1.5	8	.03												
SEP 30.....	--	9	1.5	48	.19												

PERIODIC DETERMINATIONS OF SUSPENDED SEDIMENT AND PARTICLE SIZE, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
(METHODS OF ANALYSIS: B, BOTTOM WITHDRAWAL TUBE; C, CHEMICALLY DISPERSED; N, IN NATIVE WATER; P, PIPET; S, SIEVE; V, VISUAL-ACCUMULATION TUBE; W, IN DISTILLED WATER)

DATE	TIME	WATER TEMPERATURE (C)	DISCHARGE (CFS)	CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	PARTICLE SIZE PERCENT FINER THAN THE SIZE (IN MILLIMETERS) INDICATED .002	.004	.008	.016	.031	.062	.125	.250	.500	1.00	2.00	METHOD OF ANALYSIS
CEDAR CITY VALLEY																	
10242000 COAL C NR CEDAR CITY, UTAH (LAT 37 40 20 LONG 113 02 05)[A]																	
JUL 7 1968	2000		97	90300	23600	--	--	--	--	--	--	--	--	--	--	--	
JUL 7	2100		78	153000	32200	--	--	--	--	--	--	--	--	--	--	--	
JUL 25	1500		112	439000	133000	--	--	--	--	--	--	--	--	--	--	--	
JUL 30	1520		41	12200	1350	--	--	--	--	--	--	--	--	--	--	--	
JUL 30	1630		326	223000	196000	23	28	--	37	--	59	81	97	100	--	--	VPWC
JUL 31	1615		65	24800	4350	--	--	--	--	--	--	--	--	--	--	--	
JUL 31	1915		184	26000	12900	--	--	--	--	--	--	--	--	--	--	--	
AUG 1	1630		166	138000	61900	--	--	--	--	--	--	--	--	--	--	--	
AUG 1	1715		190	62000	31800	--	--	--	--	--	--	--	--	--	--	--	
AUG 2	1445		73	40700	8020	--	--	--	--	--	--	--	--	--	--	--	
AUG 2	1915		84	81100	18400	--	--	--	--	--	--	--	--	--	--	--	
AUG 5	1715		51	122000	16800	--	--	--	--	--	--	--	--	--	--	--	
AUG 6	1600		190	258000	132000	31	35	--	61	--	88	97	100	--	--	--	VPWC
AUG 7	1745		90	61900	15000	--	--	--	--	--	--	--	--	--	--	--	
AUG 7	1850		80	170000	36700	--	--	--	--	--	--	--	--	--	--	--	
AUG 8	1740		125	257000	86700	--	--	--	--	--	--	--	--	--	--	--	
AUG 8	1905		2420	120000	784000	46	51	--	82	--	100	--	--	--	--	--	VPWC
AUG 10	1620		2420	160000	1050000	29	31	--	78	--	99	100	--	--	--	--	VPWC
AUG 12	1550		62	8830	1480	--	--	--	--	--	--	--	--	--	--	--	
AUG 13	1500		55	59900	8900	--	--	--	--	--	--	--	--	--	--	--	
SEP 29	1150		12	9100	295	--	--	--	--	--	--	--	--	--	--	--	
PYRAMID AND WINNEMUCCA LAKES BASIN																	
10351700 TRUCKEE R NR NIXON, NEV. (LAT 39 46 40 LONG 119 20 10)																	
OCT 3 1967	1320	14.5	78	11	2.32												
NOV 2	1400	12.0	421	18	20.5												
DEC 5	1335	6.0	118	5	1.59												
JAN 3 1968	1050	1.5	548	30	44.4												
FEB 5	1040	3.0	616	52	86.5												
FEB 29	1500	9.5	1480	188	751												
MAR 5	1430	5.5	1460	482	1900												
APR 3	1230	8.5	1130	102	311												
MAY 3	1330	15.5	56	8	1.21												
JUN 3	1410	21.0	54	10	1.46												
JUL 2	1155	19.0	48	16	2.07												
SEP 4	1150	18.0	58	58	6.38												

A SAMPLES COLLECTED BY U.S. SOIL CONSERVATION SERVICE; LABORATORY ANALYSES MADE BY U.S. GEOLOGICAL SURVEY.

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