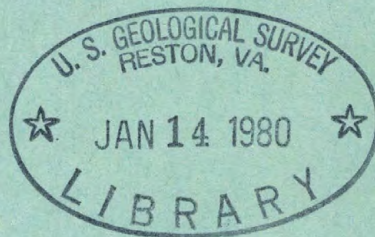


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Water Resources Data for Arizona



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-78-1
WATER YEAR 1978

Prepared in cooperation with the State of Arizona
and with other agencies

CALENDAR FOR WATER YEAR 1978

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Water Resources Data for Arizona

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-78-1

WATER YEAR 1978

Prepared in cooperation with the State of Arizona
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. W. Menard, Director

For information on the water program in Arizona write to
District Chief, Water Resources Division
U.S. Geological Survey
301 W. Congress Street
Tucson, Arizona 85701

PREFACE

This report was prepared by personnel of the Arizona district of the Water Resources Division of the U.S. Geological Survey, under the supervision of R. D. Mac Nish, District Chief, and W. H. Robinson, Regional Hydrologist, Western Region. It was done in cooperation with the State of Arizona and with other agencies.

This report is one of a series by State. General direction for the series is by J. S. Cragwall, Jr., Chief Hydrologist, and G. W. Whetstone, Assistant Chief Hydrologist for Scientific Publications and Data Management.

NOTICE

During water year 1978, revisions were made in the terminology used to define 143 of the water-quality parameter codes that have been used by the U.S. Geological Survey in its publication of water-quality data and in its WATSTORE data system. These revisions were made to achieve consistency in terminology and to conform to a joint U.S. Geological Survey-Environmental Protection Agency agreement on terminology. They do not represent a change in the way the codes have been used in the past or in the association of specific code numbers with identified analytical procedures.

Use of the new terminology began with data for the 1978 water year, and therefore, it first appears in this publication. Definitions on which the terminology is based are included in the "Definitions" section of this report, and a table showing both old and new terminology is attached as an appendix to the report.

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GAGING STATIONS AND WATER-QUALITY STATIONS,
IN DOWNSTREAM ORDER, FOR WHICH
RECORDS ARE PUBLISHED

[Letters after station name designate type of data: (b) biological; (c) chemical; (d) discharge; (e) elevation; (g) gage height; (m) microbiological (bacteria); (p) pesticide; (q) specific conductance (daily); (r) radiochemical; (s) suspended sediment; (t) water temperature (daily); (v) contents]

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WATER RESOURCES DATA FOR ARIZONA, WATER YEAR 1978

INTRODUCTION

Water resources data for the 1978 water year for Arizona consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; measurements of ground-water levels; and quality of water from selected wells. Also included are discharge data for crest-stage partial-record stations and water-quality data for partial-record stations. Locations of the gaging stations are shown in figures 4, 6, and 7, and of water-quality stations in figures 5 and 6. Additional water data were collected at various sites, which are not part of the systematic data-collection program, and are published as miscellaneous measurements or miscellaneous water-quality analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Arizona.

Records of discharge or stage of streams and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." These water-supply papers were in an annual series through water year 1960 and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia 22202.

For water years 1961-74, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. For water years 1964-74, water-quality records were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report AZ-78-1." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephone (602) 792-6671.

COOPERATION

The U.S. Geological Survey and organizations of the State of Arizona have had cooperative agreements for the systematic collection of surface-water records since 1912, for ground-water levels since 1939, and for water-quality records since 1969. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Arizona Department of Health Services, W. H. Shafer, assistant chief, Technical Services and Support.
Arizona Water Commission, W. E. Steiner, executive director.
Arizona Game and Fish Department, R. A. Jantzen, director.
Arizona State Land Department, A. L. Bettwy, State land commissioner.
Salt River Valley Water Users' Association, K. F. Abel, president, and D. S. Wilson, Jr., manager, Water Resources Operations.
Flood Control District of Maricopa County, H. P. Donald, chief engineer and general manager.
Gila Valley Irrigation District, S. L. Pace, president.
San Carlos Irrigation and Drainage District, C. L. Skousen, president, and N. M. Soma, district manager.
Show Low Irrigation Company, Chester Adams, secretary-treasurer.
Pima County Board of Supervisors, E. S. Walker, chairman.
Maricopa County Municipal Water Conservation District No. 1, S. L. Libby, president, and J. A. Falbo, secretary-manager.
City of Flagstaff, R. L. Moody, mayor, and C. K. McClain, city manager.
City of Safford, R. D. Self, city manager.
City of Tucson, Lewis Murphy, mayor, and F. R. Emmett, acting city engineer.
Metropolitan Water District of Southern California, J. H. Lauten, general manager, and C. E. Hildebrand, principal engineer.
University of Arizona, Sol Resnick, director, Water Resources Research Center.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 14 gaging stations published in this report; by the Bureau of Reclamation, U.S. Department

of the Interior, for 8 stations; and by the Federal Power Commission for 2 stations. Assistance in collecting records was furnished by the Arizona Public Service Co. Organizations that supplied data are acknowledged in station descriptions.

HYDROLOGIC CONDITIONS

As is common in Arizona, streamflow varied greatly in the 1978 water year—from month to month throughout the year and from place to place in the State. The variations are related to differences in precipitation, temperature, topography, and geology. The yearly mean discharge at six key gaging stations ranged from 108 to 321 percent of the median of yearly mean discharges. The median of the yearly mean discharges is defined as the middle value of discharge when arranged in order of size. For the index stations, the median is computed from the yearly mean discharges for the 1941-70 period of record.

The yearly mean discharge for the 1978 water year was excessive at four of the index stations and near the excessive value at the other two index stations. The flow of the San Pedro River at Charleston was excessive from October through May; the flow at all six index stations was greatly excessive in March. Deficient flows at the index stations occurred randomly but mostly during the last 3 months of the water year.

The yearly mean discharge for the 1978 water year and the relation to the median of yearly mean discharges for the period 1941-70 for the six index gaging stations are given below.

<u>Station</u>	<u>Discharge (acre-feet)</u>	<u>Percent of median</u>
Little Colorado River near Cameron....	178,800	108
Virgin River at Littlefield.....	256,600	†200
Gila River at head of Safford Valley, near Solomon.....	331,000	187
San Pedro River at Charleston.....	86,090	†288
Salt River near Roosevelt.....	1,103,000	†303
Verde River below Tangle Creek, above Horseshoe Dam.....	926,300	†321

† Excessive

The discharge of the Colorado River near Grand Canyon was 8,457,000 acre-ft (10,400 hm³); the flow of the Colorado River at this point is affected by storage in upstream reservoirs, and this gaging station is no longer used as an index station.

The discharge of the Santa Cruz River at Tucson was 56,790 acre-ft (70.0 hm^3) for the 1978 water year, which is about 562 percent of the median flow for the period of record, 1906-78. The Santa Cruz River is an intermittent stream that is subject to large variations in flow—from place to place along the river and from time to time. For example, the flow for 1965 was only 9 percent of median and for 1972 only 52 percent of median.

Two periods of major flooding occurred during the 1978 water year. During October 6 to 9, 1977, as much as 14 in (356 mm) of rain fell in southern Arizona and northern Mexico. During February 28 to March 4, 1978, 4 to 6 in (102 to 152 mm), and in places as much as 9 to 14 in (229 to 356 mm), of rain fell in the mountains of central Arizona; the rainfall was preceded by extremely large amounts of precipitation in January and February.

The October floods are the largest known on the Santa Cruz River upstream from Tucson and the sixth largest known since 1913 on the San Pedro River. The peak discharge of $23,700 \text{ ft}^3/\text{s}$ ($671 \text{ m}^3/\text{s}$) on the Santa Cruz River at Tucson is the highest since at least 1892. The flood along the Santa Cruz River and tributary drainages inundated areas as much as 4 mi (6.48 m) wide, covered at least 16,000 acres ($6,500 \text{ hm}^2$) of farmland, and caused \$15 million in damages.

The March floods occurred mostly on the Salt, Gila, and Verde Rivers. Unusually large volumes of runoff occurred upstream from reservoirs on the Salt and Verde Rivers. The peak discharge into Roosevelt Lake was more than $155,000 \text{ ft}^3/\text{s}$ ($4,390 \text{ m}^3/\text{s}$), the largest since at least 1890. The reservoirs stored large quantities of water and greatly reduced the magnitude of the flood. The peak discharge of the Salt River at Phoenix—the highest since 1920—was $122,000 \text{ ft}^3/\text{s}$ ($3,455 \text{ m}^3/\text{s}$), and the discharge was more than $100,000 \text{ ft}^3/\text{s}$ ($2,832 \text{ m}^3/\text{s}$) for 7 hours. Without the storage provided by the reservoirs, the peak discharge would have been about $260,000 \text{ ft}^3/\text{s}$ ($7,363 \text{ m}^3/\text{s}$), and the discharge would have been more than $100,000 \text{ ft}^3/\text{s}$ ($2,832 \text{ m}^3/\text{s}$) for 3 days. Three deaths resulted from the flood, and statewide damages amounted to \$66 million.

Storage increased in the major reservoirs during the 1978 water year. Change in contents during the year and percentage of average contents on September 30 for the period of record for several reservoirs are given below.

Reservoir	Change in contents, 1977-78 (acre-feet)	Average contents on September 30 (percent)
Lake Powell.....	+419,000	---
Lakes Mead-Mohave.....	+683,000	114
San Carlos Reservoir.....	+63,700	64
Salt-Verde system.....	+971,860	208
Lake Pleasant.....	+107,080	334

Diversions of streamflow for irrigation of Arizona lands in the 1978 water year was 2,910,000 acre-ft ($3,588 \text{ hm}^3$), slightly more than in 1977. About 1,676,000 acre-ft ($2,067 \text{ hm}^3$) was diverted from the Colorado River for use by the Colorado River Indian Reservation, the Gila Project, and the Yuma Project. About 797,000 acre-ft (983 hm^3) of the water diverted from the Colorado River was returned to the river or discharged across the Arizona-Sonora international boundary. About 1,236,000 acre-ft ($1,524 \text{ hm}^3$) of streamflow was diverted from the Gila River basin for use in Safford Valley, the San Carlos Project, and the Salt River Project.

Figure 1 shows the discharge for the 1978 water year compared with the median runoff for the period 1941-70 at three representative gaging stations for which long-term records are available.

DEFINITION OF TERMS

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

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

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

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria, which ferment lactose with gas formation within 48 hours at 35°C . In the laboratory these bacteria are defined as the organisms that produce colonies within 24 hours when incubated at $35^\circ\text{C} \pm 1.0^\circ\text{C}$ on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

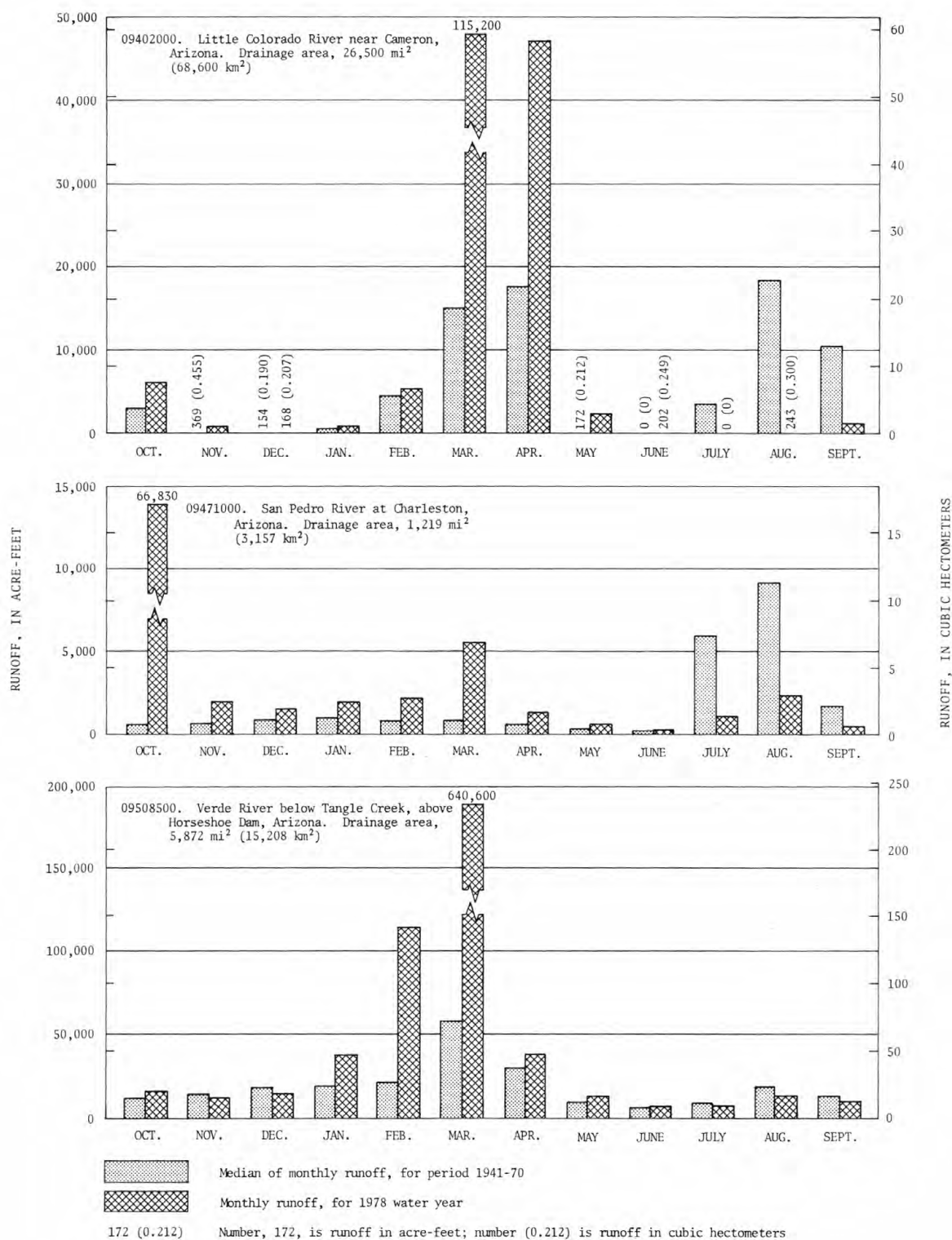


FIGURE 1.--RUNOFF DURING 1978 WATER YEAR COMPARED WITH MEDIAN RUNOFF FOR PERIOD 1941-70 FOR THREE REPRESENTATIVE GAGING STATIONS.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestines of warmblooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

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

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

Bottom material: See Bed material.

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

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

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

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

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

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

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

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

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

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

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

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

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

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

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO_3).

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

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

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

Milligrams per liter (MG/L , mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter

represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

Miscellaneous site is a location other than continuous- or partial-record stations where random discharge measurements are made or samples are collected to give better areal coverage of unusual flow events or water-quality conditions in a river basin.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

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

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

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

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

Particle-size classification used in this report, agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	.004 - .062	Sedimentation
Sand	.062 - 2.0	Sedimentation or sieve
Gravel	2.0 - 64.0	Sieve

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

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

Periphyton is the assemblage of microorganisms attached to and growing upon solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants, respectively, are the two categories reported.

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

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

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

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

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

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

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

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

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

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

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

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

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

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that passes a section in a given time. It is computed by multiplying discharge times mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

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

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

Seston is the total suspended particulate matter in water. The concentration of particulate matter has a profound effect upon the optical properties of the water, and upon the concentration of dissolved materials in the water. Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent

in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

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

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

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the location of the thermograph or a digital mechanism that automatically records water temperature on paper tape.

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

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

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

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the

constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

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

WRD is used as an abbreviation for "Water Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

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

DOWNSTREAM ORDER AND STATION NUMBERS

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

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 09402500, which appears just to the left of the station name, includes the 2-digit part number "09" plus the 6-digit downstream order number "402500."

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid (see fig. 2). In addition to the well number based on latitude and longitude, a local well number is given based on the Gila and Salt River meridian and base line (see fig. 3). A different numbering system is used on the Navajo and Hopi Indian Reservations. The Navajo Indian Reservation is divided into 17 administrative districts, numbered 1 to 5 and 7 to 18, and the Hopi Indian Reservation comprises district 6. The area is further divided into 15-minute quadrangles arbitrarily numbered from 1 to 151 starting in the northeast corner of the area and numbering consecutively in rows from east to west. Within the 15-minute quadrangle the well is located in miles south and west from the northeast corner of the quadrangle. The first two numbers in the well number represent the district, the next three numbers are the quadrangle, the decimal numbers are miles west by (X) miles south of the northeast corner of the quadrangle. Thus, the number 02 021-05.28X10.68 states that the well is in district 2, quadrangle 21, and is 5.28 miles west by 10.68 miles south of the northeast corner of the quadrangle.

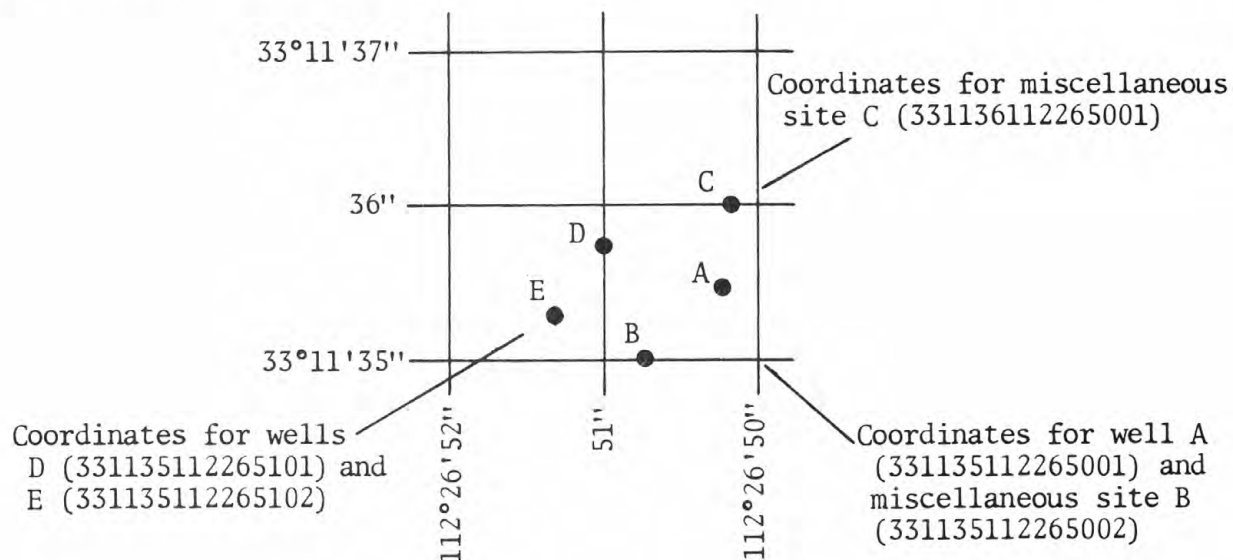
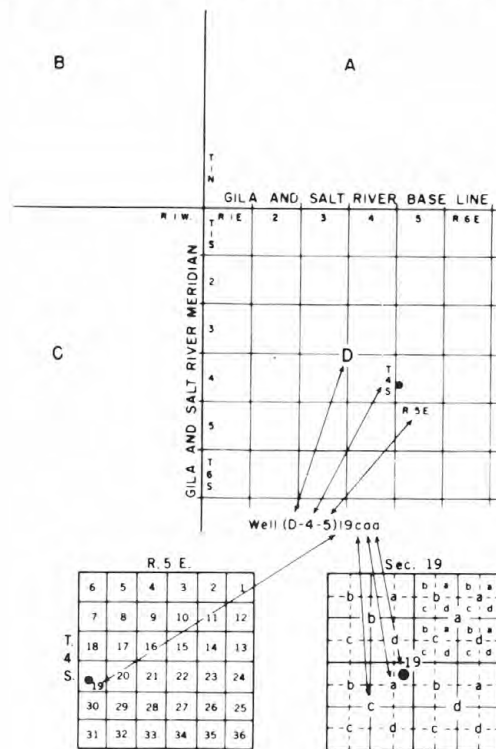


Figure 2.--System for numbering wells and miscellaneous sites (latitude and longitude).



The well numbers used by the Geological Survey in Arizona are in accordance with the Bureau of Land Management's system of land subdivision. The land survey in Arizona is based on the Gila and Salt River meridian and base line, which divide the State into four quadrants. These quadrants are designated counterclockwise by the capital letters A, B, C, and D. All land north and east of the point of origin is in A quadrant, that north and west in B quadrant, that south and west in C quadrant, and that south and east in D quadrant. The first digit of a well number indicates the township, the second the range, and the third the section in which the well is situated. The lowercase letters a, b, c, and d after the section number indicate the well location within the section. The first letter denotes a particular 160-acre tract, the second the 40-acre tract, and the third the 10-acre tract. These letters also are assigned in a counterclockwise direction, beginning in the northeast quarter. If the location is known within the 10-acre tract, three lowercase letters are shown in the well number. In the example shown, well number (D-4-5)19caa designates the well as being in the $NE\frac{1}{4}NE\frac{1}{4}SW\frac{1}{4}$ sec. 19, T. 4 S., R. 5 E. Where more than one well is within a 10-acre tract, consecutive numbers beginning with 1 are added as suffixes.

FIGURE 3.--WELL-NUMBERING SYSTEM IN ARIZONA.

SPECIAL NETWORKS AND PROGRAMS

Some of the stations for which data are published in this report 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 that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin. Included in this program in Arizona is station 09508300, Wet Bottom Creek near Childs.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated in the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality. Included in this network in Arizona are stations 09380000, Colorado River at Lees Ferry; 09401200, Little Colorado River at Cameron; 09421500, Colorado River below Hoover Dam, AZ-NV; 09426600, Bill Williams River near Planet; 09429490, Colorado River above Imperial Dam, AZ-CA; 09466500, Gila River at Calva; 09473500, San Pedro River at Winkelman; 09474000, Gila River at Kelvin; 09489000, Santa Cruz River near Laveen; 09502000, Salt River below Stewart Mountain Dam; 09510000, Verde River below Bartlett Dam; 09518000, Gila River above diversions, at Gillespie Dam; 09520700, Gila River near mouth, near Yuma; 09522000, Colorado River at northerly international boundary above Morelos Dam, near Andrade, CA; 09535300, Vamori Wash at Kom Vo; and 09537500, Whitewater Draw near Douglas.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity. Included in this network in Arizona are stations 09380000, Colorado River at Lees Ferry; 09401200, Little Colorado River at Cameron; 09426600, Bill Williams River near Planet; 09429490, Colorado River above Imperial Dam, AZ-CA; 09518000, Gila River above diversions, at Gillespie Dam; and 09522000, Colorado River at northerly international boundary above Morelos Dam, near Andrade, CA.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States. Included in this network in Arizona is station 09429490, Colorado River above Imperial Dam, AZ-CA.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States. Included in this network in Arizona is station 09429490, Colorado River above Imperial Dam, AZ-CA.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A-6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrologists and observers are used in applying the gage heights to the rating tables. If the stage-

discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

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

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

Publication of data

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes or reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or the stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge were affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum of 1929; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum of 1929 is explained in "Definition of Terms."

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the

month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

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

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair", within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft³/s; to tenths between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures above 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

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

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of records of discharge not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

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

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

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

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

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection and publication of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude (see figure 2) and (2) a local number that is provided for local needs (see figure 3).

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum referenced to National Geodetic Vertical Datum of 1929 (NGVD) is given. National Geodetic Vertical Datum of 1929 is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office. Prices are effective October 1978 but are subject to change.

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

- 1-D1. *Water temperature-influential factors, field measurement, and data presentation*, by H. H. Stevens Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages. \$1.60.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W.Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages. \$0.85
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages. \$1.90.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages. \$1.75.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages. \$1.00.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages. \$0.35.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages. \$0.40.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages. \$1.00.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages. \$0.35.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages. \$1.00.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages. \$1.40.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages. \$1.25.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages. \$1.20.
- 3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson Jr.: USGS--TWRI Book 3, Chapter A12. 1968. 31 pages. \$0.35. Not currently available.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages. \$0.70.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages. \$2.50.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages. \$2.50.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages. \$2.50.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages. \$2.10.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4 Chapter A1. 1968. 39 pages. \$1.60.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages. \$1.20
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages. \$0.65.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages. \$0.75.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages. \$0.65.
- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages. \$1.10.
- 5-A1. *Methods for collection and analysis of water samples for dissolved minerals and gases*, by Eugene Brown, M. W. Skougstad, and M. J. Fishman: USGS--TWRI Book 5, Chapter A1. 1970. 160 pages. \$2.40.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages. \$0.80.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages. \$0.90.

- 5-A4.* *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P.E. Greeson, T.A. Ehlke, G.A. Irwin, B.W. Lium, and K.V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages. \$20.00.
- 5-A5.* *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages. \$16.00.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages. \$2.10.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages. \$2.30.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages. \$0.70.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages. \$1.10.

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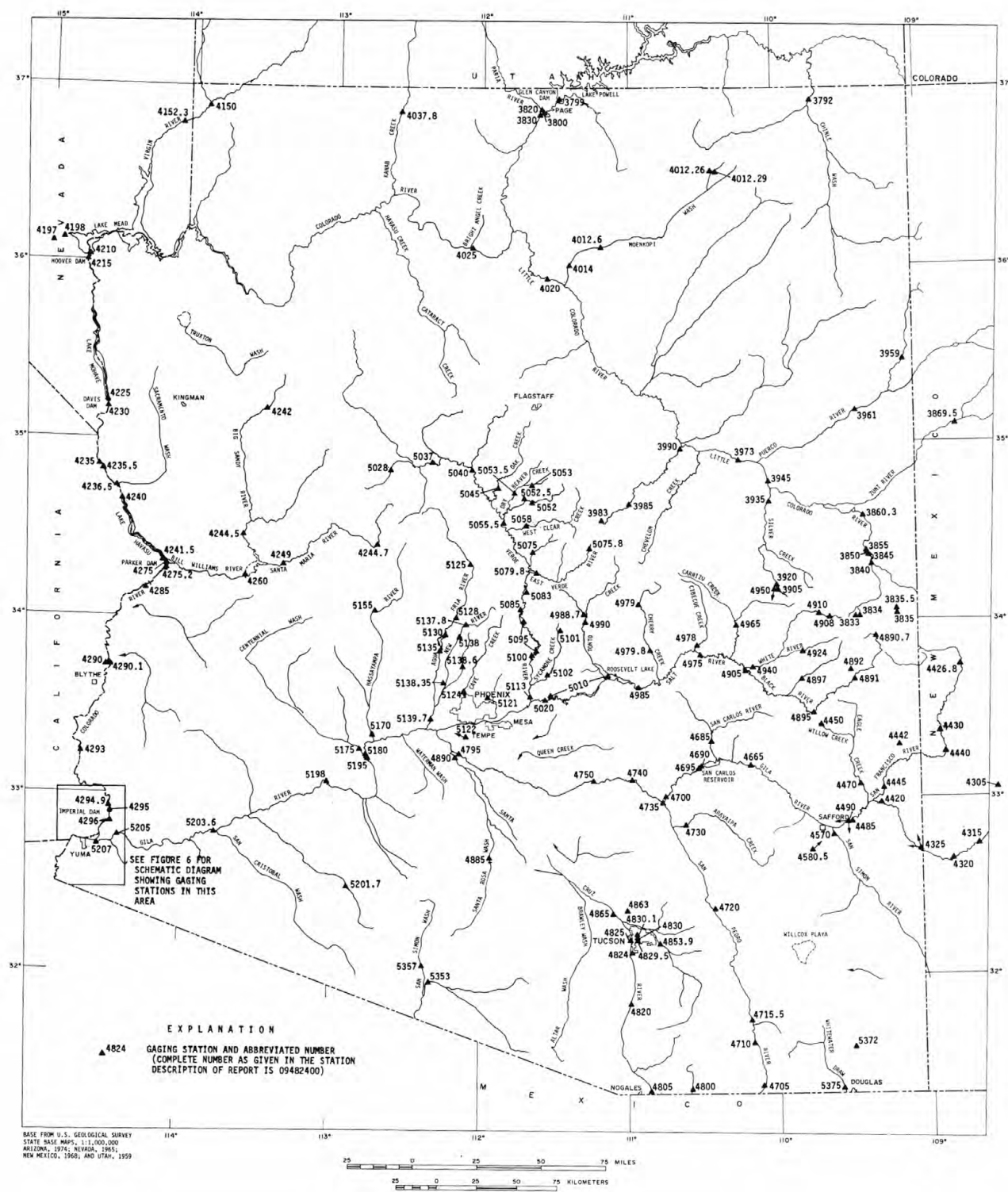


FIGURE 4.--MAP OF ARIZONA SHOWING LOCATION OF GAGING STATIONS.

SAN JUAN RIVER BASIN

09379200 CHINLE CREEK NEAR MEXICAN WATER, AZ

LOCATION.--Lat 36°56'38", long 109°42'36", in sec.19, T.41 N., R.25 E. (unsurveyed), Apache County, Hydrologic Unit 14080204, in Navajo Indian Reservation, in midstream 150 ft (46 m) upstream from bridge on U.S. Highway 160, 3 mi (5 km) upstream from Walker Creek, 4 mi (6 km) southwest of Mexican Water, 5 mi (8 km) downstream from confluence of Chinle Wash and Laguna Creek, and 6 mi (10 km) upstream from Arizona-Utah State line.

DRAINAGE AREA.--3,660 mi² (9,480 km²), approximately, of which 360 mi² (932 km²) is noncontributing.

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1970 published as Chinle Wash near Mexican Water.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,720 ft (1,439 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Some diversions upstream for irrigation, stock tanks, and domestic use. Many Farms Reservoir, about 25 mi (40 km) upstream, was built in 1939 with an original capacity of 25,000 acre-ft (30.8 hm³). The reservoir provides off-channel storage for irrigation of about 1,600 acres (6.48 km²).

AVERAGE DISCHARGE.--14 years, 17.8 ft³/s (0.504 m³/s), 12,900 acre-ft/yr (15.9 hm³/yr); median of yearly mean discharges, 14 ft³/s (0.40 m³/s), 10,100 acre-ft/yr (12 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft³/s (280 m³/s) Sept. 7, 1970, gage height, 7.55 ft (2.301 m), from rating curve extended above 600 ft³/s (17 m³/s) on basis of slope-area measurements at gage heights 5.4, 6.1, and 7.55 ft (1.65, 1.86, and 2.301 m); no flow at times in each year. The flood of Sept. 7, 1970, is the highest since at least 1950 (information from a local resident).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Mar. 6	2000	505	14.3	4.78	1.457
July 18	1130	*751	21.3	5.13	1.564
Aug. 20	2330	660	18.7	5.00	1.524

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	1.0	.40	2.0	2.0	7.8	.30	80	.00	.00	.10	.00
2	.40	1.0	.40	2.0	2.0	67	.10	200	.00	.00	.00	.00
3	.40	1.0	.40	2.0	2.0	75	.50	100	.00	.00	.00	.00
4	.40	5.0	.40	2.0	2.0	154	4.6	40	.00	.00	.00	.00
5	.40	10	.40	2.0	2.0	28	4.8	50	.00	.00	.00	.00
6	1.0	30	.40	2.0	2.0	91	.80	60	.00	.00	.00	.00
7	1.0	50	.40	2.0	2.0	53	.40	50	.00	.00	.00	.00
8	1.0	40	.40	2.0	10	32	.20	40	.00	.00	.00	.00
9	1.0	38	.40	2.0	9.2	16	.30	30	.00	.00	.00	.00
10	1.0	44	.40	2.0	15	7.4	.40	20	.00	.00	.00	.00
11	1.0	10	.40	2.0	12	7.7	.40	25	.00	33	.00	.00
12	1.0	2.0	.40	2.0	28	8.8	.40	30	.00	11	.00	.00
13	1.0	1.0	.40	2.0	23	7.7	.40	31	.00	2.7	.00	.00
14	1.0	.80	.40	2.0	12	11	.50	15	.00	1.0	.00	.00
15	1.0	.60	.40	2.0	9.6	2.2	.80	4.0	.00	.40	.00	.00
16	1.0	.40	.40	2.0	10	1.4	30	1.4	.00	.20	.00	7.8
17	1.0	.40	.40	2.0	10	1.0	22	.70	.00	.00	.00	8.4
18	1.0	.40	1.0	2.0	5.1	.90	26	.20	.00	240	.00	.90
19	1.0	.40	2.0	2.0	6.6	.80	40	.30	.00	22	.00	.90
20	1.0	.40	2.0	2.0	4.0	1.0	38	.40	.00	5.5	64	.70
21	1.0	.40	2.0	2.0	3.0	1.1	58	19	.00	1.5	168	.90
22	1.0	.40	2.0	2.0	8.9	1.0	52	18	.00	.20	15	8.0
23	1.0	.40	2.0	2.0	14	2.0	26	12	.00	.10	4.8	5.0
24	1.0	.40	2.0	2.0	12	12	14	6.2	.00	.00	2.4	2.0
25	1.0	.40	2.0	2.0	9.6	6.0	12	2.2	.00	.00	1.0	1.0
26	1.0	.40	2.0	2.0	7.7	5.9	17	.70	.00	.00	.20	.00
27	1.0	.40	2.0	2.0	5.2	3.7	27	.40	.00	.00	.00	.00
28	1.0	.40	2.0	2.0	4.5	1.1	11	.20	.00	.00	.00	.00
29	1.0	.40	2.0	2.0	---	.70	13	.20	.00	.00	.00	.00
30	1.0	.40	2.0	2.0	---	.40	10	.10	.00	.70	.00	.00
31	1.0	---	2.0	2.0	---	.40	---	.00	---	.90	.00	---
TOTAL	28.00	240.40	33.80	62.0	233.4	610.00	410.90	837.00	.00	319.20	255.50	35.60
MEAN	.90	8.01	1.09	2.00	8.34	19.7	13.7	27.0	.000	10.3	8.24	1.19
MAX	1.0	50	2.0	2.0	28	154	58	200	.00	240	168	8.4
MIN	.40	.40	.40	2.0	2.0	.40	.10	.00	.00	.00	.00	.00
AC-FT	56	477	67	123	463	1210	815	1660	.00	633	507	71
CAL YR 1977	TOTAL	9391.70	MEAN	25.7	MAX	2900	MIN	.00	AC-FT	18630		
WTR YR 1978	TOTAL	3065.80	MEAN	8.40	MAX	240	MIN	.00	AC-FT	6080		

NOTE.--No gage-height record Oct. 1 to Feb. 8.

COLORADO RIVER MAIN STEM

09379900 LAKE POWELL AT GLEN CANYON DAM, AZ

LOCATION.--Lat 36°56'12", long 111°29'00", in sec.24, T.41 N., R.8 E., Coconino County, Hydrologic Unit 14070006, at Glen Canyon Dam on Colorado River, 900 ft (270 m) upstream from bridge on U.S. Highway 89, 1.4 mi (2.3 km) downstream from Wahweap Creek, 2 mi (3 km) northwest of Page, and 12 mi (19 km) downstream from Utah-Arizona State line.

DRAINAGE AREA.--111,700 mi² (289,300 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-arch gravity dam; storage began Mar. 13, 1963; dam completed September 1963. Total capacity, 27,000,000 acre-ft (33,300 hm³), consisting of the following: dead storage, 1,998,000 acre-ft (2,460 hm³) below elevation 3,370 ft (1,027 m)--sill of outlet gates; usable contents, 25,002,000 acre-ft (30,800 hm³) between elevations 3,370 ft (1,027 m) and 3,700 ft (1,128 m)--top of conservation pool. Reservoir is used for power development, to provide storage replacement for upstream irrigation development, and to meet downstream requirements under the Colorado River Compact of 1922. Figures given herein represent usable contents; prior to Oct. 1, 1968, figures of total contents were published (prior to sealing of diversion tunnel July 7, 1965, all storage was usable).

COOPERATION.--Records furnished by Bureau of Reclamation.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 21,177,000 acre-ft (26,100 hm³) July 25, 1975, elevation, 3,674.93 ft (1,120.119 m); minimum since power pool level was reached (Aug. 16, 1964), 4,166,000 acre-ft (5,140 hm³) Mar. 18, 1965, elevation, 3,490.76 ft (1,063.984 m).

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 18,142,000 acre-ft (22,400 hm³) July 24, elevation, 3,652.75 ft (1,113.358 m); minimum, 14,483,000 acre-ft (17,900 hm³) Mar. 6, elevation, 3,622.29 ft (1,104.074 m).

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

3,620	14,231,000	3,640	16,542,000
3,625	14,787,000	3,645	17,157,000
3,630	15,357,000	3,650	17,789,000
3,635	15,942,000	3,655	18,436,000

CONTENTS, IN THOUSANDS OF ACRE-Feet, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	UCT	NUV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16130	16015	15872	15344	14770	14518	14532	15029	16053	17793	18063	17224
2	16128	16020	15864	15325	14755	14505	14536	15039	16094	17839	18047	17201
3	16117	16016	15869	15303	14744	14484	14548	15050	16135	17878	18033	17174
4	16106	16003	15876	15272	14744	14485	14559	15080	16189	17914	18011	17136
5	16099	15992	15868	15245	14741	14484	14578	15089	16233	17947	17993	17108
6	16091	15999	15856	15225	14737	14483	14591	15099	16280	17983	17971	17065
7	16084	15987	15838	15197	14719	14486	14604	15118	16334	17998	17948	17032
8	16078	15982	15822	15181	14714	14486	14611	15142	16374	18025	17918	16991
9	16075	15974	15800	15160	14706	14489	14633	15159	16416	18041	17893	16981
10	16073	15971	15797	15135	14704	14493	14665	15178	16469	18057	17861	16928
11	16066	15965	15786	15119	14706	14494	14688	15191	16535	18061	17837	16908
12	16054	15965	15772	15107	14713	14494	14709	15213	16599	18068	17808	16875
13	16045	15972	15752	15094	14710	14496	14728	15234	16666	18079	17785	16848
14	16048	15971	15733	15080	14695	14503	14735	15253	16729	18079	17771	16833
15	16053	15971	15717	15073	14681	14514	14755	15264	16797	18092	17734	16810
16	16059	15962	15697	15052	14677	14519	14784	15287	16875	18117	17693	16794
17	16056	15955	15683	15035	14664	14527	14797	15314	16964	18103	17663	16778
18	16053	15948	15664	15022	14655	14536	14814	15354	17057	18109	17638	16769
19	16048	15942	15640	15001	14644	14548	14832	15406	17134	18110	17614	16756
20	16045	15940	15610	14973	14644	14543	14846	15471	17209	18108	17593	16734
21	16044	15917	15586	14959	14632	14537	14853	15525	17269	18122	17564	16709
22	16043	15904	15549	14947	14622	14530	14863	15576	17324	18125	17524	16696
23	16040	15901	15524	14923	14603	14550	14883	15623	17373	18134	17495	16680
24	16035	15903	15507	14898	14587	14550	14901	15652	17436	18142	17461	16664
25	16025	15904	15487	14872	14581	14530	14910	15689	17496	18134	17419	16646
26	16018	15909	15465	14854	14571	14533	14920	15729	17550	18131	17392	16627
27	16007	15910	15435	14841	14547	14517	14938	15790	17608	18117	17375	16613
28	16003	15908	15410	14831	14529	14526	14957	15853	17660	18107	17347	16590
29	16000	15907	15387	14826	---	14522	14972	15917	17703	18104	17319	16574
30	16009	15896	15364	14808	---	14520	14995	15973	17743	18099	17286	16562
31	16018	---	15362	14788	---	14527	---	16015	---	18082	17256	---
MAX	16130	16020	15876	15344	14770	14548	14995	16015	17743	18142	18063	17224
MIN	16000	15896	15362	14788	14529	14483	14532	15029	16053	17793	17256	16562
(†)	3635.65	3634.62	3630.05	3625.02	3622.71	3622.69	3626.85	3635.62	3649.65	3652.29	3645.80	3640.17
(‡)	-125,000	-122,000	-534,000	-574,000	-259,000	-2,000	+468,000	+1,020,000	+1,728,000	+339,000	-826,000	-694,000
CAL YR 1977	 ‡ -3,113,000											
WTR YR 1978	 ‡ +419,000											

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

NOTE.--All figures of contents expressed in thousands.

09380000 COLORADO RIVER AT LEES FERRY, AZ
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 36°51'53", long 111°35'15", in NE¼SE¼ sec.13, T.40 N., R.7 E., Coconino County, Hydrologic Unit 14070006, in Navajo Indian Reservation, on left bank at head of Marble Gorge at Lees Ferry, just upstream from Paria River, 16 mi (26 km) downstream from Glen Canyon Dam, 28 mi (45 km) downstream from Utah-Arizona State line, and 61.5 mi (99.0 km) upstream from Little Colorado River.

DRAINAGE AREA.--111,800 mi² (289,600 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1895 to current year. Calendar year estimates and monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 859: 1921-23. WSP 1313: 1914-21.

GAGE.--Water-stage recorder. Datum of gage is 3,106.16 ft (946.758 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1923, nonrecording gages or reference points within 400 ft (120 m) of present gage, at different datums.

REMARKS.--Water-discharge record excellent. Flow completely regulated by Lake Powell 16 mi (26 km) upstream since Mar. 13, 1963. Many diversions above station for irrigation, municipal, and industrial use.

AVERAGE DISCHARGE.--51 years (water years 1912-62), 17,850 ft³/s (505.5 m³/s), 12,923,000 acre-ft/yr (15,900 hm³/yr); 14 years (water years 1965-78), 12,120 ft³/s (343.2 m³/s), 8,781,000 acre-ft/yr (10,830 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 220,000 ft³/s (6,230 m³/s) June 18, 1921, gage height, 26.5 ft (8.08 m), from floodmarks, from rating curve extended above 120,000 ft³/s (3,400 m³/s) on basis of discharge computed for station near Grand Canyon; minimum daily, 700 ft³/s (19.8 m³/s) Jan. 23, 24, 1963.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1868, about 300,000 ft³/s (8,500 m³/s) July 7, 1884, gage height, 31.5 ft (9.60 m), present site and datum, from floodmark at mouth of Paria River, from rating curve extended above 120,000 ft³/s (3,400 m³/s) on basis of discharge computed for flood of June 18, 1921, for station near Grand Canyon.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,400 ft³/s (804 m³/s) Jan. 23, gage height, 11.80 ft (3.597 m); minimum daily, 1,260 ft³/s (35.7 m³/s) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7420	2160	14000	12700	14600	16300	7260	8660	14600	8510	13400	20000
2	4150	2820	9650	16400	13200	16500	7270	10400	14100	8250	13400	16000
3	8540	6250	4880	17100	11800	17700	6910	11900	15600	9970	15100	16600
4	9430	9120	3510	17800	7470	15300	7450	14500	9160	7940	15700	18300
5	7680	6450	7560	19700	5180	12600	7900	12700	15700	11100	14100	21000
6	9480	6060	9380	17900	8670	15300	7700	8050	15500	9100	13800	23500
7	9600	9260	12400	17100	12200	10400	6760	6860	11300	13000	17500	23700
8	5920	10300	14700	12600	11400	9770	6660	10800	14000	9290	19400	23600
9	5210	8560	14500	16800	11000	8920	7470	11200	15500	11800	18000	17200
10	7790	7360	7870	17600	10000	12300	7490	10600	10600	12900	15900	18500
11	8650	7290	8290	15200	5270	7250	6750	11200	7870	12600	17500	19800
12	9230	5710	12400	15200	3730	7630	7060	9810	11500	11800	16200	17700
13	7740	1920	13500	15200	11200	6540	8420	7550	13300	12900	15400	16500
14	3660	4650	14600	15900	12900	7060	7780	7120	16900	15600	14400	17600
15	1560	4980	12200	12500	10900	5310	7220	11000	16700	10000	17200	14900
16	1260	7290	15200	17300	11800	5400	8610	9320	12900	9860	20300	11700
17	5530	8540	14600	15300	12800	4950	9650	11400	9730	12500	19900	9700
18	6690	9310	14400	15300	9640	5380	10200	10500	6740	13600	17700	11700
19	4930	6620	18400	17600	8490	2940	9570	8300	12600	12600	12500	11300
20	7040	6990	19000	19600	8530	6970	10500	6840	9490	12800	16100	13100
21	4770	12900	18200	14700	11100	8140	12500	6430	14400	10700	19800	14100
22	4620	10600	18500	11200	10700	8520	9040	11300	16500	10200	19700	13000
23	5000	6340	16700	17800	14500	8600	6930	12800	17500	6400	21200	13000
24	6940	5150	15500	20200	12600	8300	9210	15100	9460	8950	22000	13500
25	7580	2160	12600	17000	8920	8030	9550	16200	6550	13700	23100	16200
26	7860	4670	14600	15800	11400	7220	8010	16400	13200	14000	18200	16100
27	8560	2630	18900	15200	15900	11600	7780	8750	13000	15700	14200	15200
28	6540	5260	17800	10200	17100	10400	7150	7050	12000	14300	19600	17100
29	2500	6410	17100	6660	---	10700	11100	6600	12900	10500	17700	16200
30	2520	10700	16400	15200	---	8580	8680	15500	12900	11100	17800	11500
31	3340	---	10200	17000	---	9440	---	13600	---	14100	20100	---
TOTAL	191140	196620	415140	477760	303200	292050	248180	326420	362180	353770	536900	488300
MEAN	6166	6354	13590	15410	10830	9420	8275	10550	12740	11410	17320	16280
MAX	9600	12900	19000	20200	17100	17700	12500	16400	17500	15700	23100	23700
MIN	1260	1920	3510	6660	3730	2940	6660	6430	6530	6400	12500	9700
AC-FT	379100	390000	823400	947600	601400	579200	492300	647500	758100	701700	1065000	968500

CAL YR 1977 TOTAL 3707290 MEAN 10160 MAX 24600 MIN 869 AC-FT 7353000
WTR YR 1978 TOTAL 4211640 MEAN 11540 MAX 25700 MIN 1260 AC-FT 8354000

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January to July 1926, October 1926 to June 1927, October 1928 to December 1933, November 1942 to October 1945, October 1947 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to current year.

WATER TEMPERATURE: July 1949 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1928 to December 1933, November 1942 to September 1944, October 1947 to September 1965.

INSTRUMENTATION.--Specific conductance and water temperature recorder since March 1977.

REMARKS.--Unpublished daily specific conductance measurements for period November 1942 to October 1945, October 1947 to September 1964 available from district office in Tucson, Ariz.

Because of the permanent change in stream characteristics owing to the regulation of flow by Glen Canyon Dam since Mar. 13, 1963, and the subsequent initial filling of Lake Powell, extreme values for the period of daily record now include only those obtained after July 31, 1965, at which time a normal flow release pattern was begun.

COOPERATION.--Pesticide analysis performed by Environmental Protection Agency.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE (August 1965 to current year): Maximum daily, 1,260 micromhos Apr. 20, 21, 1967; minimum daily, 460 micromhos Aug. 10, 1965.

WATER TEMPERATURES (August 1965 to current year): Maximum, 21.0°C on several days during August, September, and October, 1965, 1967, 1968; minimum, 2.0°C on Jan. 29, 30, 1970.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,060 micromhos May 18, 27; minimum daily, 778 micromhos Mar. 8.

WATER TEMPERATURES: Maximum, 13.5°C July 24; minimum, 7.0°C Nov. 20, Dec. 18-20.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT									
06...	1600	12500	890	7.6	9.0	1	--	10.1	<1
NOV									
04...	1200	10800	845	7.6	9.0	1	--	7.8	<1
DEC									
07...	1230	14900	870	7.8	8.0	1	--	7.6	<1
JAN									
05...	1430	24000	880	8.0	9.0	1	--	7.6	--
FEB									
02...	1000	17800	870	8.3	9.5	1	--	8.0	<1
MAR									
08...	1100	12200	925	7.7	8.0	--	--	7.6	<1
APR									
04...	1600	7950	980	--	9.5	0	--	7.0	<1
MAY									
03...	1000	16000	980	7.8	9.0	0	--	8.1	K1
JUN									
06...	1400	21000	1000	7.7	10.0	--	.20	7.1	K1
JUL									
05...	1700	15000	965	8.1	10.0	--	.60	7.5	K4
AUG									
17...	1300	11900	990	7.9	10.0	--	1.1	7.9	<1
SEP									
06...	1400	27100	960	7.8	12.0	--	1.5	8.6	<1

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

COLORADO RIVER MAIN STEM

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09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREP- TUCGCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION HATIU	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
OCT									
06...	K2	270	130	65	25	73	2.0	3.5	160
NOV									
04...	K2	280	150	71	24	77	2.0	3.6	160
DEC									
07...	--	310	170	81	27	76	1.9	3.8	170
JAN									
05...	60	280	160	68	27	77	2.0	4.0	150
FEB									
02...	K1	290	150	70	27	77	2.0	3.8	160
MAR									
08...	--	--	--	--	--	--	--	--	--
APR									
04...	K19	350	210	90	30	90	2.1	4.3	170
MAY									
03...	320	320	180	79	29	84	2.1	4.3	170
JUN									
06...	K340	340	200	88	29	86	2.0	4.2	--
JUL									
05...	K11	310	180	78	29	91	2.2	4.4	--
AUG									
17...	K1	310	180	78	28	89	2.2	4.3	--
SEP									
06...	K6	300	170	79	26	87	2.2	4.0	--

DATE	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT								
06...	0	230	49	.3	8.0	543	533	.74
NOV								
04...	0	230	52	.3	8.1	566	545	.77
DEC								
07...	0	260	52	.1	8.2	590	592	.80
JAN								
05...	0	260	53	.5	7.9	575	571	.78
FEB								
02...	0	240	56	.3	7.8	575	561	.78
MAR								
08...	--	--	--	--	--	--	--	--
APR								
04...	--	280	69	.2	7.9	665	655	.90
MAY								
03...	0	260	65	.3	7.9	642	614	.87
JUN								
06...	--	270	62	.3	8.2	657	632	.89
JUL								
05...	--	270	61	.4	6.4	644	618	.88
AUG								
17...	--	270	63	.3	7.6	655	619	.89
SEP								
06...	--	260	57	.3	7.6	634	599	.86

K Based on non-ideal colony count.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NH ₄ + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 06...	.00	.01	--	--	--	.63	--	.00	.01
NOV 04...	.47	.00	--	--	--	.26	--	.00	.00
DEC 07...	.62	.07	--	--	--	.35	--	.00	.00
JAN 05...	.48	.04	--	--	--	.38	--	.01	.01
FEB 02...	.39	.01	.09	.10	.01	.09	.49	.02	.01
APR 04...	.59	.00	.32	.32	.07	.25	.91	.00	.00
MAY 03...	.55	.00	.25	.25	.01	.24	.80	.00	.00
JUN 06...	.59	.01	.44	.45	--	--	1.0	.07	.02
JUL 05...	.54	.00	.63	.63	.03	.60	1.2	.01	.00
AUG 17...	.56	.00	.48	.48	.00	.48	1.0	.01	.01
SEP 06...	.51	.00	.36	.36	.00	.37	.87	.01	.01

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
NOV 04...	2	2	500	200	110	90	10	1	4	12
JAN 05...	--	--	--	--	--	100	--	--	--	--
FEB 02...	2	2	100	100	120	100	2	1	0	0
MAY 03...	1	1	200	200	--	--	0	0	0	10
JUL 05...	--	--	--	--	--	120	--	--	--	--
AUG 17...	2	2	200	100	--	--	4	4	0	0

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
NOV 04...	<50	0	<10	2	50	10	<100	4	0
JAN 05...	--	--	--	--	--	--	--	--	--
FEB 02...	0	0	3	3	120	20	0	0	0
MAY 03...	0	0	2	1	60	10	4	1	10
JUL 05...	--	--	--	--	--	--	--	--	--
AUG 17...	1	1	12	5	10	<10	7	0	10

< Actual value is known to be less than value shown.

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MANGANESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
NOV 04...	4	.0	.0	5	4	<10	0	10	20
JAN 05...	--	--	--	--	--	--	--	--	--
FEB 02...	10	.1	.0	4	5	0	0	30	20
MAY 03...	0	.0	.0	4	0	0	0	20	20
JUL 05...	--	--	--	--	--	--	--	--	--
AUG 17...	<1	.1	.3	4	3	0	0	20	20

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C)	PCB, TOTAL (UG/L)	PCB, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	ATRA-ZINE, TOTAL (UG/L)	ATRA-ZINE, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)
NOV 04...	2.7	--	--	ND	ND	ND	ND	--	ND	ND	ND
DEC 07...	3.0	--	--	--	--	--	--	--	--	--	--
JAN 05...	3.6	--	--	--	--	--	--	--	--	--	--
FEB 02...	--	--	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	--	8.9	.2	ND	ND	ND	ND	ND	--	ND	ND
JUN 06...	3.2	--	--	--	--	--	--	--	--	--	--
JUL 05...	3.1	--	--	--	--	--	--	--	--	--	--
AUG 17...	--	--	--	ND	--	ND	--	ND	--	ND	--
SEP 06...	3.4	--	--	--	--	--	--	--	--	--	--

DATE	DDD, TOTAL (UG/L)	DDD, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BUT-TOM MA-TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)
NOV 04...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 07...	--	--	--	--	--	--	--	--	--	--	--
JAN 05...	--	--	--	--	--	--	--	--	--	--	--
FEB 02...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 06...	--	--	--	--	--	--	--	--	--	--	--
JUL 05...	--	--	--	--	--	--	--	--	--	--	--
AUG 17...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP 06...	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than value shown.
 ND Material specifically analyzed for but not detected.

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ENDRIN, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL IN BUT- TOM MA- TERIAL (UG/L)	ETHION, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL IN BUT- TOM MA- TERIAL (UG/L)	HEPTA- CHLOR, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BUT- TOM MA- TERIAL (UG/L)	LINDANE TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL IN BUT- TOM MA- TERIAL (UG/L)	MALA- THION, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)
NOV 04...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 07...	--	--	--	--	--	--	--	--	--	--	--
JAN 05...	--	--	--	--	--	--	--	--	--	--	--
FEB 02...	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 06...	--	--	--	--	--	--	--	--	--	--	--
JUL 05...	--	--	--	--	--	--	--	--	--	--	--
AUG 17...	--	ND	--	ND	--	ND	--	ND	--	ND	--
SEP 06...	--	--	--	--	--	--	--	--	--	--	--

DATE	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/L)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/L)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA- THION, TOTAL IN BUT- TOM MA- TERIAL (UG/L)	PARA- THION, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)	SIMA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)
NOV 04...	ND	ND	ND	ND	ND	ND	ND	ND	--	ND
DEC 07...	--	--	--	--	--	--	--	--	--	--
JAN 05...	--	--	--	--	--	--	--	--	--	--
FEB 02...	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
JUN 06...	--	--	--	--	--	--	--	--	--	--
JUL 05...	--	--	--	--	--	--	--	--	--	--
AUG 17...	ND	--	ND	--	ND	--	ND	--	ND	--
SEP 06...	--	--	--	--	--	--	--	--	--	--

ND Material specifically analyzed for but not detected.

COLORADO RIVER MAIN STEM

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09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TOX- APHENE, TOTAL (UG/L)	TUXA- PHENE, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THIUN, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4-D, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	2,4,5-T TOTAL (UG/L)	2,4,5-T TOTAL IN BUT- TOM MA- TERIAL (UG/KG)	SILVEX, TOTAL (UG/L)	SILVEX, TOTAL IN BUT- TOM MA- TERIAL (UG/KG)
NOV 04...	ND	ND	ND	ND	--	ND	--	ND	--	ND
DEC 07...	--	--	--	--	--	--	--	--	--	--
JAN 05...	--	--	--	--	--	--	--	--	--	--
FEB 02...	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	ND	ND	ND	ND	--	--	--	--	--	--
JUN 06...	--	--	--	--	--	--	--	--	--	--
JUL 05...	--	--	--	--	--	--	--	--	--	--
AUG 17...	ND	--	ND	--	--	--	--	--	--	--
SEP 06...	--	--	--	--	--	--	--	--	--	--

DATE	TIME	STREAM- FLOW (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	LENGTH OF EXPO- SURE (DAYS)	PHYTU- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL WEIGHT G/SQ M	PERI- PHYTON BIOMASS WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)
UCT 06...	1600	9480	9.0	9	70	230	--	4000	--	--	--	--
14...	0800	3660	--	2	--	20	--	--	--	--	--	--
NOV 04...	1200	9120	9.0	8	52	197	29	170	.157	.079	.000	.000
17...	1530	8540	--	9	--	208	--	--	--	--	--	--
DEC 07...	1230	12400	8.0	5	--	167	--	--	--	--	--	--
15...	1230	12200	--	5	49	165	--	--	--	--	--	--
JAN 05...	1430	19700	9.0	12	23	638	--	--	--	--	--	--
12...	1415	13200	--	7	--	249	--	--	--	--	--	--
FEB 02...	1000	13200	9.5	18	35	642	--	--	--	--	--	--
16...	0900	11800	--	1	--	32	--	--	--	--	--	--
MAR 08...	1100	9770	8.0	17	47	448	--	95	--	--	--	--
MAY 03...	1000	11900	9.0	8	43	257	--	190	--	--	--	--
15...	1430	11000	--	13	78	386	--	--	--	--	--	--
JUN 06...	1400	15500	10.0	14	79	586	34	--	1.89	.866	.270	.000
19...	1500	12600	--	25	--	850	--	--	--	--	--	--
JUL 05...	1700	11100	10.0	16	49	480	--	88	--	--	--	--
31...	1400	14100	--	14	75	533	--	--	--	--	--	--
AUG 17...	1300	19900	10.0	31	8	1670	--	590	1.02	.551	.400	.060
SEP 06...	1400	23500	12.0	18	24	1140	--	1700	--	--	--	--
18...	1330	11700	--	5	--	158	--	--	--	--	--	--

ND Material specifically analyzed for but not detected.

DAY	MAX		MIN		MAX		MIN		MAX		MIN		MAX		MIN		MAX		MIN		
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH										
1	11.0	9.5	10.0	9.0	8.0	7.5	10.0	8.5	9.5	9.5	8.5	8.0	8.0								
2	11.0	9.5	9.5	8.5	8.5	7.5	10.0	8.5	9.5	9.5	8.5	8.5	8.0								
3	11.5	10.5	9.5	8.5	8.0	7.5	10.0	8.5	9.0	9.5	8.5	8.5	8.0								
4	11.5	10.0	9.5	8.5	8.5	8.0	10.0	8.5	9.0	9.5	8.5	8.5	8.0								
5	11.0	10.0	9.5	9.0	8.5	8.0	10.5	9.0	9.0	9.5	8.5	8.5	8.0								
6	11.0	10.0	9.5	9.0	8.0	7.5	10.5	8.5	9.0	9.5	8.5	8.5	8.0								
7	11.0	10.0	9.5	9.0	8.5	8.0	10.0	8.5	9.0	9.5	8.5	8.5	8.0								
8	11.0	10.0	9.0	8.5	8.0	8.0	10.0	8.5	9.5	9.5	8.5	8.5	8.0								
9	11.0	10.0	9.0	8.0	8.0	7.5	9.5	8.5	9.0	9.5	8.5	8.5	7.5								
10	11.0	10.0	9.0	8.0	8.0	7.5	9.5	8.5	9.0	9.0	8.5	8.5	8.0								
11	10.5	9.5	9.0	8.5	8.0	7.5	9.5	9.0	9.0	8.5	8.5	8.5	8.0								
12	10.5	9.5	9.5	8.5	8.0	7.5	9.5	9.0	9.0	7.5	8.5	8.5	8.0								
13	10.5	9.5	9.5	8.5	8.0	7.5	9.5	9.0	9.0	8.0	8.5	8.5	8.0								
14	11.0	9.5	9.5	8.5	8.0	8.0	9.5	9.0	9.0	8.5	8.5	8.5	8.0								
15	11.5	10.0	9.5	9.0	8.0	7.5	9.5	9.0	9.0	8.5	8.5	8.5	8.0								
16	11.5	10.5	9.0	8.5	8.0	7.5	9.0	9.0	9.0	7.5	8.5	8.5	8.5								
17	11.5	10.0	9.0	8.5	8.0	7.5	9.5	9.0	8.5	7.5	9.0	9.0	8.5								
18	10.5	9.5	9.0	8.5	8.5	7.0	9.0	8.5	8.5	7.5	9.0	9.0	8.5								
19	10.5	9.5	8.5	8.0	8.5	7.0	9.0	9.0	9.0	8.0	9.0	9.0	8.5								
20	10.5	9.5	8.0	7.0	8.5	7.0	9.0	9.0	9.0	8.0	9.0	9.0	8.0								
21	10.0	9.5	8.5	8.0	8.5	8.5	9.0	9.0	9.0	8.5	9.0	9.0	8.0								
22	10.5	9.5	8.5	8.0	9.0	8.5	9.0	8.5	9.0	8.5	9.0	9.0	8.0								
23	10.0	9.5	8.5	8.0	9.0	8.5	9.0	8.5	9.0	8.0	9.0	9.0	8.0								
24	10.0	9.5	9.0	8.0	9.5	9.0	8.5	8.0	9.0	8.5	9.0	9.0	8.0								
25	10.0	9.0	8.5	8.0	9.0	8.5	9.0	7.5	9.0	8.5	9.0	9.0	8.0								
26	10.0	9.0	8.5	8.0	9.0	8.5	9.0	8.5	9.0	8.5	9.0	9.0	8.5								
27	10.0	9.0	8.5</																		

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	883	857	856	833	908	877	898	880	886	871	921	893
2	884	858	848	827	911	888	899	885	897	870	920	908
3	854	814	846	828	917	881	904	886	878	866	920	905
4	881	845	842	801	916	885	915	897	884	866	934	891
5	890	837	852	812	934	892	907	874	880	862	943	915
6	886	867	839	802	948	910	893	881	885	861	932	879
7	886	835	850	819	909	830	886	875	899	869	946	876
8	878	839	845	819	887	866	904	874	893	875	794	778
9	878	827	855	822	869	857	903	865	892	874	945	885
10	855	831	834	811	878	842	906	885	916	879	941	916
11	873	841	856	817	877	841	908	869	919	869	937	907
12	900	846	859	822	876	849	908	890	937	869	922	901
13	869	840	836	820	878	851	901	886	918	883	945	897
14	873	840	845	819	874	847	894	885	917	885	965	904
15	861	834	867	836	870	849	897	891	912	884	961	897
16	868	829	885	846	871	840	908	887	922	878	945	907
17	856	833	883	847	873	849	926	829	945	874	980	904
18	883	831	886	849	881	860	916	841	923	894	961	891
19	875	824	892	866	889	865	897	888	913	884	949	904
20	875	834	945	845	878	861	908	887	919	875	965	910
21	898	834	928	847	877	863	914	890	908	883	969	928
22	863	838	893	860	888	855	920	886	904	873	961	922
23	882	837	899	859	872	857	912	888	907	879	973	928
24	870	831	902	849	883	863	928	837	910	875	995	928
25	870	835	885	850	882	858	943	866	912	860	986	934
26	869	836	907	850	890	863	910	836	904	865	983	934
27	884	846	933	902	904	880	910	835	911	885	969	925
28	884	846	912	874	902	878	906	862	910	894	973	928
29	865	842	903	870	904	892	906	870	---	---	980	941
30	845	821	906	873	909	885	893	878	---	---	983	941
31	845	829	---	---	899	872	889	877	---	---	---	---
MONTH	900	814	945	801	948	830	943	829	945	861	995	778

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	1010	956	1020	976	---	---	993	965	977	962
2	---	---	1030	972	996	953	---	---	993	959	969	953
3	---	---	1000	974	1000	968	---	---	989	956	973	950
4	---	---	1030	986	1000	972	---	---	1000	959	973	947
5	966	902	1050	978	1000	968	---	---	997	965	977	956
6	937	905	1050	978	---	---	---	---	989	932	---	---
7	980	904	1020	966	---	---	881	944	993	947	989	963
8	982	932	1020	990	---	---	1010	959	989	956	985	959
9	960	892	1010	962	---	---	997	959	989	959	989	935
10	967	892	998	974	---	---	993	965	989	953	981	953
11	986	926	1020	974	---	---	977	956	969	953	997	953
12	980	956	1050	986	---	---	985	956	977	956	997	944
13	982	954	1040	966	---	---	993	950	1000	965	969	938
14	1010	949	1010	974	---	---	985	950	997	953	977	953
15	992	948	999	963	---	---	981	962	1010	962	---	---
16	978	938	1030	979	---	---	981	953	993	956	---	---
17	1000	928	1020	978	---	---	981	959	1010	969	---	---
18	1020	927	1060	987	---	---	985	959	1010	959	---	---
19	1020	966	1020	959	---	---	977	950	997	947	---	---
20	1010	972	979	949	---	---	989	959	989	959	---	---
21	1020	974	995	971	---	---	997	959	989	962	---	---
22	1020	953	1000	967	---	---	993	947	993	965	---	---
23	1000	956	1020	979	---	---	981	950	1000	965	---	---
24	998	970	1040	945	---	---	985	950	997	965	---	---
25	984	964	1020	971	---	---	985	953	981	959	---	---
26	1010	971	1050	971	---	---	997	965	981	959	---	---
27	1020	974	1060	984	---	---	1000	953	985	959	---	---
28	1010	964	1000	960	---	---	989	962	985	959	---	---
29	1030	974	1030	964	---	---	934	953	985	956	---	---
30	1040	961	1000	964	---	---	981	944	977	959	---	---
31	---	---	1030	980	---	---	985	941	981	956	---	---
MONTH	1040	892	1060	949	1020	953	1010	941	1010	932	997	935
YEAR	1060	778										

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	ULT 6,77 1600	NOV 4,77 1200	MAR 6,78 1100	MAY 3,78 1000
TOTAL CELLS/ML	4000	170	95	190
DIVERSITY: DIVISION	1.5	1.8	0.6	0.4
..CLASS	1.5	1.8	0.6	0.4
..ORDER	1.6	1.8	0.6	0.4
...FAMILY	2.1	2.2	1.8	1.9
....GENUS	2.1	2.4	1.8	2.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCEAE								
....UOUCYACEAE								
.....CHODATELLA	49	1	--	--	--	--	--	--
.....UOUCYSTIS	98	2	--	--	--	--	--	--
.....TETRAEDRUM	25	1	--	--	--	--	--	--
.....SCENEDESMACEAE								
.....CRUCIGENIA	200	5	16	10	--	--	--	--
.....SCENEDESMUS	--	--	16	10	--	--	--	--
...VULVACEAE								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	150	4	--	--	14	14	14	8
...PHACOTACEAE								
....PHACOTUS	25	1	--	--	--	--	--	--
CHRYSDOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	--	--	--	--	--	29#	15
...COCCONEIS	25	1	--	--	--	--	43#	23
...RHUICOSPHEA	98	2	--	--	--	--	--	--
...CYMBELLACEAE								
....AMPHURA	25	1	--	--	--	--	--	--
....CYMBELLA	--	--	4	2	41#	43	--	--
...DIATOMACEAE								
....DIATOMA	910#	22	66#	38	14	14	72#	38
...FRAGILARIACEAE								
....SYNEURA	25	1	--	--	27#	29	14	8
...NAVICULACEAE								
....NAVICULA	74	2	--	--	--	--	--	--
...NEIDIUM	--	--	--	--	--	--	14	8
...NITZSCHIALEAE								
....NITZSCHIA	25	1	12	7	--	--	--	--
...TABELLARIACEAE								
....TABELLARIA	--	--	--	--	--	--	--	--
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONADALES								
....CRYPTOMONADACEAE								
....CRYPTOMONAS	25	1	--	--	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROOCOCCEAE								
....CHROOCOCCEAE								
.....AGMENELLUM	--	--	--	--	--	--	--	--
...HORMOGONALES								
...NOSTOCACEAE								
....ANABAEANA	--	--	53#	19	--	--	--	--
...OSCILLATORIACEAE								
....LYNGBYA	--	--	--	--	--	--	--	--
...OSCILLATORIA	2300#	56	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENIDS)								
..EUGLENOPHYCEAE								
...EUGLENALS								
...EUGLENACEAE								
....EUGLENA	--	--	25	14	--	--	--	--
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
....PERIDINIALEAE								
....PERIDINIUM	25	1	--	--	--	--	--	--

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JUL 5,78 1700	AUG 17,78 1300	SEP 6,78 1400
TOTAL CELLS/ML	80	590	1700
DIVERSITY: DIVISION	0.0	0.5	0.1
..CLASS	0.0	0.5	0.1
...ORDER	0.0	0.5	0.1
....FAMILY	0.7	0.6	0.2
.....GENUS	0.7	0.6	0.2

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCEAE						
....UOCCYSTACEAE						
.....CHODATELLA	--	-	12	2	--	-
.....OUCYSTIS	--	-	--	-	--	-
.....TETRAEDRON	--	-	--	-	--	-
....SCENEDESMACEAE						
.....CRUCIGENIA	--	-	--	-	--	-
.....SCENEDESMUS	--	-	*	0	--	-
..VULVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMUNAS	--	-	--	-	--	-
...PHACUTACEAE						
....PHACOTUS	--	-	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...PENNACEAE						
....ACHNANTHACEAE						
.....ACHNANTHES	--	-	22	4	*	0
....CUCCONEIS	--	-	*	0	*	0
....RHODICUSPHENIA	--	-	--	-	--	-
...CYMBELLACEAE						
....AMPHORA	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	73#	85	7	1	14	1
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	--	-	*	0	*	0
....NEIDIUM	--	-	--	-	--	-
...NITZSCHACEAE						
....NITZSCHIA	--	-	*	0	--	-
...TABELLARIACEAE						
....TABELLARIA	15#	17	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADALES						
.....CRYPTOMONAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROOCOCCALES						
....CHROOCOCCACEAE						
.....AGMENELLUM	--	-	--	-	*	0
...HORMOGONALES						
....NOSTOCACEAE						
.....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
....LYNGBYA	--	-	540#	92	--	-
....OSCILLATORIA	--	-	--	-	1700#	98
EUGLENOPHYTA (EUGLENIDS)						
..EUGLENOPHYCEAE						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
....PERIDINIALES						
.....PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09381900 PARIA RIVER AT WHITE HOUSE RUINS NEAR GLEN CANYON, UT

LOCATION.--Lat 37°04'31", long 111°53'23", NE¼ sec.15, T.43 S., R.5 E., Kane County, Hydrologic Unit 14070007, at northern boundary of Paria Canyon Primitive Area, 3.3 mi (5.3 km) downstream from U.S. Highway 89, 6.8 mi (10.9 km) upstream from Buckskin Gulch and 36.1 mi (58.1 km) upstream from mouth.

PERIOD OF RECORD.--September 1977 to current year.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	CULI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)
SEP , 1977											
16...	1000	2.3	1540	8.2	22.0	18.0	380	9.2	K30	--	650
OCT											
14...	1030	.00	--	--	--	--	--	--	--	--	--
NOV											
15...	1400	13	1390	8.2	17.0	12.0	200	8.1	--	--	580
DEC											
05...	1800	12	1320	8.6	17.0	8.0	380	9.6	K4	--	540
JAN , 1978											
10...	1430	25	1060	8.5	--	2.5	750	13.1	K4	480	430
FEB											
16...	1600	25	1400	8.1	2.0	6.0	5400	10.7	<1	1800	490
MAR											
14...	1630	35	2100	8.2	12.0	12.0	--	9.3	K100	K70000	--
APR											
19...	1500	11	1600	8.3	21.0	13.0	600	8.7	K10	51000	630
MAY											
15...	0900	1.0	1640	8.3	26.0	18.5	230	8.3	36	K100	680
JUN											
06...	1400	.00	--	--	--	--	--	--	--	--	--
JUL											
12...	1400	.00	--	--	--	--	--	--	--	--	--
AUG											
18...	0900	.00	--	--	--	--	--	--	--	--	--
SEP											
05...	1700	.00	--	--	--	--	--	--	--	--	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L AS CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
SEP , 1977											
16...	470	140	74	130	2.2	7.9	220	730	21	.4	13
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	420	110	74	120	2.2	5.6	200	580	23	.3	10
DEC											
05...	380	100	70	110	2.1	5.5	190	550	19	.2	9.9
JAN , 1978											
10...	260	90	49	79	1.7	4.0	200	410	15	.3	8.2
FEB											
16...	310	110	52	140	2.8	4.9	220	560	21	.3	8.3
MAR											
14...	--	--	--	--	--	--	--	--	--	.4	--
APR											
19...	480	120	80	140	2.4	6.6	180	710	24	.3	11
MAY											
15...	540	130	87	130	2.2	8.9	170	750	22	.4	12
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
AUG											
18...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

PARIA RIVER BASIN

47

09381900 PARIA RIVER AT WHITE HOUSE RUINS NEAR GLEN CANYON, UT--Continued

WATER QUALITY DATA

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977											
16...	1300	1230	1.77	.35	.88	.48	9	2	200	10	7
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	1100	1020	1.50	--	--	--	--	1	0	--	--
DEC											
05...	998	960	1.36	--	--	--	--	1	100	--	--
JAN , 1978											
10...	786	754	1.07	--	--	--	--	1	0	--	--
FEB											
16...	1040	1010	1.41	--	--	--	--	1	100	--	--
MAR											
14...	--	--	--	.63	3.7	.39	24	2	100	--	1
APR											
19...	1240	1180	1.69	--	--	--	--	1	0	--	--
MAY											
15...	1350	1220	1.84	--	--	--	--	1	0	--	--
JUN											
06...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
AUG											
18...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
16...	20	10	<50	0	10	2	7900	20	<100	97
OCT										
14...	--	--	--	--	--	--	--	--	--	--
NOV										
15...	--	--	--	--	--	2	--	60	--	11
DEC										
05...	--	--	--	--	--	1	--	40	--	0
JAN , 1978										
10...	--	--	--	--	--	5	--	40	--	2
FEB										
16...	--	--	--	--	--	3	--	20	--	1
MAR										
14...	100	10	44	0	200	11	140000	30	1	0
APR										
19...	--	--	--	--	--	11	--	60	--	0
MAY										
15...	--	--	--	--	--	2	--	30	--	0
JUN										
06...	--	--	--	--	--	--	--	--	--	--
JUL										
12...	--	--	--	--	--	--	--	--	--	--
AUG										
18...	--	--	--	--	--	--	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than value shown.

09381900 PARIA RIVER AT WHITE HOUSE RUINS NEAR GLEN CANYON, UT--Continued

WATER QUALITY DATA

[illegible]

PARIA RIVER BASIN

49

09381950 PARIA RIVER BELOW WATER POCKETS NEAR PAGE, AZ

LOCATION.--Lat 36°56'47", long 111°40'32", NE¼NE¼ sec.19, T.41 N., R.7 E., Coconino County, Hydrologic Unit 14070007, in Paria Canyon Primitive Area, 8.9 mi (14.3 km) upstream from mouth and 20.4 mi (32.8 km) downstream from Buckskin Gulch.

PERIOD OF RECORD.--September 1977 to current year.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MHOS)	PH (UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (CULS./ 100 ML)	STREP- TOCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)
SEP , 1977											
14...	0900	14	1450	7.6	--	18.5	48000	--	2800	K20000	680
OCT											
13...	0930	5.2	510	8.1	8.0	9.0	10	10.0	<1	K4	220
NOV											
16...	1300	16	1070	8.3	16.0	9.0	--	10.1	K5	60	430
DEC											
06...	1330	16	990	8.3	--	7.0	200	10.4	K2	--	410
JAN , 1978											
11...	1430	37	1220	8.4	12.0	6.5	1200	10.6	K18	400	150
FEB											
15...	1200	32	1240	8.1	12.0	--	1600	11.1	<1	1300	450
MAR											
13...	1230	44	1420	8.3	13.0	9.0	--	10.1	K280	K43000	--
APR											
18...	1130	17	900	8.3	--	12.0	950	9.4	K40	73000	440
MAY											
16...	1230	5.6	510	8.4	22.5	20.5	--	8.5	<1	<1	220
JUN											
07...	1130	4.8	495	8.2	32.5	28.0	--	--	<1	360	200
JUL											
13...	1130	4.5	470	8.5	36.0	23.0	1	8.5	--	--	180
AUG											
16...	1130	4.4	490	8.3	28.0	22.0	90	7.7	K4	42	180
SEP											
07...	1230	5.7	440	8.6	32.5	23.0	--	7.8	K2	<1	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
SEP , 1977											
14...	520	190	50	87	1.5	12	200	720	11	.6	11
OCT											
13...	93	52	21	29	.9	3.0	150	140	9.1	.1	11
NOV											
16...	320	86	53	87	1.8	4.7	140	430	19	3.0	11
DEC											
06...	270	81	50	78	1.7	4.5	170	360	9.1	.2	10
JAN , 1978											
11...	320	100	54	100	2.0	4.3	180	--	18	.3	8.1
FEB											
15...	260	100	49	120	2.5	4.8	230	460	22	3.0	8.8
MAR											
13...	--	--	--	--	--	--	--	--	--	.4	--
APR											
18...	280	90	52	97	2.0	5.2	190	430	16	.3	10
MAY											
16...	92	52	22	32	.9	3.6	150	130	9.4	.2	11
JUN											
07...	85	45	21	30	.9	3.2	140	120	9.2	.2	6.5
JUL											
13...	75	38	21	30	1.0	3.0	130	120	9.5	.1	9.2
AUG											
16...	54	41	18	37	1.2	3.4	150	120	12	.2	11
SEP											
07...	--	--	--	--	--	--	--	--	--	.1	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

PARIA RIVER BASIN

09381950 PARIA RIVER BELOW WATER POCKETS NEAR PAGE, AZ--Continued

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977											
14...	1240	1180	1.69	1.7	32	9.4	2400	1	200	80	2
OCT											
13...	322	339	.44	--	--	--	--	2	200	--	--
NOV											
16...	810	760	1.10	--	--	--	--	2	0	--	--
DEC											
06...	--	677	.92	--	--	--	--	2	100	--	--
JAN , 1978											
11...	948	858	1.29	--	--	--	--	1	100	--	--
FEB											
15...	933	879	1.27	--	--	--	--	2	100	--	--
MAR											
13...	--	--	--	.69	2.1	3.6	22	2	200	2	1
APR											
18...	863	794	1.17	--	--	--	--	1	0	--	--
MAY											
16...	350	337	.48	--	--	--	--	2	0	--	--
JUN											
07...	305	304	.41	--	--	--	--	2	100	--	--
JUL											
13...	298	295	.41	--	--	--	--	3	200	--	--
AUG											
16...	309	317	.42	--	--	--	--	3	90	--	--
SEP											
07...	--	--	--	.85	1.3	.02	3	3	300	0	0

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
14...	50	10	400	0	170	10	11000	20	900	79
OCT										
13...	--	--	--	--	--	1	--	20	--	12
NOV										
16...	--	--	--	--	--	3	--	160	--	9
DEC										
06...	--	--	--	--	--	2	--	20	--	0
JAN , 1978										
11...	--	--	--	--	--	2	--	30	--	1
FEB										
15...	--	--	--	--	--	3	--	30	--	0
MAR										
13...	80	10	27	0	110	5	77000	60	53	0
APR										
18...	--	--	--	--	--	12	--	60	--	0
MAY										
16...	--	--	--	--	--	1	--	60	--	0
JUN										
07...	--	--	--	--	--	2	--	20	--	1
JUL										
13...	--	--	--	--	--	4	--	40	--	3
AUG										
16...	--	--	--	--	--	2	--	<10	--	4
SEP										
07...	0	0	0	0	6	2	540	20	0	0

< Actual value is known to be less than value shown.

PARIA RIVER BASIN

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09381950 PARIA RIVER BELOW WATER POCKETS NEAR PAGE, AZ--Continued

WATER QUALITY DATA

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDEO (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDEO (T/DAY)
SEP , 1977										
14...	10000	10	2.1	.0	1	1	190	20	87300	5300
OCT										
13...	--	20	--	--	--	0	--	0	30	.43
NOV										
16...	--	10	--	--	--	2	--	40	218	9.5
DEC										
06...	--	10	--	--	--	1	--	10	210	9.1
JAN , 1978										
11...	--	20	--	--	--	1	--	30	2860	286
FEB										
15...	--	20	--	--	--	3	--	--	1910	166
MAR										
13...	2700	10	.1	.0	4	5	340	50	8510	1030
APR										
18...	--	10	--	--	--	1	--	50	1620	75
MAY										
16...	--	0	--	--	--	0	--	30	19	.29
JUN										
07...	--	0	--	--	--	0	--	50	16	.21
JUL										
13...	--	10	--	--	--	--	--	20	4	.05
AUG										
16...	--	<1	--	--	--	--	--	<3	171	2.0
SEP										
07...	20	10	.0	.1	0	1	40	10	53	.51

< Actual value is known to be less than value shown.

09382000 PARIA RIVER AT LEES FERRY, AZ

LOCATION.--Lat 36°52'20", long 111°35'38", in NW¼NE¼ sec.13, T.40 N., R.7 E., Coconino County, Hydrologic Unit 14070007, on left bank 0.6 mi (1.0 km) northwest of Lees Ferry, and 1.1 mi (1.8 km) upstream from mouth.

DRAINAGE AREA.--1,410 mi² (3,652 km²).

PERIOD OF RECORD.--October 1923 to current year.

REVISED RECORDS.--WSP 1925: 1958(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,123.40 ft (952.012 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1925, nonrecording gage at site 2,000 ft (610 m) upstream at different datum. Oct. 13, 1925, to Sept. 11, 1929, nonrecording gage at present site and datum.

REMARKS.--Records good. Diversions above station for irrigation of about 3,300 acres (13.4 km²).

AVERAGE DISCHARGE.--55 years, 29.0 ft³/s (0.821 m³/s), 21,010 acre-ft/yr (25.9 hm³/yr); median of yearly mean discharges, 26 ft³/s (0.74 m³/s), 18,800 acre-ft/yr (23 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s (456 m³/s) Oct. 5, 1925, gage height, 16.3 ft (4.97 m), from flood mark, from rating curve extended above 2,000 ft³/s (57 m³/s) on basis of float-area measurement of peak flow; maximum gage height, 16.35 ft (4.983 m) Sept. 1, 1963; minimum daily discharge, 1 ft³/s (0.03 m³/s) in most years prior to 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft³/s (36.0 m³/s) Mar. 5, gage height, 9.60 ft (2.926 m), no peak above base of 1,400 ft³/s (39.6 m³/s); minimum daily, 2.0 ft³/s (0.057 m³/s) July 22-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1917 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	10	17	40	42	98	20	14	4.5	2.8	3.6	4.0
2	5.0	10	16	18	26	222	50	25	5.0	2.8	3.2	4.0
3	5.0	14	17	16	25	252	40	18	4.5	2.5	3.6	4.0
4	5.5	13	16	18	23	138	30	18	4.5	2.5	12	4.0
5	5.5	13	16	20	20	378	24	10	5.0	2.8	16	4.0
6	5.5	15	17	20	25	289	21	10	5.0	2.8	10	3.6
7	5.0	29	16	21	54	108	16	5.0	4.5	3.2	10	4.0
8	7.0	18	16	18	41	81	12	5.0	4.5	2.8	5.0	6.0
9	5.5	13	14	15	35	63	39	5.0	4.0	2.8	4.0	7.9
10	4.5	10	14	18	65	55	154	5.0	3.2	5.0	4.0	3.6
11	4.5	10	17	35	218	57	136	4.0	2.5	3.6	3.0	2.8
12	4.0	10	16	40	68	96	84	4.0	3.6	2.8	3.0	2.8
13	4.5	10	17	19	36	61	56	4.0	3.6	3.2	3.0	2.8
14	4.5	10	15	15	35	36	50	4.0	2.5	3.6	3.0	3.2
15	4.5	10	15	21	31	21	40	4.0	2.5	4.0	3.2	4.5
16	4.5	16	17	71	24	8.8	30	4.0	2.2	5.0	3.2	8.1
17	4.5	15	16	38	19	6.0	20	4.0	2.2	29	2.8	13
18	4.5	15	17	47	12	12	18	4.0	2.8	23	2.8	8.2
19	5.0	15	25	31	12	22	17	4.5	2.8	20	3.6	6.0
20	8.2	14	18	52	15	43	15	4.5	2.5	4.0	4.0	5.0
21	90	13	8.8	30	21	55	16	5.5	2.8	2.2	6.0	5.0
22	42	12	7.0	20	24	63	13	6.0	2.5	2.0	8.4	5.0
23	42	18	8.2	20	29	108	13	5.0	2.8	2.0	16	5.0
24	20	18	21	30	28	64	11	4.5	2.2	2.0	6.5	5.0
25	20	17	21	30	25	46	9.4	4.5	2.2	2.0	6.5	5.0
26	10	18	18	20	28	31	9.4	4.5	2.2	2.0	5.0	5.0
27	10	17	19	20	31	25	8.2	4.5	2.2	2.0	3.2	5.0
28	10	16	23	26	20	29	8.2	4.5	2.9	2.0	3.2	5.0
29	10	16	33	30	---	31	7.6	4.5	4.0	4.4	3.6	5.0
30	15	16	31	28	---	33	6.0	5.0	3.2	4.0	4.0	5.0
31	15	---	29	29	---	30	---	4.5	---	3.2	4.0	---
TOTAL	586.7	431	557.0	856	1028	2561.8	973.8	209.0	98.9	156.0	169.4	151.5
MEAN	12.5	14.4	18.0	27.6	36.7	82.6	32.5	6.74	3.30	5.03	5.46	5.05
MAX	90	29	33	71	218	378	154	25	5.0	29	16	13
MIN	4.0	10	7.0	15	12	6.0	6.0	4.0	2.2	2.0	2.8	2.8
AC-FT	767	855	1100	1700	2040	5080	1930	415	196	309	336	301
CAL YR 1977	TOTAL	4561.3	MEAN 12.5	MAX 231	MIN 3.2	AC-FT 9050						
WTR YR 1978	TOTAL	7579.1	MEAN 20.8	MAX 378	MIN 2.0	AC-FT 15030						

09382000 PARIA RIVER AT LEES FERRY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1947 to September 1976, September 1977 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSIS: October 1947 to February 1950, October 1969 to September 1972, September 1977 to current year.

SPECIFIC CONDUCTANCE: October 1964 to September 1976.

WATER TEMPERATURE: October 1956 to September 1976.

SUSPENDED-SEDIMENT DISCHARGE: October 1947 to September 1976.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	CULI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)
SEP , 1977											
15...	0930	12	1460	8.0	--	19.0	32000	9.4	1900	K18000	510
OCT											
13...	1530	4.6	550	8.3	21.5	20.0	20	7.8	K16	K8	220
NOV											
17...	1200	15	1080	8.4	18.0	9.0	100	11.4	K1	20	450
DEC											
07...	0930	16	1030	8.1	13.0	4.0	140	11.7	K2	--	420
JAN , 1978											
12...	1000	49	825	8.2	5.0	4.0	7900	11.7	K20	7600	230
FEB											
15...	1700	29	1260	8.3	10.0	8.0	1400	10.7	K20	1800	450
MAR											
02...	1530	271	1450	7.9	--	10.0	--	--	--	--	410
14...	0930	46	1700	8.4	13.5	6.5	--	11.4	K67	K53000	--
APR											
19...	0930	14	900	8.3	--	10.0	1000	10.3	K16	K110000	430
MAY											
15...	1430	4.4	550	8.4	32.5	27.0	20	7.6	K1	K4000	210
JUN											
06...	1830	4.4	630	8.5	31.0	27.0	2	--	<1	45	210
JUL											
12...	1730	3.8	540	8.7	37.0	31.5	9	7.3	--	--	190
AUG											
15...	1230	3.5	500	8.4	32.0	28.0	90	8.1	<1	300	190
SEP											
06...	1000	4.2	440	8.4	33.0	26.0	--	8.0	K9	K40	--

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
SEP , 1977											
15...	350	140	38	150	2.9	9.6	190	650	20	.6	10
OCT											
13...	98	52	22	32	.9	3.3	150	140	9.8	.2	11
NOV											
17...	310	90	55	86	1.8	4.6	170	420	19	.2	11
DEC											
07...	300	85	51	77	1.6	4.6	150	390	14	.2	10
JAN , 1978											
12...	74	54	23	95	2.7	4.0	190	250	11	.4	8.0
FEB											
15...	280	100	49	120	2.5	5.0	210	510	23	.4	8.8
MAR											
02...	270	120	26	180	3.9	7.5	170	600	17	.5	8.5
14...	--	--	--	--	--	--	--	--	--	.4	--
APR											
19...	290	83	53	99	2.1	5.2	160	450	15	.3	11
MAY											
15...	91	47	23	35	1.0	3.9	140	140	11	.2	11
JUN											
06...	110	45	23	34	1.0	3.7	120	150	25	.2	8.9
JUL											
12...	83	38	23	40	1.3	3.9	130	150	11	.2	8.7
AUG											
15...	64	44	20	29	.9	3.5	150	120	12	.2	11
SEP											
06...	--	--	--	--	--	--	--	--	--	.1	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

PARIA RIVER BASIN

09382000 PARIA RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977											
15...	1140	1110	1.55	2.5	24	6.4	720	1	300	50	0
OCT											
13...	343	345	.47	--	--	--	--	2	200	--	--
NOV											
17...	817	770	1.11	--	--	--	--	2	0	--	--
DEC											
07...	784	706	1.07	--	--	--	--	2	100	--	--
JAN , 1978											
12...	573	539	.78	--	--	--	--	2	100	--	--
FEB											
15...	947	920	1.29	--	--	--	--	3	100	--	--
MAR											
02...	1090	1050	1.48	--	--	--	--	--	--	--	--
14...	--	--	--	.69	3.2	2.8	15	2	200	3	0
APR											
19...	818	796	1.11	--	--	--	--	3	0	--	--
MAY											
15...	367	344	.50	--	--	--	--	3	0	--	--
JUN											
06...	334	349	.45	--	--	--	--	1	200	--	--
JUL											
12...	344	339	.47	--	--	--	--	3	300	--	--
AUG											
15...	317	317	.43	--	--	--	--	3	100	--	--
SEP											
06...	--	--	--	.52	.93	.03	2	3	--	0	0

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
15...	200	10	400	0	470	2	240000	30	1000	7
OCT										
13...	--	--	--	--	--	1	--	10	--	8
NOV										
17...	--	--	--	--	--	1	--	20	--	14
DEC										
07...	--	--	--	--	--	1	--	20	--	9
JAN , 1978										
12...	--	--	--	--	--	2	--	20	--	1
FEB										
15...	--	--	--	--	--	6	--	10	--	0
MAR										
02...	--	--	--	--	--	--	--	30	--	--
14...	50	0	24	0	120	4	71000	20	16	0
APR										
19...	--	--	--	--	--	9	--	30	--	0
MAY										
15...	--	--	--	--	--	1	--	70	--	0
JUN										
06...	--	--	--	--	--	2	--	60	--	0
JUL										
12...	--	--	--	--	--	5	--	20	--	2
AUG										
15...	--	--	--	--	--	3	--	10	--	0
SEP										
06...	0	0	0	0	8	2	460	10	0	0

09382000 PARIA RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1977										
15...	8300	0	1.4	.0	5	0	1500	10	32800	1060
OCT										
13...	--	20	--	--	--	1	--	0	31	.39
NOV										
17...	--	8	--	--	--	2	--	4	200	8.6
DEC										
07...	--	0	--	--	--	1	--	10	131	5.8
JAN , 1978										
12...	--	0	--	--	--	2	--	20	14700	1970
FEB										
15...	--	10	--	--	--	2	--	20	2200	183
MAR										
02...	--	--	--	--	--	--	--	--	--	--
14...	1900	10	.1	.0	6	5	350	30	5920	746
APR										
19...	--	10	--	--	--	1	--	50	1540	62
MAY										
15...	--	0	--	--	--	0	--	30	34	.41
JUN										
06...	--	10	--	--	--	1	--	60	9	.11
JUL										
12...	--	0	--	--	--	1	--	20	31	.32
AUG										
15...	--	2	--	--	--	1	--	<3	111	1.0
SEP										
06...	10	10	.0	.1	0	1	30	10	33	.38

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09383000 COLORADO RIVER AT COMPACT POINT, NEAR LEES FERRY, AZ

LOCATION.--Lat 36°51'05", long 111°36'21", in NE¼SE¼ sec.23, T.40 N., R.7 E., Coconino County, Hydrologic Units 14070006, 15010001, (see REMARKS), 1.0 mi (1.6 km) downstream from Paria River, 1.4 mi (2.3 km) downstream from gage on Colorado River at Lees Ferry, and 29 mi (47 km) downstream from Utah-Arizona State line.

DRAINAGE AREA.--112,000 mi² (290,100 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--October 1913 to current year (monthly discharge only). Prior to October 1950, published in WSP 1313.

DETERMINATION OF DISCHARGE.--There is no gage. Monthly and yearly discharge computed as the sum of flow at stations on Colorado River and Paria River at Lees Ferry.

REMARKS.--This point on the Colorado River is the dividing point between the Upper Basin and Lower Basin, as defined in the Colorado River Compact of 1922. Flow completely regulated by Lake Powell beginning Mar. 13, 1963. (See elsewhere in this report.)

AVERAGE DISCHARGE.--49 years (water years 1914-62), 17,760 ft³/s (503 m³/s), 12,870,000 acre-ft/yr (15,900 hm³/yr); 14 years (water years 1965-78), 12,150 ft³/s (344 m³/s), 8,803,000 acre-ft/yr (10,800 hm³/yr).

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Mean	Runoff in acre-feet
October	6,178	379,900
November	6,568	390,900
December	13,410	824,500
CAL YR 1977	10,140	7,362,000
January	15,440	949,300
February	10,870	603,400
March	9,503	584,300
April	8,306	494,200
May	10,540	647,900
June	12,740	758,300
July	11,420	702,000
August	17,330	1,065,000
September	16,290	968,800
WTR YR 1978	11,550	8,368,000

NOTE.--Record shown is sum of flow at stations on Colorado River and Paria River at Lees Ferry.

LITTLE COLORADO RIVER BASIN

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09383400 LITTLE COLORADO RIVER AT GREER, AZ

LOCATION.--Lat 34°01'00", long 109°27'24", in NE¼SE¼ sec.11, T.7 N., R.27 E., Apache County, Hydrologic Unit 15020001, in Apache National Forest, on upstream side of right abutment of culverts on State Highway 373, at Greer, 0.1 mi (0.2 km) downstream from Filler ditch.

DRAINAGE AREA.--30.9 mi² (80.0 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 8,283 ft (2,524.7 m), National Geodetic Vertical Datum of 1929. Prior to Aug. 24, 1976, at datum 0.21 ft (0.064 m) higher.

REMARKS.--Records fair except those for winter periods, which are poor. Filler ditch diverts water from river 0.1 mi (0.2 km) above station. (The gaging station on the filler ditch was discontinued in June 1977; therefore, the total flow of the Little Colorado River at this point is no longer measured.)

AVERAGE DISCHARGE.--18 years, 14.8 ft³/s (0.419 m³/s), 10,720 acre-ft/yr (13.2 hm³/yr); median of yearly mean discharges, 13 ft³/s (0.37 m³/s), 9,400 acre-ft/yr (12 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 615 ft³/s (17.4 m³/s) Oct. 20, 1972, gage height, 5.65 ft (1.722 m), from rating curve extended above 150 ft³/s (4.25 m³/s) on basis of partially estimated culvert computation of peak flow; minimum daily, 0.10 ft³/s (0.003 m³/s) Sept. 24-30, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 78 ft³/s (2.209 m³/s) Apr. 7, gage height, 1.95 ft (0.594 m), base discharge, 60 ft³/s (1.7 m³/s); minimum daily, 0.10 ft³/s (0.003 m³/s) Sept. 24-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	4.8	4.0	3.1	3.1	14	45	21	24	10	18	12
2	2.2	3.1	4.0	3.1	2.9	13	33	20	24	9.7	16	13
3	2.9	5.1	3.3	3.5	2.0	12	32	21	23	9.3	15	12
4	3.5	4.2	3.1	3.1	2.0	12	34	20	22	10	17	12
5	2.6	3.3	3.1	2.0	2.0	12	35	20	22	10	18	12
6	1.4	5.1	3.3	1.8	2.2	11	42	20	22	9.7	15	12
7	6.8	4.2	3.3	2.0	2.4	10	47	21	21	9.3	15	12
8	4.0	4.2	3.1	2.0	2.4	10	32	20	21	9.7	16	12
9	3.1	4.0	3.3	2.0	2.0	10	22	20	21	9.3	16	12
10	2.6	4.5	3.3	2.0	2.2	10	18	19	21	9.7	16	12
11	2.4	4.2	3.3	2.0	2.4	9.7	22	18	21	9.7	16	11
12	2.2	3.8	3.3	2.0	2.0	10	34	20	20	9.7	18	11
13	2.2	4.0	3.1	2.0	2.0	10	34	22	20	9.3	15	11
14	2.9	4.0	3.3	2.0	2.4	10	32	26	20	9.0	14	11
15	3.8	4.5	3.3	2.0	2.4	9.7	31	29	20	7.5	14	9.7
16	5.7	5.1	3.1	2.0	2.4	10	35	30	19	6.8	13	4.3
17	4.2	4.0	3.1	2.0	2.4	9.7	29	30	18	6.8	12	2.2
18	2.6	3.1	3.1	2.0	2.0	9.7	26	29	17	7.9	12	4.0
19	2.4	3.5	3.3	2.6	2.0	11	26	28	17	9.0	13	5.4
20	2.6	3.8	3.1	2.0	2.9	12	24	29	16	9.7	18	5.7
21	3.1	3.5	3.3	2.0	3.1	13	23	29	15	9.3	15	4.8
22	4.8	3.8	3.1	2.0	3.6	15	21	30	15	9.0	15	4.8
23	5.1	3.5	3.1	2.0	3.1	15	21	30	14	9.0	15	3.0
24	3.4	4.0	3.1	2.0	2.4	14	21	29	13	11	13	.10
25	3.7	3.8	3.1	2.0	3.1	16	21	29	13	13	14	.10
26	6.2	4.0	3.1	2.0	3.5	17	23	27	12	12	13	.10
27	6.8	3.5	3.3	2.0	3.1	18	23	26	12	11	12	.10
28	6.8	3.5	3.3	2.4	9.0	19	23	24	12	10	12	.10
29	8.2	3.5	3.1	3.1	---	21	23	24	12	11	12	.10
30	7.5	3.3	3.1	3.1	---	29	22	23	11	11	12	.10
31	6.5	---	3.1	3.3	---	43	---	24	---	14	12	---
TOTAL	134.4	118.9	101.7	71.1	79.2	435.8	854	758	538	302.4	452	209.60
MEAN	4.34	3.96	3.28	2.29	2.83	14.1	28.5	24.5	17.9	9.75	14.6	6.99
MAX	8.2	5.1	4.0	3.5	9.0	43	47	30	24	14	18	13
MIN	2.2	3.1	3.1	1.8	2.0	9.7	18	18	11	6.8	12	.10
AC-FT	267	236	202	141	157	864	1690	1500	1070	600	897	416
CAL YR 1977	TOTAL	2762.70	MEAN	7.57	MAX	68	MIN	2.2	AC-FT	5480		
WTR YR 1978	TOTAL	4055.10	MEAN	11.1	MAX	47	MIN	.10	AC-FT	8040		

LITTLE COLORADO RIVER BASIN

09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

			SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	
DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)		(UNITS)									
OCT 11...	1800	3.0	77	7.8	12.0	2	8.0	14	38	0	10	3.2	
NOV 08...	1130	4.2	60	7.8	3.0	2	9.8	11	33	0	8.2	3.1	
DEC 06...	1130	4.0	60	8.4	3.0	2	10.2	2	36	0	10	2.7	
JAN 11...	1100	11	75	7.6	.5	2	10.6	--	32	0	8.3	2.8	
FEB 15...	1500	7.5	60	7.7	.5	1	10.2	0	35	0	9.1	2.9	
MAR 15...	1700	8.5	100	--	8.0	2	8.2	1	39	2	10	3.3	
APR 19...	1200	23	60	7.6	10.0	3	8.4	4	24	0	6.4	2.0	
MAY 10...	1130	20	65	7.7	12.0	--	8.2	0	23	0	5.4	2.2	
JUN 08...	0930	23	42	6.9	9.0	1	8.7	21	17	1	3.8	1.9	
JUL 12...	0945	10	70	8.0	12.5	--	8.1	78	31	1	8.5	2.4	
AUG 17...	0845	16	65	8.2	14.0	2	7.8	22	37	0	10	2.8	
SEP 13...	1500	14	70	7.4	14.0	2	7.2	73	31	0	8.0	2.7	
		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT 11...	4.4	.3	2.1	52	0	3.8	1.2	.1	27	73	78	.10	
NOV 08...	5.2	.4	2.0	48	0	2.6	1.3	.1	26	75	73	.10	
DEC 06...	4.4	.3	1.8	46	0	4.7	1.1	.1	28	66	76	.09	
JAN 11...	4.6	.4	1.8	46	0	2.5	1.2	.1	13	71	57	.10	
FEB 15...	5.3	.4	1.7	49	0	3.8	1.0	.1	27	64	76	.09	
MAR 15...	5.0	.4	1.8	44	--	6.0	1.3	.1	25	70	75	.10	
APR 19...	2.7	.2	1.3	29	0	5.1	1.2	.1	20	52	54	.07	
MAY 10...	2.9	.3	1.4	29	0	5.4	1.1	.1	20	58	53	.08	
JUN 08...	2.5	.3	1.4	20	0	4.9	.9	.1	20	41	46	.06	
JUL 12...	3.8	.3	1.7	37	0	4.8	.8	.1	26	57	67	.08	
AUG 17...	4.4	.3	1.9	45	0	3.8	1.1	.1	28	63	75	.09	
SEP 13...	4.6	.4	2.1	39	0	6.6	1.2	.1	30	69	75	.09	

LITTLE COLORADO RIVER BASIN

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09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHURUS, ORTHO. TOTAL (MG/L AS P)	PHOS- PHURUS, ORTHO. DIS- SOLVED (MG/L AS P)
OCT							
11...	.03	--	.10	.13	.09	--	--
NOV							
08...	.02	--	.16	.18	.04	--	--
DEC							
06...	.03	.03	.61	.64	--	.03	.13
JAN							
11...	.04	.05	.15	.19	.06	--	.02
FEB							
15...	.07	.08	.12	.19	.04	--	.02
MAR							
15...	.78	.11	.35	1.1	.10	--	.02
APR							
19...	.13	.08	.31	.44	.05	--	.02
MAY							
10...	.00	.03	.20	.20	.05	--	.01
JUN							
08...	.05	.01	.17	.22	.05	--	.03
JUL							
12...	.01	.02	.42	.43	.06	--	.03
AUG							
17...	.01	.01	.46	.47	.05	--	.02
SEP							
13...	.02	.03	.50	.52	.08	--	.03

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT								
11...	1	100	90	10	<10	10	<10	1200
NOV								
08...	1	400	50	10	0	12	3	760
DEC								
06...	1	0	70	9	0	10	9	580
JAN								
11...	0	0	40	9	1	10	5	560
FEB								
15...	0	0	60	9	2	10	7	550
MAR								
15...	0	0	70	9	2	0	2	630
APR								
19...	2	200	70	10	1	0	3	450
MAY								
10...	0	100	90	20	3	0	7	540
JUN								
08...	1	--	50	10	33	5	5	320
JUL								
12...	1	200	60	10	0	10	9	520
AUG								
17...	1	200	50	10	0	10	6	670
SEP								
13...	1	100	60	20	1	0	4	490

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 11...	810	<100	50	40	.0	0	<10	20
NOV 08...	500	7	60	60	.0	0	0	30
DEC 06...	250	3	50	20	.0	0	0	30
JAN 11...	120	3	50	10	.1	0	1	20
FEB 15...	270	13	40	40	.2	0	5	60
MAR 15...	350	5	30	30	.0	0	1	20
APR 19...	100	6	20	0	.0	0	0	10
MAY 10...	160	58	10	0	.0	0	0	20
JUN 08...	90	36	20	10	.0	0	0	10
JUL 12...	250	2	40	20	.0	0	0	20
AUG 17...	330	4	40	20	.0	0	0	10
SEP 13...	230	4	30	10	.0	0	0	10

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
OCT 11...	2.5	.00	4	--	--	--
NOV 08...	1.3	.00	6	--	--	--
DEC 06...	--	.00	4	--	--	--
JAN 11...	1.1	.00	1	--	--	--
FEB 15...	1.3	.00	1	--	--	--
MAR 15...	2.2	.00	2	--	--	--
APR 19...	3.1	.00	5	--	--	--
MAY 10...	3.5	.00	0	--	--	--
JUN 08...	2.7	.00	2	57	11.6	10.9
JUL 12...	2.9	.00	1	--	--	--
AUG 17...	2.4	.00	1	--	--	--
SEP 13...	2.7	.00	7	--	--	--

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

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09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUN 8, 78
TIME	0930
TOTAL CELLS/ML	57
DIVERSITY: DIVISION	0.8
..CLASS	0.8
...ORDER	1.5
...FAMILY	2.0
...GENUS	2.0

ORGANISM	CELLS /ML	PER- CENT
BACILLARIOPHYIA (KARSTEN)		
..BACILLARIOPHYCEAE		
...FRAGILARIALES		
...FRAGILARIALEAE		
....DIEPHURA	14#	25
CHRYSTOPHYIA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...LUSCINODISCACEAE		
....CYCLOIELLA	14#	25
...PENNALES		
...ACHNANTHACEAE		
...ACHNANTHES	14#	25
...FRAGILARIALEAE		
....SYNEDRA	14#	25

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09383500 NUTRIOS CREEK ABOVE NELSON RESERVOIR, NEAR SPRINGVILLE, AZ

LOCATION.--Lat 34°01'49", long 109°11'09", in NE¼SW¼ sec.4, T.7 N., R.30 E., Apache County, Hydrologic Unit 15020001, in Apache National Forest, on right bank 2.4 mi (3.9 km) upstream from dam on Nelson Reservoir and 9 mi (14 km) southeast of Springville.

DRAINAGE AREA.--83.4 mi² (216.0 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 7,421.7 ft (2,262.13 m).

REMARKS.--Records fair except those for December to February, which are poor.

AVERAGE DISCHARGE.--11 years, 5.26 ft³/s (0.150 m³/s), 3,810 acre-ft/yr (4.70 hm³/yr); median of yearly mean discharges, 3.0 ft³/s (0.085 m³/s), 2,200 acre-ft/yr (2.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 439 ft³/s (12.4 m³/s) Apr. 28, 1973, gage height, 9.72 ft (2.963 m), from rating curve extended above 190 ft³/s (5.4 m³/s) on basis of slope-area measurement at gage height 8.96 ft (2.731 m); no flow at times during most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 6.2 ft³/s or 0.18 m³/s on basis of theoretical computations of flow over weir) and peak discharges above base of 40 ft³/s (1.1 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Mar. 31	2030	*88	2.49	8.53	2.60
Apr. 6	2330	56	1.58	8.27	2.52

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.25	.37	.37	1.9	14	65	2.6	.54	.16	.00	.00
2	.13	.31	.43	.19	1.4	11	44	3.1	.54	.09	.00	.00
3	.13	.31	.49	.25	1.0	7.1	44	3.8	.54	.03	.07	.00
4	.16	.25	.49	.17	.72	4.6	44	3.3	.54	.01	.05	.00
5	.19	.25	.49	.17	.72	8.7	40	1.9	.49	.00	.03	.00
6	.49	.37	.37	.19	.72	9.8	40	2.2	.60	.00	.00	.00
7	1.7	.60	.31	.25	.72	7.8	40	2.6	.60	.00	.00	.00
8	1.7	.60	.31	.19	.72	5.6	36	3.3	.54	.00	.00	.00
9	1.1	.49	.31	.19	.72	4.8	24	2.3	.49	.00	.00	.00
10	.66	.49	.31	.19	.66	6.1	22	1.9	.54	.00	.19	.00
11	.60	.49	.31	.25	.72	6.1	19	1.6	.49	.00	.16	.00
12	.54	.49	.37	.25	.60	8.4	26	1.3	.43	.00	.06	.00
13	.49	.43	.31	.17	.60	6.8	24	1.3	.43	.00	.03	.00
14	.49	.43	.31	.31	.72	6.1	18	1.0	.43	.00	.00	.00
15	.43	.49	.37	.37	1.0	3.8	15	.78	.31	.00	.00	.00
16	.37	.49	.19	.31	.78	4.8	10	.78	.19	.00	.00	.00
17	.37	.54	.25	.43	.89	5.4	8.4	.72	.17	.00	.00	.00
18	.31	.54	.31	.49	.72	7.1	5.4	.72	.17	.00	.00	.00
19	.31	.49	.19	.37	.78	10	4.1	.72	.19	.00	.00	.00
20	.31	.43	.14	.37	.78	14	4.1	.89	.16	.00	.00	.00
21	.31	.49	.11	.49	1.0	18	4.8	.89	.11	.00	.00	.00
22	.31	.43	.17	.43	1.1	24	3.3	.72	.09	.00	.19	.00
23	.31	.49	.31	.25	1.1	29	3.1	.66	.09	.00	.16	.00
24	.31	.43	.31	.37	1.3	28	3.1	.60	.09	.00	.49	.00
25	.25	.43	.19	.43	1.3	28	2.8	.60	.06	.31	.17	.00
26	.25	.43	.19	.54	1.2	28	2.6	.66	.02	.16	.05	.00
27	.19	.49	.43	.49	1.2	29	2.6	.60	.02	.06	.02	.00
28	.19	.49	.37	.66	1.6	33	2.4	.54	.06	.03	.00	.00
29	.31	.43	.37	.66	---	36	2.2	.54	.31	.00	.00	.00
30	.43	.43	.43	.78	---	44	2.6	.49	.37	.00	.00	.00
31	.31	---	.31	1.6	---	57	---	.54	---	.00	.00	---
TOTAL	13.79	13.28	9.82	12.18	26.67	506.0	562.5	43.85	9.61	.85	1.67	.00
MEAN	.44	.44	.32	.39	.95	16.3	18.8	1.41	.32	.027	.054	.000
MAX	1.7	.60	.49	1.6	1.9	57	65	3.8	.60	.31	.49	.00
MIN	.13	.25	.11	.17	.60	3.8	2.2	.49	.02	.00	.00	.00
AC-FT	27	26	19	24	53	1000	1120	87	19	1.7	3.3	.00

CAL YR 1977	TOTAL	244.21	MEAN	.67	MAX	19	MIN	.00	AC-FT	484
WTR YR 1978	TOTAL	1200.22	MEAN	3.29	MAX	65	MIN	.00	AC-FT	2380

LITTLE COLORADO RIVER BASIN

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09383550 NUTRIOSO CREEK BELOW NELSON RESERVOIR, NEAR SPRINGVILLE, AZ

LOCATION.--Lat 34°03'36", long 109°11'40", in SE¼NE¼ sec.29, T.8 N., R.30 E., Apache County, Hydrologic Unit 15020001, in Apache National Forest, on right bank about 200 ft (60 m) downstream from dam on Nelson Reservoir and 7 mi (11 km) southeast of Springville.

DRAINAGE AREA.--86.8 mi² (224.8 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 7,364.8 ft (2,244.79 m).

REMARKS.--Records good. Flow regulated by Nelson Reservoir, 200 ft (60 m) upstream, minor stock ponds, and a small lake in Nutrioso.

AVERAGE DISCHARGE.--11 years, 4.90 ft³/s (0.139 m³/s), 3,550 acre-ft/yr (4.38 hm³/yr); median of yearly mean discharges, 2.6 ft³/s (0.074 m³/s), 1,900 acre-ft/yr (2.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 465 ft³/s (13.2 m³/s) Apr. 29, 1973, gage height, 7.03 ft (2.143 m), from rating curve extended above 150 ft³/s (4.2 m³/s) on basis of slope-area measurement at gage height 7.02 ft (2.140 m); no flow Dec. 10, 1967, Jan. 3, 1968, Sept. 11-13, 17, 18, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 63 ft³/s (1.78 m³/s) Apr. 1, gage height, 5.89 ft (1.795 m); minimum daily, 0.07 ft³/s (0.002 m³/s) Mar. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.12	.10	.11	.12	.09	53	1.9	.11	.11	.11	.10
2	.10	.10	.11	.11	.11	.07	35	2.1	.11	.10	.11	.10
3	.10	.10	.11	.11	.12	.07	30	3.9	.11	.10	.10	.10
4	.11	.10	.11	.11	.12	.07	32	3.9	.11	.09	.10	.10
5	.10	.11	.11	.11	.12	.09	25	3.5	.13	.09	.10	.10
6	.11	.11	.11	.11	.11	.08	27	1.6	.13	.10	.10	.10
7	.11	.11	.11	.12	.11	5.5	29	2.2	.13	.10	.10	.11
8	.10	.10	.11	.12	.11	6.5	26	2.5	.13	.10	.11	.11
9	.10	.11	.11	.12	.11	6.2	21	3.1	.13	.10	.12	.10
10	.10	.11	.11	.12	.11	6.5	19	2.3	3.3	.10	.11	.09
11	.10	.11	.11	.12	.11	6.6	16	2.5	5.2	.10	.13	.09
12	.09	.11	.11	.11	.11	9.6	18	5.8	5.0	.10	.11	.09
13	.09	.10	.11	.11	.10	9.6	19	3.7	4.9	.09	.11	.09
14	.09	.10	.11	.12	.10	6.5	16	5.5	4.9	.09	.11	.10
15	.09	.09	.11	.12	.10	7.5	13	.22	4.7	.09	.11	.10
16	.09	.09	.11	.11	.10	7.5	10	.22	1.8	.09	.10	.11
17	.10	.09	.11	.12	.10	7.8	6.0	.20	.14	.09	.10	.11
18	.10	.10	.12	.12	.10	6.5	6.7	.18	.13	.09	.10	.10
19	.09	.10	.12	.12	.10	10	5.0	.18	.14	.10	.10	.10
20	.09	.10	.12	.12	.10	14	4.2	.18	.13	.10	.10	.10
21	.10	.11	.12	.12	.10	16	4.7	.16	.14	.10	.10	.11
22	.10	.11	.12	.14	.11	24	3.7	.16	.14	.10	.10	.11
23	.10	.13	.11	.12	.11	29	3.2	.16	.14	.10	.10	.11
24	.10	.11	.11	.11	.10	27	3.0	.14	.14	.12	.10	.10
25	.10	.11	.10	.11	.10	27	3.0	.14	.14	.11	.10	.11
26	.10	.11	.10	.11	.09	26	3.5	.12	.13	.11	.10	.10
27	.10	.11	.10	.11	.10	30	1.6	.12	.13	.10	.10	.11
28	.12	.13	.10	.10	.09	30	1.5	.12	.14	.10	.10	.11
29	.12	.13	.10	.10	---	30	1.6	.12	.13	.10	.10	.11
30	.12	.11	.11	.10	---	32	1.6	.11	.13	.10	.10	.11
31	.12	---	.11	.10	---	40	---	.11	---	.11	.10	---
TOTAL	3.14	3.22	3.40	3.53	2.96	435.97	440.1	42.19	32.81	3.08	3.23	3.08
MEAN	.10	.11	.11	.11	.11	14.1	14.7	1.36	1.09	.099	.10	.10
MAX	.12	.13	.12	.14	.12	40	53	5.8	5.2	.12	.13	.11
MIN	.09	.09	.10	.10	.09	.07	1.5	.11	.11	.09	.10	.09
AC-FT	6.2	6.4	6.7	7.0	5.9	865	673	84	65	6.1	6.4	6.1

CAL YR 1977 TOTAL 147.79 MEAN .40 MAX 8.2 MIN .06 AC-FT 293
WTR YR 1978 TOTAL 976.71 MEAN 2.68 MAX 53 MIN .07 AC-FT 1940

LOCATION (REVISED).--Lat 34°18'52", long 109°21'42", in SW¼ sec.27, T.11 N., R.28 E., Apache County, Hydrologic Unit 15020001, on left bank 0.75 mi (1.2 km) downstream from Coyote Creek, 6 mi (9.6 km) upstream from Lyman Dam, and 15 mi (24.1 km) south of St. Johns. Prior to Dec. 7, 1976, at site 0.4 mi (0.6 km) downstream.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Altitude of gage is 6,010 ft (1,832 m), from topographic map. Prior to December 7, 1976, water-stage recorder at site 0.4 mi (0.6 km) downstream at datum approximately 20 ft (6.1 m) lower. See WSP 1313 for history of changes prior to 1950.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) July 25, 1940, gage height, 17.1 ft (5.21 m), datum then in use, from floodmarks, by slope-area measurement of peak flow and reservoir inflow studies; maximum gage height, 18.6 ft (5.67 m), Sept. 12, 1975, at previous site (from graph recorded to 18.4 ft or 5.61 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	4.2	4.7	6.0	9.3	11	187	2.0	2.6	3.2	87	2.9
2	3.6	4.9	4.7	5.6	9.3	29	214	1.4	2.9	2.4	25	2.2
3	3.2	4.0	5.1	5.6	7.8	26	191	1.4	3.3	2.4	17	2.3
4	3.3	3.6	5.1	5.8	7.1	20	197	1.4	2.5	2.3	6.9	2.2
5	3.3	3.6	5.1	5.6	6.7	15	196	1.4	1.3	2.3	15	2.1
6	6.2	3.7	5.1	5.4	7.3	14	206	1.8	1.7	2.3	8.5	1.8
7	9.0	3.7	4.9	5.4	7.3	14	209	2.0	1.2	2.5	6.7	1.6
8	7.8	4.9	5.3	5.4	7.1	12	202	2.0	1.3	2.3	7.1	1.5
9	5.3	4.9	4.7	5.4	6.9	11	164	2.0	2.2	2.5	7.6	1.5
10	4.7	5.1	4.5	5.6	6.9	12	154	1.7	3.2	1.7	6.7	1.4
11	4.0	4.7	5.1	5.6	6.9	12	143	1.6	3.3	1.8	6.9	1.2
12	3.4	4.9	4.7	5.6	6.9	12	139	1.5	2.9	1.5	6.2	1.2
13	4.5	4.9	4.7	5.4	8.5	13	151	1.5	3.2	1.7	7.1	1.2
14	3.4	5.1	4.7	5.1	8.5	14	145	1.6	4.0	1.4	6.7	1.2
15	3.2	5.1	5.1	5.4	9.3	12	139	1.7	4.0	1.3	6.0	1.7
16	3.7	5.1	4.7	5.3	8.8	11	125	2.9	4.5	1.2	4.7	1.9
17	3.7	5.1	4.5	5.8	8.3	11	100	2.9	6.5	1.1	3.6	2.3
18	3.6	5.1	5.6	7.1	8.0	11	50	4.2	5.6	1.0	3.7	1.8
19	3.9	4.9	5.3	7.8	7.8	11	25	4.9	3.7	1.0	32	1.7
20	3.4	4.9	4.7	7.6	9.0	14	15	3.2	3.4	1.0	12	1.6
21	3.2	4.7	4.5	7.8	9.0	19	10	3.4	4.5	1.0	25	1.5
22	4.5	4.7	5.8	6.9	9.0	27	9.0	3.0	3.9	.90	17	1.5
23	4.7	4.9	5.8	7.1	9.3	51	8.0	2.5	3.9	.90	9.0	1.6
24	4.4	5.1	5.8	7.1	8.8	57	7.0	2.4	4.7	1.0	8.5	1.7
25	4.7	5.3	5.6	6.0	8.3	58	6.0	2.0	3.2	1.0	7.8	1.8
26	5.0	5.3	5.3	6.9	9.0	69	5.0	2.5	3.0	1.2	7.1	1.6
27	5.4	5.1	6.2	6.7	9.3	94	4.0	2.5	2.5	1.4	8.0	2.3
28	4.4	4.9	6.2	7.3	9.8	101	3.0	2.9	2.7	1.3	6.5	1.7
29	4.5	4.7	6.7	7.8	---	111	2.0	2.5	2.7	1.2	5.3	1.5
30	4.5	4.5	6.2	8.5	---	127	2.0	3.3	2.5	1.2	5.1	1.0
31	4.4	---	6.5	9.6	---	154	---	3.6	---	1.3	3.7	---
TOTAL	136.2	141.6	162.9	198.2	230.2	1153	3008.0	73.7	96.9	49.30	379.4	51.5
MEAN	4.39	4.72	5.25	6.39	8.22	37.2	100	2.38	3.23	1.59	12.2	1.72
MAX	9.0	5.3	6.7	9.6	9.8	154	214	4.9	6.5	3.2	87	2.9
MIN	3.2	3.6	4.5	5.1	6.7	11	2.0	1.4	1.2	.90	3.6	1.0
AC-FT	270	281	323	393	457	2290	5970	146	192	98	753	102
CAL YR 1977	TOTAL		2934.50		MEAN	8.04	MAX	112	MIN	.50	AC-FT	5820
WTR YR 1978	TOTAL		5680.90		MEAN	15.6	MAX	214	MIN	.90	AC-FT	11270

LITTLE COLORADO RIVER BASIN

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09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
UCI												
11...	1630	3.0	600	8.5	18.0	200	7.0	300	240	0	53	27
NOV												
08...	1500	4.0	715	8.6	10.0	40	10.4	45	260	0	58	29
DEC												
05...	1400	5.0	660	9.2	13.0	10	8.9	7	290	0	59	35
JAN												
11...	1230	6.3	640	8.0	8.0	8	9.8	--	260	0	53	30
FEB												
15...	1300	8.5	520	8.0	9.0	90	10.0	2	230	0	53	23
MAR												
16...	0900	14	500	--	3.0	20	10.0	39	190	0	45	20
APR												
19...	1600	50	215	8.1	16.0	40	7.7	115	92	0	23	8.4
MAY												
10...	1435	30	670	8.3	24.0	--	7.8	55	280	0	65	28
JUN												
08...	1130	1.5	700	8.3	25.0	4	7.6	47	280	0	59	32
JUL												
12...	1100	1.4	625	8.5	22.0	--	8.7	160	250	0	51	30
AUG												
17...	1200	.75	590	8.4	24.0	--	8.2	16	230	0	52	25
SEP												
13...	1200	1.0	640	7.6	24.0	10	9.5	37	260	0	55	30

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
UCT												
11...	45	1.3	4.7	350	0	21	14	.5	24	353	362	.48
NOV												
08...	53	1.4	3.3	390	4	29	18	.4	20	392	407	.53
DEC												
05...	52	1.3	3.8	390	0	25	20	.3	15	386	403	.53
JAN												
11...	54	1.5	3.8	370	0	26	22	.1	8.4	388	380	.53
FEB												
15...	40	1.2	2.6	320	0	20	18	.4	18	311	334	.42
MAR												
16...	36	1.1	2.3	280	--	17	12	.3	18	282	290	.38
APR												
19...	12	.5	2.1	130	0	8.1	4.4	.1	19	139	142	.19
MAY												
10...	57	1.5	4.6	400	0	33	19	.2	11	415	415	.56
JUN												
08...	59	1.5	4.5	360	0	34	15	.2	22	386	403	.53
JUL												
12...	49	1.3	3.6	350	0	28	18	.5	24	348	377	.47
AUG												
17...	45	1.3	3.8	340	8	21	13	.3	25	356	361	.48
SEP												
13...	48	1.3	3.6	350	0	29	20	.5	23	366	382	.50

LITTLE COLORADO RIVER BASIN

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT							
11...	.01	--	--	--	--	--	.43
NOV							
08...	.01	--	--	--	--	--	.36
DEC							
05...	.02	.05	--	--	--	--	.84
JAN							
11...	.03	.03	--	--	--	--	.27
FEB							
15...	.16	.08	.00	.01	.51	.18	.51
MAR							
16...	.15	.13	--	--	--	--	.62
APR							
19...	.12	.11	--	--	--	--	.61
MAY							
10...	.00	.01	--	--	--	--	.30
JUN							
08...	.01	.01	--	--	--	--	.38
JUL							
12...	.02	.05	--	--	--	--	.79
AUG							
17...	.01	.00	--	--	--	--	.47
SEP							
13...	.01	.02	--	--	--	--	.68

DATE	NITRO- GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, NH4 + ORG. TUT IN BUT MAT (MG/KG AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT						
11...	--	--	--	.44	.21	--
NOV						
08...	--	--	--	.37	.18	--
DEC						
05...	--	--	--	.86	.18	.07
JAN						
11...	--	--	--	.30	.29	.11
FEB						
15...	.32	.19	--	.67	.45	.20
MAR						
16...	--	--	--	.77	.33	.22
APR						
19...	--	--	--	.73	.20	.07
MAY						
10...	--	--	--	.30	.13	.01
JUN						
08...	--	--	.80	.39	.01	.00
JUL						
12...	--	--	--	.81	.10	.03
AUG						
17...	--	--	--	.48	.09	.03
SEP						
13...	--	--	--	.69	.08	.03

LITTLE COLORADO RIVER BASIN

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09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CU)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT 11...	3	--	400	--	170	110	10	--	55
NOV 08...	2	--	800	--	110	90	0	--	8
DEC 05...	2	--	100	--	150	90	1	--	0
JAN 11...	2	--	100	--	140	100	1	--	0
FEB 15...	1	--	100	--	110	80	0	--	0
MAR 16...	2	--	0	--	130	60	2	--	10
APR 19...	3	--	300	--	100	30	1	--	0
MAY 10...	1	--	200	--	170	100	2	--	0
JUN 08...	2	6	200	60	200	100	0	0	0
JUL 12...	0	--	300	--	130	100	0	--	0
AUG 17...	3	--	400	--	120	90	1	--	10
SEP 13...	2	--	100	--	140	120	4	--	0

DATE	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 11...	--	10	--	11000	90	<100	--	260	20
NOV 08...	--	6	--	1400	30	7	--	140	30
DEC 05...	--	6	--	590	20	5	--	70	20
JAN 11...	--	3	--	450	50	8	--	70	30
FEB 15...	--	11	--	4800	50	21	--	190	20
MAR 16...	--	4	--	2000	0	4	--	140	10
APR 19...	--	10	--	2800	10	6	--	120	0
MAY 10...	--	5	--	720	30	30	--	90	40
JUN 08...	2	4	50	420	0	5	8	60	20
JUL 12...	--	8	--	680	50	4	--	110	30
AUG 17...	--	6	--	310	20	5	--	60	30
SEP 13...	--	7	--	690	10	10	--	90	30

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT- TUM MA- TERIAL (UG/L AS HG)	SELE- NIUM, TOTAL IN BOT- TUM MA- TERIAL (UG/L AS SE)	SELE- NIUM, TOTAL IN BOT- TUM MA- TERIAL (UG/G)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, RECOV. FM BOT- TUM MA- TERIAL (UG/G AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT- TUM MA- TERIAL (UG/G AS ZN)
UCT 11...	.0	--	0	--	<10	--	40	--
NOV 08...	.0	--	0	--	0	--	40	--
DEC 05...	.0	--	0	--	0	--	60	--
JAN 11...	.0	--	0	--	0	--	30	--
FEB 15...	.0	--	0	--	1	--	30	--
MAR 16...	2.0	--	0	--	1	--	30	--
APR 19...	.0	--	0	--	0	--	20	--
MAY 10...	.0	--	0	--	0	--	20	--
JUN 08...	.1	.0	7	0	0	2	10	8
JUL 12...	.0	--	0	--	0	--	20	--
AUG 17...	.0	--	0	--	0	--	10	--
SEP 13...	.0	--	0	--	0	--	20	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	CYANIDE TOTAL IN BOT- TUM MA- TERIAL (UG/G AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
UCT 11...	6.4	.00	--	5	--	--	--
NOV 08...	3.3	.00	--	4	--	--	--
DEC 05...	3.8	.00	--	5	--	--	--
JAN 11...	3.3	.00	--	1	--	--	--
FEB 15...	5.9	.00	--	2	--	--	--
MAR 16...	7.6	.00	--	0	--	--	--
APR 19...	6.4	.00	--	4	--	--	--
MAY 10...	4.6	.00	--	0	--	--	--
JUN 08...	3.1	.00	0	1	73	28.2	25.0
JUL 12...	5.3	.00	--	1	--	--	--
AUG 17...	5.3	.00	--	2	--	--	--
SEP 13...	5.6	.00	--	2	--	--	--

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

69

09384000 LITTLE COLORADO RIVER ABOVE LYMAN LAKE, NEAR ST. JOHNS, AZ--Continued

PHYTOPLANKTON

DATE	JUN 8, 78
TIME	1130
TOTAL CELLS/ML	73
DIVERSITY: DIVISION	0.7
..CLASS	0.7
...ORDER	0.7
...FAMILY	1.4
...GENUS	1.4

ORGANISM	CELLS /ML	PER- CENT
CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...PENNACEAE		
...NAVICULACEAE		
...NAVICULA	44#	60
...NITZSCHACEAE		
...NITZSCHIA	15#	20
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
...PHACUS	15#	20

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

LITTLE COLORADO RIVER BASIN

09384500 LYMAN LAKE NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°22'06", long 109°22'55", in SW¼NE¼ sec.9, T.11 N., R.28 E., Apache County, Hydrologic Unit 15020001, in control tower of Lyman Dam on Little Colorado River, 9.5 mi (15.3 km) south of St. Johns.

DRAINAGE AREA.--790 mi² (2,046 km²).

PERIOD OF RECORD.--May 1940 to September 1947; April 1948 to September 1975 (daily contents), October 1975 to September 1978 (daily gage heights). Discontinued. Prior to October 1975 published as "Lyman Reservoir near St. Johns."

GAGE.--Water-stage recorder. Datum of gage is 5,923.7 ft (1,805.54 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Lake is formed by an earthfill and rockfill dam, rubble faced; dam completed and storage began in 1920; original dam washed out Apr. 14, 1915. Crest of permanent spillway raised from 50.0 ft (15.24 m) to 56.8 ft (17.31 m) during March and April 1949. Capacity (based on 1953 studies), 30,600 acre-ft (37.7 hm³) between gage heights 20.0 ft (6.10 m)—bottom of Lyman Canal—and 56.8 ft (17.31 m)—average elevation of spillway crest. Contents between gage heights 14.0 ft (4.27 m)—12.0 ft (3.66 m) above sill of outlet gates—and 20.0 ft (6.10 m), about 800 acre-ft (1.0 hm³), not available for release to Lyman Canal but can be released to river channel. Due to silt deposition in the lake, contents cannot be determined until new capacity tables can be prepared. Water is used for irrigation in vicinity of St. Johns.

EXTREMES FOR PERIOD OF RECORD.--1940-75: Maximum contents, 32,200 acre-ft (39.7 hm³) May 6, 1973, gage height, 57.93 ft (17.657 m); no storage at times in recent years.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 42.80 ft (13.045 m) Apr. 28; minimum, 31.51 ft (9.604 m) Sept. 23.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.92	32.06	32.11	32.30	32.82	33.44	37.60	---	40.48	37.57	34.65	32.72
2	31.91	32.05	32.11	32.33	32.84	33.57	---	42.10	40.39	37.44	34.62	32.67
3	31.89	32.04	32.11	32.34	32.86	33.65	38.10	---	40.37	37.32	34.56	32.62
4	31.89	32.03	32.11	32.36	32.88	33.68	38.65	---	40.32	37.20	34.48	32.57
5	31.87	32.02	32.11	32.37	32.90	33.75	---	---	40.15	37.16	34.34	32.52
6	32.16	32.03	32.11	32.37	32.90	33.78	38.84	41.94	40.08	37.02	34.29	32.46
7	32.14	32.04	32.11	32.38	32.92	33.81	---	---	40.00	36.93	34.19	32.37
8	32.15	32.05	32.11	32.38	32.95	33.84	---	---	39.89	36.83	34.10	32.21
9	32.18	32.05	32.11	---	32.96	33.89	---	41.80	39.77	36.75	33.99	32.14
10	32.15	32.06	32.11	---	32.99	33.89	39.65	41.90	39.70	36.74	33.96	32.02
11	32.15	32.06	32.12	32.37	32.99	33.90	---	---	---	36.66	33.83	31.91
12	32.13	32.07	32.12	32.37	33.02	33.95	---	---	---	36.51	33.82	31.88
13	32.12	32.08	32.12	32.38	33.04	33.96	41.59	41.26	---	36.44	33.78	31.78
14	32.11	32.09	32.14	32.39	33.06	34.01	41.80	---	39.30	36.31	33.72	31.69
15	32.10	32.09	32.16	32.40	33.08	34.03	42.00	---	39.24	36.19	33.67	31.67
16	32.09	32.09	32.12	32.38	33.13	34.05	---	---	39.06	36.09	33.58	31.59
17	32.08	32.10	32.12	32.44	33.14	34.07	---	---	38.89	36.00	33.51	31.61
18	32.08	32.11	32.13	32.45	33.16	34.10	42.50	41.00	38.80	35.89	33.45	31.59
19	32.08	32.11	32.13	32.48	33.19	34.16	---	---	38.69	35.79	33.47	31.58
20	32.07	32.09	32.13	32.51	33.21	34.15	---	---	38.59	35.67	33.48	31.57
21	32.07	32.09	32.14	32.52	33.21	34.19	---	---	38.56	35.63	33.48	31.56
22	32.06	32.09	32.14	32.55	33.24	---	42.10	---	38.49	35.54	33.48	31.54
23	32.05	32.09	32.14	32.57	33.25	34.60	---	40.80	38.42	35.44	33.47	31.51
24	32.04	32.09	32.17	32.59	33.27	---	---	---	38.36	35.37	33.31	31.52
25	32.03	32.10	32.18	32.59	33.28	---	---	---	38.32	35.27	33.21	31.54
26	32.03	32.10	32.19	32.61	33.29	35.10	---	---	38.15	35.18	33.16	31.53
27	32.02	32.10	32.22	32.63	33.30	---	---	---	38.03	35.09	33.07	31.53
28	32.03	32.10	32.26	32.65	33.38	35.92	42.80	41.60	37.90	34.98	33.04	31.53
29	32.08	32.11	32.26	32.68	---	---	---	---	37.79	34.91	32.89	31.53
30	32.08	32.11	32.27	32.73	---	36.66	---	---	37.72	34.80	32.81	31.53
31	32.08	---	32.29	32.78	---	---	---	---	---	34.67	32.80	---
MAX	32.18	32.11	32.29	32.78	33.38	36.66	42.80	42.10	40.48	37.57	34.65	32.72
MIN	31.87	32.02	32.11	32.30	32.82	33.44	37.60	40.80	37.72	34.67	32.80	31.51

CAL YR 1977 MAX 45.17 MIN 31.82
WTR YR 1978 MAX 42.80 MIN 31.51

NOTE.--No gage-height record on days when no values are listed.

LITTLE COLORADO RIVER BASIN

71

09385000 LYMAN CANAL BELOW LYMAN LAKE, NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°22'05", long 109°22'55", in SW¼NE¼ sec.9, T.11 N., R.28 E., Apache County, Hydrologic Unit 1502002, on right bank 45 ft (14 m) downstream from outlet tunnel in Lyman Dam and 9.5 mi (15.3 km) south of St. Johns.

PERIOD OF RECORD.--June 1950 to June 1954, April 1955 to current year. Prior to October 1975 published as "below Lyman Reservoir, near St. Johns."

GAGE.--Water-stage recorder. Datum of gage is 5,943.4 ft (1,811.55 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Canal diverts water from Lyman Lake for irrigation of about 1,500 acres (6.07 km²) in vicinity of St. Johns. No diversion between reservoir outlet and station. A feeder ditch 9 mi (14 km) downstream diverts up to 400 acre-ft/yr (0.493 hm³/yr) from Lyman Canal to Little Reservoir.

AVERAGE DISCHARGE.--26 years (water years 1951-53, 1956-78), 11.5 ft³/s (0.326 m³/s), 8,330 acre-ft/yr (10.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 74 ft³/s (2.10 m³/s) July 3-5, Aug. 8, 9, 1952; no flow for long periods in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	9.7	24	25	23	11
2	.00	.00	.00	.00	.00	.00	.00	9.7	24	26	24	9.2
3	.00	.00	.00	.00	.00	.00	.00	9.4	22	26	24	9.7
4	.00	.00	.00	.00	.00	.00	.00	9.0	20	26	24	9.5
5	.00	.00	.00	.00	.00	.00	.00	5.7	22	25	26	13
6	.00	.00	.00	.00	.00	.00	.00	2.3	25	24	27	15
7	.00	.00	.00	.00	.00	.00	.00	.12	26	22	27	15
8	.00	.00	.00	.00	.00	.00	.00	.12	26	21	28	22
9	.00	.00	.00	.00	.00	.00	.00	.10	25	19	28	24
10	.00	.00	.00	.00	.00	.00	.00	.09	28	19	26	24
11	.00	.00	.00	.00	.00	.00	.00	1.9	30	20	24	24
12	.00	.00	.00	.00	.00	.00	.00	1.7	30	22	21	21
13	.00	.00	.00	.00	.00	.00	.00	2.3	30	25	14	20
14	.00	.00	.00	.00	.00	.00	.00	10	30	25	11	19
15	.00	.00	.00	.00	.00	.00	.00	16	30	28	12	18
16	.00	.00	.00	.00	.00	.00	.00	17	30	29	11	.22
17	.00	.00	.00	.00	.00	.00	7.2	18	29	27	11	.81
18	.00	.00	.00	.00	.00	.00	13	21	28	26	13	.31
19	.00	.00	.00	.00	.00	.00	17	23	27	26	16	.06
20	.00	.00	.00	.00	.00	.00	17	27	27	26	17	.03
21	.00	.00	.00	.00	.00	.00	17	26	26	23	17	.01
22	.00	.00	.00	.00	.00	.00	17	26	26	21	17	.00
23	.00	.00	.00	.00	.00	.00	17	26	26	21	17	.00
24	.00	.00	.00	.00	.00	.00	19	26	26	21	24	.00
25	.00	.00	.00	.00	.00	.00	19	25	26	21	29	.00
26	.00	.00	.00	.00	.00	.00	19	25	26	21	32	.00
27	.00	.00	.00	.00	.00	.00	19	25	25	20	32	.00
28	.00	.00	.00	.00	.00	.00	19	25	24	20	28	.00
29	.00	.00	.00	.00	---	.00	18	25	24	20	23	.00
30	.00	.00	.00	.00	---	.00	12	25	24	20	22	.00
31	.00	---	.00	.00	---	.00	---	25	---	21	20	---
TOTAL	.00	.00	.00	.00	.00	.00	230.20	463.13	786	716	668	255.84
MEAN	.000	.000	.000	.000	.000	.000	7.67	14.9	26.2	23.1	21.5	8.53
MAX	.00	.00	.00	.00	.00	.00	19	27	30	29	32	24
MIN	.00	.00	.00	.00	.00	.00	.00	.09	20	19	11	.00
AC-FT	.00	.00	.00	.00	.00	.00	457	919	1560	1420	1320	507
CAL YR 1977 TOTAL	4274.60											
WTR YR 1978 TOTAL	3119.17											
MEAN 11.7												
MAX 38												
MIN .00												
AC-FT 8480												
AC-FT 6190												

NOTE.--No gage-height record Dec. 23 to Jan. 3, Mar. 3 to Apr. 4.

LITTLE COLORADO RIVER BASIN

09385500 LITTLE COLORADO RIVER BELOW LYMAN LAKE, NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°22'05", long 109°22'56", in SW¼NE¼ sec.9, T.11 N., R.28 E., Apache County, Hydrologic Unit 150220002, on right bank 65 ft (20 m) downstream from outlet tunnel in Lyman Dam, and 9.5 mi (15.3 km) south of St. Johns.

DRAINAGE AREA.--790 mi² (2,046 km²).

PERIOD OF RECORD.--April 1941 to June 1954, April 1955 to current year. Prior to October 1975 published as "below Lyman Reservoir, near St. Johns."

GAGE.--Water-stage recorder and concrete control for determination of quantity of water released to river channel. Datum of gage is 5,925.35 ft (1,806.047 m) National Geodetic Vertical Datum of 1929. Water-stage recorder on Lyman Lake for determination of flow in spillway channel 0.4 mi (0.6 km) north, in SW¼ sec.4, T.11 N., R.28 E.

REMARKS.--Records fair. Records show all water spilled and released from Lyman Lake to the river channel, but do not include flow diverted to Lyman Canal. (See sta 09385000.) No flow over Lyman Dam spillway this year. Since 1929 spill has occurred only during periods Apr. 8 to about May 6, 1932, Apr. 30 to May 13, 1941, Apr. 5-23, 1966, Apr. 29 to May 26, 1973. Except for periods of flow over spillway, flow is completely regulated by many reservoirs--combined capacity, 46,900 acre-ft (57.8 km³)--the largest of which is Lyman Lake. (See sta 09384500.) Diversions above station for irrigation of about 8,200 acres (33.2 km²), including 1,500 acres (6.07 km²) served by Lyman Canal. Flow past this station, supplemented by spring inflow downstream and feeder ditch diversions from Lyman Canal, used to irrigate an additional 2,000 acres (8.09 km²) in vicinity of St. Johns.

AVERAGE DISCHARGE.--35 years (water years 1942-53, 1956-78), 3.18 ft³/s (0.090 m³/s), 2,300 acre-ft/yr (2.84 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 603 ft³/s (17.1 m³/s) May 8, 1941 (including 546 ft³/s or 15.5 m³/s of spilled water); no flow at times prior to 1960.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 7.2 ft³/s (0.20 m³/s) May 3, June 9; minimum daily, 0.09 ft³/s (0.003 m³/s) Oct. 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.26	.80	.69	.89	.37	.37	6.0	5.4	3.9	4.2	4.3
2	.26	.26	.80	.69	.89	.37	.37	7.0	5.6	4.5	4.2	3.7
3	.26	.26	.80	.69	1.0	.37	.37	7.2	5.8	4.5	4.2	3.5
4	.26	.22	.80	.69	.89	.37	.37	6.4	6.5	4.8	4.4	3.6
5	.22	.22	.80	.69	.78	.37	.37	5.7	6.7	4.8	3.9	3.9
6	.22	.22	.80	.69	.78	.37	.37	4.8	6.8	4.9	3.9	3.9
7	.22	.22	.90	.69	.78	.37	.37	4.3	6.8	4.9	4.2	3.8
8	.22	.26	.89	1.0	.78	.37	.37	4.1	6.8	5.1	4.4	3.9
9	.22	.26	.89	.68	.78	.37	.37	4.2	7.2	5.1	4.5	4.4
10	.22	.22	.89	.68	.78	.31	.37	4.0	5.5	4.9	4.8	4.3
11	.15	.20	.89	.68	.78	.37	.37	3.9	5.1	4.7	5.1	4.5
12	.15	.20	.89	.78	.78	.37	.44	3.7	5.1	4.3	5.3	3.7
13	.15	.20	.89	.78	.78	.37	.44	3.5	5.1	3.5	4.7	3.3
14	.15	.20	.89	.78	.78	.37	.44	3.5	4.8	3.5	4.0	3.5
15	.12	.30	.89	.78	.78	.31	.44	3.5	4.8	3.5	3.6	3.6
16	.12	.30	.89	.78	.68	.31	.44	3.5	4.6	3.5	3.8	1.9
17	.12	.30	.89	.78	.68	.31	1.4	3.7	4.5	3.5	4.0	1.6
18	.09	.30	.89	.78	.68	.26	1.8	3.6	4.5	3.5	4.3	1.2
19	.09	.40	.89	.69	.68	.31	1.8	3.5	4.3	3.5	4.4	.94
20	.12	.40	.89	.69	.59	.31	1.8	3.4	4.2	3.4	4.0	.73
21	.12	.40	.89	.69	.59	.31	1.8	3.5	4.0	3.3	4.0	.52
22	.12	.50	.89	.69	.51	.31	1.8	3.5	4.0	3.3	4.0	.46
23	.12	.50	.89	.69	.51	.31	1.8	3.3	3.8	3.2	4.1	.40
24	.15	.50	.89	.69	.44	.31	1.8	3.8	3.9	3.3	4.0	.35
25	.15	.60	.89	.69	.44	.31	2.0	4.5	3.7	3.3	4.2	.39
26	.15	.60	.89	.69	.44	.31	2.2	4.7	3.7	3.3	4.1	.35
27	.15	.60	.89	.69	.44	.31	2.2	4.8	3.5	3.6	4.3	.36
28	.18	.70	.89	.69	.37	.31	2.2	4.8	3.5	3.6	4.0	.39
29	.18	.70	.89	.69	---	.31	2.8	5.1	3.4	3.5	3.8	.41
30	.22	.70	.89	.69	---	.31	6.0	5.3	3.3	3.5	4.5	.40
31	.26	---	.89	.69	---	.37	---	5.4	---	3.9	4.5	---
TOTAL	5.42	11.00	27.06	26.30	19.30	10.40	37.67	138.2	146.7	122.1	131.4	68.30
MEAN	.17	.37	.87	.85	.69	.34	1.26	4.46	4.89	3.94	4.24	2.28
MAX	.26	.70	.90	1.0	1.0	.37	6.0	7.2	7.2	5.1	5.3	4.5
MIN	.09	.20	.80	.68	.37	.26	.37	3.3	3.3	3.2	3.6	.35
AC-FT	11	22	54	52	38	21	75	274	291	242	261	135

CAL YR 1977 TOTAL 734.19 MEAN 2.01 MAX 6.4 MIN .09 AC-FT 1460
WTR YR 1978 TOTAL 743.85 MEAN 2.04 MAX 7.2 MIN .09 AC-FT 1480

LITTLE COLORADO RIVER BASIN

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09386030 LITTLE COLORADO RIVER ABOVE ZION RESERVOIR, NEAR ST. JOHNS, AZ

LOCATION.--Lat 34°35'01", long 109°24'23", in SE¼SE¼ sec.30, T.14 N., R.28 E., Apache County, Hydrologic Unit 15020002, on downstream side of center pier of bridge on private road, 1.5 mi (2.4 km) upstream from Carrizo Creek, 4 mi (6 km) upstream from Zion Reservoir, and 5.8 mi (9.3 km) northwest of St. Johns.

DRAINAGE AREA.--975 mi² (2,525 km²).

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,560 ft (1,690 m), from topographic map.

REMARKS.--Records fair. Diversions above station for irrigation of about 10,200 acres (41.3 km²), including 1,500 acres (6.07 km²) served by Lyman Canal. Regulation by many reservoirs above station (combined capacity, 46,900 acre-ft or 57.8 hm³), the largest of which is Lyman Lake (see sta 09384500).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100 ft³/s (2.83 m³/s) Oct. 7, 1977, gage height, 2.47 ft (0.753 m); minimum daily, 0.04 ft³/s (0.001 m³/s) Aug. 2, Sept. 7, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 40 ft³/s (1.133 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 7	1300	*100 2.83	2.47 0.753
Mar. 2	2215	88 2.49	2.48 0.756

Minimum daily, 0.04 ft³/s (0.001 m³/s) Aug. 2, Sept. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	4.8	6.8	4.5	23	31	9.7	3.6	.61	.12	.05	.12
2	2.0	4.5	6.8	4.5	18	69	10	3.9	.61	.18	.04	.12
3	3.0	4.5	6.8	4.5	13	58	9.3	4.2	.50	.24	.05	.10
4	3.0	4.5	7.2	5.1	11	18	8.8	2.9	.32	.12	.05	.10
5	3.1	4.5	6.4	4.8	9.7	13	8.4	2.7	.24	.32	.05	.08
6	16	5.1	7.2	4.2	9.6	17	8.4	5.1	.32	.50	.05	.06
7	80	6.1	6.4	4.2	10	15	8.4	14	.32	.12	.05	.04
8	26	8.0	6.1	4.2	9.7	12	7.6	6.1	.24	.09	.05	.05
9	12	6.4	6.1	4.5	8.9	11	8.0	3.7	.32	.09	.05	.07
10	8.8	5.4	6.1	4.5	8.8	11	8.4	3.1	.18	.09	.05	.09
11	6.1	5.1	6.1	4.8	9.9	12	8.4	2.2	.41	.50	.05	.07
12	5.7	5.1	6.1	4.5	10	12	8.4	1.3	.24	.12	.05	.09
13	4.8	5.1	5.7	4.2	10	13	7.6	5.7	.09	.07	.09	.09
14	4.8	5.4	5.4	4.2	11	12	5.1	3.9	.09	.07	.05	.07
15	4.5	6.1	5.4	4.8	11	10	5.1	1.6	.07	.07	.05	.50
16	4.2	6.4	5.7	5.1	11	10	6.4	2.0	.07	.07	.05	.86
17	4.2	6.8	6.1	5.4	12	10	7.6	1.8	1.0	.07	.05	12
18	4.5	7.2	5.7	6.8	14	10	7.6	3.4	.61	.09	.05	6.5
19	4.5	6.8	5.1	6.4	13	10	8.8	3.1	.12	.09	.07	1.8
20	4.2	5.7	4.2	7.6	12	11	7.6	2.2	.12	.09	6.1	.86
21	3.4	5.7	4.2	8.4	12	11	6.4	2.2	.09	.09	9.2	1.1
22	3.9	6.1	4.2	6.8	12	12	6.1	2.2	.05	.07	9.6	1.0
23	3.9	7.2	4.8	6.4	12	19	6.1	1.6	.05	.07	.86	1.5
24	4.2	6.4	5.1	7.6	11	15	7.6	1.1	.07	.05	.73	2.2
25	4.2	6.4	4.5	6.4	12	12	6.4	.73	.07	.05	1.1	.50
26	4.5	6.8	3.9	6.4	12	12	5.7	1.1	.07	.05	.50	.18
27	4.5	7.2	4.5	8.0	11	11	4.5	1.6	.07	.05	.41	.07
28	4.5	6.8	4.8	7.6	19	9.9	4.2	2.4	.09	.05	.32	.09
29	6.4	6.4	5.1	8.0	---	10	4.2	2.7	.07	.18	.32	.09
30	8.0	6.8	5.4	8.0	---	10	3.9	2.4	.09	.05	.14	.09
31	5.7	---	4.5	21	---	9.9	---	2.2	---	.05	.14	---
TOTAL	257.2	179.3	172.4	193.4	336.6	496.8	214.7	96.73	7.20	3.87	30.42	30.49
MEAN	8.30	5.98	5.56	6.24	12.0	16.0	7.16	3.12	.24	.12	.98	1.02
MAX	80	8.0	7.2	21	23	69	10	14	1.0	.50	9.6	12
MIN	2.0	4.5	3.9	4.2	8.8	9.9	3.9	.73	.05	.05	.04	.04
AC-FT	510	356	342	384	668	985	426	192	14	7.7	60	60
CAL YR 1977	TOTAL	1976.33	MEAN 5.41	MAX 80	MIN .09	AC-FT 3920						
WTR YR 1978	TOTAL	2019.11	MEAN 5.53	MAX 80	MIN .04	AC-FT 4000						

LITTLE COLORADO RIVER BASIN

09386950 ZUNI RIVER ABOVE BLACK ROCK RESERVOIR, NM

LOCATION.--Lat 35°06'03", long 108°45'03", in NE¼ sec.17, T.10 N., R.18 W., McKinley County, Hydrologic Unit 15020004, on Zuni Indian Reservation, on left bank downstream from highway bridge on State Highway 36, 0.8 mi (1.3 km) upstream from flow line of Black Rock Reservoir, 2.3 mi (3.7 km) northeast of Black Rock, and 5.9 mi (9.5 km) northeast of Zuni Pueblo.

DRAINAGE AREA.--810 mi² (2,100 km²), approximately.

PERIOD OF RECORD.--October 1969 to current year. Prior to October 1974 published as "above Zuni Reservoir."

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,480 ft (1,975 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--9 years, 8.06 ft³/s (0.228 m³/s), 5,840 acre-ft/yr (7.20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s (147 m³/s) Aug. 4, 1974, gage height, 6.61 ft (2.015 m), from rating curve extended above 670 ft³/s (19.0 m³/s) on basis of slope-area measurements at gage heights 4.05, 3.94, 5.16, and 6.61 ft (1.234, 1.201, 1.573, and 2.015 m); no flow for many days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 360 ft³/s (10.2 m³/s) Mar. 2, gage height, 3.99 ft (1.216 m), base discharge 100 ft³/s (2.8 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.37	.10	.50	4.0	39	58	.49	.00	.00	.07	.15
2	.29	.44	.10	.50	3.5	86	55	.68	.00	.00	.35	.20
3	.28	.49	.10	.50	3.0	158	54	1.0	.00	.00	.43	.22
4	.26	.48	.10	.60	3.5	22	47	.69	.00	.00	.33	.25
5	.30	.45	.10	1.0	4.5	9.0	35	.50	.00	.00	.16	.37
6	.79	2.6	.50	1.4	4.5	7.0	28	2.2	.00	.00	.10	.69
7	1.5	8.5	.50	1.4	4.5	4.6	17	2.9	.00	.00	.31	1.3
8	.89	4.0	.50	1.0	4.0	2.5	12	1.2	.00	.00	.21	.45
9	.69	2.6	.10	.80	3.3	2.0	11	.74	.00	.00	.13	.23
10	.75	1.2	.12	1.2	2.2	2.3	11	.51	.00	.00	.11	.08
11	.56	1.1	.12	1.2	2.5	3.1	9.6	.52	.00	.00	.09	.11
12	.48	1.3	.10	1.2	2.5	2.5	6.6	.43	.00	.00	.08	.14
13	.53	1.0	.10	1.2	2.0	2.3	5.4	.58	.00	.17	.10	.19
14	.40	.98	.10	.80	2.0	1.7	3.9	.14	.00	.00	.15	.27
15	.63	.88	.07	.80	1.5	1.6	2.4	.11	.00	.00	.01	.52
16	.63	1.1	.08	1.2	1.2	1.5	1.8	.00	.00	.00	.00	2.1
17	.50	.93	.08	1.2	.80	1.4	1.5	.00	.00	.00	.00	2.0
18	.47	.85	.08	1.2	.50	1.4	1.6	.00	.00	.00	.00	.93
19	.54	.85	.08	1.2	.80	1.3	1.8	.00	.00	16	.00	.97
20	.59	.71	.08	1.2	1.0	1.4	1.7	.35	.00	5.2	.00	.77
21	.58	.48	.08	1.0	1.2	1.4	1.4	3.4	.00	1.6	5.4	.81
22	.59	.47	.90	.80	1.4	1.9	1.2	.42	.00	.25	4.6	.85
23	.36	.58	.90	.60	1.4	2.9	1.3	.29	.00	.08	1.1	.85
24	.51	.77	.90	.40	1.4	1.9	1.3	.10	.00	.06	.61	.65
25	1.0	.86	.90	.10	1.5	3.3	1.3	.00	.00	.13	.81	.77
26	.59	.75	1.0	.50	1.5	9.0	1.2	.00	.00	.35	.57	.73
27	.54	.77	1.0	1.0	1.6	15	.90	.00	.00	.32	.53	.45
28	.57	.82	1.0	1.4	7.6	15	.89	.00	.00	.14	.40	.32
29	.94	.72	1.0	2.0	---	12	.85	.00	.00	.03	.20	.32
30	2.0	.20	1.0	2.5	---	14	.56	.00	.00	.02	.13	.19
31	.99	---	1.0	3.5	---	39	---	.00	---	.02	.13	---
TOTAL	20.03	37.25	12.79	33.70	69.40	466.0	375.20	17.25	.00	24.37	17.11	18.08
MEAN	.65	1.24	.41	1.09	2.48	15.0	12.5	.56	.000	.79	.55	.60
MAX	2.0	8.5	1.0	3.5	7.6	158	58	3.4	.00	16	5.4	2.1
MIN	.26	.20	.07	.10	.50	1.3	.56	.00	.00	.00	.00	.08
AC-FT	40	74	25	67	138	924	744	34	.00	48	34	36

CAL YR 1977 TOTAL 1780.49 MEAN 4.88 MAX 369 MIN .00 AC-FT 3530
WTR YR 1978 TOTAL 1091.18 MEAN 2.99 MAX 158 MIN .00 AC-FT 2160

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ

LOCATION.--Lat 34°10'46", long 109°59'14", in SW¼NW¼ sec 14, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on left bank 1 mi (2 km) upstream from pumping plant on Show Low Lake, 1.9 mi (3.1 km) northwest of Lakeside, 2.2 mi (3.5 km) upstream from Jaques Dam, and 6 mi (10 km) southeast of Show Low.

DRAINAGE AREA.--68.6 mi² (177.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1953 to current year.

REVISED RECORDS.--WSP 1513: 1954-56. WSP 1926: Drainage area. WRD Ariz. 1971: 1970(M).

GAGE.--Water-stage recorder and concrete-dam control with V-notch sharp-crested weir. Altitude of gage is 6,610 ft (2,015 m), from topographic map.

REMARKS.--Records good except those for Nov. 8 to Dec. 3, Jan. 28 to Feb. 1, and July 18 to Aug. 2, which are poor. Record shows inflow to Show Low Lake. Flow partly regulated by several small reservoirs, largest of which are Rainbow Lake and Scott Reservoir, combined capacity, 2,400 acre-ft (2.96 hm³). Diversions for irrigation of about 250 acres (1.01 km²) above station.

AVERAGE DISCHARGE.--25 years, 11.3 ft³/s (0.320 m³/s), 8,190 acre-ft/yr (10.1 hm³/yr); median of yearly mean discharges, 7.9 ft³/s (0.22 m³/s), 5,700 acre-ft/yr (7.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,450 ft³/s (154 m³/s) Dec. 26, 1971, gage height, 9.53 ft (2.905 m), from rating curve extended above 2,500 ft³/s (71 m³/s) on basis of slope-area measurement of peak flow; no flow Oct. 5, 6, Dec. 10-19, 1964, Jan. 4-15, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s (2.8 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 1	Unknown	107 3.03	3.06 0.933	Mar. 13	2100	112 3.17	3.08 0.939
Mar. 1	1230	*2,750 77.9	6.56 1.999	Mar. 15	0215	117 3.31	3.10 0.945
Mar. 3	0545	1,170 33.1	4.98 1.518	Mar. 23	0700	406 11.5	3.84 1.170

Minimum daily, 0.29 ft³/s (0.008 m³/s) Oct. 21, 22, 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.51	.60	.87	90	1810	27	3.0	3.7	9.1	6.0	4.7
2	.59	.60	.60	.82	36	585	68	3.3	4.0	9.1	6.5	4.9
3	.42	.63	.60	.80	17	906	42	3.7	4.1	9.0	6.5	4.9
4	.37	.50	.60	.78	11	293	28	3.6	4.3	8.4	5.7	5.1
5	.48	.31	.72	.75	9.1	232	19	3.5	4.4	8.2	5.4	5.2
6	5.4	1.7	.77	.74	8.2	183	15	4.3	3.8	8.2	5.3	5.3
7	4.9	2.0	.77	1.1	9.0	123	13	5.3	2.8	8.1	5.6	4.9
8	1.6	1.8	.77	1.8	9.8	79	16	5.3	2.3	8.1	5.8	5.6
9	1.5	1.5	.77	1.8	11	65	19	5.2	2.0	7.4	6.1	5.8
10	2.1	1.0	.77	3.3	9.1	63	19	4.4	2.7	6.7	5.2	5.8
11	2.0	1.0	.69	2.6	12	58	19	4.1	2.6	5.9	2.9	5.9
12	1.9	.90	.77	2.5	11	64	19	3.9	2.5	5.7	2.2	5.8
13	.98	.90	.67	2.0	11	79	18	3.7	2.5	5.6	1.9	6.0
14	.40	.90	.58	1.9	10	92	15	3.0	3.0	5.3	2.5	6.3
15	.35	.90	.87	2.0	10	85	11	2.5	3.2	5.3	2.0	7.3
16	.32	.90	.64	2.1	10	55	9.2	2.2	3.7	5.1	2.2	8.1
17	.32	.80	.41	2.4	9.4	46	7.9	1.8	1.7	5.2	2.5	7.9
18	.33	.80	.37	2.6	9.4	47	6.4	1.4	2.1	5.5	2.0	7.4
19	.32	.80	.36	2.4	9.4	52	7.1	1.3	4.0	5.5	1.4	7.4
20	.30	.80	.31	2.4	9.5	61	11	1.6	6.5	5.5	1.4	7.1
21	.29	.80	.30	2.4	9.5	63	12	2.1	6.6	5.5	1.5	7.2
22	.29	.80	.31	2.2	14	109	12	2.1	6.1	5.5	1.6	8.0
23	.31	.80	.39	2.2	29	305	11	1.7	6.0	5.5	2.1	7.1
24	.29	.80	.79	2.1	38	139	11	1.5	6.0	5.5	2.2	6.3
25	.29	.70	.81	2.0	38	70	10	2.1	5.8	5.5	2.2	6.0
26	.48	.70	.80	2.2	37	50	9.4	2.5	6.4	5.5	1.6	5.8
27	.61	.70	.78	2.6	30	41	7.2	2.9	8.8	5.5	4.2	3.9
28	.62	.70	.50	3.5	445	39	6.0	3.2	9.6	5.5	4.6	3.0
29	.66	.70	.51	5.0	---	29	4.0	3.4	9.4	5.5	4.7	2.7
30	.50	.70	.85	10	---	22	3.1	3.5	9.1	5.5	4.7	2.3
31	.65	---	.95	65	---	20	---	3.5	---	5.5	4.9	---
TOTAL	30.22	26.65	19.63	134.66	952.2	5865	475.3	95.6	139.7	197.4	113.4	173.7
MEAN	.97	.89	.63	4.34	34.0	189	15.8	3.08	4.66	6.37	3.66	5.79
MAX	5.4	2.0	.95	65	445	1810	68	5.3	9.6	9.1	6.5	8.1
MIN	.29	.31	.30	.74	8.2	20	3.1	1.3	1.7	5.1	1.4	2.3
AC-FT	60	53	39	267	1890	11630	943	190	277	392	225	345
CAL YR 1977	TOTAL	1352.57	MEAN	3.71	MAX	28	MIN	.20	AC-FT	2680		
WTR YR 1978	TOTAL	8223.46	MEAN	22.5	MAX	1810	MIN	.29	AC-FT	16310		

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
OCT								
13...	0900	.58	200	8.2	10.0	25	--	8.5
DEC								
07...	1030	.97	210	9.3	1.5	6	--	11.0
JAN								
12...	1100	2.6	250	7.3	2.0	4	--	10.6
FEB								
15...	0900	9.9	245	9.4	4.5	15	--	11.3
MAR								
14...	1630	83	70	7.3	10.0	40	--	8.6
APR								
09...	0900	6.3	130	7.9	10.0	20	--	8.4
MAY								
10...	0700	4.8	180	7.6	7.0	--	4.0	7.8
JUN								
06...	1530	3.9	195	8.9	20.5	4	--	7.9
JUL								
11...	1600	5.8	130	8.2	23.0	5	--	6.9
AUG								
16...	1500	2.6	145	8.3	23.0	20	--	6.9
SEP								
13...	0900	6.1	170	7.5	16.0	7	--	7.5

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT									
13...	43	93	0	19	11	8.2	.4	2.2	120
DEC									
07...	1	100	0	21	12	8.2	.4	1.8	130
JAN									
12...	--	110	4	23	13	8.7	.4	1.7	130
FEB									
15...	26	100	0	22	12	7.6	.3	1.9	130
MAR									
14...	7	44	13	11	4.0	2.9	.2	1.2	38
APR									
09...	8	64	4	14	7.1	4.5	.2	1.4	74
MAY									
10...	21	91	1	31	3.4	6.9	.3	2.4	110
JUN									
06...	6	91	0	20	9.9	7.3	.3	2.3	91
JUL									
11...	15	62	8	13	7.2	4.4	.2	1.4	66
AUG									
16...	7	63	0	13	7.4	5.1	.3	1.5	79
SEP									
13...	40	80	0	16	9.7	6.8	.3	1.7	100

LITTLE COLORADO RIVER BASIN

77

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-F1)
OCT 13...	0	5.2	4.8	.1	13	118	123	.16
DEC 07...	0	4.5	4.5	.1	13	128	129	.17
JAN 12...	0	6.2	5.8	.1	9.4	132	133	.18
FEB 15...	0	6.8	5.0	.1	12	116	132	.16
MAR 14...	0	6.6	2.9	.0	12	71	60	.10
APR 09...	0	6.5	3.1	.1	15	88	89	.12
MAY 10...	0	6.0	5.6	.0	7.7	119	118	.16
JUN 06...	12	4.6	5.8	--	7.0	118	114	.16
JUL 11...	0	6.5	3.0	.1	12	81	81	.11
AUG 16...	0	5.2	3.5	.1	13	92	89	.13
SEP 13...	0	8.9	4.9	.1	13	105	111	.14

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NH4 + URG. TOT IN BOT MAT (MG/KG AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHURUS, DIS- SOLVED (MG/L AS P)	PHOS- PHURUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 13...	.05	--	--	--	.53	--	.58	.07	--	--
DEC 07...	.02	.01	--	--	.74	--	.76	.01	--	.01
JAN 12...	.11	.10	--	--	.57	--	.48	.06	--	.03
FEB 15...	.01	.01	--	--	.33	--	.34	.06	--	.01
MAR 14...	.22	.04	--	--	.57	--	.79	.14	--	.01
APR 09...	.05	.10	--	--	1.8	--	1.9	.05	--	.01
MAY 10...	.00	.04	--	--	.53	--	.33	.06	--	.01
JUN 06...	--	--	.03	.05	1.9	1200	1.9	.07	.01	--
JUL 11...	.05	.07	--	--	.74	--	.79	.07	--	.02
AUG 16...	.05	.07	--	--	.99	--	1.0	.09	--	.04
SEP 13...	.02	.02	--	--	.71	--	.73	.11	--	.01

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BUT- TOM MA- TERIAL (UG/G AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, RECUV. FM BUT- TOM MA- TERIAL (UG/G AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM RECUV. FM BUT- TOM MA- TERIAL (UG/G AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT									
13...	2	--	0	--	50	40	<10	--	10
DEC									
07...	1	--	100	--	70	20	0	--	0
JAN									
12...	2	--	0	--	70	30	0	--	10
FEB									
15...	1	--	0	--	90	40	0	--	0
MAR									
14...	1	--	0	--	100	40	3	--	10
APR									
09...	3	--	200	--	80	20	1	--	10
MAY									
10...	1	--	200	--	90	40	0	--	0
JUN									
06...	--	11	2	160	90	30	2	0	--
JUL									
11...	0	--	200	--	70	40	1	--	0
AUG									
16...	3	--	200	--	80	30	1	--	10
SEP									
13...	3	--	0	--	90	50	4	--	0

DATE	CHRO- MIUM, RECUV. FM BUT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, RECUV. FM BUT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, RECUV. FM BUT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT									
13...	--	--	10	--	1000	30	<100	--	100
DEC									
07...	--	--	2	--	490	70	3	--	30
JAN									
12...	--	--	5	--	350	40	2	--	10
FEB									
15...	--	--	6	--	1100	100	10	--	50
MAR									
14...	--	--	10	--	2200	30	6	--	40
APR									
09...	--	--	4	--	990	130	9	--	30
MAY									
10...	--	--	6	--	500	60	8	--	40
JUN									
06...	15	0	10	1500	470	80	7	38	60
JUL									
11...	--	--	9	--	850	20	6	--	80
AUG									
16...	--	--	8	--	1800	280	10	--	170
SEP									
13...	--	--	5	--	1200	20	6	--	120

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

79

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MANGA- NESE, RECUV. FM BUT- TOM MA- TERIAL (UG/G)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, TOTAL IN BOT- TUM MA- TERIAL (UG/G)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, RECOV. FM BOT- TUM MA- TERIAL (UG/G AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT- TUM MA- TERIAL (UG/G AS ZN)
OCT 13...	8	--	.0	0	--	<10	--	30	--
DEC 07...	0	--	.0	0	--	0	--	40	--
JAN 12...	10	--	.1	0	--	0	--	40	--
FEB 15...	10	--	.2	0	--	4	--	20	--
MAR 14...	10	--	.0	0	--	1	--	20	--
APR 09...	0	--	.0	0	--	0	--	20	--
MAY 10...	0	--	.0	0	--	0	--	20	--
JUN 06...	20	0	--	0	0	0	1	20	22
JUL 11...	10	--	.0	0	--	0	--	20	--
AUG 16...	40	--	.4	--	--	0	--	30	--
SEP 13...	0	--	.0	0	--	2	--	10	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTU- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)
OCT 13...	5.3	.00	--	--	--	--	--	--
DEC 07...	3.6	.00	5	--	--	--	--	--
JAN 12...	3.7	.00	0	--	--	--	--	--
FEB 15...	5.7	.00	2	--	--	--	--	--
MAR 14...	9.0	.00	6	--	--	--	--	--
APR 09...	5.3	.00	0	--	--	--	--	--
MAY 10...	8.6	.00	0	--	--	--	--	--
JUN 06...	7.6	.00	2	370	2.70	2.60	.840	.640
JUL 11...	8.5	.00	6	--	--	--	--	--
AUG 16...	7.5	.00	2	--	--	--	--	--
SEP 13...	8.7	.00	2	--	--	--	--	--

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUN 6, 78
TIME	1530
TOTAL CELLS/ML	370
DIVERSITY: DIVISION	1.0
..CLASS	1.0
..ORDER	1.2
...FAMILY	2.1
....GENUS	2.9

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYIA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCUCCALES		
....UOCYSTACEAE		
....ANKISTRUDESMUS	24	8
...SCENEDESMACEAE		
....SCENEDESMUS	120#	32
CHRYSOPHYIA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	15	4
..PENNALES		
...ACHNANTHACEAE		
....CUCULONEIS	44	12
...CYMBELLACEAE		
....CYMBELLA	54#	16
...FRAGILARIALEAE		
....SYNEOKA	24	8
...NAVICULACEAE		
....NAVICULA	24	8
...PINNULARIA	24	8
...NITZSCHIA		
....NITZSCHIA	15	4

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09392000 SHOW LOW CREEK BELOW JAKUES DAM, NEAR SHOW LOW, AZ

LOCATION.--Lat 34°11'47", long 110°00'13", in NW¼ sec.10, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on right bank just downstream from Jakues Dam, 3.5 mi (5.6 km) northwest of Lakeside, and 4.5 mi (7.2 km) southeast of Show Low.

DRAINAGE AREA.--73.0 mi² (189 km²).

PERIOD OF RECORD.--November 1941 to January 1945, June 1953 to September 1955 (monthly discharge only), October 1955 to current year. Monthly discharge only November 1941 to January 1945, published in WSP 1313. Published as "at Jakues damsite, near Lakeside" 1941-45.

REVISED RECORDS.--WSP 1926: Drainage area.

GAGE.--Water-stage recorder and sharp-crested weir, with periodic supplementary lake elevation readings for flow over concrete spillway. Altitude of gage is 6,530 ft (1,990 m), from topographic map. November 1941 to January 1945 nonrecording gage at site 100 ft (30 m) upstream at different datum.

REMARKS.--Records good. Record since 1953 shows release from Show Low Lake. Flow regulated by several reservoirs, largest of which are Show Low Lake, completed in 1953; Rainbow Lake, completed prior to 1941; and Scott Reservoir, completed in 1946 (combined capacity, 8,800 acre-ft or 10.9 km³). Diversions for irrigation of about 250 acres (1.0 km²) above Show Low Lake and diversion by pumping of floodwater stored in Show Low Lake to Forestdale Creek in Salt River basin (see record for Forestdale Creek diversion from Show Low Creek, near Show Low, elsewhere in this report).

AVERAGE DISCHARGE--25 years (water years 1954-78), 6.11 ft³/s (0.173 m³/s), 4,430 acre-ft/yr (5.46 hm³/yr); median of yearly mean discharges, 3.2 ft³/s (0.09 m³/s), 2,300 acre-ft/yr (2.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--1941-45: Maximum daily discharge, 304 ft³/s (8.61 m³/s) Mar. 6, 1943; no flow Aug. 8, 9, 1943. 1953-78: Maximum discharge, about 2,500 ft³/s (71 m³/s), spillway flow entering 0.2 mi (0.3 km) downstream from station, Dec. 26, 1971 (lake elevation unknown); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 800 ft³/s (22.7 m³/s) Mar. 3, lake elevation, about 8,160 ft (2,487 m); no flow for most of year.

09391000. SHOW LOW LAKE.--A lake on Show Low Creek, formed by Jakues Dam, in NW¼ sec.10, T.9 N., R.22 E., Navajo County, 4.5 mi (7.2 km) southeast of Show Low; dam completed and storage began in spring of 1953. Total capacity to spillway, 6,176 acre-ft (7.62 km³), consisting of 1,070 acre-ft (1.32 hm³) dead storage below elevation 6,535.0 ft (1,991.87 m), sill of outlet structure, and 5,106 acre-ft (6.30 hm³) usable storage between elevation 6,535.0 and 6,570.0 ft (1,991.87 and 2,002.54 m), sill of overflow spillway. Capacity table prepared by Leeds, Hill, and Jewett, consulting engineers, from surveys by the firm. Water cannot be pumped when lake elevation is below 6,538.5 ft (1,992.93 m), sill of intake to pumping plant, but can be released to river channel down to elevation 6,535.0 ft (1,991.87 m). Partial listing of periodic observations made by Navapache Electric Co. and Geological Survey were as follows:

Date	Elevation (feet)	Usable contents (acre-feet)	Date	Elevation (feet)	Usable contents (acre-feet)
Oct. 3, 1977	6,538.5	1,420	Mar. 7, 1978	6,570.3	6,240
Nov. 1	6,538.6	1,430	Apr. 3	6,570.0	6,180
Nov. 3	6,538.8	1,450	May 1	6,566.7	5,550
Dec. 3	6,539.3	1,500	June 1	6,557.4	3,930
Jan. 5, 1978	6,539.4	1,520	July 3	6,546.0	2,290
Feb. 1	6,542.2	1,820	Aug. 1	6,539.2	1,490
Mar. 2	6,570.9	6,350	Sept. 1	6,537.6	1,320

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	500	.00	.00	4.0	6.4	5.5	5.6
2	.00	.00	.00	.00	.00	600	.00	.00	4.0	6.4	5.5	5.6
3	.00	.00	.00	.00	.00	800	.00	.00	4.0	6.4	5.6	5.6
4	.00	.00	.00	.00	.00	300	.00	.00	4.0	6.4	5.6	5.6
5	.00	.00	.00	.00	.00	200	.00	.00	4.0	6.4	5.6	5.6
6	.00	.00	.00	.00	.00	150	.00	.00	4.0	6.4	5.6	5.6
7	.00	.00	.00	.00	.00	100	.00	.00	4.0	6.4	5.6	5.5
8	.00	.00	.00	.00	.00	60	.00	.00	3.9	6.2	5.6	5.6
9	.00	.00	.00	.00	.00	60	.00	.00	4.5	6.2	4.7	5.6
10	.00	.00	.00	.00	.00	60	.00	.00	5.8	6.2	4.2	5.6
11	.00	.00	.00	.00	.00	60	.00	.00	5.8	6.2	4.2	5.6
12	.00	.00	.00	.00	.00	60	.00	.00	5.8	6.2	4.2	5.6
13	.00	.00	.00	.00	.00	60	.00	.00	5.8	6.2	4.2	4.9
14	.00	.00	.00	.00	.00	80	.00	.00	5.7	6.2	4.2	4.4
15	.00	.00	.00	.00	.00	70	.00	.00	5.6	6.2	4.2	4.4
16	.00	.00	.00	.00	.00	50	.00	.00	5.6	6.2	4.3	4.4
17	.00	.00	.00	.00	.00	30	.00	.00	5.6	6.0	4.9	4.4
18	.00	.00	.00	.00	.00	30	.00	.00	5.9	6.0	4.9	4.4
19	.00	.00	.00	.00	.00	40	.00	1.3	6.9	6.0	4.9	4.4
20	.00	.00	.00	.00	.00	50	.00	3.8	7.1	6.0	4.9	5.1
21	.00	.00	.00	.00	.00	50	.00	3.9	6.9	5.8	4.9	5.6
22	.00	.00	.00	.00	.00	90	.00	4.0	6.9	5.8	4.9	5.6
23	.00	.00	.00	.00	.00	250	.00	4.0	6.8	5.8	4.8	5.2
24	.00	.00	.00	.00	.00	100	.00	4.0	6.6	5.8	4.8	4.2
25	.00	.00	.00	.00	.00	50	.00	4.0	6.6	5.8	4.8	4.2
26	.00	.00	.00	.00	.00	30	.00	4.0	6.6	5.8	4.7	4.2
27	.00	.00	.00	.00	.00	20	.00	4.0	6.6	5.8	4.7	4.2
28	.00	.00	.00	.00	.00	10	.00	4.0	6.6	5.8	5.2	4.2
29	.00	.00	.00	.00	---	10	.00	4.0	6.5	5.8	5.6	4.2
30	.00	.00	.00	.00	---	10	.00	4.0	6.4	5.8	5.6	4.2
31	.00	---	.00	.00	---	.00	---	4.0	---	5.6	5.6	---
TOTAL	.00	.00	.00	.00	.00	3980.00	.00	49.00	168.5	188.2	154.0	149.3
MEAN	.000	.000	.000	.000	.000	128	.000	1.58	5.62	6.07	4.97	4.98
MAX	.00	.00	.00	.00	.00	800	.00	4.0	7.1	6.4	5.6	5.6
MIN	.00	.00	.00	.00	.00	.00	.00	.00	3.9	5.6	4.2	4.2
AC-FT	.00	.00	.00	.00	.00	7890	.00	97	334	373	305	296

CAL YR 1977 TOTAL 458.08 MEAN 2.35 MAX 7.3 MIN .00 AC-FT 1700
WIR YR 1978 TOTAL 4684.00 MEAN 12.8 MAX 800 MIN .00 AC-FT 9300

LITTLE COLORADO RIVER BASIN

09393500 SILVER CREEK NEAR SNOWFLAKE, AZ

LOCATION.--Lat 34°40'00", long 110°02'30", in SW¼NW¼ sec.29, T.15 N., R.22 E., Navajo County, Hydrologic Unit 15020005, on left bank 6 mi (10 km) upstream from mouth and 11 mi (18 km) north of Snowflake.

DRAINAGE AREA.--886 mi² (2,295 km²).

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,204.1 ft (1,586.21 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Diversions for irrigation above station of about 6,600 acres (26.7 km²). Flow regulated by several reservoirs—combined capacity, about 13,700 acre-ft (16.9 hm³), excluding Lone Pine Reservoir, but including 6,176 acre-ft (7.62 hm³) in Show Low Lake.

AVERAGE DISCHARGE.--28 years, 16.6 ft³/s (0.470 m³/s), 12,030 acre-ft/yr (14.8 hm³/yr); median of yearly mean discharges, 13 ft³/s (0.37 m³/s), 9,400 acre-ft/yr (12 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s (286 m³/s) Jan. 19, 1952, gage height, 18.0 ft (5.49 m), from rating curve extended above 4,400 ft³/s (125 m³/s) on basis of peak discharge for former station near Woodruff; no flow for several days in water years 1971, 1974-78.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s (28.3 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	2200	*4,160 118	11.20 3.414
Mar. 3	1000	1,870 53.0	7.65 2.332
Aug. 11	0030	1,060 30.0	6.06 1.847

No flow for several days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	1.9	3.3	1.9	.13	1600	10	.34	.00	1.0	3.6	.95
2	9.1	.84	3.7	1.2	2.9	1180	8.0	.15	.16	.64	2.9	3.4
3	7.0	1.0	3.8	.74	3.5	1360	7.0	.07	.04	.13	51	3.5
4	8.8	.74	3.2	.93	3.4	483	5.0	.55	.00	.04	2.8	2.5
5	8.8	2.4	3.0	.84	3.1	252	4.0	.23	.00	1.1	1.8	1.2
6	61	1.5	2.7	1.2	1.7	341	2.0	1.6	.10	.30	4.2	1.5
7	64	2.3	2.9	.74	.69	200	1.3	1.7	.84	.13	3.4	3.8
8	21	2.2	3.0	.50	.21	113	3.6	2.0	1.5	.58	20	4.0
9	4.1	2.2	2.6	.74	.30	69	4.9	1.5	1.2	1.2	13	1.7
10	2.2	2.2	2.5	.50	3.3	48	3.4	.62	.50	2.7	128	.58
11	1.6	1.6	1.0	.50	2.6	35	1.9	.93	.26	1.4	307	1.1
12	2.1	.68	.36	.22	3.7	25	2.4	1.9	1.0	.82	212	2.9
13	4.1	2.2	1.2	.16	4.3	22	.99	2.0	1.1	.60	37	1.4
14	3.8	2.1	1.4	.50	4.8	18	.34	2.2	2.0	.73	11	2.5
15	3.8	2.2	2.1	.50	5.4	20	.00	.84	2.2	1.0	4.2	1.1
16	3.6	2.8	2.0	.57	5.7	20	.00	.19	1.2	.57	2.6	3.6
17	2.2	2.7	1.7	1.1	4.5	15	.00	.19	1.4	4.0	2.3	60
18	1.4	2.1	1.6	5.2	5.2	12	.00	.84	.44	8.0	7.8	5.5
19	1.9	3.5	.98	2.9	4.5	12	.00	.44	.10	5.0	10	2.3
20	2.5	2.9	2.4	2.5	4.3	12	.78	.00	.26	1.8	9.2	1.9
21	1.2	2.0	2.5	2.7	4.4	12	.55	.00	.44	.99	5.8	3.1
22	1.2	2.1	1.6	1.9	4.8	12	2.0	.04	.26	8.4	.78	4.8
23	1.1	4.8	.93	.84	5.8	12	2.0	.50	.07	3.9	3.1	18
24	1.4	4.2	.74	.57	4.9	12	.82	2.4	.00	3.4	4.2	5.1
25	.22	3.6	.64	.22	4.6	37	.13	1.5	.00	1.3	1.9	7.4
26	.95	3.4	.64	.13	4.4	42	.00	.84	.00	74	1.1	4.9
27	.84	4.0	.64	.04	4.7	30	.00	1.2	.37	124	.31	6.1
28	2.5	3.4	.37	.02	6.3	20	.39	2.5	16	23	1.9	5.6
29	1.7	3.2	.30	.04	---	17	1.3	1.4	11	6.8	2.4	3.4
30	1.2	4.1	.50	.00	---	13	.90	.84	2.7	3.5	.85	3.4
31	1.5	---	.50	.02	---	11	---	.19	---	2.2	.29	---
TOTAL	234.99	74.86	54.80	27.32	104.13	6055	63.70	29.70	45.14	283.03	882.53	167.23
MEAN	7.58	2.50	1.77	.88	3.72	195	2.12	.96	1.50	9.13	28.5	5.57
MAX	64	4.8	3.8	3.2	6.3	1600	10	2.5	16	124	307	60
MIN	.22	.68	.30	.00	.13	11	.00	.00	.00	.04	.29	.58
AC-FT	466	148	109	54	207	12010	126	59	90	561	1750	332

CAL YR 1977	TOTAL	2696.43	MEAN	7.39	MAX	310	MIN	.00	AC-FT	5350
WTR YR 1978	TOTAL	8022.43	MEAN	22.0	MAX	1600	MIN	.00	AC-FT	15910

09394500 LITTLE COLORADO RIVER AT WOODRUFF, AZ

LOCATION.--Lat 34°46'58", long 110°02'37", in NE¼SW¼ sec.17, T.16 N., R.22 E., Navajo County, Hydrologic Unit 15020002, on left bank at abandoned county road bridge in Woodruff, 3.7 mi (6.0 km) downstream from Silver Creek.

DRAINAGE AREA.--8,100 mi² (21,000 km²), approximately.

PERIOD OF RECORD.--March to May 1905; June to July 1905 (gage heights only); August 1905 to May 1907; July 1907 to April 1908, July to October 1908, December 1908, and December 1915 to September 1916 (gage heights only); October 1916 to August 1917 (monthly discharge only); September 1917 to March 1918, December 1918 to December 1919, April 1929 to December 1933, September 1935 to current year. Published as 'near Woodruff' 1916-19, 1929-48.

REVISED RECORDS.--WSP 1049: 1917. WSP 1213: 1906, 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 5,130.3 ft (1,563.72 m) National Geodetic Vertical Datum of 1929. See WSP 1733 for history of changes prior to Sept. 22, 1949.

REMARKS.--Records fair. Diversions above station for irrigation of about 22,000 acres (89.0 km²) including a pump installation 1,000 ft (305 m) upstream installed in spring of 1973. Some regulation by reservoirs above station; combined capacity, about 73,000 acre-ft (90.0 hm³), excluding Lone Pine Reservoir.

AVERAGE DISCHARGE.--49 years (water years 1906, 1917, 1930-33, 1936-78), 50.8 ft³/s (1.439 m³/s), 36,800 acre-ft/yr (45.4 hm³/yr); median of yearly mean discharges, 43 ft³/s (1.22 m³/s), 31,200 acre-ft/yr (38 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, occurred Jan. 19, 1916; maximum discharge recorded, 25,000 ft³/s (708 m³/s) Dec. 5, 1919; maximum gage height, 22.50 ft (6,858 m) from floodmark, Sept. 30, 1971; no flow at times in most years prior to 1960 and in 1974 and 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,900 ft³/s (54 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 2	0300	*4,470 127	15.57 4.746
Mar. 3	1200	2,450 69.4	12.24 3.731

Minimum daily, 0.45 ft³/s (0.013 m³/s) July 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UC1	NUV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	5.6	7.8	11	96	1190	8.6	4.6	1.0	1.8	21	15
2	23	5.2	7.4	10	49	2240	7.4	4.1	.88	1.8	49	14
3	24	4.3	8.2	10	30	2020	7.0	4.1	.88	1.5	126	13
4	23	3.8	9.0	9.0	22	794	6.0	3.8	2.9	1.5	11	12
5	24	3.8	7.8	9.0	20	466	5.0	4.3	3.3	1.4	3.1	11
6	130	7.8	7.4	9.0	18	571	4.5	5.6	2.9	1.8	4.6	11
7	442	15	7.8	8.0	15	472	4.3	98	1.8	1.9	5.2	10
8	75	22	7.8	8.0	13	264	4.1	29	2.3	.75	6.2	7.4
9	27	23	8.2	7.0	12	165	6.6	13	3.8	1.2	19	6.3
10	15	14	7.8	7.4	11	100	7.0	7.0	1.8	.45	98	4.6
11	17	10	7.4	7.4	11	60	6.3	4.6	2.3	1.3	388	3.6
12	13	8.6	5.6	6.6	9.9	38	4.9	4.3	1.5	.95	274	3.6
13	10	6.6	4.1	5.9	11	32	5.2	5.6	1.3	2.3	126	4.9
14	7.8	7.8	3.3	5.9	14	23	4.3	5.2	1.3	2.3	15	3.8
15	5.9	6.6	6.6	7.4	18	24	3.8	4.9	1.5	.88	10	4.3
16	4.9	7.0	7.0	7.8	28	24	3.6	4.1	1.4	2.6	5.0	10
17	4.1	6.6	6.3	7.8	30	18	3.3	3.3	1.1	3.1	4.0	63
18	3.5	6.3	7.4	8.6	18	15	3.3	3.5	1.6	5.9	3.0	15
19	3.3	4.9	7.8	12	18	12	3.6	4.1	2.3	6.6	138	6.6
20	3.3	7.0	5.6	15	19	11	3.6	2.7	1.9	3.8	300	4.3
21	3.8	5.2	15	15	18	9.9	4.1	2.9	1.8	2.3	81	3.6
22	3.5	4.6	15	20	23	11	4.1	3.3	1.8	.80	24	2.9
23	3.1	4.6	14	26	18	15	5.2	3.3	1.3	5.6	24	15
24	3.5	7.4	14	16	13	13	5.2	3.8	1.1	4.1	23	9.0
25	3.1	6.6	13	19	11	40	4.6	4.9	1.5	4.3	22	32
26	3.1	6.3	13	15	9.9	53	3.8	4.6	1.3	33	21	39
27	2.9	6.6	13	13	8.6	38	3.3	2.1	1.4	317	20	13
28	3.3	7.0	12	15	9.4	26	3.1	4.1	1.6	37	19	8.2
29	3.8	6.3	12	17	---	18	3.6	4.9	18	22	18	5.6
30	11	6.6	11	16	---	15	4.6	4.3	4.6	21	17	3.3
31	13	---	11	91	---	11	---	1.8	---	20	16	---
TOTAL	932.9	237.1	283.3	435.8	573.8	8788.9	144.0	255.8	72.16	510.93	1895.1	355.0
MEAN	30.1	7.90	9.14	14.1	20.5	284	4.80	8.25	2.41	16.5	61.1	11.8
MAX	442	23	15	91	96	2240	8.6	98	18	317	388	63
MIN	2.9	3.8	3.3	5.9	8.6	9.9	3.1	1.8	.88	.45	3.0	2.9
AC-FT	1850	470	562	864	1140	17430	286	507	143	1010	3760	704
CAL YR 1977	TOTAL	6645.90	MEAN	18.2	MAX	454	MIN	.50	AC-FT	13180		
WTR YR 1978	TOTAL	14484.79	MEAN	39.7	MAX	2240	MIN	.45	AC-FT	28730		

NOTE.--No gage-height record Mar. 2.

LITTLE COLORADO RIVER BASIN

09395900 BLACK CREEK NEAR LUPTON, AZ

LOCATION.--Lat 35°27'09", long 109°07'30", in E½NE¼ sec.26, T.24 N., R.30 E. (unsurveyed), Apache County, Hydrologic Unit 15020006, in Navajo Indian Reservation, on downstream end of center bridge pier on State Highway 166, 7 mi (11 km) upstream from West Fork, and 8 mi (13 km) northwest of Lupton, and 16 mi (26 km) south of Window Rock.

DRAINAGE AREA.--500 mi² (1,300 km²), approximately.

PERIOD OF RECORD.--August 1964 to December 1972, May 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,550 ft (1,996 m), from topographic map. Prior to May 1974 at site 160 ft (49 m) downstream at same datum.

REMARKS.--Records poor. Small diversions above station for irrigation and stock water. Red Lake, near headwaters 35 mi (56 km) upstream, was built in 1954, with capacity of 9,700 acre-ft (12.0 hm³), but silting may have reduced this amount.

AVERAGE DISCHARGE.--12 years, 7.18 ft³/s (0.203 m³/s), 5,200 acre-ft/yr (6.41 hm³/yr); median of yearly mean discharges, 6.4 ft³/s (0.18 m³/s), 4,600 acre-ft/yr (5.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,160 ft³/s (203 m³/s) Aug. 17, 1977, gage height, 9.35 ft (2.85 m), from rating curve extended above 90 ft³/s (2.55 m³/s) on basis of slope-area measurement of peak flow; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72 ft³/s (2.04 m³/s) Mar. 1, gage height, 3.81 ft (1.161 m), no peak above base of 1,500 ft³/s (42 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	1.0	.10	.40	2.0	23	.20	2.6	.00	.00	.50	.50
2	.10	.90	.10	.40	3.8	24	2.0	3.2	.00	.00	.50	.40
3	.10	.90	.10	.40	3.1	29	1.0	2.5	.00	.00	3.6	.40
4	.10	.90	.10	.40	2.2	10	.50	1.8	.00	.00	.50	.20
5	.10	.90	.10	.40	1.9	5.0	.00	2.8	.00	.00	.50	.20
6	1.6	1.7	.50	.40	2.0	4.0	.00	5.4	.00	.00	.50	.20
7	2.8	6.5	3.0	.40	2.0	2.0	.00	11	.00	.00	.50	.20
8	1.9	4.6	3.6	.50	2.0	1.0	.00	6.1	.00	.00	.50	.20
9	1.2	3.0	3.1	.60	2.0	1.0	.00	2.0	.00	.00	.50	.20
10	1.1	2.7	3.8	.70	2.0	2.0	.00	.30	.00	.00	.50	.20
11	.80	1.0	2.8	.80	4.9	2.0	.00	3.9	.00	.00	.50	.20
12	.80	.50	2.4	.80	5.7	10	.00	4.0	.00	2.0	.50	.20
13	.80	.30	1.7	.80	3.3	8.0	.00	2.0	.00	1.0	.50	.20
14	.80	.20	1.0	.80	4.2	8.2	.00	.20	.00	.50	.50	.20
15	.90	.10	.40	5.6	5.0	6.4	.00	.10	.00	.00	.50	.10
16	.90	.10	.40	2.0	2.0	5.5	.00	.00	.00	.00	.50	.10
17	.90	.10	.40	2.0	2.0	4.4	.00	.00	.00	.00	.50	2.0
18	.90	.10	.40	1.4	1.0	4.0	.00	.00	.00	.00	.50	1.0
19	.90	.10	.40	1.0	.80	2.0	.00	.00	.00	1.0	.50	.00
20	.90	.10	.40	1.0	.80	5.8	.00	.00	.00	.50	1.0	.00
21	1.0	.10	.40	1.0	2.0	9.1	.00	.00	.00	.00	3.0	.00
22	1.0	.10	.90	1.0	2.0	9.4	.00	.00	.00	.00	5.0	.00
23	1.0	.10	1.0	1.0	.80	13	.00	.00	.00	.00	2.5	1.3
24	1.0	.10	.80	.80	.80	9.1	.00	.00	.00	2.5	.50	8.4
25	.90	.10	.60	.80	.80	7.1	.00	.00	.00	4.0	.50	7.9
26	.90	.10	.40	.80	.80	5.0	.00	.00	.00	2.0	.50	2.0
27	.90	.10	.40	.80	.80	2.0	.00	.00	.00	1.0	.50	1.0
28	.90	.10	.40	.80	6.6	1.0	.00	.00	.00	5.6	.50	.50
29	1.4	.10	.40	.80	---	.80	.00	.00	.00	2.0	.50	.50
30	1.4	.10	.40	.80	---	.40	.00	.00	.00	1.0	.50	.50
31	1.1	---	.40	.80	---	.20	---	.00	---	.50	.40	---
TOTAL	29.20	26.70	30.90	28.20	67.30	214.40	3.70	47.90	.00	23.60	28.00	28.80
MEAN	.94	.89	1.00	.91	2.40	6.92	.12	1.55	.000	.76	.90	.96
MAX	2.8	6.5	3.8	3.6	6.6	29	2.0	11	.00	5.6	5.0	8.4
MIN	.10	.10	.10	.40	.80	.20	.00	.00	.00	.00	.40	.00
AC-FT	58	53	61	56	133	425	7.3	95	.00	47	56	57
CAL YR 1977 TOTAL	2450.50											
WTR YR 1978 TOTAL	528.70											
MEAN	6.71											
MAX	700											
MIN	.00											
AC-FT	4860											
WTR	1050											

NOTE.--No gage-height record Dec. 14 to Jan. 14 and July 24 to Aug. 23.

LOCATION.--Lat 35°10'42", long 109°27'15", in SW¼ sec.35, T.21 N., R.27 E., Apache County, Hydrologic Unit 15020007, on upstream side of right abutment of Archison, Topeka, and Santa Fe Railway Co. bridge, 1.5 mi (2.4 km) southwest of Chambers.

PERIOD OF RECORD.--Water years 1971-72 (annual maximums only), January 1973 to current year (discharge above 500 ft³/s or 14 m³/s only).

REMARKS.--Records poor. Only daily discharges above 500 ft³/s (14 m³/s) are published. Small diversions above station for irrigation and livestock. Red Lake, near the headwaters of Black Creek, was built in 1954, with a capacity of 9,700 acre-ft (12.0 hm³), but capacity may have been reduced by silting.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 603 ft³/s (17.1 m³/s), Oct. 7, gage height, 1.08 ft (0.329 m), no peak above base of 3,000 ft³/s (85 m³/s); no flow observed on several days.

[illegible]

LOCATION.--Lat 34°54'04", long 110°15'17", in NE¼SE¼ sec.6, T.17 N., R.20 E., Navajo County, Hydrologic Unit 15020008, on right bank just upstream from diversion dam, 5.4 mi (8.7 km) west of Holbrook, 5.7 mi (9.2 km) southeast of Joseph City, and 8.5 mi (13.7 km) downstream from Puerco River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,200 ft³/s (147 m³/s) Mar. 1, gage height, 4.00 ft (1.219 m), base discharge, 5,000 ft³/s (142 m³/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	419	1490				
2	---	---	---	---	1810				
3	---	---	---	---	010				
4	---	---	---	---	---				
5	---	---	---	---	---				
6	465	---	---	---	---				
7	772	224	---	---	---				
8	---	---	---	---	---				
9	---	---	---	---	---				
10	---	---	---	---	---				
11	---	---	---	---	---				
12	---	---	---	---	---				
13	---	---	---	---	---				
14	---	---	---	---	---				
15	---	---	---	---	---				
16	---	---	---	---	---				
17	---	---	---	---	---				
18	---	---	---	---	---				
19	---	---	---	---	---				
20	---	---	---	---	---				
21	---	---	---	---	---				
22	---	---	---	---	---				
23	---	---	---	---	---				
24	---	---	---	---	---				
25	---	---	---	---	---				
26	---	---	---	---	---				
27	---	---	---	---	---				
28	---	---	---	---	---				
29	---	---	---	---	---				
30	---	---	---	---	---				
31	---	---	666	---	---				

09398300 BLUE RIDGE RESERVOIR NEAR PINE, AZ

LOCATION.--Lat 34°33'19", long 111°11'00", in NE¼SE¼ sec.33, T.14 N., R.11 E., Coconino County, Hydrologic Unit 15020008, in Coconino National Forest, on upstream side of left end of spillway structure of Blue Ridge Dam on East Clear Creek, at mouth of General Springs Canyon, 7.3 mi (11.7 km) east of Clints Well and 20 mi (32 km) northeast of Pine.

DRAINAGE AREA.--71.1 mi² (184.1 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 6,620 ft (2,018 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. Prior to Apr. 2, 1965, nonrecording-gage readings (at intervals of 3 to 8 days) at NGVD.

REMARKS.--Reservoir is formed by a concrete arch dam. Dam completed and storage began in December 1964. Total capacity is 19,500 acre-ft (24.0 hm³) at elevation 6,735 ft (2,053 m), of which 15,000 acre-ft (18.5 hm³) is usable storage below 6,720 ft (2,048 m)—crest of spillway. Drawdown below elevation 6,640 ft (2,024 m)—capacity, 2,120 acre-ft (2.61 hm³)—for diversion to East Verde River is not permitted. Figures given herein represent total contents. Reservoir is used as a basin for pumping water to East Verde River. (See records for East Verde River diversion from East Clear Creek, near Pine.)

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, about 16,000 acre-ft (19.7 hm³) Dec. 30, 1965, based on outflow studies and weather records; minimum since reservoir filled (April 1965), 1,850 acre-ft (2.28 hm³) Dec. 12, 1967, elevation, 6,636.68 ft (2,022.860 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,810 acre-ft (19.5 hm³) Mar. 2, elevation, 6,722.82 ft (2,049.116 m); minimum, 2,000 acre-ft (2.47 hm³) Jan. 14, elevation, 6,638.54 ft (2,023.427 m).

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on surveys by Leeds, Hill, and Jewett, Inc., January 1962)

6,630	1,400	6,700	10,260
6,640	2,120	6,720	15,000
6,660	3,920	6,730	17,960
6,680	6,580		

CONTENTS, IN ACRE-Feet, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2270	2220	2110	2020	2760	14580	---	14710	12760	10810	9130	7430
2	2270	2220	2110	2020	2910	15810	---	14680	12680	10760	9080	7380
3	2270	2210	2110	2020	3030	15460	---	14670	12610	10700	9020	7320
4	2270	2210	2100	2020	3120	15280	---	14680	12540	10640	8960	7260
5	2260	2210	2100	2010	3210	15480	---	14640	12460	10590	8910	7210
6	2270	2210	2090	2010	3390	15290	---	14600	12390	10530	8850	7150
7	2270	2210	2090	2010	3600	15210	15160	14560	12330	10480	8800	7090
8	2280	2200	2080	2010	3750	15000	15130	14510	12270	10420	8740	7040
9	2280	2200	2080	2010	3870	15190	15090	14450	12190	10360	8690	6980
10	2280	2200	2080	2010	3970	15150	15100	14380	12130	10320	8630	6920
11	2270	2200	2080	2010	4040	15120	15140	14310	12050	10280	8580	6860
12	2270	2200	2070	2010	4130	15100	15160	14240	11980	10230	8530	6800
13	2270	2190	2070	2010	4210	15080	15160	14180	11930	10190	8490	6740
14	2270	2190	2070	2000	4270	15080	15150	14100	11860	10120	8440	6680
15	2260	2180	2060	2010	4320	15060	15140	14010	11800	10080	8390	6630
16	2260	2180	2060	2010	4350	15070	15100	13930	11730	10020	9340	6580
17	2260	2170	2060	2030	4380	15090	15080	13850	11670	9990	9300	6520
18	2260	2170	2060	2030	4410	---	15060	13780	11600	9930	9240	6470
19	2250	2160	2050	2070	4410	---	15070	13720	11540	9870	9190	6410
20	2250	2160	2050	2080	4390	---	15060	13640	11480	9820	9140	6360
21	2250	2160	2040	2090	4380	---	15040	13570	11420	9770	9080	6310
22	2240	2150	2040	2100	4390	---	15020	13500	11360	9720	9040	6260
23	2240	2150	2040	2110	4430	---	15000	13430	11300	9640	8980	6210
24	2240	2140	2040	2120	4500	---	14990	13350	11240	9590	8920	6140
25	2240	2140	2030	2120	4600	---	14970	13270	11180	9540	8870	6110
26	2230	2140	2030	2130	4720	---	14950	13200	11120	9490	8810	6060
27	2230	2130	2030	2140	4840	---	14920	13130	11050	9440	8750	6010
28	2230	2130	2030	2140	7060	---	14880	13050	10980	9380	8680	5950
29	2230	2120	2030	2160	---	---	14820	12980	10930	9330	8630	5900
30	2220	2120	2030	2190	---	---	14760	12910	10870	9270	8560	5850
31	2220	---	2030	2500	---	15100	---	12820	---	9200	8500	---
MAX	2280	2220	2110	2500	7060	---	---	14710	12760	10810	9340	7430
MIN	2220	2120	2030	2000	2760	---	---	12820	10870	9200	7500	5850
(+)	6641.28	6639.98	6638.83	6644.70	6682.97	---	6719.09	6711.39	6702.95	6694.68	6685.66	6674.79
(-)	-60	-100	-90	+470	+4560	+8040	-340	-1940	-1950	-1670	-1700	-1650

CAL YR 1977 \$ -180

WTR YR 1978 \$ +3,570

† Elevation, in feet, at end of month.

\$ Change in contents, in acre-feet.

NOTE.--No gage-height record on days when no values of contents are listed except at monthend, when contents are estimated.

LITTLE COLORADO RIVER BASIN

09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ

LOCATION.--Lat 34°40'03", long 111°00'25", in SW¼SE¼ sec.19, T.15 N., R.13 E., Coconino County, Hydrologic Unit 15020008, in Sitgreaves National Forest, on right bank 2 mi (3 km) downstream from Willow Creek and 30 mi (48 km) southwest of Winslow.

DRAINAGE AREA.--321 mi² (831 km²).

PERIOD OF RECORD.--June 1947 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,957 ft (1,815.7 m), from Topographic Division by photogrammetry.

REMARKS.--Records fair. Flow is partially controlled by Blue Ridge Reservoir (usable capacity, 15,000 acre-ft or 18.5 hm³) about 20 mi (32 km) upstream. (See sta 09398300.) Diversion to East Verde River from Blue Ridge Reservoir. (See sta 09507580.)

AVERAGE DISCHARGE (unadjusted for diversion or storage).--31 years, 78.0 ft³/s (2.209 m³/s), 56,510 acre-ft/yr (69.7 hm³/yr); median of yearly mean discharges, 58 ft³/s (1.64 m³/s), 42,000 acre-ft/yr (52 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft³/s (464 m³/s) Jan. 18, 1952, gage height, 21.5 ft (6.55 m), from rating curve extended above 6,000 ft³/s (170 m³/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 6,000 ft³/s or 170 m³/s) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	1230	*10,500 297	17.48 5.328	Apr. 1	1345	1,700 48.1	9.43 2.874
Mar. 3	0715	4,370 124	12.85 3.917	Apr. 11	1930	542 15.3	6.85 2.088
Mar. 22	2345	3,120 88.4	11.46 3.493				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	54	6100	1470	114	.00	.00	.00	.00
2	.00	.00	.00	.00	98	2400	1140	85	.00	.00	.00	.00
3	.00	.00	.00	.00	60	3460	657	64	.00	.00	.00	.00
4	.00	.00	.00	.00	43	1830	728	49	.00	.00	.00	.00
5	.00	.00	.00	.00	42	1430	698	39	.00	.00	.00	.00
6	.00	.00	.00	.00	41	1640	642	33	.00	.00	.00	.00
7	.00	.00	.00	.00	67	1040	624	30	.00	.00	.00	.00
8	.00	.00	.00	.00	83	773	463	30	.00	.00	.00	.00
9	.00	.00	.00	.00	72	698	306	30	.00	.00	.00	.00
10	.00	.00	.00	.00	64	663	291	30	.00	.00	.00	.00
11	.00	.00	.00	.00	58	539	412	30	.00	.00	.00	.00
12	.00	.00	.00	.00	40	444	446	26	.00	.00	.00	.00
13	.00	.00	.00	.00	43	358	238	21	.00	.00	.00	.00
14	.00	.00	.00	.00	42	281	241	18	.00	.00	.00	.00
15	.00	.00	.00	.00	32	254	221	14	.00	.00	.00	.00
16	.00	.00	.00	.00	28	228	207	12	.00	.00	.00	.00
17	.00	.00	.00	.00	24	219	191	9.5	.00	.00	.00	.00
18	.00	.00	.00	.00	20	300	163	7.5	.00	.00	.00	.00
19	.00	.00	.00	.00	16	471	135	5.8	.00	.00	.00	.00
20	.00	.00	.00	2.4	19	963	126	4.6	.00	.00	.00	.00
21	.00	.00	.00	3.3	20	1140	118	3.3	.00	.00	.00	.00
22	.00	.00	.00	2.8	20	2230	118	2.6	.00	.00	.00	.00
23	.00	.00	.00	2.4	30	2180	113	1.8	.00	.00	.00	.00
24	.00	.00	.00	2.1	44	1420	91	1.2	.00	.00	.00	.00
25	.00	.00	.00	1.7	61	1220	75	.81	.00	.00	.00	.00
26	.00	.00	.00	1.2	82	1080	62	.54	.00	.00	.00	.00
27	.00	.00	.00	.76	99	1070	66	.36	.00	.00	.00	.00
28	.00	.00	.00	.62	609	1100	58	.25	.00	.00	.00	.00
29	.00	.00	.00	.34	---	1030	78	.14	.00	.00	.00	.00
30	.00	.00	.00	.34	---	1020	142	.08	.00	.00	.00	.00
31	.00	---	.00	.86	---	1200	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	19.22	1913	38761	10520	661.68	.00	.00	.00	.00
MEAN	.000	.000	.000	.62	68.3	1251	351	21.3	.000	.000	.000	.000
MAX	.00	.00	.00	3.3	609	6100	1470	114	.00	.00	.00	.00
MIN	.00	.00	.00	.00	16	219	58	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	38	3790	76920	20870	1310	.00	.00	.00	.00

CAL YR 1977	TOTAL	3272.18	MEAN	8.46	MAX	295	MIN	.00	AC-FT	6490
WTR YR 1978	TOTAL	51894.90	MEAN	142	MAX	6100	MIN	.00	AC-FT	102900

09399000 CLEAR CREEK NEAR WINSLOW, AZ

LOCATION.--Lat 34°58'10", long 110°38'40", in SE¼SE¼ sec.9, T.18 N., R.16 E., Navajo County, Hydrologic Unit 15020008, on right bank 10 ft (3.0 m) downstream from bridge on State Highway 99, 1.5 mi (2.4 km) upstream from mouth, and 5 mi (8 km) southeast of Winslow.

DRAINAGE AREA.--607 mi² (1,572 km²).

PERIOD OF RECORD --June to December 1906, January 1907 to January 1909 (gage heights only), March 1929 to February 1934, September 1935 to current year.

REVISED RECORDS.--WSP 859: 1929.

GAGE.--Water-stage recorder with diversion dam 1,200 ft (366 m) downstream as control. Datum of gage is 4,861.32 ft (1,481.730 m) National Geodetic Vertical Datum of 1929. See WSP 1713, 1733, or 1926 for history of changes prior to July 10, 1931.

REMARKS.--Records fair. Records show discharge over dam and do not include flow in canal that diverts at dam or leakage through dam. Storage in and diversion from Blue Ridge Reservoir near Pine, about 50 mi (80 km) upstream, since December 1964. (See sta 09398300.)

AVERAGE DISCHARGE.--47 years (water years 1930-33, 1936-78), 77.2 ft³/s (2.186 m³/s), 55,930 acre-ft/yr (69.0 hm³/yr); median of yearly mean discharges, 59 ft³/s (1.67 m³/s), 42,700 acre-ft/yr (53 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Apr. 4, 1929, gage height, 18.1 ft (5.52 m), present datum, from rating curve extended above 13,500 ft³/s (382 m³/s) on basis of velocity-area studies and verified by slope-area measurement at gage height 13.4 ft (4.08 m); no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floodmarks 3 ft (0.9 m) higher than stage of flood of Apr. 4, 1929, were found 1,850 ft (564 m) downstream from gage in 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	2330	*12,900 365	12.03 3.667	Apr. 2	0800	1,580 44.7	7.59 2.313
Mar. 3	2215	5,000 142	9.41 2.868	Apr. 14	1115	619 17.5	6.71 2.045
Mar. 23	1330	3,440 97.4	8.70 2.652				

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.15	.37	.53	.57	1940	1080	61	.88	.93	1.7	.32
2	.00	.15	.35	.53	.54	6150	1400	53	.90	.99	1.7	.37
3	.00	.13	.35	.53	.54	2910	976	45	.78	.98	1.7	.37
4	.00	.12	.34	.52	.54	3240	770	42	.75	.94	1.7	.37
5	.00	.27	.33	.53	.54	1550	672	40	.79	.91	1.7	.35
6	.48	.42	.30	.53	.57	1550	649	90	.90	.90	1.7	.34
7	.42	.47	.30	.53	.55	1380	600	109	.87	.93	1.7	.33
8	.04	.47	.29	.53	.53	909	580	75	.86	.97	1.6	.28
9	.00	.40	.28	.53	.53	706	557	55	.82	1.0	6.9	.32
10	.00	.56	.28	.58	.54	659	462	43	.72	1.1	4.3	.38
11	.00	.53	.28	.41	.60	646	353	33	.62	1.2	1.1	.33
12	.00	.55	.28	.59	.58	560	319	27	.61	1.2	.81	.26
13	.00	.57	.28	.59	.55	483	421	22	.62	1.2	.72	.23
14	.00	.59	.28	.42	.66	419	550	19	.66	1.3	.50	.23
15	.00	.59	.29	.46	.63	353	545	15	.73	1.3	.40	.27
16	.00	.59	.24	.45	15	304	508	11	.74	1.3	.38	.29
17	.00	.59	.29	.49	20	272	466	11	.73	1.7	.37	.39
18	.00	.59	.32	.54	17	255	390	9.2	.78	2.2	.42	.34
19	.00	.54	.32	.62	13	314	309	7.1	.79	1.9	.44	.26
20	.00	.55	.30	.68	11	479	257	5.2	.79	2.1	.45	.23
21	.00	.43	.30	.64	10	919	229	3.8	.81	2.3	.49	.22
22	.00	.47	.33	.58	7.3	1080	215	2.4	.80	2.0	.51	.24
23	.00	.48	.35	.57	5.4	2820	195	1.7	.74	1.9	.43	.23
24	.00	.45	.35	.52	4.1	1810	160	1.3	.70	1.9	.35	.23
25	.00	.44	.33	.49	3.8	1250	124	1.1	.68	2.0	.32	.23
26	.00	.45	.33	.48	6.5	1090	108	.97	.71	2.1	.29	.22
27	.00	.46	.39	.45	18	969	97	.86	.76	2.3	.23	.20
28	.00	.45	.44	.45	46	970	91	.87	.78	2.1	.22	.13
29	.13	.39	.50	.49	---	996	92	.86	.86	2.0	.26	.06
30	.20	.58	.48	.50	---	925	75	.94	.90	1.9	.28	.01
31	.18	---	.39	.55	---	976	---	.91	---	1.8	.27	---
TOTAL	1.45	11.03	10.26	13.91	185.57	38864	13250	788.21	23.08	47.35	33.94	8.03
MEAN	.047	.37	.33	.45	6.63	1254	442	25.4	.77	1.53	1.09	.27
MAX	.48	.48	.50	.68	46	6150	1400	109	.90	2.3	6.9	.39
MIN	.00	.12	.24	.32	.53	255	75	.86	.61	.90	.22	.01
AC-FT	2.9	22	20	28	368	77090	26280	1560	46	94	67	16

CAL YR 1977	TOTAL	2243.18	MEAN	6.15	MAX	316	MIN	.00	AC-FT	4450
WTR YR 1978	TOTAL	53236.83	MEAN	146	MAX	6150	MIN	.00	AC-FT	105600

LITTLE COLORADO RIVER BASIN

09401200 LITTLE COLORADO RIVER AT CAMERON, AZ
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 35°52'40", long 111°24'40", in NE¼SE¼ sec.22, T.29 N., R.9 E. (unsurveyed), Coconino County, Hydrologic Unit 15020016, at bridge on U.S. Highway 89 at Cameron, in Navajo Indian Reservation, 2.5 mi (4.0 km) upstream from Moenkopi Wash, 12 mi (19.3 km) upstream from gaging station 09402000 Little Colorado River near Cameron, and 57.5 mi (92.5 km) upstream from mouth.

DRAINAGE AREA.--24,000 mi² (62,000 km²), approximately.

PERIOD OF RECORD.--October 1947 to September 1970, October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1970.

WATER TEMPERATURE: October 1951 to September 1970.

SUSPENDED-SEDIMENT DISCHARGE: October 1947 to September 1970.

REMARKS.--Streamflow ungaged. No flow for extended periods each year.

COOPERATION.--Pesticide analysis performed by Environmental Protection Agency.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DISE- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DISE- SOLVED (MG/L AS Mg)	SODIUM, DISE- SOLVED (MG/L AS Na)
OCT 07...	1400	E20	550	8.5	21.0	6600	3100	22	0	7.7	.7	130
NOV 21...	1300	E2.0	1380	8.2	7.5	3800	--	88	0	27	4.9	290
JAN 05...	1300	.00	--	--	--	--	--	--	--	--	--	--
FEB 06...	1200	E80	880	8.5	6.0	K400	5400	37	0	12	1.6	190
MAR 09...	1530	E1500	440	7.9	12.0	2400	--	34	0	10	2.1	85
APR 05...	1730	E1100	260	8.3	17.0	<1	K150	39	0	12	2.3	42
MAY 05...	1500	E20	700	8.1	14.0	K10	18000	110	31	32	6.4	100
JUN 06...	1300	.00	--	--	--	--	--	--	--	--	--	--
JUL 05...	1300	.00	--	--	--	--	--	--	--	--	--	--
AUG 17...	1300	.00	--	--	--	--	--	--	--	--	--	--
SEP 05...	1600	.00	--	--	--	--	--	--	--	--	--	--

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DISE- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISE- SOLVED (MG/L)	SOLIDS, DISE- SOLVED (TONS PER AC-FT)
OCT 07...	12	1.3	260	6	57	36	1.1	13	342	381	.47
NOV 21...	13	3.0	300	0	210	180	.9	9.6	870	874	1.18
JAN 05...	--	--	--	--	--	--	--	--	--	--	--
FEB 06...	14	2.2	290	0	99	93	.8	11	544	553	.74
MAR 09...	6.4	1.7	130	0	44	54	.5	6.7	295	268	.40
APR 05...	2.9	1.7	77	0	20	29	.2	5.9	147	151	.20
MAY 05...	4.2	5.9	92	0	36	150	.1	6.1	374	384	.51
JUN 06...	--	--	--	--	--	--	--	--	--	--	--
JUL 05...	--	--	--	--	--	--	--	--	--	--	--
AUG 17...	--	--	--	--	--	--	--	--	--	--	--
SEP 05...	--	--	--	--	--	--	--	--	--	--	--

E Estimated.

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

LITTLE COLORADO RIVER BASIN

91

09401200 LITTLE COLORADO RIVER AT CAMERSON, AZ

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT 07...	.19	.58	--	--	--	.13	.14	--	--	--	--	--
NOV 21...	--	--	--	--	--	.13	.14	340	3	--	--	15
FEB 06...	1.5	.00	17	17	19	17	.12	55	6	100	350	0
MAR 09...	.24	.54	2.8	3.1	3.3	5.1	.05	--	--	--	--	--
APR 05...	.12	.01	4.2	4.2	4.3	3.9	.05	--	--	--	--	--
MAY 05...	.02	.58	.00	.33	.35	.18	.02	3	1	--	--	2

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--
NOV 21...	0	280	4	150	0	330	10	270000	30	320	2
FEB 06...	0	10	0	3	1	19	6	1300	20	22	4
MAR 09...	--	--	--	--	--	--	--	--	--	--	--
APR 05...	--	--	--	--	--	--	--	--	--	--	--
MAY 05...	0	20	0	6	0	15	2	2800	10	12	2

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--
NOV 21...	10000	0	1.0	.0	4	4	1400	10	--	--	--
FEB 06...	20	0	1.0	.0	5	1	20	30	--	--	--
MAR 09...	--	--	--	--	--	--	--	--	60	--	--
APR 05...	--	--	--	--	--	--	--	--	32	--	--
MAY 05...	90	10	.0	.0	0	0	40	10	--	5.2	1.1

LITTLE COLORADO RIVER BASIN

09401200 LITTLE COLORADO RIVER AT CAMERSON, AZ

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ALDRIN, TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	ODE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELURIN TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	EIHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)
NOV 21...	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV 21...	ND	ND	ND	ND	ND	--	ND	ND	--	--	--
FEB 06...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAY 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	TIME	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)
OCT 07...	1400	21.0	32600	99	2600
NOV 21...	1300	7.5	38200	100	0
FEB 06...	1200	6.0	52400	99	--
MAR 09...	1530	12.0	22500	57	57
APR 05...	1730	17.0	10100	66	--
MAY 05...	1500	14.0	510	79	1700

ND Material specifically analyzed for but not detected.

LITTLE COLORADO RIVER BASIN

93

09401200 LITTLE COLORADO RIVER AT CAMERSON, AZ

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	OCT 7, 77 1400	NOV 21, 77 1300	MAR 9, 78 1530	MAY 5, 78 1500
TOTAL CELLS/ML	2600	0	57	1700
DIVERSITY: DIVISION	0.9	0.0	0.0	0.0
..CLASS	0.9	0.0	0.0	0.0
...ORDER	0.9	0.0	0.0	0.0
...FAMILY	0.9	0.0	0.0	0.0
....GENUS	0.9	0.0	0.0	0.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	1700#	67	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
...NAVICULACEAE								
....NAVICULA	870#	33	--	-	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	--	-	--	-	--	-	1700#	100
EUGLENOPHYTA (EUGLENUIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	57#	100	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

LITTLE COLORADO RIVER BASIN

09401226 COAL MINE WASH TRIBUTARY NO. 1 NEAR KAYENTA, AZ

LOCATION.--Lat 36°31'54", long 110°24'02", Navajo County, Hydrologic Unit 15020018, in Navajo Indian Reservation, on left bank, 0.25 mi (0.40 km) upstream from Coal Mine Wash and 16 mi (26 km) southwest of Kayenta.

DRAINAGE AREA.--0.62 mi² (1.61 km²), approximately.

PERIOD OF RECORD.--October 1977 to September 1978, October 1976 to September 1977 (annual maximum only), December 1973 to September 1975, records not equivalent because of control installation.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,560 ft (1,999 m), from topographic map. December 1973 to September 1975, recording gage and supplementary crest-stage gage located 30 ft (9.14 m) downstream at different datum.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 772 ft³/s (21.9 m³/s) July 10, 1975 (from slope-area measurement), gage height, 8.5 ft (2.6 m), approximately (flow went around ends of control). No flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.15 ft³/s (0.004 m³/s) July 24, gage height, 1.11 ft (0.338 m), no peak above base of 5.0 ft³/s (0.14 m³/s). No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.003	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0004	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0034	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.00011	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.003	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.0000	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.007	.00	.00

WTR YR 1978 TOTAL 0.0034 MEAN .000009 MAX .003 MIN .00 AC-FT .007

LITTLE COLORADO RIVER BASIN

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09401229 COAL MINE WASH TRIBUTARY NO. 2 NEAR KAYENTA, AZ

LOCATION.--Lat 36°32'13", long 110°24'28", Navajo County, Hydrologic Unit 15020018, in Navajo Indian Reservation, on right bank, 0.25 mi (0.40 km) upstream from mouth, and 20 mi (32 km) southwest of Kayenta.

DRAINAGE AREA.--0.06 mi² (0.16 km²), approximately. Prior to July 1975, 0.62 mi² (1.61 km²).

PERIOD OF RECORD.--October 1977 to September 1978, October 1975 to September 1977 (annual maximum only, records published in Progress Report on Black Mesa Monitoring Program, 1977, U.S. Geological Survey open-file report 78-459). December 1973 to March 1975, records not equivalent because control was not installed.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,510 ft (1,984 m), from topographic map. December 1973 to March 1975, recording gage and supplementary crest-stage gage at same site at different datum.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15 ft³/s (0.425 m³/s) July 16, 1974, gage height, 0.46 ft (0.140 m), datum then in use; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.10 ft³/s (0.003 m³/s) Mar. 1, gage height, 1.08 ft (0.329 m), no peak above base of 1.0 ft³/s (0.028 m³/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00

WTR YR 1978 TOTAL 0.01 MEAN .000 MAX .01 MIN .00 AC=FT .02

LITTLE COLORADO RIVER BASIN

09401260 MOENKOPI WASH AT MOENKOPI, AZ

LOCATION.--Lat 36°06'18", long 111°12'04", in NW¼NE¼ sec.3, T.31 N., R.11 E. (unsurveyed), Coconino County, Hydrologic Unit 15020018, in Navajo Indian Reservation on left bank 100 ft (30 m) upstream from bridge on State Highway 264, 1.3 mi (2.1 km) southeast of Moenkopi, 2.5 mi (4.0 km) downstream from former gaging station 09401250, and 12.5 mi (20.1 km) downstream from Begashibito Wash.

DRAINAGE AREA.--1,660 mi² (4,300 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1976 to current year. Records for October 1973 to July 1976 at site 2.5 mi (4.0 km) upstream, not equivalent below 1.5 ft³/s (0.042 m³/s) due to channel losses.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,610 ft (1,405 m), from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,420 ft³/s (153 m³/s) Sept. 25, 1976, gage height, 9.9 ft (3.02 m), from profile of floodmarks past gage, from rating curve extended above 140 ft³/s (3.96 m³/s) on basis of slope-area measurement of peak flow. No flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 15,100 ft³/s (428 m³/s) occurred Aug. 4, 1929, at former gaging station site 3.5 mi (5.6 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 262 ft³/s (7.420 m³/s) Sept. 25, gage height, 5.03 ft (1.533 m), no peak above base of 1,200 ft³/s (34 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	1.5	2.4	2.8	4.4	2.0	1.8	1.3	.50	.00	.00	.00
2	.70	1.5	2.4	2.8	3.6	2.7	1.8	1.3	.50	.00	.00	.00
3	.50	1.5	2.4	2.8	3.6	1.3	1.8	1.1	.40	.00	.00	.00
4	.50	2.1	2.4	2.8	3.6	9.0	1.8	1.1	.50	.00	.00	.00
5	.50	2.1	2.4	2.8	1.2	1.3	1.8	1.1	.50	.00	.00	.00
6	.70	2.1	2.4	2.8	4.0	1.5	1.1	1.1	.50	.00	.00	.00
7	1.5	2.8	2.4	2.8	4.9	6.0	1.1	1.1	.60	.00	.00	.00
8	.70	4.9	2.4	2.8	1.2	4.0	1.1	1.1	.50	.00	.00	.00
9	1.1	3.2	1.8	2.8	4.0	4.0	1.1	1.1	.50	.00	.00	.00
10	1.1	2.4	1.8	3.2	4.0	1.8	1.1	.70	.50	.00	.00	.00
11	1.1	2.4	1.8	3.6	4.0	1.8	1.1	.80	.20	.00	.00	.00
12	1.1	2.4	1.8	3.6	4.9	4.0	1.8	.70	.00	.00	.00	.00
13	1.1	2.4	2.4	3.2	4.0	1.8	1.8	.60	.00	.00	.00	.00
14	1.1	2.4	2.4	2.8	4.0	6.0	1.8	.50	.00	.00	.00	.00
15	1.1	2.4	2.4	2.8	4.0	1.8	1.8	.50	.00	.00	.00	.00
16	.70	2.4	2.4	3.2	4.0	1.8	1.8	.40	.00	.00	.00	.00
17	.70	2.4	2.4	4.9	4.0	1.8	1.8	.60	.00	.00	.00	.00
18	1.1	2.4	2.4	5.4	3.2	1.8	1.8	.60	.00	.00	.00	.00
19	1.1	2.4	2.4	5.4	4.0	1.8	1.8	.70	.00	3.3	.00	.00
20	.70	2.4	2.4	5.4	4.4	1.8	2.8	.70	.00	.90	.00	.00
21	.70	1.8	2.4	4.4	4.4	1.8	2.8	.60	.00	.30	.00	.00
22	1.1	1.5	2.4	4.4	4.0	1.8	2.8	.50	.00	.00	.00	.00
23	1.5	1.5	2.4	4.4	4.0	1.8	2.8	.50	.00	.00	.00	.00
24	1.5	1.5	2.4	3.6	4.0	1.8	2.8	.50	.00	.00	.00	.50
25	1.5	1.5	2.4	3.6	4.0	1.8	2.8	.40	.00	.00	.00	91
26	1.5	1.5	2.8	4.4	4.0	1.8	2.8	.50	.00	7.2	.00	15
27	1.5	1.5	2.8	5.4	4.0	1.8	2.8	.50	.00	3.8	.00	4.0
28	1.5	1.5	3.6	4.4	3.4	1.8	1.8	.50	.00	1.8	.00	.70
29	1.5	2.1	4.4	4.4	---	1.8	1.5	.50	.00	1.1	.00	.50
30	1.5	2.4	3.6	3.6	---	1.8	1.5	.50	.00	.20	.00	.20
31	1.5	---	2.8	5.4	---	1.8	---	.50	---	.00	.00	---
TOTAL	33.10	64.9	77.6	116.7	120.8	157.0	57.2	22.60	5.20	18.60	.00	111.70
MEAN	1.07	2.16	2.50	3.76	4.31	5.06	1.91	.73	.17	.60	.000	3.72
MAX	1.5	4.9	4.4	5.4	1.2	2.7	2.8	1.3	.60	7.2	.00	91
MIN	.50	1.5	1.8	2.8	3.2	1.8	1.1	.40	.00	.00	.00	.00
AC-FT	66	129	154	231	240	311	115	45	10	37	.00	222

CAL YR 1977 TOTAL 5513.70 MEAN 15.1 MAX 1900 MIN .00 AC-FT 10940
WTR YR 1978 TOTAL 785.40 MEAN 2.15 MAX 91 MIN .00 AC-FT 1560

NOTE.--No gage-height record Oct. 14 to Nov. 21, Nov. 29 to Feb. 17, Mar. 3 to Apr. 3.

09401260 MOENKOPI WASH AT MOENKOPI, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1973 to current year.

WATER TEMPERATURES: October 1973 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1973 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum observed, 4,070 micromhos July 14, 1975; minimum observed, 564 micromhos Dec. 28, 1976.

WATER TEMPERATURES: Maximum observed, 33.0°C July 9, Aug. 22, 1975, July 30, 1976; minimum observed, 0.0°C on many days during winter months.

SEDIMENT CONCENTRATIONS: Maximum daily, 262,000 mg/L Sept. 25, 1976; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 1,600,000 tons (1,450,000 tonnes) Sept. 25, 1976; minimum daily, 0 ton (0 tonne) on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum observed, 3,080 micromhos Oct. 29; minimum observed, 702 micromhos Feb. 20.

WATER TEMPERATURES: Maximum observed, 29.0°C May 19; minimum observed, 1.0°C Nov. 9.

SEDIMENT CONCENTRATIONS: Maximum daily, 114,000 mg/L Sept. 25; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 34,700 tons (31,500 tonnes) Sept. 25; minimum daily, 0 ton (0 tonne) on many days.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)
NOV 21...	1615	2.4	1000	8.2	8.0	290	85	83
JAN 04...	1715	2.7	920	8.4	7.5	240	55	65
FEB 17...	1340	3.5	900	8.1	4.0	250	77	70
JUL 19...	1215	2.8	1400	8.5	27.0	230	15	47
SEP 25...	1630	75	2700	7.2	19.0	1300	1100	380

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
NOV 21...	20	120	3.1	5.8	250	0	310	15	.5
JAN 04...	19	110	3.1	4.2	210	8	290	15	.6
FEB 17...	18	100	2.8	3.6	210	0	260	13	.5
JUL 19...	27	260	7.5	7.7	260	0	510	20	.6
SEP 25...	97	220	2.6	14	360	0	1500	22	.5

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, ORTHU, DIS- SOLVED (MG/L AS P)	BURUN, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
NOV 21...	10	678	689	.92	.30	.00	0	60
JAN 04...	7.8	652	624	.89	.16	.00	80	10
FEB 17...	7.2	573	577	.78	.15	.00	80	20
JUL 19...	11	984	1020	1.34	2.1	.01	150	680
SEP 25...	11	2630	2430	3.58	1.7	.06	190	40

LITTLE COLORADO RIVER BASIN

09401260 MOENKOPI WASH AT MOENKOPI, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1260	856	834	912	854	1030	959	1210	1050	---	---	---
2	1200	873	837	925	859	---	916	966	1060	---	---	---
3	1070	862	791	926	851	1490	933	964	1110	---	---	---
4	1130	832	788	901	836	1510	932	938	1200	---	---	---
5	1060	846	812	873	821	1520	916	961	1200	---	---	---
6	1130	1150	815	869	818	1170	870	878	1200	---	---	---
7	1110	1160	829	856	826	1280	903	868	1280	---	---	---
8	1130	1160	825	867	848	1540	909	862	1500	---	---	---
9	1170	1380	840	853	826	1230	919	862	1380	---	---	---
10	1140	1400	868	864	854	1220	898	865	1380	---	---	---
11	1130	1220	862	876	847	1090	902	883	---	---	---	---
12	1020	894	833	897	859	911	860	863	---	---	---	---
13	955	870	822	847	963	883	901	903	---	---	---	---
14	2970	860	815	861	832	858	890	908	---	---	---	---
15	1000	838	896	856	847	1400	887	879	---	---	---	---
16	926	854	891	888	841	1410	919	930	---	---	---	---
17	900	880	971	888	836	883	929	1030	---	---	---	---
18	918	875	931	909	853	861	840	1020	---	---	---	---
19	896	908	937	873	868	857	847	999	---	1600	---	---
20	893	916	951	943	702	841	840	935	---	1450	---	---
21	887	925	809	933	782	---	938	926	---	---	---	---
22	900	853	809	910	771	856	951	920	---	---	---	---
23	889	842	809	922	775	845	895	923	---	---	---	---
24	881	859	803	897	781	916	850	1090	---	---	---	---
25	872	854	798	892	804	917	876	1240	---	---	---	1820
26	869	835	780	872	788	871	862	1250	---	2090	---	2500
27	848	816	781	894	843	830	899	1150	---	1800	---	2200
28	839	815	785	797	847	847	903	1150	---	1810	---	2080
29	3080	824	909	789	---	840	889	1040	---	1740	---	1930
30	1000	822	923	805	---	837	865	1050	---	1800	---	1750
31	883	---	955	840	---	973	---	1040	---	---	---	---
MAX	3080	1400	971	943	963	1540	959	1250	1500	2090	---	2500
MIN	839	815	780	789	702	830	840	862	1050	1450	---	1750
WTR YR 1978	MAX	3080		MIN	702							

LITTLE COLORADO RIVER BASIN

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09401260 MOENKOPI WASH AT MOENKOPI, AZ--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.0	13.0	6.0	7.0	6.0	10.0	6.0	13.0	26.0	---	---	---
2	11.0	10.0	2.0	5.0	4.0	10.0	15.0	20.0	23.0	---	---	---
3	14.0	5.0	2.0	5.0	5.0	10.0	16.0	24.0	16.0	---	---	---
4	23.0	10.0	4.0	7.0	6.0	8.0	17.0	20.0	18.0	---	---	---
5	23.0	11.0	5.0	9.0	6.0	10.0	19.0	13.0	22.0	---	---	---
6	20.0	8.0	2.0	6.0	8.0	14.0	23.0	14.0	15.0	---	---	---
7	21.0	4.0	2.0	6.0	11.0	16.0	15.0	17.0	16.0	---	---	---
8	21.0	6.0	5.0	5.0	12.0	16.0	16.0	25.0	18.0	---	---	---
9	21.0	1.0	4.0	6.0	7.0	15.0	14.0	25.0	18.0	---	---	---
10	11.0	2.0	2.0	7.0	9.0	11.0	22.0	25.0	25.0	---	---	---
11	10.0	4.0	2.0	5.0	8.0	10.0	24.0	25.0	---	---	---	---
12	9.0	12.0	2.0	7.0	7.0	15.0	26.0	26.0	---	---	---	---
13	8.0	3.0	6.0	6.0	5.0	4.0	21.0	28.0	---	---	---	---
14	8.0	10.0	7.0	4.0	8.0	4.0	20.0	25.0	---	---	---	---
15	9.0	10.0	6.0	6.0	9.0	6.0	18.0	26.0	---	---	---	---
16	19.0	10.0	5.0	5.0	5.0	7.0	12.0	25.0	---	---	---	---
17	20.0	2.0	4.0	8.0	6.0	20.0	21.0	26.0	---	---	---	---
18	20.0	10.0	4.0	6.0	5.0	20.0	24.0	26.0	---	---	---	---
19	19.0	6.0	2.0	5.0	8.0	18.0	21.0	29.0	---	27.0	---	---
20	18.0	8.0	3.0	8.0	10.0	18.0	20.0	28.0	---	18.0	---	---
21	18.0	8.0	5.0	8.0	12.0	20.0	21.0	21.0	---	---	---	---
22	16.0	5.0	4.0	5.0	14.0	20.0	11.0	24.0	---	---	---	---
23	12.0	6.0	5.0	5.0	12.0	22.0	24.0	21.0	---	---	---	---
24	17.0	8.0	2.0	4.0	14.0	18.0	23.0	18.0	---	---	---	---
25	8.0	10.0	5.0	4.0	13.0	22.0	21.0	22.0	---	---	---	18.0
26	18.0	10.0	4.0	4.0	12.0	25.0	23.0	26.0	---	28.0	---	15.0
27	18.0	5.0	5.0	5.0	10.0	18.0	22.0	26.0	---	21.0	---	26.0
28	10.0	4.0	6.0	6.0	9.0	25.0	25.0	27.0	---	21.0	---	27.0
29	20.0	7.0	7.0	8.0	---	23.0	22.0	26.0	---	26.0	---	6.0
30	16.0	7.0	8.0	7.0	---	21.0	21.0	27.0	---	23.0	---	10.0
31	12.0	---	8.0	8.0	---	22.0	---	28.0	---	---	---	---
MAX	23.0	13.0	8.0	9.0	14.0	25.0	26.0	29.0	26.0	28.0	---	27.0
MIN	8.0	1.0	2.0	4.0	4.0	4.0	6.0	13.0	15.0	18.0	---	6.0
WTR YR 1978	MAX	29.0		MIN	1.0							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	214	364	284	181	30700	238	180	110	---		---
2	82	190	352	249	386	52600	568	196	163	---		---
3	75	204	360	233	178	19200	556	228	101	---		---
4	48	256	329	286	429	3600	618	129	85	---		---
5	78	267	308	246	144	8360	317	104	92	---		---
6	96	1350	412	247	166	11300	326	111	102	---		---
7	123	1360	340	200	205	9320	284	119	90	---		---
8	142	1330	304	200	167	2770	237	120	94	---		---
9	54	511	312	378	157	483	263	102	104	---		---
10	50	506	416	365	192	359	162	87	121	---		---
11	62	454	354	326	395	466	154	139	---	---		---
12	80	346	385	320	391	379	144	109	---	---		---
13	77	339	347	227	296	389	211	90	---	---		---
14	96	340	364	214	206	563	129	92	---	---		---
15	114	322	444	217	212	365	154	98	---	---		---
16	120	228	442	393	238	211	110	90	---	---		---
17	96	356	155	358	300	634	112	96	---	---		---
18	107	351	160	235	199	190	116	78	---	---		---
19	71	378	206	234	141	248	139	87	---	27700		---
20	120	353	164	240	233	223	153	100	---	2400		---
21	114	302	291	461	262	173	164	84	---	300		---
22	144	309	312	324	152	695	126	78	---	---		---
23	77	303	298	218	220	241	101	90	---	---		---
24	125	320	294	224	191	220	108	142	---	---		500
25	151	266	534	252	222	193	168	94	---	50500		114000
26	140	251	407	285	202	243	134	77	---	50500		46200
27	156	295	520	306	408	220	100	113	---	57000		10300
28	162	282	318	300	366	196	90	101	---	4210		3000
29	103	286	352	300	---	186	107	196	---	296		345
30	232	295	439	274	---	176	98	155	---	22		252
31	204	---	331	317	---	231	---	105	---	---		

[illegible]

LITTLE COLORADO RIVER BASIN

09401260 MOENKOPI WASH AT MOENKOPI, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
MAR							
02...	1200	20	10.0	48500	2670	68	78
02...	1600	17	10.0	44600	2060	70	85
JUL							
26...	1800	10	28.0	109000	3180	59	82
SEP							
25...	1200	114	18.0	123000	37900	55	67

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM
MAR							
02...	92	--	99	--	99	--	100
02...	96	--	99	--	--	--	100
JUL							
26...	96	--	99	--	99	--	100
SEP							
25...	88	98	--	99	--	100	--

LITTLE COLORADO RIVER BASIN

09401400 MOENKOPI WASH NEAR TUBA CITY, AZ

LOCATION.--Lat 36°01'25", long 111°23'48", in sec.35, T.31 N., R.9 E. (unsurveyed), Coconino County, Hydrologic Unit 15020018, on Navajo Indian Reservation, on downstream side of bridge on U.S. Highway 89, 3,500 ft (1,070 m) downstream from Hamblin Wash, 11 mi (18 km) upstream from mouth, and 12 mi (19 km) southwest of Tuba City.

DRAINAGE AREA.--2,500 mi² (6,500 km²), approximately, of which about 1,200 mi² (3,100 km²) is partly or entirely noncontributing.

PERIOD OF RECORD.--June 1941 to December 1953 (published as "near Tuba"), February 1965 to September 1978 (discontinued). Records for July 1926 to June 1941 at site 8 mi (13 km) upstream not equivalent.

REVISED RECORDS.--WSP 1213: 1943(M). WSP 1926: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,309 ft (1,313.4 m) National Geodetic Vertical Datum of 1929. June 23, 1941, to Dec. 10, 1953, at site 2,500 ft (760 m) upstream at datum 4,310.96 ft (1,313.981 m) NGVD (State Highway Department bench mark).

REMARKS.--Records poor. Diversions above station for irrigation of about 500 acres (2.0 km²).

AVERAGE DISCHARGE.--25 years (water years 1942-53, 1966-78), 14.7 ft³/s (0.416 m³/s), 10,650 acre-ft/yr (13.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s (343 m³/s) Oct. 19, 1972, gage height, 16.98 ft (5.176 m), from floodmarks in recorder shelter; no flow for many days in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 15,100 ft³/s (428 m³/s) occurred 8 mi (13 km) upstream (published as "near Tuba City") Aug. 4, 1929, from rating curve extended above 200 ft³/s (5.7 m³/s) on basis of slope-area measurement of peak flow; maximum discharge for period 1926-41.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,710 ft³/s (48.4 m³/s) June 28, gage height, 10.35 ft (3.155 m), base discharge 1,400 ft³/s (40 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.0	3.2	4.0	1.0	14.2	10	.00	.00	.00	.00	.00
2	.00	1.0	3.2	4.0	1.0	3.0	8.0	.00	.00	.00	.00	.00
3	.00	1.4	3.0	4.0	1.0	2.4	7.5	.00	.00	.00	.00	.00
4	.10	1.0	3.0	3.5	1.0	1.0	5.0	.00	.00	.00	.00	.00
5	.20	1.0	3.5	3.8	1.0	1.0	2.0	.00	.00	.00	.00	.00
6	1.2	1.0	3.0	4.1	1.0	.20	1.0	.00	.00	.00	.00	36
7	.50	2.0	3.5	4.1	1.0	.00	.00	.00	.00	.00	.00	12
8	.50	4.8	3.5	3.5	1.0	.00	.00	.00	.00	.00	.00	.20
9	.50	2.0	3.0	2.7	1.0	.00	.00	.00	.00	.00	.00	.20
10	.50	2.0	3.0	11	1.0	.00	.00	.00	.00	.00	.00	.20
11	.50	1.7	3.2	13	1.0	.00	.00	.00	.00	.00	.00	.20
12	.50	1.0	3.0	5.0	1.0	1.0	.00	.00	.00	.00	.00	.20
13	.50	2.0	3.2	4.0	1.0	1.0	.00	.00	.00	.00	.00	.20
14	.80	2.0	3.0	3.0	.00	.50	.00	.00	.00	.00	.00	.20
15	.50	2.7	3.0	32	4.0	.20	.00	.00	.00	.00	.00	.20
16	1.0	2.0	4.0	6.0	4.0	.20	.00	.00	.00	.00	.00	3.4
17	1.0	2.0	4.5	4.0	4.1	.20	.00	.00	.00	.00	.00	.20
18	1.0	2.0	4.5	3.0	3.2	.20	.00	.00	.00	.00	.00	.10
19	1.3	2.0	3.2	6.9	3.0	.20	.00	.00	.00	.00	.00	.00
20	1.2	2.0	4.0	57	3.0	.20	.00	.00	.00	.00	48	.00
21	1.0	2.2	3.2	10	3.0	.20	.00	.00	.00	.00	2.0	.00
22	1.0	2.3	3.2	5.0	3.0	.20	.00	.00	.00	.00	.00	.00
23	1.0	2.3	3.0	3.0	3.2	.20	.00	.00	.00	.00	.00	.00
24	1.0	2.5	3.0	2.0	2.7	.20	.00	.00	.00	.00	.00	.00
25	1.0	2.5	4.5	2.0	2.5	.20	.00	.00	.00	.00	.00	62
26	.40	2.5	3.0	1.8	2.5	.20	.00	.00	.00	.00	.00	13
27	.40	2.5	3.2	1.8	2.5	.20	.00	.00	.00	.00	.00	.00
28	.40	2.5	4.1	1.5	48	.20	.00	.00	157	.00	.00	.00
29	.40	2.7	3.0	1.5	---	.20	.00	.00	14	.00	.00	.00
30	1.0	4.1	4.0	1.8	---	.20	.00	.00	.00	.00	.00	.00
31	1.0	---	4.0	2.0	---	.20	---	.00	---	.00	.00	---
TOTAL	20.40	62.7	124.4	273.1	115.5	262.10	33.50	.00	171.00	.00	50.00	128.30
MEAN	.66	2.09	4.03	8.81	4.12	8.45	1.12	.000	5.70	.000	1.61	4.28
MAX	1.5	4.8	4.1	6.9	4.0	14.2	10	.00	157	.00	48	62
MIN	.00	1.0	3.0	1.5	1.0	.00	.00	.00	.00	.00	.00	.00
AC-FT	40	124	248	542	229	520	66	.00	339	.00	99	254

CAL YR 1977 TOTAL 5271.90 MEAN 14.4 MAX 1500 MIN .00 AC-FT 10460
WTR YR 1978 TOTAL 1241.30 MEAN 3.40 MAX 157 MIN .00 AC-FT 2460

NOTE.--No gage-height record Oct. 1 to Nov. 20, Apr. 4 to June 27, June 30 to Aug. 19.

09402000 LITTLE COLORADO RIVER NEAR CAMERON, AZ

LOCATION.--Lat 35°55'35", long 111°34'00", in NW¼ sec.5, T.29 N., R.8 E. (unsurveyed), Coconino County, Hydrologic Unit 15020016, in Navajo Indian Reservation, on left bank 3 mi (5 km) downstream from Coconino damsite, 9.5 mi (15.3 km) downstream from Moenkopi Wash, 9.5 mi (15.3 km) northwest of Cameron, and 45 mi (72 km) upstream from mouth.

DRAINAGE AREA.--26,500 mi² (68,600 km²), approximately.

PERIOD OF RECORD.--June 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,979.2 ft (1,212.86 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for periods of no gage-height record, which are poor. Diversions above station for irrigation of about 32,000 acres (130 km²), and for municipal uses. Some regulation by reservoirs above station (combined capacity of principal reservoirs, about 127,000 acre-ft or 157 hm³).

AVERAGE DISCHARGE.--31 years, 220 ft³/s (6.23 m³/s), 159,400 acre-ft/yr (197 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s (705 m³/s) Jan. 21, 1952, gage height, 20.7 ft (6.31 m); no flow at times in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 120,000 ft³/s (3,400 m³/s) occurred on Sept. 19 or 20, 1929, based on discharge at Grand Falls.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s (113 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 6	2100	*9,540 267	12.50 3.810
Mar. 24	unknown	unknown	unknown

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231	.00	1.2	3.1	22	761	1770	88	.00	.00	.00	.00
2	105	.00	1.4	2.4	640	151	1940	93	.00	.00	.00	.00
3	68	.00	1.1	2.0	474	2350	2120	82	.00	.00	.40	.00
4	46	.00	1.4	1.8	270	3310	2340	65	.00	.00	.10	.00
5	28	.00	1.4	1.8	133	5290	1710	51	.00	.00	.00	.00
6	39	.00	1.2	2.0	95	8710	1400	48	.00	.00	.00	75
7	43	5.0	1.2	2.2	72	7000	1220	41	.00	.00	.00	85
8	1180	17	1.2	1.8	53	4000	1080	30	.00	.00	.00	20
9	723	5.7	.80	1.8	40	2000	983	20	.00	.00	.00	10
10	238	5.4	.80	2.2	32	1000	902	25	.00	.00	.00	5.0
11	106	1.4	.70	3.1	26	700	824	144	.00	.00	.00	1.0
12	68	27	.70	4.7	23	500	614	131	.00	.00	.00	.00
13	51	59	1.0	3.8	23	400	465	93	.00	.00	.00	.00
14	35	46	1.0	2.8	24	200	400	64	.00	.00	.00	.00
15	24	37	.80	4.4	26	100	716	49	.00	.00	.00	.00
16	18	25	.50	11	20	90	836	45	.00	.00	.00	.00
17	13	19	1.2	12	14	80	764	40	.00	.00	.00	38
18	7.4	14	1.6	7.8	67	70	686	20	.00	.00	.00	38
19	4.7	12	2.2	5.4	100	60	590	10	.00	.00	.00	10
20	3.8	8.2	.70	50	95	50	465	5.0	.00	.00	.00	5.0
21	3.1	6.1	.40	9.9	77	60	333	2.0	.00	.00	63	1.0
22	2.0	5.4	.50	6.6	54	90	288	1.0	.00	.00	16	.00
23	.30	3.8	.70	4.0	55	500	242	.00	.00	.00	.00	.00
24	.10	2.6	.70	2.6	53	4000	212	.00	.00	.00	.00	193
25	.00	1.8	2.0	2.0	34	3500	195	.00	.00	.00	3.8	24
26	.00	1.6	2.4	1.6	31	3000	172	.00	.00	.00	31	80
27	.00	1.1	1.4	33	31	2400	143	.00	.00	.00	7.8	20
28	.00	.80	1.7	37	56	2040	121	.00	47	.00	.20	5.0
29	.00	1.0	35	29	---	1940	108	.00	55	.00	.00	1.0
30	.00	1.0	13	30	---	1890	93	.00	.00	.00	.00	.00
31	.00	---	4.7	22	---	1820	---	.00	---	.00	.00	---
TOTAL	3037.40	304.90	84.60	303.8	2650	56062	23732	1152.00	102.00	.00	122.30	611.00
MEAN	98.0	10.2	2.73	9.80	94.6	1873	791	37.2	3.40	.000	3.95	20.4
MAX	1180	59	35	50	640	8710	2340	144	55	.00	63	193
MIN	.00	.00	.40	1.6	14	50	93	.00	.00	.00	.00	.00
AC-FT	6020	605	168	603	5260	115200	47070	2280	202	.00	243	1210
CAL YR 1977	TOTAL	38207.50	MEAN 105	MAX 2980	MIN .00	AC-FT 75780						
WTR YR 1978	TOTAL	90162.00	MEAN 247	MAX 8710	MIN .00	AC-FT 178800						

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON, AZ

LOCATION.--Lat 36°06'05", long 112°05'08", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, Hydrologic Unit 15010001, in Grand Canyon National Park, on left bank 0.2 mi (0.3 km) upstream from Kaibab Bridge, 0.4 mi (0.6 km) upstream from Bright Angel Creek, 4.5 mi (7.2 km) northeast of village of Grand Canyon, 26 mi (42 km) downstream from Little Colorado River, and 267 mi (430 km) upstream from Hoover Dam.

DRAINAGE AREA.--141,600 mi² (366,700 km²) approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1922 to current year. Prior to 1944, published as "Colorado River at Bright Angel Creek, near Grand Canyon." Gage-gage records collected 1.5 mi (2.4 km) downstream 1908-15, published in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder with supplementary water-stage recorder on right bank 700 ft (213 m) downstream (prior to Oct. 1, 1934, supplementary gage was the only gage). Datum of both gages is 2,418.7 ft (737.22 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Lake Powell, 104 mi (167 km) upstream, since Mar. 13, 1963. (See elsewhere in this report.) Many diversions above station for irrigation, municipal, and industrial uses.

AVERAGE DISCHARGE (unadjusted for storage in Lake Powell).--40 years (water years 1923-62), 16,930 ft³/s (479.5 m³/s), 12,260,000 acre-ft/yr (15,100 hm³/yr); 14 years (water years 1965-78) 12,650 ft³/s (358.2 m³/s), 9,165,000 acre-ft/yr (11,300 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 127,000 ft³/s (3,600 m³/s) July 2, 1927, gage height, 29.25 ft (8.915 m); minimum, 700 ft³/s (19.8 m³/s) Dec. 28, 1924, gage height, -0.70 ft (-0.213 m).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1884, 300,000 ft³/s (8,500 m³/s) about July 8, 1884 (computed on basis of flood studies at Lees Ferry). Crest discharge of flood of June 19, 1921, was 220,000 ft³/s (6,230 m³/s), gage height, 37.5 ft (11.43 m) from floodmarks, from rating curve extended above 120,000 ft³/s (3,400 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,400 ft³/s (832.6 m³/s) Sept. 9, gage height, 15.87 ft (4.837 m); minimum daily, 1,720 ft³/s (48.71 m³/s) Oct. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17500	3500	11300	9980	17200	15400	11500	8680	13300	11200	14600	21500
2	7420	2750	13900	13300	15700	15000	9680	7890	15700	7350	13400	20100
3	4980	2750	9500	15700	13700	15100	8830	9330	15200	6700	14700	16600
4	8300	6230	5250	16400	11400	19500	8680	10800	16800	8110	15100	17400
5	9480	9360	4170	17900	7470	14600	7960	11900	9200	6900	16500	19000
6	7820	8430	7900	19600	5560	16100	7930	11200	16800	9080	14000	23600
7	9790	6260	9600	18100	9510	17700	8680	6940	14900	7950	14400	24700
8	9620	9400	12600	16900	11900	15800	7760	6120	11200	12800	18800	24300
9	7120	10500	14800	12300	11000	14200	6630	8870	15500	9070	19800	23300
10	5850	8340	14000	16600	10600	11500	6400	9750	16000	12300	18500	16800
11	8020	7460	7660	17800	9400	14200	6550	9050	10900	13500	16800	20100
12	8720	7470	8640	15200	5720	8100	6130	10100	7680	13700	18600	19300
13	9290	4020	12400	13000	4390	8970	6300	8180	11900	12400	16000	18200
14	7780	2830	13400	12800	11100	9550	7040	6970	14100	13100	15700	16700
15	4160	4370	14000	15700	10900	7810	7120	6410	18200	14200	14700	18100
16	2650	5190	12300	12000	11100	6320	6720	10800	17200	10500	19600	14900
17	1720	7500	13300	16400	11600	6160	7200	9230	13500	10300	20200	11800
18	4380	8770	14000	13500	11600	5410	7640	10700	9990	13100	21000	10200
19	6640	9350	14200	14900	9270	4410	8030	9750	6340	14200	16900	12000
20	5110	6790	17500	18900	8720	3960	8230	7440	13000	12600	13400	12000
21	7020	7140	17900	20000	8750	9490	10500	5940	9120	13300	17100	13100
22	5050	13500	17700	14000	10800	8640	10600	5540	14800	10600	20700	14800
23	4720	10100	17700	11400	10600	9970	8960	11100	15400	10500	21200	12900
24	5130	6870	15800	19500	13300	10800	6830	11900	16600	7120	22200	13500
25	7010	4200	14300	19800	12300	10500	8040	15000	8480	9800	23700	14000
26	7350	3120	12200	17100	9050	11500	9070	15300	6490	14000	23800	16500
27	7870	4460	13600	15600	11400	9670	8100	13400	12700	15000	16900	16200
28	8630	3790	17300	15100	14200	14400	7760	7790	11800	15900	15000	15900
29	6540	5120	17200	10300	---	12200	7210	6580	11300	14300	20800	17600
30	3080	5650	16100	7030	---	13200	10600	6010	12100	10400	18100	16400
31	2430	---	15300	16100	---	9700	---	14000	---	11500	18300	---
TOTAL	211180	195220	405320	468910	298240	349860	242680	292670	386200	351480	550500	511500
MEAN	6812	6507	13070	15130	10650	11290	8089	9441	12870	11340	17760	17050
MAX	17500	13500	17900	20000	17200	19500	11500	15300	18200	15900	23800	24700
MIN	1720	2750	4170	7030	4390	3960	6130	5540	6340	6700	13400	10200
AC-FT	418900	387200	804000	930100	591600	694000	481400	580500	766000	697200	1042000	1015000
CAL YR 1977 TOTAL	3829920			MEAN 10490	MAX 27100	MIN 1380	AC-FT 7597000					
WTR YR 1978 TOTAL	4263780			MEAN 11680	MAX 24700	MIN 1720	AC-FT 8457000					

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1925 to November 1942, September 1943 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to March 1974.

WATER TEMPERATURES: October 1940 to October 1942, September 1943 to September 1976.

SUSPENDED-SEDIMENT DISCHARGE: October 1925 to November 1942, September 1943 to September 1972.

INSTRUMENTATION.--Water-temperature recorder from October 1952 to September 1976.

REMARKS.--Unpublished chemical analyses for period October 1930 to September 1940, daily specific conductance measurements for period October 1937 to November 1942, September 1943 to September 1964, and daily water temperatures for period October 1936 to September 1940, available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)
UCT								
04...	1000	9290	1000	8.2	11.0	300	150	76
DEC								
04...	1300	5950	950	8.1	9.5	310	180	77
JAN								
03...	1000	17500	850	8.0	9.0	300	180	74
FEB								
23...	1700	13100	965	7.8	9.0	320	180	80
APR								
02...	1155	7760	940	8.2	11.0	290	140	77
JUN								
08...	0830	12200	950	8.1	9.0	330	190	82
JUL								
03...	1000	5880	1050	8.4	14.0	310	170	76
AUG								
05...	0900	22400	1000	8.1	13.0	--	--	--
SEP								
05...	0900	26000	950	7.9	13.0	340	220	88

COLORADO RIVER MAIN STEM

09402500 COLORADO RIVER NEAR GRAND CANYON, AZ--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 04...	27	110	2.8	4.1	190	0	230	110	.3
DEC 04...	28	96	2.4	4.1	160	0	250	85	.4
JAN 03...	28	89	2.2	3.8	150	0	250	89	.4
FEB 23...	28	93	2.3	4.3	170	0	260	70	.3
APR 02...	24	100	2.6	3.9	190	0	210	87	.3
JUN 08...	31	110	2.6	4.3	170	0	260	95	.3
JUL 03...	29	110	2.7	4.4	170	1	270	92	.3
AUG 05...	--	--	--	--	170	0	260	87	.3
SEP 05...	29	110	2.6	4.3	150	0	280	87	.5

DATE	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-F1)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, URICACID, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
UCT 04...	8.6	691	660	.94	--	--	130	30
DEC 04...	8.5	627	628	.85	--	--	110	10
JAN 03...	8.2	609	616	.83	--	--	110	20
FEB 23...	7.5	634	627	.86	--	--	130	160
APR 02...	8.0	610	606	.83	.49	.01	110	10
JUN 08...	8.6	717	679	.98	.97	--	130	30
JUL 03...	6.5	697	675	.95	.48	--	130	<10
AUG 05...	8.0	683	--	.93	.56	--	130	--
SEP 05...	7.6	696	681	.95	.10	--	140	20

< Actual value is known to be less than value shown.

09403780 KANAB CREEK NEAR FREDONIA, AZ

LOCATION.--Lat 36°51'50", long 112°34'45", in SE¼ sec.14, T.40 N., R.3 W. (unsurveyed), Coconino County, Hydrologic Unit 15010003, in Kaibab Indian Reservation, at Nagles Crossing, on left bank 0.2 mi (0.3 km) downstream from Johnson Wash and 6.5 mi (10.5 km) southwest of Fredonia.

DRAINAGE AREA.--1,085 mi² (2,810 km²).

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WRD Ariz. 1974: 1969.

GAGE.--Water-stage recorder and concrete control with supplementary water-stage recorder at control since Apr. 14, 1975. Altitude of gages is 4,500 ft (1,372 m), from topographic map.

REMARKS.--Records good except for periods when both gages were inoperable (Jan. 21, 24, and 28), which are poor. Diversions upstream for irrigation of about 1,400 acres (5.67 km²) in Utah and 800 acres (3.24 km²) in Arizona in 1967.

AVERAGE DISCHARGE.--15 years, 5.57 ft³/s (0.158 m³/s), 4,040 acre-ft/yr (4.98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,630 ft³/s (131 m³/s) Aug. 18, 1970, gage height, 9.11 ft (2.777 m), inside, 9.7 ft (2.96 m), from profile past gage, from rating curve extended above 850 ft³/s (24 m³/s) on basis of slope-area measurement of peak flow; no flow for most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 300 ft³/s (8.5 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 5	0730	302 8.55	2.67 0.814
Apr. 11	0400	*460 13.0	3.00 0.914
Aug. 4	0500	362 10.3	2.78 0.847

No flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.51	.00	.36	67	163	.98	.00	.00	.00	.00
2	.00	.00	.12	.00	.21	112	138	2.1	.00	.00	.00	.00
3	.00	.00	.03	.00	.00	194	94	1.5	.00	.00	8.7	.00
4	.00	.00	.00	.06	6.6	73	47	.17	.00	.00	76	.00
5	.00	.00	.00	.01	8.5	199	45	.00	.00	.00	.00	.00
6	2.6	.00	.00	.00	11	105	32	.00	.00	.00	.00	.00
7	.27	.00	.00	.00	24	40	20	.00	.00	.00	.00	.00
8	.09	.00	.00	.00	16	27	18	.00	.00	.00	.00	.00
9	.03	.00	.00	.00	18	26	17	.00	.00	.00	.00	.00
10	.00	.00	.00	.54	51	9.5	15	.00	.00	.00	.00	.00
11	.00	.00	.00	.49	37	31	175	.00	.00	.00	.00	.00
12	.00	.00	.00	.34	14	53	98	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	13	25	32	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	17	17	13	.00	.00	.00	.00	.00
15	.00	.00	.00	12	16	15	6.0	.00	.00	.00	.00	1.1
16	.00	.00	.00	2.5	12	14	2.0	.00	.00	.00	.00	.08
17	.00	.00	.00	10	9.9	13	.00	.00	.00	.00	.00	56
18	.00	.00	.00	.67	12	15	.00	.00	.00	.00	.00	.35
19	.00	.00	.00	2.5	11	30	.00	.00	.00	.00	.00	.00
20	7.3	.00	.00	1.7	11	94	.00	.00	.00	.00	.00	.00
21	.99	.00	.00	.11	9.6	126	.00	.00	.00	.00	.00	.00
22	.20	.00	.00	.00	12	179	.00	.00	.00	.00	.00	.00
23	.12	.00	.00	.04	12	192	.00	.00	.00	.00	.00	.00
24	.09	.00	.00	.00	9.9	142	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	13	127	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.35	12	122	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.57	12	122	.00	.00	.00	.00	.00	.00
28	.00	.00	.02	.23	12	155	.00	.00	.00	.00	.00	.00
29	.00	.00	.11	.00	---	179	.00	.00	.00	.00	.00	.00
30	.00	4.9	.06	.00	---	152	.00	.00	.00	.00	.00	.00
31	.00	---	.02	.00	---	138	---	.00	---	.00	.00	---
TOTAL	11.69	4.90	.87	31.91	381.07	2793.5	935.00	4.75	.00	.00	84.70	57.53
MEAN	.38	.16	.028	1.03	13.6	90.1	31.2	.15	.000	.000	2.73	1.92
MAX	7.3	4.9	.51	12	51	199	183	2.1	.00	.00	76	56
MIN	.00	.00	.00	.00	.00	9.5	.00	.00	.00	.00	.00	.00
AC-FT	23	9.7	1.7	63	756	5540	1850	9.4	.00	.00	168	114
CAL YR 1977	TOTAL	362.05	MEAN	.99	MAX	71	MIN	.00	AC-FT	718		
WTR YR 1978	TOTAL	4305.92	MEAN	11.8	MAX	199	MIN	.00	AC-FT	8540		

VIRGIN RIVER BASIN

09413300 VIRGIN RIVER AT BLOOMINGTON, UT

LOCATION.--Lat 37°01'49", long 113°37'56", in SW¼ sec.22, T.43 S., R.16 W., Washington County, Hydrologic Unit 15010010, 5.0 mi (8.0 km) downstream from Santa Clara River and 6.2 mi (10.0 km) southwest of St. George.

PERIOD OF RECORD.--May 1978 to current year.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS)	SPE- CIFIC CON- DUCTI- VANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	SIRUP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
MAY , 1978											
23...	1045	882	825	8.3	17.0	200	8.7	--	--	300	130
JUN											
20...	0910	145	2150	8.4	22.0	7	8.0	K25	K2000	680	600
JUL											
27...	0745	25	4400	8.5	23.5	8	--	K720	K7800	1400	1200
AUG											
22...	1600	29	4200	8.7	29.0	45	--	270	1650	1400	1200
SEP											
26...	1140	42	3600	8.7	26.0	3	--	350	--	1300	1000

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
MAY , 1978											
23...	83	22	66	1.7	6.4	210	140	83	.2	11	529
JUN											
20...	180	57	240	4.0	19	91	520	320	.5	21	1520
JUL											
27...	340	130	510	6.0	36	260	1200	700	.9	20	3230
AUG											
22...	330	130	560	6.6	42	200	1400	790	.8	16	3520
SEP											
26...	320	120	490	5.9	39	300	1300	580	.8	22	3060

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
MAY , 1978										
23...	518	.72	--	--	--	--	4	200	--	--
JUN										
20...	1410	2.07	--	--	--	--	9	200	--	--
JUL										
27...	3070	4.39	--	--	--	--	6	100	--	--
AUG										
22...	3370	4.79	--	--	--	--	6	100	--	--
SEP										
26...	3020	4.16	.86	2.2	.20	10	11	0	2	1

K Based on non-ideal colony count.

VIRGIN RIVER BASIN

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09413300 VIRGIN RIVER AT BLOOMINGTON, UT--Continued

WATER QUALITY DATA

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
MAY , 1978										
23...	--	--	--	--	--	21	--	0	--	5
JUN										
20...	--	--	--	--	--	12	--	10	--	0
JUL										
27...	--	--	--	--	--	5	--	20	--	0
AUG										
22...	--	--	--	--	--	6	--	40	--	0
SEP										
26...	10	0	0	1	4	2	1000	20	54	1

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELENIUM, TOTAL RECOVERABLE (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDIMENT, SUS- PENDED (MG/L)	SEDIMENT DIS- CHARGE, SUS- PENDED (T/DAY)
MAY , 1978										
23...	--	20	--	--	--	0	--	30	2500	5950
JUN										
20...	--	10	--	--	--	0	--	30	248	97
JUL										
27...	--	90	--	--	--	0	--	40	144	9.7
AUG										
22...	--	40	--	--	--	1	--	30	153	12
SEP										
26...	100	20	.0	.0	1	1	60	40	208	24

VIRGIN RIVER BASIN

09413600 VIRGIN RIVER BELOW BLACK ROCK GULCH NEAR LITTLEFIELD, AZ

LOCATION.--Lat 36°57'13", long 113°46'46", in NE¼ sec.14, T.41 N., R.14 W., Mohave County, Hydrologic Unit 15010010, 4.2 mi (6.8 km) upstream from Sullivan's Canyon, 5.9 mi (9.5 km) downstream from Black Rock Gulch and 9.7 mi (15.6 km) northeast of Littlefield.

PERIOD OF RECORD.--September 1977 to current year.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
SEP , 1977											
20...	--	.00	--	--	--	--	--	--	--	--	--
OCT											
19...	--	.00	--	--	--	--	--	--	--	--	--
NOV											
10...	0900	45	2900	8.1	2.5	1200	13.2	K800	3500	800	580
DEC											
14...	1030	22	3050	8.4	3.5	450	12.0	K500	8900	880	650
JAN , 1978											
24...	1430	127	2150	8.5	6.0	550	13.0	--	--	680	460
FEB											
13...	1500	220	1520	8.5	9.5	1000	13.0	--	--	526	360
MAR											
28...	1500	591	1050	8.4	20.5	950	11.7	--	--	480	300
APR											
25...	1045	685	1080	8.4	15.0	260	9.3	340	5800	370	270
MAY											
22...	1330	820	880	8.3	20.0	250	8.0	650	7600	310	130
JUN											
20...	1700	9.8	2300	8.2	29.0	50	8.2	K20	K75	640	500
JUL											
25...	--	.00	--	--	--	--	--	--	--	--	--
AUG											
21...	--	.00	--	--	--	--	--	--	--	--	--
SEP											
27...	--	.00	--	--	--	--	--	--	--	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
SEP , 1977											
20...	--	--	--	--	--	--	--	--	--	--	--
OCT											
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	210	68	310	4.8	21	270	640	430	.6	17	1920
DEC											
14...	220	81	360	5.3	260	290	730	490	.7	19	2100
JAN , 1978											
24...	180	57	230	3.8	17	270	490	300	.5	15	1440
FEB											
13...	150	36	130	2.5	10	200	400	150	.4	12	1040
MAR											
28...	130	38	96	1.9	10	220	320	110	.3	14	844
APR											
25...	96	31	84	1.9	8.7	120	250	100	.3	12	599
MAY											
22...	85	23	74	1.8	6.9	210	150	89	.2	11	554
JUN											
20...	160	59	250	4.3	20	180	560	320	.5	21	1510
JUL											
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	--	--	--	--	--	--	--	--	--	--	--

K Based on non-ideal colony count.

WATER QUALITY DATA

[illegible]

VIRGIN RIVER BASIN

09413600 VIRGIN RIVER BELOW BLACK ROCK GULCH NEAR LITTLEFIELD, AZ--Continued

WATER QUALITY DATA

[illegible]

VIRGIN RIVER BASIN

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09413650 VIRGIN RIVER ABOVE SULLIVANS CANYON NEAR LITTLEFIELD, AZ

LOCATION---Lat 36°56'57", long 113°47'47", in SE¼ sec.15, T.41 N., R.14 W., Mohave County, Hydrologic Unit 15010010, 2.3 mi (3.7 km) upstream from Sullivan Canyon, 7.8 mi (12.6 km) downstream from Black Rock Gulch and 8.7 mi (14.0 km) northeast of Littlefield.

PERIOD OF RECORD---September 1977 to current year.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
SEP , 1977											
20...	--	.00	--	--	--	--	--	--	--	--	--
OCT											
19...	--	.00	--	--	--	--	--	--	--	--	--
NOV											
09...	1505	51	3000	8.1	9.0	1600	12.0	440	2500	840	630
DEC											
13...	1400	35	2850	8.4	8.0	600	11.2	K1700	K13000	840	620
JAN , 1978											
25...	1100	102	2350	8.6	5.0	420	15.6	--	--	700	470
FEB											
14...	0800	179	1500	8.5	7.0	270	13.0	--	--	520	360
MAR											
29...	0930	574	1160	8.4	14.0	1300	13.0	--	--	460	270
APR											
25...	0845	549	1030	8.5	14.0	360	12.0	260	3000	350	200
MAY											
23...	1230	880	800	8.3	18.5	320	8.5	360	4200	310	150
JUN											
20...	1445	9.1	2220	8.0	33.5	70	11.2	K35	K250	640	500
JUL											
25...	--	.00	--	--	--	--	--	--	--	--	--
AUG											
21...	--	.00	--	--	--	--	--	--	--	--	--
SEP											
27...	--	.00	--	--	--	--	--	--	--	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
SEP , 1977											
20...	--	--	--	--	--	--	--	--	--	--	--
OCT											
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	220	71	330	5.0	23	260	680	460	.6	17	1970
DEC											
13...	210	76	310	4.7	25	270	660	440	.6	18	1960
JAN , 1978											
25...	180	61	240	3.9	18	280	510	32	.5	16	1540
FEB											
14...	150	36	130	2.5	10	200	380	160	.3	13	985
MAR											
29...	120	38	95	1.9	9.3	230	310	110	.4	14	820
APR											
25...	95	28	76	1.8	7.3	190	230	95	.2	6.4	624
MAY											
23...	87	23	75	1.8	6.6	200	180	92	.2	11	563
JUN											
20...	160	59	250	4.3	20	180	530	320	.5	22	1500
JUL											
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
21...	--	--	--	--	--	--	--	--	--	--	--
SEP											
27...	--	--	--	--	--	--	--	--	--	--	--

K Based on non-ideal colony count.

VIRGIN RIVER BASIN

09413650 VIRGIN RIVER ABOVE SULLIVANS CANYON NEAR LITTLEFIELD, AZ--Continued

WATER QUALITY DATA

[illegible][illegible]

WATER QUALITY DATA

[illegible]

VIRGIN RIVER BASIN

09413800 VIRGIN RIVER AT THE NARROWS NEAR LITTLEFIELD, AZ

LOCATION.--Lat 36°55'17", long 113°51'35", SW¼ sec.30, T.41 N., R.14 W., Mohave County, Hydrologic Unit 15010010, at The Narrows, 4.4 mi (7.1 km) downstream from Sullivan's Canyon, 5.3 mi (8.5 km) upstream from Beaver Dam Wash and 6.3 mi (10.1 km) upstream from Littlefield.

PERIOD OF RECORD.--September 1977 to current year.

WATER QUALITY DATA

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
SEP , 1977											
20...	1200	16	3550	8.0	26.0	2	7.2	--	--	1600	1400
UCT											
19...	0930	19	3700	7.3	20.0	310	7.6	--	--	1500	1200
NOV											
09...	0930	56	3000	7.3	7.0	1300	11.4	K1000	2300	950	680
DEC											
13...	1000	46	3050	7.6	8.5	550	11.0	K500	K21000	1100	850
JAN , 1978											
24...	1230	138	2100	8.0	5.0	420	7.8	--	--	800	550
FEB											
14...	0945	215	1640	8.1	8.0	700	11.7	--	--	560	390
MAR											
29...	1130	610	1260	8.2	16.0	1300	13.0	--	--	510	330
APR											
26...	0845	585	1020	7.9	13.5	260	10.2	1000	4600	340	190
MAY											
24...	1000	485	960	8.1	13.0	320	8.1	K710	K3500	350	180
JUN											
21...	1530	20	3800	7.8	27.5	0	6.9	K15	K1400	1600	1300
JUL											
26...	1030	18	3400	8.0	27.0	110	--	K870	K1200	1500	1200
AUG											
23...	1030	17	3400	8.3	24.5	1	--	K160	K700	1600	1300
SEP											
26...	1600	19	3380	8.2	27.5	1	--	600	--	1600	1300

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
SEP , 1977											
20...	410	140	250	2.7	34	290	1300	430	1.0	17	2870
UCT											
19...	420	120	330	3.7	32	360	1200	470	1.0	18	2970
NOV											
09...	230	90	350	5.0	25	320	800	450	.7	18	2200
DEC											
13...	280	92	310	4.1	27	280	860	420	.7	17	2200
JAN , 1978											
24...	210	67	230	3.5	18	310	590	320	.6	16	1620
FEB											
14...	160	39	130	2.4	11	210	410	170	.4	13	1090
MAR											
29...	140	40	100	1.9	8.3	220	330	120	.3	14	873
APR											
26...	86	31	79	1.9	7.5	180	220	100	.2	6.7	671
MAY											
24...	99	26	75	1.7	7.4	210	200	100	.3	12	633
JUN											
21...	420	130	270	3.0	33	300	1200	430	1.0	17	2740
JUL											
26...	410	120	260	2.9	30	340	1200	400	1.0	15	2590
AUG											
23...	430	120	280	3.1	32	330	1300	410	1.0	16	2850
SEP											
26...	430	130	280	3.0	34	350	1300	420	1.0	16	2820

K Based on non-ideal colony count.

VIRGIN RIVER BASIN

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09413800 VIRGIN RIVER AT THE NARROWS NEAR LITTLEFIELD, AZ--Continued

WATER QUALITY DATA

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977										
20...	2730	3.90	.17	.25	.02	7	4	300	10	--
OCT										
19...	2770	4.04	--	--	--	--	3	400	--	--
NOV										
09...	2120	2.99	--	--	--	--	7	100	--	--
DEC										
13...	2150	2.99	--	--	--	--	7	100	--	--
JAN , 1978										
24...	1610	2.20	--	--	--	--	8	200	--	--
FEB										
14...	1040	1.48	--	--	--	--	6	100	--	--
MAR										
29...	861	1.19	.41	2.6	.99	9	4	100	1	0
APR										
26...	620	.91	--	--	--	--	4	100	--	--
MAY										
24...	624	.86	--	--	--	--	4	200	--	--
JUN										
21...	2650	3.73	--	--	--	--	7	50	--	--
JUL										
26...	2610	3.52	--	--	--	--	6	0	--	--
AUG										
23...	2750	3.88	--	--	--	--	5	0	--	--
SEP										
26...	2780	3.84	.11	.31	.01	--	4	0	1	1

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
20...	10	--	50	--	10	0	260	50	100	2
OCT										
19...	--	--	--	--	--	0	--	10	--	0
NOV										
09...	--	--	--	--	--	2	--	100	--	11
DEC										
13...	--	--	--	--	--	2	--	40	--	4
JAN , 1978										
24...	--	--	--	--	--	--	--	--	--	--
FEB										
14...	--	--	--	--	--	2	--	40	--	46
MAR										
29...	40	0	10	1	48	2	28000	40	24	0
APR										
26...	--	--	--	--	--	0	--	20	--	0
MAY										
24...	--	--	--	--	--	9	--	30	--	0
JUN										
21...	--	--	--	--	--	2	--	20	--	0
JUL										
26...	--	--	--	--	--	3	--	20	--	0
AUG										
23...	--	--	--	--	--	4	--	70	--	--
SEP										
26...	10	0	0	1	4	2	320	20	17	3

VIRGIN RIVER BASIN

09413800 VIRGIN RIVER AT THE NARROWS NEAR LITTLEFIELD, AZ--Continued

WATER QUALITY DATA

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1977										
20...	100	50	.0	.0	0	0	30	10	--	--
OCT										
19...	--	90	--	--	--	1	--	10	624	32
NOV										
09...	--	400	--	--	--	3	--	60	4740	717
DEC										
13...	--	40	--	--	--	1	--	20	2620	325
JAN , 1978										
24...	--	--	--	--	--	--	--	--	3950	1470
FEB										
14...	--	80	--	--	--	0	--	20	--	--
MAR										
29...	1100	20	.0	.0	1	0	--	10	7410	12200
APR										
26...	--	0	--	--	--	0	--	30	--	--
MAY										
24...	--	10	--	--	--	0	--	10	--	--
JUN										
21...	--	90	--	--	--	0	--	30	7	.38
JUL										
26...	--	190	--	--	--	1	--	50	284	14
AUG										
23...	--	50	--	--	--	1	--	60	--	--
SEP										
26...	40	20	--	.0	--	2	40	50	31	1.6

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ

LOCATION.--lat 36°53'30", long 113°55'25", in SW¼SW¼ sec.4, T.40 N., R.15 W., Mohave County, Hydrologic Unit 15010010, on right bank 5.0 mi (0.8 km) downstream from Beaver Dam Wash, 0.4 mi (0.6 km) upstream from Littlefield, and 36 mi (58 km) upstream from waterline of Lake Mead at elevation 1,221 ft (372.2 m) National Geodetic Vertical Datum of 1929.

DRAINAGE AREA.--5,090 mi² (13,200 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 959: 1932. WSP 979: 1930-31, 1933-37. WSP 1313: 1940 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,763.68 ft (537.570 m) National Geodetic Vertical Datum of 1929. Prior to May 28, 1933, nonrecording gage at same site and May 28, 1933, to Nov. 7, 1939, at site 300 ft (90 m) downstream, both at datum 2.53 ft (0.771 m) higher. Nov. 8, 1939, to Mar. 31, 1942, nonrecording gage at site 300 ft (90 m) downstream at datum 2.00 ft (0.610 m) higher. Apr. 1, 1942, to Sept. 30, 1970, water-stage recorder at site 300 ft (90 m) downstream at same datum.

REMARKS.--Records poor. Diversion above station for irrigation of about 23,200 acres (93.9 km²).

AVERAGE DISCHARGE.--49 years, 223 ft³/s (6.315 m³/s), 161,600 acre-ft/yr (199 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,200 ft³/s (997 m³/s) Dec. 6, 1966, gage height, 15.66 ft (4.773 m), site then in use, from rating curve extended above 1,500 ft³/s (42.5 m³/s) on basis of slope-area measurement of peak flow; minimum, 38 ft³/s (1.08 m³/s) May 1, 10, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s (85 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Feb. 10	0430	11,160	316	12.80	3.901
Mar. 2	2200	*22,000†	623	13.60	4.145
Mar. 5	0100	9,400	266	11.20	3.414
Mar. 22	1000	5,000	142	10.13	3.088
Apr. 1	1600	6,000	170	10.35	3.155

Minimum daily, 52 ft³/s (1.47 m³/s) Aug. 25-27.

† About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	89	112	228	145	1060	3550	498	195	63	59	59
2	59	91	107	176	145	7210	2000	473	170	63	59	61
3	61	89	105	170	139	13300	1650	473	150	63	61	61
4	63	89	105	170	136	2970	1060	508	130	64	61	63
5	64	83	128	173	131	7720	1030	458	120	64	61	64
6	64	103	103	176	139	3180	693	478	110	64	64	68
7	64	100	115	496	448	1400	687	513	100	64	64	66
8	63	103	123	224	439	782	645	510	92	66	61	64
9	63	107	133	170	317	611	651	520	86	66	61	63
10	66	110	110	190	3550	539	628	520	82	66	61	59
11	64	112	112	268	740	566	706	510	78	66	59	59
12	64	115	120	232	510	957	712	500	75	68	191	59
13	66	112	105	163	430	681	699	480	72	70	123	59
14	68	112	94	163	350	483	616	470	70	73	60	63
15	68	105	89	473	283	420	657	470	68	75	58	63
16	66	107	98	865	256	410	620	470	66	71	58	61
17	71	100	89	524	256	400	620	480	65	70	58	61
18	75	100	98	347	248	380	610	480	64	68	56	63
19	66	96	154	257	220	400	610	490	63	66	56	63
20	71	100	110	283	212	463	620	510	63	66	56	61
21	77	107	117	257	220	402	640	540	63	64	54	61
22	105	103	128	183	220	1900	680	570	63	66	54	61
23	91	112	135	176	204	904	730	600	63	66	53	59
24	91	112	125	180	236	634	770	605	63	66	53	59
25	81	125	125	160	194	550	769	518	64	66	52	59
26	79	112	125	151	201	630	688	508	63	73	52	59
27	73	112	120	151	261	663	483	450	63	59	52	59
28	73	128	183	154	224	756	545	380	63	64	55	59
29	81	103	216	148	---	828	550	320	63	59	56	59
30	77	110	216	142	---	815	488	270	63	59	56	59
31	87	---	197	145	---	972	---	230	---	58	59	---
TOTAL	2219	3147	3895	7635	10854	52986	25407	14802	2550	2036	1983	1834
MEAN	71.6	105	126	246	388	1709	847	477	85.0	65.7	64.0	61.1
MAX	105	128	216	865	3550	13300	3550	605	195	75	191	68
MIN	58	83	89	142	131	380	483	230	63	58	52	59
AC-FT	4400	6240	7730	15140	21530	105100	50390	29360	5060	4040	3930	3640
CAL YR 1977 TOTAL	36844				1590			73080				
WTR YR 1978 TOTAL	129348				13300			256600				

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1947 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: July 1949 to September 1969, once-daily (composited); October 1969 to current year, monthly.

SPECIFIC CONDUCTANCE: October 1947 to current year, once-daily.

WATER TEMPERATURES: October 1947 to current year, once-daily.

MICROBIOLOGICAL DATA: November 1977 to current year, monthly.

SUSPENDED-SEDIMENT DATA: October 1947 to September 1968, once-daily, September 1977 to current year, monthly.

REMARKS.--Streamflow is not completely homogenous chemically from bank to bank. Flow adjacent to north bank is generally somewhat more dilute than average; monthly data collected during June 1975-September 1976 indicate that specific conductance off north bank was 93 to 100 percent of stream-wide average (range of discharge, 60-230 ft³/s). This doubtless affects specific conductance of daily samples, which are collected off north bank. Water temperature characteristically shows little or no variation from bank to bank. Much of day-to-day fluctuation in water temperature prior to August 1975 was due to measurement at different times of day (rather than at about the same time each day). Detailed sampling information for period since June 1975 is available from U.S. Geological Survey office, Carson City, Nevada.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 4,650 micromhos Aug. 21, 1966; minimum, 685 micromhos May 12, 1973.

WATER TEMPERATURES: Maximum, 33.5°C July 7, 1953; minimum, 2.0°C Jan. 4, 1949, Jan. 4, 1950, Jan. 4, 5, 1971.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 247,000 mg/L Aug. 14, 1964; minimum, 40 mg/L June 16, 20, 1962.

EXTREMES FOR CURRENT YEAR (MEASUREMENTS AT LEAST ONCE-DAILY).--

SPECIFIC CONDUCTANCE: Maximum, 3,990 micromhos Aug. 1; minimum, 805 micromhos May 15.

WATER TEMPERATURES: Maximum, 32.0°C Aug. 3-5; minimum, 9.0°C Jan. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
UCT								
19...	1130	64	3400	7.7	19.5	290	9.0	--
27...	1030	79	3480	8.0	18.5	--	--	--
NOV								
09...	1120	106	3200	7.8	15.0	700	9.7	K1300
23...	1000	73	3250	8.2	13.0	--	--	--
DEC								
13...	1100	95	3150	7.9	14.0	270	9.5	K500
29...	1100	179	2740	8.1	14.0	--	--	--
JAN								
25...	1400	164	2650	7.9	12.0	280	13.0	--
FEB								
13...	1345	410	1880	8.1	10.0	900	10.4	--
MAR								
29...	1330	952	1460	8.1	18.0	1400	11.7	--
APR								
26...	1000	747	1370	8.0	16.0	310	9.0	K1000
MAY								
24...	1230	619	1150	8.0	16.0	300	8.2	880
JUN								
21...	1015	63	3300	8.0	25.0	35	7.9	K30
JUL								
26...	1715	59	3190	8.0	30.0	75	--	260
AUG								
23...	1300	54	3200	8.4	28.0	20	--	K40
SEP								
28...	1430	59	3530	8.2	28.0	--	--	K180

K Based on non-ideal colony count.

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NUNCAR- BUNATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BUNATE (MG/L AS HCO3)
OCT									
19...	--	1500	1300	390	120	290	3.3	30	250
27...	--	1300	1100	350	110	300	3.6	30	330
NOV									
09...	2900	1200	920	320	100	310	3.9	27	360
23...	--	1200	920	300	110	330	4.1	28	350
DEC									
13...	7200	1200	960	320	100	290	3.6	29	310
29...	--	960	670	250	81	260	3.7	26	350
JAN									
25...	--	1000	730	270	82	250	3.4	24	350
FEB									
13...	--	670	480	190	48	140	2.4	12	230
MAR									
29...	--	570	360	150	47	110	2.0	11	250
APR									
26...	4000	460	330	120	38	90	1.8	11	160
MAY									
24...	1400	440	250	120	33	96	2.0	9.2	230
JUN									
21...	K300	1400	1200	380	120	290	3.3	33	240
JUL									
26...	1000	1400	1200	370	120	280	3.2	33	270
AUG									
23...	K250	1400	1300	380	120	280	3.2	32	150
SEP									
28...	--	1500	1300	390	120	290	3.3	32	250

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLOR- IDE, DIS- SOLVED (MG/L AS CL)	FLUOR- IDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT								
19...	0	1100	420	1.0	20	2740	2500	3.73
27...	0	1100	440	--	19	--	2510	3.41
NOV								
09...	0	960	420	.8	19	2410	2340	3.28
23...	0	970	440	--	19	--	2370	3.22
DEC								
13...	0	930	400	.9	17	2320	2240	3.16
29...	0	720	340	--	17	--	1870	2.54
JAN								
25...	0	710	360	.5	12	--	1880	3.18
FEB								
13...	0	520	180	.2	12	1270	1220	1.73
MAR								
29...	0	390	130	.4	14	971	976	1.32
APR								
26...	0	310	130	.2	12	766	791	1.04
MAY								
24...	0	260	120	.3	21	789	774	1.07
JUN								
21...	0	1100	410	1.0	19	2550	2470	3.47
JUL								
26...	0	1200	410	1.1	18	2660	2570	3.62
AUG								
23...	0	1300	400	1.0	18	2690	2610	3.66
SEP								
28...	0	1200	410	1.1	19	2750	2590	3.74

K Based on non-ideal colony count.

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 27...	.34	.01	--	.35	--	--	--	.03
JAN 25...	.42	.01	--	.43	--	--	--	.03
MAR 29...	--	--	.37	--	1.6	2.0	1.9	--
APR 26...	.12	.00	--	.12	--	--	--	.01
JUL 26...	.24	.02	--	.26	--	--	--	.01
SEP 28...	.25	.01	.14	.26	.18	.32	.01	.01

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECUV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHROMIUM, TOTAL RECUV- ERABLE (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECUV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECUV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT 19...	--	4	400	1100	--	--	--	--	--	--	--	1
NOV 09...	--	7	100	950	--	--	--	--	--	--	--	1
DEC 13...	--	7	100	930	--	--	--	--	--	--	--	1
JAN 25...	--	8	200	710	--	--	--	--	--	--	--	5
FEB 13...	--	6	300	300	--	--	--	--	--	--	--	2
MAR 29...	11	5	100	310	2	0	20	0	10	1	47	0
APR 26...	--	4	100	250	--	--	--	--	--	--	--	0
MAY 24...	--	4	300	260	--	--	--	--	--	--	--	--
JUN 21...	--	7	200	1100	--	--	--	--	--	--	--	2
JUL 26...	--	8	0	1100	--	--	--	--	--	--	--	3
AUG 23...	--	7	0	1100	--	--	--	--	--	--	--	8
SEP 28...	7	8	0	1300	--	--	0	0	0	0	10	1

DATE	IRON, TOTAL RECUV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECUV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECUV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECUV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECUV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 19...	--	20	--	6	--	30	--	--	--	1	--	10
NOV 09...	--	40	--	5	--	10	--	--	--	2	--	30
DEC 13...	--	40	--	7	--	20	--	--	--	1	--	20
JAN 25...	--	50	--	--	--	60	--	--	--	2	--	30
FEB 13...	--	--	--	2	--	60	--	--	--	2	--	30
MAR 29...	26000	50	40	1	1100	30	.0	.0	2	1	140	10
APR 26...	--	10	--	0	--	10	--	--	--	0	--	30
MAY 24...	--	40	--	2	--	0	--	--	--	0	--	10
JUN 21...	--	10	--	1	--	40	--	--	--	0	--	20
JUL 26...	--	20	--	0	--	50	--	--	--	1	--	20
AUG 23...	--	50	--	0	--	20	--	--	--	1	--	20
SEP 28...	150	20	--	--	50	20	.0	.0	2	2	50	50

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCF-DAILY

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3310	3360	3220	2890	2630	2330	1030	985	1690	3250	3990	3340
2	3380	3320	3180	2880	2690	1270	1030	1030	1670	3270	3590	3350
3	3350	3330	3300	2890	2680	1150	1050	853	1720	3300	3560	3350
4	3380	3470	3260	2880	2630	1120	1230	861	1800	3350	3500	3440
5	3400	3600	3160	2850	2650	1100	1300	917	1820	3310	3520	3440
6	3370	3400	3100	1780	1530	1290	1300	1140	1800	3240	3520	3490
7	3390	3330	3160	1180	1750	1490	1300	1400	1960	3320	3360	3490
8	3320	3230	3030	2400	2090	1710	1300	1390	2000	3390	3530	3400
9	3390	3150	3000	2760	868	1810	1390	1440	2170	3290	3370	3410
10	3420	3060	3140	2660	1790	1560	1330	1250	2250	3420	3440	3450
11	3310	3150	3150	2530	1780	1560	1470	1050	2700	3310	3380	3460
12	3410	3200	3120	2530	1780	1560	1460	990	2740	3330	3380	3460
13	3420	3120	3180	2520	1790	1620	1450	925	2740	3290	3400	3440
14	3430	3150	3300	1600	1880	2210	1260	839	2700	3310	3450	3350
15	3400	3250	3340	1600	2330	2210	1280	805	2900	3310	3470	3430
16	3410	3250	3320	1600	2360	2190	1260	892	2940	3340	3380	3440
17	3450	3220	3260	1570	2460	2240	1580	1060	2860	3400	3500	3370
18	3280	3130	3300	2080	2560	2210	1530	1220	3450	3390	3450	3350
19	3310	3160	3070	2340	2600	2190	1550	1210	2940	3430	3350	3370
20	3430	3160	2970	2260	2530	1700	1540	1190	3390	3400	3360	3410
21	3310	3180	3140	2370	2540	1820	1450	1190	3390	3400	3500	3410
22	3310	3190	3200	2560	2460	1040	1460	1160	3390	3330	3500	3400
23	3320	3250	3060	2570	2500	1220	1560	1180	3330	3400	3520	3370
24	3300	3300	3030	2590	2520	1520	1430	1160	3450	3400	3520	3380
25	3420	3210	3030	2890	2530	1600	1300	1380	3330	3460	3470	3400
26	3410	3170	3080	2880	2500	1630	1210	1380	3390	3390	3480	3400
27	3460	3160	3110	2810	2560	1610	971	1520	3500	3380	3470	3460
28	3430	3200	2720	2680	2600	1580	967	1480	3450	3030	3470	3450
29	3440	3270	2630	2690	---	1430	1010	1460	3500	3400	3480	3460
30	3390	3270	2560	2700	---	1390	1010	1520	3500	3430	3520	3470
31	3420	---	2920	2670	---	1350	---	1500	---	3440	3520	---
MEAN	3380	3240	3100	2430	2270	1640	1300	1170	2750	3350	3480	3410
WTR YR 1978	MEAN	2630	MAX	3990	MIN	805						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCF-DAILY

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.5	19.0	15.5	15.0	15.0	15.0	14.0	17.0	23.0	26.0	30.0	28.0
2	24.5	19.0	16.0	15.0	15.5	15.0	14.0	19.0	23.0	26.0	31.0	29.0
3	26.0	20.0	17.0	15.0	16.0	17.0	15.5	17.0	24.0	26.0	32.0	29.0
4	25.0	19.0	17.5	15.0	14.5	14.0	15.0	17.0	26.0	28.0	32.0	28.0
5	24.5	18.0	17.0	15.0	15.0	11.0	14.0	15.0	25.0	29.0	32.0	28.0
6	24.0	17.5	17.0	11.5	15.0	12.5	14.0	15.0	26.5	30.0	30.0	26.0
7	25.5	18.0	16.0	11.5	13.0	13.0	13.0	20.0	27.0	27.5	30.0	25.5
8	24.5	15.0	15.5	13.0	14.5	13.5	12.0	20.0	28.0	29.0	31.0	26.5
9	25.0	15.0	13.0	12.5	14.0	13.5	13.5	21.5	25.5	28.5	31.5	26.0
10	25.0	16.0	14.5	13.0	10.0	14.0	17.0	21.0	23.0	27.0	31.0	25.0
11	22.5	17.0	16.0	14.0	11.0	13.0	19.5	20.5	24.0	27.0	30.0	26.5
12	22.5	18.0	16.0	15.0	11.0	12.5	20.0	22.0	24.0	27.5	29.0	26.0
13	23.5	17.5	15.5	14.5	11.5	11.0	19.0	22.0	25.5	29.0	27.0	25.0
14	24.5	18.0	17.0	14.0	13.0	14.0	18.0	22.0	25.5	29.0	29.0	26.0
15	25.0	18.5	16.5	11.0	12.0	15.0	18.5	20.0	25.0	31.0	29.0	27.5
16	24.0	18.0	16.5	9.0	12.0	17.0	17.0	18.0	27.0	29.0	25.0	25.0
17	24.0	19.0	15.5	10.5	12.0	19.0	16.5	19.0	28.0	28.0	25.0	24.0
18	23.5	18.0	16.5	12.0	13.0	20.0	17.0	22.5	25.0	28.5	25.0	24.0
19	21.5	14.0	12.0	13.0	14.0	21.0	18.0	21.5	28.0	28.0	26.5	22.0
20	23.5	12.5	12.0	13.5	15.0	21.0	18.0	22.0	28.0	28.0	27.5	23.5
21	22.5	13.0	14.5	13.0	15.0	17.0	17.5	22.0	28.0	30.0	27.0	25.0
22	22.5	15.0	14.5	13.0	15.0	13.5	17.5	21.5	28.5	29.5	25.0	25.5
23	21.0	15.5	15.0	11.0	16.0	17.0	19.0	20.0	25.0	30.5	24.5	26.0
24	21.5	16.5	15.0	10.0	15.5	17.5	19.0	19.5	25.0	30.0	25.5	26.0
25	21.0	17.0	14.0	13.0	16.0	17.0	17.0	20.0	28.0	31.0	26.0	27.0
26	21.0	16.5	14.0	13.0	16.0	18.0	19.0	20.5	26.0	30.0	26.0	25.5
27	21.5	16.0	17.0	13.0	16.0	19.0	19.0	22.0	27.0	31.5	28.0	26.0
28	21.5	15.5	13.5	16.0	16.0	20.0	19.5	23.5	26.5	26.0	28.0	26.5
29	20.0	16.5	14.5	16.0	---	19.5	19.0	24.5	28.0	31.0	28.5	26.5
30	20.0	16.5	15.0	14.5	---	17.5	17.0	25.0	26.0	30.0	26.0	26.0
31	20.0	---	16.0	16.0	---	16.5	---	23.5	---	28.5	26.0	---
MEAN	23.0	17.0	15.5	13.5	14.0	16.0	17.0	20.5	26.0	28.5	28.0	26.0
WTR YR 1978	MEAN	20.5	MAX	32.0	MIN	9.0						

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
OCT				
19...	--	1700	668	117
NOV				
09...	--	--	2680	767
DEC				
13...	--	--	1510	391
JAN				
25...	--	--	2170	961
MAR				
29...	39	140	6110	15700
APR				
26...	--	--	3420	6900
MAY				
24...	--	--	3970	6640
JUN				
21...	--	--	256	44
JUL				
26...	--	--	310	50
AUG				
23...	--	--	97	14
SEP				
28...	2.4	--	93	15

VIRGIN RIVER BASIN

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09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	OCT 19, 77 1130	MAR 29, 78 1330
TOTAL CELLS/ML	1700	140
DIVERSITY: DIVISION	0.4	0.7
.CLASS	0.5	0.7
..ORDER	0.9	0.7
...FAMILY	1.9	2.4
....GENUS	2.2	2.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
.CHLOROPHYCEAE				
..CHLOROCOCCALES				
...OOCYSTACEAE				
....CHLORELLA	54	3	--	-
...VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	--	-	29#	20
...ZYGNEMATALES				
...DESMIDIACEAE				
....CLUSTERIUM	27	2	--	-
CHRYSOPHYTA				
.BACILLARIOPHYCEAE				
..PENNALES				
...NAVICULACEAE				
....ENTOMONEIS	27	2	--	-
...CENTRALES				
...COSCINODISCACEAE				
....CYCLOTELLA	110	6	--	-
..PENNALES				
...CYMBELLACEAE				
....CYMBELLA	54	3	--	-
....EPITHEMIA	--	-	29#	20
...DIATOMACEAE				
....DIATOMA	--	-	43#	30
...NAVICULACEAE				
....NAVICULA	560#	34	14	10
....NEIDIUM	81	5	--	-
...NITZSCHIA				
...NITZSCHIA	700#	42	14	10
...SURIRELLACEAE				
....SURIRELLA	--	-	14	10
...CHRYSTOPHYCEAE				
...CHRYSDOMONADALES				
...CHROMULINACEAE				
....CHRYSOCCUS	27	2	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)				
.CYANOPHYCEAE				
..CHROCOCCALES				
...CHROCOCCACEAE				
....ANACYSTIS	27	2	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

VIRGIN RIVER BASIN

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV

LOCATION.--Lat 36°40'10", long 114°18'10", in SE¼SW¼ sec.32, T.14 S., R.69 E., Clark County, Hydrologic Unit 15010010, on left bank, 0.8 mi (1.3 km) upstream from Halfway Wash and 6.5 mi (10.5 km) southeast of Riverside.

DRAINAGE AREA.--5,980 mi² (15,490 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1978.

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft (402 m), from topographic map.

REMARKS.--Records poor. Diversion above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 16,000 ft³/s (453 m³/s) Mar. 5, 1978, gage height, 6.60 ft (2.012 m); no flow June 29 to July 25, Aug. 1 to Sept. 13, 19, 1978.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	60	89	191	158	242	1600	370	200	.00	.00	.00
2	48	60	89	163	155	3530	1000	360	170	.00	.00	.00
3	48	61	90	179	150	3070	900	380	140	.00	.00	.00
4	49	62	91	163	150	3530	780	390	120	.00	.00	.00
5	50	63	92	197	148	4210	660	370	110	.00	.00	.00
6	51	64	92	216	148	2500	600	380	85	.00	.00	.00
7	51	66	92	244	200	1400	580	400	70	.00	.00	.00
8	52	68	92	158	300	800	560	400	60	.00	.00	.00
9	52	70	92	179	476	632	550	400	50	.00	.00	.00
10	52	72	94	259	2210	617	540	390	43	.00	.00	.00
11	53	76	95	292	1670	603	530	400	36	.00	.00	.00
12	53	79	96	292	600	855	520	400	31	.00	.00	.00
13	54	81	97	283	460	855	520	410	25	.00	.00	.00
14	54	85	98	267	510	737	520	410	20	.00	.00	20
15	54	92	99	530	460	603	510	420	18	.00	.00	47
16	54	98	100	348	370	512	500	420	14	.00	.00	3.2
17	54	98	102	452	300	442	500	430	11	.00	.00	8.2
18	54	98	104	358	280	476	500	440	9.0	.00	.00	1.3
19	55	98	104	330	260	537	500	450	7.5	.00	.00	.00
20	56	97	105	310	250	675	500	460	6.0	.00	.00	1.3
21	58	93	106	270	240	488	490	470	4.5	.00	.00	11
22	60	91	108	250	240	1410	490	480	3.5	.00	.00	9.1
23	68	88	110	225	240	737	480	490	3.0	.00	.00	9.1
24	70	88	115	210	240	540	480	500	2.5	.00	.00	14
25	66	88	126	200	230	490	470	510	2.0	.00	.00	7.4
26	64	88	126	190	230	510	460	440	1.4	4.7	.00	11
27	60	88	110	180	230	540	350	400	.90	.14	.00	5.4
28	60	88	100	165	230	560	380	360	.40	.20	.00	7.4
29	60	88	174	165	---	600	400	320	.00	13	.00	15
30	60	88	191	162	---	680	370	280	.00	5.4	.00	16
31	60	---	168	160	---	800	---	230	---	.08	.00	---
TOTAL	1728	2436	3347	7588	11135	34181	17240	12560	1243.70	23.52	.00	186.40
MEAN	55.7	81.2	108	245	398	1103	575	405	41.5	.76	.000	6.21
MAX	70	98	191	530	2210	4210	1600	510	200	13	.00	47
MIN	48	60	89	158	148	242	350	230	.00	.00	.00	.00
AC-FT	3430	4850	6640	15050	22090	67800	34200	24910	2470	47	.00	370
WTR YR 1978	TOTAL	91668.62	MEAN	251	MAX	4210	MIN	.00	AC-FT	181800		

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1977 to current year.

CHEMICAL ANALYSES, MICROBIOLOGICAL DATA, AND SEDIMENT DATA: January to September 1978, monthly.

SPECIFIC CONDUCTANCES AND WATER TEMPERATURES: December 1977 to April 1978, monthly; May to September 1978, once-daily.

BIOLOGICAL DATA: March to September 1978, monthly (seasonal).

REMARKS.--Daily specific-conductance and temperature data are collected approximately 5 mi (8 km) upstream, in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.12, T.14 S., R.69 E. Stream channel at both sampling sites was dry or almost dry during part of year.

EXTREMES MEASURED FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCES: Maximum, 5,260 micromhos Sept. 16, 1978; minimum, 1,080 micromhos May 14, 1978.

PHYTOPLANKTON: Maximum, 2,500 cells/mL June 22, 1978; minimum, 27 cells/mL Mar. 30, 1978.

FECAL STREPTOCOCCI: Maximum, 7,200 colonies/100 mL Mar. 30, 1978; minimum, 750 colonies/100 mL (non-ideal colony count) June 22, 1978.

WATER TEMPERATURES: Maximum, 34.0°C June 20, July 30, 1978; minimum, 10.0°C Jan. 26, 1978.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 3,600 mg/L Feb. 14, 1978; minimum, 166 mg/L Sept. 27, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
JAN										
26...	1330	185	3130	8.3	10.0	350	--	13.0	K200	--
FEB										
14...	1430	509	2260	8.2	14.0	400	--	7.8	K200	--
MAR										
30...	0930	642	1650	8.3	18.0	950	--	11.7	4800	--
APR										
24...	1300	487	1680	8.5	22.0	420	--	8.8	--	260
MAY										
25...	1300	560	1380	8.3	20.5	--	260	7.7	--	310
JUN										
22...	1015	3.8	4250	8.2	26.5	--	110	--	--	440
JUL										
27...	--	.00	--	--	--	--	--	--	--	--
AUG										
24...	--	.00	--	--	--	--	--	--	--	--
SEP										
27...	1320	11	5020	8.3	29.5	--	40	--	--	K1200

DATE	STREP- TOCUCCI FECAL, (COLS. PER 100 ML)	STREP- TOCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY (MG/L AS CaCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
JAN										
26...	5500	--	1200	280	110	290	3.7	26	240	930
FEB										
14...	4800	--	760	240	65	200	3.2	14	200	650
MAR										
30...	7200	--	600	160	48	120	2.1	13	200	440
APR										
24...	--	1100	640	170	53	140	2.4	13	200	460
MAY										
25...	--	1800	500	130	43	110	2.1	10	170	340
JUN										
22...	--	K750	1500	350	160	440	4.9	38	150	1600
JUL										
27...	--	--	--	--	--	--	--	--	--	--
AUG										
24...	--	--	--	--	--	--	--	--	--	--
SEP										
27...	--	--	1700	370	200	510	5.3	50	150	1700

K Based on non-ideal colony count.

VIRGIN RIVER BASIN

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)
JAN 26...	400	.6	19	2270	2200	3.09	--	--	.26	.10
FEB 14...	240	.4	14	1670	1520	2.27	--	--	.37	.09
MAR 30...	150	.4	15	1110	1060	1.51	--	--	.32	.05
APR 24...	190	.5	15	1150	1160	1.56	.31	.01	.32	.03
MAY 25...	140	.3	13	858	889	1.17	.52	.00	.52	.10
JUN 22...	610	.9	21	3550	3310	4.83	.01	.00	.01	.01
JUL 27...	--	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--	--
SEP 27...	740	.9	23	4070	3680	5.54	.01	.00	.01	.01

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
JAN 26...	--	--	.77	1.0	.64	.01	--	--	--
FEB 14...	--	--	1.1	1.5	1.4	.02	31	--	--
MAR 30...	--	--	1.5	1.8	.99	.02	--	--	--
APR 24...	--	--	.82	1.1	.14	.01	12	--	--
MAY 25...	--	--	--	--	.53	.03	18	--	--
JUN 22...	--	--	.06	.67	.08	.00	--	17	2.7
JUL 27...	--	--	--	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--	--	--	--
SEP 27...	.01	.38	.40	.41	.05	.01	6.2	--	--

VIRGIN RIVER BASIN

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09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
MAR 30...	0930	11	5	400	100	<10	0	20	0
JUN 22...	1015	3	4	300	200	--	--	20	0
SEP 27...	1320	6	6	0	0	--	--	10	10

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
MAR 30...	10	0	40	0	23000	40	30	1	800
JUN 22...	1	1	9	9	1600	70	--	--	150
SEP 27...	0	1	6	3	980	80	--	--	60

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAR 30...	20	--	--	1	1	0	0	100	10
JUN 22...	20	.0	.0	0	0	0	0	20	30
SEP 27...	10	.1	.0	0	1	0	0	40	30

< Actual value is known to be less than value shown.

VIRGIN RIVER BASIN

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT CHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
JAN 26...	1330	185	3210	1600	11	13	13
FEB 14...	1430	509	3600	4950	--	--	--
MAR 30...	0930	642	3500	6070	--	--	--
APR 24...	1300	487	2680	3520	10	13	17
MAY 25...	1300	560	1970	2980	12	17	22
JUN 22...	1015	3.8	322	3.4	--	--	--
JUL 27...	--	.00	--	--	--	--	--
AUG 24...	--	.00	--	--	--	--	--
SEP 27...	1320	11	166	4.9	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
JAN 26...	19	26	46	73	96	100
FEB 14...	--	--	--	--	--	--
MAR 30...	--	--	--	--	--	--
APR 24...	21	27	42	75	99	100
MAY 25...	26	31	45	77	99	100
JUN 22...	--	--	--	--	--	--
JUL 27...	--	--	--	--	--	--
AUG 24...	--	--	--	--	--	--
SEP 27...	--	--	--	--	--	--

VIRGIN RIVER BASIN

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09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	1610	---		---
2								---	1690	---		---
3								---	1670	---		---
4								---	1940	---		---
5								---	1940	---		---
6								---	2080	---		---
7								---	2190	---		---
8								1550	2170	---		---
9								1710	2340	---		---
10								1600	2620	---		---
11								1420	2520	---		---
12								1290	2670	---		---
13								1250	2910	---		---
14								1080	3640	---		2970
15								1110	3920	---		4420
16								1120	3400	---		4260
17								1200	3580	---		4530
18								1370	3780	---		4070
19								1440	4160	---		---
20								1470	4310	---		4070
21								1420	4670	---		4950
22								1390	4170	---		4800
23								1390	4860	---		4740
24								1410	4840	---		4260
25								1410	4740	---		4530
26								1520	4510	4140		---
27								1640	5060	4230		4740
28								1660	---	5020		4330
29								1690	---	5970		4630
30								1690	---	4020		4480
31								1690	---	4960		---
MEAN								1440	3270	4390		4540
WTR YR 1978	MEAN	3030		MAX	5260	MIN	1080					

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								---	27.0	---		---
2								---	26.0	---		---
3								---	28.0	---		---
4								---	30.5	---		---
5								---	30.5	---		---
6								---	31.5	---		---
7								---	33.5	---		---
8								25.0	33.5	---		---
9								25.0	26.0	---		---
10								23.0	23.0	---		---
11								24.0	33.0	---		---
12								26.5	27.5	---		---
13								26.0	28.0	---		---
14								---	24.0	---		19.0
15								22.0	24.0	---		29.0
16								21.5	29.0	---		28.0
17								22.0	32.5	---		22.5
18								25.0	26.0	---		24.5
19								27.0	31.0	---		---
20								25.5	34.0	---		23.5
21								25.5	27.0	---		25.5
22								21.0	27.5	---		20.0
23								21.0	24.5	---		28.5
24								23.0	26.5	---		29.0
25								23.0	29.0	---		31.0
26								23.0	25.0	33.0		21.0
27								27.0	24.5	32.0		28.5
28								29.0	---	28.0		29.0
29								29.5	---	33.5		22.0
30								29.5	---	34.0		20.5
31								29.0	---	31.0		---
MEAN								25.0	28.0	32.0		27.5
WTR YR 1978	MEAN	27.5		MAX	34.0	MIN	19.0					

VIRGIN RIVER BASIN

09415230 VIRGIN RIVER ABOVE HALFWAY WASH NEAR RIVERSIDE, NV--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	MAR 30,78 0930	MAY 25,78 1300	JUN 22,78 1015	SEP 27,78 1320				
TOTAL CELLS/ML	27	270	2500	760				
DIVERSITY: DIVISION	0.0	0.0	1.0	0.8				
..CLASS	0.0	0.0	1.0	0.8				
...ORDER	0.0	0.0	1.7	0.8				
....FAMILY	0.0	1.6	2.6	1.9				
.....GENUS	1.0	1.6	2.7	2.0				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOKOPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....DUCYSTACEAE								
.....DICTYOSPHAERIUM	--	-	--	-	89	4	--	-
.....DUCYSTIS	--	-	--	-	180	7	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	360	14	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	310	12	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
....CUSCINOUSCACEAE								
.....CYCLOTELLA	--	-	--	-	250	10	--	-
..PENNALES								
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	15	2
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	44	6
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	89#	33	67	3	--	-
...NAVICULACEAE								
....AMPHIPLEURA	--	-	--	-	--	-	15	2
....GYROSIGMA	14#	50	--	-	--	-	--	-
....NAVICULA	14#	50	130#	50	740#	29	88	12
...NITZSCHIACEAE								
....NITZSCHIA	--	-	22	8	540#	21	400#	52
...SURIRELLACEAE								
....CYMATOPLEURA	--	-	--	-	--	-	29	4
....SURIRELLA	--	-	22	8	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCCOCCALES								
....CHRUCCOCCAEAE								
.....ANACYSTIS	--	-	--	-	--	-	180#	23

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09419700 LAS VEGAS WASH NEAR HENDERSON, NV

LOCATION.--Lat 36°05'20", long 114°59'05", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.30, T.21 S., R.63 E., Clark County, Hydrologic Unit 15010015, on right bank at upstream end of 4.5-ft (1.37-m) pipe culvert on road, 3.5 mi (5.6 km) north of Henderson, and 6.0 mi (9.7 km) upstream from high-water line of Lake Mead at elevation 1,221.4 ft (372.28 m) National Geodetic Vertical Datum of 1929.

DRAINAGE AREA.--2,125 mi² (5,504 km²), of which 1,518 mi² (3,932 km²) contribute directly to surface runoff. Prior to Apr. 4, 1961, 2,179 mi² (5,644 km²), of which 1,571 mi² (4,069 km²) contributed directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1957 to current year.

REVISED RECORDS.--WSP 1926: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,540 ft (469 m), from topographic map. Prior to Apr. 4, 1961, at site 2.5 mi (4.0 km) downstream at various datums.

REMARKS.--Records fair. In closed basin above station, 2,150 acres (8.70 km²) are irrigated, mostly by pumping from ground water. Discharge includes waste water from industrial plants and sewage effluent.

AVERAGE DISCHARGE.--21 years, 37.3 ft³/s (1.056 m³/s), 27,020 acre-ft/yr (33.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,510 ft³/s (184 m³/s) July 4, 1975, gage height, 10.67 ft (3.252 m), from flood-marks, from rating curve extended above 3,340 ft³/s (94.6 m³/s) on basis of area-velocity computation to determine peak flow; minimum daily, 4.8 ft³/s (0.14 m³/s) Aug. 17, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,260 ft³/s (35.7 m³/s) Mar. 5, gage height, 8.47 ft (2.582 m); minimum, 33 ft³/s (0.93 m³/s) Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	57	61	90	81	114	83	98	58	53	49	66
2	69	56	64	85	82	102	84	104	61	52	54	75
3	71	56	65	89	83	84	82	72	63	57	60	63
4	68	59	66	83	79	105	75	69	68	58	62	60
5	65	62	70	84	85	534	72	67	69	58	57	68
6	66	66	75	83	89	124	68	70	62	55	61	65
7	66	64	77	81	87	91	64	73	64	57	88	67
8	61	63	76	82	86	81	69	71	60	54	64	65
9	64	66	74	80	87	79	84	71	60	62	59	64
10	62	67	72	95	114	103	80	64	58	63	58	66
11	63	68	78	95	120	115	76	63	58	56	62	73
12	59	77	81	83	96	115	78	64	58	56	64	72
13	59	73	75	83	116	97	80	62	59	55	63	66
14	59	75	73	84	290	81	81	62	54	54	67	66
15	58	71	72	125	112	75	82	62	54	56	66	75
16	62	72	71	111	90	80	86	63	60	55	64	68
17	64	72	72	102	91	80	82	63	62	58	66	71
18	68	71	74	91	87	81	74	62	63	61	66	72
19	68	73	71	87	89	86	72	62	61	60	62	70
20	68	78	74	84	85	89	62	64	62	58	68	68
21	70	79	73	82	72	84	64	60	61	59	69	66
22	69	77	73	84	67	82	67	62	54	59	65	64
23	69	74	75	82	72	74	65	64	50	58	71	62
24	68	75	75	79	71	77	70	62	54	55	75	61
25	63	75	76	80	64	76	74	60	60	55	67	59
26	62	76	71	82	71	75	75	62	59	55	67	58
27	60	73	76	84	77	73	73	61	57	54	74	57
28	58	73	111	77	72	79	74	62	53	57	74	56
29	57	71	218	81	---	76	71	60	55	63	71	55
30	61	66	97	84	---	74	73	58	55	63	68	54
31	58	---	89	80	---	78	---	55	---	58	63	---
TOTAL	1979	2085	2475	2692	2615	3164	2240	2052	1772	1774	2024	1952
MEAN	63.8	69.5	79.8	86.8	93.4	102	74.7	66.2	59.1	57.2	65.3	65.1
MAX	71	79	218	125	290	534	86	104	69	63	88	75
MIN	57	56	61	77	64	73	62	55	50	52	49	54
AC-FT	3930	4140	4910	5340	5190	6280	4440	4070	3510	3520	4010	3870
CAL YR 1977	TOTAL	24730	MEAN 67.8	MAX 520	MIN 45	AC-FT 49050						
WTR YR 1978	TOTAL	26824	MEAN 73.5	MAX 534	MIN 49	AC-FT 53210						

09419700 LAS VEGAS WASH NEAR HENDERSON, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1957 to October 1961, September and October 1962, May 1963 to June 1965, and December 1965 to current year.
CHEMICAL ANALYSES: January 1964 to January 1965, twice-monthly; October 1967 to January 1969, weekly; February 1969 to January 1970 and July 1970 to current year, monthly.

SPECIFIC CONDUCTANCE: January 1964 to January 1965, twice-monthly; October to November 1967 and April 1968 to January 1969, weekly; February 1969 to January 1970 and July 1970 to current year, monthly.

WATER TEMPERATURES: February 1957 to October 1961, monthly; September to October 1962, May 1963 to June 1965, and December 1965 to current year, monthly.

SEDIMENT DATA: January to September 1977, monthly.

REMARKS.--Discharge includes sewage effluent and some waste water from industrial plants.

COOPERATION.--All water-quality sampling and analyses prior to July 1970, plus nutrient analyses for period July 1970 to September 1972, from U.S. Environmental Protection Agency. Data in addition to those listed under "Period of Record" for January 1964 to June 1970 may exist in files of U.S. Environmental Protection Agency.

EXTREMES MEASURED FOR PERIOD OF RECORD. --

SPECIFIC CONDUCTANCE: Maximum, 6,960 micromhos Sept. 19, 1968; minimum, 2,160 micromhos Sept. 12, 1977.

WATER TEMPERATURES: Maximum, 28.0°C July 30, Sept. 3, 1958; minimum, 2.0°C Jan. 31, 1972.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 347 mg/L July 11, 1978 (questionable value not verified by duplicate determination); minimum, 9 mg/L July 12, 1977, Feb. 16, 1978.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)
OCT								
11...	1200	64	2660	7.8	18.0	780	180	80
NOV								
14...	1230	69	2750	--	13.5	--	--	--
DEC								
12...	1000	84	2720	--	11.0	--	--	--
FEB								
16...	1045	86	2810	--	11.0	--	--	--
MAR								
13...	1100	91	2850	--	14.5	--	--	--
APR								
19...	1030	68	2860	8.0	16.5	850	190	92
MAY								
15...	1045	60	3020	--	21.0	--	--	--
JUN								
13...	0815	66	--	--	21.0	--	--	--
JUL								
11...	1110	55	2690	7.8	23.0	800	180	85
AUG								
14...	1300	57	2440	--	23.5	--	--	--
SEP								
11...	1430	54	2600	--	21.5	--	--	--

LAS VEGAS VALLEY

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09419700 LAS VEGAS WASH NEAR HENDERSON, NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
UCT								
11...	1.1	.23	1.3	16	15	16	7.5	--
NOV								
14...	2.2	.41	2.6	12	--	--	6.5	--
DEC								
12...	1.7	.21	1.9	12	--	--	--	--
FEB								
16...	1.7	.33	2.0	12	--	--	2.6	--
MAR								
13...	1.5	.29	1.8	13	--	--	2.2	--
APR								
19...	.65	.12	.77	16	22	23	3.6	3.6
MAY								
15...	.14	.06	.20	18	--	--	4.9	--
JUN								
13...	.08	.04	.12	16	--	--	8.2	--
JUL								
11...	.01	.04	.05	17	19	19	6.9	6.1
AUG								
14...	.06	.02	.08	14	--	--	5.3	--
SEP								
11...	.06	.03	.09	15	--	--	5.9	--

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT CHARGE, SUS- PENDED (T/DAY)
UCT				
11...	1200	64	27	4.7
NOV				
14...	1230	69	13	2.4
DEC				
12...	1000	84	13	2.9
FEB				
16...	1045	86	9	2.1
MAR				
13...	1100	91	--	--
APR				
19...	1030	68	12	2.2
MAY				
15...	1045	60	36	5.8
JUN				
13...	0815	66	16	2.9
JUL				
11...	1110	55	347	52
AUG				
14...	1300	57	17	2.6
SEP				
11...	1430	54	10	1.5

LAS VEGAS VALLEY

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV

LOCATION.--Lat 36°07'20", long 114°54'15", in NE¼ sec.14, T.21 S., R.63 E., Clark County, Hydrologic Unit 15010015, in Lake Mead National Recreation Area, on left bank near mouth, on upstream side of lake shore highway, about 0.8 mi (1.3 km) upstream from high-water line of Lake Mead at elevation 1,221.4 ft (372.28 m) National Geodetic Vertical Datum of 1929, and 11 mi (18 km) north-northwest of Boulder City.

DRAINAGE AREA.--2,193 mi² (5,680 km²), of which 1,586 mi² (4,108 km²) contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1969 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. In closed basin above station, 2,150 acres (8.70 km²) are irrigated, mostly by pumping from ground water. Discharge includes sewage effluent.

AVERAGE DISCHARGE.--9 years, 67.9 ft³/s (1.923 m³/s), 49,190 acre-ft (60.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,430 ft³/s (688.8 m³/s) July 4, 1975, gage height, 12.32 ft (3.755 m), from indirect measurement of peak flow; minimum, 14 ft³/s (0.40 m³/s) July 7, 8, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 26, 1964, reached a stage of 7.5 ft (2.29 m), from floodmarks, discharge, 1,050 ft³/s (29.7 m³/s), from indirect measurement of peak flow, and another flood between 1964 and 1969 reached a stage of about 10 ft (3.05 m), from floodmarks, discharge, about 1,700 ft³/s (48.1 m³/s), from rating curve extended above 300 ft³/s (8.50 m³/s) on basis of theoretical weir and culvert formulas.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 829 ft³/s (23.5 m³/s) Mar. 5, gage height, 7.03 ft (2.143 m); minimum daily, 62 ft³/s (1.76 m³/s) July 15-17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	73	83	107	97	97	97	116	68	66	66	74
2	88	73	81	101	97	121	99	150	71	65	66	82
3	89	73	84	107	95	99	101	113	74	64	66	76
4	88	74	84	99	95	111	99	90	79	64	66	74
5	88	74	84	88	93	378	89	87	79	64	70	74
6	84	76	91	89	91	290	84	82	76	64	80	73
7	84	77	95	89	93	163	77	85	73	64	100	73
8	79	77	99	89	97	121	76	84	72	65	74	73
9	79	79	99	88	99	105	84	82	71	65	70	74
10	77	83	97	89	109	103	93	76	70	66	69	76
11	77	84	101	101	128	130	88	74	70	65	68	78
12	77	89	105	95	121	118	88	73	70	64	68	78
13	77	91	103	91	113	110	86	72	70	63	68	76
14	79	86	101	91	186	100	84	72	70	63	68	78
15	81	84	99	99	260	90	87	73	70	62	68	80
16	83	83	97	123	118	84	90	74	70	62	68	78
17	84	86	99	107	107	97	88	74	70	62	70	77
18	83	88	99	107	109	97	84	73	70	65	70	76
19	84	88	97	99	111	97	77	72	70	67	71	76
20	84	89	99	99	105	103	73	76	72	68	72	76
21	84	93	101	95	101	97	68	70	74	68	72	76
22	84	95	99	95	89	95	71	72	74	68	74	78
23	86	93	97	93	88	93	71	74	71	68	76	86
24	86	93	97	93	86	91	70	72	66	70	77	96
25	84	93	95	93	84	88	71	70	64	70	78	105
26	84	93	95	95	81	93	71	73	67	69	80	90
27	83	91	97	95	88	97	71	72	70	68	82	84
28	79	89	113	97	88	95	71	71	70	68	82	82
29	77	91	251	95	---	91	71	70	69	67	82	81
30	76	88	138	97	---	91	74	68	67	67	80	80
31	79	---	111	101	---	95	---	66	---	66	75	---
TOTAL	2553	2546	3191	3007	3029	3640	2453	2476	2127	2037	2276	2380
MEAN	82.4	84.9	103	97.0	108	117	81.8	79.9	70.9	65.7	73.4	79.3
MAX	89	95	251	123	260	378	101	150	79	70	100	105
MIN	76	73	81	88	81	84	68	66	64	62	66	73
AC-FT	5060	5050	6330	5960	6010	7220	4870	4910	4220	4040	4510	4720

CAL YR 1977 TOTAL 30824 MEAN 84.4 MAX 529 MIN 55 AC-FT 61140
WTR YR 1978 TOTAL 31715 MEAN 86.9 MAX 378 MIN 62 AC-FT 62910

NOTE.--No gage-height record May 4 to Sept. 30.

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1964 to January 1965, October 1967 to current year.

PERIOD OF DAILY RECORD.--

CHEMICAL ANALYSES: January 1964 to January 1965, twice-monthly; October 1967 to January 1969, weekly; February to October 1969, monthly; November 1969 to January 1970, twice-monthly; February 1970 to July 1974, monthly; August 1974 to current year, twice-monthly.

SPECIFIC CONDUCTANCE: January 1964 to January 1965, twice-monthly; October 1967 to December 1967 and May 1968 to January 1969, weekly; February to October 1969, monthly; November 1969 to January 1970, twice-monthly; February 1970 to July 1974, monthly; August 1974 to May 1975, twice-monthly; June 1975 to March 1976, 4 times per hour (incomplete record due to recorder malfunctions) and twice-monthly; April to October 1976, twice-monthly; November 1976 to September 1977, 4 times per hour (incomplete record due to recorder malfunctions) and twice-monthly; October 1977 to May 1978, 2-4 times per month; June to September 1978, 3-5 times per week.

MICROBIOLOGICAL DATA: October 1976 to current year, monthly (data prior to October 1977 unpublished).

WATER TEMPERATURES: January to December 1968, weekly; August 1969 to July 1974, monthly; August 1974 to current year, twice-monthly.

SUSPENDED-SEDIMENT DISCHARGE: January 1974 to December 1976, monthly; January 1977 to current year, twice-monthly.

INSTRUMENTATION.--Specific conductance recorder from June 1975 to March 1976 and November 1976 to April 1978.

REMARKS.--Discharge includes sewage effluent and waste water from industrial plants...continuous records of specific conductance for 1978 water year are questionable, and therefore are not published here. Recorder was removed in May 1978 prior to demolition of nearby road culvert (removal of culvert caused severe stream-channel downcutting at gage).

COOPERATION.--Microbiological analyses for entire period of record by Nevada Bureau of Laboratories and Research. All water-quality sampling and analyses to October 1969, plus nutrient and trace-metal analyses for period October 1969 to September 1972, from U.S. Environmental Protection Agency. Data in addition to that listed under "Period of Record" for January 1964 to September 1969 may exist in files of U.S. Environmental Protection Agency.

EXTREMES MEASURED FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 9,120 micromhos Sept. 8, 1964; minimum, 2,600 micromhos July 3, 1975.

WATER TEMPERATURES: Maximum, 26.0°C July 23, 1969, June 3, 1970; minimum, 3.0°C Jan. 7, 1970.

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 17,300 mg/L Feb. 10, 1976; minimum, 111 mg/L Jan. 28, 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, TOTAL, IMMFD. (COLS. PER 100 ML)	CULI- FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
UCT											
11...	1030	76	3420	8.0	17.0	110	10.4	7300	K60	--	K100
31...	1130	79	3560	--	15.0	100	--	--	--	--	--
NOV											
14...	1145	88	3330	--	14.0	95	--	K1600	K100	--	240
29...	1315	99	3270	--	13.0	150	--	2300	--	--	280
DEC											
12...	1100	111	3260	--	10.0	260	--	2500	K50	--	300
27...	1300	111	3260	--	12.5	210	--	K1000	K60	--	K180
JAN											
09...	1000	86	3050	8.4	10.0	210	--	K1500	K60	--	2500
30...	1030	93	3330	--	11.5	180	--	500	K60	--	570
FFB											
16...	1145	118	3750	--	10.0	1200	--	>200	K90	--	2200
MAR											
13...	0930	E110	3890	--	13.5	900	--	K1900	K60	--	2300
28...	0700	93	3840	--	14.5	240	--	K1100	K30	--	800
APR											
19...	1430	E73	3520	7.9	17.0	160	8.3	--	--	--	--
MAY											
01...	1230	109	3560	--	16.0	320	--	500	<10	--	K190
15...	1400	E78	3920	--	21.0	250	--	K15000	K1400	--	K15000
30...	1400	67	3530	--	22.0	56	--	--	--	--	--
JUN											
14...	0930	E64	3500	--	20.5	45	--	K1100	K40	--	K1800
27...	1200	70	3450	--	21.0	70	--	K11000	K20	--	2800
JUL											
11...	1400	E73	3450	8.2	23.5	70	--	3400	144	--	K1900
24...	1000	69	3400	--	23.0	55	--	K1600	K110	--	K1700
AUG											
14...	1300	E68	2910	--	23.5	40	--	--	--	--	K16000
28...	1430	81	3270	--	23.0	80	--	9000	K168	--	2000
SEP											
11...	1330	77	3000	--	21.0	39	--	--	--	K530	K4800
25...	1215	105	3050	--	21.5	68	--	>1500	K120	--	2200

> Actual value is known to be greater than value shown.

< Actual value is known to be less than value shown.

E Estimated.

K Based on non-ideal colony count.

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD- NESS (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINTY (MG/L CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT											
11...	1100	280	100	340	4.4	37	200	1100	380	40	2620
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
14...	--	--	--	--	--	--	--	--	--	--	2540
29...	--	--	--	--	--	--	--	--	--	--	--
DEC											
12...	--	--	--	--	--	--	--	--	--	--	2420
27...	--	--	--	--	--	--	--	--	--	--	--
JAN											
09...	1100	290	81	240	3.2	25	150	960	330	32	2120
30...	--	--	--	--	--	--	--	--	--	--	--
FEB											
16...	--	--	--	--	--	--	--	--	--	--	3020
MAR											
13...	--	--	--	--	--	--	--	--	--	--	3040
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
19...	1200	300	120	340	4.2	38	180	1000	470	39	2690
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	2900
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
14...	--	--	--	--	--	--	--	--	--	--	2640
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
11...	1200	280	110	340	4.4	39	200	1100	440	40	2500
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	--	--	--	--	--	--	--	--	--	--	2510
28...	--	--	--	--	--	--	--	--	--	--	--
SEP											
11...	--	--	--	--	--	--	--	--	--	--	2480
25...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NOS TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT											
11...	2400	3.56	3.4	.66	4.1	1.0	2.6	6.7	7.8	5.5	7.2
31...	--	--	5.4	.33	5.7	.58	1.4	7.1	5.0	--	6.6
NOV											
14...	--	3.45	6.6	.45	7.0	.94	1.7	8.7	5.8	--	--
29...	--	--	6.4	.72	7.1	3.2	4.5	12	4.5	--	8.7
DEC											
12...	--	3.29	7.0	.51	7.5	2.3	3.7	11	3.5	--	11
27...	--	--	7.8	.49	8.3	1.2	2.7	11	4.8	--	9.5
JAN											
09...	2050	2.88	6.0	.45	6.4	4.0	5.2	12	4.2	1.6	--
30...	--	--	5.8	.37	6.4	3.4	4.5	11	3.9	--	8.7
FEB											
16...	--	4.11	6.0	.14	6.1	.55	1.4	7.5	2.8	--	38
MAR											
13...	--	4.13	5.0	.28	5.3	2.6	5.0	10	3.8	--	3.7
28...	--	--	4.6	.43	5.0	2.4	4.0	9.0	2.9	--	13
APR											
19...	2420	E3.66	4.3	.48	4.8	2.6	3.7	8.5	3.0	2.5	8.9
MAY											
01...	--	--	2.9	.41	3.3	3.9	4.6	7.9	--	--	12
15...	--	E3.94	2.9	.68	3.6	3.3	5.1	8.7	4.0	--	41
30...	--	--	2.7	.90	3.6	3.1	5.3	8.9	2.5	--	9.0
JUN											
14...	--	E3.59	2.7	.91	3.6	6.0	8.1	12	3.7	--	8.3
27...	--	--	8.4	.01	8.4	.04	1.5	9.9	3.6	--	9.8
JUL											
11...	2470	E3.40	2.6	1.4	4.0	4.4	6.9	11	4.2	6.1	11
24...	--	--	3.0	2.0	5.0	2.7	4.8	9.8	3.6	--	13
AUG											
14...	--	E3.41	2.0	1.8	3.8	6.3	7.1	11	3.8	--	20
28...	--	--	2.9	1.6	4.5	4.4	4.9	9.4	4.2	--	13
SEP											
11...	--	3.37	--	1.3	6.1	4.1	5.6	12	3.9	--	9.3
25...	--	--	3.3	.85	4.1	5.3	4.8	8.9	3.8	--	20

E Estimated.

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT							
11...	1030	50	400	10	20	20	6900
31...	1130	--	--	--	--	--	8700
NOV							
14...	1145	30	100	0	4	14	4700
29...	1315	--	--	--	--	--	5200
DEC							
12...	1100	33	600	0	30	5	980
27...	1300	--	--	--	--	--	8600
JAN							
09...	1000	33	--	--	--	--	--
30...	1030	--	--	--	--	--	8500
FEB							
16...	1145	70	1000	0	100	71	54000
MAR							
13...	0930	70	1000	0	0	60	40000
28...	0700	--	--	--	--	--	10000
APR							
19...	1430	35	300	--	30	21	7700
MAY							
01...	1230	--	--	--	--	--	14000
15...	1400	60	400	--	30	51	17000
30...	1400	--	--	--	--	--	3100
JUN							
14...	0930	28	200	--	20	16	2600
27...	1200	--	--	--	--	--	5000
JUL							
11...	1400	26	300	--	10	9	0
24...	1000	--	--	--	--	--	3000
AUG							
14...	1300	33	200	--	30	17	4800
28...	1430	--	--	--	--	--	8900
SEP							
11...	1330	20	300	--	10	15	2700
25...	1215	--	--	--	--	--	6900

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT						
11...	100	680	.2	0	10	70
31...	--	--	--	--	--	--
NOV						
14...	28	580	.0	1	0	40
29...	--	--	--	--	--	--
DEC						
12...	43	690	--	--	1	40
27...	--	--	--	--	--	--
JAN						
09...	--	--	.0	--	--	--
30...	--	--	--	--	--	--
FEB						
16...	210	2400	.0	5	1	270
MAR						
13...	110	2500	.0	4	0	190
28...	--	--	--	--	--	--
APR						
19...	--	710	.0	0	0	60
MAY						
01...	--	--	--	--	--	--
15...	--	2100	.0	1	0	140
30...	--	--	--	--	--	--
JUN						
14...	--	1300	.0	2	0	60
27...	--	--	--	--	--	--
JUL						
11...	--	500	.0	2	0	20
24...	--	--	--	--	--	--
AUG						
14...	--	1300	.0	2	0	60
28...	--	--	--	--	--	--
SEP						
11...	--	790	.0	1	0	90
25...	--	--	--	--	--	--

LAS VEGAS VALLEY

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDKN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DUT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)
OCT 11...	1030	.0	.00	.00	.0	.00	.00	.00	.06	.00	.00	.00
JAN 09...	1000	.0	.00	.00	.0	.00	.00	.00	.08	.00	.00	.00
APR 19...	1430	.0	.00	.00	.0	.00	.00	.00	.07	.00	.00	.00
JUL 18...	0730	.0	.00	.00	.0	.00	.00	.00	.04	.00	.00	.00

DATE	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TUX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 11...	.00	.00	.04	.00	.00	.00	.00	0	.00	.01	.00	.00
JAN 09...	.00	.00	.30	.00	.00	.00	.00	0	.00	.00	.00	.00
APR 19...	.00	.00	.03	.00	.00	.00	.00	0	.00	.12	.01	.02
JUL 18...	.00	.00	.00	.00	.00	.00	.00	0	.00	.04	.00	.00

DATE	TIME	STREAM- FLOW, INSTAN- TANFLOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
OCT 11...	1030	76	17.0	757	155
31...	1130	79	15.0	939	200
NOV 14...	1145	88	14.0	685	163
29...	1315	99	13.0	834	223
DEC 12...	1100	111	10.0	1300	390
JAN 09...	1000	86	10.0	1480	344
30...	1030	93	11.5	1100	276
FEB 28...	1230	89	14.5	1460	351
MAR 28...	0700	93	14.5	1640	412
APR 19...	1430	E73	17.0	1350	E281
MAY 01...	1230	109	16.0	2650	780
15...	1400	E78	21.0	3440	E724
30...	1400	67	22.0	524	95
JUN 14...	0930	E64	20.5	418	E72
27...	1200	70	21.0	525	99
JUL 11...	1400	E73	23.5	556	E110
24...	1000	69	23.0	376	71
AUG 14...	1300	E68	23.5	626	E115
28...	1430	81	23.0	814	178
SEP 11...	1330	77	21.0	371	77
25...	1215	105	21.5	504	143

E Estimated.

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV

LOCATION.--Lat 36°00'58", long 114°44'13", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River meridian, Mohave-Clark Counties, Hydrologic Unit 15010005, in center of Hoover Dam on Colorado River.

DRAINAGE AREA.--171,700 mi² (444,700 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Contents: February 1935 to current year. Evaporation: March 1952 to current year. Diversions (monthly totals only): to Boulder City area, since October 1935; to Henderson and Las Vegas areas, since April 1942; combined diversions since October 1968. Prior to 1946 published as "at Boulder Dam."

REVISED RECORDS.--WSP 899: 1935-39.

GAGE.--Water-stage indicator read once daily at midnight, with supplementary water-stage recorder. Datum of gage is 0.00 ft (0.000 m) to Local Powerhouse datum and is 0.40 ft (0.122 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by concrete arch-gravity dam; storage began Feb. 1, 1935; dam completed Mar. 1, 1936. Total capacity (based on 1965-64 resurvey by Coast and Geodetic Survey; capacity table put into use Apr. 1, 1967), 29,755,000 acre-ft (36,700 hm³), consisting of the following: Dead storage, 2,378,000 acre-ft (2,930 hm³) below gage height 895.0 ft (272.80 m)—gate sills in outlet towers; usable contents, 26,159,000 acre-ft (32,500 hm³) between gage heights 895.0 ft (272.80 m) and 1,221.4 ft (372.28 m)—top of automatic spillway gates in raised position; and uncontrolled storage, 1,218,000 acre-ft (1,500 hm³) between gage heights 1,221.4 ft (372.28 m) and 1,229.0 ft (374.60 m)—maximum water surface. Reservoir is used to store water for flood control, irrigation, municipal water supply, and power development. Figures given herein represent usable contents.

DIVERSIONS FROM LAKE MEAD.--Diversions to Boulder City area at dam; diversions to Henderson and Las Vegas areas from intakes 6 mi (10 km) upstream. Diversions measured by Venturi meters. Water used for municipal and industrial purposes.

COOPERATION.--Records of gage height and contents furnished by Bureau of Reclamation. Records of diversions from Lake Mead furnished by Bureau of Reclamation and Colorado River Commission of Nevada.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 27,790,000 acre-ft (34,300 hm³) July 29, 30, 1941, gage height, 1,220.45 ft (371.993 m); minimum (since 1940), 10,695,000 acre-ft (1,200 hm³) Apr. 26, 1956, gage height, 1,083.21 ft (330.162 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 21,460,000 acre-ft (26,500 hm³) Mar. 12, gage height, 1,189.73 ft (362.630 m); minimum, 20,004,000 acre-ft (24,700 hm³) Dec. 15, gage height, 1,178.96 ft (359.347 m).

CONTENTS, IN THOUSANDS OF ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20221	20182	20036	20280	20974	21173	21294	20947	20751	20785	20571	20647
2	20246	20170	20029	20292	20997	21191	21305	20939	20753	20793	20569	20664
3	20250	20164	20040	20304	21022	21219	21295	20921	20770	20795	20568	20678
4	20245	20153	20055	20319	21042	21259	21281	20898	20791	20795	20568	20700
5	20237	20141	20054	20338	21064	21306	21288	20890	20793	20787	20568	20708
6	20237	20150	20042	20366	21068	21353	21269	20899	20776	20780	20588	20728
7	20229	20153	20028	20399	21073	21381	21244	20914	20783	20755	20583	20746
8	20233	20153	20017	20429	21074	21407	21241	20894	20784	20746	20568	20770
9	20242	20143	20005	20453	21079	21425	21248	20869	20777	20751	20573	20799
10	20238	20140	20019	20478	21094	21439	21239	20850	20788	20737	20577	20827
11	20227	20144	20038	20504	21123	21440	21217	20842	20810	20727	20575	20839
12	20217	20153	20030	20529	21138	21460	21196	20825	20803	20720	20590	20854
13	20219	20160	20026	20548	21142	21454	21173	20825	20792	20715	20610	20871
14	20217	20158	20020	20569	21142	21449	21156	20826	20781	20701	20616	20886
15	20218	20157	20004	20591	21153	21435	21148	20818	20777	20711	20606	20866
16	20226	20148	20016	20610	21163	21418	21160	20815	20783	20715	20592	20898
17	20215	20131	20019	20627	21173	21403	21134	20806	20801	20708	20583	20903
18	20200	20115	20034	20651	21184	21396	21116	20792	20807	20692	20577	20901
19	20170	20112	20033	20680	21202	21392	21103	20785	20803	20678	20585	20893
20	20176	20116	20034	20704	21218	21375	21077	20793	20791	20669	20599	20878
21	20172	20111	20040	20735	21217	21363	21058	20796	20783	20662	20588	20868
22	20176	20100	20063	20769	21200	21341	21052	20784	20777	20666	20581	20861
23	20184	20096	20082	20792	21191	21330	21063	20768	20769	20657	20580	20865
24	20178	20108	20111	20808	21142	21328	21042	20751	20780	20643	20587	20868
25	20166	20107	20135	20833	21189	21232	21019	20743	20801	20620	20595	20860
26	20165	20106	20154	20863	21197	21341	21003	20741	20801	20590	20619	20853
27	20166	20107	20164	20886	21178	21328	20980	20757	20795	20581	20650	20856
28	20173	20086	20177	20913	21169	21335	20951	20773	20787	20576	20653	20854
29	20178	20066	20202	20939	---	21334	20951	20776	20785	20584	20646	20852
30	20190	20048	20225	20952	---	21334	20966	20765	20778	20594	20647	20869
31	20189	---	20250	20959	---	21281	---	20754	---	20583	20641	---
MAX	20250	20182	20250	20959	21218	21460	21305	20947	20810	20795	20653	20903
MIN	20165	20048	20004	20280	20974	21173	20951	20741	20751	20576	20568	20647
(*)	1180.36	1179.29	1180.82	1186.09	1187.62	1188.44	1186.14	1184.58	1184.76	1183.31	1183.74	1185.43
(†)	-16000	-141000	+202000	+709000	+210000	+112000	-315000	-212000	+24000	-195000	+58000	+228000
(‡)	8040	6190	4100	4160	4200	5270	6850	9370	11570	12260	11980	10340
(**)	6.5	6.4	4.2	3.7	3.7	3.4	4.3	6.2	7.9	7.7	10.5	8.6
(††)	71800	70500	46200	41500	42300	39100	49200	70100	89200	86600	117700	97200
CAL YR 1977	† -953000	‡ 90880	** 75.5	†† 836300								
WTR YR 1978	† +664000	‡ 94300	** 73.1	†† 821400								

* Gage height, in feet, at end of month.

** Gross evaporation, in inches, from Lake Mead.

† Change in contents, in acre-feet.

†† Gross evaporation, in acre-feet, from Lake Mead.

‡ Diversions, in acre-feet.

NOTE.--Figures of gross evaporation are based on data obtained on Lake Mead by the Bureau of Reclamation and at Las Vegas by National Weather Service, and are computed by the Geological Survey. Only the mass-transfer method described in Geological Survey Professional Paper 298 is used. "Gross" denoted the total evaporation from the lake without deduction for precipitation on the lake surface or for natural losses that would have occurred in the area now occupied by the lake. Starting February 1976 coefficient changed to 0.00179.

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1940 to current year.

REMARKS.--Unpublished chemical analyses for 1963 water year available from Metropolitan Water District of Southern California, LaVerne, Calif.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ELEV- ATION ABOVE NGVD (FEET)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)
OCT												
27...	0900	.0	1180.00	1080	8.0	22.0	6.8	330	220	79	32	100
27...	0905	10	1170.00	1100	8.3	22.0	6.8	--	--	--	--	--
27...	0910	25	1155.00	1100	8.5	22.0	6.7	--	--	--	--	--
27...	0925	75	1105.00	1060	8.5	19.0	2.4	--	--	--	--	--
27...	0935	125	1055.00	1080	8.4	15.0	4.3	330	210	84	30	100
27...	0945	175	1005.00	1070	8.3	13.5	5.6	--	--	--	--	--
27...	1000	225	955.00	1060	8.2	13.0	6.3	--	--	--	--	--
27...	1005	267	913.00	1050	8.6	12.0	6.6	320	190	83	28	97
27...	1015	275	905.00	1040	8.3	12.0	6.6	--	--	--	--	--
27...	1025	325	855.00	1050	8.5	12.0	6.4	--	--	--	--	--
27...	1040	375	805.00	1050	8.2	12.0	6.0	--	--	--	--	--
27...	1100	425	755.00	1050	8.2	12.0	5.0	320	190	82	28	97
27...	1120	460	720.00	1060	8.0	12.0	3.3	--	--	--	--	--
DEC												
07...	0830	.0	1182.00	1100	7.9	16.0	6.8	330	210	83	30	100
07...	0845	10	1172.00	1100	7.8	16.5	6.8	--	--	--	--	--
07...	0900	25	1157.00	1100	8.0	16.5	6.8	--	--	--	--	--
07...	0910	75	1107.00	1100	8.1	16.5	6.6	--	--	--	--	--
07...	0930	125	1057.00	1100	7.9	16.0	4.5	330	210	84	30	100
07...	0950	175	1007.00	1060	7.9	14.0	5.2	330	200	83	30	99
07...	1000	225	957.00	1050	8.1	13.0	6.3	--	--	--	--	--
07...	1010	267	915.00	1050	8.0	12.5	6.3	320	190	82	29	97
07...	1020	275	907.00	1050	8.1	12.5	6.3	--	--	--	--	--
07...	1040	325	857.00	1040	8.0	12.0	6.3	--	--	--	--	--
07...	1100	375	807.00	1040	8.0	12.0	5.5	--	--	--	--	--
07...	1115	425	757.00	1050	7.9	12.0	4.8	320	180	81	28	96
07...	1130	460	722.00	1050	7.9	12.0	3.5	--	--	--	--	--
JAN												
04...	0845	.0	1181.00	1080	7.3	14.0	7.6	330	210	83	30	100
04...	0900	10	1171.00	1100	7.8	14.0	7.8	--	--	--	--	--
04...	0910	25	1156.00	1100	7.9	14.5	8.0	--	--	--	--	--
04...	0925	75	1106.00	1100	7.9	14.5	8.0	--	--	--	--	--
04...	0950	125	1056.00	1100	8.1	14.5	7.8	--	--	--	--	--
04...	1000	175	1006.00	1060	8.2	13.5	5.9	330	200	83	30	96
04...	1010	225	956.00	1050	8.2	13.0	6.0	--	--	--	--	--
04...	1020	267	914.00	1050	8.0	12.5	6.1	320	190	83	28	95
04...	1040	275	906.00	1050	8.0	12.5	6.3	--	--	--	--	--
04...	1050	325	856.00	1050	8.0	12.0	6.3	--	--	--	--	--
04...	1100	375	806.00	1050	7.8	12.0	6.3	--	--	--	--	--
04...	1115	425	756.00	1050	7.8	12.0	5.5	330	190	81	30	93
04...	1130	460	721.00	1060	7.6	12.0	4.0	--	--	--	--	--
30...	0900	.0	1186.00	1060	8.0	13.5	9.1	330	200	84	30	100
30...	0910	10	1176.00	1090	8.1	13.5	9.0	--	--	--	--	--
30...	0925	25	1161.00	1090	8.1	13.5	9.0	--	--	--	--	--
30...	0935	75	1111.00	1100	8.2	13.5	8.6	--	--	--	--	--
30...	0945	125	1061.00	1100	8.0	13.5	8.5	--	--	--	--	--
30...	0955	175	1011.00	1100	8.2	13.5	8.5	330	200	84	30	100
30...	1000	225	961.00	1050	7.9	13.0	6.3	330	210	83	28	98
30...	1010	275	911.00	1040	8.0	12.5	6.2	320	190	83	28	97
30...	1020	325	861.00	1050	7.8	12.0	6.2	--	--	--	--	--
30...	1030	375	811.00	1060	7.7	12.0	5.0	330	200	81	30	100
30...	1040	425	761.00	1060	7.8	12.0	5.0	320	190	80	29	98
30...	1050	450	--	1060	7.7	12.0	4.2	--	--	--	--	--
30...	1100	468	718.00	1060	10.0	12.0	3.5	--	--	--	--	--

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

COOPERATION.--Water samples collected by Bureau of Reclamation and analyzed by the Metropolitan Water District of Southern California, LaVerne, Calif.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CAR- BONATE (MG/L AS CO3)	ALKA- LITY (MG/L AS CACU3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT												
27...	39	2.4	5.0	0	112	2.2	300	94	8.3	686	.93	.02
27...	--	--	--	--	--	--	--	94	--	--	--	--
27...	--	--	--	--	--	--	--	94	--	--	--	--
27...	--	--	--	--	--	--	--	88	--	--	--	--
27...	39	2.4	4.6	0	129	1.0	290	88	8.0	683	.93	.20
27...	--	--	--	--	--	--	--	86	--	--	--	--
27...	--	--	--	--	--	--	--	84	--	--	--	--
27...	39	2.4	4.3	0	135	.7	270	84	9.3	658	.89	.18
27...	--	--	--	--	--	--	--	84	--	--	--	--
27...	--	--	--	--	--	--	--	83	--	--	--	--
27...	--	--	--	--	--	--	--	83	--	--	--	--
27...	39	2.4	4.3	0	134	1.6	280	82	9.4	664	.90	.20
27...	--	--	--	--	--	--	--	83	--	--	--	--
DEC												
07...	39	2.4	5.0	0	121	3.0	300	92	8.0	692	.94	.16
07...	--	--	--	0	122	3.8	--	92	--	--	--	--
07...	--	--	--	0	122	2.4	--	92	--	--	--	--
07...	--	--	--	0	122	1.9	--	92	--	--	--	--
07...	39	2.4	4.7	0	125	3.1	290	90	8.1	683	.93	.16
07...	39	2.4	4.6	0	131	3.2	280	86	7.8	670	.91	.20
07...	--	--	--	--	131	2.0	--	84	--	--	--	--
07...	39	2.3	4.4	0	132	2.6	280	84	9.0	665	.90	.16
07...	--	--	--	0	132	2.0	--	84	--	--	--	--
07...	--	--	--	0	132	2.6	--	84	--	--	--	--
07...	--	--	--	0	134	2.6	--	84	--	--	--	--
07...	39	2.3	4.4	0	134	3.3	270	84	9.1	654	.89	.20
07...	--	--	--	0	132	3.2	--	84	--	--	--	--
JAN												
04...	39	2.4	5.0	0	124	12	300	92	8.6	694	.94	.14
04...	--	--	--	0	125	3.9	--	91	--	--	--	--
04...	--	--	--	0	126	3.1	--	90	--	--	--	--
04...	--	--	--	0	125	3.1	--	92	--	--	--	--
04...	--	--	--	0	125	1.9	--	92	--	--	--	--
04...	38	2.3	4.6	0	133	1.6	280	86	8.8	669	.91	.20
04...	--	--	--	0	135	1.7	--	85	--	--	--	--
04...	39	2.3	4.4	0	135	2.6	280	83	9.0	665	.90	.20
04...	--	--	--	0	134	2.6	--	83	--	--	--	--
04...	--	--	--	0	135	2.6	--	83	--	--	--	--
04...	--	--	--	0	135	4.2	--	84	--	--	--	--
04...	38	2.2	4.4	0	135	4.2	270	84	9.2	654	.89	.18
04...	--	--	--	0	136	6.7	--	85	--	--	--	--
30...	39	2.4	4.7	0	126	2.5	290	90	8.6	684	.93	.16
30...	--	--	--	0	126	2.0	--	90	--	--	--	--
30...	--	--	--	0	126	2.0	--	90	--	--	--	--
30...	--	--	--	0	126	1.6	--	90	--	--	--	--
30...	--	--	--	0	126	2.5	--	91	--	--	--	--
30...	39	2.4	4.8	0	125	1.5	290	92	8.2	685	.93	.16
30...	39	2.4	4.4	0	122	3.0	280	91	8.9	688	.91	.02
30...	39	2.4	4.3	0	134	2.6	270	83	8.9	655	.89	.02
30...	--	--	--	0	134	4.1	--	84	--	--	--	--
30...	40	2.4	4.6	0	130	5.1	280	88	9.0	672	.91	.20
30...	40	2.4	4.3	0	135	4.2	270	84	9.7	657	.89	.23
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	0	136	.0	--	84	--	--	--	--

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ELEV- ATION ABOVE NGVD (FEET)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS Ca)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)
MAR												
07...	0900	.0	1189.00	1060	7.2	14.0	8.9	330	200	84	30	100
07...	0910	10	1179.00	1060	7.2	13.3	9.4	--	--	--	--	--
07...	0925	25	1164.00	1080	7.8	13.5	9.1	--	--	--	--	--
07...	0935	75	1114.00	1090	7.6	13.0	9.1	--	--	--	--	--
07...	0945	125	1064.00	1090	7.8	13.0	9.0	330	200	85	29	100
07...	0955	175	0.10	1090	7.8	13.0	9.0	--	--	--	--	--
07...	1000	225	964.00	1090	7.8	13.0	9.0	330	200	85	29	100
07...	1010	275	914.00	1090	7.8	13.0	8.7	--	--	--	--	--
07...	1015	277	--	1090	7.8	13.0	8.7	--	--	--	--	--
07...	1020	325	864.00	1080	7.7	13.0	7.4	330	200	83	29	100
07...	1030	375	814.00	1060	7.7	12.5	6.2	--	--	--	--	--
07...	1040	425	764.00	1060	7.6	12.0	5.5	330	190	83	29	97
07...	1100	470	719.00	1080	8.1	12.0	5.2	--	--	--	--	--
30...	0900	.0	1188.00	1080	8.2	16.5	10.1	330	200	83	30	100
30...	0910	10	1177.00	1080	8.3	16.5	10.1	--	--	--	--	--
30...	0925	25	1163.00	1080	8.3	16.0	10.0	--	--	--	--	--
30...	0935	75	1113.00	1090	8.2	13.5	9.2	--	--	--	--	--
30...	0945	125	1063.00	1090	8.2	13.0	8.8	--	--	--	--	--
30...	0955	175	1013.00	1080	8.0	13.0	8.2	--	--	--	--	--
30...	1000	225	963.00	1070	8.0	13.0	7.1	330	200	82	30	97
30...	1010	275	913.00	1050	8.0	12.0	5.6	--	--	--	--	--
30...	1020	279	909.00	1050	8.0	12.0	5.6	320	190	82	29	96
30...	1030	325	863.00	1060	7.9	12.0	5.3	--	--	--	--	--
30...	1040	375	813.00	1070	7.9	12.0	5.2	--	--	--	--	--
30...	1050	425	763.00	1080	7.9	12.0	5.0	330	190	84	29	96
30...	1100	470	718.00	1080	7.9	12.0	4.8	--	--	--	--	--
APR												
27...	0800	.0	1186.00	1040	8.5	18.5	9.4	340	210	85	30	100
27...	0815	10	1176.00	1060	8.7	18.0	9.6	--	--	--	--	--
27...	0830	25	1161.00	1070	8.4	17.0	9.4	--	--	--	--	--
27...	0845	75	1111.00	1080	8.2	14.0	8.6	--	--	--	--	--
27...	0900	125	1061.00	1060	8.1	13.5	8.2	330	200	84	30	100
27...	0930	175	1011.00	1060	8.6	13.0	7.8	--	--	--	--	--
27...	1000	225	961.00	1060	8.4	13.0	7.2	330	200	83	29	99
27...	1030	275	911.00	1060	8.4	12.5	6.6	--	--	--	--	--
27...	1100	325	861.00	1050	8.7	12.0	6.4	--	--	--	--	--
27...	1130	375	811.00	1050	8.7	12.0	6.4	--	--	--	--	--
27...	1200	425	761.00	1050	8.6	12.0	6.4	330	190	82	30	99
27...	1230	468	718.00	1060	8.7	12.0	6.4	--	--	--	--	--
JUN												
02...	0930	.0	1186.00	1040	8.1	24.0	10.3	320	200	78	30	100
02...	0945	10	1176.00	1050	8.4	21.5	10.4	--	--	--	--	--
02...	1000	25	1161.00	1080	8.4	19.5	10.4	--	--	--	--	--
02...	1015	75	1111.00	1100	8.3	17.0	7.8	--	--	--	--	--
02...	1030	125	1061.00	1060	7.7	15.0	7.3	331	200	83	30	100
02...	1040	175	--	1080	8.1	13.5	7.3	--	--	--	--	--
02...	1045	225	961.00	1080	7.5	13.0	7.0	--	--	--	--	--
02...	1100	275	911.00	1060	8.3	12.5	6.7	324	190	81	30	100
02...	1115	325	861.00	1060	8.3	12.0	6.3	--	--	--	--	--
02...	1130	375	811.00	1060	8.3	12.0	6.4	--	--	--	--	--
02...	1145	425	761.00	1060	8.1	12.0	6.1	319	180	80	29	98
02...	1200	468	718.00	1060	7.7	12.0	5.8	--	--	--	--	--
29...	0845	.0	1185.00	1060	8.3	24.0	8.5	330	210	82	30	100
29...	0850	10	1175.00	1080	8.3	23.5	8.6	--	--	--	--	--
29...	0855	25	1160.00	1080	8.3	23.0	8.6	--	--	--	--	--
29...	0905	75	1110.00	1080	7.8	17.0	6.4	330	200	83	30	100
29...	0915	125	1060.00	1080	7.8	15.5	6.8	--	--	--	--	--
29...	0925	175	1010.00	1080	7.8	14.0	7.0	--	--	--	--	--
29...	0935	225	960.00	1070	8.0	13.5	6.8	330	200	84	30	100
29...	0945	275	910.00	1060	7.8	13.0	6.6	330	200	83	30	99
29...	1000	325	860.00	1060	7.9	13.0	6.6	--	--	--	--	--
29...	1010	375	810.00	1060	7.9	13.0	6.2	--	--	--	--	--
29...	1020	425	760.00	1060	7.9	12.0	6.0	320	190	81	29	99
29...	1040	468	717.00	1060	7.7	12.0	5.4	--	--	--	--	--
JUL												
27...	0840	.0	1183.00	1040	8.3	29.0	8.5	320	210	77	31	110

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CAR- BONATE (MG/L AS CO3)	ALKA- LINITY (MG/L AS CACU3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
MAR												
07...	39	2.4	4.6	0	132	16	290	86	9.3	684	.93	.11
07...	--	--	--	0	132	16	--	87	--	--	--	--
07...	--	--	--	0	133	4.1	--	86	--	--	--	--
07...	--	--	--	0	132	6.5	--	87	--	--	--	--
07...	39	2.4	4.5	0	132	4.1	290	87	9.1	685	.93	.11
07...	--	--	--	0	133	4.1	--	89	--	--	--	--
07...	39	2.4	4.7	0	133	4.1	290	88	9.1	687	.93	.09
07...	--	--	--	0	133	4.1	--	88	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	40	2.4	4.4	0	135	5.3	290	85	9.3	683	.93	.14
07...	--	--	--	0	139	5.4	--	81	--	--	--	--
07...	39	2.3	4.3	0	140	6.9	270	83	10	662	.90	.18
07...	--	--	--	0	140	2.2	--	82	--	--	--	--
30...	39	2.4	4.5	0	126	1.6	290	88	6.8	679	.92	.09
30...	--	--	--	--	127	1.2	--	89	--	--	--	--
30...	--	--	--	--	127	1.2	--	87	--	--	--	--
30...	--	--	--	--	127	1.6	--	88	--	--	--	--
30...	--	--	--	--	128	1.6	--	88	--	--	--	--
30...	--	--	--	--	129	2.5	--	87	--	--	--	--
30...	39	2.3	4.3	0	130	2.5	280	85	8.7	666	.91	.23
30...	--	--	--	--	130	2.5	--	83	--	--	--	--
30...	39	2.3	4.1	0	132	2.6	270	82	9.2	653	.89	.23
30...	--	--	--	--	133	3.3	--	81	--	--	--	--
30...	--	--	--	--	134	3.3	--	83	--	--	--	--
30...	38	2.3	4.3	0	138	3.4	280	83	9.5	670	.91	.27
30...	--	--	--	--	139	3.4	--	84	--	--	--	--
APR												
27...	39	2.4	4.4	2	127	.8	290	87	8.0	681	.93	.11
27...	--	--	--	1	129	.5	--	87	--	--	--	--
27...	--	--	--	1	129	1.0	--	88	--	--	--	--
27...	--	--	--	0	129	1.6	--	87	--	--	--	--
27...	39	2.4	4.3	0	130	2.0	290	87	9.0	683	.93	.18
27...	--	--	--	0	131	.6	--	86	--	--	--	--
27...	39	2.4	4.1	0	132	1.0	280	85	9.0	669	.91	.20
27...	--	--	--	0	134	1.0	--	84	--	--	--	--
27...	--	--	--	0	137	.5	--	83	--	--	--	--
27...	--	--	--	0	134	.5	--	82	--	--	--	--
27...	39	2.4	4.1	0	136	.7	280	85	11	674	.92	.18
27...	--	--	--	0	136	.5	--	84	--	--	--	--
JUN												
02...	40	2.4	4.8	0	118	1.8	300	91	7.9	683	.93	.05
02...	--	--	--	--	115	.9	--	91	--	--	--	--
02...	--	--	--	--	120	.9	--	90	--	--	--	--
02...	--	--	--	--	128	1.3	--	89	--	--	--	--
02...	39	2.4	4.5	0	128	5.0	300	89	8.8	693	.94	.18
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	131	8.1	--	87	--	--	--	--
02...	40	2.4	4.4	0	132	1.3	280	86	9.0	670	.91	.14
02...	--	--	--	--	132	1.3	--	86	--	--	--	--
02...	--	--	--	--	133	1.3	--	85	--	--	--	--
02...	40	2.4	4.4	0	135	2.1	280	85	9.9	668	.91	.18
02...	--	--	--	--	136	5.3	--	84	--	--	--	--
29...	39	2.4	4.7	0	116	1.1	300	92	8.6	687	.93	.05
29...	--	--	--	0	117	1.1	--	94	--	--	--	--
29...	--	--	--	0	116	1.1	--	93	--	--	--	--
29...	39	2.4	4.6	0	127	3.9	290	92	8.6	686	.93	.14
29...	--	--	--	0	128	4.0	--	92	--	--	--	--
29...	--	--	--	0	128	4.0	--	92	--	--	--	--
29...	39	2.4	4.5	0	130	2.5	280	89	9.3	676	.92	.16
29...	39	2.4	4.5	0	132	4.1	280	88	9.6	674	.92	.16
29...	--	--	--	0	132	3.2	--	86	--	--	--	--
29...	--	--	--	0	134	3.3	--	87	--	--	--	--
29...	40	2.4	4.2	0	134	3.3	270	86	11	661	.90	.14
29...	--	--	--	0	131	5.1	--	89	--	--	--	--
JUL												
27...	42	2.7	4.8	0	109	1.1	300	93	8.0	690	.94	.05

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SAMP- LING DEPTH (FT)	ELEV- ATION ABOVE NGVD (FEET)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)
JUL												
27...	0845	10	1173.00	1080	8.6	28.0	8.5	--	--	--	--	--
27...	0850	25	1158.00	1090	8.5	26.5	8.5	--	--	--	--	--
27...	0855	75	1108.00	1070	8.3	24.0	4.8	--	--	--	--	--
27...	0900	125	1058.00	1060	8.1	15.5	6.4	330	200	84	30	100
27...	0905	175	1008.00	1070	8.1	14.0	7.0	--	--	--	--	--
27...	0915	225	958.00	1060	8.0	13.5	6.8	330	200	82	30	100
27...	0930	275	908.00	1060	8.0	13.0	6.4	--	--	--	--	--
27...	0945	325	858.00	1060	8.0	13.0	6.4	320	190	81	29	100
27...	1000	375	808.00	1060	8.0	13.0	6.2	--	--	--	--	--
27...	1015	425	758.00	1060	7.9	13.0	5.8	320	190	81	29	100
27...	1030	468	715.00	1060	7.9	13.0	5.3	--	--	--	--	--
AUG												
30...	0830	.0	1186.00	1060	8.6	28.5	8.4	320	220	77	32	110
30...	0845	10	1176.00	1080	8.4	26.5	8.4	--	--	--	--	--
30...	0900	25	1161.00	1100	8.4	26.0	7.8	--	--	--	--	--
30...	0915	75	1111.00	1080	7.8	20.5	5.0	340	210	83	31	110
30...	0930	125	1061.00	1080	7.8	16.0	5.2	--	--	--	--	--
30...	0945	175	1011.00	1080	7.8	14.5	6.5	340	200	83	31	100
30...	1000	225	961.00	1070	7.8	13.5	6.6	--	--	--	--	--
30...	1015	275	911.00	1060	7.8	13.0	6.6	330	200	82	30	100
30...	1030	325	861.00	1060	7.8	13.0	6.4	--	--	--	--	--
30...	1100	375	811.00	1060	7.7	13.0	6.1	--	--	--	--	--
30...	1130	425	761.00	1060	7.8	13.0	5.6	--	--	--	--	--
30...	1200	450	736.00	1060	7.7	13.0	4.8	330	190	82	30	100
30...	1230	468	718.00	1060	7.7	13.0	4.4	--	--	--	--	--
SEP												
28...	0930	.0	1185.00	1100	8.5	25.5	9.0	330	220	80	32	110
28...	0935	10	1175.00	1110	8.7	25.0	9.0	330	220	--	--	--
28...	0945	25	1160.00	1080	8.5	25.0	8.4	330	220	--	--	--
28...	1020	75	1110.00	1080	8.0	21.0	1.9	340	210	83	31	100
28...	1040	125	1060.00	1070	7.8	18.0	3.8	340	210	--	--	--
28...	1050	175	1010.00	1070	7.8	15.5	5.4	340	210	--	--	--
28...	1110	225	960.00	1070	8.1	14.5	6.2	340	210	--	--	--
28...	1120	275	910.00	1060	8.0	13.5	6.4	330	200	83	30	99
28...	1135	325	860.00	1060	7.7	13.0	6.1	330	200	--	--	--
28...	1145	375	810.00	1060	7.9	13.0	5.8	330	200	--	--	--
28...	1200	425	760.00	1060	7.8	13.0	5.3	330	200	--	--	--
28...	1215	450	735.00	1060	7.8	13.0	4.5	330	190	82	30	98
28...	1230	471	714.00	1060	7.8	13.0	3.8	330	190	--	--	--

COLORADO RIVER MAIN STEM

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09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CAR- BUNATE (MG/L AS CO3)	ALKA- LINITIY (MG/L AS CACU3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
JUL												
27...	--	--	--	0	110	.5	--	93	--	--	--	--
27...	--	--	--	0	110	.7	--	93	--	--	--	--
27...	--	--	--	0	125	1.2	--	91	--	--	--	--
27...	39	2.4	4.7	0	130	2.0	290	90	8.4	687	.93	.14
27...	--	--	--	0	131	2.0	--	88	--	--	--	--
27...	39	2.4	4.5	0	132	2.6	280	87	9.1	673	.92	.14
27...	--	--	--	0	134	2.6	--	86	--	--	--	--
27...	40	2.4	4.3	0	135	2.6	270	86	9.3	662	.90	.11
27...	--	--	--	0	135	2.6	--	85	--	--	--	--
27...	40	2.4	4.3	0	136	3.3	280	85	9.4	671	.91	.16
27...	--	--	--	0	137	3.4	--	85	--	--	--	--
AUG												
30...	42	2.7	5.2	0	108	.5	310	97	9.0	706	.96	.05
30...	--	--	--	0	108	.8	--	97	--	--	--	--
30...	--	--	--	0	108	.8	--	97	--	--	--	--
30...	41	2.6	4.9	0	125	3.9	300	93	8.0	706	.96	.14
30...	--	--	--	0	129	4.0	--	91	--	--	--	--
30...	39	2.4	4.8	0	130	4.0	290	90	9.0	687	.93	.16
30...	--	--	--	0	132	4.1	--	90	--	--	--	--
30...	39	2.4	4.6	0	134	4.1	280	87	9.0	674	.92	.18
30...	--	--	--	0	135	4.2	--	86	--	--	--	--
30...	--	--	--	0	136	5.3	--	86	--	--	--	--
30...	--	--	--	0	137	4.2	--	86	--	--	--	--
30...	39	2.4	4.5	0	138	5.4	270	86	9.0	665	.90	.09
30...	--	--	--	0	131	5.1	--	87	--	--	--	--
SEP												
28...	41	2.6	4.9	0	112	.7	320	96	8.6	719	.98	.02
28...	--	--	--	0	112	.4	--	96	--	--	--	--
28...	--	--	--	0	112	.7	--	95	--	--	--	--
28...	39	2.4	4.7	0	124	2.4	300	92	8.4	694	.94	.09
28...	--	--	--	0	129	4.0	--	91	--	--	--	--
28...	--	--	--	0	130	4.0	--	89	--	--	--	--
28...	--	--	--	0	130	2.0	--	89	--	--	--	--
28...	39	2.4	4.3	0	133	2.6	280	87	9.3	673	.92	.16
28...	--	--	--	0	134	5.2	--	86	--	--	--	--
28...	--	--	--	0	135	3.3	--	85	--	330	.45	--
28...	--	--	--	0	133	4.1	--	87	--	--	--	--
28...	39	2.4	4.3	0	136	4.2	280	85	9.8	672	.91	.14
28...	--	--	--	0	139	4.3	--	85	--	--	--	--

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV
(National stream-quality accounting network station)

LOCATION.--Lat 36°00'55", long 114°44'16", in NE¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River meridian, or SW¼NE¼ sec.29, T.22 S., R.65 E., Mount Diablo meridian, Mohave-Clark Counties, Hydrologic Unit 15030101, in powerhouse at downstream side of Hoover Dam.

DRAINAGE AREA.--171,700 mi² (444,700 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1933 to current year (prior to April 1934, monthly discharge only, published in WSP 1313). Published as "near Willow Beach" 1933-39 and as "below Boulder Dam" 1939-45.

GAGE.--Totalizing flowmeters on each turbine in Hoover Dam powerhouse. Prior to Nov. 1, 1939, water-stage recorder at site 9 mi (14 km) downstream at datum 594.8 ft (181.30 m) National Geodetic Vertical Datum of 1929. Nov. 1, 1939, to June 30, 1958, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 600.35 ft (182.987 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Lake Mead since Feb. 1, 1935. Many diversions above station for irrigation, industrial, and municipal use.

COOPERATION.--Records furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--44 years (water years 1935-78), 13,210 ft³/s (374.1 m³/s), 9,571,000 acre-ft/yr (11,800 hm³/yr), unadjusted for storage in Lake Mead.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 36,000 ft³/s (1,020 m³/s) Jan. 28, 1942; no flow at Hoover Dam part of Feb. 10, 1935; minimum daily, 152 ft³/s (4.30 m³/s) Feb. 10, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 22,300 ft³/s (632 m³/s) May 4; minimum daily, 1,560 ft³/s (44.2 m³/s) Jan. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6990	5000	11500	2180	6160	15900	7010	19100	11700	7500	15400	15200
2	5090	6900	11100	2820	3720	14600	6160	16500	10200	5600	13300	10200
3	9160	6480	4310	8530	3780	10700	14300	19500	4850	8600	11500	9660
4	8740	7850	3300	7980	3060	6700	16100	22300	3630	7430	14900	6280
5	7800	4360	10000	6370	3630	5180	16900	18400	14500	12700	12500	8900
6	8750	3930	10400	3670	5010	5200	19600	8120	16700	16400	6260	7240
7	11600	6100	12300	2290	6850	8460	19200	4650	11800	17300	15700	10500
8	5210	6570	14000	1620	5950	9250	12100	19700	13900	12300	18700	10800
9	3950	10400	16000	3780	8820	8920	6240	21100	15000	9570	13600	6430
10	11900	9540	6240	3510	6320	9300	16100	19300	4360	15700	16900	4640
11	9720	6760	5100	4270	4820	7500	19500	15100	5150	13600	13200	10700
12	9560	2600	12200	3910	5210	7650	18100	19500	12900	14200	10100	9050
13	6250	2380	11400	3630	7700	13700	18900	12700	13900	15300	6470	9180
14	10000	7930	14900	3760	5640	13400	18500	4090	13300	16800	12800	10300
15	6420	6060	15300	3260	5380	16400	8990	13800	10900	8870	19400	16400
16	3570	8010	10800	7690	5160	18400	6770	14000	11600	7120	16800	10100
17	9360	10800	6410	4330	6550	15400	17100	13400	7570	13400	19800	6840
18	10300	11100	6600	3870	4260	10800	19700	16500	6280	17600	21500	13700
19	9110	7580	13900	3170	2810	7780	16700	15100	14800	16600	14200	12500
20	8540	5910	12700	1800	2900	14700	19200	6490	13600	17200	9930	14800
21	8640	10800	10700	2170	9650	14200	21400	8620	13200	14000	17500	15200
22	1640	11800	10300	1700	16100	15100	12300	13900	12300	10000	17400	16800
23	2450	12000	6090	2810	17800	15900	7300	14800	14900	11500	16900	11200
24	7480	3600	4330	2450	15400	12700	20600	15100	8280	19000	14600	12900
25	10500	10500	3740	4860	8370	8880	18600	17200	4560	18600	16500	16400
26	3770	5530	3830	4460	9440	5940	18800	15400	10500	20900	6110	16600
27	4010	5110	9360	4930	17400	17900	21500	9480	9560	18600	6340	13900
28	4690	12700	10600	1560	18500	14000	20700	7800	11900	17100	17200	17600
29	2270	11400	7230	1610	---	16300	11300	7960	12900	10300	16800	15600
30	1980	13500	5440	4820	---	14700	4920	11700	15000	8100	17000	7410
31	6550	---	3640	4620	---	17700	---	12200	---	16900	20500	---
TOTAL	216000	233200	283720	118430	216390	373260	454590	433510	329740	418790	449810	347030
MEAN	6968	7773	9152	3820	7728	12040	15150	13980	10990	13510	14510	11570
MAX	11900	13500	16000	8530	18500	18400	21500	22300	16700	20900	21500	17600
MIN	1640	2380	3300	1560	2810	5180	4920	4090	3630	5600	6110	4640
AC-FT	428400	462600	562800	234900	429200	740400	901700	859900	654000	830700	892200	688300
CAL YR 1977 TOTAL	3969260			MEAN 10870		MAX 25000	MIN 1390	AC-FT 7873000				
WTR YR 1978 TOTAL	3874470			MEAN 10610		MAX 22300	MIN 1560	AC-FT 7685000				

COLORADO RIVER MAIN STEM

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09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 36°00'38", long 114°44'31", in SW¼SW¼ sec.3, T.30 N., R.23 W., Gila and Salt River meridian, Mohave County, Ariz., or in SW¼SE¼ sec.29, T.22 S., R.65 E., Mount Diablo meridian, Clark County, Nev., 0.3 mi (0.5 km) downstream from gaging station in powerhouse at downstream side of Hoover Dam.

DRAINAGE AREA.--171,800 mi² (445,000 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--October 1939 to September 1962, October 1963 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1941 to September 1957.

REMARKS.--Unpublished chemical analyses for period October 1939 to September 1940, available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)
OCT												
04...	0800	3920	1060	6.9	12.5	1	--	--	--	--	--	310
05...	0800	4220	--	--	13.5	--	--	6.6	--	1	1	--
NOV												
08...	0900	3870	1060	8.0	12.0	1	--	9.1	--	--	--	310
09...	0800	2770	--	--	--	--	--	--	--	1	1	--
DEC												
06...	0800	7980	1050	8.0	12.0	1	--	7.1	--	--	--	340
07...	0800	11600	--	--	12.5	--	--	--	--	2	1	--
JAN												
10...	0800	3370	1040	7.9	13.0	1	--	8.2	--	--	--	340
11...	0800	2050	--	--	12.5	--	--	--	--	3	1	--
FEB												
07...	0830	7090	1060	8.1	12.0	1	--	6.5	--	--	--	330
08...	0830	4850	--	--	12.0	--	--	--	--	1	1	--
MAR												
07...	0815	9600	1080	8.2	12.5	1	--	8.5	--	--	--	340
08...	0800	1870	--	--	--	--	--	--	--	1	5	--
APR												
11...	0800	19900	1080	7.9	12.0	1	--	6.5	--	--	--	340
12...	0800	18000	--	--	--	--	--	--	--	1	1	--
MAY												
09...	0800	29400	1060	8.1	13.0	0	--	7.3	--	--	--	340
10...	0730	21400	--	--	12.5	--	--	--	--	1	1	--
JUN												
13...	0730	10900	1070	8.0	13.0	--	.40	7.7	35	--	--	350
14...	0715	7760	--	--	13.0	--	--	--	--	1	1	--
JUL												
11...	0800	9090	1080	8.0	13.0	--	.40	7.8	9	--	--	340
12...	0800	9910	--	--	13.0	--	--	--	--	3	1	--
AUG												
08...	0800	10800	1070	7.7	13.5	--	.25	7.3	95	--	--	340
09...	0800	8920	--	--	13.0	--	--	--	--	1	3	--
SEP												
12...	0800	4580	1080	8.4	13.0	--	1.3	7.2	3	--	--	330
13...	0800	5480	--	--	13.0	--	--	--	--	2	1	--

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible][illegible]

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
NOV 08...	10	<100	15	4	4	.0	.0	5	0
FEB 07...	0	6	30	10	0	.0	.0	5	5
MAY 09...	20	--	--	10	10	.1	.0	1	2
AUG 08...	20	--	--	10	0	.0	.0	2	3

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
NOV 08...	30	10	--	--	6	6	160	130	<10
FEB 07...	20	20	.1	2.7	3	3	180	130	2
MAY 09...	40	10	.1	2.4	3	4	220	130	--
AUG 08...	20	20	.1	3.0	3	3	160	150	--

< Actual value is known to be less than value shown.

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
NOV 08...	1	4	5	<50	0	<10	2	0
FEB 07...	3	10	0	0	0	4	1	10
MAY 09...	--	0	10	0	0	4	0	30
AUG 08...	--	0	0	2	1	5	2	20

DATE	TIME	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIFVE UTAM. % FINER THAN .062 MM
NOV 08...	0900	42	.236	.157	1	23	65
FEB 07...	0830	450	--	--	1	19	50
MAY 09...	0800	78	18.0	14.2	2	159	89
JUN 13...	0730	22	--	--	1	29	76
JUL 11...	0800	1900	--	--	3	74	86
SEP 12...	0800	28	--	--	1	12	100

< Actual value is known to be less than value shown.

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 8,77 0900	FEB 7,78 0830	MAY 9,78 0800	JUN 13,78 0730
TOTAL CELLS/ML	42	450	78	22
DIVERSITY: DIVISION	0.5	0.0	0.0	0.0
..CLASS	0.5	0.0	0.0	0.0
...ORDER	1.4	0.0	0.0	0.0
...FAMILY	2.2	0.0	0.9	0.0
....GENUS	2.2	0.0	0.9	0.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....OUCYSTACEAE								
....DICTYOSPHAERIUM	--	-	--	-	--	-	--	-
....TETRAEDRON	5	11	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	14#	33	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...COCCONEIS	5	11	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	9#	22	--	-	26#	33	--	-
...NAVICULACEAE								
....NAVICULA	9#	22	--	-	52#	67	22#	100
...NITZSCHIA	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMUGONALES								
...NOSIOCEAE								
....ANABAENOPSIS	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE	--	-	450#100		--	-	--	-
....LYNGBYA	--	-	--	-	--	-	--	-
....USCILLATORIA	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	JUL 11,78 0800	AUG 8,78 0800	SEP 12,78 0800			
TOTAL CELLS/ML	1900	1800	28			
DIVERSITY: DIVISION	0.1	0.0	0.0			
..CLASS	0.1	0.0	0.0			
..ORDER	0.1	0.0	0.0			
...FAMILY	0.1	0.1	1.0			
....GENUS	0.1	0.1	1.0			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...OOCYSTACEAE						
....DICTYUSPHAERIUM	--	-	* 0		--	-
....TETRAEDRON	--	-	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	22	1	--	-	--	-
....COCCONEIS	--	-	--	-	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	14#	50
...NAVICULACEAE						
....NAVICULA	--	-	* 0		--	-
...NITZSCHIACEAE						
....NITZSCHIA	--	-	* 0		14#	50
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...HORMOGONALES						
...NOSTOCACEAE						
....ANABAENOPSIS	--	-	11	1	--	-
...USCILLATORIACEAE	--	-	--	-	--	-
....LYNGBYA	--	-	1800#	99	--	-
....OSCILLATORIA	1900#	99	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09422500 LAKE MOHAVE AT DAVIS DAM, AZ-NV

LOCATION.--Lat 35°11'50", long 114°34'07", in SW¼SW¼ sec.18, T.21 N., R.21 W., Gila and Salt River meridian, Mohave County, Hydrologic Unit 15030101, on forebay structure on Arizona side of Davis Dam on Colorado River, 29 mi (47 km) west of Kingman, Ariz., and 67 mi (108 km) downstream from Hoover Dam.

DRAINAGE AREA.--173,300 mi² (448,800 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--January 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill and rockfill dam; dam completed in April 1949 and storage began Jan. 17, 1950. Usable capacity, 1,810,000 acre-ft (2,230 hm³) between elevations 533.39 ft (162.577 m)—lowest point of penstock outlet—and 647.0 ft (197.21 m)—top of spillway gates. A small amount of additional storage is available through use of splashboards on the spillway gates. Dead storage, 8,530 acre-ft (10.5 hm³) below elevation 533.39 ft (162.577 m). Lake is used for power development, re-regulation for irrigation demand, and to satisfy requirements of the Treaty of 1944 with Mexico. Figures given herein represent usable contents.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,811,000 acre-ft (2,230 hm³) May 24, 1958, May 29, 1963; maximum elevation, 647.04 ft (197.218 m) May 29, 1963; minimum contents (since 1952), 1,168,000 acre-ft (1,440 hm³) Sept. 8, 1953, elevation, 622.15 ft (189.631 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,744,000 acre-ft (2,150 hm³) May 26, elevation, 644.64 ft (196.486 m); minimum contents, 1,347,000 acre-ft (1,660 hm³) Aug. 15, elevation 629.55 ft (191.887 m).

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

629	1,334,000	641	1,644,000
632	1,409,000	644	1,726,000
635	1,486,000	647	1,810,000
638	1,564,000		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1461000	1434000	1503000	1636000	1682000	1675000	1599000	1621000	1716000	1494000	1390000	1452000
2	1456000	1434000	1509000	1631000	1686000	1699000	1589000	1629000	1711000	1478000	1386000	1447000
3	1458000	1432000	1503000	1637000	1687000	1716000	1583000	1644000	1696000	1459000	1382000	1446000
4	1458000	1434000	1497000	1644000	1684000	1721000	1584000	1663000	1680000	1443000	1383000	1437000
5	1455000	1430000	1499000	1650000	1685000	1723000	1583000	1676000	1681000	1437000	1378000	1434000
6	1467000	1426000	1503000	1652000	1686000	1724000	1593000	1667000	1688000	1439000	1365000	1428000
7	1481000	1425000	1512000	1650000	1690000	1725000	1600000	1655000	1692000	1442000	1363000	1425000
8	1476000	1427000	1524000	1646000	1695000	1722000	1592000	1668000	1698000	1433000	1370000	1421000
9	1470000	1431000	1540000	1647000	1699000	1710000	1585000	1684000	1702000	1426000	1372000	1408000
10	1481000	1437000	1538000	1651000	1698000	1701000	1583000	1704000	1697000	1421000	1376000	1397000
11	1483000	1434000	1534000	1655000	1694000	1688000	1586000	1717000	1666000	1419000	1376000	1396000
12	1492000	1426000	1546000	1659000	1697000	1686000	1590000	1732000	1662000	1419000	1369000	1391000
13	1496000	1418000	1553000	1660000	1694000	1687000	1596000	1732000	1663000	1423000	1359000	1387000
14	1503000	1418000	1566000	1659000	1692000	1684000	1598000	1717000	1662000	1425000	1353000	1390000
15	1497000	1416000	1583000	1662000	1688000	1685000	1583000	1714000	1652000	1411000	1359000	1397000
16	1488000	1420000	1585000	1646000	1678000	1696000	1574000	1721000	1644000	1401000	1362000	1394000
17	1491000	1430000	1581000	1678000	1672000	1692000	1574000	1725000	1631000	1394000	1375000	1389000
18	1496000	1439000	1581000	1683000	1652000	1682000	1575000	1736000	1618000	1394000	1387000	1394000
19	1499000	1442000	1596000	1685000	1639000	1676000	1574000	1740000	1612000	1396000	1387000	1400000
20	1500000	1442000	1607000	1684000	1616000	1671000	1576000	1726000	1605000	1399000	1397000	1408000
21	1500000	1448000	1613000	1684000	1607000	1663000	1588000	1720000	1602000	1395000	1403000	1414000
22	1484000	1456000	1618000	1683000	1612000	1657000	1581000	1719000	1601000	1381000	1408000	1431000
23	1477000	1465000	1626000	1683000	1617000	1652000	1573000	1721000	1599000	1378000	1414000	1428000
24	1475000	1461000	1635000	1682000	1621000	1647000	1587000	1726000	1581000	1383000	1414000	1436000
25	1482000	1468000	1639000	1687000	1611000	1634000	1591000	1736000	1566000	1388000	1419000	1444000
26	1475000	1465000	1640000	1688000	1611000	1625000	1599000	1744000	1549000	1401000	1406000	1453000
27	1467000	---	1626000	1686000	1625000	1626000	1612000	1737000	1535000	1410000	1397000	1460000
28	1462000	1473000	1625000	1679000	1647000	1622000	1625000	1730000	1527000	1414000	1406000	1475000
29	1451000	1482000	1635000	1673000	---	1621000	1622000	1723000	1521000	1415000	1415000	1487000
30	1443000	1494000	1640000	1672000	---	1619000	1611000	1723000	1517000	1420000	1426000	1484000
31	1442000	---	1638000	1676000	---	1618000	---	1721000	---	1393000	1443000	---
MAX	1503000	---	1640000	1688000	1699000	1725000	1625000	1744000	1716000	1494000	1443000	1487000
MIN	1442000	---	1497000	1631000	1607000	1618000	1573000	1621000	1517000	1378000	1353000	1387000
(†)	633.30	635.34	640.78	642.16	641.10	640.00	639.75	643.80	636.20	631.80	633.35	634.95
(‡)	-23000	+52000	+144000	+38000	-29000	-29000	-7000	+110000	-204000	-124000	+50000	+41000
CAL YR 1977	MAX	1793000	MIN	1385000	‡	-78000						
WTR YR 1978	MAX	1744000	MIN	1353000	‡	+19000						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

09423000 COLORADO RIVER BELOW DAVIS DAM, AZ-NV

LOCATION.--Lat 35°11'30", long 114°34'17", in SE¼NE¼ sec.1, T.32 S., R.66 E., Mount Diablo meridian, in Nevada, Clark County, Hydrologic Unit 15030101, on right bank 0.5 mi (0.8 km) downstream from Davis Dam, 29 mi (47 km) west of Kingman, Ariz., and 68 mi (109 km) downstream from Hoover Dam.

DRAINAGE AREA.--173,300 mi² (448,800 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1905 to September 1907 (published as "at Hardyville"), March 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 500.00 ft (152.40 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. 1905-7, nonrecording gage at site 4.8 mi (7.7 km) downstream at datum about 13.4 ft (4.1 m) lower. Mar. 16 to May 3, 1949, water-stage recorder at site 0.5 mi (0.8 km) downstream at present datum. May 4, 1949, to Feb. 24, 1956, water-stage recorder at site 400 ft (120 m) upstream at present datum.

REMARKS.--Records excellent. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950. Many diversions upstream for irrigation, industrial, and municipal uses.

AVERAGE DISCHARGE.--29 years (water years 1950-78), 12,450 ft³/s (352.6 m³/s), 9,020,000 acre-ft/yr (11,100 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--1905-7: Maximum daily discharge, 116,000 ft³/s (3,290 m³/s) June 20, 1906; minimum daily, 2,850 ft³/s (80.7 m³/s) Jan. 5, 1906.

1949-78: Maximum discharge, 31,200 ft³/s (884 m³/s) Apr. 22, 1952, elevation, 513.91 ft (156.640 m); no flow at Davis Dam parts of several days July to September 1950 and Dec. 27, 1950, when gates in dam were closed; minimum daily discharge, 285 ft³/s (8.07 m³/s) Aug. 3, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,900 ft³/s (733 m³/s) Mar. 23, elevation, 505.52 ft (154.082 m); minimum daily discharge, 2,150 ft³/s (60.9 m³/s) Jan. 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8830	8820	7630	4450	2210	4150	17700	13800	14900	18600	16700	14500
2	8030	7870	7750	5540	2220	2280	12400	12400	13900	13100	16000	12400
3	8890	7460	7960	4920	3690	2320	18100	11500	13400	19200	15800	11000
4	9100	7120	6320	4730	4300	5410	16900	12600	12400	16300	13100	11400
5	9080	6540	9120	3550	3360	5500	16700	12400	14600	16300	16400	10300
6	3310	6320	8200	3890	4020	5520	14300	12700	13500	15700	14200	12000
7	4900	7140	7960	3440	4250	8170	16600	12200	11200	16000	16100	12200
8	7260	6710	7300	3460	4560	11200	16700	14200	10900	18000	16200	13000
9	7410	7110	8170	3860	6770	16500	11900	12600	12800	13200	12600	13600
10	6970	6110	8260	2460	7900	14600	17200	9750	16900	19500	14900	11100
11	7950	7980	6360	2270	6980	15500	17500	10700	12800	16100	15400	11900
12	5260	7730	7240	2160	5610	9320	17100	12600	15600	15100	14900	11100
13	4260	6360	8400	3200	8690	13900	16800	13000	14500	13800	12200	11600
14	7020	7500	8140	4190	6760	14800	17100	11600	15000	17900	15400	10700
15	8730	7430	8440	2230	9210	16300	18500	16700	16200	17400	15700	12000
16	8680	5800	9320	2170	8890	11900	12100	12000	17100	13400	14400	11800
17	8750	5340	8610	2170	10500	17400	18400	10800	15100	18300	13200	10800
18	7830	5950	6440	2190	14700	17100	19000	11200	13000	18400	13600	11000
19	8310	6730	7340	2150	9770	11300	19600	13500	18100	17700	14200	10800
20	7390	6180	7390	2150	15800	17300	18400	14500	17200	15800	11400	9390
21	9440	6820	7060	2220	14900	18400	17300	12000	14900	16900	14400	9010
22	9800	7550	6870	2160	12700	19200	17600	14600	13200	18300	15900	9830
23	6460	7770	10000	3600	16200	19800	12400	14300	15900	14300	15600	13000
24	8560	6830	9780	2170	13400	17400	16900	12200	17200	16800	15000	7890
25	7650	5950	5650	2200	14800	16200	14700	12800	12800	16900	14700	13300
26	7740	6270	4960	4520	9640	11200	15100	11700	19300	14700	14600	11700
27	8290	5430	2510	5470	10200	16800	15500	13700	16500	14300	12700	10600
28	7790	6960	2390	5340	7000	16800	15000	11700	16200	15900	13200	9990
29	8380	6980	2360	4870	---	16800	14500	12100	15100	15700	12400	9390
30	6360	6910	2920	5560	---	16800	12100	13800	17000	13200	12100	8780
31	7740	---	4600	2230	---	18000	---	13300	---	16300	12300	---
TOTAL	236170	205670	215450	105520	239030	407870	484100	392950	447200	503100	445300	336080
MEAN	7618	6856	6950	3404	8537	13160	16140	12680	14910	16230	14360	11200
MAX	9800	8820	10000	5560	16200	19800	19600	16700	19300	19500	16700	14500
MIN	3310	5340	2360	2150	2210	2280	11900	9750	10900	13100	11400	7890
AC-FT	468400	407900	427300	209300	474100	809000	960200	779400	887000	997900	883300	666600
CAL YR 1977	TOTAL	4121570	MEAN	11290	MAX	20600	MIN	2160	AC-FT	8175000		
WTR YR 1978	TOTAL	4018440	MEAN	11010	MAX	19800	MIN	2150	AC-FT	7971000		

COLORADO RIVER MAIN STEM

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09423000 COLORADO RIVER BELOW DAVIS DAM, AZ-NV--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SIREAM- FLOW, INSTANT- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HAR- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCT												
03...	1200	10100	1070	7.9	19.0	330	200	78	32	100	2.4	4.8
NOV												
01...	1425	13400	1080	7.8	16.0	340	210	84	31	110	2.6	5.0
DEC												
01...	1400	5170	1080	7.6	14.0	340	210	83	32	98	2.3	5.2
JAN												
03...	1000	5650	1070	7.8	12.0	330	210	82	30	100	2.4	4.9
FEB												
01...	0920	2160	1080	7.9	12.0	340	210	84	32	96	2.3	4.9
MAR												
01...	0930	9630	1070	8.0	12.0	340	200	83	31	100	2.4	4.8
APR												
03...	1130	24000	1080	7.7	14.5	340	200	88	30	100	2.3	5.4
MAY												
01...	1250	14200	1070	7.8	16.0	320	190	78	31	100	2.4	5.1
JUN												
01...	1340	19500	1070	8.0	19.0	330	190	84	28	100	2.4	5.5
JUL												
03...	0845	23300	1080	7.7	21.0	330	210	82	30	100	2.4	4.9
AUG												
01...	0705	15300	1070	7.7	20.5	340	200	83	31	99	2.4	4.9
SEP												
01...	1100	14300	1070	7.5	19.5	320	190	82	29	100	2.4	4.9

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
UCT												
03...	150	0	300	92	.3	8.7	695	690	.95	--	140	10
NOV												
01...	150	0	300	93	.4	8.8	697	706	.95	--	140	0
DEC												
01...	160	0	310	87	.4	8.8	707	703	.96	--	160	10
JAN												
03...	150	0	310	89	.3	10	709	700	.96	--	140	0
FEB												
01...	160	0	280	89	.4	8.8	694	674	.94	--	140	0
MAR												
01...	160	0	290	89	.4	8.4	707	686	.96	--	140	10
APR												
03...	170	0	270	93	.3	9.0	690	680	.94	--	140	10
MAY												
01...	160	0	280	87	.3	9.0	700	669	.95	--	140	0
JUN												
01...	160	0	280	92	.3	8.4	703	677	.96	--	140	0
JUL												
03...	150	0	290	92	.3	8.9	706	683	.96	.17	130	30
AUG												
01...	160	0	290	94	.3	9.0	703	691	.96	.23	130	0
SEP												
01...	160	0	290	91	.3	9.3	716	687	.97	.26	150	30

COLORADO RIVER MAIN STEM

09423500 COLORADO RIVER AT NEEDLES, CA

LOCATION.--Lat 34°51'06", long 114°36'33", in SE¼SE¼ sec.19, T.9 N., R.23 E., San Bernardino meridian, San Bernardino County, Hydrologic Unit 15030101, on right bank at Needles, 15 mi (24 km) upstream from gaging station near Topock, Ariz., 30 mi (48 km) downstream from Davis Dam, and 97 mi (156 km) downstream from Hoover Dam.

DRAINAGE AREA.--174,500 mi² (452,000 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--April 1931 to current year (elevations only).

REVISED RECORDS.--WSP 1119: 1931-47.

GAGE.--Water-stage recorder. Datum of gage is 400.00 ft (121.920 m) National Geodetic Vertical Datum of 1929. Prior to May 15, 1942, at site 550 ft (170 m) downstream and May 15, 1942, to Feb. 16, 1969, at site 200 ft (60 m) upstream; at datum 66.23 ft (20.187 m) higher prior to Jan. 12, 1952, and at present datum thereafter.

REMARKS.--Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 475.77 ft (145.015 m) Nov. 30, 1944; minimum, 457.84 ft (139.550 m) Feb. 26, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 469.70 ft (143.165 m) Mar. 23; minimum, 458.61 ft (139.784 m) Jan. 20-23.

MEAN ELEVATION, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	463.24	---	462.07	460.05	458.76	460.76	466.96	464.79	465.45	467.10	466.34	---
2	462.59	462.46	462.04	460.14	458.70	459.38	465.55	464.98	465.14	465.96	466.08	464.21
3	461.83	462.12	462.38	460.71	458.89	458.88	466.40	464.59	465.28	466.65	466.03	464.22
4	462.50	461.88	461.72	460.28	459.78	459.48	466.44	464.28	464.64	466.67	465.83	463.73
5	463.09	461.66	462.12	460.22	459.86	460.73	466.70	464.70	464.98	466.22	464.94	---
6	462.25	461.51	462.73	459.49	459.54	460.71	466.42	465.01	465.30	465.90	465.79	---
7	459.58	461.45	462.33	459.75	460.18	461.22	465.51	464.85	464.60	465.87	466.27	---
8	461.01	461.72	462.04	459.41	459.73	463.14	466.60	464.45	464.09	466.80	465.58	---
9	461.99	461.64	462.13	459.60	460.33	465.98	465.21	465.04	463.92	465.72	465.20	---
10	461.92	461.71	462.36	---	462.02	463.49	465.75	463.62	465.72	466.64	465.04	---
11	461.77	461.69	462.02	---	461.95	466.00	467.15	463.59	465.48	466.64	465.45	---
12	461.37	462.09	461.70	---	461.11	464.28	466.65	464.13	465.21	465.68	465.47	---
13	460.47	461.77	461.91	---	461.97	464.36	466.54	464.80	466.04	465.57	465.04	---
14	460.71	461.66	462.26	---	461.96	465.56	466.64	464.57	465.27	465.98	465.42	---
15	462.28	462.22	462.53	---	462.01	466.20	467.01	465.34	465.95	466.78	465.31	---
16	462.91	461.36	462.74	---	462.90	464.57	465.72	464.98	466.55	465.52	---	---
17	---	461.19	462.74	458.67	462.91	466.54	466.17	464.53	465.93	466.10	---	---
18	---	460.75	461.93	458.65	465.02	466.87	467.78	463.65	465.34	466.98	---	---
19	---	461.21	461.54	458.69	464.35	465.20	467.63	464.29	466.32	467.07	---	---
20	---	461.34	461.92	458.62	465.15	465.90	467.44	465.20	466.67	466.05	---	---
21	---	461.41	461.64	458.67	465.86	467.30	467.07	464.89	466.17	466.38	---	---
22	---	461.86	461.67	458.62	465.05	467.36	466.66	464.90	465.38	466.83	---	462.91
23	---	462.05	462.64	458.78	466.17	467.72	465.76	465.48	465.52	466.02	---	463.90
24	---	461.84	463.19	459.48	465.31	467.62	465.69	464.95	466.60	466.63	---	463.67
25	---	461.62	462.17	458.67	465.57	466.14	466.12	464.67	465.72	466.45	---	463.21
26	---	461.30	461.22	459.03	464.38	465.17	466.01	464.37	466.65	466.15	---	464.62
27	---	461.34	459.60	460.47	463.25	465.52	466.21	464.64	466.64	464.97	---	462.57
28	---	460.85	459.19	460.93	463.41	466.46	465.85	464.69	466.38	465.67	---	463.75
29	---	461.96	459.19	460.55	---	466.53	465.51	464.37	466.20	465.96	---	463.14
30	---	461.47	459.19	460.84	---	466.56	465.15	464.62	466.48	465.47	---	462.69
31	---	---	459.36	460.29	---	467.06	---	465.00	---	465.76	---	---
MEAN	---	---	461.69	---	462.36	464.67	466.35	464.64	465.65	466.21	---	---
MAX	---	---	463.19	---	466.17	467.72	467.78	465.48	466.67	467.10	---	---
MIN	---	---	459.19	---	458.70	458.88	465.15	463.59	463.92	464.97	---	---

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09423550 TOPOCK MARSH INLET NEAR NEEDLES, CA

LOCATION.--Lat 34°50'10", long 114°35'03", in NE¼NW¼ sec.33, T.9 N., R.23 E., San Bernardino meridian, in Arizona, Mohave County, Hydrologic Unit 15030101, on left bank of Colorado River on north side of intake structure, 1.3 mi (2.1 km) east of Needles.

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

GAGE.--Water-stage recorders above and below intake gates to record head; recorder to show gate opening. Datum of gages is 400.00 ft (121.920 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair above 50 ft³/s (1.4 m³/s) and poor below. Topock Marsh inlet diverts water from the Colorado River into Topock Marsh, an area of 4,260 acres (17.2 km²). This water flows through the marsh and returns to the Colorado River through the Topock Marsh outlet. (See following page.) The Bureau of Sport Fisheries and Wildlife maintains two other gates to the same opening as the recording gate.

AVERAGE DISCHARGE.--11 years, 63.4 ft³/s (1.795 m³/s), 45,930 acre-ft/yr (56.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 249 ft³/s (7.05 m³/s) Mar. 5, 1976; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	81	39	6.0	.00	.00	.00	21	104	122	77	78
2	95	80	39	6.0	.00	.00	.00	18	98	109	76	73
3	65	84	47	7.0	.00	.00	.00	18	102	117	76	73
4	78	72	31	.00	.00	.00	.00	18	93	117	75	70
5	88	70	45	.00	.00	.00	.00	17	98	113	68	64
6	83	62	69	.00	.00	.00	.00	18	102	109	75	69
7	47	35	54	.00	.00	10	.00	18	93	67	79	76
8	41	.00	40	.00	.00	127	.00	17	86	37	114	68
9	72	.00	35	.00	.00	195	.00	18	82	34	130	81
10	70	.00	55	.00	.00	184	.00	16	107	36	131	74
11	63	.00	44	.00	.00	191	40	15	103	36	135	71
12	74	.00	14	.00	.00	153	50	40	101	34	133	66
13	46	.00	43	.00	.00	155	50	95	111	33	125	70
14	41	.00	43	.00	.00	181	35	95	102	35	136	69
15	71	.00	60	.00	.00	194	35	90	109	37	131	71
16	94	.00	65	.00	.00	151	31	95	115	33	132	74
17	78	.00	62	.00	.00	202	29	90	108	35	131	69
18	79	.00	43	.00	.00	206	31	80	102	37	118	70
19	80	.00	13	.00	.00	175	29	90	114	38	127	68
20	78	.00	23	.00	.00	188	28	100	116	35	110	65
21	78	.00	18	.00	.00	212	28	95	111	36	116	59
22	92	.00	17	.00	.00	211	27	95	102	37	129	57
23	84	.00	42	.00	.00	133	25	100	104	35	130	71
24	68	.00	67	.00	.00	68	24	95	117	37	130	65
25	80	.00	45	.00	.00	62	26	90	106	36	119	60
26	73	.00	6.0	.00	.00	58	25	90	118	35	112	76
27	76	7.5	.00	.00	.00	27	26	95	117	37	103	66
28	79	35	.00	.00	.00	.00	25	95	114	61	104	68
29	76	27	.00	.00	---	.00	24	90	113	72	101	58
30	77	22	.00	.00	---	.00	24	95	116	69	100	55
31	61	---	.00	.00	---	.00	---	97	---	71	94	---
TOTAL	2277	575.50	1059.00	19.00	.00	3083.00	612.00	2006	3164	1740	3417	2054
MEAN	73.5	19.2	34.2	.61	.000	99.5	20.4	64.7	105	56.1	110	68.5
MAX	95	84	69	7.0	.00	212	50	100	118	122	136	81
MIN	41	.00	.00	.00	.00	.00	.00	15	82	33	68	55
AC-FT	4520	1140	2100	38	.00	6120	1210	3980	6280	3450	6780	4070
CAL YR 1977 TOTAL	19300.50			MEAN 52.9	MAX 225	MIN .00	AC-FT 38280					
WTR YR 1978 TOTAL	20006.50			MEAN 54.8	MAX 212	MIN .00	AC-FT 39680					

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09423650 TOPOCK MARSH OUTLET NEAR TOPOCK, AZ

LOCATION.--Lat 34°44'13", long 114°29'22", in SW¼SE¼ sec.27, T.16 N., R.21 W., Gila and Salt River meridian, Mohave County, Hydrologic Unit 15030101, at outlet structure in left bank levee of Colorado River, 1.3 mi (2.1 km) north of Topock.

PERIOD OF RECORD.--January 1967 to current year (June 1978 to September 1978 monthly discharge only).

GAGE.--Staff gage on marsh. Prior to June 1, 1978, water-stage recorders on marsh and on river to record head over weir; log of elevations of stoplogs on crest of weir; log of operation of flapgates just downstream from weir. Datum of gage is 450.00 ft (137.160 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Station measures return flow from Topock Marsh, an area of 4,260 acres (17.2 km²), to Colorado River. Reverse flow (from Colorado River into Topock Marsh) occurred at times during July to September 1967, when flapgates were tied open. After February 1977, reverse flow can no longer occur.

AVERAGE DISCHARGE.--11 years, 10.9 ft³/s (0.309 m³/s), 7,900 acre-ft/yr (9.74 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 828 ft³/s (23.4 m³/s) July 8, 1968; no flow for most of time; maximum daily reverse flow, 238 ft³/s (6.74 m³/s) Aug. 15, 1967.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00				
2	.00	.00	.00	.00	.00	.00	.00	.00				
3	.00	.00	.00	.00	.00	.00	.00	.00				
4	.00	.00	.00	.00	.00	.00	.00	.00				
5	.00	.00	.00	.00	.00	.00	.00	.00				
6	.00	.00	.00	.00	.00	.00	.00	.00				
7	.00	140	.00	.00	.00	.00	.00	.00				
8	.00	251	.00	.00	.00	.00	.00	.00				
9	.00	245	.00	.00	.00	.00	.00	.00				
10	.00	239	.00	.00	.00	.00	.00	.00				
11	.00	234	.00	.00	.00	.00	.00	.00	Discontinued as a daily-record station			
12	.00	230	.00	.00	.00	.00	.00	.00				
13	.00	225	.00	.00	.00	.00	.00	.00				
14	.00	221	.00	.00	.00	.00	.00	.00				
15	.00	216	.00	.00	.00	.00	.00	.00				
16	.00	68	.00	.00	.00	.00	.00	.00				
17	.00	.00	.00	.00	.00	.00	.00	.00				
18	.00	.00	.00	.00	.00	.00	.00	.00				
19	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.00	.00	.00	.00	.00	.00	.00				
21	.00	.00	.00	.00	.00	.00	.00	.00				
22	.00	.00	.00	.00	.00	.00	.00	.00				
23	.00	.00	.00	.00	.00	.00	.00	.00				
24	.00	.00	.00	.00	.00	.00	.00	.00				
25	.00	.00	.00	.00	.00	.00	.00	.00				
26	.00	.00	.00	.00	.00	.00	.00	.00				
27	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.00	.00	.00	.00	.00	.00	.00				
29	.00	.00	.00	.00	---	.00	.00	.00				
30	.00	.00	.00	.00	---	.00	.00	.00				
31	.00	---	.00	.00	---	.00	---	.00				
TOTAL	.00	2069.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	69.0	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	251	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	4100	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL	2148.00	MEAN	5.88	MAX	251	MIN	.00	AC-FT	4260		
WTR YR 1978	TOTAL	2069.00	MEAN	5.67	MAX	251	MIN	.00	AC-FT	4100		

09424000 COLORADO RIVER NEAR TOPOCK, AZ

LOCATION.--Lat 34°41'15", long 114°27'43", in SW¼NW¼ sec.13, T.15 N., R.21 W., Gila and Salt River meridian, Mohave County, Hydrologic Unit 15030101, on left bank in Mohave Canyon, 2.4 mi (3.9 km) southeast of Topock, 39 mi (63 km) upstream from Parker Dam, and 45 mi (72 km) downstream from Davis Dam.

DRAINAGE AREA.--176,300 mi² (456,600 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1917 to current year. Daily mean elevations published since October 1938.

REVISED RECORDS.--WSP 918: 1921. WSP 1313: 1918-19(M).

GAGE.--Water-stage recorder. Datum of gage is 423.02 ft (128.936 m) National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD. Prior to Dec. 3, 1922, at site about 1 mi (2 km) upstream at different datum.

REMARKS.--Records fair. Many diversions above station for irrigation, municipal, and industrial uses. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950.

AVERAGE DISCHARGE.--17 years (water years 1918-34), 20,260 ft³/s (573.8 m³/s), 14,670,000 acre-ft/yr (18,100 hm³/yr); 44 years (water years 1935-78), 12,750 ft³/s (361.1 m³/s), 9,237,000 acre-ft/yr (11,400 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--1917-34: Maximum discharge probably exceeded 200,000 ft³/s (5,660 m³/s) June 22, 1921; minimum, 1,480 ft³/s (41.9 m³/s) Aug. 17, 1934.

1934-78: Maximum discharge, 35,700 ft³/s (1,010 m³/s) Jan. 29, 1942; maximum elevation, 457.37 ft (139.406 m) July 9, 1959; minimum discharge, 375 ft³/s (10.6 m³/s) Feb. 14, 1935; minimum daily, 422 ft³/s (12.0 m³/s) Feb. 14, 1935.

EXTREMES OUTSIDE PERIOD OF RECORD.--Discharge of about 300,000 ft³/s (8,500 m³/s), based on determination at Lees Ferry gaging station, occurred about July 10, 1884. Discharge estimated to be in excess of 400,000 ft³/s (11,300 m³/s) probably occurred within the period 1857-68 and most likely in 1862.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s (578 m³/s) Mar. 24; maximum elevation, 455.61 ft (138.870 m) June 27; minimum daily discharge, 2,280 ft³/s (64.6 m³/s) Jan. 26; minimum elevation, 448.12 ft (136.587 m) Jan. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8300	7070	6660	4010	2860	6980	17300	12000	12500	16000	15000	11200
2	8030	7970	7140	4110	2520	4570	16500	12700	13200	15800	15200	11400
3	7010	7350	7430	5060	2430	2960	14000	12000	13100	14400	15000	11800
4	7940	7150	7180	4810	3340	2850	16400	11200	12600	16200	14800	10800
5	8400	6930	6240	4640	3800	5060	16200	11500	12300	15000	13100	10900
6	8450	6390	8330	3750	3310	5100	16500	12200	13300	14800	14800	10400
7	3980	6290	7680	3850	3680	5100	14100	12100	12800	14800	14500	11500
8	4830	6810	7410	3500	3820	7370	15800	11300	11600	15500	14500	11400
9	6590	6490	7010	3510	4000	11400	15200	12700	11300	15500	14400	12400
10	6880	6870	7620	5970	6210	14200	12900	11600	13100	14400	12500	12200
11	6460	6320	7600	3040	7020	13800	16300	10300	14500	16300	13700	10700
12	7100	7520	6340	2700	6270	13600	16200	10700	12800	14500	14000	10700
13	5120	7430	6780	2570	5470	10200	16000	11700	14400	13900	13900	10300
14	4130	6450	7580	3180	7740	13000	16000	11700	13500	13700	12700	10800
15	6240	7240	7780	4110	6300	14300	16600	11600	14100	15700	13800	10200
16	8260	7070	7870	2830	8160	13700	16400	13700	15100	14900	14400	11000
17	7580	5920	8530	2530	8060	13600	13500	11400	15100	13400	13700	11000
18	7910	5510	7910	2410	10300	16200	17400	10100	14100	15800	12600	10200
19	7370	5790	6140	2450	11900	15100	18000	10800	13700	16200	12800	10300
20	7560	6240	6760	2390	10500	12600	17900	12400	15700	15200	13000	10100
21	7070	5870	6720	2370	13500	16300	17400	13100	15300	14700	11300	9020
22	8520	6420	6630	2380	12900	17100	16400	12000	14000	15500	13400	8850
23	8750	6920	7080	2320	13000	18100	16200	13600	13500	15600	14000	9760
24	6360	7090	9180	3080	13500	18700	13200	13200	15200	14400	14000	11600
25	7680	6500	8750	2370	12900	16300	15500	12200	15000	15100	13600	8330
26	7140	5910	5930	2280	12500	15200	14200	12000	14300	15100	13500	11800
27	7200	6000	4830	5970	9340	12400	14600	11500	16100	13500	13300	10900
28	7510	5360	2930	4980	9740	15700	14500	12400	15200	13800	11800	10100
29	7160	6500	2660	4960	---	16100	13600	11400	15000	14600	12200	9650
30	7510	6580	2560	4740	---	16200	13500	11600	15000	14400	11500	9050
31	5950	---	2790	5210	---	16700	---	12300	---	13400	11400	---
TOTAL	218990	197960	206050	108080	215070	380490	468300	369000	417400	462100	418400	318360
MEAN	7064	6599	6647	3486	7681	12270	15610	11900	13910	14910	13500	10610
MAX	8750	7970	9180	5210	13500	18700	18000	13700	16100	16300	15200	12400
MIN	3980	5360	2560	2280	2430	2850	12900	10100	11300	13400	11300	8330
AC-FT	434400	392700	408700	214400	426600	754700	928900	731900	827900	916600	829900	631500
CAL YR 1977	TOTAL	3900080	MEAN	10690	MAX	19400	MIN	2020	AC-FT	7736000		
WTR YR 1978	TOTAL	3780200	MEAN	10360	MAX	18700	MIN	2280	AC-FT	7498000		

09424000 COLORADO RIVER NEAR TOPOCK, AZ--Continued

MEAN ELEVATION, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	451.79	451.24	450.90	449.54	448.62	450.85	454.48	453.20	453.83	454.75	454.17	452.66
2	451.69	451.62	451.12	449.40	448.36	449.66	454.23	453.53	454.06	454.66	454.22	452.73
3	451.24	451.54	451.25	449.91	448.31	448.69	453.35	453.35	454.02	454.17	454.12	452.89
4	451.61	451.24	451.12	449.79	448.94	448.61	454.24	453.14	453.81	454.77	454.02	452.55
5	451.81	451.13	450.67	449.70	449.23	449.92	454.20	453.37	453.68	454.40	453.39	452.57
6	451.84	450.86	451.60	449.20	448.92	449.94	454.30	453.62	454.01	454.31	453.97	452.39
7	449.82	450.80	451.32	449.25	449.15	449.94	453.48	453.60	453.82	454.28	453.85	452.83
8	450.21	451.03	451.19	449.05	449.22	451.07	454.09	453.29	453.35	454.54	453.83	452.80
9	451.04	450.88	451.00	449.05	449.35	452.68	453.89	453.79	453.25	454.52	453.78	453.23
10	451.18	451.05	451.28	449.52	450.51	453.45	453.09	453.45	453.87	454.14	453.08	453.13
11	451.00	450.79	451.27	448.74	450.91	453.29	454.29	452.98	454.34	454.79	453.48	452.59
12	451.26	451.54	450.67	448.52	450.54	453.22	454.24	453.17	453.70	454.17	453.57	452.60
13	450.39	451.28	450.87	448.42	450.13	452.00	454.17	453.60	454.25	453.96	453.49	452.50
14	449.90	450.81	451.24	448.84	451.21	453.02	454.19	453.62	453.91	453.88	453.05	452.68
15	450.85	451.18	451.33	449.39	450.56	453.48	454.38	453.60	454.13	454.56	453.42	452.45
16	451.74	451.08	451.38	448.60	451.43	453.23	454.29	454.00	454.48	454.26	453.62	452.78
17	451.45	450.53	451.63	448.38	451.38	453.21	453.30	453.28	454.47	453.76	453.37	452.78
18	451.57	450.32	451.36	448.29	452.27	454.12	454.65	452.88	454.11	454.58	452.97	452.48
19	451.35	450.46	450.55	448.31	452.87	453.74	454.84	453.07	453.98	454.70	453.07	452.47
20	451.44	450.68	450.83	448.28	452.34	452.85	454.83	453.55	454.67	454.33	453.11	452.38
21	451.23	450.50	450.81	448.26	453.43	454.17	454.64	453.70	454.52	454.18	452.52	451.97
22	451.84	450.78	450.76	448.27	453.22	454.43	454.32	453.31	454.08	454.45	453.26	451.88
23	451.92	451.02	450.97	448.22	453.28	454.76	454.24	453.89	453.88	454.44	453.50	452.22
24	450.94	451.10	451.87	448.77	453.46	454.94	453.20	453.74	454.46	454.05	453.49	452.88
25	451.52	450.82	451.66	448.26	453.22	454.17	454.02	453.57	454.41	454.30	453.35	451.60
26	451.27	450.53	450.41	448.19	453.08	453.77	453.67	453.66	454.16	454.28	453.31	452.94
27	451.34	450.57	449.79	449.32	451.90	452.81	453.92	453.46	454.77	453.72	453.22	452.55
28	451.52	450.25	448.69	449.88	452.06	453.95	453.93	453.81	454.47	453.83	452.75	452.25
29	451.37	450.82	448.51	449.87	---	454.08	453.68	453.45	454.38	454.09	452.91	452.14
30	451.52	450.86	448.42	449.75	---	454.12	453.71	453.50	454.38	454.02	452.71	451.95
31	450.83	---	448.59	450.00	---	454.30	---	453.76	---	453.66	452.68	---
MEAN	451.24	450.90	450.74	448.99	451.00	452.66	454.06	453.48	454.11	454.28	453.40	452.53
MAX	451.92	451.62	451.87	450.00	453.46	454.94	454.84	454.00	454.77	454.79	454.22	453.23
MIN	449.82	450.25	448.42	448.19	448.31	448.61	453.09	452.88	453.25	453.66	452.52	451.60
CAL YR 1977	MEAN	452.52	MAX	455.56	MIN	448.42						
WTR YR 1978	MEAN	452.29	MAX	454.94	MIN	448.19						

COLORADO RIVER MAIN STEM

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09424000 COLORADO RIVER NEAR TOPOCK, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1969 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: July 1952 to July 1962.

INSTRUMENTATION.--Water temperature recorder from July 1952 to July 1962.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCT												
03...	1400	7350	1070	8.1	20.5	320	200	76	32	100	2.4	4.9
NOV												
01...	0945	8170	1070	7.7	16.5	340	210	84	31	110	2.6	4.7
DEC												
01...	1030	7820	1070	8.0	14.0	340	210	85	32	96	2.5	5.0
JAN												
03...	1530	5620	1080	7.9	12.0	320	200	79	30	100	2.4	4.9
FEB												
01...	1320	2720	1090	8.0	15.0	340	210	84	31	100	2.4	4.8
MAR												
01...	0900	682	1070	8.0	15.0	340	200	83	31	100	2.4	4.7
APR												
03...	1400	12400	1080	8.0	14.0	340	210	86	30	98	2.5	5.0
MAY												
02...	0900	16100	1070	7.9	16.5	350	190	81	30	100	2.4	5.0
JUN												
01...	1025	14400	1070	8.0	20.0	340	200	85	30	100	2.4	5.2
JUL												
03...	1230	13500	1080	7.8	21.5	350	200	81	30	110	2.7	4.5
AUG												
01...	1000	16200	1070	7.9	21.0	350	200	80	31	97	2.5	4.9
SEP												
01...	0800	13800	1070	7.7	20.0	320	190	82	29	100	2.4	4.6

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-Ft)	NITRO- GEN, NH2+NH3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS Fe)
UCT												
03...	150	0	290	91	.3	8.3	698	677	.95	--	140	20
NOV												
01...	160	0	300	90	.4	9.2	682	708	.93	--	130	0
DEC												
01...	160	0	320	88	.4	8.4	682	714	.93	--	150	10
JAN												
03...	150	0	310	89	.5	10	690	697	.94	--	140	0
FEB												
01...	160	0	280	92	.5	8.8	696	680	.95	--	140	0
MAR												
01...	160	0	290	90	.4	8.5	682	687	.93	--	140	0
APR												
03...	160	0	280	91	.5	9.0	690	678	.94	--	140	20
MAY												
02...	170	0	280	87	.5	8.9	682	676	.93	--	140	0
JUN												
01...	160	0	290	90	.5	8.4	680	688	.92	--	140	0
JUL												
03...	--	--	300	91	.3	8.7	680	704	.92	--	130	10
AUG												
01...	160	0	290	94	.5	9.0	676	666	.92	.22	140	0
SEP												
01...	160	0	270	88	.5	9.3	676	663	.92	.25	150	20

DIVERSIONS FROM LAKE HAVASU

09424150 COLORADO RIVER AQUEDUCT NEAR PARKER DAM, AZ-CA

LOCATION.--Lat 34°18'58", long 114°09'23", in NW¼SW¼ sec.28, T.3 N., R.27 E., San Bernardino meridian, in California, San Bernardino County, Hydrologic Unit 15030101, at intake pumping plant of Metropolitan Water District of Southern California on Lake Havasu, 1.8 mi (2.9 km) upstream from Parker Dam and 149 mi (240 km) downstream from Hoover Dam.

PERIOD OF RECORD.--January 1939 to current year (monthly diversions only since October 1942). Published as a supplement to records for Colorado River below Parker Dam, 1942-50. Percolation return flow (monthly flow only) October 1964 to September 1973 (discontinued); prior to October 1964 miscellaneous measurements only.

GAGE.--Venturi meters in pressure lines at intake pumping plant.

REMARKS.--Pumping began Jan. 7, 1939. Figures of monthly diversion shown represent water pumped from Lake Havasu less return surface flow from Gene and Copper Basin Reservoirs. No water returned as surface flow from these reservoirs this year. Percolation return flow from Gene and Copper Basin Reservoirs is estimated by the U.S. Bureau of Reclamation as 10 acre-ft/day (12,300 m³/day) for a yearly total of 3,650 acre-ft (4.50 hm³), which is used for accounting purposes.

COOPERATION.--Diversion records furnished by Metropolitan Water District of Southern California.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily diversion, 3,986 acre-ft (4.91 hm³), 2,010 ft³/s (56.9 m³/s) Oct. 25, 1970 and Oct. 29, 1977; no diversion at times.

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Diversions			
	Maximum	Minimum	Mean	Total
October.....	3,986	3,746	3,813	118,201
November.....	3,843	3,713	3,813	114,379
December.....	3,825	3,693	3,799	117,773
CAL YR 1977.....	3,986	0	3,533	1,289,590
January.....	3,829	417	2,333	72,337
February.....	2,760	881	1,614	45,203
March.....	2,715	216	2,112	65,462
April.....	2,424	1,411	2,136	64,066
May.....	2,241	830	1,390	43,090
June.....	2,548	1,155	2,107	63,206
July.....	2,289	1,335	2,010	62,307
August.....	2,274	1,643	2,160	66,956
September.....	2,279	1,856	2,125	63,748
WTR YR 1978.....	3,986	216	2,451	896,728

09424200 COTTONWOOD WASH NO. 1 NEAR KINGMAN, AZ

LOCATION.--Lat 35°10'52", long 113°28'08", in NW¼ sec.29, T.21 N., R.11 W., Mohave County, Hydrologic Unit 15030201, on right bank, 13 mi (21 km) upstream from mouth, and 34 mi (55 km) east of Kingman.

DRAINAGE AREA.--143 mi² (370 km²).

PERIOD OF RECORD.--January 1959 to August 1963 (fragmentary low flow only published in WSP 1858), February 1964 to September 1978 (discontinued).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,545 ft (1,385.3 m), from special U.S. Geological Survey project map. Prior to June 20, 1969, at site 10 ft (3 m) downstream at datum 2.72 ft (0.829 m) lower.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--14 years, 4.69 ft³/s (0.133 m³/s), 3,400 acre-ft/yr (4.19 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s (198 m³/s) July 31, 1964, gage height, 7.36 ft (2.243 m), at former site and datum of supplementary gage, from rating curve extended above 400 ft³/s (11.3 m³/s) on basis of slope-area measurements at gage heights 3.82 and 7.36 ft (1.164 and 2.243 m); minimum daily, 0.10 ft³/s (0.003 m³/s) many days in 1972, 1974-78.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 400 ft³/s or 11.3 m³/s as explained above) and peak discharges above base of 700 ft³/s (19.8 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	Unknown	*3,080 87.2	4.46 1.36
Aug. 2	1800	798 22.6	3.14 .97
Aug. 10	1930	2,790 79.0	4.33 1.32

Minimum daily, 0.10 ft³/s (0.003 m³/s) Oct. 1-5, 7-11, 14-16.

Peak gage heights from high-water marks inside gage well.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.50	1.3	.90	1.5	1000	2.0	1.5	.30	.30	.60	.90
2	.10	.50	1.0	1.0	1.2	500	2.0	1.6	.30	.30	.63	.90
3	.10	.50	1.0	1.2	1.2	200	2.0	1.4	.30	.40	.24	.90
4	.10	.50	1.0	1.1	1.0	100	2.0	1.4	.30	.40	2.0	.25
5	.10	.50	1.0	1.0	1.0	500	1.2	1.3	.30	.40	1.0	5.8
6	.30	.50	.90	.90	1.0	200	1.8	1.3	.30	.40	1.0	.90
7	.10	.50	.80	.90	1.0	7.0	1.8	1.2	.30	.40	.90	.90
8	.10	.50	.80	1.0	1.0	4.6	2.1	1.2	.30	.40	.90	.90
9	.10	.50	.80	1.2	1.0	4.4	1.8	1.2	.30	.40	9.7	.80
10	.10	.50	.80	2.0	250	4.2	1.6	1.1	.30	.40	180	.80
11	.10	.50	.80	1.3	80	4.2	1.3	1.1	.30	.40	70	.80
12	.80	.50	.80	1.2	40	90	1.6	1.1	.30	.40	4.5	.80
13	.60	.50	.80	1.2	20	30	1.5	1.0	.30	.40	71	.70
14	.10	.50	.80	1.3	10	5.0	1.5	1.0	.30	.40	19	.60
15	.10	.50	.80	102	1.0	5.0	1.6	.90	.30	.70	3.0	.60
16	.10	.50	.90	10	1.0	5.0	1.6	.90	.30	.40	.90	.80
17	.60	.50	.90	38	1.0	5.0	1.6	.90	.30	.40	.90	.60
18	.60	.60	.90	5.0	1.0	4.0	1.3	.80	.30	.40	.90	.60
19	.60	.60	.90	1.5	1.0	4.0	1.3	.80	.30	.40	.90	.50
20	1.0	.80	.90	1.5	1.0	4.0	1.2	.80	.30	.40	.90	.50
21	.60	.90	.80	1.5	1.0	4.0	.90	.70	.30	.40	.90	.50
22	.50	1.5	.80	1.5	1.0	4.0	1.2	.70	.30	.40	.90	.50
23	.50	1.8	.80	1.5	1.0	4.0	1.3	.60	.30	.40	.90	.40
24	.50	2.0	.80	1.5	1.0	3.0	1.5	.60	.30	.40	.90	.40
25	.50	1.8	.90	1.5	1.0	3.0	1.5	.60	.30	.40	.90	.40
26	.50	1.6	.90	1.5	1.0	3.0	1.3	.50	.30	25	.90	.40
27	.50	1.3	1.0	1.5	1.0	3.0	1.5	.50	.30	15	.90	.30
28	.50	1.0	1.2	1.5	1.0	3.0	1.5	.50	.30	1.0	.90	.30
29	.50	1.0	1.0	1.5	---	3.0	1.2	.40	.30	.90	.90	.30
30	.50	1.2	1.2	1.5	---	3.0	1.2	.40	.30	.60	.90	.20
31	.50	---	.90	16	---	2.0	---	.40	---	.60	.90	---
TOTAL	11.40	24.60	28.20	205.20	423.9	2711.4	45.90	28.40	9.00	53.20	465.00	48.00
MEAN	.37	.82	.91	6.62	15.1	87.5	1.53	.92	.30	1.72	15.0	1.60
MAX	1.0	2.0	1.3	102	250	1000	2.1	1.6	.30	25	180	25
MIN	.10	.50	.80	.90	1.0	2.0	.90	.40	.30	.30	.60	.20
AC-FT	23	49	56	407	841	5380	91	56	18	106	922	95

CAL YR 1977 TOTAL 478.70 MEAN 1.31 MAX 160 MIN .10 AC-FT 950
WTR YR 1978 TOTAL 4054.20 MEAN 11.1 MAX 1000 MIN .10 AC-FT 8040

NOTE.--No gage-height record Oct. 17 to Nov. 18, Feb. 2 to Mar. 7, May 3 to July 2.

BILL WILLIAMS RIVER BASIN

09424434 BURRO CREEK ABOVE BOULDER CREEK NEAR BAGDAD, AZ

WATER-QUALITY RECORDS

LOCATION.--Lat 34°37'05", long 113°17'55", in sec.28, T.15 N., R.10 W., Yavapai County, Hydrologic Unit 15030202, 0.2 mi (0.3 km) above Boulder Creek, at abandoned pumping plant, about 7.5 mi (12.1 km) northwest of Bagdad.

DRAINAGE AREA.--375 mi² (971 km²).

PERIOD OF RECORD.--November 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO ₃)	HARD- NESS, NONCAR- BONATE (MG/L CACO ₃)
JUN , 1978											
13...	1430	1.7	510	8.6	26.5	2	10.4	K36	68	140	0
JUL											
21...	1200	.30	610	8.3	29.0	1	8.3	K8	K14	160	0
AUG											
10...	1000	19	340	8.1	23.0	360	7.5	--	--	110	0
SEP											
12...	1000	.44	610	8.3	21.0	8	8.3	200	60	170	0

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
JUN , 1978										
13...	310	.40	--	--	--	--	12	200	--	--
JUL										
21...	369	.47	--	--	--	--	12	200	--	--
AUG										
10...	229	.30	--	--	--	--	7	40	--	--
SEP										
12...	375	.48	.04	.43	.12	20	20	--	6	0

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
JUN , 1978										
13...	--	10	--	--	--	0	--	10	--	--
JUL										
21...	--	10	--	--	--	0	--	10	--	--
AUG										
10...	--	9	--	--	--	0	--	10	540	29
SEP										
12...	60	0	.0	.0	0	0	10	0	27	.03

K Based on non-ideal colony count.

09424434 BURRO CREEK ABOVE BOULDER CREEK NEAR BAGDAD, AZ--Continued

WATER QUALITY DATA

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
JUN , 1978											
13...	27	17	62	2.3	8.1	210	29	38	.6	16	292
JUL											
21...	33	18	72	2.5	9.8	250	31	51	.6	30	345
AUG											
10...	25	11	29	1.2	6.1	180	16	17	.3	35	222
SEP											
12...	38	18	62	2.1	8.2	300	22	34	.6	44	352

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
JUN , 1978										
13...	--	--	--	--	--	10	--	30	--	8
JUL										
21...	--	--	--	--	--	3	--	10	--	9
AUG										
10...	--	--	--	--	--	3	--	150	--	11
SEP										
12...	0	0	0	0	8	2	1000	20	14	7

BILL WILLIAMS RIVER BASIN

09424436 BOULDER CREEK ABOVE COPPER CREEK NEAR BAGDAD, AZ

WATER-QUALITY RECORDS

LOCATION.--Lat 34°36'23", long 113°13'51", in SW¼ sec.29, T.15 N., R.9 W., Yavapai County, Hydrologic Unit 15030202, 100 ft (30 m) upstream from Copper Creek, and 3.5 mi (5.6 km) northwest of Bagdad.

DRAINAGE AREA.--107 mi² (277 km²).

PERIOD OF RECORD.--November 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
NOV , 1977											
16...	1430	.03	3300	7.7	18.0	6	8.9	K6	K10	1900	1700
DEC											
13...	1100	.30	3000	7.7	6.8	1	10.6	K6	K28	1400	1200
FEB , 1978											
15...	1000	104	140	7.5	6.0	--	11.1	--	K140	60	32
APR											
20...	1100	2.4	1020	8.0	22.5	20	8.7	<1	<1	420	260
MAY											
25...	1015	.50	1500	8.1	25.0	1	--	<1	192	680	490
JUN											
13...	1045	.04	2000	8.0	31.5	1	10.4	K2	K36	910	720
JUL											
21...	0820	.01	2450	7.2	27.5	1	6.2	K10	108	1200	960
AUG											
10...	0700	.05	2580	7.2	26.5	1	5.6	K10	210	1200	1000
SEP											
12...	1250	.07	2800	7.3	26.0	1	6.2	K8	110	1400	1200

DATE	SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BAIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
NOV , 1977										
16...	2980	4.31	--	--	--	--	7	100	--	--
DEC										
13...	2050	3.06	--	--	--	--	13	100	--	--
FEB , 1978										
15...	124	.15	.08	.23	.09	4	2	0	0	1
APR										
20...	673	.93	--	--	--	--	8	200	--	--
MAY										
25...	1100	1.58	--	--	--	--	9	0	--	--
JUN										
13...	1510	2.18	--	--	--	--	9	50	--	--
JUL										
21...	1940	2.87	--	--	--	--	7	0	--	--
AUG										
10...	2020	2.98	--	--	--	--	7	100	--	--
SEP										
12...	2120	3.20	.25	.47	.02	9	10	0	3	2

< Actual value is known to be less than value shown.
K Based on non-ideal colony count.

09424436 BOULDER CREEK ABOVE COPPER CREEK NEAR BAGDAD, AZ--Continued

WATER-QUALITY RECORDS

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
NOV , 1977											
16...	410	220	180	1.8	9.9	240	1900	110	3.1	27	3170
DEC											
13...	310	150	160	1.9	8.6	250	1200	71	3.6	25	2250
FEB , 1978											
15...	14	6.0	6.9	.4	1.5	34	35	3.4	.1	35	113
APR											
20...	81	53	54	1.1	4.7	190	330	30	3.3	22	682
MAY											
25...	130	87	100	1.7	7.6	230	590	52	4.8	17	1160
JUN											
13...	200	100	140	2.0	9.4	230	650	80	4.3	13	1600
JUL											
21...	280	120	160	2.0	12	280	1100	100	4.2	22	2110
AUG											
10...	280	130	160	2.0	12	240	1200	95	4.7	21	2190
SEP											
12...	300	150	140	1.6	11	200	1300	91	5.6	23	2350

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV , 1977										
16...	--	--	--	--	--	5	--	20	--	15
DEC										
13...	--	--	--	--	--	13	--	30	--	100
FEB , 1978										
15...	0	0	1	1	71	11	1800	20	43	2
APR										
20...	--	--	--	--	--	25	--	0	--	54
MAY										
25...	--	--	--	--	--	17	--	30	--	21
JUN										
13...	--	--	--	--	--	17	--	10	--	9
JUL										
21...	--	--	--	--	--	12	--	20	--	12
AUG										
10...	--	--	--	--	--	16	--	20	--	10
SEP										
12...	10	0	1	1	23	11	80	20	10	6

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
NOV , 1977										
16...	--	260	--	--	--	0	--	50	--	--
DEC										
13...	--	650	--	--	--	0	--	100	--	--
FEB , 1978										
15...	120	120	.6	.0	0	0	60	30	35	9.8
APR										
20...	--	690	--	--	--	1	--	20	45	.29
MAY										
25...	--	180	--	--	--	0	--	30	3	.00
JUN										
13...	--	40	--	--	--	0	--	30	0	.00
JUL										
21...	--	300	--	--	--	0	--	40	--	--
AUG										
10...	--	240	--	--	--	0	--	40	4	.00
SEP										
12...	100	100	.0	.0	0	0	50	20	1	.00

BILL WILLIAMS RIVER BASIN

09424437 COPPER CREEK NEAR MOUTH NEAR BAGDAD, AZ

WATER-QUALITY RECORDS

LOCATION.--lat 34°36'23", long 113°13'50", in SW¼ sec.29, T.15 N., R.9 W., Yavapai County, Hydrologic Unit 15030202, 100 ft (30 m) upstream from mouth and 3.5 mi (5.6 km) northwest of Bagdad.

DRAINAGE AREA.--10.8 mi² (28.0 km²).

PERIOD OF RECORD.--October 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT , 1977											
12...	1415	.07	830	7.9	25.0	8.3	--	--	--	--	--
NOV											
16...	1500	.08	790	8.3	21.0	8.0	K4	176	--	--	--
DEC											
13...	1130	.10	870	7.9	18.4	8.6	54	114	--	--	--
FEB , 1978											
15...	0945	.13	992	9.0	12.0	9.2	K4	K22	440	300	120
APR											
20...	1100	8.0	1500	8.4	19.0	8.3	<1	K4	--	--	--
MAY											
25...	1015	1.4	1480	8.0	23.0	--	<1	K30	--	--	--
JUN											
13...	1045	2.7	1750	7.8	26.0	7.6	<1	52	--	--	--
JUL											
21...	0815	.90	1700	8.0	28.0	7.7	K12	90	--	--	--
AUG											
10...	0645	1.8	1450	8.0	24.0	7.5	K18	300	--	--	--
SEP											
12...	1255	.87	1750	8.2	24.0	8.1	<1	72	--	--	--

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)
OCT , 1977											
12...	--	--	--	--	--	--	--	--	--	--	--
NOV											
16...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	--	--	--	--	--	--	--	--	--	--	--
FEB , 1978											
15...	35	46	1.0	4.8	180	320	30	1.7	45	738	692
APR											
20...	--	--	--	--	--	--	--	1.5	--	--	--
MAY											
25...	--	--	--	--	--	--	--	1.8	--	--	--
JUN											
13...	--	--	--	--	--	--	--	1.6	--	--	--
JUL											
21...	--	--	--	--	--	--	--	1.7	--	--	--
AUG											
10...	--	--	--	--	--	--	--	1.5	--	--	--
SEP											
12...	--	--	--	--	--	--	--	1.8	--	--	--

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

BILL WILLIAMS RIVER BASIN

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09424437 COPPER CREEK NEAR MOUTH NEAR BAGDAD, AZ--Continued

WATER-QUALITY RECORDS

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
OCT , 1977											
12...	--	6	0	6	10	2	10	1	10	23	.00
NOV											
16...	--	6	0	5	20	57	0	0	10	--	--
DEC											
13...	--	5	0	6	10	5	40	1	10	--	--
FEB , 1978											
15...	1.00	5	100	33	20	2	120	3	40	13	.00
APR											
20...	--	3	200	360	20	13	690	4	160	44	.95
MAY											
25...	--	2	0	190	30	18	1800	9	180	23	.09
JUN											
13...	--	2	200	230	--	11	1400	0	200	8	.06
JUL											
21...	--	2	0	130	30	5	1300	12	180	--	--
AUG											
10...	--	3	70	130	<10	29	1200	11	220	10	.05
SEP											
12...	--	8	0	120	20	2	1900	18	180	61	.14

< Actual value is known to be less than value shown.

BILL WILLIAMS RIVER BASIN

09424440 BOULDER CREEK NEAR MOUTH NEAR BAGDAD, AZ

WATER-QUALITY RECORDS

LOCATION.--Lat 34°36'45", long 113°17'55", in sec.27, T.15 N., R.10 W., Yavapai County, Hydrologic Unit 15030202, 0.2 mi (0.3 km) upstream from mouth, on downstream side of pump plant road crossing apron, and 7.8 mi (12.6 km) northwest of Bagdad.

DRAINAGE AREA.--146 mi² (378 km²).

PERIOD OF RECORD.--October 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (CULS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L CAC03)
OCT , 1977											
12...	1545	.02	1700	7.9	27.0	1	7.4	300	58	.690	530
NOV											
16...	1630	.07	1570	7.8	17.0	1	7.8	K30	K20	720	560
DEC											
13...	1400	.10	1700	8.5	15.4	1	9.4	K10	K10	700	530
JAN , 1978											
19...	1000	.43	315	7.2	8.5	35	10.6	K170	280	120	68
FEB											
15...	1345	101	180	6.9	9.0	30	9.0	K10	K20	85	48
MAR											
23...	0945	20	890	7.6	16.0	9	8.1	K2	K10	390	300
APR											
20...	1015	11	1320	8.2	16.0	2	10.0	<1	K4	590	470
MAY											
25...	0945	.15	1400	7.8	17.0	1	--	K4	K6	600	430
JUN											
13...	1500	.87	1400	8.0	30.0	1	7.2	K22	K24	700	590
JUL											
21...	1215	.08	1650	7.2	28.5	0	3.2	100	220	800	660
AUG											
10...	1100	.54	1750	7.6	29.5	2	7.0	370	110	770	630
SEP											
12...	1100	.27	2000	8.2	26.5	1	7.7	280	70	890	780

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLD- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT , 1977											
12...	150	76	120	2.0	8.2	190	680	63	4.0	37	1280
NOV											
16...	160	77	120	2.0	6.8	190	670	62	3.6	30	1240
DEC											
13...	160	72	110	1.8	6.5	200	620	58	3.2	32	1180
JAN , 1978											
19...	28	13	18	.7	2.3	68	85	8.8	1.3	19	207
FEB											
15...	20	8.5	10	.5	1.8	45	52	5.1	1.2	18	149
MAR											
23...	92	40	42	.9	5.5	120	320	24	4.0	21	621
APR											
20...	150	52	70	1.3	7.6	140	520	39	2.7	21	984
MAY											
25...	140	60	78	1.4	7.7	200	510	41	3.5	24	997
JUN											
13...	160	73	78	1.3	8.7	130	660	47	2.4	18	1180
JUL											
21...	190	79	94	1.4	10	170	720	59	3.8	28	1360
AUG											
10...	180	77	86	1.4	9.8	170	760	54	4.0	30	1410
SEP											
12...	210	89	97	1.4	9.0	130	880	57	4.3	30	1580

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

BILL WILLIAMS RIVER BASIN

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09424440 BOULDER CREEK NEAR MOUTH NEAR BAGDAD, AZ--Continued

WATER-QUALITY RECORDS

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT , 1977										
12...	1230	1.74	--	--	--	--	15	100	--	--
NOV										
16...	1220	1.69	--	--	--	--	10	0	--	--
DEC										
13...	1160	1.60	--	--	--	--	9	100	--	--
JAN , 1978										
19...	209	.28	--	--	--	--	8	0	--	--
FEB										
15...	140	.20	.11	.31	.09	4	3	100	0	0
MAR										
23...	609	.84	--	--	--	--	3	200	--	--
APR										
20...	932	1.34	--	--	--	--	8	400	--	--
MAY										
25...	963	1.36	--	--	--	--	8	0	--	--
JUN										
13...	1110	1.60	--	--	--	--	10	--	--	--
JUL										
21...	1270	1.85	--	--	--	--	15	100	--	--
AUG										
10...	1290	1.92	--	--	--	--	11	50	--	--
SEP										
12...	1440	2.15	.01	.18	.02	11	7	0	3	1

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT , 1977										
12...	--	--	--	--	--	5	--	30	--	1
NOV										
16...	--	--	--	--	--	4	--	30	--	7
DEC										
13...	--	--	--	--	--	5	--	20	--	9
JAN , 1978										
19...	--	--	--	--	--	12	--	20	--	4
FEB										
15...	10	0	1	2	50	9	1600	50	8	3
MAR										
23...	--	--	--	--	--	41	--	20	--	10
APR										
20...	--	--	--	--	--	49	--	10	--	6
MAY										
25...	--	--	--	--	--	12	--	20	--	15
JUN										
13...	--	--	--	--	--	13	--	10	--	11
JUL										
21...	--	--	--	--	--	7	--	10	--	12
AUG										
10...	--	--	--	--	--	7	--	<10	--	7
SEP										
12...	0	10	1	1	16	7	180	20	12	4

< Actual value is known to be less than value shown.

09424440 BOULDER CREEK NEAR MOUTH NEAR BAGDAD, AZ--Continued

WATER-QUALITY RECORDS

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)
OCT , 1977										
12...	--	130	--	--	--	0	--	20	0	.00
NOV										
16...	--	50	--	--	--	1	--	10	--	--
DEC										
13...	--	40	--	--	--	0	--	10	0	.00
JAN , 1978										
19...	--	50	--	--	--	1	--	20	22	2.6
FEB										
15...	100	90	.1	.0	0	1	40	20	47	13
MAR										
23...	--	610	--	--	--	12	--	30	15	.81
APR										
20...	--	360	--	--	--	4	--	40	4	.13
MAY										
25...	--	90	--	--	--	0	--	30	1	.00
JUN										
13...	--	50	--	--	--	0	--	20	8	.02
JUL										
21...	--	40	--	--	--	0	--	30	--	--
AUG										
10...	--	60	--	--	--	0	--	10	10	.01
SEP										
12...	60	40	.0	.0	1	0	10	10	6	.00

09424445 BURRO CREEK AT U.S. 93 BRIDGE NEAR BAGDAD, AZ

WATER-QUALITY RECORDS

LOCATION.--Lat 34°32'50", long 113°26'35", in SE¼ sec.18, T.14 N., R.11 W., Mohave County, Hydrologic Unit 15030202, 0.2 mi (0.3 km) downstream from new U.S. 93 bridge at Burro Creek, 500 ft (152 m) north of U.S. Bureau of Land Management Burro Creek campground, and 15.5 mi (24.9 km) west of Bagdad.

DRAINAGE AREA.--612 mi² (1,585 km²).

PERIOD OF RECORD.--September 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	CULI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)
SEP , 1977											
07...	1400	.10	590	8.2	35.0	35.0	7	7.8	118	490	160
OCT											
12...	1045	.60	650	8.3	--	21.0	3	--	96	118	200
NOV											
17...	1430	.20	585	8.2	--	19.5	4	10.7	K28	K36	190
DEC											
14...	1515	1.0	740	8.3	--	14.2	2	13.2	K1280	K3020	210
JAN , 1978											
18...	1330	476	195	7.5	--	9.5	85	11.0	450	820	67
FEB											
16...	0930	195	220	8.0	--	7.0	25	10.0	K16	84	91
MAR											
23...	1330	79	555	7.6	--	20.5	1	8.1	<1	K6	230
APR											
19...	1430	26	740	8.2	--	23.0	1	8.1	<1	K6	310
MAY											
24...	1225	3.5	840	8.3	--	22.0	0	--	K12	42	270
JUN											
14...	1145	1.0	730	8.5	--	30.0	1	10.4	92	172	250
JUL											
20...	1330	.20	770	8.2	--	33.5	2	8.8	K2	K22	250
AUG											
09...	1430	.47	725	8.6	--	34.5	1	8.6	270	K1250	210
SEP											
13...	0900	1.5	750	8.3	--	24.0	1	10.4	80	46	250

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

BILL WILLIAMS RIVER BASIN

09424445 BURRO CREEK AT U.S. 93 BRIDGE NEAR BAGDAD, AZ--Continued

WATER-QUALITY RECORDS

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
SEP , 1977											
07...	0	33	20	54	1.8	9.0	210	54	51	1.2	37
OCT											
12...	23	42	22	55	1.7	8.0	210	66	51	1.3	37
NOV											
17...	22	40	23	60	1.9	7.0	210	76	50	1.1	27
DEC											
14...	36	42	25	55	1.7	7.1	210	79	46	1.1	28
JAN , 1978											
18...	6	16	6.5	10	.5	3.0	74	19	6.8	.4	21
FEB											
16...	15	22	8.7	13	.6	3.1	92	31	6.5	.6	26
MAR											
23...	81	52	24	33	1.0	6.1	180	110	20	1.3	28
APR											
19...	120	70	32	54	1.3	7.9	230	180	34	1.2	28
MAY											
24...	110	60	30	58	1.5	8.9	200	180	37	1.1	28
JUN											
14...	110	50	31	60	1.6	10	160	190	44	1.0	15
JUL											
20...	98	52	30	65	1.8	12	190	160	57	1.1	29
AUG											
09...	80	39	27	57	1.7	12	140	150	49	1.0	31
SEP											
13...	82	54	29	57	1.6	9.8	210	150	41	1.0	32

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977											
07...	345	363	.47	.01	.18	.05	12	13	100	10	0
OCT											
12...	366	386	.50	--	--	--	--	8	100	--	--
NOV											
17...	368	388	.50	--	--	--	--	7	0	--	--
DEC											
14...	383	387	.52	--	--	--	--	8	0	--	--
JAN , 1978											
18...	124	119	.17	--	--	--	--	5	0	--	--
FEB											
16...	163	158	.22	.18	.31	.15	7	6	0	0	0
MAR											
23...	360	364	.49	--	--	--	--	7	200	--	--
APR											
19...	507	521	.69	--	--	--	--	14	300	--	--
MAY											
24...	487	502	.66	--	--	--	--	11	0	--	--
JUN											
14...	453	484	.62	--	--	--	--	12	100	--	--
JUL											
20...	491	500	.67	--	--	--	--	13	200	--	--
AUG											
09...	451	443	.61	--	--	--	--	11	30	--	--
SEP											
13...	470	478	.64	.06	.46	.02	12	11	0	4	0

09424445 BURRO CREEK AT U.S. 95 BRIDGE NEAR BAGDAD, AZ--Continued

WATER-QUALITY RECORDS

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
07...	10	0	<50	0	<10	4	350	20	<100	2
OCT										
12...	--	--	--	--	--	1	--	20	--	0
NOV										
17...	--	--	--	--	--	3	--	20	--	1
DEC										
14...	--	--	--	--	--	2	--	50	--	18
JAN , 1978										
18...	--	--	--	--	--	8	--	40	--	2
FEB										
16...	10	10	1	1	20	8	1100	30	13	6
MAR										
23...	--	--	--	--	--	5	--	20	--	38
APR										
19...	--	--	--	--	--	11	--	0	--	4
MAY										
24...	--	--	--	--	--	8	--	20	--	13
JUN										
14...	--	--	--	--	--	6	--	10	--	12
JUL										
20...	--	--	--	--	--	5	--	20	--	6
AUG										
09...	--	--	--	--	--	7	--	<10	--	8
SEP										
13...	0	0	0	0	8	5	60	50	60	4

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDIMENT, SUS- PENDED (MG/L)	SEDIMENT DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1977										
07...	80	40	.0	.0	1	0	40	0	--	--
OCT										
12...	--	20	--	--	--	0	--	10	3	.00
NOV										
17...	--	10	--	--	--	1	--	8	14	.01
DEC										
14...	--	30	--	--	--	0	--	10	2	.01
JAN , 1978										
18...	--	10	--	--	--	0	--	20	81	104
FEB										
16...	30	10	2.7	.0	0	1	40	10	19	10
MAR										
23...	--	30	--	--	--	5	--	0	4	.85
APR										
19...	--	0	--	--	--	1	--	10	2	.14
MAY										
24...	--	10	--	--	--	0	--	10	1	.01
JUN										
14...	--	0	--	--	--	0	--	10	7	.02
JUL										
20...	--	20	--	--	--	0	--	10	--	--
AUG										
09...	--	20	--	--	--	0	--	10	--	--
SEP										
13...	70	30	.0	.0	0	0	10	0	3	.01

< Actual value is known to be less than value shown.

BILL WILLIAMS RIVER BASIN

09424447 BURRO CREEK AT OLD U.S. 93 BRIDGE NEAR BAGDAD, AZ

WATER-QUALITY RECORDS

LOCATION.--Lat 34°32'30", long 113°26'40", in NE¼ sec.19, T.14 N., R.11 W., Mohave County, Hydrologic Unit 15030202, 0.2 mi (0.3 km) downstream from old U.S. 93 bridge at Burro Creek, and 15.5 mi (24.9 km) west of Bagdad.

DRAINAGE AREA.--613 mi² (1,588 km²).

PERIOD OF RECORD.--September 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE, AIR (DEG C)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
SEP , 1977											
07...	1600	.02	580	8.9	35.0	35.0	45	--	470	740	160
DEC											
14...	1315	.07	710	8.6	--	12.5	9	12.6	K34	K22	210
FEB , 1978											
16...	1100	195	230	7.2	--	8.0	20	10.8	K12	118	95
MAR											
23...	1415	79	555	7.6	--	23.0	1	8.1	<1	K10	220
APR											
19...	1230	26	810	8.2	--	18.5	1	8.4	<1	K12	300
MAY											
24...	1115	3.5	750	8.5	--	26.0	0	--	50	100	270
JUN											
14...	1130	1.0	1150	8.4	--	28.5	1	10.0	K170	146	250
JUL											
20...	1315	.20	750	8.6	--	35.0	1	12.0	210	84	240
AUG											
09...	1410	.27	740	8.4	--	36.5	1	11.2	K1080	290	210
SEP											
13...	0830	.77	770	8.0	--	22.0	1	8.0	370	88	250

DATE	HARD- NESS, NONCAR- BONATE (MG/L CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
SEP , 1977											
07...	0	30	20	60	2.1	9.5	210	58	36	1.0	27
DEC											
14...	26	42	26	55	1.6	7.2	210	80	48	.9	22
FEB , 1978											
16...	18	23	9.2	14	.6	3.2	94	30	7.3	.6	26
MAR											
23...	72	50	23	34	1.0	6.1	180	110	20	1.3	28
APR											
19...	120	69	32	52	1.3	7.8	230	180	34	1.2	27
MAY											
24...	120	59	30	62	1.6	9.3	180	190	38	1.2	28
JUN											
14...	120	52	29	61	1.7	10	150	180	43	1.0	16
JUL											
20...	100	51	28	67	1.9	12	170	160	53	1.1	26
AUG											
09...	68	42	25	57	1.7	12	160	140	48	1.0	31
SEP											
13...	84	53	28	60	1.7	10	200	160	40	1.1	29

< Actual value is known to be less than value shown.
K Based on non-ideal colony count.

BILL WILLIAMS RIVER BASIN

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09424447 BURRO CREEK AT OLD U.S. 93 BRIDGE NEAR BAGDAD, AZ--Continued

WATER QUALITY DATA

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CU)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977											
07...	338	358	.46	.00	1.0	.21	18	15	500	<10	0
DEC											
14...	1	393	.00	--	--	--	--	6	0	--	--
FEB , 1978											
16...	171	161	.23	.18	.29	.15	7	6	0	0	0
MAR											
23...	361	362	.49	--	--	--	--	6	200	--	--
APR											
19...	499	517	.68	--	--	--	--	13	400	--	--
MAY											
24...	492	509	.67	--	--	--	--	11	100	--	--
JUN											
14...	459	471	.62	--	--	--	--	12	200	--	--
JUL											
20...	481	482	.65	--	--	--	--	10	200	--	--
AUG											
09...	444	440	.60	--	--	--	--	12	20	--	--
SEP											
13...	460	480	.63	.01	.26	.02	11	9	0	3	1

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
07...	20	0	<50	0	10	7	1700	20	<100	2
DEC										
14...	--	--	--	--	--	2	--	30	--	2
FEB , 1978										
16...	190	0	10	1	21	6	76000	20	65	4
MAR										
23...	--	--	--	--	--	11	--	20	--	5
APR										
19...	--	--	--	--	--	10	--	0	--	11
MAY										
24...	--	--	--	--	--	9	--	40	--	12
JUN										
14...	--	--	--	--	--	7	--	10	--	12
JUL										
20...	--	--	--	--	--	6	--	10	--	9
AUG										
09...	--	--	--	--	--	4	--	<10	--	9
SEP										
13...	0	0	1	1	8	7	60	20	130	6

< Actual value is known to be less than value shown.

BILL WILLIAMS RIVER BASIN

09424447 BURRO CREEK AT OLD U.S. 93 BRIDGE NEAR BAGDAD, AZ--Continued

WATER QUALITY DATA

DATE	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDIMENT, SUS- PENDED (MG/L)	SEDIMENT DIS- CHARGE, SUS- PENDED (T/DAY)
SEP , 1977										
07...	410	10	.4	.0	0	1	50	0	--	--
DEC										
14...	--	50	--	--	--	0	--	10	13	.00
FEB , 1978										
16...	8000	10	.0	.0	0	1	640	10	15	7.9
MAR										
23...	--	20	--	--	--	3	--	0	2	.43
APR										
19...	--	10	--	--	--	1	--	10	1	.07
MAY										
24...	--	0	--	--	--	0	--	5	2	.02
JUN										
14...	--	0	--	--	--	0	--	10	7	.02
JUL										
20...	--	20	--	--	--	0	--	10	--	--
AUG										
09...	--	20	--	--	--	0	--	<3	8	.01
SEP										
13...	40	40	.0	.0	0	0	20	0	1	.00

< Actual value is known to be less than value shown.

09424450 BIG SANDY RIVER NEAR WIKIEUP, AZ

LOCATION.--Lat 34°27'45", long 113°37'25", in SE¼ sec.16, T.13 N., R.13 W., Mohave County, Hydrologic Unit 15030201, on left bank 7 mi (11 km) downstream from Burro Creek, 15 mi (24 km) upstream from confluence with Santa Maria River, and 17 mi (27 km) south of Wikieup.

DRAINAGE AREA.--2,800 mi² (7,250 km²), approximately.

PERIOD OF RECORD.--March 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,400 ft (427 m), from topographic map. Prior to Oct. 1, 1970, at datum 3.06 ft (0.933 m), corrected, higher. Oct. 1, 1970, to Oct. 10, 1973, at datum 2.06 ft (0.628 m) higher. Supplementary water-stage recorder for low flows at site 75 ft (23 m) upstream at same datum since Apr. 10, 1975; Mar. 28 to Dec. 7, 1966, Apr. 2, 1969, to Apr. 9, 1975, at site 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records poor. Diversions above station for irrigation of about 3,800 acres (15 km²), mostly by pumping from ground water.

AVERAGE DISCHARGE.--12 years, 63.1 ft³/s (1.79 m³/s), 45,720 acre-ft/yr (56.4 hm³/yr); median of yearly mean discharges, 37 ft³/s (1.05 m³/s), 26,800 acre-ft/yr (33 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,500 ft³/s (1,030 m³/s) Mar. 1, 1978, gage height, 16.42 ft (5.005 m), from rating curve extended above 21,000 ft³/s (595 m³/s); minimum daily, 1.3 ft³/s (0.037 m³/s) July 13, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 21,000 ft³/s or 595 m³/s) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1630	8,250 234	7.59 2.313	Mar. 5	1345	15,400 436	9.82 2.993
Feb. 11	0630	17,900 507	10.62 3.237	Mar. 12	2330	4,960 140	6.52 1.987
Mar. 1	0845	*36,500 1,030	16.42 5.005				

Minimum daily, 2.0 ft³/s (0.057 m³/s) Aug. 10

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	3.1	5.5	3.7	850	19900	67	31	4.2	4.3	2.9	3.8
2	5.1	3.3	5.7	3.1	530	10100	74	31	4.1	4.4	3.0	3.9
3	5.1	3.5	5.9	2.9	148	1800	70	31	4.1	4.4	2.9	3.8
4	5.1	3.5	5.9	2.9	88	1620	67	32	4.3	4.0	3.1	4.3
5	5.1	3.5	5.9	2.9	65	5880	67	27	4.2	3.9	3.0	4.2
6	5.5	3.5	5.9	2.7	54	2220	65	25	4.1	3.9	2.9	4.0
7	5.5	3.5	5.9	2.7	85	1240	60	21	4.1	4.0	3.2	3.9
8	5.5	3.5	5.9	2.5	488	718	63	19	4.5	3.6	3.4	3.8
9	5.5	3.5	5.7	2.7	190	573	67	16	4.5	3.5	3.2	3.9
10	5.1	3.5	5.7	6.6	98	556	60	15	4.2	3.7	2.0	3.8
11	5.5	3.7	5.7	5.6	5570	488	60	15	4.1	3.8	3.0	4.0
12	5.5	3.7	5.9	153	1190	2090	60	14	4.0	3.4	2.4	3.9
13	5.5	3.7	4.1	93	680	2610	54	14	4.1	3.4	3.4	4.2
14	5.5	3.7	4.1	19	530	1450	49	13	4.2	3.4	3.5	4.1
15	5.5	3.7	4.1	2150	692	760	47	11	4.5	3.5	2.4	4.2
16	5.5	3.7	4.1	2480	595	464	45	10	4.2	3.3	2.4	4.4
17	5.5	3.7	4.1	973	156	291	43	8.9	4.3	3.4	2.6	4.4
18	5.5	3.7	4.1	700	89	224	41	9.0	4.3	3.3	2.6	4.2
19	5.5	3.7	4.1	209	56	173	45	8.5	4.5	3.3	2.9	4.0
20	5.7	3.5	4.1	416	41	157	38	8.2	4.5	3.2	3.0	4.0
21	11	3.5	5.9	520	32	151	36	7.4	4.4	3.1	3.0	4.0
22	4.4	3.5	5.9	225	26	109	36	7.1	4.3	3.0	3.2	4.1
23	5.9	3.5	5.9	61	29	109	31	6.7	4.0	3.2	3.3	4.1
24	4.5	3.5	5.9	25	23	92	34	6.1	4.2	3.2	3.3	4.0
25	4.5	3.5	4.1	20	20	88	34	6.3	4.3	3.2	3.3	4.0
26	4.1	3.5	4.1	15	17	81	33	5.9	4.3	3.2	3.3	4.0
27	5.9	3.7	5.9	10	17	81	33	5.7	4.1	3.0	3.4	4.1
28	5.5	3.7	5.9	5.0	9000	74	31	5.3	4.1	3.0	3.4	4.0
29	5.5	3.5	5.9	5.0	---	70	31	5.2	4.4	3.0	3.7	4.2
30	5.5	3.5	5.9	5.0	---	67	30	4.6	4.4	3.2	3.7	4.3
31	3.1	---	3.7	569	---	67	---	4.1	---	2.9	3.8	---
TOTAL	115.5	106.6	121.5	8611.3	20755	60243	1465	424.0	126.7	107.7	95.2	121.6
MEAN	3.75	3.55	3.92	280	741	1943	48.8	13.7	4.22	3.47	3.07	4.05
MAX	11	3.7	4.1	2480	9000	19900	74	52	4.5	4.4	3.8	4.4
MIN	3.1	3.1	3.5	2.5	17	67	30	4.1	4.0	2.9	2.0	3.8
AC-FT	229	211	241	17200	41170	119500	2910	841	251	214	189	241

CAL YR 1977 TOTAL 1516.4 MEAN 4.15 MAX 102 MIN 1.7 AC-FT 3010
WTR YR 1978 TOTAL 92333.1 MEAN 253 MAX 19900 MIN 2.0 AC-FT 183200

NOTE.--No gage-height record Oct. 16 to Nov. 17.

BILL WILLIAMS RIVER BASIN

09424450 BIG SANDY RIVER NEAR WICKIEUP, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1977 to current year.

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACU3)
SEP , 1977											
06...	1500	2.4	1160	8.1	28.0	4	6.2	K160	84	260	9
OCT											
13...	1100	3.0	1060	8.0	24.5	2	8.0	280	380	280	29
NOV											
17...	1200	3.3	1080	7.9	22.0	1	8.8	92	K44	290	22
DEC											
14...	1030	4.3	1260	7.7	17.8	2	8.6	184	440	300	41
JAN , 1978											
19...	1530	197	265	8.1	11.0	80	10.2	K160	700	92	10
FEB											
14...	1130	251	280	8.1	11.0	45	12.4	K30	250	120	11
MAR											
22...	1300	104	720	7.8	23.0	5	7.7	K10	K2	240	62
APR											
21...	1030	38	1090	8.4	21.0	1	8.4	K16	K18	300	54
MAY											
24...	1430	17	1180	8.0	26.0	0	--	K146	K50	300	23
JUN											
14...	0900	3.7	1160	8.1	27.0	1	8.7	48	76	310	37
JUL											
20...	1030	3.5	1140	8.1	33.0	1	9.3	40	48	300	43
AUG											
09...	1145	3.0	1090	8.2	32.0	1	8.9	98	74	270	11
SEP											
13...	1230	3.6	1120	7.9	28.5	1	7.2	100	200	290	27
16...	1315	--	--	--	--	--	--	--	--	--	--

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
SEP , 1977											
06...	56	30	120	3.2	7.9	310	120	100	1.3	36	622
OCT											
13...	59	33	120	3.1	7.3	310	140	99	1.3	36	645
NOV											
17...	61	34	130	3.3	7.5	330	150	110	1.3	35	663
DEC											
14...	64	35	130	3.2	8.0	320	150	110	1.3	36	687
JAN , 1978											
19...	23	8.4	19	.9	3.6	100	30	12	.5	23	170
FEB											
14...	29	11	26	1.0	4.1	130	42	14	.7	26	224
MAR											
22...	56	25	66	1.8	7.9	220	120	50	.4	14	451
APR											
21...	68	32	110	2.8	9.2	300	160	92	1.4	31	647
MAY											
24...	68	32	140	3.5	9.4	340	160	120	1.5	33	713
JUN											
14...	67	34	140	3.5	8.9	330	170	120	1.4	26	710
JUL											
20...	63	34	130	3.3	9.1	310	160	110	1.4	34	685
AUG											
09...	55	31	130	3.5	8.7	310	150	110	1.4	37	658
SEP											
13...	63	32	130	3.3	8.0	320	170	110	1.5	39	656
16...	--	--	--	--	--	--	--	--	--	--	--

K Based on non-ideal colony count.

09424450 BIG SANDY RIVER NEAR WICKIEUP, AZ--Continued

WATER QUALITY DATA

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CU)	CADMIUM DIS- SOLVED (UG/L AS CD)
SEP , 1977										
06...	625	.85	.12	.16	.07	10	11	300	<10	0
OCT										
13...	649	.88	--	--	--	--	5	0	--	--
NOV										
17...	692	.90	--	--	--	--	10	0	--	--
DEC										
14...	692	.93	--	--	--	--	11	0	--	--
JAN , 1978										
19...	169	.23	--	--	--	--	7	100	--	--
FEB										
14...	219	.30	.35	.53	.21	8	8	100	0	0
MAR										
22...	448	.61	--	--	--	--	6	200	--	--
APR										
21...	653	.88	--	--	--	--	12	400	--	--
MAY										
24...	732	.97	--	--	--	--	9	100	--	--
JUN										
14...	731	.97	--	--	--	--	11	200	--	--
JUL										
20...	695	.93	--	--	--	--	9	--	--	--
AUG										
09...	676	.89	--	--	--	--	10	50	--	--
SEP										
13...	713	.89	.36	.66	.06	12	11	--	3	0
16...	--	--	--	--	--	--	--	--	--	--

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)
SEP , 1977										
06...	10	0	<50	0	10	2	220	20	<100	2
OCT										
13...	--	--	--	--	--	1	--	30	--	1
NOV										
17...	--	--	--	--	--	1	--	10	--	3
DEC										
14...	--	--	--	--	--	1	--	10	--	3
JAN , 1978										
19...	--	--	--	--	--	9	--	50	--	3
FEB										
14...	10	0	0	1	25	7	6500	50	9	9
MAR										
22...	--	--	--	--	--	9	--	20	--	3
APR										
21...	--	--	--	--	--	7	--	40	--	96
MAY										
24...	--	--	--	--	--	4	--	20	--	10
JUN										
14...	--	--	--	--	--	7	--	30	--	13
JUL										
20...	--	--	--	--	--	5	--	10	--	9
AUG										
09...	--	--	--	--	--	3	--	<10	--	8
SEP										
13...	0	10	0	0	7	3	440	20	18	0
16...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than value shown.

BILL WILLIAMS RIVER BASIN

09424450 BIG SANDY RIVER NEAR WICKIEUP, AZ--Continued

WATER QUALITY DATA

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SULVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SULVED (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SULVED (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SULVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDE (T/DAY)
SEP , 1977										
06...	80	60	.0	.0	1	0	30	0	11	.07
OCT										
13...	--	40	--	--	--	0	--	0	0	.00
NOV										
17...	--	20	--	--	--	0	--	8	0	.00
DEC										
14...	--	20	--	--	--	0	--	10	1	.01
JAN , 1978										
19...	--	0	--	--	--	0	--	20	290	154
FEB										
14...	130	20	.0	.0	0	0	40	10	82	56
MAR										
22...	--	0	--	--	--	6	--	0	48	13
APR										
21...	--	10	--	--	--	1	--	10	14	1.4
MAY										
24...	--	0	--	--	--	0	--	10	8	.37
JUN										
14...	--	10	--	--	--	0	--	20	6	.06
JUL										
20...	--	10	--	--	--	0	--	10	--	--
AUG										
09...	--	6	--	--	--	0	--	<3	21	.17
SEP										
13...	40	0	.0	.0	0	0	20	0	16	.16
16...	--	--	--	--	--	--	--	--	76	--

< Actual value is known to be less than value shown.

09424470 KIRKLAND CREEK NEAR KIRKLAND, AZ

LOCATION.--Lat 34°23'38", long 112°43'19", in SW¼ sec.7, T.12 N., R.4 W., Yavapai County, Hydrologic Unit 15030203, on right bank 1.3 mi (2.1 km) upstream from Skull Valley Wash and 1.7 mi (2.7 km) southwest of Kirkland.

DRAINAGE AREA.--109 mi² (282 km²).

PERIOD OF RECORD.--April 1973 to current year.

REVISED RECORDS.--WDR AZ-77-1: 1976.

GAGE.--Water-stage recorder. Altitude of gage is 3,900 ft (1,190 m), from topographic map.

REMARKS.--Records poor. No known diversions above station.

AVERAGE DISCHARGE.--5 years, 7.11 ft³/s (0.201 m³/s), 5,150 acre-ft/yr (6.35 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,890 ft³/s (223 m³/s) Mar. 1, 1978, gage height, 10.53 ft (3.209 m), from rating curve extended above 1,400 ft³/s (39.6 m³/s) on basis of slope-area measurement at gage height 10.53 ft (3.209 m); minimum daily, 1.1 ft³/s (0.031 m³/s) Oct. 2 to Nov. 1, 1974, Aug. 29, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 1,400 ft³/s or 39.6 m³/s on basis of slope-area measurement at gage height 10.53 ft or 3.209 m) and peak discharges above base of 200 ft³/s (5.7 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	Unknown	560 15.8	3.96 1.207	Mar. 1	0900	*7,890 223	10.53 3.209
Jan. 17	1430	405 11.5	3.64 1.109	Mar. 12	0645	455 12.9	3.73 1.137
Jan. 31	1845	328 9.29	3.46 1.055	July 31	2230	3,010 85.2	7.1 2.16
Feb. 11	0015	1,470 41.6	5.44 1.658				

Minimum daily, 1.1 ft³/s (0.031 m³/s) Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.6	2.6	2.8	73	2540	7.7	3.5	2.1	1.9	71	1.5
2	2.2	2.5	2.6	2.8	18	961	6.8	3.5	2.2	1.7	11	1.4
3	2.2	2.4	2.6	2.8	13	494	6.3	3.5	2.1	1.9	4.4	1.8
4	2.2	2.4	2.6	2.8	13	66	5.4	3.2	1.8	1.7	3.8	1.7
5	2.2	2.4	2.6	2.6	12	69	5.0	2.9	2.3	1.7	2.9	1.7
6	30	2.4	2.6	2.6	13	47	4.7	2.6	2.4	1.9	1.9	1.6
7	2.2	2.4	2.6	2.6	13	34	4.7	2.6	2.3	1.7	2.3	1.4
8	2.2	2.4	2.6	2.6	11	20	5.0	2.6	2.2	1.6	1.7	1.5
9	2.2	2.4	2.6	2.6	11	11	4.7	2.6	2.1	1.6	1.6	1.5
10	2.2	2.6	2.9	5.3	61	8.6	4.1	2.5	2.0	1.7	1.4	1.6
11	2.2	2.6	3.1	4.3	358	7.2	3.8	2.5	1.9	1.7	2.3	1.7
12	2.2	2.6	3.1	3.2	45	216	3.4	2.4	1.8	1.7	2.0	1.8
13	2.2	2.6	3.1	2.7	18	96	3.4	2.4	1.7	1.7	1.9	1.5
14	2.3	2.6	3.1	2.6	68	48	3.1	2.3	1.6	1.7	1.4	1.8
15	2.3	2.6	3.1	9.8	68	29	3.1	2.3	1.6	1.7	1.9	2.0
16	2.3	2.6	3.1	29	18	18	3.1	2.2	1.7	1.7	1.7	3.2
17	2.3	2.6	2.8	108	7.2	16	2.9	2.2	1.6	1.7	1.8	3.0
18	2.3	2.6	2.8	57	3.8	11	2.9	2.1	1.4	1.7	1.5	2.4
19	2.4	2.6	2.8	15	3.6	9.5	2.9	2.1	1.3	1.7	1.6	2.4
20	2.4	2.6	2.8	33	3.5	9.0	2.9	1.8	1.4	1.7	1.5	2.3
21	2.4	2.6	2.8	41	3.4	9.0	2.6	1.8	1.3	1.7	1.8	2.0
22	2.4	2.6	2.8	9.5	3.2	9.5	2.6	1.7	1.6	1.7	1.7	2.1
23	2.6	2.6	2.6	7.2	3.2	11	2.6	1.9	1.9	1.7	1.3	1.8
24	2.6	2.6	2.6	6.4	2.9	8.1	2.6	2.3	1.6	1.7	1.3	1.9
25	2.6	2.6	2.6	6.2	2.9	6.8	2.3	2.2	1.4	1.7	1.3	2.9
26	2.4	2.6	2.8	6.0	3.2	6.3	2.3	2.3	1.4	1.7	1.3	2.4
27	2.3	2.6	3.1	5.7	3.5	6.3	2.3	2.1	1.6	1.7	1.3	1.8
28	2.3	2.6	3.1	5.7	116	5.9	2.3	2.0	1.7	1.7	1.3	1.8
29	2.4	2.6	2.8	5.4	---	6.3	2.3	2.0	1.9	1.7	1.1	1.7
30	2.4	2.7	2.8	5.6	---	6.3	2.3	1.7	1.7	1.7	1.2	1.6
31	2.4	---	2.8	76	---	7.2	---	1.9	---	110	1.3	---
TOTAL	99.5	76.6	86.9	448.8	969.4	4793.0	110.1	73.7	53.6	161.4	134.5	57.8
MEAN	3.21	2.55	2.80	14.5	34.6	155	3.67	2.38	1.79	5.21	4.34	1.93
MAX	30	2.7	3.1	108	358	2540	7.7	3.5	2.4	110	71	3.2
MIN	2.2	2.4	2.6	2.6	2.9	5.9	2.3	1.7	1.3	1.6	1.1	1.4
AC-FT	197	152	172	890	1920	9510	218	146	106	320	267	115
CAL YR 1977	TOTAL	892.8	MEAN	2.45	MAX	30	MIN	1.5	AC-FT	1770		
WTR YR 1978	TOTAL	7065.3	MEAN	19.4	MAX	2540	MIN	1.1	AC-FT	14010		

09424900 SANTA MARIA RIVER NEAR BAGDAD, AZ

LOCATION.--Lat 34°18'21", long 113°20'47", in SE¼ sec.12, T.11 N., R.11 W., Mohave County, Hydrologic Unit 15030203, on right bank 4.0 mi (6.4 km) east of Palmerita Ranch, 12 mi (19 km) upstream from confluence with Big Sandy River, and 21 mi (34 km) southwest of Bagdad.

DRAINAGE AREA.--1,210 mi² (3,130 km²), approximately.

PERIOD OF RECORD.--April 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,360 ft (415 m), from topographic map.

REMARKS.--Records poor. Diversions above station for irrigation of about 5,300 acres (21.4 km²), most of which is by pumping from ground water.

AVERAGE DISCHARGE.--12 years, 44.2 ft³/s (1.252 m³/s), 32,020 acre-ft/yr (39.5 hm³/yr); median of yearly mean discharges, 22 ft³/s (0.62 m³/s), 15,900 acre-ft/yr (20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,100 ft³/s (654 m³/s) Mar. 1, 1978, gage height, 7.82 ft (2.384 m), from rating curve extended above 5,000 ft³/s (140 m³/s) on basis of step-backwater computations and slope-area measurements at gage heights 5.50 and 7.82 ft (1.676 and 2.384 m); no flow for most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*)₃ (from rating curve extended above 5,000 ft³/s or 140 m³/s as explained above) and peak discharges above base of 200 ft³/s (5.7 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	0445	761 21.6	3.02 0.920	Feb. 11	0215	8,820 250	4.99 1.521
Jan. 15	1645	1,480 41.9	3.99 1.216	Feb. 15	0945	411 11.6	3.44 1.049
Jan. 17	1545	2,130 60.3	4.15 1.265	Feb. 28	1530	12,900 365	5.41 1.649
Jan. 20	0745	1,000 28.3	3.76 1.146	Mar. 1	0700	*23,100 654	7.82 2.384
Feb. 1	0200	1,680 47.6	4.04 1.231	Mar. 5	1300	9,220 261	4.71 1.436
Feb. 7	1830	846 24.0	3.71 1.131	Mar. 12	0930	5,940 168	4.22 1.286

No flow for most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1000	7200	31	23	14	.00	.00	.00
2	.00	.00	.00	.00	350	3120	34	29	.00	.00	.00	.00
3	.00	.00	.00	.00	270	3020	51	31	.00	.00	.00	.00
4	.00	.00	.00	.00	160	144	89	37	.00	.00	.00	.00
5	.00	.00	.00	.00	120	2770	47	30	.00	.00	.00	.00
6	232	.00	.00	.00	70	974	29	27	.00	.00	.00	.00
7	4.2	.00	.00	.00	274	1540	22	26	.00	.00	.00	.00
8	.00	.00	.00	.00	285	725	27	30	.00	.00	.00	.00
9	.00	.00	.00	.00	156	429	47	24	.00	.00	.00	.00
10	.00	.00	.00	.00	189	280	110	21	.00	.00	.00	.00
11	.00	.00	.00	.00	1700	695	70	19	.00	.00	.00	.00
12	.00	.00	.00	.00	150	2380	54	21	.00	.00	.00	.00
13	.00	.00	.00	.00	100	1990	37	26	.00	.00	.00	.00
14	.00	.00	.00	.00	150	1600	34	19	.00	.00	.00	.00
15	.00	.00	.00	289	213	680	30	16	.00	.00	.00	.00
16	.00	.00	.00	113	150	343	23	19	.00	.00	.00	.00
17	.00	.00	.00	285	140	224	21	19	.00	.00	.00	.00
18	.00	.00	.00	200	130	167	21	23	.00	.00	.00	.00
19	.00	.00	.00	150	120	129	18	22	.00	.00	.00	.00
20	.00	.00	.00	369	110	82	18	22	.00	.00	.00	.00
21	.00	.00	.00	237	100	80	14	24	.00	.00	.00	.00
22	.00	.00	.00	150	100	56	18	23	.00	.00	.00	.00
23	.00	.00	.00	100	100	73	21	24	.00	.00	.00	.00
24	.00	.00	.00	70	100	56	16	30	.00	.00	.00	.00
25	.00	.00	.00	60	100	43	15	31	.00	.00	.00	.00
26	.00	.00	.00	40	100	32	12	33	.00	.00	.00	.00
27	.00	.00	.00	30	100	27	16	34	.00	.00	.00	.00
28	.00	.00	.00	20	3000	27	13	36	.00	.00	.00	.00
29	.00	.00	.00	15	---	20	19	37	.00	.00	.00	.00
30	.00	.00	.00	10	---	18	23	34	.00	.00	.00	.00
31	.00	---	.00	300	---	24	---	25	---	.00	.00	---
TOTAL	236.20	.00	.00	2438.00	9537	28948	980	815	14.00	.00	.00	.00
MEAN	7.62	.000	.000	78.6	341	934	32.7	26.3	.47	.000	.000	.000
MAX	232	.00	.00	369	3000	7200	110	37	14	.00	.00	.00
MIN	.00	.00	.00	.00	70	18	12	16	.00	.00	.00	.00
AC-FT	469	.00	.00	4840	18920	57420	1940	1620	28	.00	.00	.00
CAL YR 1977 TOTAL	556.20	MEAN	1.52	MAX	270	MIN	.00	AC-FT	1100			
WTR YR 1978 TOTAL	42968.20	MEAN	118	MAX	7200	MIN	.00	AC-FT	85230			

09426000 BILL WILLIAMS RIVER BELOW ALAMO DAM, AZ

LOCATION.--Lat 34°13'51", long 113°36'29", in SE¼SE¼ sec.4, T.10 N., R.13 W., Yuma County, Hydrologic Unit 15030204, on left bank 0.6 mi (1.0 km) downstream from Alamo Dam, 3.7 mi (6.0 km) downstream from Bullard Wash, and 8 mi (13 km) downstream from confluence of Santa Maria and Big Sandy Rivers.

DRAINAGE AREA.--4,730 mi² (12,250 km²), approximately, of which 400 mi² (1,040 km²) is below confluence of Santa Maria and Big Sandy Rivers.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October and November 1939, published in WSP 1313. Prior to October 1943, published as "Williams River near Alamo." October 1943 to September 1967, published as "Bill Williams River near Alamo."

REVISED RECORDS.--WSP 1213: 1939(M). 1941(P).

GAGE.--Water-stage recorder. Altitude of gage is 967 ft (294.7 m), from construction data. Prior to Apr. 9, 1968, at site 1.7 mi (2.7 km) upstream at datum 1,002.95 ft (305.699 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Diversions above station for irrigation of about 9,100 acres (36.8 km²), mostly by pumping from ground water. Flow regulated by Alamo Lake, beginning Mar. 28, 1969. Temporary storage and slight regulation of releases through uncontrolled rectangular conduit through Alamo Dam June 23, 1968, to Mar. 27, 1969. Alamo Lake is formed by an earthfill and rockfill dam, completed in 1968. Total capacity of lake is 1,043,000 acre-ft (1,290 hm³). See table below for monthend contents. Maximum contents during year was 334,300 acre-ft (412 hm³) Mar. 21.

AVERAGE DISCHARGE (adjusted for storage in Alamo Lake).--39 years, 91.6 ft³/s (2.594 m³/s), 66,360 acre-ft/yr (81.8 hm³/yr); median of yearly mean discharges, 43 ft³/s (1.22 m³/s), 31,200 acre-ft/yr (38 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,100 ft³/s (1,840 m³/s) Aug. 29, 1951, gage height, 30.8 ft (9.39 m), site and datum then in use; no flow at times in most years since 1969.

EXTREMES OUTSIDE PERIOD OF RECORD.--The history of floods that occurred prior to October 1939 is published in WSP 1683. The peak discharges have been correlated with those for Bill Williams River at Planet. The peak discharge for February 1937 has been determined as 105,000 ft³/s (2,970 m³/s) at a stage of 46 ft (14 m)—site and datum then in use—from rating curve extended above 50,000 ft³/s (1,400 m³/s) on basis of slope-area measurement for flood of Sept. 6, 1939, at a stage of 39.6 ft (12.07 m), discharge of 86,000 ft³/s (2,440 m³/s) and known stable high-water control.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 286 ft³/s (8.10 m³/s) Mar. 4; no flow June 17-22, Sept. 6-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	14	9.2	6.4	3.2	8.0	186	194	1.1	.20	.50	1.0
2	13	14	9.2	6.0	3.2	155	188	194	1.0	.30	.50	1.0
3	13	15	9.2	6.0	3.2	278	188	192	1.0	.30	.50	.90
4	7.3	15	9.2	6.0	2.9	286	188	192	1.0	.30	.50	1.0
5	.50	14	9.2	6.0	2.9	278	190	192	1.0	.30	.40	.56
6	.40	14	9.2	4.3	2.9	261	190	192	1.1	.30	.40	.00
7	.40	14	9.2	2.9	2.9	264	190	192	1.0	.20	.50	.00
8	.50	14	9.2	2.9	2.9	267	190	192	.90	.20	.50	.00
9	.50	15	8.8	2.9	2.9	270	190	192	.90	.20	.50	.00
10	.50	18	8.8	2.9	2.9	207	190	192	.90	.20	.50	.00
11	7.1	19	8.8	2.9	3.2	37	190	194	.90	.20	.50	2.0
12	13	19	8.8	2.9	3.2	15	192	194	.80	.20	.50	1.0
13	13	19	8.8	2.9	3.4	1.5	192	194	.80	.20	.60	1.0
14	14	19	8.8	2.9	3.6	1.7	190	194	.70	.20	.50	1.0
15	14	18	8.8	3.2	3.6	46	190	194	.30	.20	.50	1.0
16	14	18	8.8	3.2	3.6	176	190	192	.10	.20	.50	1.0
17	14	18	8.0	3.4	3.6	176	188	192	.00	.30	.60	1.0
18	14	19	8.0	3.4	3.6	176	188	192	.00	.30	.60	1.0
19	15	19	8.0	3.4	3.6	178	188	192	.00	.30	.50	1.0
20	15	16	8.0	3.4	3.6	178	188	192	.00	.30	.60	1.0
21	15	14	8.0	3.4	3.6	180	190	192	.00	.40	.80	1.0
22	16	14	8.0	3.4	3.6	182	190	76	.00	.40	.80	1.0
23	16	12	8.0	3.4	3.6	182	190	1.0	.05	.40	.80	1.0
24	15	10	8.0	3.2	3.4	182	190	1.0	.10	.40	.80	1.0
25	15	9.6	6.4	3.2	3.4	184	190	1.0	.20	.40	.80	1.0
26	15	9.6	5.7	3.2	3.4	184	192	1.1	.20	.50	.80	1.0
27	15	9.6	5.7	3.2	3.4	186	194	1.1	.20	.40	.80	1.0
28	15	9.2	5.7	3.2	6.4	186	194	1.2	.20	.50	.90	1.0
29	14	9.2	5.7	3.2	---	186	194	1.2	.20	.40	.90	1.0
30	14	9.2	6.0	3.2	---	188	194	1.2	.20	.40	1.0	1.0
31	14	---	6.0	3.2	---	186	---	1.1	---	.50	1.0	---
TOTAL	346.20	437.4	249.2	113.7	95.7	5285.2	5704	4131.9	14.85	9.60	19.60	25.46
MEAN	11.2	14.6	8.04	3.67	3.42	170	190	133	.50	.31	.63	.85
MAX	16	19	9.2	6.4	6.4	286	194	194	1.1	.50	1.0	2.0
MIN	.40	9.2	5.7	2.9	2.9	1.5	186	1.0	.00	.20	.40	.00
AC-FT	687	868	494	226	190	10480	11310	8200	29	19	39	50
(†)	28070	27200	27040	39440	91220	332400	320800	311600	307300	304200	300800	296800
CAL YR 1977 TOTAL	5096.70			MEAN 14.0	MAX 51	MIN .40	AC-FT 10110	± -8750				
WTR YR 1978 TOTAL	16432.81			MEAN 45.0	MAX 286	MIN .00	AC-FT 32590	± +268300				

† Monthend contents, in acre-feet, in Alamo Lake, furnished by Corps of Engineers.

‡ Change in contents, in acre-feet.

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 34°15'43", long 114°01'40", in SE¼SW¼ sec.27, T.11 N., R.17 W., on boundary between Mohave and Yuma Counties, Hydrologic Unit 15030204, at ford 0.8 mi (1.3 km) downstream from Mineral Wash, 3.6 mi (5.8 km) upstream from Havasu Lake National Wildlife Refuge, 4.1 mi (6.6 km) west of Planet Ranch, 5.2 mi (8.4 km) upstream from waterline of Havasu Lake at elevation 450 ft (137 m) above mean sea level, and approximately 30 mi (50 km) downstream from Alamo Dam.

DRAINAGE AREA.--5,140 mi² (13,310 km²) approximately, of which approximately 410 mi² (1,060 km²) is below Alamo Dam.

PERIOD OF RECORD.--January 1970 to January 1972, October 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to current year.

WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Streamflow ungaged.

COOPERATION.--Pesticide analysis performed by Environmental Protection Agency.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,110 micromhos Aug. 17, 1977; minimum daily, 319 micromhos Feb. 23, 1978.

WATER TEMPERATURES: Maximum, 35.0°C July 3, 6, 1976; minimum, 9.0°C Mar. 26, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,080 micromhos Jan. 15, 16, 1977; minimum daily, 319 micromhos Feb. 23, 1978.

WATER TEMPERATURES: Maximum, 31.0°C July 30; minimum 10.0°C Apr. 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
OCT 03...	1010	1.5	990	7.6	22.0	4	--	8.7	380	980	240	0
NOV 07...	1050	2.2	1010	7.7	17.0	2	--	8.8	120	340	250	0
DEC 05...	1050	3.8	1020	7.8	15.0	1	--	9.6	K23	280	260	0
JAN 09...	1100	7.5	1010	7.6	13.0	1	--	8.5	K1	190	250	0
FEB 06...	1040	E8.0	995	7.8	16.0	15	--	9.0	K1	190	250	0
MAR 06...	1030	246	440	7.9	12.0	70000	--	8.4	33000	66000	130	0
APR 10...	1130	52	501	8.1	18.5	470	--	9.8	450	420	140	2
MAY 08...	1015	52	533	7.7	17.0	310	--	8.8	600	800	140	0
JUN 12...	1100	6.2	956	7.8	24.5	95	--	7.4	800	1500	250	2
JUL 10...	0950	3.8	952	7.5	27.0	--	70	5.6	3000	6000	240	--
AUG 07...	1015	3.1	956	8.2	27.0	--	75	6.1	2100	3600	230	0
SEP 11...	1005	3.1	972	7.7	22.0	--	50	6.1	1400	3000	240	--

E Estimated.

K Based on non-ideal colony count.

BILL WILLIAMS RIVER BASIN

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09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT 03...	62	20	110	3.1	7.3	310	0	87	110	1.5	35	584
NOV 07...	64	21	130	3.6	7.3	320	0	87	120	1.5	34	601
DEC 05...	64	23	130	3.5	7.1	320	0	82	130	1.5	34	587
JAN 09...	62	22	120	3.3	7.0	300	0	92	120	1.6	33	601
FEB 06...	64	23	120	3.3	7.0	310	0	85	120	1.4	32	588
MAR 06...	35	11	38	1.4	7.3	220	0	32	21	.6	22	260
APR 10...	37	12	53	1.9	4.9	170	0	46	44	.8	18	287
MAY 08...	38	11	53	1.9	5.1	180	0	48	50	.8	20	309
JUN 12...	63	22	110	3.0	7.8	300	0	84	100	1.3	32	554
JUL 10...	60	21	110	3.1	7.0	--	--	82	110	1.5	32	566
AUG 07...	58	20	120	3.5	7.2	--	--	82	110	1.5	33	566
SEP 11...	63	19	110	3.1	7.2	--	--	88	110	1.5	33	579

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 03...	587	.79	.17	.20	.02	--	--	--	.03	.02	.04
NOV 07...	624	.82	.12	.22	.01	--	--	--	.04	.03	.01
DEC 05...	632	.80	.30	.24	.00	--	--	--	.02	.03	.01
JAN 09...	607	.82	.29	.35	.11	--	--	--	.04	.04	.04
FEB 06...	607	.80	.52	.34	.00	.36	.36	.88	.07	.03	.01
MAR 06...	279	.35	.85	.80	.26	130	130	130	1.0	.17	.18
APR 10...	303	.39	.71	.64	.09	1.7	1.8	2.5	1.2	.12	.11
MAY 08...	317	.42	.49	.53	.17	1.1	1.3	1.8	.80	.10	.09
JUN 12...	574	.75	1.1	1.1	.17	.58	.75	1.9	.20	.03	.04
JUL 10...	--	.77	.56	.59	.03	.69	.72	1.3	.17	.03	.02
AUG 07...	576	.77	.59	--	.09	.54	.63	1.2	.18	.03	--
SEP 11...	--	.79	.63	.67	.05	.66	.71	1.3	.23	.03	.03

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET. A7--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
OCT 03...	30	--	1	--	10	--	--	--	0
NOV 07...	30	<100	24	20	40	.0	.0	0	0
DEC 05...	20	--	10	--	20	--	--	--	0
JAN 09...	40	--	25	--	30	--	--	--	0
FEB 06...	30	36	20	50	30	.1	.0	0	0
MAR 06...	60	--	<5	--	20	--	--	--	0
APR 10...	60	--	14	--	20	--	--	--	0
MAY 08...	50	25	2	460	60	.1	.0	0	0
JUN 12...	0	--	0	--	80	--	--	--	0
JUL 10...	20	--	2	--	100	--	--	--	0
AUG 07...	<10	13	0	210	60	.2	.0	0	0
SEP 11...	10	--	0	--	40	--	--	--	0

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT 03...	--	0	--	--	--	6	--	290	--
NOV 07...	50	10	--	--	7	8	330	290	<10
DEC 05...	--	10	--	--	--	6	--	300	--
JAN 09...	--	10	--	--	--	5	--	290	--
FEB 06...	30	10	.5	1.8	5	6	300	280	3
MAR 06...	--	10	--	--	--	9	--	210	--
APR 10...	--	0	--	--	--	9	--	190	--
MAY 08...	80	10	3.7	6.3	4	6	230	160	2
JUN 12...	--	5	--	--	--	5	--	270	--
JUL 10...	--	0	--	--	--	6	--	290	--
AUG 07...	40	10	1.6	3.2	8	5	310	290	2
SEP 11...	--	10	--	--	--	10	--	300	--

< Actual value is known to be less than value shown.

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 03...	--	--	--	--	--	--	2	--
NOV 07...	3	4	5	<50	0	0	0	170
DEC 05...	--	--	--	--	--	--	1	--
JAN 09...	--	--	--	--	--	--	4	--
FEB 06...	3	0	0	0	0	18	5	510
MAR 06...	--	--	--	--	--	--	19	--
APR 10...	--	--	--	--	--	--	4	--
MAY 08...	1	10	10	9	0	50	3	16000
JUN 12...	--	--	--	--	--	--	1	--
JUL 10...	--	--	--	--	--	--	0	--
AUG 07...	<1	10	0	5	<1	30	1	2900
SEP 11...	--	--	--	--	--	--	1	--

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ATRA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	UDE, TOTAL (UG/L)	P,P' DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
FEB 06...	1040	ND	--	ND	--	ND	ND	--	ND	--	ND	--
MAY 08...	1015	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	.3
AUG 07...	1015	ND	--	ND	--	ND	ND	--	ND	--	ND	--

DATE	DDT, TOTAL (UG/L)	P,P' DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)
FEB 06...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 08...	ND	.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 07...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

< Actual value is known to be less than value shown.
 ND Material specifically analyzed for but not detected.

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/L)	LINDANE TOTAL (UG/KG)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	MALA- THION, TOTAL (UG/KG)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG)
FEB 06...	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 07...	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	METHYL TRI- THION, TOTAL (UG/L)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA- THION, TOTAL (UG/L)	PARA- THION, TOT. IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOX- APHENE, TOT. IN BOT- TOM MA- TERIAL (UG/KG)	TOXA- PHENE, TOTAL (UG/L)	TOXA- PHENE, TOT. IN BOT- TOM MA- TERIAL (UG/KG)	TRI- THION, TOTAL (UG/L)	TRI- THION, TOT. IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
FEB 06...	ND	--	ND	--	ND	--	ND	--	ND	--	ND	ND	ND
MAY 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--	--
AUG 07...	ND	--	ND	--	ND	--	ND	--	ND	--	--	--	--

DATE	TIME	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL WET WEIGHT G/SQ M	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DTAM. % FINER THAN .0625 MM
NOV 07...	1050	210	.394	.315	3	.02	61
FEB 06...	1040	890	--	--	12	.26	76
MAY 08...	1015	4100	1.81	1.02	566	79	100
JUN 12...	1100	890	--	--	--	--	--
JUL 10...	0950	1800	--	--	--	--	--
AUG 07...	1015	--	18.7	16.6	111	.93	--
SEP 11...	1005	870	--	--	165	1.4	99

ND Material specifically analyzed for but not detected.

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	995	997	1020	1020	1020	478	529	516	943	941	943	944
2	995	1000	1020	989	984	918	526	521	941	960	937	950
3	1000	1000	1020	1020	990	900	521	521	944	965	954	943
4	994	1000	1020	1010	994	642	514	529	955	964	957	944
5	994	1000	1020	1020	1000	662	525	531	941	962	951	929
6	974	999	1020	1010	997	953	484	535	960	964	946	939
7	999	989	1020	1020	1000	905	481	533	947	962	951	933
8	991	1010	1020	1020	1000	959	492	535	939	964	956	963
9	995	1010	1020	1020	996	964	530	536	952	969	953	958
10	990	1010	1020	996	1000	962	491	534	950	931	953	963
11	1000	1010	1020	902	999	955	486	536	942	934	952	955
12	1000	1010	1020	901	1000	964	455	533	914	915	946	977
13	1000	1010	1020	1010	997	954	434	537	932	916	950	977
14	995	1010	1020	1070	998	515	462	535	941	917	951	978
15	990	1010	1020	1060	1000	517	456	534	946	927	904	980
16	989	1010	1010	1060	1000	516	483	532	953	925	944	969
17	1000	1010	1020	1010	991	519	516	528	945	922	945	959
18	1010	1010	1020	995	993	518	517	537	949	930	946	968
19	987	1010	1020	993	994	522	517	528	943	935	939	968
20	990	1010	1020	996	994	517	519	528	955	927	944	969
21	989	1010	1020	1010	992	527	516	967	953	933	931	968
22	1010	969	1020	1000	994	526	517	967	952	925	954	968
23	1000	1010	1020	1000	519	526	519	967	951	930	906	967
24	1000	1010	1020	1000	912	526	517	970	940	925	953	968
25	1010	1000	1020	993	551	517	514	965	950	943	953	967
26	1010	1010	1020	996	415	515	519	969	959	943	953	971
27	1010	1010	1020	998	593	519	521	991	975	945	951	970
28	1000	1020	1020	992	401	521	518	965	942	945	950	965
29	1010	1020	1020	969	---	518	518	992	963	943	951	967
30	1010	1020	1020	1000	---	516	516	971	966	945	965	967
31	1010	---	1020	964	---	523	---	969	---	938	959	---
MEAN	999	1010	1020	1000	985	666	504	691	948	940	947	961
WTR YR 1978	MEAN	861	MAX	1060	MIN	319						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	16.0	15.0	15.0	15.0	15.5	12.5	18.0	20.0	24.5	27.0	26.0
2	26.0	20.0	14.0	17.5	15.0	17.5	12.5	20.0	20.0	25.5	27.5	26.0
3	25.0	19.0	15.0	17.0	12.5	17.0	16.0	20.0	19.5	25.0	27.5	26.0
4	25.0	21.0	15.0	15.5	14.5	14.0	19.0	22.0	22.5	24.0	27.5	26.5
5	22.0	20.0	14.0	15.0	15.5	14.0	12.0	22.0	24.0	24.0	27.0	24.0
6	23.0	19.0	12.0	14.5	17.5	15.5	10.0	17.0	25.0	24.5	27.5	26.0
7	22.0	17.0	12.0	13.5	16.5	17.0	11.5	17.0	22.0	23.0	30.0	24.5
8	25.0	19.0	20.0	14.0	17.0	17.0	14.5	17.0	21.5	25.0	24.5	22.0
9	24.0	18.0	15.0	14.5	16.0	15.5	19.0	17.5	24.0	24.0	24.0	22.5
10	19.0	15.0	12.0	15.5	16.5	15.0	23.5	17.0	26.0	25.0	28.0	22.5
11	18.0	20.0	12.0	14.5	17.0	15.5	19.5	18.5	26.5	24.5	27.5	22.5
12	16.0	21.0	15.0	12.5	15.5	17.5	19.5	19.0	27.5	28.5	24.0	22.5
13	16.0	25.0	11.0	15.0	17.5	15.5	19.0	19.0	27.0	27.5	23.5	22.5
14	24.0	24.0	15.0	15.0	16.0	14.0	19.0	18.0	22.0	25.5	24.5	23.0
15	23.0	24.0	16.0	14.0	16.0	14.0	16.5	19.0	24.0	24.0	23.5	23.0
16	16.5	17.0	15.0	13.5	14.5	15.5	19.5	16.5	25.5	24.5	24.0	20.0
17	20.0	21.0	15.0	15.0	15.0	14.5	15.0	17.5	25.0	24.0	24.0	20.0
18	19.0	20.0	14.0	14.5	15.0	15.0	16.0	24.5	28.5	25.5	25.0	18.5
19	22.0	13.0	15.0	16.0	15.0	14.0	17.5	24.0	26.5	25.0	23.0	18.5
20	16.5	14.0	16.0	15.5	14.0	14.0	17.0	25.0	22.0	25.0	23.0	20.0
21	19.0	15.0	15.0	15.0	14.0	22.0	17.5	25.0	22.0	24.5	29.0	18.5
22	22.0	17.0	15.0	14.0	16.0	21.5	16.0	25.0	26.0	24.0	27.5	19.5
23	23.0	18.0	15.0	13.0	16.0	23.0	19.0	24.5	24.5	24.0	27.0	19.0
24	23.0	19.0	17.0	12.5	16.5	22.0	19.0	19.5	27.5	24.5	29.0	20.0
25	15.0	16.0	15.0	14.5	16.0	20.5	19.5	19.0	27.5	25.5	27.0	22.5
26	16.0	15.0	15.0	15.0	14.0	20.0	19.5	20.0	22.5	27.0	27.0	22.5
27	17.0	14.0	11.0	14.0	16.0	21.0	10.5	19.0	22.0	25.5	26.0	22.5
28	21.0	13.0	14.0	14.5	14.5	19.0	12.5	19.0	23.0	27.0	28.5	21.5
29	25.0	15.0	11.0	14.5	---	23.0	12.0	20.0	24.0	28.5	26.0	21.0
30	19.0	14.0	16.0	13.0	---	22.0	17.5	18.5	21.0	31.0	22.0	21.0
31	20.0	---	17.0	14.5	---	17.5	---	19.0	---	27.0	23.0	---
MEAN	21.0	18.0	14.0	14.5	15.5	17.5	16.5	20.0	24.0	25.5	26.0	22.0
WTR YR 1978	MEAN	19.5	MAX	31.0	MIN	10.0						

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 1,77 1050	FEB 6,78 1040	MAY 8,78 1015	JUN 12,78 1100
TOTAL CELLS/ML	210	890	4100	890
DIVERSITY: DIVISION	0.4	1.0	1.0	1.1
..CLASS	0.4	1.0	1.0	1.1
..ORDER	0.8	1.3	1.1	1.1
...FAMILY	2.6	2.4	2.2	2.0
....GENUS	2.6	2.6	2.2	2.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOLCALES								
...CHAKACIACEAE								
....SCHROEDERIA	5	3	--	--	--	--	--	--
....DUCYSTACEAE								
....DUCYSTIS	--	--	--	--	--	--	29	3
...SCENEDESMACEAE								
...SCENEDESMUS	--	--	--	--	--	--	--	--
...VOLVUCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	11	5	--	--	--	--	--	--
....CHLAMYDOMONAS	--	--	290#	33	160	4	14	2
...PHACOTACEAE								
....PHACUTUS	--	--	--	--	--	--	--	--
...ZYGNEMATALES								
...DESMIDIACEAE								
....CLUSTERIUM	--	--	--	--	650#	16	--	--
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...CUSCINOUSCACEAE								
....CYCLOTELLA	16	8	36	4	--	--	--	--
....STEPHANODISCUS	--	--	--	--	--	--	--	--
...PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	--	36	4	--	--	--	--
....COCCONEIS	64#	31	94	11	--	--	--	--
....RHUICOSPHEA	--	--	14	2	--	--	--	--
...CYMBELLACEAE								
....CYMBELLA	5	3	--	--	160	4	--	--
...DIATOMACEAE								
....DIATOMA	--	--	--	--	--	--	--	--
...FRAGILARIACEAE								
....SYNEDRA	38#	18	--	--	--	--	--	--
...GUMPHONEMACEAE								
....GUMPHONEMA	--	--	160#	18	980#	24	14	2
...NAVICULACEAE								
....GYROSIGMA	--	--	--	--	--	--	--	--
....NAVICULA	43#	21	200#	22	1800#	44	270#	31
...PINNULARIA	--	--	--	--	--	--	--	--
...NITZSCHACEAE								
....NITZSCHIA	27	13	51	6	160	4	390#	44
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDAE								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	--	--	--	--	--	29	3
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	--	7	1	--	--	--	--
....SPIRULINA	--	--	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	--	7	1	--	--	86	10
....LEPOCINCLIS	--	--	--	--	--	--	--	--
....TRACHELOMONAS	--	--	--	--	160	4	57	6

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JUL 10, 78 0950	AUG 7, 78 1015	SEP 11, 78 1005			
TOTAL CELLS/ML	1800	550	870			
DIVERSITY: DIVISION	0.8	1.3	1.2			
CLASS	0.8	1.3	1.2			
ORDER	1.0	1.5	1.0			
FAMILY	1.9	2.0	2.3			
GENUS	2.1	2.5	2.9			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
CHLOROPHYCEAE						
CHLOROCUCCALES						
CHARACIACEAE						
SCHROEDERIA	--	-	--	-	--	-
UOCYSTACEAE						
UOCYSTIS	--	-	--	-	--	-
SCENEDESMACEAE						
SCENEDESMUS	--	-	32	6	--	-
VULVOCALES						
CHLAMYDOMONADACEAE						
CARTERIA	22	1	--	-	--	-
CHLAMYDOMUNAS	--	-	--	-	--	-
PHACUTACEAE						
PHACOTUS	67	4	--	-	--	-
ZYGNEMATALES						
UESMIDIACEAE						
CLOSTERIUM	--	-	--	-	--	-
CHRYSDOPHYTA						
BACILLARIOPHYCEAE						
CENTRALES						
COSCINODISCACEAE						
CYCLOTELLA	44	2	16	3	87	10
STEPHANODISCUS	--	-	8	1	--	-
PENNALES						
ACHNANTHACEAE						
ACHNANTHES	--	-	--	-	--	-
CUCCONEIS	--	-	8	1	--	-
RHOICUSPHENIA	22	1	--	-	--	-
CYMBELLACEAE						
CYMBELLA	--	-	--	-	--	-
DIATUMACEAE						
DIATOMA	22	1	--	-	--	-
FRAGILARIACEAE						
SYNEDRA	--	-	--	-	--	-
GOMPHONEMACEAE						
GOMPHONEMA	--	-	--	-	43	5
NAVICULACEAE						
GYRUSIGMA	--	-	16	3	43	5
NAVICULA	480#	53	81	15	130	15
PINNULAR	22	1	--	-	--	-
NITZSCHACEAE						
NITZSCHIA	420#	23	150#	26	220#	25
CRYPTOPHYTA (CRYPTOMONAS)						
CRYPTOPHYCEAE						
CRYPTOMUNIDALES						
CRYPTOMONODACEAE						
CRYPTOMUNAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
CYANOPHYCEAE						
HORMOGONALES						
USCILLATORIACEAE						
OSCILLATORIA	--	-	--	-	--	-
SPIRULINA	--	-	--	-	43	5
EUGLENOPHYTA (EUGLENOIDS)						
EUGLENOPHYCEAE						
EUGLENALES						
EUGLENACEAE						
EUGLENA	160	8	190#	34	130	15
LEPUCINCLIS	--	-	--	-	130	15
TRACHELUMUNAS	89	5	57	10	43	5

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA

LOCATION.--Lat 34°18'58", long 114°09'23", in NW¼SW¼ sec.28, T.3 N., R.27 E., San Bernardino meridian, in California, San Bernardino County, Hydrologic Unit 15030101, at intake pumping plant for Colorado River aqueduct of Metropolitan Water District of Southern California, 1.8 mi (2.9 km) upstream from Parker Dam on Colorado River, and 149 mi (240 km), downstream from Hoover Dam.

DRAINAGE AREA.--182,700 mi² (473,200 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--July 1938 to current year. Published as "Parker Reservoir near Parker Dam" 1938.

REVISED RECORDS.--WRD Ariz. 1975: 1974 (elevation).

GAGE.--Water-stage recorder. Datum of gage is 400.54 ft (122.085 m) National Geodetic Vertical Datum of 1929. Gage readings have been reduced to elevations NGVD.

REMARKS.--Lake is formed by concrete-arch dam; dam was completed and storage began July 1, 1938. Usable capacity—based on April 1957 re-survey by Bureau of Reclamation between elevations 430.54 ft (131.229 m) and 450.54 ft (137.325 m)—619,400 acre-ft (764 hm³) between elevations 400.54 ft (122.085 m), sill of regulating gates, and 450.54 ft (137.325 m), top of regulating gates. Prior to Oct. 1, 1956, different capacity table used. Dead storage, 28,600 acre-ft (35.3 hm³) below elevation 400.54 ft (122.085 m), based on original survey. About 0.07 ft (0.021 m) fall indicated between gage and Parker Dam under normal operating conditions. Drawdown below elevation 440.54 ft (134.277 m) not legally permissible except by consent of the Metropolitan Water District of Southern California or in an emergency affecting the safety of the dam. Lake is used for flood control, power development, re-regulation of river for irrigation demand, and as a basin from which water is pumped by Metropolitan Water District of Southern California to Colorado River aqueduct. Figures given herein represent usable contents. For record of diversion to Colorado River aqueduct, see record for Colorado River aqueduct near Parker Dam elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 693,000 acre-ft (854 hm³), by temporary use of flashboards, Apr. 18, 1943, June 4, 1953; maximum elevation, 450.77 ft (137.395 m) June 26, 1958; minimum contents, 71,400 acre-ft (88.0 hm³) June 25, 1942, elevation, 412.09 ft (125.605 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 622,200 acre-ft (767 hm³) May 27, elevation, 450.68 ft (137.367 m); minimum, 528,500 acre-ft (652 hm³) Feb. 18, elevation, 445.75 ft (135.865 m).

CORRECTIONS.--Contents table, water year 1977. In the previously published table the contents in acre-feet were rounded improperly. A correct table is shown below.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	585300	571800	541400	577500	544000	557700	571300	599200	613400	599000	584200	573700
2	579600	570100	544500	577900	544500	559400	574500	595400	615400	597200	585900	581900
3	573200	569700	545200	581000	546700	561100	577000	594800	613400	596000	589500	581900
4	562000	569600	550400	581000	548100	562200	571800	599000	613200	592800	591200	574300
5	559200	566700	552800	581300	549000	557900	571800	603800	612400	596400	588000	569400
6	559800	562400	547200	582300	547700	555400	572000	608000	611800	604800	585500	576800
7	558100	559200	548100	583400	545100	551300	577500	611800	613000	611600	583400	582300
8	556500	554300	549900	584200	541400	548500	579200	613000	614200	609200	578500	582300
9	555600	555000	552100	584600	545400	546700	581900	612200	615800	611000	579800	579600
10	554600	557300	552400	584900	548500	546800	581300	614400	615800	610400	581900	573500
11	555400	557700	551700	583400	547200	546800	576200	617600	617400	604400	580200	574300
12	559400	560900	550400	581500	546800	546300	578300	620400	617400	606000	577000	578100
13	561100	565600	548100	579400	547200	551500	581500	621600	614600	607200	580400	578100
14	561800	569900	549900	575400	542700	546300	586600	619400	615600	607800	581500	578100
15	563700	572400	555400	568400	544900	547400	588600	617000	617200	603600	584800	577900
16	562900	570900	560700	561100	546700	550100	588400	617200	620000	602800	604800	572600
17	562400	572600	557700	555800	550400	554600	587400	614800	615600	600800	613600	566300
18	561800	573900	556000	552400	550300	557700	582700	611400	612600	594000	614200	561500
19	561500	573900	554300	550600	549700	561800	582100	607400	610600	596200	613000	559000
20	562700	573400	551700	549400	550800	564400	584000	605800	604200	600400	607600	562000
21	564400	571800	553300	548800	545600	559800	589500	608600	605200	599800	603600	568000
22	570500	570100	555800	552200	546100	561100	590100	609400	609400	595200	595000	573900
23	573900	569000	560000	551500	545200	561300	590600	607400	611200	595000	598400	574500
24	573900	567100	560200	548800	546100	565400	590800	613800	608000	593800	598800	577300
25	573500	565400	559600	549900	547200	566900	586600	616800	607400	588700	597200	569000
26	571600	566100	559200	549500	551000	572400	586500	617400	606600	590800	587000	561100
27	572000	559600	556000	552100	554600	572800	591000	612400	600000	596000	579600	560300
28	573900	553100	556900	548100	553500	572000	599200	611600	601200	600000	570500	565200
29	575400	547600	560500	548100	---	572200	599000	614600	605400	596800	562700	567100
30	575400	544500	564800	549000	---	570700	598600	612400	604800	592200	565400	568800
31	575100	---	570500	546700	---	571600	---	612800	---	588700	570300	---
MAX	585300	573900	570500	584900	554600	572800	599200	621600	620000	611600	614200	582300
MIN	554600	544500	541400	546700	541400	546300	571300	594800	600000	588700	562700	559000
(†)	-9300	-30600	+26000	-23800	+6800	+18100	+27000	+14200	-8000	-16100	-18400	-1500
CAL YR 1976	MAX	620800	MIN	529400	†	+24900						
WTR YR 1977	MAX	621600	MIN	541400	†	-15600						

† Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

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09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA--Continued

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	569700	563500	554600	550300	556900	563800	572800	597800	614800	613800	589500	575400
2	568600	565900	553000	550600	556200	562500	573000	600800	616600	613600	591200	574300
3	566700	568800	551700	553100	553300	557100	567600	604600	617600	609600	593800	573900
4	565900	569900	550300	555600	551000	552800	569700	608000	616800	612000	592800	574700
5	566700	569700	547700	556900	551000	553300	573000	609200	614200	614000	586800	574900
6	574300	566700	549500	556900	545800	548600	578300	609400	616200	615200	583400	573000
7	573900	563100	551500	557100	543400	542300	575100	609400	618200	613000	580800	574500
8	570500	562700	553300	556400	541800	537100	575600	608200	618400	610600	579200	573000
9	570900	561300	553300	556700	539600	539300	574500	612800	613000	610200	577900	572400
10	570900	562700	553100	559600	540900	544000	568000	616400	610200	604800	573400	572800
11	570900	559800	553500	560200	540900	545600	569600	616000	611600	606000	570500	570100
12	572400	559600	550800	558600	535500	547600	573900	614600	608600	604400	567800	570700
13	570500	560000	548100	555600	535000	544300	579200	614200	609800	604400	567300	569200
14	564400	558400	547000	553900	535100	544500	579400	611200	608400	599800	563800	572000
15	560900	560300	549400	556000	531500	546300	579800	608400	610600	600000	563300	571300
16	561100	562900	548300	554400	533700	548100	579400	614000	612400	598400	565200	572000
17	560900	562500	547900	553300	530100	543800	572200	611000	615600	592400	567600	572600
18	560000	557500	547700	551900	529200	544900	573400	607800	613400	593000	567800	573200
19	559600	553000	544500	551700	534100	545800	577700	602800	609000	595200	565800	572600
20	562500	549900	543600	551700	533700	540200	583600	601800	610600	596400	564400	573500
21	560900	547600	546100	551700	539100	541300	587400	602400	614600	593400	559600	573200
22	562700	546300	551700	551500	543100	547200	587200	600000	618000	590800	560500	570900
23	565400	549200	551700	552100	546300	554300	587000	606200	613600	591400	564600	566700
24	563800	554300	555000	546300	548300	563700	581000	610800	611800	591800	569400	566200
25	564800	556900	555200	546800	547700	569200	583200	616000	610400	593800	570900	562500
26	565200	558400	556400	544100	551200	570700	587000	618800	606400	599000	572400	565200
27	565900	559800	558800	543400	549900	564600	591800	616400	609200	600800	573400	567500
28	566900	559200	556700	544100	558100	565600	594800	617000	610400	599000	571800	570700
29	566100	558800	554300	545800	---	566900	595200	614200	612800	597400	572800	572200
30	566300	556700	551300	549500	---	569400	597000	610600	611400	595400	572800	571600
31	563300	---	549700	555800	---	570500	---	611200	---	590400	574900	---
MAX	574300	569900	558800	560200	558100	570700	597000	618800	618400	615200	593800	575400
MIN	559800	546300	543800	543400	529200	537100	567600	597800	606400	590400	559600	562500
(‡)	-5500	-6600	-7000	+6100	+2300	+12400	+26500	+14200	+200	-21000	-15500	-3300
CAL YR 1977	MAX	621600	MIN	541400	‡	-20800						
WTR YR 1978	MAX	618800	MIN	529200	‡	+2800						

‡ Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

09427500 LAKE HAVASII NEAR PARKER DAM. A7-CA--Continued

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	447.99	447.67	447.20	446.96	447.32	447.69	448.16	449.46	450.31	450.26	449.04	448.30
2	447.94	447.80	447.11	446.98	447.28	447.62	448.17	449.61	450.40	450.25	449.13	448.24
3	447.84	447.95	447.04	447.12	447.13	447.33	447.89	449.80	450.45	450.05	449.26	448.22
4	447.80	446.01	446.96	447.25	447.00	447.10	448.00	449.97	450.41	450.17	449.21	448.26
5	447.84	448.00	446.82	447.52	447.00	447.13	448.17	450.03	450.28	450.27	448.90	448.27
6	448.24	447.84	446.92	447.52	446.71	446.87	448.45	450.04	450.38	450.33	448.72	448.17
7	448.22	447.65	447.03	447.53	446.58	446.52	448.28	450.04	450.48	450.22	448.58	448.25
8	448.04	447.63	447.13	447.29	446.49	446.23	448.31	449.98	450.49	450.10	448.50	448.17
9	448.06	447.55	447.13	447.51	446.38	446.35	448.25	450.21	450.22	450.08	448.43	448.14
10	448.06	447.63	447.12	447.46	446.44	446.61	447.91	450.39	450.08	449.81	448.19	448.16
11	448.06	447.47	447.14	447.49	446.44	446.70	447.99	450.37	450.15	449.87	448.04	448.02
12	448.14	447.46	446.99	447.41	446.14	446.81	448.22	450.30	450.00	449.79	447.90	448.05
13	448.04	447.48	446.84	447.25	446.11	446.63	448.50	450.28	450.06	449.79	447.87	447.97
14	447.72	447.40	446.78	447.16	446.12	446.64	448.51	450.13	449.99	449.56	447.69	448.12
15	447.53	447.50	446.91	447.27	445.92	446.74	448.53	449.99	450.10	449.57	447.66	448.08
16	447.54	447.64	446.85	447.19	446.04	446.84	448.51	450.27	450.19	449.49	447.76	448.12
17	447.53	447.62	446.83	447.13	445.84	446.60	448.13	450.12	450.35	449.19	447.89	448.15
18	447.48	447.35	446.82	447.05	445.79	446.66	448.19	449.96	450.24	449.22	447.90	448.18
19	447.47	447.11	446.64	447.04	446.06	446.71	448.42	449.71	450.02	449.33	447.79	448.15
20	447.62	446.94	446.60	447.04	446.04	446.40	448.73	449.66	450.10	449.39	447.72	448.20
21	447.53	446.81	446.73	447.04	446.34	446.46	448.93	449.69	450.30	449.24	447.46	448.18
22	447.63	446.74	447.04	447.03	446.56	446.79	448.92	449.57	450.47	449.11	447.51	448.06
23	447.77	446.90	447.04	447.06	446.74	447.18	448.91	449.88	450.25	449.14	447.73	447.84
24	447.69	447.18	447.22	446.74	446.85	447.68	448.59	450.11	450.16	449.16	447.98	447.92
25	447.74	447.32	447.23	446.77	446.82	447.97	448.71	450.37	450.09	449.26	448.06	447.62
26	447.76	447.40	447.29	446.62	447.01	448.05	448.91	450.51	449.89	449.52	448.14	447.76
27	447.80	447.47	447.42	446.58	446.94	447.13	449.16	450.39	450.03	449.61	448.19	447.88
28	447.85	447.44	447.31	446.62	447.38	447.78	449.31	450.42	450.09	449.52	448.11	448.05
29	447.81	447.42	447.18	446.71	---	447.85	449.33	450.28	450.21	449.44	448.16	448.13
30	447.82	447.31	447.02	446.92	---	447.98	449.42	450.10	450.14	449.34	448.16	448.10
31	447.66	---	446.93	447.26	---	448.04	---	450.13	---	449.09	448.27	---
MEAN	447.81	447.46	447.01	447.09	446.55	447.09	448.52	450.06	450.21	449.65	448.19	448.09
MAX	448.24	448.01	447.42	447.49	447.38	448.05	449.42	450.51	450.49	450.33	449.26	448.30
MIN	447.47	446.74	446.60	446.58	445.79	446.23	447.89	449.46	449.89	449.09	447.46	447.62
CAL YR 1977	MEAN 448.33		MAX 450.65	MIN 446.45								
WTR YR 1978	MEAN 448.15		MAX 450.51	MIN 445.79								

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA

LOCATION.--Lat 34°17'44", long 114°08'22", in NW¼NW¼ sec.3, T.2 N., R.27 E., San Bernardino meridian, in California, San Bernardino County, Hydrologic Unit 15030104, on north end of powerplant at Parker Dam, 13 mi (21 km) northeast of Parker, Ariz., and 14 mi (23 km) upstream from Headgate Rock Dam.

DRAINAGE AREA.--182,700 mi² (473,200 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to September 1934 (gage heights and fragmentary discharge records), October 1934 to current year. Prior to October 1937, published as "near Parker, Ariz."

REVISED RECORDS.--WSP 1313: 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 300.54 ft (91.605 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1967, at site 3.8 mi (6.1 km) downstream at datum 346.23 ft (105.531 m) N.G.V.D.

REMARKS.--Records excellent. Flow regulated by Lake Mead since Feb. 1, 1935, by Lake Mohave since Jan. 17, 1950, and by Lake Havasu since July 1, 1938. Many diversions above station. For record of diversion to Colorado River aqueduct and return flows, see record for Colorado River aqueduct near Parker Dam, elsewhere in this report.

AVERAGE DISCHARGE.--44 years, 11,950 ft³/s (338.4 m³/s), 8,658,000 acre-ft/yr (10,700 hm³/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,400 ft³/s (1,200 m³/s) Feb. 8, 1937; no flow at Parker Dam for parts of several days in 1942 when gates in dam were closed; minimum daily discharge, 920 ft³/s (26.1 m³/s) Jan. 11, 1978.
An unregulated discharge of probably less than 1,350 ft³/s (38.2 m³/s) occurred Aug. 18, 1934 (lowest unregulated discharge since 1917 and probably since a much earlier date).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,300 ft³/s (547 m³/s) Mar. 30; maximum gage height, 72.01 ft (21.949 m) June 9, 10; minimum daily, 920 ft³/s (26.1 m³/s) Jan. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6320	5300	5650	1930	1890	3970	15300	10800	9900	14400	14200	10100
2	6650	4900	6140	1940	1850	4030	16100	10900	11600	15300	14300	10600
3	6590	3950	6190	1950	2780	4010	15500	9700	12000	15000	13700	10600
4	6450	4760	6490	1990	3450	3990	14700	9020	11900	14500	14300	9280
5	6360	5100	5770	1990	2990	3990	13300	11000	12300	13300	15400	9240
6	2900	6020	5800	1990	5190	6590	12500	11200	11400	13100	15600	10200
7	2920	5900	5200	1950	4170	7480	14400	11500	10600	14500	15100	9660
8	4760	5860	5020	1950	4430	8800	14500	11000	9660	15500	15000	11200
9	4700	4750	5400	1610	4230	9090	15300	9990	11600	15300	14600	11700
10	5230	4350	5950	1200	5280	11000	14700	9240	12500	15300	13600	11300
11	4920	5800	5850	920	6480	11900	14200	9260	12900	15300	14600	11200
12	4830	5910	6180	1200	8570	11800	13200	10200	12700	14600	14600	9850
13	4340	5640	6340	1890	5840	10700	12700	11300	12500	13200	13300	9840
14	5700	5240	6170	1890	7570	12000	14800	12300	12600	14900	13400	8510
15	6500	4350	5100	1890	7730	12500	15300	12300	11600	14700	13400	9670
16	6500	4050	6500	1890	6440	12400	16100	11500	13300	15500	12400	9650
17	6690	3890	6710	1890	9750	14500	15500	11800	13000	15300	11500	9440
18	6760	5510	6790	1890	10000	14600	15700	11000	14300	15300	11900	9480
19	6280	6380	6200	1890	9990	14500	15100	12400	14800	15200	12600	9410
20	4850	5940	5240	1890	10500	14600	13800	12800	14100	14200	12800	8380
21	6550	5210	3600	1890	10700	14800	15000	12500	12800	16000	12500	7420
22	6180	5320	1920	1890	10400	13600	15600	12100	11600	15700	11700	8490
23	6120	3880	4960	1890	10400	13500	15500	10400	14000	16400	11100	10300
24	5940	2860	5830	4930	12100	13300	15100	9670	15200	14600	10600	10200
25	5670	3430	7000	1890	12300	13400	13200	9050	15100	14200	12000	10100
26	5440	3220	3800	3510	10600	13900	11900	10000	14800	13500	11700	6940
27	5080	3450	1900	3950	9530	14400	11500	11600	14300	12400	11800	9160
28	5790	3910	1930	4390	5370	14900	12800	11600	14000	14500	11400	7460
29	6120	4580	1980	4010	---	15100	12700	12000	13000	15100	10500	8070
30	6170	5770	1980	2980	---	14200	12100	12300	14500	15100	10300	8410
31	6050	---	1960	1850	---	15400	---	11800	---	14800	9120	---
TOTAL	175360	145230	155550	68920	200530	348950	428100	342230	384560	456700	399020	288860
MEAN	5657	4841	5018	2223	7162	11260	14270	11040	12820	14730	12870	9629
MAX	6760	6380	7000	4930	12300	15400	16100	12800	15200	16400	15600	11700
MIN	2900	2860	1900	920	1850	3970	11500	9020	9660	12400	9120	7420
AC-FT	347800	288100	308500	136700	397800	692100	849100	678800	762800	905900	791500	573000
CAL YR 1977 TOTAL	3383630			MEAN 9270	MAX 17200	MIN 1890	AC-FT 6711000					
WTR YR 1978 TOTAL	3394010			MEAN 9249	MAX 16400	MIN 920	AC-FT 6732000					

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1963 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1954 to August 1970.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHQS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	CULI- FORM, FECAL, 0.7 UM-MF (CULS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)
OCT										
03...	0730	--	1070	--	23.5	--	--	--	--	--
06...	1135	4610	1080	7.7	22.5	2	5.6	1	330	200
11...	0730	--	1070	--	23.0	--	--	--	--	--
17...	0730	--	1070	--	23.5	--	--	--	--	--
25...	0730	--	1070	--	22.0	--	--	--	--	--
31...	0630	--	1080	--	20.0	--	--	--	--	--
NOV										
07...	1215	4700	1070	7.8	20.5	3	6.7	1	330	200
07...	1325	--	1070	--	19.5	--	--	--	--	--
14...	1000	--	1070	--	18.5	--	--	--	--	--
21...	1000	--	1080	--	17.0	--	--	--	--	--
28...	0730	--	1080	--	16.0	--	--	--	--	--
DEC										
05...	0800	--	1090	--	--	--	--	--	--	--
05...	1230	4670	1080	7.8	15.5	2	9.2	1	330	200
12...	0730	--	1090	--	15.0	--	--	--	--	--
19...	0730	--	1090	--	14.5	--	--	--	--	--
27...	1230	--	1110	--	13.5	--	--	--	--	--
JAN										
03...	0730	--	1090	--	13.5	--	--	--	--	--
09...	0730	--	1090	--	13.5	--	--	--	--	--
09...	1230	1290	1100	7.1	13.0	3	10.5	38	350	230
16...	0730	--	1090	--	12.0	--	--	--	--	--
23...	0800	--	1100	--	12.0	--	--	--	--	--
30...	0730	--	1090	--	12.0	--	--	--	--	--
FEB										
06...	0830	--	1090	--	13.0	--	--	--	--	--
06...	1240	1950	1090	7.9	14.0	2	10.2	1	340	210
13...	0730	--	1090	--	13.0	--	--	--	--	--
21...	0600	--	1090	--	13.0	--	--	--	--	--
27...	0730	--	1090	--	13.5	--	--	--	--	--
MAR										
06...	0730	--	1080	--	13.5	--	--	--	--	--
06...	1210	4900	1080	7.8	15.5	10	8.0	42	340	210
13...	0800	--	1080	--	14.5	--	--	--	--	--
20...	0800	--	1070	--	16.5	--	--	--	--	--
27...	0800	--	1080	--	18.0	--	--	--	--	--
APR										
03...	0800	--	1080	--	18.0	--	--	--	--	--
10...	0935	--	1070	--	18.0	--	--	--	--	--
10...	1245	18400	1080	6.3	18.5	3	9.8	1	310	180
17...	0730	--	1080	--	18.5	--	--	--	--	--
24...	0600	--	1080	--	19.0	--	--	--	--	--
MAY										
01...	0730	--	1080	--	19.0	--	--	--	--	--
08...	0800	--	1080	--	20.0	--	--	--	--	--
08...	1255	14300	1080	8.0	20.0	2	7.8	1	330	210
15...	0800	--	1080	--	--	--	--	--	--	--
22...	0800	--	1090	--	21.0	--	--	--	--	--
30...	0800	--	1090	--	22.0	--	--	--	--	--
JUN										
05...	0800	--	1090	--	22.0	--	--	--	--	--
12...	0800	--	1080	--	23.0	--	--	--	--	--
12...	1310	19300	1090	7.8	23.0	2	7.0	1	330	200
19...	0800	--	1080	--	24.5	--	--	--	--	--
26...	0800	--	1080	--	23.5	--	--	--	--	--
JUL										
03...	1200	--	1080	--	22.0	--	--	--	--	--
10...	0800	--	1080	--	24.0	--	--	--	--	--
10...	1215	18000	1080	7.9	23.5	2	7.2	1	320	200
17...	0945	--	1080	--	25.0	--	--	--	--	--
24...	0745	--	1080	--	24.5	--	--	--	--	--
31...	0800	--	1080	--	25.0	--	--	--	--	--
AUG										
07...	0730	--	1080	--	24.5	--	--	--	--	--
07...	1245	18200	1070	8.1	25.5	2	6.2	2	310	190
14...	0800	--	1080	--	25.0	--	--	--	--	--
21...	0745	--	1080	--	25.5	--	--	--	--	--
28...	0800	--	1080	--	25.0	--	--	--	--	--
SEP										
05...	0730	--	1080	--	24.0	--	--	--	--	--
11...	0800	--	1080	--	24.0	--	--	--	--	--
11...	1145	13600	1080	7.8	25.0	2	6.1	2	330	200
18...	0730	--	1080	--	24.0	--	--	--	--	--
25...	0740	--	1090	--	22.0	--	--	--	--	--

INSTRUMENTATION.--Water temperature recorder from February 1954 to August 1970.

REMARKS.--Prior to October 1968, published as 09428000.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT										
03...	--	--	--	--	--	--	--	--	--	--
06...	78	32	100	2.4	4.8	150	0	310	88	.3
11...	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
NOV										
07...	79	31	95	2.3	5.1	150	0	290	89	.4
07...	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
DEC										
05...	--	--	--	--	--	--	--	--	--	--
05...	81	32	110	2.6	5.1	160	0	310	91	.2
12...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
JAN										
03...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	86	32	100	2.3	5.1	140	0	310	92	.4
16...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
FEB										
06...	--	--	--	--	--	--	--	--	--	--
06...	82	34	100	2.3	5.0	160	0	290	92	.1
13...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
MAR										
06...	--	--	--	--	--	--	--	--	--	--
06...	86	30	100	2.4	4.8	160	0	270	90	.
13...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	74	30	110	2.7	4.8	160	0	290	90	.
17...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	86	29	99	2.4	5.5	150	0	290	92	.
15...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
JUN										
05...	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
12...	81	31	100	2.4	5.5	160	0	280	87	.
19...	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--
JUL										
03...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	80	30	100	2.4	4.8	150	0	290	92	.
17...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	--	--	--	--	--	--	--	--	--	--
07...	76	29	94	2.3	5.0	150	0	280	90	.
14...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
SEP										
05...	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
11...	83	29	100	2.4	4.9	150	0	290	95	.
18...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT										
03...	--	676	--	.92	--	--	--	--	--	--
06...	8.8	693	696	.94	.09	.07	.34	.43	.01	.00
11...	--	680	--	.92	--	--	--	--	--	--
17...	--	680	--	.92	--	--	--	--	--	--
25...	--	682	--	.93	--	--	--	--	--	--
31...	--	690	--	.94	--	--	--	--	--	--
NOV										
07...	9.4	710	674	.97	.09	.12	.39	.48	.03	.01
07...	--	680	--	.92	--	--	--	--	--	--
14...	--	682	--	.93	--	--	--	--	--	--
21...	--	692	--	.94	--	--	--	--	--	--
28...	--	690	--	.94	--	--	--	--	--	--
DEC										
05...	--	698	--	.95	--	--	--	--	--	--
05...	8.9	700	718	.95	.11	.09	.33	.44	.00	.00
12...	--	700	--	.95	--	--	--	--	--	--
19...	--	698	--	.95	--	--	--	--	--	--
27...	--	710	--	.97	--	--	--	--	--	--
JAN										
03...	--	698	--	.95	--	--	--	--	--	--
09...	--	698	--	.95	--	--	--	--	--	--
09...	9.6	733	713	1.00	.19	.18	.70	.89	.03	.03
16...	--	700	--	.95	--	--	--	--	--	--
23...	--	702	--	.95	--	--	--	--	--	--
30...	--	698	--	.95	--	--	--	--	--	--
FEB										
06...	--	698	--	.95	--	--	--	--	--	--
06...	9.3	719	693	.98	.17	.18	.29	.46	.01	.00
13...	--	696	--	.95	--	--	--	--	--	--
21...	--	692	--	.94	--	--	--	--	--	--
27...	--	696	--	.95	--	--	--	--	--	--
MAR										
06...	--	694	--	.94	--	--	--	--	--	--
06...	11	711	672	.97	.15	.15	.36	.51	.05	.02
13...	--	690	--	.94	--	--	--	--	--	--
20...	--	684	--	.93	--	--	--	--	--	--
27...	--	690	--	.94	--	--	--	--	--	--
APR										
03...	--	690	--	.94	--	--	--	--	--	--
10...	--	678	--	.92	--	--	--	--	--	--
10...	9.0	700	688	.95	.08	.07	.48	.56	.01	.01
17...	--	690	--	.94	--	--	--	--	--	--
24...	--	692	--	.94	--	--	--	--	--	--
MAY										
01...	--	688	--	.94	--	--	--	--	--	--
08...	--	688	--	.94	--	--	--	--	--	--
08...	6.1	720	683	.98	.10	.14	.58	.68	.03	.01
15...	--	690	--	.94	--	--	--	--	--	--
22...	--	698	--	.95	--	--	--	--	--	--
30...	--	694	--	.94	--	--	--	--	--	--
JUN										
05...	--	688	--	.94	--	--	--	--	--	--
12...	--	684	--	.93	--	--	--	--	--	--
12...	8.9	696	673	.95	.12	.14	.58	.70	.01	.00
19...	--	684	--	.93	--	--	--	--	--	--
26...	--	690	--	.94	--	--	--	--	--	--
JUL										
03...	--	684	--	.93	--	--	--	--	--	--
10...	--	684	--	.93	--	--	--	--	--	--
10...	8.7	704	680	.96	.10	.12	.36	.46	.00	.00
17...	--	680	--	.92	--	--	--	--	--	--
24...	--	682	--	.93	--	--	--	--	--	--
31...	--	682	--	.93	--	--	--	--	--	--
AUG										
07...	--	682	--	.93	--	--	--	--	--	--
07...	8.6	707	658	.96	.08	.13	.31	.39	.00	.02
14...	--	690	--	.94	--	--	--	--	--	--
21...	--	686	--	.93	--	--	--	--	--	--
28...	--	686	--	.93	--	--	--	--	--	--
SEP										
05...	--	682	--	.93	--	--	--	--	--	--
11...	--	688	--	.94	--	--	--	--	--	--
11...	9.0	718	686	.98	.07	.08	.42	.49	.02	.00
18...	--	688	--	.94	--	--	--	--	--	--
25...	--	692	--	.94	--	--	--	--	--	--

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECUV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECUV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECUV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECUV- ERABLE (UG/L AS ZN)	ARSENIC TOTAL (UG/L AS AS)
UCT 06...	10	<100	30	0	.0	1	40	4
NOV 07...	20	19	20	8	.0	4	20	4
DEC 05...	30	11	0	0	.0	2	20	3
JAN 09...	20	5	20	10	.0	4	10	2
FEB 06...	10	5	10	10	.1	5	10	2
MAR 06...	10	66	20	0	.0	4	70	2
APR 10...	0	33	10	0	.0	0	10	3
MAY 08...	20	13	30	20	.1	2	20	3
JUN 12...	10	8	30	10	.0	0	20	4
JUL 10...	30	4	20	10	.0	0	10	2
AUG 07...	<10	5	20	9	.1	2	20	3
SEP 11...	10	0	30	10	.1	2	10	1

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)
OCT 06...	160	130	<10	20	<10	80	.00	3
NOV 07...	160	140	2	12	2	90	.00	1
DEC 05...	210	150	1	0	4	130	.00	0
JAN 09...	180	150	0	0	17	70	.00	3
FEB 06...	180	140	3	0	1	70	.00	2
MAR 06...	180	140	3	10	22	390	.00	3
APR 10...	170	130	3	10	9	140	.00	2
MAY 08...	250	140	2	0	6	190	.00	0
JUN 12...	200	140	2	5	5	110	.00	0
JUL 10...	200	130	1	10	7	160	.00	0
AUG 07...	190	140	0	0	6	150	.00	0
SEP 11...	190	140	0	10	4	160	.00	0

< Actual value is known to be less than value shown.

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, AZ

LOCATION.--Two gages, 1st 34°10'04", long 114°16'33", in SE¼NW¼ sec.31, T.10 N., R.19 W., Gila and Salt River meridian, Yuma County. Hydrologic Unit 15030104. Forebay gage, on left wall of canal intake, 90 ft (30 m) upstream from diversion gates at Arizona end of Headgate Rock Dam. Tailrace gage, on right bank of canal 250 ft (80 m) downstream from gates. Both gages are on Colorado River Indian Reservation 1.7 mi (2.7 km) northeast of Parker and 14 mi (23 km) downstream from Parker Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1915 to current year (prior to January 1937, fiscal year diversions only; January 1937 to September 1954, monthly diversions only).

REVISED RECORDS.--WSP 1513: 1915-36.

GAGE.--Water-stage recorders above and below intake gates to record head and recorder to show gate openings (since Oct. 1, 1972), with supplementary tape gages read daily and at time of each gate change (prior to Oct. 1, 1972, tape gages only). Datum of gages is 350.00 ft (106.680 m), datum in use locally, or 350.51 ft (106.835 m) National Geodetic Vertical Datum of 1929. Normal operating level of forebay is 364.3 ft (111.04 m); prior to July 9, 1962, normal operating level of forebay was 362.9 ft (110.61 m), datum in use locally. Prior to October 1954, discharge computed by various methods as described in WSP 1513.

REMARKS.--Records excellent. Daily diversions computed on basis of head on intake gates and gate openings. Records show water diverted to project and surface return flows to Colorado River through two wasteways and two drains; three of these are equipped with water-stage recorders. Water used for irrigation of 72,166 acres (292 km²) during 1977 calendar year on east side of Colorado River between Parker and Ehrenberg.

COOPERATION.--Log of canal intake gate opening (supplementary record) furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily, 1,650 ft³/s (46.7 m³/s) Aug. 6, 1977; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	539	518	453	232	.00	398	1430	875	1330	1270	1480	1250
2	557	516	482	340	62	297	1290	823	1350	1090	1530	1180
3	528	554	422	510	63	207	1250	812	1350	1150	1570	1120
4	591	553	305	568	.00	179	1290	767	1230	1170	1540	1100
5	635	526	286	466	.00	179	1310	960	1090	1300	1550	1250
6	533	439	322	243	.00	212	1280	970	1150	1390	1530	1310
7	447	411	312	.00	82	282	1170	948	1180	1420	1530	1270
8	471	411	291	.00	190	370	1110	940	1160	1360	1500	1300
9	370	390	349	.00	153	448	1140	908	1200	1380	1440	1240
10	431	374	342	.00	85	480	1160	934	1230	1390	1480	1160
11	562	376	291	.00	.00	519	1090	1120	1270	1450	1510	1110
12	566	348	324	.00	63	538	1060	1160	1300	1470	1500	1120
13	554	314	395	.00	94	506	1190	1180	1330	1540	1440	1080
14	544	313	421	.00	94	578	1250	1140	1350	1570	1360	1010
15	545	373	464	.00	152	748	1250	1150	1450	1560	1330	927
16	494	540	445	.00	179	795	1230	967	1560	1550	1290	790
17	466	566	324	.00	215	765	1240	1090	1550	1570	1280	687
18	537	511	245	.00	289	768	1240	1120	1510	1590	1310	722
19	568	479	281	.00	342	777	1230	1100	1450	1580	1290	763
20	578	489	356	.00	384	861	1310	1070	1430	1580	1230	928
21	638	460	429	.00	380	947	1380	1030	1490	1570	1190	950
22	609	406	435	.00	464	1060	1260	1060	1450	1570	1330	911
23	493	433	400	.00	509	1150	1210	1090	1380	1530	1380	808
24	490	366	312	.00	546	1140	1200	1180	1350	1440	1410	705
25	531	322	219	140	545	1040	1080	1170	1310	1340	1440	701
26	530	282	190	335	539	1040	1050	1080	1300	1320	1430	742
27	516	279	192	144	515	1070	1050	1080	1310	1310	1350	854
28	549	314	270	93	406	1210	1010	1090	1420	1270	1310	791
29	515	352	408	93	---	1340	969	1100	1340	1230	1380	679
30	437	421	304	95	---	1370	906	1180	1240	1210	1400	630
31	451	---	218	36	---	1410	---	1280	---	1280	1350	---
TOTAL	16275	12636	10487	3295.00	6351.00	22684	35635	32374	40060	43430	43660	29088
MEAN	525	421	338	106	227	732	1188	1044	1335	1401	1408	970
MAX	638	566	482	568	546	1410	1430	1280	1560	1590	1570	1310
MIN	370	279	190	.00	.00	179	906	767	1090	1090	1190	630
AC-FT	32280	25060	20800	6540	12600	44990	70680	64210	79460	86140	86600	57700
(†)	21930	19830	18050	13840	10750	15230	24800	27520	27410	29450	29570	26490
CAL YR 1977 TOTAL	300058.00			MEAN 822	MAX 1650	MIN .00	AC-FT 595200		†273800			
WTR YR 1978 TOTAL	295975.00			MEAN 811	MAX 1590	MIN .00	AC-FT 587100		†264900			

† Return surface flow, in acre-feet, to Colorado River.

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL NEAR PARKER, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CALCS)	HARD- NESS, NONCAR- BONATE (MG/L CALCS)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TIUM RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
03...	1015	579	1080	7.5	22.0	320	200	78	30	110	2.7	5.0
11...	1000	--	1090	--	21.0	--	--	--	--	--	--	--
18...	1150	--	1080	--	22.0	--	--	--	--	--	--	--
25...	1000	--	1080	--	21.0	--	--	--	--	--	--	--
31...	0950	--	1080	--	21.5	--	--	--	--	--	--	--
NOV												
07...	1250	458	1080	7.7	20.0	330	210	83	30	110	2.6	5.0
14...	1040	--	1140	--	19.0	--	--	--	--	--	--	--
21...	1035	--	1080	--	18.5	--	--	--	--	--	--	--
28...	0955	--	1100	--	18.0	--	--	--	--	--	--	--
DEC												
05...	1250	286	1090	7.8	18.0	340	220	83	33	100	2.4	5.0
12...	1300	--	1090	--	15.0	--	--	--	--	--	--	--
19...	1140	--	1100	--	15.0	--	--	--	--	--	--	--
27...	0845	.00	--	--	--	--	--	--	--	--	--	--
JAN												
03...	1300	579	1090	7.7	14.0	340	200	83	31	110	2.6	4.9
09...	0900	--	1100	--	11.0	--	--	--	--	--	--	--
16...	1220	--	1190	--	14.5	--	--	--	--	--	--	--
23...	1320	--	1070	--	12.0	--	--	--	--	--	--	--
30...	1125	--	1100	--	14.0	--	--	--	--	--	--	--
FEB												
06...	0940	.00	1090	7.9	15.0	340	200	83	31	110	2.6	4.7
13...	0800	--	1100	--	16.5	--	--	--	--	--	--	--
21...	0900	--	1090	--	14.5	--	--	--	--	--	--	--
27...	1220	--	1100	--	15.0	--	--	--	--	--	--	--
MAR												
06...	1100	231	1090	7.9	15.0	320	190	77	31	110	2.7	4.8
13...	1240	--	1130	--	14.5	--	--	--	--	--	--	--
20...	1120	--	1080	--	16.5	--	--	--	--	--	--	--
27...	1300	--	1090	--	15.5	--	--	--	--	--	--	--
APR												
03...	1310	1270	1080	7.9	19.0	330	200	82	31	100	2.4	5.0
10...	1045	--	1060	--	16.0	--	--	--	--	--	--	--
17...	1000	--	1080	--	17.0	--	--	--	--	--	--	--
24...	1030	--	1130	--	17.0	--	--	--	--	--	--	--
MAY												
01...	1145	854	1090	7.7	19.5	330	190	81	31	100	2.4	5.1
08...	1000	--	1090	--	20.0	--	--	--	--	--	--	--
15...	1000	--	1090	--	--	--	--	--	--	--	--	--
22...	0850	--	1100	--	20.0	--	--	--	--	--	--	--
30...	0850	--	1100	--	22.0	--	--	--	--	--	--	--
JUN												
05...	0930	925	1090	7.8	21.0	340	200	85	31	100	2.4	5.1
12...	0920	--	1150	--	--	--	--	--	--	--	--	--
19...	0900	--	1090	--	23.5	--	--	--	--	--	--	--
26...	1010	--	1080	--	24.0	--	--	--	--	--	--	--
JUL												
03...	1240	1150	1090	7.9	24.5	330	210	85	29	100	2.4	4.8
10...	1000	--	1080	--	24.0	--	--	--	--	--	--	--
17...	1010	--	1080	--	25.5	--	--	--	--	--	--	--
24...	1325	--	1080	--	26.5	--	--	--	--	--	--	--
31...	0930	--	1180	--	20.0	--	--	--	--	--	--	--
AUG												
07...	1225	1500	1080	7.7	26.5	320	200	80	30	110	2.7	4.9
14...	0930	--	1080	--	25.5	--	--	--	--	--	--	--
21...	0910	--	1080	--	25.5	--	--	--	--	--	--	--
28...	0900	--	1090	--	25.5	--	--	--	--	--	--	--
SEP												
05...	1310	1520	1090	7.7	24.5	330	190	81	30	110	2.7	4.9
11...	1325	--	1090	--	24.0	--	--	--	--	--	--	--
18...	1315	--	1090	--	23.0	--	--	--	--	--	--	--
25...	1320	--	1090	--	23.5	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

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09428500 COLORADO RIVER INDIAN RESERVATION MAIN CANAL, NEAR PARKER, AZ--Continued

REMARKS.--No flow Jan. 7-24; Feb. 1, 4-6, 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED PER AC-FT	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
UCT												
03...	150	0	300	41	.3	8.8	684	647	.93	--	140	20
11...	--	--	--	--	--	--	694	--	.94	--	--	--
16...	--	--	--	--	--	--	690	--	.94	--	--	--
25...	--	--	--	--	--	--	688	--	.94	--	--	--
31...	--	--	--	--	--	--	688	--	.94	--	--	--
NOV												
07...	150	0	310	45	.3	8.6	690	716	.94	--	140	10
14...	--	--	--	--	--	--	730	--	.94	--	--	--
21...	--	--	--	--	--	--	690	--	.94	--	--	--
28...	--	--	--	--	--	--	702	--	.95	--	--	--
DEC												
05...	150	0	310	41	.4	9.2	698	706	.95	--	150	20
12...	--	--	--	--	--	--	698	--	.95	--	--	--
19...	--	--	--	--	--	--	706	--	.96	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	160	0	310	43	.4	8.8	700	720	.95	--	150	20
09...	--	--	--	--	--	--	702	--	.95	--	--	--
16...	--	--	--	--	--	--	762	--	1.04	--	--	--
23...	--	--	--	--	--	--	684	--	.93	--	--	--
30...	--	--	--	--	--	--	706	--	.96	--	--	--
FEB												
06...	160	0	290	42	.3	9.2	700	649	.95	--	140	0
13...	--	--	--	--	--	--	706	--	.96	--	--	--
21...	--	--	--	--	--	--	694	--	.94	--	--	--
27...	--	--	--	--	--	--	702	--	.95	--	--	--
MAR												
06...	160	0	280	40	.3	7.8	700	680	.95	--	140	10
13...	--	--	--	--	--	--	722	--	.98	--	--	--
20...	--	--	--	--	--	--	690	--	.94	--	--	--
27...	--	--	--	--	--	--	698	--	.95	--	--	--
APR												
03...	160	0	280	49	.4	9.2	690	676	.94	--	150	0
10...	--	--	--	--	--	--	672	--	.91	--	--	--
17...	--	--	--	--	--	--	692	--	.94	--	--	--
24...	--	--	--	--	--	--	724	--	.98	--	--	--
MAY												
01...	170	0	300	40	.4	9.0	694	700	.94	--	140	10
08...	--	--	--	--	--	--	698	--	.95	--	--	--
15...	--	--	--	--	--	--	698	--	.95	--	--	--
22...	--	--	--	--	--	--	702	--	.95	--	--	--
30...	--	--	--	--	--	--	698	--	.95	--	--	--
JUN												
05...	170	0	280	46	.4	9.4	692	641	.94	--	140	20
12...	--	--	--	--	--	--	728	--	.99	--	--	--
19...	--	--	--	--	--	--	690	--	.94	--	--	--
26...	--	--	--	--	--	--	692	--	.94	--	--	--
JUL												
03...	150	0	280	41	.3	8.9	692	674	.94	.15	150	20
10...	--	--	--	--	--	--	686	--	.93	--	--	--
17...	--	--	--	--	--	--	682	--	.93	--	--	--
24...	--	--	--	--	--	--	680	--	.92	--	--	--
31...	--	--	--	--	--	--	748	--	1.02	--	--	--
AUG												
07...	150	0	290	42	.3	9.0	680	691	.92	.20	150	10
14...	--	--	--	--	--	--	692	--	.94	--	--	--
21...	--	--	--	--	--	--	688	--	.94	--	--	--
28...	--	--	--	--	--	--	690	--	.94	--	--	--
SEP												
05...	160	0	290	46	.5	8.7	688	700	.94	.01	150	10
11...	--	--	--	--	--	--	688	--	.94	--	--	--
18...	--	--	--	--	--	--	696	--	.95	--	--	--
25...	--	--	--	--	--	--	696	--	.95	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09428510 COLORADO RIVER INDIAN RESERVATION POSTON WASTEWAY NEAR POSTON, AZ

LOCATION.--Lat 33°59'58", long 114°26'41", in SW¼SE¼ sec.28, T.8 N., R.21 W., Yuma County, Hydrologic Unit 15030104, at gaging station 0.8 mi (1.3 km) upstream from mouth, 2.5 mi (4.0 km) west of Poston, and 14 mi (23 km) southwest of Parker.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT												
03...	1040	1940	7.6	23.0	580	340	150	51	220	4.0	5.5	300
11...	0910	1890	--	21.0	--	--	--	--	--	--	--	--
17...	1215	1820	--	23.0	--	--	--	--	--	--	--	--
25...	1025	1940	--	21.5	--	--	--	--	--	--	--	--
31...	1025	1890	--	22.0	--	--	--	--	--	--	--	--
NOV												
07...	1225	1960	7.8	21.0	610	360	160	52	230	4.0	6.0	310
14...	0925	1910	--	18.0	--	--	--	--	--	--	--	--
21...	0915	1550	--	19.5	--	--	--	--	--	--	--	--
28...	0830	1830	--	17.0	--	--	--	--	--	--	--	--
DEC												
05...	1320	1830	7.8	18.5	560	320	140	50	200	3.7	5.5	290
12...	1325	1950	--	16.0	--	--	--	--	--	--	--	--
19...	1300	1740	--	15.0	--	--	--	--	--	--	--	--
27...	1330	1930	--	15.5	--	--	--	--	--	--	--	--
JAN												
03...	1340	1890	7.4	14.5	580	340	150	50	210	3.8	5.5	290
09...	0820	2350	--	15.5	--	--	--	--	--	--	--	--
16...	1100	2410	--	15.0	--	--	--	--	--	--	--	--
23...	1340	2150	--	14.5	--	--	--	--	--	--	--	--
30...	1200	1740	--	13.5	--	--	--	--	--	--	--	--
FEB												
06...	1030	2160	7.9	15.5	670	400	170	60	250	4.2	5.6	330
13...	0845	1960	--	16.5	--	--	--	--	--	--	--	--
21...	1010	2190	--	14.5	--	--	--	--	--	--	--	--
27...	1145	1910	--	16.5	--	--	--	--	--	--	--	--
MAR												
06...	1200	2000	7.8	14.5	570	320	140	53	230	4.2	5.6	300
13...	1300	1890	--	16.5	--	--	--	--	--	--	--	--
20...	1045	1750	--	19.0	--	--	--	--	--	--	--	--
27...	1325	1720	--	17.0	--	--	--	--	--	--	--	--
APR												
03...	1230	1470	7.8	19.0	440	250	110	39	150	3.1	5.6	220
10...	0900	1630	--	18.5	--	--	--	--	--	--	--	--
17...	1035	1610	--	18.5	--	--	--	--	--	--	--	--
24...	0910	1440	--	19.5	--	--	--	--	--	--	--	--
MAY												
01...	1125	1800	7.6	20.0	550	320	140	48	200	3.7	5.8	280
08...	1030	1360	--	21.0	--	--	--	--	--	--	--	--
15...	1030	1390	--	21.5	--	--	--	--	--	--	--	--
22...	0815	1350	--	20.5	--	--	--	--	--	--	--	--
30...	0805	1870	--	22.0	--	--	--	--	--	--	--	--
JUN												
05...	1000	1370	7.9	20.5	430	260	110	37	140	2.9	5.5	200
12...	1000	1330	--	23.5	--	--	--	--	--	--	--	--
19...	0930	1240	--	23.5	--	--	--	--	--	--	--	--
26...	0830	1730	--	22.0	--	--	--	--	--	--	--	--
JUL												
03...	1320	1790	7.8	24.5	540	330	140	45	180	3.4	5.5	250
10...	1025	1730	--	25.0	--	--	--	--	--	--	--	--
17...	0830	1820	--	24.5	--	--	--	--	--	--	--	--
24...	1200	1530	--	25.0	--	--	--	--	--	--	--	--
31...	1125	1860	--	26.5	--	--	--	--	--	--	--	--
AUG												
07...	1050	1790	7.7	27.0	530	320	140	44	200	3.8	6.0	260
14...	0830	1440	--	25.0	--	--	--	--	--	--	--	--
21...	0830	1570	--	25.5	--	--	--	--	--	--	--	--
28...	0830	1660	--	23.5	--	--	--	--	--	--	--	--
SEP												
05...	1330	1780	8.0	--	510	300	130	44	200	3.9	5.5	250
11...	1220	1580	--	25.0	--	--	--	--	--	--	--	--
18...	1200	1920	--	23.5	--	--	--	--	--	--	--	--
25...	1340	1500	--	23.0	--	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

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09428510 COLORADO RIVER INDIAN RESERVATION POSTON WASTEWAY NEAR POSTON, AZ--Continued

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
UCT											
03...	0	520	190	.6	19	1330	1300	1.81	--	280	30
11...	--	--	--	--	--	1280	--	1.74	--	--	--
17...	--	--	--	--	--	1240	--	1.69	--	--	--
25...	--	--	--	--	--	1310	--	1.78	--	--	--
31...	--	--	--	--	--	1270	--	1.73	--	--	--
NOV											
07...	0	540	190	.6	21	1320	1350	1.80	--	290	30
14...	--	--	--	--	--	1290	--	1.75	--	--	--
21...	--	--	--	--	--	1030	--	1.40	--	--	--
28...	--	--	--	--	--	1250	--	1.70	--	--	--
DEC											
05...	0	520	170	.6	18	1250	1250	1.70	--	270	10
12...	--	--	--	--	--	1330	--	1.81	--	--	--
19...	--	--	--	--	--	1150	--	1.56	--	--	--
27...	--	--	--	--	--	1310	--	1.78	--	--	--
JAN											
03...	0	540	180	.6	19	1290	1300	1.75	--	270	10
09...	--	--	--	--	--	1610	--	2.19	--	--	--
16...	--	--	--	--	--	1590	--	2.16	--	--	--
23...	--	--	--	--	--	1450	--	1.97	--	--	--
30...	--	--	--	--	--	1170	--	1.59	--	--	--
FEB											
06...	0	590	220	.7	22	1460	1480	1.99	--	320	0
13...	--	--	--	--	--	1310	--	1.78	--	--	--
21...	--	--	--	--	--	1480	--	2.01	--	--	--
27...	--	--	--	--	--	1280	--	1.74	--	--	--
MAR											
06...	0	540	190	.7	16	1340	1320	1.82	--	300	10
13...	--	--	--	--	--	1250	--	1.70	--	--	--
20...	--	--	--	--	--	1200	--	1.63	--	--	--
27...	--	--	--	--	--	1160	--	1.58	--	--	--
APR											
03...	0	590	140	.7	13	970	957	1.32	--	200	10
10...	--	--	--	--	--	1100	--	1.50	--	--	--
17...	--	--	--	--	--	1070	--	1.46	--	--	--
24...	--	--	--	--	--	948	--	1.29	--	--	--
MAY											
01...	0	480	170	.6	17	1200	1200	1.63	--	280	20
08...	--	--	--	--	--	894	--	1.22	--	--	--
15...	--	--	--	--	--	914	--	1.24	--	--	--
22...	--	--	--	--	--	880	--	1.20	--	--	--
30...	--	--	--	--	--	1210	--	1.65	--	--	--
JUN											
05...	--	360	130	.4	13	898	895	1.22	--	200	0
12...	--	--	--	--	--	870	--	1.18	--	--	--
19...	--	--	--	--	--	786	--	1.07	--	--	--
26...	--	--	--	--	--	1160	--	1.58	--	--	--
JUL											
03...	0	490	170	.5	17	1200	1170	1.63	.08	250	20
10...	--	--	--	--	--	1150	--	1.56	--	--	--
17...	--	--	--	--	--	1200	--	1.63	--	--	--
24...	--	--	--	--	--	1000	--	1.36	--	--	--
31...	--	--	--	--	--	1220	--	1.66	--	--	--
AUG											
07...	0	490	170	.5	17	1180	1200	1.60	.59	270	10
14...	--	--	--	--	--	972	--	1.32	--	--	--
21...	--	--	--	--	--	1060	--	1.44	--	--	--
28...	--	--	--	--	--	1070	--	1.46	--	--	--
SEP											
05...	0	490	170	.7	18	1150	1180	1.56	.06	280	10
11...	--	--	--	--	--	1050	--	1.43	--	--	--
18...	--	--	--	--	--	1310	--	1.78	--	--	--
25...	--	--	--	--	--	976	--	1.33	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA

LOCATION.--Lat 33°43'55", long 114°30'40", in NW¼NE¼ sec.19, T.5 S., R.24 E., San Bernardino meridian, Riverside County, Hydrologic Unit 15030104, at canal intake structure on west side of Palo Verde diversion dam, 10 mi (16 km) northeast of Blythe and 44 mi (71 km) downstream from Headgate Rock Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1922 to December 1923, January 1925 to current year (prior to October 1950, monthly discharge only).

REVISED RECORD.--WSP 1213: 1946-48.

GAGE.--Recording gages above and below intakes to record head. Since May 18, 1964, recorder to show gate openings. Datum of gage is: Forebay gage, National Geodetic Vertical Datum of 1929; tailrace gage, 274.13 ft (83.555 m) NGVD. Aug. 7, 1950, to Nov. 30, 1952, water-stage recorder on tailrace and auxiliary recorder 0.5 mi (0.8 km) downstream and Dec. 1, 1952, to Oct. 28, 1957, recording gage above and below former intake structure 0.2 mi (0.3 km) upstream, at different datums.

REMARKS.--Records good. Daily diversions computed on basis of head on intake gates and gate openings. Records published herein represent flow diverted from Colorado River for irrigation of 92,121 acres (373 km²) during the 1977 calendar year. Return flows to Colorado River are measured by 11 wasteways and drains extending throughout the project; 5 of these are equipped with water stage recorder and Parshall flume, 3 are equipped with Sparling flowmeters. Return flows have not been subtracted; combined monthly return flows are given in table below.

AVERAGE DISCHARGE.--28 years (water years 1951-78), 1,209 ft³/s (34.24 m³/s), 875,900 acre-ft/yr (1,080 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,230 ft³/s (63.2 m³/s) July 20, 1977; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	794	781	970	667	546	891	1920	1550	1720	1790	1820	1380
2	687	878	1020	27	522	854	1810	1580	1780	1930	1940	1360
3	789	953	946	.00	549	712	1740	1580	1680	2000	1920	1220
4	827	983	795	.00	569	610	1800	1560	1700	2040	1850	1230
5	713	1090	719	.00	533	609	1800	1610	1650	2010	1880	1270
6	659	967	755	.00	599	676	1920	1630	1710	1960	1790	1390
7	770	929	717	.00	628	771	1980	1480	1800	2000	1550	1460
8	760	867	701	.00	617	877	1880	1390	1720	2040	1740	1420
9	677	889	675	242	653	1030	1730	1490	1710	2050	1660	1350
10	751	874	639	385	661	1180	1830	1650	1950	2030	1790	1300
11	742	912	665	348	712	1180	1800	1770	1900	2040	1830	1200
12	766	859	764	322	782	1120	1810	1810	1850	1970	1650	1300
13	859	762	792	315	865	1320	1910	1520	1900	1970	1500	1390
14	968	903	827	308	959	1360	1890	1340	1870	1990	1530	1350
15	860	812	736	305	904	1350	1770	1540	1930	2030	1470	1300
16	795	863	768	314	793	1350	1780	1630	1940	1960	1440	1160
17	1070	892	780	302	911	1410	1970	1740	2000	2000	1480	1090
18	1020	885	670	305	1010	1530	1920	1760	1730	2000	1490	1080
19	881	743	800	304	1020	1540	1870	1690	1730	2000	1440	1150
20	788	673	784	331	1120	1510	1870	1120	1770	2060	1380	1060
21	817	866	723	370	1200	1540	2000	1270	1810	2110	1470	1110
22	835	836	687	366	1340	1670	1920	1700	1850	2130	1440	1070
23	802	730	685	387	1340	1710	1570	1810	1830	2090	1450	993
24	771	668	657	437	1480	1750	1820	1760	1770	1910	1500	988
25	765	747	528	518	1500	1590	1760	1660	1680	1820	1550	1080
26	828	776	637	579	1310	1440	1880	1580	1730	1900	1450	1040
27	924	723	585	661	1230	1620	1840	1450	1750	2010	1340	1030
28	1040	783	608	689	1110	1680	1740	1280	1810	2020	1300	1210
29	1120	867	713	623	---	1870	1730	1370	1730	1950	1330	1290
30	866	921	680	628	---	1790	1640	1520	1780	1890	1330	1130
31	830	---	797	551	---	1790	---	1620	---	1910	1410	---
TOTAL	25774	25432	22823	10284.00	25463	40330	54900	48460	53780	61610	48720	36401
MEAN	831	848	736	332	909	1301	1830	1563	1793	1967	1572	1213
MAX	1120	1090	1020	689	1500	1870	2000	1810	2000	2130	1940	1460
MIN	659	668	528	.00	522	609	1570	1120	1650	1790	1300	988
AC-FT	51120	50440	45270	20400	50510	79990	108900	96120	106700	122200	96640	72200
(†)	38170	35610	37710	30350	27940	35540	40360	45200	42770	44030	47890	41060
CAL YR 1977 TOTAL	464983.00			MEAN 1274	MAX 2230	MIN 323		AC-FT 922300		† 487200		
WTR YR 1978 TOTAL	453977.00			MEAN 1244	MAX 2130	MIN .00		AC-FT 900500		† 466600		

† Return flows, in acre-feet, to Colorado River.

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1970 to current year.

REMARKS.--No flow Jan. 3-8.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHDS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO
OCT											
03...	1130	773	1100	7.7	21.0	330	200	80	31	110	2.6
11...	0730	--	1150	--	22.0	--	--	--	--	--	--
11...	0815	--	1150	--	23.0	--	--	--	--	--	--
17...	1310	--	1090	--	24.5	--	--	--	--	--	--
25...	1110	--	1150	--	21.0	--	--	--	--	--	--
31...	1115	--	1120	--	20.5	--	--	--	--	--	--
NOV											
07...	1125	1000	1140	7.7	19.0	350	210	87	31	120	2.8
14...	0830	--	1160	--	19.0	--	--	--	--	--	--
21...	0825	--	1150	--	18.5	--	--	--	--	--	--
28...	0740	--	1170	--	17.0	--	--	--	--	--	--
DEC											
05...	1405	728	1130	8.0	16.5	350	220	85	33	110	2.6
06...	0700	--	1210	--	14.0	--	--	--	--	--	--
12...	1100	--	1110	--	13.5	--	--	--	--	--	--
19...	1030	--	1160	--	14.5	--	--	--	--	--	--
27...	1110	--	1110	--	14.0	--	--	--	--	--	--
JAN											
09...	0930	433	1180	7.7	13.0	380	240	95	34	110	2.5
16...	1020	--	1170	--	13.5	--	--	--	--	--	--
23...	1130	--	1160	--	13.5	--	--	--	--	--	--
30...	1255	--	1110	--	14.0	--	--	--	--	--	--
31...	0700	--	1180	--	13.0	--	--	--	--	--	--
FEB											
06...	1130	676	1180	8.0	14.0	360	220	88	33	120	2.8
13...	0930	--	1090	--	13.5	--	--	--	--	--	--
21...	1110	--	1100	--	13.0	--	--	--	--	--	--
27...	1110	--	1100	--	14.0	--	--	--	--	--	--
MAR											
06...	1250	684	1130	8.0	14.0	340	200	81	33	110	2.6
13...	1400	--	1090	--	15.5	--	--	--	--	--	--
20...	0900	--	1090	--	16.5	--	--	--	--	--	--
27...	0930	--	1090	--	18.5	--	--	--	--	--	--
APR											
03...	1145	1750	1090	7.8	18.0	340	210	85	31	100	2.4
10...	0800	--	1090	--	17.0	--	--	--	--	--	--
17...	0750	--	1090	--	18.5	--	--	--	--	--	--
24...	0810	--	1090	--	18.5	--	--	--	--	--	--
MAY											
01...	1030	1500	1110	7.7	19.0	340	200	85	32	100	2.3
02...	0700	--	1100	--	19.0	--	--	--	--	--	--
08...	1135	--	1100	--	20.5	--	--	--	--	--	--
15...	1120	--	1100	--	22.0	--	--	--	--	--	--
22...	0730	--	1110	--	20.0	--	--	--	--	--	--
30...	0710	--	1110	--	23.5	--	--	--	--	--	--
JUN											
05...	1150	1760	1100	7.6	19.5	340	200	84	31	110	2.6
12...	1055	--	1100	--	24.0	--	--	--	--	--	--
19...	1030	--	1110	--	24.5	--	--	--	--	--	--
26...	0745	--	1110	--	24.5	--	--	--	--	--	--
27...	0730	--	1200	--	24.0	--	--	--	--	--	--
JUL											
03...	1420	2040	1100	7.9	25.5	330	180	83	30	100	2.4
10...	1115	--	1090	--	26.0	--	--	--	--	--	--
17...	0735	--	1090	--	25.5	--	--	--	--	--	--
24...	1110	--	1200	--	27.0	--	--	--	--	--	--
31...	1210	--	1080	--	28.0	--	--	--	--	--	--
AUG											
07...	0945	1590	1090	7.8	28.0	320	200	80	29	110	2.7
14...	0800	--	1090	--	25.5	--	--	--	--	--	--
21...	0735	--	1100	--	26.0	--	--	--	--	--	--
25...	0745	--	1100	--	24.5	--	--	--	--	--	--
SEP											
05...	1425	1340	1120	7.8	25.5	340	210	82	32	110	2.6
11...	1135	--	1100	--	24.5	--	--	--	--	--	--
18...	1405	--	1100	--	22.0	--	--	--	--	--	--
25...	1420	--	1100	--	23.5	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT											
03...	4.9	150	0	310	93	.4	8.9	704	712	.96	--
11...	--	--	--	--	--	--	--	736	--	1.00	--
17...	--	--	--	--	--	--	--	696	--	.95	--
25...	--	--	--	--	--	--	--	734	--	1.00	--
31...	--	--	--	--	--	--	--	714	--	.97	--
NOV											
07...	5.4	160	0	320	96	.4	9.7	732	749	1.00	--
14...	--	--	--	--	--	--	--	740	--	1.01	--
21...	--	--	--	--	--	--	--	738	--	1.00	--
28...	--	--	--	--	--	--	--	748	--	1.02	--
DEC											
05...	5.0	160	0	320	98	.4	8.8	722	739	.98	--
06...	5.2	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	708	--	.96	--
19...	--	--	--	--	--	--	--	736	--	1.00	--
27...	--	--	--	--	--	--	--	708	--	.96	--
JAN											
09...	5.0	170	0	330	100	.4	8.8	754	767	1.03	--
16...	--	--	--	--	--	--	--	752	--	1.02	--
23...	--	--	--	--	--	--	--	742	--	1.01	--
30...	--	--	--	--	--	--	--	708	--	.96	--
31...	5.1	--	--	--	--	--	--	--	--	--	--
FEB											
06...	4.7	170	0	300	110	.4	9.5	756	750	1.03	--
13...	--	--	--	--	--	--	--	698	--	.95	--
21...	--	--	--	--	--	--	--	704	--	.96	--
27...	--	--	--	--	--	--	--	706	--	.96	--
MAR											
06...	4.9	170	0	300	90	.3	7.7	724	711	.98	--
13...	--	--	--	--	--	--	--	698	--	.95	--
20...	--	--	--	--	--	--	--	696	--	.95	--
27...	--	--	--	--	--	--	--	700	--	.95	--
APR											
03...	5.0	160	0	290	91	.4	9.2	698	691	.95	--
10...	--	--	--	--	--	--	--	694	--	.94	--
17...	--	--	--	--	--	--	--	696	--	.95	--
24...	--	--	--	--	--	--	--	698	--	.95	--
MAY											
01...	5.2	170	0	310	93	.4	9.1	710	719	.97	--
02...	5.3	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	700	--	.95	--
15...	--	--	--	--	--	--	--	702	--	.95	--
22...	--	--	--	--	--	--	--	712	--	.97	--
30...	--	--	--	--	--	--	--	702	--	.95	--
JUN											
05...	5.4	170	0	280	96	.4	9.5	700	700	.95	--
12...	--	--	--	--	--	--	--	696	--	.95	--
19...	--	--	--	--	--	--	--	704	--	.96	--
26...	--	--	--	--	--	--	--	706	--	.96	--
27...	5.2	--	--	--	--	--	--	--	--	--	--
JUL											
03...	4.8	180	0	280	90	.3	9.0	696	686	.95	.09
10...	--	--	--	--	--	--	--	692	--	.94	--
17...	--	--	--	--	--	--	--	690	--	.94	--
24...	--	--	--	--	--	--	--	758	--	1.03	--
31...	--	--	--	--	--	--	--	684	--	.93	--
AUG											
07...	5.0	150	0	300	95	.3	9.0	692	703	.94	.23
14...	--	--	--	--	--	--	--	698	--	.95	--
21...	--	--	--	--	--	--	--	702	--	.95	--
25...	--	--	--	--	--	--	--	696	--	.95	--
SEP											
05...	4.9	160	0	300	100	.5	8.7	710	722	.97	1.0
11...	--	--	--	--	--	--	--	696	--	.95	--
18...	--	--	--	--	--	--	--	700	--	.95	--
25...	--	--	--	--	--	--	--	700	--	.95	--

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BORON, DIS- SOLVED (UG/L AS B)	COPPER, TOTAL RECUV- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	MERCURY TOTAL RECUV- ERABLE (UG/L AS HG)	ZINC, TOTAL RECUV- ERABLE (UG/L AS ZN)
OCT					
03...	140	--	20	--	--
11...	--	<10	--	.0	10
NOV					
07...	160	--	10	--	--
DEC					
05...	150	--	10	--	--
06...	--	8	--	.0	10
JAN					
09...	150	--	10	--	--
31...	--	9	--	.0	20
FEB					
06...	150	--	0	--	--
MAR					
06...	150	--	10	--	--
APR					
03...	150	--	0	--	--
MAY					
01...	140	--	10	--	--
02...	--	5	--	.0	20
JUN					
05...	140	--	40	--	--
27...	--	6	--	.0	20
JUL					
03...	160	--	20	--	--
AUG					
07...	150	--	10	--	--
SEP					
05...	160	--	10	--	--

< Actual value is known to be less than value shown.

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	ALURIN, TOTAL (UG/L)	ATHA- ZINE, TOTAL (UG/L)	CHLUR- DANE, TOTAL (UG/L)	DUD, TOTAL (UG/L)	UDE, TOTAL (UG/L)	DUT, TOTAL (UG/L)
OCT 11...	0730	.0	.00	.00	--	.0	.00	.00	.00
DEC 06...	0700	.0	.00	.00	.00	.0	.00	.00	.00
JAN 31...	0700	.0	.00	.00	.00	.0	.00	.00	.00
MAY 02...	0700	.0	.00	.00	.00	.0	.00	.00	.00
JUN 27...	0730	.0	.00	.00	.00	.0	.00	.00	.00

DATE	D1- AZINON, TOTAL (UG/L)	UI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENURIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPIA- CHLUR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)
OCT 11...	.01	.00	.00	.00	.00	.00	.00	.00	.00
DEC 06...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN 31...	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAY 02...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUN 27...	.00	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL THI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TUX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
UCT 11...	.00	.00	.00	0	.00	.00	.00	.00
DEC 06...	.00	.00	.00	0	.00	.00	.00	.00
JAN 31...	.00	.00	.00	0	.00	.00	.00	.00
MAY 02...	.00	.00	.00	0	.00	.00	.00	.00
JUN 27...	.00	.00	.00	0	.00	.00	.00	.00

COLORADO RIVER MAIN STEM

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09429010 COLORADO RIVER AT PALO VERDE DAM, AZ-CA

LOCATION.--Lat 33°43'55", long 114°30'40", in NW¼NE¼ sec.19, T.5 S., R.24 E., San Bernardino meridian, in California, Riverside County, Hydrologic Unit 15030104, on west side of Palo Verde Diversion Dam, 10 mi (16 km) northeast of Blythe, Calif., and 44 mi (71 km) downstream from Headgate Rock Dam.

DRAINAGE AREA.--186,200 mi² (482,300 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--April 1969 to current year. If records (available in files of Tucson District office) for the two Colorado River Indian Reservation drains entering below Palo Verde Dam are added to records for this station, records equivalent to those published 1956-69 as "Colorado River below Palo Verde Dam" can be obtained.

GAGE.--Two water-stage recorders, one above and one below dam, to record head on gates, and water-stage recorder to record gate opening. Supplementary water-stage recorder above dam operated by Geological Survey and supplementary water-stage recorder below dam operated by Palo Verde Irrigation District. Datum of gages is National Geodetic Vertical Datum of 1929.

REMARKS.--Records good prior to March and excellent thereafter. Record does not include diversion to Palo Verde Canal. (See elsewhere in this report.) Daily discharge computed from relation between discharge, head, and gate openings. Many diversions above station for irrigation, municipal, and industrial uses. Flow regulated by Lake Mead, Lake Mohave, and Lake Havasu.

AVERAGE DISCHARGE.--9 years, 7,300 ft³/s (206.7 m³/s), 5,289,000 acre-ft/yr (6,520 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 13,300 ft³/s (377 m³/s) July 31, 1977; minimum daily, 1,060 ft³/s (30.0 m³/s) Nov. 25, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 12,400 ft³/s (351 m³/s) Apr. 17; minimum daily, 1,270 ft³/s (36.0 m³/s) Jan. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4850	5060	4520	1560	1520	3670	10900	9160	8670	10900	10900	6420
2	5300	4050	4380	2500	1630	3520	12200	8250	6560	11000	10400	7210
3	5480	3650	4820	1800	1540	3440	11900	8240	8240	11800	9900	7860
4	5450	2840	5010	1700	2190	3360	11300	7280	8880	11500	10100	8030
5	5260	3390	5390	1900	2840	3500	10600	6500	9050	10200	10600	6660
6	5270	3830	4830	1800	2460	3370	9870	8150	9480	9850	11500	6300
7	2390	4520	4640	2200	4000	5790	9620	8660	8210	9800	11700	7080
8	2320	4590	4050	2000	3290	6300	11000	9080	7770	11300	11400	6900
9	3790	4540	4090	2010	3560	7170	11700	8540	6930	11500	11100	8020
10	3750	3780	4390	2340	3610	7420	11500	7310	8540	11200	10500	8630
11	4050	3380	4900	2210	4530	8880	11400	6610	9240	11500	10600	8510
12	3810	4560	4910	2150	5530	9560	10700	6690	9640	11200	10800	8370
13	3540	4890	4900	2040	7270	9380	9820	7610	9130	10700	11100	7060
14	3030	4540	5040	1940	5170	8500	10000	8730	9670	10000	9280	7060
15	4320	4130	4790	1930	7110	9950	11300	9730	8700	10900	10100	6190
16	5150	3280	4100	1880	6230	9430	12100	9240	8800	11400	9870	7250
17	5040	2830	5200	1860	5800	10200	12400	8630	9740	11600	9470	7470
18	5180	2700	5760	1790	8690	11400	12200	9690	9860	11300	8460	7200
19	5180	4130	5550	1730	8460	11400	11700	8280	10700	11200	8960	7340
20	4920	4900	4870	1700	8400	11400	11100	9980	11000	10900	9810	7140
21	3690	4560	4190	1660	8680	11400	10700	9830	10100	11100	9810	6110
22	5010	4100	2830	1650	8680	10600	11400	9610	8910	11500	9380	5530
23	4850	4390	1650	1620	8100	10300	12300	8720	8810	12000	8780	6440
24	4990	3030	3950	1540	8700	10900	11900	7620	10700	12000	8130	8100
25	4740	2420	4990	1410	9950	10100	11300	6690	11700	10200	7900	8080
26	4470	2760	5930	1270	9390	10200	9530	6410	11100	10400	8960	7960
27	4210	2680	3170	2420	8280	11000	8660	7600	11000	9410	8820	7550
28	3760	2860	1740	2880	7900	10900	9060	9060	10400	9740	8990	6690
29	4330	2990	1470	3340	---	11200	9750	8930	10400	10400	8580	5620
30	4830	3560	1410	3240	---	11100	9590	9530	10500	11200	7680	6060
31	4880	---	1440	2270	---	11000	---	8950	---	11000	7320	---
TOTAL	137840	112940	128910	62340	163510	266340	327500	259310	282430	338700	300900	214840
MEAN	4446	3765	4158	2011	5840	8592	10920	8365	9414	10930	9706	7161
MAX	5480	5060	5930	3340	9950	11400	12400	9980	11700	12000	11700	8630
MIN	2320	2420	1410	1270	1520	3360	8660	6410	5660	9410	7320	5530
AC-FT	273400	224000	255700	123700	324300	528300	649600	514300	560200	671800	596800	426100
CAL YR 1977 TOTAL		2579330		MEAN 7067	MAX 13300	MIN 1350	AC-FT 5116000					
WTR YR 1978 TOTAL		2595560		MEAN 7111	MAX 12400	MIN 1270	AC-FT 5148000					

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429030 PALO VERDE DRAIN NEAR PARKER, AZ

LOCATION.--Lat 33°45'25", long 114°29'48", in NE¼SW¼ sec.24, T.5 N., R.22 W., Yuma County, Hydrologic Unit 15030104, at bridge, 0.5 mi (0.8 km) above mouth, 0.5 mi (0.8 km) northeast of Palo Verde Dam, 9 mi (14 km) north of Ehrenberg, and 31 mi (50 km) southwest of Parker.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACOS)	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AU- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCT												
05...	1110	35	1990	7.8	23.5	600	590	160	49	240	4.3	4.9
11...	0835	--	1920	--	21.0	--	--	--	--	--	--	--
17...	1245	--	1930	--	21.5	--	--	--	--	--	--	--
25...	1045	--	1970	--	20.0	--	--	--	--	--	--	--
31...	1050	--	2010	--	20.5	--	--	--	--	--	--	--
NOV												
07...	1135	26	1960	8.0	20.5	620	430	160	53	210	5.1	5.2
14...	0845	--	1850	--	18.5	--	--	--	--	--	--	--
21...	0840	--	1940	--	18.0	--	--	--	--	--	--	--
28...	0750	--	1940	--	19.0	--	--	--	--	--	--	--
DEC												
05...	1345	27	1940	8.0	19.0	610	470	160	51	210	5.1	4.7
12...	1345	--	1920	--	15.0	--	--	--	--	--	--	--
19...	1045	--	1900	--	15.5	--	--	--	--	--	--	--
27...	1125	--	1890	--	15.0	--	--	--	--	--	--	--
JAN												
05...	1405	30	1940	7.7	15.5	610	590	160	52	210	5.7	4.8
09...	0740	--	1950	--	14.5	--	--	--	--	--	--	--
16...	1050	--	1940	--	16.0	--	--	--	--	--	--	--
23...	1140	--	1930	--	15.0	--	--	--	--	--	--	--
30...	1225	--	1910	--	14.5	--	--	--	--	--	--	--
FEB												
15...	0915	--	1890	--	15.0	--	--	--	--	--	--	--
21...	1055	--	1920	--	15.5	--	--	--	--	--	--	--
27...	1120	--	1910	--	--	--	--	--	--	--	--	--
MAR												
06...	1230	31	1870	7.8	16.0	560	350	140	51	210	5.9	5.0
13...	1330	--	1850	--	18.5	--	--	--	--	--	--	--
20...	1010	--	1870	--	18.0	--	--	--	--	--	--	--
27...	1350	--	1920	--	18.0	--	--	--	--	--	--	--
APR												
03...	1205	39	2050	7.7	21.0	630	410	160	57	250	4.0	5.7
10...	0825	--	1930	--	16.0	--	--	--	--	--	--	--
17...	0800	--	2050	--	16.5	--	--	--	--	--	--	--
24...	0825	--	2150	--	17.0	--	--	--	--	--	--	--
MAY												
01...	1045	59	2230	7.4	19.5	670	430	170	60	250	4.2	5.8
08...	1120	--	2190	--	19.5	--	--	--	--	--	--	--
15...	1110	--	2060	--	20.0	--	--	--	--	--	--	--
22...	0740	--	2000	--	20.5	--	--	--	--	--	--	--
30...	0735	--	2050	--	21.5	--	--	--	--	--	--	--
JUN												
05...	1150	52	2030	7.8	20.0	620	380	160	54	250	4.0	5.3
12...	1040	--	2150	--	25.0	--	--	--	--	--	--	--
19...	1020	--	2050	--	21.0	--	--	--	--	--	--	--
26...	0800	--	1980	--	21.5	--	--	--	--	--	--	--
JUL												
03...	1400	51	2010	7.9	24.5	590	390	160	47	220	5.9	5.3
10...	1055	--	1880	--	24.0	--	--	--	--	--	--	--
17...	0740	--	1890	--	25.0	--	--	--	--	--	--	--
24...	1120	--	1910	--	25.5	--	--	--	--	--	--	--
31...	1200	--	1940	--	25.5	--	--	--	--	--	--	--
AUG												
07...	1005	46	2000	7.7	26.0	610	400	160	51	220	5.9	5.5
14...	0820	--	1940	--	25.5	--	--	--	--	--	--	--
21...	0750	--	1900	--	24.5	--	--	--	--	--	--	--
28...	0800	--	1900	--	22.0	--	--	--	--	--	--	--
SEP												
05...	1405	39	1950	8.0	25.0	570	380	150	48	220	4.0	5.1
11...	1145	--	1830	--	25.5	--	--	--	--	--	--	--
18...	1345	--	1830	--	21.5	--	--	--	--	--	--	--
25...	1410	--	1810	--	24.0	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

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09429030 PALO VERDE DRAIN NEAR PARKER, AZ--Continued

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.
Formerly published as 09429030 - C.R.I.R. Levee Drain near Parker, AZ.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)
OCT											
03...	260	0	530	220	.4	21	1360	1350	1.85	220	20
11...	--	--	--	--	--	--	1300	--	1.77	--	--
17...	--	--	--	--	--	--	1320	--	1.80	--	--
25...	--	--	--	--	--	--	1320	--	1.80	--	--
31...	--	--	--	--	--	--	1350	--	1.84	--	--
NOV											
07...	230	0	540	210	.2	22	1340	1310	1.82	220	20
14...	--	--	--	--	--	--	1260	--	1.71	--	--
21...	--	--	--	--	--	--	1320	--	1.80	--	--
28...	--	--	--	--	--	--	1320	--	1.80	--	--
DEC											
05...	170	0	550	210	.5	22	1330	1290	1.81	230	30
12...	--	--	--	--	--	--	1320	--	1.80	--	--
19...	--	--	--	--	--	--	1280	--	1.74	--	--
27...	--	--	--	--	--	--	1290	--	1.75	--	--
JAN											
03...	270	0	550	210	.4	22	1330	1340	1.81	220	10
09...	--	--	--	--	--	--	1320	--	1.80	--	--
16...	--	--	--	--	--	--	1320	--	1.80	--	--
23...	--	--	--	--	--	--	1310	--	1.78	--	--
30...	--	--	--	--	--	--	1300	--	1.77	--	--
FEB											
13...	--	--	--	--	--	--	1300	--	1.77	--	--
21...	--	--	--	--	--	--	1280	--	1.74	--	--
27...	--	--	--	--	--	--	1310	--	1.78	--	--
MAR											
06...	250	0	500	190	.3	18	1270	1240	1.73	220	10
13...	--	--	--	--	--	--	1240	--	1.69	--	--
20...	--	--	--	--	--	--	1230	--	1.67	--	--
27...	--	--	--	--	--	--	1320	--	1.80	--	--
APR											
03...	270	0	530	230	.4	20	1410	1370	1.92	230	10
10...	--	--	--	--	--	--	1320	--	1.80	--	--
17...	--	--	--	--	--	--	1400	--	1.90	--	--
24...	--	--	--	--	--	--	1470	--	2.00	--	--
MAY											
01...	290	0	610	250	.4	20	1540	1510	2.09	240	10
08...	--	--	--	--	--	--	1500	--	2.04	--	--
15...	--	--	--	--	--	--	1420	--	1.93	--	--
22...	--	--	--	--	--	--	1350	--	1.84	--	--
30...	--	--	--	--	--	--	1390	--	1.89	--	--
JUN											
05...	290	0	540	230	.4	20	1350	1380	1.84	220	20
12...	--	--	--	--	--	--	1420	--	1.93	--	--
19...	--	--	--	--	--	--	1390	--	1.89	--	--
26...	--	--	--	--	--	--	1330	--	1.81	--	--
JUL											
03...	250	0	540	220	.3	20	1360	1340	1.85	230	60
10...	--	--	--	--	--	--	1280	--	1.74	--	--
17...	--	--	--	--	--	--	1270	--	1.73	--	--
24...	--	--	--	--	--	--	1300	--	1.77	--	--
31...	--	--	--	--	--	--	1310	--	1.78	--	--
AUG											
07...	260	0	550	220	.4	22	1370	1360	1.86	240	10
14...	--	--	--	--	--	--	1310	--	1.78	--	--
21...	--	--	--	--	--	--	1290	--	1.75	--	--
28...	--	--	--	--	--	--	1260	--	1.71	--	--
SEP											
05...	230	0	220	210	.5	20	1300	988	1.77	240	20
11...	--	--	--	--	--	--	1250	--	1.70	--	--
18...	--	--	--	--	--	--	1230	--	1.67	--	--
25...	--	--	--	--	--	--	1210	--	1.65	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429060 COLORADO RIVER INDIAN RESERVATION LOWER MAIN DRAIN NEAR PARKER, AZ

LOCATION.--Lat 33°45'40", long 114°29'05", in SW¼NW¼ sec.19, T.5 N., R.21 W., Yuma County, Hydrologic Unit 15030104, at gaging station, 2.8 mi (4.5 km) above outlet to Colorado River, and 31 mi (50 km) south of Parker.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CALCS)	HARD- NESS, NONCAR- BONATE (MG/L CAU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURF- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCT												
03...	1120	211	2230	7.6	23.0	570	380	140	54	270	4.9	5.9
11...	0830	--	2640	--	23.5	--	--	--	--	--	--	--
17...	1255	--	2680	--	23.5	--	--	--	--	--	--	--
25...	1050	--	2130	--	22.0	--	--	--	--	--	--	--
31...	1100	--	2100	--	21.0	--	--	--	--	--	--	--
NOV												
07...	1145	175	2130	7.9	21.5	590	380	150	52	260	4.7	6.2
14...	0855	--	2370	--	19.5	--	--	--	--	--	--	--
21...	0850	--	2280	--	19.0	--	--	--	--	--	--	--
28...	0800	--	2500	--	18.5	--	--	--	--	--	--	--
DEC												
05...	1355	158	2690	7.9	19.5	690	470	170	64	340	5.6	6.6
12...	1355	--	2520	--	18.0	--	--	--	--	--	--	--
19...	1055	--	2900	--	14.5	--	--	--	--	--	--	--
27...	1135	--	2590	--	14.5	--	--	--	--	--	--	--
JAN												
03...	1415	135	2730	7.7	14.5	720	480	180	65	360	5.9	6.3
09...	0750	--	2740	--	15.5	--	--	--	--	--	--	--
16...	1040	--	3320	--	15.0	--	--	--	--	--	--	--
23...	1150	--	3220	--	--	--	--	--	--	--	--	--
30...	1235	--	2560	--	13.5	--	--	--	--	--	--	--
FEB												
06...	1110	106	3080	7.8	16.5	820	560	200	77	400	6.1	7.0
13...	0905	--	3310	--	16.0	--	--	--	--	--	--	--
21...	1045	--	2630	--	14.0	--	--	--	--	--	--	--
27...	1115	--	2560	--	16.0	--	--	--	--	--	--	--
MAR												
06...	1240	101	3100	7.9	15.5	820	550	200	77	420	6.4	7.0
13...	1340	--	2660	--	16.5	--	--	--	--	--	--	--
20...	1020	--	2550	--	16.0	--	--	--	--	--	--	--
27...	1400	--	2720	--	16.0	--	--	--	--	--	--	--
APR												
03...	1155	207	2090	7.6	18.0	570	370	140	54	250	4.6	6.1
10...	0855	--	2200	--	17.0	--	--	--	--	--	--	--
17...	0810	--	2500	--	18.0	--	--	--	--	--	--	--
24...	0855	--	2010	--	19.0	--	--	--	--	--	--	--
MAY												
01...	1055	212	2570	7.5	19.0	690	450	170	64	340	5.6	7.3
08...	1110	--	2540	--	20.5	--	--	--	--	--	--	--
15...	1110	--	2530	--	21.0	--	--	--	--	--	--	--
22...	0750	--	2770	--	21.0	--	--	--	--	--	--	--
30...	0730	--	2320	--	23.0	--	--	--	--	--	--	--
JUN												
05...	1140	232	2290	7.9	21.5	640	420	160	59	260	4.8	6.5
12...	1050	--	2510	--	24.5	--	--	--	--	--	--	--
19...	1010	--	2550	--	22.0	--	--	--	--	--	--	--
26...	0810	--	2610	--	21.5	--	--	--	--	--	--	--
JUL												
03...	1410	221	2810	7.8	25.5	750	540	190	68	350	5.5	7.2
10...	1105	--	2750	--	25.5	--	--	--	--	--	--	--
17...	0800	--	2850	--	25.5	--	--	--	--	--	--	--
24...	1150	--	2240	--	26.0	--	--	--	--	--	--	--
31...	1150	--	2500	--	27.0	--	--	--	--	--	--	--
AUG												
07...	1015	255	2460	7.9	27.0	680	460	170	65	300	5.0	6.7
14...	0815	--	2400	--	25.0	--	--	--	--	--	--	--
21...	0755	--	2570	--	25.5	--	--	--	--	--	--	--
28...	0755	--	2120	--	23.5	--	--	--	--	--	--	--
SEP												
05...	1415	225	2440	8.0	26.0	670	450	170	60	300	5.0	6.4
11...	1155	--	1970	--	24.5	--	--	--	--	--	--	--
18...	1355	--	2120	--	23.5	--	--	--	--	--	--	--
25...	1400	--	2010	--	24.5	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429060 COLORADO RIVER INDIAN RESERVATION LOWER MAIN DRAIN NEAR PARKER, AZ--Continued

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (IONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT											
03...	240	0	530	290	.6	15	1480	1420	2.01	330	20
11...	--	--	--	--	--	--	1750	--	2.38	--	--
17...	--	--	--	--	--	--	1770	--	2.41	--	--
25...	--	--	--	--	--	--	1430	--	1.94	--	--
31...	--	--	--	--	--	--	1410	--	1.92	--	--
NOV											
07...	250	0	520	260	.5	16	--	1430	1.94	310	10
14...	--	--	--	--	--	--	1600	--	2.18	--	--
21...	--	--	--	--	--	--	1530	--	2.08	--	--
28...	--	--	--	--	--	--	1660	--	2.26	--	--
DEC											
05...	270	0	650	380	.6	19	1800	1760	2.45	440	20
12...	--	--	--	--	--	--	1680	--	2.28	--	--
19...	--	--	--	--	--	--	1970	--	2.68	--	--
27...	--	--	--	--	--	--	1770	--	2.41	--	--
JAN											
03...	290	0	660	400	.7	18	1840	1830	2.50	430	10
09...	--	--	--	--	--	--	1830	--	2.49	--	--
16...	--	--	--	--	--	--	2210	--	3.01	--	--
23...	--	--	--	--	--	--	2170	--	2.95	--	--
30...	--	--	--	--	--	--	1710	--	2.33	--	--
FEB											
06...	310	0	690	480	.7	20	2030	2030	2.76	470	10
13...	--	--	--	--	--	--	2270	--	3.09	--	--
21...	--	--	--	--	--	--	1760	--	2.39	--	--
27...	--	--	--	--	--	--	1750	--	2.38	--	--
MAR											
06...	330	0	740	450	.7	18	2070	2080	2.82	510	10
13...	--	--	--	--	--	--	1760	--	2.39	--	--
20...	--	--	--	--	--	--	1670	--	2.27	--	--
27...	--	--	--	--	--	--	1830	--	2.49	--	--
APR											
03...	250	0	480	270	.6	16	1580	1340	1.88	290	20
10...	--	--	--	--	--	--	1440	--	1.96	--	--
17...	--	--	--	--	--	--	1650	--	2.24	--	--
24...	--	--	--	--	--	--	1330	--	1.81	--	--
MAY											
01...	290	0	600	360	.6	17	1730	1700	2.35	360	0
08...	--	--	--	--	--	--	1650	--	2.24	--	--
15...	--	--	--	--	--	--	1680	--	2.28	--	--
22...	--	--	--	--	--	--	1880	--	2.56	--	--
30...	--	--	--	--	--	--	1550	--	2.11	--	--
JUN											
05...	240	--	530	310	.6	18	1490	1480	2.03	310	20
12...	--	--	--	--	--	--	1660	--	2.26	--	--
19...	--	--	--	--	--	--	1730	--	2.35	--	--
26...	--	--	--	--	--	--	1740	--	2.37	--	--
JUL											
03...	260	0	650	410	.6	21	1880	1830	2.56	390	50
10...	--	--	--	--	--	--	1860	--	2.53	--	--
17...	--	--	--	--	--	--	1890	--	2.57	--	--
24...	--	--	--	--	--	--	1500	--	2.04	--	--
31...	--	--	--	--	--	--	1680	--	2.28	--	--
AUG											
07...	270	0	590	350	.6	18	1630	1630	2.22	330	10
14...	--	--	--	--	--	--	1590	--	2.16	--	--
21...	--	--	--	--	--	--	1570	--	2.14	--	--
28...	--	--	--	--	--	--	1370	--	1.86	--	--
SEP											
05...	270	0	600	330	.7	19	1600	1620	2.18	330	30
11...	--	--	--	--	--	--	1280	--	1.74	--	--
18...	--	--	--	--	--	--	1400	--	1.90	--	--
25...	--	--	--	--	--	--	1330	--	1.81	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429130 PALO VERDE IRRIGATION DISTRICT OLIVE LAKE DRAIN NEAR BLYTHE, CA

LOCATION.--Lat 33°40'36", long 114°32'09", in SW¼SW¼ sec.1, T.6 S., R.23 E., San Bernardino meridian, Riverside County, Hydrologic Unit 15030104, 0.3 mi (0.5 km) upstream from mouth, and 5 mi (8 km) northeast of Blythe.

PERIOD OF RECORD.--October 1968 to September 1970 (partial-record station), October 1970 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CALCO3)	HARDNESS, NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADJUSTED SURP- TITION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
OCT												
03...	0730	9.0	1630	7.9	13.0	540	290	140	45	160	3.0	6.0
NOV												
01...	0930	6.0	1590	7.5	16.0	520	280	140	42	160	3.0	6.2
DEC												
01...	0830	9.0	1660	7.7	8.0	590	330	160	46	160	2.9	6.1
JAN												
03...	1010	6.0	1650	7.5	14.5	560	300	150	44	160	3.0	6.5
FEB												
01...	0820	1.0	1690	7.7	14.0	580	320	160	45	160	2.9	7.1
MAR												
13...	1000	9.0	1580	7.8	16.0	550	310	150	43	150	2.8	6.1
APR												
03...	0825	10	1500	7.8	18.0	420	240	110	36	120	2.5	5.5
MAY												
01...	0810	12	1610	7.5	18.5	530	280	140	44	160	3.0	6.5
JUN												
01...	0745	9.0	1520	7.5	21.0	490	270	130	41	150	2.9	6.8
JUL												
06...	0940	112	1620	7.5	22.0	560	300	150	44	160	3.0	5.6
AUG												
01...	1120	17	1650	7.4	23.0	560	310	150	46	160	2.9	6.5
SEP												
06...	1400	9.0	1580	7.4	25.5	540	330	150	39	150	2.8	5.8

E Estimated.

09429130 PALO VERDE IRRIGATION DISTRICT OLIVE LAKE DRAIN NEAR BLYTHE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 03...	300	0	420	150	.4	18	1040	1090	1.41	--	190	40
NOV 01...	300	0	420	140	.4	18	1060	1070	1.44	--	190	20
DEC 01...	320	0	440	140	.4	19	1060	1150	1.44	--	210	20
JAN 03...	310	0	450	150	.5	19	1120	1150	1.52	--	190	20
FEB 01...	320	0	440	150	.4	18	1140	1140	1.55	--	200	30
MAR 15...	300	0	400	140	.4	16	1050	1050	1.45	--	190	10
APR 03...	220	0	330	110	.3	12	856	852	1.16	--	160	20
MAY 01...	300	0	410	140	.4	16	1060	1070	1.44	--	190	0
JUN 01...	270	0	390	140	.4	14	1010	1010	1.37	--	180	0
JUL 06...	320	0	430	140	.4	18	1070	1110	1.46	--	190	10
AUG 01...	310	0	430	150	.4	18	1110	1120	1.51	.23	200	20
SEP 06...	250	0	420	140	.4	19	1060	1050	1.44	.32	200	20

COLORADO RIVER MAIN STEM

09429188 COLORADO RIVER AT TAYLOR FERRY, NEAR BLYTHE, CA

LOCATION.--Lat 33°26'03", long 114°37'35", in SE¼ sec.36, T.8 S., R.22 E., San Bernardino meridian, Riverside County, Hydrologic Unit 15030104, at gaging station, at site of old Taylor Ferry, 2.5 mi (4.0 km) upstream from Cibola Bridge, 12 mi (19 km) south of Blythe, Calif., 28 mi (45 km) downstream from Palo Verde Dam, and 62 mi (100 km) upstream from Imperial Dam.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLUM, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
03...	1220	2380	1200	7.7	23.5	360	220	88	33	120	2.6	5.0
11...	0850	--	1220	--	22.0	--	--	--	--	--	--	--
17...	0730	--	1230	--	23.5	--	--	--	--	--	--	--
25...	1245	--	1180	--	21.5	--	--	--	--	--	--	--
31...	1210	--	1200	--	20.5	--	--	--	--	--	--	--
NOV												
07...	0820	4920	1190	7.8	21.0	360	220	89	33	120	2.8	5.2
14...	1250	--	1190	--	20.0	--	--	--	--	--	--	--
21...	1000	--	1160	--	19.5	--	--	--	--	--	--	--
28...	1240	--	1330	--	18.5	--	--	--	--	--	--	--
DEC												
05...	0945	5300	1170	7.9	18.0	350	210	84	33	120	2.6	5.1
12...	0800	--	1180	--	19.5	--	--	--	--	--	--	--
19...	0745	--	1190	--	19.0	--	--	--	--	--	--	--
27...	1000	--	1160	--	19.0	--	--	--	--	--	--	--
JAN												
03...	0900	3720	1340	7.8	12.0	400	240	100	37	140	3.0	5.0
10...	0800	--	1340	--	--	--	--	--	--	--	--	--
16...	0725	--	1340	--	19.0	--	--	--	--	--	--	--
23...	0825	--	1330	--	19.5	--	--	--	--	--	--	--
30...	0930	--	1180	--	12.0	--	--	--	--	--	--	--
FEB												
06...	0845	856	1200	8.0	19.5	360	220	89	33	120	2.8	4.7
13...	1010	--	1140	--	14.0	--	--	--	--	--	--	--
21...	1055	--	1130	--	13.5	--	--	--	--	--	--	--
27...	0835	--	1140	--	14.5	--	--	--	--	--	--	--
MAR												
06...	1100	3050	1200	8.0	19.5	350	200	83	34	120	2.8	5.0
13...	0745	--	1140	--	19.0	--	--	--	--	--	--	--
20...	0830	--	1150	--	16.0	--	--	--	--	--	--	--
27...	0810	--	1150	--	17.0	--	--	--	--	--	--	--
APR												
03...	0825	13500	1110	7.9	18.0	350	210	86	32	110	2.6	4.8
10...	0850	--	1130	--	18.0	--	--	--	--	--	--	--
17...	0815	--	1140	--	18.0	--	--	--	--	--	--	--
24...	1130	--	1140	--	19.0	--	--	--	--	--	--	--
MAY												
01...	0745	12900	1170	7.8	18.0	360	210	88	34	110	2.5	5.4
08...	0745	--	1180	--	20.0	--	--	--	--	--	--	--
15...	0735	--	1170	--	22.0	--	--	--	--	--	--	--
22...	1130	--	1190	--	23.5	--	--	--	--	--	--	--
30...	0735	--	1170	--	20.5	--	--	--	--	--	--	--
JUN												
05...	0855	8130	1160	7.9	23.5	360	230	88	33	120	2.8	5.2
12...	0920	--	1190	--	24.5	--	--	--	--	--	--	--
19...	1130	--	1180	--	23.5	--	--	--	--	--	--	--
26...	0850	--	1150	--	26.5	--	--	--	--	--	--	--
JUL												
03...	0740	13900	1160	7.9	25.5	360	220	90	32	110	2.5	5.0
10...	0750	--	1160	--	16.0	--	--	--	--	--	--	--
17...	0800	--	1150	--	24.5	--	--	--	--	--	--	--
24...	0740	--	1150	--	25.5	--	--	--	--	--	--	--
31...	0735	--	1160	--	26.5	--	--	--	--	--	--	--
AUG												
07...	0900	11100	1140	7.9	26.5	330	200	84	30	110	2.6	5.1
14...	0845	--	1170	--	25.5	--	--	--	--	--	--	--
21...	0825	--	1170	--	26.5	--	--	--	--	--	--	--
28...	1155	--	1190	--	26.5	--	--	--	--	--	--	--
SEP												
05...	0845	--	1170	--	25.5	--	--	--	--	--	--	--
11...	0820	--	1160	--	24.5	--	--	--	--	--	--	--
18...	0815	--	1170	--	22.0	--	--	--	--	--	--	--
25...	0830	--	1160	--	22.0	--	--	--	--	--	--	--

COLORADO RIVER MAIN STEM

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09429188 COLORADO RIVER AT TAYLOR FERRY, NEAR BLYTHE, CA--Continued

DRAINAGE AREA.--187,700 mi² (486,100 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming which is noncontributing.

PERIOD OF RECORD.--April 1970 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICAK- BONATE (MG/L AS HCO ₃)	CAR- BONATE (MG/L AS CO ₃)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT											
03...	170	0	340	110	.4	9.9	766	790	1.04	150	30
11...	--	--	--	--	--	--	780	--	1.06	--	--
17...	--	--	--	--	--	--	790	--	1.07	--	--
25...	--	--	--	--	--	--	756	--	1.03	--	--
31...	--	--	--	--	--	--	772	--	1.05	--	--
NOV											
07...	170	0	330	100	.4	9.9	762	771	1.04	160	10
14...	--	--	--	--	--	--	764	--	1.04	--	--
21...	--	--	--	--	--	--	740	--	1.01	--	--
28...	--	--	--	--	--	--	848	--	1.15	--	--
DEC											
05...	160	0	320	100	.5	9.7	750	751	1.02	160	20
12...	--	--	--	--	--	--	758	--	1.03	--	--
19...	--	--	--	--	--	--	764	--	1.04	--	--
27...	--	--	--	--	--	--	740	--	1.01	--	--
JAN											
03...	200	0	350	130	.5	11	860	872	1.17	180	20
10...	--	--	--	--	--	--	860	--	1.17	--	--
16...	--	--	--	--	--	--	858	--	1.17	--	--
23...	--	--	--	--	--	--	852	--	1.16	--	--
30...	--	--	--	--	--	--	754	--	1.03	--	--
FEB											
06...	170	0	310	110	.4	9.3	770	760	1.05	160	10
13...	--	--	--	--	--	--	728	--	.99	--	--
21...	--	--	--	--	--	--	720	--	.98	--	--
27...	--	--	--	--	--	--	730	--	.99	--	--
MAR											
06...	180	0	310	100	.4	8.3	770	750	1.05	160	10
13...	--	--	--	--	--	--	728	--	.99	--	--
20...	--	--	--	--	--	--	734	--	1.00	--	--
27...	--	--	--	--	--	--	734	--	1.00	--	--
APR											
03...	170	0	290	97	.4	9.5	708	714	.96	150	10
10...	--	--	--	--	--	--	720	--	.98	--	--
17...	--	--	--	--	--	--	726	--	.99	--	--
24...	--	--	--	--	--	--	728	--	.99	--	--
MAY											
01...	180	0	290	120	.4	9.6	746	746	1.01	150	10
08...	--	--	--	--	--	--	754	--	1.03	--	--
15...	--	--	--	--	--	--	750	--	1.02	--	--
22...	--	--	--	--	--	--	764	--	1.04	--	--
30...	--	--	--	--	--	--	740	--	1.01	--	--
JUN											
05...	160	0	300	110	.4	10	734	746	1.00	150	40
12...	--	--	--	--	--	--	750	--	1.02	--	--
19...	--	--	--	--	--	--	746	--	1.01	--	--
26...	--	--	--	--	--	--	728	--	.99	--	--
JUL											
03...	170	0	300	99	.3	9.4	734	731	1.00	170	20
10...	--	--	--	--	--	--	734	--	1.00	--	--
17...	--	--	--	--	--	--	726	--	.99	--	--
24...	--	--	--	--	--	--	728	--	.99	--	--
31...	--	--	--	--	--	--	736	--	1.00	--	--
AUG											
07...	160	0	310	100	.3	9.4	722	729	.98	160	10
14...	--	--	--	--	--	--	742	--	1.01	--	--
21...	--	--	--	--	--	--	746	--	1.01	--	--
28...	--	--	--	--	--	--	756	--	1.03	--	--
SEP											
05...	--	--	--	--	--	--	744	--	1.01	--	--
11...	--	--	--	--	--	--	732	--	1.00	--	--
18...	--	--	--	--	--	--	748	--	1.02	--	--
25...	--	--	--	--	--	--	736	--	1.00	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA

LOCATION.--Lat 33°21'41", long 114°43'20", in SE¼SE¼ sec.26, T.9 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030104, at gaging station, at State Highway 78 bridge, 3.3 mi (5.3 km) upstream from mouth, and 5 mi (8 km) south of Palo Verde.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT											
03...	1200	577	2560	7.1	25.0	550	280	140	48	350	6.5
11...	0915	--	2580	--	24.0	--	--	--	--	--	--
11...	1000	--	2750	--	24.0	--	--	--	--	--	--
17...	0750	--	2390	--	24.5	--	--	--	--	--	--
25...	1415	--	2580	--	24.0	--	--	--	--	--	--
31...	1355	--	2480	--	24.0	--	--	--	--	--	--
NOV											
07...	1020	512	2370	7.8	23.0	530	280	140	44	340	6.4
14...	1330	--	2140	--	20.5	--	--	--	--	--	--
21...	1200	--	2180	--	20.5	--	--	--	--	--	--
28...	1420	--	2460	--	20.5	--	--	--	--	--	--
DEC											
05...	0800	537	2370	7.9	18.5	510	270	130	45	330	6.4
06...	0915	--	2560	--	17.0	--	--	--	--	--	--
12...	0945	--	2420	--	18.0	--	--	--	--	--	--
19...	0935	--	2520	--	16.5	--	--	--	--	--	--
27...	0825	--	2360	--	17.0	--	--	--	--	--	--
JAN											
03...	0900	505	2310	7.7	16.0	500	260	130	42	340	6.6
10...	0840	--	2720	--	--	--	--	--	--	--	--
16...	0910	--	2400	--	16.5	--	--	--	--	--	--
23...	1000	--	2340	--	15.0	--	--	--	--	--	--
30...	1200	--	2460	--	15.5	--	--	--	--	--	--
31...	1145	--	2450	--	18.0	--	--	--	--	--	--
FEB											
06...	1055	400	2470	7.9	18.0	530	280	130	50	360	6.8
13...	0755	--	2660	--	14.5	--	--	--	--	--	--
21...	1320	--	2490	--	18.5	--	--	--	--	--	--
27...	1015	--	2260	--	18.0	--	--	--	--	--	--
MAR											
06...	1040	475	2310	7.8	19.0	490	250	120	45	330	6.5
13...	0950	--	2400	--	17.0	--	--	--	--	--	--
20...	1035	--	2370	--	18.5	--	--	--	--	--	--
27...	1015	--	2550	--	18.5	--	--	--	--	--	--
APR											
03...	1020	585	2310	7.8	19.0	480	240	120	43	340	6.8
10...	1050	--	2400	--	19.0	--	--	--	--	--	--
17...	1025	--	2320	--	19.0	--	--	--	--	--	--
24...	0920	--	2590	--	20.0	--	--	--	--	--	--
MAY											
01...	1040	693	2380	7.6	19.5	510	260	130	45	340	6.6
02...	0945	--	2600	--	20.0	--	--	--	--	--	--
08...	0930	--	2420	--	22.0	--	--	--	--	--	--
15...	0935	--	2490	--	23.5	--	--	--	--	--	--
22...	1335	--	2670	--	23.5	--	--	--	--	--	--
30...	1020	--	2680	--	22.0	--	--	--	--	--	--
JUN											
05...	1120	698	2360	7.6	25.0	480	280	120	43	360	7.2
12...	1220	--	2440	--	25.5	--	--	--	--	--	--
19...	1200	--	2710	--	25.0	--	--	--	--	--	--
26...	1115	--	2810	--	25.5	--	--	--	--	--	--
27...	1000	--	2800	--	24.0	--	--	--	--	--	--
JUL											
03...	1000	616	2860	8.0	28.0	530	390	140	44	430	8.1
10...	1010	--	2730	--	18.5	--	--	--	--	--	--
17...	1150	--	2860	--	28.0	--	--	--	--	--	--
24...	0950	--	2780	--	28.5	--	--	--	--	--	--
31...	1000	--	2610	--	25.5	--	--	--	--	--	--
AUG											
07...	1100	722	2540	8.1	29.0	500	250	130	42	390	7.6
14...	1100	--	2460	--	27.0	--	--	--	--	--	--
21...	1000	--	2660	--	28.0	--	--	--	--	--	--
28...	1345	--	2650	--	26.5	--	--	--	--	--	--
SEP											
11...	1025	--	2360	--	25.5	--	--	--	--	--	--
18...	1035	--	2580	--	21.5	--	--	--	--	--	--
25...	1015	--	2490	--	24.0	--	--	--	--	--	--

09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA--Continued

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT											
03...	6.0	320	0	560	350	1.1	20	1650	1630	2.24	--
11...	--	--	--	--	--	--	--	1680	--	2.28	--
17...	--	--	--	--	--	--	--	1550	--	2.11	--
25...	--	--	--	--	--	--	--	1680	--	2.28	--
31...	--	--	--	--	--	--	--	1620	--	2.20	--
NOV											
07...	6.2	300	0	550	310	1.1	20	1540	1560	2.09	--
14...	--	--	--	--	--	--	--	1370	--	1.86	--
21...	--	--	--	--	--	--	--	1420	--	1.93	--
28...	--	--	--	--	--	--	--	1610	--	2.19	--
DEC											
05...	6.2	290	0	540	320	1.1	20	1560	1540	2.12	--
06...	6.3	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	1550	--	2.11	--
19...	--	--	--	--	--	--	--	1630	--	2.22	--
27...	--	--	--	--	--	--	--	1520	--	2.07	--
JAN											
03...	5.7	290	0	510	310	1.1	19	1490	1500	2.03	--
10...	--	--	--	--	--	--	--	1770	--	2.41	--
16...	--	--	--	--	--	--	--	1550	--	2.11	--
23...	--	--	--	--	--	--	--	1490	--	2.03	--
30...	--	--	--	--	--	--	--	1580	--	2.15	--
31...	6.6	--	--	--	--	--	--	--	--	--	--
FEB											
06...	6.0	300	0	540	350	1.1	20	1580	1610	2.15	--
13...	--	--	--	--	--	--	--	1720	--	2.34	--
21...	--	--	--	--	--	--	--	1590	--	2.16	--
27...	--	--	--	--	--	--	--	1460	--	1.99	--
MAR											
06...	6.0	290	0	520	320	.9	16	1490	1500	2.03	--
13...	--	--	--	--	--	--	--	1560	--	2.12	--
20...	--	--	--	--	--	--	--	1510	--	2.05	--
27...	--	--	--	--	--	--	--	1660	--	2.26	--
APR											
03...	6.1	290	0	530	310	1.1	18	1490	1510	2.03	--
10...	--	--	--	--	--	--	--	1540	--	2.09	--
17...	--	--	--	--	--	--	--	1490	--	2.03	--
24...	--	--	--	--	--	--	--	1690	--	2.30	--
MAY											
01...	7.0	310	0	530	320	1.1	19	1530	1550	2.08	--
02...	6.3	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	1550	--	2.11	--
15...	--	--	--	--	--	--	--	1590	--	2.16	--
22...	--	--	--	--	--	--	--	1710	--	2.33	--
30...	--	--	--	--	--	--	--	1720	--	2.34	--
JUN											
05...	6.7	310	--	510	350	1.1	18	1520	1560	2.07	--
12...	--	--	--	--	--	--	--	1570	--	2.14	--
19...	--	--	--	--	--	--	--	1730	--	2.35	--
26...	--	--	--	--	--	--	--	1810	--	2.46	--
27...	6.8	--	--	--	--	--	--	--	--	--	--
JUL											
03...	6.5	170	0	620	430	1.2	21	1850	1780	2.52	.71
10...	--	--	--	--	--	--	--	1750	--	2.38	--
17...	--	--	--	--	--	--	--	1850	--	2.49	--
24...	--	--	--	--	--	--	--	1800	--	2.45	--
31...	--	--	--	--	--	--	--	1680	--	2.28	--
AUG											
07...	7.2	300	0	580	380	1.2	20	1630	1700	2.22	.63
14...	--	--	--	--	--	--	--	1590	--	2.16	--
21...	--	--	--	--	--	--	--	1730	--	2.35	--
28...	--	--	--	--	--	--	--	1720	--	2.34	--
SEP											
11...	--	--	--	--	--	--	--	1510	--	2.05	--
18...	--	--	--	--	--	--	--	1660	--	2.26	--
25...	--	--	--	--	--	--	--	1610	--	2.19	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BORON, DIS- SOLVED (UG/L AS B)	COPPER, TOTAL RECUM- ERABLE (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	MERCURY TOTAL RECUM- ERABLE (UG/L AS HG)	ZINC, TOTAL RECUM- ERABLE (UG/L AS ZN)
OCT					
03...	530	--	20	--	--
NOV					
07...	470	--	10	--	--
DEC					
05...	480	--	20	--	--
06...	--	8	--	.1	30
JAN					
03...	480	--	20	--	--
31...	--	15	--	.0	30
FEB					
06...	510	--	10	--	--
MAR					
06...	490	--	10	--	--
APR					
03...	470	--	10	--	--
MAY					
01...	470	--	10	--	--
02...	--	5	--	.1	40
JUN					
05...	490	--	20	--	--
27...	--	9	--	.0	40
JUL					
03...	640	--	20	--	--
AUG					
07...	580	--	10	--	--

09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ATRA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DOD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DUT, TOTAL (UG/L)
DEC									
06...	0915	.00	.00	.00	.00	.00	.00	.00	.00
JAN									
31...	1145	.00	.00	.00	.00	.00	.00	.00	.00
MAY									
02...	0945	.00	.00	.00	.00	.00	.00	.00	.00
JUN									
27...	1000	.00	.00	.00	.00	.00	.00	.00	.00

DATE	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)
DEC									
06...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JAN									
31...	.03	.00	.02	.00	.00	.00	.00	.00	.00
MAY									
02...	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUN									
27...	.01	.00	.00	.00	.00	.00	.00	.00	.00

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TUX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
DEC								
06...	.00	.00	.00	0	.00	.00	.00	.00
JAN								
31...	.01	.00	.00	0	.00	.04	.00	.00
MAY								
02...	.00	.00	.00	0	.00	.03	.00	.00
JUN								
27...	.00	.00	.00	0	.00	.01	.00	.00

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429225 PALO VERDE IRRIGATION DISTRICT ANDERSON DRAIN NEAR PALO VERDE, CA

LOCATION.--Lat 33°21'19", long 114°43'00", in SW¼ sec.36, T.9 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030104, 0.1 mi (0.2 km) upstream from pump into Outfall drain, and 5.5 mi (8.8 km) south of Palo Verde.

PERIOD OF RECORD.--Water year 1969 (partial-record station), October 1969 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.
No flow many days during year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT 03...	1110	.76	1430	7.5	17.0	380	190	86	40	190	4.2	7.3
NOV 01...	1200	.80	3970	7.8	20.0	600	88	120	72	710	15	7.5
DEC 01...	1445	.76	2740	7.7	11.0	610	200	140	64	410	7.2	7.1
JUN 01...	1245	1.2	2530	7.7	27.0	570	160	120	66	400	7.3	9.5

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 03...	230	0	380	140	.5	14	930	971	1.26	240	30
NOV 01...	620	0	920	420	.9	21	2670	2580	3.63	960	30
DEC 01...	500	0	660	270	.8	23	1850	1820	2.52	630	20
JUN 01...	500	0	610	250	.7	23	1670	1730	2.27	610	10

09429280. CIBOLA LAKE INLET NEAR CIBOLA, AZ.

LOCATION.--Lat 33°15'11", long 114°40'05", in SW¼NE¼ sec.18, T.2 S., R.23 W., Yuma County, Hydrologic Unit 15030104, in Cibola National Wildlife Refuge, below levee on left bank Colorado River at north end of Cibola Lake, 4.4 mi (7.1 km) south of Cibola.

PERIOD OF RECORD.--December 1974 to current year (monthly discharge only).

GAGE.--Two water-stage recorders; one records stage and the other records deflection-meter readings from deflection vane located in concrete flume. Altitude of gage is 205 ft (62.5 m) U.S. Bureau of Reclamation construction data.

REMARKS.--Records fair. Record shows amount of water diverted from Colorado River to Cibola Lake. Daily records are available Nov. 21, 1974 to current year.

09429290. CIBOLA LAKE OUTLET NEAR CIBOLA, AZ.

LOCATION.--Lat 33°13'19", long 114°40'16", in NW¼SE¼ sec.30, T.2 S., R.23 W., Yuma County, Hydrologic Unit 15030104, in Cibola National Wildlife Refuge, at south end of Cibola Lake outlet to Colorado River, 6.5 mi (10.5 km) south of Cibola.

PERIOD OF RECORD.--December 1974 to current year (monthly discharge only).

GAGE.--Water-stage recorder and cipolletti weir in 6-ft (1.8-m) concrete flume. Altitude of gage is 204 ft (62.2 m) U.S. Bureau of Reclamation construction data.

REMARKS.--Records fair. Record shows amount of water returned to Colorado River through controlled outlet. Leakage less than 1 ft³/s (0.028 m³/s) through adjustable weir is not included in record. During September and October 1976 return flow of 3,820 acre-ft (4.71 km³) was from local runoff. Daily records are available Nov. 21, 1974 to current year.

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975

Month	Cibola Lake Inlet 09429280	Cibola Lake Outlet 09429290
October	--	--
November	--	--
December	0	0
CAL YR 1974	--	--
January	0	0
February	361	0
March	885	291
April	1,470	1,010
May	843	404
June	782	4.2
July	1,740	525
August	1,650	653
September	555	193
WTR YR 1975	--	--

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976

Month	Cibola Lake Inlet 09429280	Cibola Lake Outlet 09429290
October	101	0
November	34	0
December	147	0
CAL YR 1975	8,570	3,080
January	135	0
February	423	0
March	1,640	684
April	1,320	817
May	661	252
June	874	48
July	1,560	596
August	1,410	683
September	337	a2,290
WTR YR 1976	8,630	a5,370

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Cibola Lake Inlet 09429280	Cibola Lake Outlet 09429290
October	0	c1,870
November	0	0
December	0	0
CAL YR 1976	8,350	b7,240
January	0	0
February	505	0
March	950	11
April	1,090	202
May	437	0
June	1,030	22
July	1,330	494
August	962	477
September	201	0
WTR YR 1977	6,510	c3,080

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Cibola Lake Inlet 09429280	Cibola Lake Outlet 09429290
October	53	0
November	14	0
December	104	0
CAL YR 1977	6,680	1,200
January	0.6	0
February	495	0
March	692	83
April	650	466
May	387	7.5
June	957	68
July	1,070	452
August	730	255
September	1,220	2.0
WTR YR 1978	6,370	1,330

a Includes 1,950 acre-feet of local inflow.

b Includes 3,820 acre-feet of local inflow.

c Includes 1,870 acre-feet of local inflow.

COLORADO RIVER MAIN STEM

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09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ

LOCATION.--Lat 33°13'16", long 114°40'18", in NE¼SW¼ sec.30, T.2 S., R.23 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030104, on left bank 6.7 mi (10.8 km) south of Cibola, 38 mi (61 km) upstream from Imperial Dam, 39.7 mi (63.9 km) downstream from Ehrenberg, Ariz., 52.1 mi (83.8 km) downstream from Palo Verde diversion dam near Blythe, Calif., and at mile 620 (998 km) on Colorado River Profile Survey map.

DRAINAGE AREA.--187,800 mi² (486,400 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 200.00 ft (60.960 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent. Flow regulated by Lakes Mead, Mohave, and Havasu. Many diversions above station for irrigation, municipal, and industrial uses. See sta 09429000 for return flows from Palo Verde Irrigation District, which enter between sta 09429010 and this station. A portion of the return flows from Colorado River Indian Reservation also enters between these two stations.

AVERAGE DISCHARGE.--22 years, 8,789 ft³/s (248.9 m³/s), 6,368,000 acre-ft/yr (7,850 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,800 ft³/s (617 m³/s) Apr. 8, 1958; maximum gage height, 13.60 ft (4.145 m) May 6, 1958; minimum daily discharge, 1,900 ft³/s (53.8 m³/s) Jan. 18, 1974; minimum gage height, about 4.1 ft (1.25 m), Jan. 18, 1974, based on minimum observed gage height of 4.25 ft (1.295 m) Jan. 14, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,700 ft³/s (388 m³/s) July 25, gage height, 10.17 ft (3.100 m); minimum daily, 2,260 ft³/s (64.0 m³/s) Jan. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5460	5380	4430	2820	3150	8530	11900	10300	9740	11500	12100	8320
2	5810	5770	5230	2870	2580	5010	11800	10000	9250	11800	12000	7710
3	6120	5120	5250	3340	2470	4710	13000	9490	8140	11900	11700	8500
4	6330	4740	5870	3010	2460	4580	12800	9290	9170	12600	11300	9000
5	6290	4110	6080	2930	2930	4400	12000	8350	9750	12300	11300	9090
6	6140	4330	6310	2880	3420	4390	11400	7850	9760	11200	11800	7980
7	6090	4700	5820	2830	3340	4220	10600	9100	10100	10900	12600	7720
8	3800	5390	5740	2860	4500	6130	10600	9650	8890	10900	12700	8160
9	3300	5470	5270	2870	4170	6510	11700	9760	8500	12200	12600	8220
10	4500	5460	5160	2650	4200	7270	12400	9310	7850	12400	12200	9300
11	4700	4790	5270	2930	4350	7820	12300	8170	9270	12300	11700	9700
12	4900	4420	5750	2930	4920	9190	12300	7590	9940	12400	11800	9730
13	4800	5390	5800	2920	6050	9930	11600	7740	10300	12100	12000	9630
14	4500	5840	5710	2860	7590	9600	10700	8460	10000	11700	12100	8510
15	4000	5570	5870	2800	5770	9150	11000	9400	10400	11200	11000	8250
16	5000	5130	5630	2820	7240	10300	11900	10400	9800	11800	11100	7680
17	5770	4430	4940	2800	6670	9970	12700	9920	9770	12300	10800	8460
18	5830	4040	5750	2760	6280	10600	12900	9390	10500	12500	10300	8600
19	6010	3860	6310	2730	8640	11800	12900	10100	10600	12300	9650	8280
20	5990	4870	6260	2750	8740	12100	12400	9570	11600	12200	10000	8440
21	5710	5850	5650	2660	8710	12100	11900	10700	11900	11900	10700	8160
22	4700	5550	5000	2630	9220	12100	11600	10800	11100	12100	10700	7330
23	5600	5110	4060	2600	8960	11400	12200	10400	10000	12500	10200	6890
24	5600	5230	3460	2530	8600	11200	13000	9570	10100	12900	9650	7720
25	5700	4250	4740	2460	9130	11700	12700	8700	11500	13100	9040	9030
26	5570	3740	5790	2390	10400	10900	12100	7790	12400	11500	9080	9130
27	5270	3760	6600	2260	10100	11100	10800	7570	12000	11500	9740	8990
28	4900	3660	4310	3100	9030	11700	9840	8630	11900	10700	9680	8600
29	4700	3780	2970	3680	---	11700	10200	9700	11500	11100	9690	7820
30	5110	3910	2900	4200	---	12000	10600	9550	11300	11500	9190	7060
31	5570	---	2860	4280	---	11900	---	10200	---	12300	8640	---
TOTAL	163770	143650	160790	90150	173620	284010	353840	287450	307030	369600	337060	252010
MEAN	5283	4788	5187	2908	6201	9162	11790	9273	10230	11920	10870	8400
MAX	6330	5850	6600	4280	10400	12100	13000	10800	12400	13100	12700	9730
MIN	3300	3660	2860	2260	2460	4220	9840	7570	7850	10700	8640	6890
AC-FT	324800	284900	318900	178800	344400	563300	701800	570200	609000	733100	668600	499900
CAL YR 1977	TOTAL	2930340	MEAN	8028	MAX	14900	MIN	2860	AC-FT	5812000		
WTR YR 1978	TOTAL	2922980	MEAN	8008	MAX	13100	MIN	2260	AC-FT	5798000		

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1969 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CALCS)	HARD- NESS, NONCAR- BONATE (MG/L AS CALCS)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AU- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
DATE	TIME											
OCT												
03...	1315	6750	1360	7.9	--	380	220	94	35	150	5.4	5.0
11...	0935	--	1400	--	--	--	--	--	--	--	--	--
17...	0830	--	1270	--	--	--	--	--	--	--	--	--
25...	1345	--	1330	--	--	--	--	--	--	--	--	--
31...	1355	--	1360	--	--	--	--	--	--	--	--	--
NOV												
07...	0900	5540	1380	7.9	--	390	240	98	36	160	5.5	5.6
14...	1315	--	1370	--	--	--	--	--	--	--	--	--
21...	1240	--	1350	--	16.5	--	--	--	--	--	--	--
28...	1320	--	1530	--	--	--	--	--	--	--	--	--
DEC												
05...	0830	6640	1300	8.0	--	380	240	93	36	140	5.1	5.1
12...	0835	--	1350	--	16.0	--	--	--	--	--	--	--
19...	0835	--	1320	--	14.5	--	--	--	--	--	--	--
27...	0900	--	1260	--	14.5	--	--	--	--	--	--	--
JAN												
03...	0930	3500	1600	7.9	--	430	250	110	37	190	4.0	5.2
10...	1330	--	1690	--	15.0	--	--	--	--	--	--	--
16...	0800	--	1660	--	12.0	--	--	--	--	--	--	--
23...	0900	--	1640	--	--	--	--	--	--	--	--	--
30...	1105	--	1380	--	15.5	--	--	--	--	--	--	--
FEB												
06...	1005	3640	1510	8.0	15.5	400	240	100	37	180	5.9	5.0
13...	0845	--	1260	--	14.5	--	--	--	--	--	--	--
21...	1240	--	1220	--	--	--	--	--	--	--	--	--
27...	0935	--	1230	--	--	--	--	--	--	--	--	--
MAR												
06...	0925	4700	1360	8.0	--	370	220	92	35	150	5.4	5.1
13...	0830	--	1190	--	--	--	--	--	--	--	--	--
20...	0930	--	1210	--	--	--	--	--	--	--	--	--
27...	0900	--	1180	--	--	--	--	--	--	--	--	--
APR												
03...	0945	13100	1160	7.9	18.0	340	200	84	31	120	2.8	4.9
10...	1010	--	1180	--	17.0	--	--	--	--	--	--	--
17...	0940	--	1180	--	18.0	--	--	--	--	--	--	--
24...	1020	--	1180	--	--	--	--	--	--	--	--	--
MAY												
01...	0935	10600	1250	7.8	--	360	210	89	34	130	5.0	5.5
08...	0910	--	1220	--	--	--	--	--	--	--	--	--
15...	0900	--	1220	--	--	--	--	--	--	--	--	--
22...	1300	--	1280	--	20.0	--	--	--	--	--	--	--
30...	0800	--	1230	--	20.0	--	--	--	--	--	--	--
JUN												
05...	1030	--	1300	--	24.5	--	--	--	--	--	--	--
12...	1115	9840	1320	8.0	25.5	360	230	98	34	150	5.5	5.5
19...	1300	--	1340	--	24.5	--	--	--	--	--	--	--
26...	1030	--	1280	--	26.0	--	--	--	--	--	--	--
JUL												
03...	0845	12100	1320	7.9	25.0	360	230	90	32	140	5.2	5.1
10...	0915	--	1300	--	25.5	--	--	--	--	--	--	--
17...	0850	--	1270	--	24.5	--	--	--	--	--	--	--
24...	0800	--	1260	--	26.5	--	--	--	--	--	--	--
31...	0945	--	1280	--	--	--	--	--	--	--	--	--
AUG												
07...	1000	12600	1290	7.9	28.0	350	210	89	31	140	5.5	5.3
14...	0930	--	1320	--	25.5	--	--	--	--	--	--	--
21...	0910	--	1280	--	25.5	--	--	--	--	--	--	--
28...	1300	--	1370	--	27.0	--	--	--	--	--	--	--
SEP												
05...	0930	9980	1260	7.9	24.5	350	220	86	34	140	5.2	5.0
11...	0910	--	1230	--	24.0	--	--	--	--	--	--	--
18...	0915	--	1240	--	24.0	--	--	--	--	--	--	--
25...	0930	--	1200	--	--	--	--	--	--	--	--	--

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ--Continued

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: March 1956 to December 1966.

INSTRUMENTATION.--Water temperature recorder from March 1956 to December 1966.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SU4)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT											
03...	190	0	360	.5	11	868	889	1.18	--	200	20
11...	--	--	--	--	--	888	--	1.21	--	--	--
17...	--	--	--	--	--	810	--	1.10	--	--	--
25...	--	--	--	--	--	852	--	1.16	--	--	--
31...	--	--	--	--	--	866	--	1.18	--	--	--
NOV											
07...	190	0	370	.5	11	886	915	1.20	--	200	20
14...	--	--	--	--	--	878	--	1.19	--	--	--
21...	--	--	--	--	--	862	--	1.17	--	--	--
28...	--	--	--	--	--	978	--	1.33	--	--	--
DEC											
05...	170	0	350	.1	11	836	849	1.14	--	190	10
12...	--	--	--	--	--	866	--	1.18	--	--	--
19...	--	--	--	--	--	836	--	1.14	--	--	--
27...	--	--	--	--	--	804	--	1.09	--	--	--
JAN											
03...	220	0	390	.6	13	1030	1030	1.40	--	260	20
10...	--	--	--	--	--	1080	--	1.47	--	--	--
16...	--	--	--	--	--	1070	--	1.46	--	--	--
23...	--	--	--	--	--	1050	--	1.43	--	--	--
30...	--	--	--	--	--	880	--	1.20	--	--	--
FEB											
06...	200	0	360	.5	12	964	963	1.31	--	230	30
13...	--	--	--	--	--	804	--	1.09	--	--	--
21...	--	--	--	--	--	770	--	1.05	--	--	--
27...	--	--	--	--	--	788	--	1.07	--	--	--
MAR											
06...	190	0	380	.4	9.2	866	896	1.18	--	200	10
13...	--	--	--	--	--	758	--	1.03	--	--	--
20...	--	--	--	--	--	772	--	1.05	--	--	--
27...	--	--	--	--	--	758	--	1.03	--	--	--
APR											
03...	170	0	300	.4	9.7	742	734	1.01	--	160	10
10...	--	--	--	--	--	752	--	1.02	--	--	--
17...	--	--	--	--	--	752	--	1.02	--	--	--
24...	--	--	--	--	--	752	--	1.02	--	--	--
MAY											
01...	180	0	340	.4	9.8	798	818	1.09	--	170	10
08...	--	--	--	--	--	778	--	1.06	--	--	--
15...	--	--	--	--	--	776	--	1.06	--	--	--
22...	--	--	--	--	--	820	--	1.12	--	--	--
30...	--	--	--	--	--	780	--	1.06	--	--	--
JUN											
05...	--	--	--	--	--	822	--	1.12	--	--	--
12...	180	--	320	.5	11	830	848	1.13	--	190	10
19...	--	--	--	--	--	850	--	1.16	--	--	--
26...	--	--	--	--	--	828	--	1.13	--	--	--
JUL											
03...	160	0	330	.4	10	840	817	1.14	.12	210	30
10...	--	--	--	--	--	822	--	1.12	--	--	--
17...	--	--	--	--	--	802	--	1.09	--	--	--
24...	--	--	--	--	--	796	--	1.08	--	--	--
31...	--	--	--	--	--	812	--	1.10	--	--	--
AUG											
07...	170	0	330	.5	9.8	816	820	1.11	.01	220	20
14...	--	--	--	--	--	846	--	1.15	--	--	--
21...	--	--	--	--	--	814	--	1.11	--	--	--
28...	--	--	--	--	--	876	--	1.19	--	--	--
SEP											
05...	170	0	320	.6	9.0	810	799	1.10	.02	200	20
11...	--	--	--	--	--	786	--	1.07	--	--	--
18...	--	--	--	--	--	788	--	1.07	--	--	--
25...	--	--	--	--	--	768	--	1.04	--	--	--

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA
(National stream-quality accounting network, pesticide, radiochemical, and tritium network station)

LOCATION.--Lat 32°52'59", long 114°27'55", at Imperial Dam. The Arizona end of the dam is in SW¼NW¼ sec.30, T.6 S., R.21 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030104; the California end is in NW¼SW¼ sec.9, T.15 S., R.24 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030104. Imperial Dam is 5 mi (8 km) upstream from Laguna Dam, 15 mi (24 km) northeast of Yuma, Ariz., 90 mi (145 km) downstream from Palo Verde Dam, and 147 mi (237 km) downstream from Parker Dam.

DRAINAGE AREA.--188,500 mi² (488,200 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1903-34 (yearly discharge only, published in WSP 1313), July 1934 to current year (monthly discharge only since October 1942). Prior to October 1942 published as 'near Picacho, Calif.' October 1942 to September 1971 published as 'at Imperial Dam' (monthly discharge shown as 'flow reaching Imperial Dam,' listed as supplement to 'flow passing Imperial Dam').

GAGE.--None. This record is synthesized from records of several other stations (see REMARKS). July 13, 1934, to Sept. 30, 1942, water-stage recorder at site 14.5 mi (23.3 km) upstream at datum 167.38 ft (51.017 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records show flow of Colorado River reaching Imperial Dam, and are based on combined monthly total flow of Colorado River below Imperial Dam (sta 09429500), All-American Canal near Imperial Dam (sta 09523000), Gila Gravity Main Canal at Imperial Dam (sta 09522500), and diversions to Mittry Lake (sta 09522400). Records for 1903-34 and for October 1942 to September 1960 were computed as combined flow of Colorado River at Yuma (sta 09521000) and the canals diverting at Imperial and Laguna Dams, less the flow of Gila River near Dome (sta 09520500); for some of these periods drainage and waste return flows and channel losses between the gaging stations and Imperial Dam were considered, and for other periods they were neglected. Records for July 1934 to September 1942 show daily discharge of Colorado River at gaging station near Picacho, Calif.

Natural flow of Colorado River at this point affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, and diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas. Diversions to Mittry Lake, which began June 23, 1970, are included in river records in table below. Additional regulation, beginning Jan. 31, 1966, to equalize supplies for downstream water users, is provided by pumped storage in reservoir on Senator Wash, about 2 mi (3 km) upstream from Imperial Dam. Monthend contents of Senator Wash Reservoir—capacity, 13,840 acre-ft (17.1 hm³)—is given in table below.

COOPERATION.--Records of Sparling meter readings of diversion to Mittry Lake and contents of Senator Wash Reservoir furnished by Bureau of Reclamation.

AVERAGE DISCHARGE.--44 years (water years 1935-78), 10,970 ft³/s (310.7 m³/s), 7,948,000 acre-ft/yr (9,800 hm³/yr).

EXTREMES FOR PERIOD OF 1934-78.--Maximum discharge, 40,800 ft³/s (1,160 m³/s) Sept. 5, 1939; minimum, 538 ft³/s (15.2 m³/s) Aug. 3, 1934; minimum daily since regulation of Hoover Dam began, 1,450 ft³/s (41.1 m³/s) Feb. 17, 1935.

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

COLORADO RIVER ABOVE IMPERIAL DAM, DIVERSIONS TO MITTRY LAKE, AND MONTHEND CONTENTS OF SENATOR WASH RESERVOIR,
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	<u>Discharge of Colorado River</u>		Diversions to Mittry Lake (acre-feet)* (09522400)	Monthend contents, Senator Wash Reservoir (acre-feet)
	Mean (cubic feet per second)	Runoff (acre-feet)		
October.....	5,292	325,400	575	5,030
November.....	4,658	277,200	493	8,510
December.....	5,035	309,600	612	13,660
CAL YR 1977.....	7,880	5,705,000	7,380	-----
January.....	2,778	170,800	595	11,120
February.....	6,123	340,100	522	6,890
March.....	8,948	550,200	547	6,37
April.....	11,720	697,500	365	5,890
May.....	9,163	563,400	389	6,270
June.....	9,904	589,300	615	6,660
July.....	11,510	707,500	618	8,850
August.....	10,800	664,100	619	6,510
September.....	8,422	501,100	587	4,120
WTR YR 1978.....	7,868	5,696,000	6,540	-----

* Included in first two columns of table.

NOTE.--Discharge of Colorado River, in first two columns of table above, is combined discharge of Colorado River below Imperial Dam (sta 09429500) and diversions to All-American Canal, Gila Gravity Main Canal, and Mittry Lake.

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

LOCATION.--Water samples collected above trash racks at All-American Canal headworks at west end of Imperial Dam.

PERIOD OF RECORD.--August 1969 to current year.

Prior to October 1971, published as sta 09429500, Colorado River at Imperial Dam, Ariz.-Calif.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to current year.

WATER TEMPERATURES: October 1974 to current year.

REMARKS.--Replaces water-quality station 09525500 Yuma Main Canal below Colorado River Siphon, at Yuma, Ariz. Stream discharges reported with analyses represent total flow reaching Imperial Dam. Since January 1971, daily specific-conductance measurements have been made using a composite of four water samples taken at 6-hour intervals. Composites of four water samples per day are analyzed for major chemical constituents weekly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS)	STREAM- INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCEI FECAL, KF AGAR (CULS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)
OCT												
03...	--	5950	--	1350	8.3	--	4.0	--	--	--	--	370
05...	0915	--	6750	1260	8.0	24.5	--	8.0	17	28	42	--
10...	--	4760	--	1390	8.0	--	3.0	--	--	--	--	365
17...	--	4990	--	1410	7.9	--	3.0	--	--	--	--	375
18...	1030	--	5290	--	--	23.5	--	--	19	--	--	--
24...	--	5500	--	1350	7.9	--	2.0	--	--	--	--	370
31...	--	4980	--	1360	8.0	--	2.0	--	--	--	--	370
NOV												
07...	--	4540	--	1400	8.0	--	3.0	--	--	--	--	375
09...	0915	--	5020	1360	8.2	17.5	--	8.5	16	87	89	--
14...	--	5050	--	1380	7.9	--	2.0	--	--	--	--	375
21...	--	5120	--	1410	7.9	--	2.0	--	--	--	--	375
21...	1130	--	5183	--	--	15.0	--	--	35	--	--	--
28...	--	3880	--	1470	8.0	--	2.0	--	--	--	--	395
DEC												
05...	--	5210	--	1310	7.9	--	2.0	--	--	--	--	370
07...	0900	--	5680	1320	7.8	15.0	--	8.8	39	27	130	--
12...	--	5670	--	1340	7.9	--	1.0	--	--	--	--	370
19...	--	6040	--	1320	7.9	--	2.0	--	--	--	--	370
19...	1105	--	6050	--	--	13.0	--	--	0	--	--	--
26...	--	3680	--	1490	8.0	--	2.0	--	--	--	--	405
JAN												
02...	--	2190	--	1630	7.9	--	--	--	--	--	--	430
09...	--	2540	--	1630	8.0	--	2.0	--	--	--	--	430
11...	0900	--	2540	1560	7.9	12.0	--	9.8	62	280	1000	--
16...	--	2560	--	1520	7.9	--	2.0	--	--	--	--	395
23...	--	2480	--	1530	8.0	--	1.0	--	--	--	--	410
24...	1105	--	2020	--	--	12.5	--	--	20	--	--	--
30...	--	3880	--	1520	7.9	--	2.0	--	--	--	--	405
FEB												
06...	--	3720	--	1480	8.1	--	2.0	--	--	--	--	395
08...	0910	--	4020	1390	8.0	15.5	--	9.7	31	67	26	--
13...	--	5350	--	1310	8.1	--	1.0	--	--	--	--	370
20...	--	8360	--	1190	8.0	--	7.0	--	--	--	--	350
21...	1050	--	8680	--	--	14.0	--	--	19	--	--	--
27...	--	9070	--	1190	8.0	--	6.0	--	--	--	--	350
MAR												
06...	--	4680	--	1340	8.0	--	2.0	--	--	--	--	370
08...	0830	--	6140	1390	8.0	17.5	--	8.1	21	100	150	--
13...	--	8760	--	1190	8.0	--	8.0	--	--	--	--	350

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

COOPERATION.--Daily water temperature record furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Nov. 21, 1969; minimum daily, 939 micromhos Sept. 26, 1976.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 20, 1977; minimum daily, 9.0°C Dec. 26, 1974, Jan. 4, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,640 micromhos Jan. 3, 4; minimum daily, 1,160 micromhos Mar. 19.

WATER TEMPERATURES: Maximum daily, 32.0°C July 28, 29, 30; minimum daily, 13.0°C Dec. 22, 23, 24.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HARD- NESS, NONCAR- BONATE (MG/L CACO ₃)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO ₃)	CAR- BONATE (MG/L AS CO ₃)
UCT												
03...	216	--	94	--	33	--	150	3.4	--	5.8	188	0
05...	--	--	--	--	--	--	--	--	--	--	--	--
10...	211	--	93	--	32	--	160	3.6	--	5.8	188	0
17...	216	--	94	--	34	--	160	3.6	--	5.7	194	0
18...	--	--	--	--	--	--	--	--	--	--	--	--
24...	219	--	94	--	33	--	150	3.4	--	5.2	184	0
31...	216	--	92	--	34	--	150	3.4	--	5.4	188	0
NOV												
07...	214	--	94	--	34	--	160	3.6	--	5.6	196	0
09...	--	85	--	34	--	130	--	--	4.9	5.2	--	--
14...	219	--	94	--	34	--	155	3.5	--	5.4	190	0
21...	218	--	95	--	34	--	160	3.6	--	5.5	192	0
21...	--	--	--	--	--	--	--	--	--	--	--	--
28...	228	--	99	--	36	--	170	3.7	--	5.2	204	0
DEC												
05...	218	--	91	--	35	--	140	3.2	--	5.2	186	0
07...	--	--	--	--	--	--	--	--	--	--	--	--
12...	218	--	93	--	34	--	145	3.3	--	5.3	186	0
19...	218	--	93	--	34	--	145	3.3	--	5.5	186	0
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	236	--	104	--	35	--	170	3.7	--	5.6	206	0
JAN												
02...	248	--	109	--	38	--	190	4.0	--	5.5	222	0
09...	248	--	109	--	38	--	190	4.0	--	5.5	222	0
11...	--	--	--	--	--	--	--	--	--	--	--	--
16...	228	--	102	--	34	--	180	3.9	--	5.4	204	0
23...	240	--	103	--	37	--	175	3.8	--	5.4	208	0
24...	--	--	--	--	--	--	--	--	--	--	--	--
30...	234	--	101	--	37	--	175	3.8	--	5.4	208	0
FEB												
06...	228	--	98	--	37	--	170	3.7	--	5.2	204	0
08...	--	94	--	35	--	150	--	--	5.4	--	--	--
13...	219	--	90	--	35	--	140	3.2	--	5.3	184	0
20...	210	--	86	--	33	--	120	2.8	--	5.1	170	0
21...	--	--	--	--	--	--	--	--	--	--	--	--
27...	209	--	86	--	33	--	120	2.8	--	5.4	172	0
MAR												
06...	212	--	94	--	33	--	145	3.3	--	5.3	192	0
08...	--	--	--	--	--	--	--	--	--	--	--	--
13...	208	--	87	--	32	--	120	2.8	--	5.3	174	0

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT											
03...	345	130	.5	10	866	--	862	1.18	--	--	.09
05...	--	--	--	--	--	--	--	--	20	.12	--
10...	350	142	.5	8.2	882	--	885	1.20	--	--	.09
17...	355	142	.5	10	902	--	898	1.23	--	--	.09
18...	--	--	--	--	--	--	--	--	74	.08	--
24...	345	132	.6	10	858	--	861	1.17	--	--	.11
31...	345	135	.5	10	866	--	866	1.18	--	--	.14
NOV											
07...	355	140	.4	11	894	--	898	1.22	--	--	.14
09...	--	--	--	--	--	880	--	--	11	.12	--
14...	350	138	.5	9.2	884	--	881	1.20	--	--	.14
21...	355	142	.4	10	902	--	898	1.23	--	--	.14
21...	--	--	--	--	--	--	--	--	10	.14	--
28...	370	152	.5	9.0	936	--	943	1.27	--	--	.16
DEC											
05...	340	125	.5	7.8	840	--	837	1.14	--	--	.16
07...	--	--	--	--	--	--	--	--	14	.18	--
12...	345	130	.5	9.2	858	--	855	1.17	--	--	.18
19...	340	128	.5	8.8	846	--	847	1.15	--	--	.14
19...	--	--	--	--	--	--	--	--	24	.21	--
26...	370	158	.5	9.2	958	--	954	1.30	--	--	.23
JAN											
02...	390	182	.5	11	1050	--	1040	1.43	--	--	.18
09...	390	182	.5	11	1050	--	1040	1.43	--	--	.14
11...	--	--	--	--	--	--	--	--	8	.23	--
16...	370	168	.5	9.5	974	--	970	1.32	--	--	.18
23...	370	170	.5	10	982	--	974	1.34	--	--	.14
24...	--	--	--	--	--	--	--	--	25	.13	--
30...	370	165	.5	9.5	970	--	966	1.32	--	--	.16
FEB											
06...	365	160	.5	9.0	946	--	946	1.29	--	--	.18
08...	--	--	--	--	--	--	--	--	40	.19	--
13...	335	128	.5	8.0	842	--	833	1.15	--	--	.11
20...	310	108	.5	8.5	758	--	756	1.03	--	--	.27
21...	--	--	--	--	--	--	--	--	65	.20	--
27...	310	108	.5	9.5	756	--	758	1.03	--	--	.20
MAR											
06...	340	130	.6	10	856	--	854	1.16	--	--	.20
08...	--	--	--	--	--	--	--	--	25	.19	--
13...	310	108	.4	8.0	760	--	758	1.03	--	--	.29

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHQS)	PH (UNITS)	TEMPE- RATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)
MAR												
20...	--	11200	--	1170	8.0	--	4.0	--	--	--	--	340
21...	1100	--	11600	--	--	19.5	--	--	29	--	--	--
27...	--	9890	--	1200	8.1	--	6.0	--	--	--	--	345
APR												
03...	--	11600	--	1190	8.2	--	3.0	--	--	--	--	345
10...	--	11400	--	1200	8.1	--	2.0	--	--	--	--	345
12...	0930	--	12300	1230	8.1	20.0	--	7.2	17	K15	43	--
17...	--	11900	--	1210	8.0	--	4.0	--	--	--	--	350
24...	--	12200	--	1210	8.0	--	7.0	--	--	--	--	350
25...	1000	--	12400	--	--	20.5	--	--	18	--	--	--
MAY												
01...	--	10400	--	1230	7.9	--	4.0	--	--	--	--	350
08...	--	8460	--	1280	7.9	--	4.0	--	--	--	--	365
10...	0905	--	9410	1270	8.0	22.5	--	8.1	17	K15	52	--
15...	--	8890	--	1270	8.1	--	3.0	--	--	--	--	360
22...	--	9980	--	1230	8.0	--	2.0	--	--	--	--	350
23...	1115	--	10270	--	--	24.0	--	--	17	--	--	--
29...	--	8540	--	1280	8.0	--	3.0	--	--	--	--	365
JUN												
05...	--	8690	--	1270	8.0	--	3.0	--	--	--	--	360
12...	--	9110	--	1280	8.0	--	2.0	--	--	--	--	365
14...	0915	--	9900	1300	8.0	27.0	--	7.2	29	26	33	--
19...	--	9860	--	1240	8.0	--	1.0	--	--	--	--	355
26...	--	10700	--	1230	7.8	--	2.0	--	--	--	--	350
26...	1100	--	10700	--	--	28.0	--	--	13	--	--	--
JUL												
03...	--	11100	--	1240	7.8	--	1.0	--	--	--	--	355
10...	--	11400	--	1210	7.9	--	1.0	--	--	--	--	350
12...	0930	--	12400	1270	8.0	27.5	--	7.6	10	30	22	--
17...	--	11700	--	1250	7.9	--	2.0	--	--	--	--	350
24...	--	11700	--	1240	7.9	--	2.0	--	--	--	--	350
24...	1110	--	11900	--	--	29.5	--	--	20	--	--	--
31...	--	11100	--	1240	7.9	--	4.0	--	--	--	--	350
AUG												
07...	--	11600	--	1250	8.0	--	2.0	--	--	--	--	355
09...	0900	--	20000	1300	7.9	30.0	--	6.6	35	32	49	--
14...	--	11300	--	1240	7.9	--	1.0	--	--	--	--	350
21...	--	9930	--	1270	8.0	--	1.0	--	--	--	--	360
28...	--	9510	--	1270	8.0	--	2.0	--	--	--	--	360
28...	1115	--	9600	--	--	28.5	--	--	14	--	--	--

K Based on non-ideal colony count.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
MAR											
20...	305	105	.4	8.2	748	--	746	1.02	--	--	.16
21...	--	--	--	--	--	--	--	--	53	.10	--
27...	310	108	.5	8.1	762	--	763	1.04	--	--	.11
APR											
03...	310	108	.4	7.5	758	--	756	1.03	--	--	.07
10...	310	108	.5	9.0	768	--	766	1.04	--	--	.07
12...	--	--	--	--	--	--	--	--	15	.08	--
17...	310	110	.3	7.8	770	--	769	1.05	--	--	.07
24...	315	108	.5	8.5	770	--	772	1.05	--	--	.07
25...	--	--	--	--	--	--	--	--	19	.16	--
MAY											
01...	315	112	.6	7.5	784	--	783	1.07	--	--	.07
08...	320	120	.4	8.0	814	--	814	1.11	--	--	.14
10...	--	--	--	--	--	808	--	--	19	.09	--
15...	320	120	.5	7.8	810	--	808	1.10	--	--	.11
22...	315	112	.5	8.2	782	--	784	1.06	--	--	.18
23...	--	--	--	--	--	--	--	--	29	.10	--
29...	325	120	.5	8.2	814	--	814	1.11	--	--	.14
JUN											
05...	320	120	.4	8.2	806	--	808	1.10	--	--	.16
12...	325	122	.4	8.5	814	--	815	1.11	--	--	.07
14...	--	--	--	--	--	--	--	--	38	.14	--
19...	320	112	.5	7.8	786	--	789	1.07	--	--	.07
26...	320	110	.5	8.2	784	--	785	1.07	--	--	.09
26...	--	--	--	--	--	--	--	--	38	.08	.11
JUL											
03...	320	112	.4	7.5	788	--	789	1.07	--	--	.07
10...	315	110	.5	8.5	768	--	770	1.04	--	--	.09
12...	--	--	--	--	--	--	--	--	10	.08	.09
17...	325	114	.4	7.5	796	--	798	1.08	--	--	.07
24...	325	112	.4	7.5	786	--	788	1.07	--	--	.07
24...	--	--	--	--	--	--	--	--	16	.08	.11
31...	325	112	.4	8.5	790	--	791	1.07	--	--	.09
AUG											
07...	325	115	.5	9.6	792	--	794	1.08	--	--	.05
09...	--	--	--	--	--	--	--	--	17	.08	--
14...	325	112	.4	7.2	788	--	789	1.07	--	--	.07
21...	325	120	.3	8.0	808	--	808	1.10	--	--	.09
28...	325	120	.4	8.7	804	--	808	1.09	--	--	.07
28...	--	--	--	--	--	--	--	--	23	.07	.10

09429400 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
21...	.01	--	.11	--	.01	.62	.63	.74	.14	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
12...	.01	.01	.09	.14	.03	.33	.36	.45	.03	--	.03
17...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
25...	.01	--	.17	--	.01	.47	.48	.65	.05	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
10...	.01	.00	.10	.15	.09	.28	.37	.47	.03	.00	.00
15...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
23...	.01	--	.11	--	.01	.52	.53	.64	.02	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
14...	.01	.01	.15	.16	.04	.69	.73	.88	.03	--	.01
19...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	.01	.02	.09	.13	.00	.42	.42	.51	.04	--	.01
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
12...	.01	.01	.09	.10	.00	.54	.54	.63	.02	--	.03
17...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.00	.01	.08	.12	.00	.35	.35	.43	.03	--	.01
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	--	--	--	--	--	--	--	--	--	--	--
09...	.00	.01	.08	.07	.02	1.4	1.4	1.5	.03	.00	.00
14...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
28...	.01	.01	.08	.11	.01	.30	.31	.39	.04	--	.01

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW (CFS)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
SEP											
04...	--	8040	--	1290	8.1	--	3.0	--	--	--	
11...	--	9210	--	1270	8.0	--	4.0	--	--	--	
13...	0920	--	9500	1200	7.8	25.5	--	7.8	14	26	
18...	--	7970	--	1280	7.9	--	1.0	--	--	--	
25...	--	7750	--	1300	7.8	--	1.0	--	--	--	
25...	1030	--	7770	--	--	26.5	--	--	27	--	
DATE	TIME	STREP- TUCCUCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)
SEP											
04...	--	--	360	212	90	33	140	3.2	5.2	180	0
11...	--	--	360	214	92	32	135	3.1	5.4	178	0
13...	420	--	--	--	--	--	--	--	--	--	--
18...	--	--	360	212	90	33	135	3.1	5.4	180	0
25...	--	--	365	219	90	34	140	3.2	5.4	178	0
25...	--	--	--	--	--	--	--	--	--	--	--
DATE	TIME	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
SEP											
04...	335	120	.5	9.0	824	822	1.12	--	--	--	.14
11...	325	121	.4	8.2	806	808	1.10	--	--	--	.11
13...	--	--	--	--	--	--	--	9	.11	.12	--
18...	330	122	.4	8.5	816	814	1.11	--	--	--	.07
25...	335	125	.3	8.7	826	827	1.12	--	--	--	.09
25...	--	--	--	--	--	--	--	3	.08	.10	--
DATE	TIME	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
SEP											
04...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
13...	.01	.01	.12	.13	.00	.50	.50	.62	.03	.01	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	.00	.01	.08	.11	.01	.33	.34	.42	.02	.01	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible][illegible]

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT								
05...	--	--	--	--	--	--	--	470
18...	--	--	--	--	--	--	--	310
NOV								
09...	3	4	8	<50	0	<10	2	210
21...	--	--	--	--	--	--	--	250
DEC								
07...	--	--	--	--	--	--	--	400
19...	--	--	--	--	--	--	--	410
JAN								
11...	--	--	--	--	--	--	--	190
24...	--	--	--	--	--	--	--	140
FEB								
08...	0	30	5	0	0	2	2	190
21...	--	--	--	--	--	--	--	1100
MAR								
08...	--	--	--	--	--	--	--	320
21...	--	--	--	--	--	--	--	750
APR								
12...	--	--	--	--	--	--	--	310
25...	--	--	--	--	--	--	--	300
MAY								
10...	1	0	10	3	2	5	0	430
23...	--	--	--	--	--	--	--	430
JUN								
14...	--	--	--	--	--	--	--	490
26...	--	--	--	--	--	--	--	570
JUL								
12...	--	--	--	--	--	--	--	390
24...	--	--	--	--	--	--	--	450
AUG								
09...	<1	10	10	2	<1	5	2	440
28...	--	--	--	--	--	--	--	290
SEPT								
13...	--	--	--	--	--	--	--	510
25...	--	--	--	--	--	--	--	330

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV								
09...	0915	<10	.4	8.1	7.2	1.1	.08	3.5
MAY								
10...	0905	<11	1.5	6.0	5.5	1.3	.15	--

< Actual value is known to be less than value shown.

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDU, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)
OCT 05...	0915	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
NOV 09...	0915	.0	.00	.0	.00	.00	.00	--	.00	.00	--	.00
JAN 11...	0900	.0	.00	.0	.00	.00	.00	.01	.00	.00	.00	.00
FEB 08...	0910	.0	.00	.0	.00	.00	.00	.01	.00	.00	.00	.00
MAR 08...	0830	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
APR 12...	0930	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
MAY 10...	0905	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
JUL 12...	0930	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
AUG 09...	0900	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00
SEP 13...	0920	.0	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00

DATE	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 05...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
NOV 09...	.00	.00	--	--	--	--	0	--	.00	.00	.00
JAN 11...	.00	.00	.00	.01	.00	.00	0	.00	.00	.00	.00
FEB 08...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
MAR 08...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
APR 12...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
MAY 10...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
JUL 12...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
AUG 09...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00
SEP 13...	.00	.00	.00	.00	.00	.00	0	.00	.00	.00	.00

DATE	TIME	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)
NOV 09...	0915	1700	--	--	4.73	3.14
FEB 08...	0910	1800	--	--	.494	.000
MAY 10...	0905	8300	2.99	2.20	.000	.000
JUN 14...	0915	2300	--	--	.000	.000
JUL 12...	0930	1300	--	--	--	--
AUG 09...	0900	--	.472	.236	--	--
SEP 13...	0920	4800	--	--	.000	.000

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1330	1440	1540	1330	1200	1190	1230	1240	1260	1220	1290
2	1390	1310	1420	1630	1330	1210	1180	1240	1260	1240	1240	1300
3	1350	1300	1350	1640	1370	1270	1190	1250	1270	1240	1240	1320
4	1330	1340	1320	1640	1420	1310	1180	1250	1300	1240	1240	1290
5	1320	1350	1310	1540	1450	1330	1190	1260	1270	1230	1260	1270
6	1310	1390	1290	1530	1480	1340	1200	1290	1250	1240	1250	1260
7	1320	1400	1280	1570	1440	1350	1210	1310	1250	1280	1250	1310
8	1320	1400	1290	1620	1400	1300	1220	1280	1230	1280	1230	1310
9	1370	1350	1300	1630	1370	1280	1200	1260	1270	1270	1230	1290
10	1390	1320	1310	1590	1350	1260	1200	1250	1290	1210	1220	1300
11	1450	1330	1340	1540	1350	1240	1200	1260	1310	1240	1240	1270
12	1400	1350	1340	1550	1340	1220	1210	1290	1280	1250	1250	1240
13	1390	1390	1330	1530	1310	1190	1200	1310	1260	1230	1240	1240
14	1400	1380	1310	1530	1270	1180	1220	1300	1240	1240	1240	1250
15	1410	1340	1310	1510	1220	1210	1230	1270	1250	1250	1240	1260
16	1420	1320	1310	1520	1280	1230	1220	1260	1250	1250	1260	1280
17	1410	1330	1310	1530	1230	1230	1210	1240	1270	1250	1260	1320
18	1340	1370	1340	1530	1240	1200	1210	1250	1260	1250	1280	1280
19	1310	1420	1320	1530	1270	1160	1210	1270	1240	1240	1280	1280
20	1310	1440	1310	1530	1190	1170	1200	1260	1240	1250	1290	1290
21	1310	1410	1300	1520	1210	1180	1220	1260	1230	1250	1270	1280
22	1320	1340	1310	1520	1230	1180	1220	1230	1230	1240	1260	1290
23	1350	1310	1330	1530	1260	1190	1230	1240	1240	1240	1260	1310
24	1350	1320	1370	1530	1230	1200	1210	1250	1270	1240	1270	1330
25	1330	1340	1440	1540	1220	1190	1200	1270	1260	1220	1290	1300
26	1310	1360	1490	1530	1200	1170	1210	1280	1230	1230	1310	1250
27	1310	1420	1340	1530	1190	1200	1220	1310	1230	1270	1290	1250
28	1340	1470	1270	1510	1210	1190	1250	1320	1250	1260	1270	1250
29	1360	1450	1310	1610	---	1190	1270	1280	1240	1280	1260	1260
30	1360	1450	1380	1520	---	1200	1240	1260	1260	1250	1260	1280
31	1360	---	1480	1380	---	1200	---	1260	---	1240	1270	---
MEAN	1360	1370	1340	1550	1300	1220	1210	1270	1260	1250	1260	1280
WTR YR 1978	MEAN	1300		MAX	1640		MIN	1160				

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 1230

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.5	22.0	17.0	17.0	16.0	16.5	21.5	23.0	26.0	28.0	31.0	30.5
2	26.0	21.0	16.5	16.5	16.5	17.0	21.0	22.0	26.5	28.5	31.0	30.5
3	26.5	21.5	16.5	16.0	17.0	17.0	20.5	23.0	26.5	28.0	31.0	31.0
4	26.0	21.0	16.5	15.0	16.0	18.0	20.5	24.0	26.5	28.0	31.0	30.5
5	27.0	21.5	16.0	15.0	16.0	18.0	20.5	24.5	26.0	28.0	31.0	30.0
6	26.5	20.0	16.0	15.5	16.0	18.0	20.5	23.5	28.0	28.0	31.5	29.5
7	27.0	19.5	16.0	15.5	16.0	19.0	20.5	23.5	26.0	28.5	31.5	30.5
8	28.0	19.0	16.0	16.0	16.5	19.0	20.0	23.5	29.0	29.0	31.5	30.0
9	28.5	18.5	16.0	15.0	18.0	19.0	19.0	24.5	30.0	29.0	31.0	29.5
10	28.5	17.0	16.0	14.5	17.0	19.0	20.0	24.5	29.5	29.5	31.0	28.5
11	28.5	17.0	16.0	14.5	16.5	19.0	20.5	24.5	29.0	30.0	31.5	28.5
12	28.5	18.0	16.0	14.5	15.5	18.0	21.5	25.5	29.0	29.5	30.5	28.5
13	25.5	18.5	16.0	14.5	15.5	16.5	22.0	26.0	29.0	---	30.5	28.0
14	25.0	18.5	15.5	14.5	15.5	18.0	21.5	27.0	29.0	30.0	30.0	27.0
15	24.5	18.5	17.0	15.5	15.5	18.5	21.5	26.5	29.0	30.5	29.0	27.0
16	25.0	18.5	15.5	15.0	15.5	19.0	21.0	25.0	26.5	31.0	30.0	27.5
17	25.5	18.0	15.5	15.5	14.5	19.0	20.5	24.0	26.5	30.5	28.5	28.0
18	25.5	19.0	15.5	15.5	14.5	20.0	21.0	24.0	29.5	31.5	29.0	26.0
19	26.0	19.0	15.5	15.5	14.5	19.0	21.5	24.5	29.5	31.0	29.0	25.0
20	24.5	18.0	14.5	16.0	14.5	19.5	22.0	25.5	29.5	31.0	29.5	23.5
21	24.5	16.5	14.5	16.0	15.5	20.5	21.5	26.0	29.5	31.0	29.5	23.0
22	24.5	16.5	13.0	16.0	16.0	21.0	21.5	26.5	30.0	31.0	30.0	23.5
23	24.5	15.5	13.0	16.0	17.0	20.5	21.5	26.0	30.0	30.5	29.5	25.5
24	24.5	15.5	13.0	14.0	17.0	20.5	22.0	25.0	30.0	31.0	30.0	26.5
25	24.5	16.5	14.0	13.5	17.0	20.5	23.5	25.0	30.0	31.0	29.0	28.0
26	24.0	16.5	14.5	13.5	17.0	21.0	23.0	24.5	29.5	31.0	28.0	28.0
27	24.0	18.0	15.0	14.0	17.0	21.5	23.0	24.5	28.5	31.0	28.5	28.5
28	23.5	18.0	15.5	14.5	17.0	21.5	23.5	25.0	26.5	32.0	29.0	29.0
29	24.0	17.0	16.0	15.0	---	21.5	23.5	26.0	26.0	32.0	29.0	29.0
30	23.5	16.0	16.5	15.0	---	21.5	23.5	27.0	28.0	32.0	29.5	29.0
31	23.0	---	16.5	16.0	---	21.5	---	27.0	---	31.5	30.0	---
MEAN	25.5	18.5	15.5	15.0	16.0	19.5	21.5	25.0	29.0	30.0	30.0	28.0
WTR YR 1978	MEAN	23.0		MAX	32.0		MIN	13.0				

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 9,77 0915	FEB 8,78 0910	MAY 10,78 0905	JUN 14,78 0915
TOTAL CELLS/ML	1700	1800	8300	2300
DIVERSITY: DIVISION	1.7	0.8	1.4	1.7
..CLASS	1.9	0.8	1.7	1.7
..ORDER	2.7	1.3	2.3	1.9
...FAMILY	3.1	1.6	2.6	2.9
....GENUS	3.5	2.1	2.9	2.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHAKACIACEAE								
....SCHRUECKIA	96	6	--	-	--	-	--	-
...CUELASTHACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...MICRACINIAEAE								
....MICRACINIUM	--	-	64	4	--	-	--	-
...DUCYSTACEAE								
....ANKISTRODESMUS	29	2	32	2	--	-	--	-
...DICTYOSPHAERIUM	--	-	64	4	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	--	-	--	-
...UOCYSTIS	--	-	--	-	360	4	180	8
...TETRAEURON	--	-	--	-	72	1	--	-
...SCENEDESMACEAE								
....CRUCIGENIA	--	-	--	-	--	-	--	-
...SCENEDESMUS	76	5	48	3	360	4	530#	23
...TETRASTRUM	--	-	--	-	290	3	--	-
..TETRASPOALES								
...PALMELLACEAE								
...SPHAERUCYSTIS	310#	18	--	-	--	-	--	-
..VOLVUCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	--	-
...CHLAMYDOMONAS	38	2	48	3	72	1	--	-
...CHLOROGONIUM	--	-	--	-	--	-	--	-
...POLYBLEPHARIDACEAE								
...SPERMATOPHYTES	--	-	--	-	72	1	--	-
..ZYGEMATALES								
...DESMIDIACEAE								
...COSMARIUM	--	-	--	-	--	-	120	5
...STAUSTRUM	--	-	--	-	--	-	--	-
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
...CYCLOTELLA	110	6	1100#	60	3000#	36	--	-
...MELOSIRA	340#	20	240	13	--	-	--	-
...STEPHANODISCUS	38	2	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	220	3	--	-
...COCCONEIS	19	1	--	-	72	1	29	1
...RHUICOSPHENIA	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	--	-	--	-	44	2
...DIATOMACEAE								
....DIATOMA	--	-	--	-	72	1	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	--	-	--	-	--	-
...SYNEDRA	86	5	--	-	140	2	73	3
...NAVICULACEAE								
....GYROSIGMA	--	-	--	-	--	-	44	2
...NAVICULA	29	2	60	5	72	1	88	4
...PINNULARIA	--	-	--	-	--	-	--	-
...NITZSCHIAEAE								
....NITZSCHIA	86	5	96	5	290	3	290	13
...TABELLARIACEAE								
....TABELLARIA	--	-	--	-	--	-	160	8
..CHRYSTOPHYCEAE								
...CHRYSOMONADALES								
...OCHROMONADACEAE								
...DINOBRYON	48	3	--	-	360	4	--	-
...UCHROMUNAS	--	-	--	-	360	4	--	-
CRYPTOPHYTA (CRYPTOMUNADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	38	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 9,77 0915		FEB 8,78 0910		MAY 10,78 0905		JUN 14,78 0915	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROOCYCEAE								
...CHROOCOCCAEAE								
...ANACYSTIS	38	2	--	-	140	2	700#	30
...HORMOGUNALES								
...NOSTOCACEAE								
....CYLINDROSPERMUM	--	-	--	-	--	-	--	-
...OSCILLATOXIAEAE								
....USCILLATORIA	290#	17	--	-	2400#	28	--	-
....SPIRULINA	--	-	48	3	--	-	--	-
...RIVULARIAEAE								
....KAPHIDIOPSIS	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENAEAE								
....EUGLENA	19	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
...CERATIAEAE								
....CERATIUM	--	-	--	-	--	-	59	3

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON						
DATE TIME	JUL 12,78 0930	AUG 9,78 0900	SEP 13,78 0920			
TOTAL CELLS/ML	1500	2600	4600			
DIVERSITY: DIVISION	1.5	1.0	1.3			
..CLASS	1.5	1.0	1.3			
...ORDER	1.5	1.3	2.4			
...FAMILY	1.6	2.1	3.0			
....GENUS	2.1	2.2	3.1			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCUCCALES						
....CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	--	-
...COELASTRACEAE						
....COELASTRUM	--	-	700# 27	--	--	-
...MICRACITINIAEAE						
....MICKACTINIUM	--	-	48 2	--	--	-
...UOCYSTACEAE						
....ANKISTRUEDESMS	--	-	24 1	--	55 1	
....DICTYOSPHAERIUM	--	-	--	-	110 2	
....KIRCHNERIELLA	--	-	--	-	* 0	
....OUCYSTIS	--	-	--	-	--	-
....TETRAEDRON	--	-	* 0	--	--	-
...SCENEDESMACEAE						
....CRUCIGENIA	230# 19	--	--	-	--	-
....SCENEDESMUS	230# 19	--	790# 30	--	250 5	
....TETRASTRUM	--	-	--	-	--	-
..TETRASPURALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	55 1	
..VULVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	--	-	110 2	
...CHLAMYDOMUNAS	--	-	--	-	83 2	
...CHLOROGONIUM	--	-	--	-	* 0	
...POLYBLEPHARIACEAE						
....SPERMATIZOOPSIS	--	-	--	-	* 0	
..ZYGNEATALES						
...DESMIDIACEAE						
....COSMAHIUM	--	-	--	-	--	-
....STAUSTRUM	--	-	--	-	* 0	
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINUOISCACEAE						
....CYCLOTELLA	--	-	740# 28	--	570 12	
....MELOSIRA	--	-	24 1	--	--	-
...STEPHANODISCUS	--	-	* 0	--	--	-
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	* 0	--	--	-
....CUCCONEIS	--	-	--	-	28 1	
...RHOICUSPHENIA	--	-	--	-	* 0	
...CYMBELLACEAE						
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....FRAGILARIA	29 2	--	--	-	--	-
....SYNEDRA	100 8	--	--	-	--	-
...NAVICULACEAE						
....GYRUSIGMA	--	-	--	-	* 0	
....NAVICULA	44 3	--	--	-	69 1	
...PINNULARIA	29 2	--	--	-	--	-
...NITZSCHIAEAE						
....NITZSCHIA	--	-	280 11	--	250 5	
...TABELLARIACEAE						
....TABELLARIA	--	-	--	-	--	-
..CHRYSOPHYCEAE						
...CHRYSOMONADALES						
...OCHROMONADACEAE						
....DINOBRYON	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONAS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
....CRYPTOMONODACEAE						
....CRYPTOMONAS	--	-	--	-	41 1	

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	PHYTOPLANKTON					
	JUL 12,78 0930		AUG 9,78 0900		SEP 13,78 0920	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
....CHROCCOCCAEAE						
....ANACYSTIS	590#	47	--	-	1300#	28
...HORMOGONALES						
...NOSTOCACEAE						
....CYLINDRUSPERMUM	--	-	--	-	330	7
...USCILLATORIACEAE						
....OSCILLATORIA	--	-	--	-	1300#	27
....SPIRULINA	--	-	--	-	--	-
...RIVULARIACEAE						
....RAPHIDIOPSIS	--	-	--	-	140	3
EUGLENOPHYTA (EUGLENIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....EUGLENA	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
...CERATIACEAE						
....CERATIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

COLORADO RIVER MAIN STEM

09429500 COLORADO RIVER BELOW IMPERIAL DAM, AZ-CA

LOCATION.--Forebay gage: Lat 32°52'59", long 114°27'57", in NW¼SW¼ sec.9, T.15 S., R.24 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, near All-American Canal headworks at west end of Imperial Dam, 5 mi (8 km) upstream from Laguna Dam, 15 mi (24 km) northeast of Yuma, 90 mi (145 km) downstream from Palo Verde Dam, and 147 mi (237 km) downstream from Parker Dam.

DRAINAGE AREA.--188,500 mi² (488,200 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1971 published as "at Imperial Dam." Records of flow reaching Imperial Dam, formerly published with this station, are now published separately as sta 09429490, "Colorado River above Imperial Dam."

GAGE.--Water-stage recorder in forebay, 12 calibrated gates on California sluiceway, 8 calibrated gates on Gila sluiceway, and calibrated manometer on each discharge pipe from desilting basin. Datum of forebay gage is 162.00 ft (49.378 m) U.S. Bureau of Reclamation datum.

REMARKS.--Records good. Records of daily discharge show flow of Colorado River passing Imperial Dam, and include water released to river through California and Gila sluiceways, sludge from desilting basins returned to river, and leakage through dam. For records of flow reaching Imperial Dam see sta 09429490.

Flow of Colorado River regulated by many reservoirs, principally Lake Mead, since 1935. Many diversions from Colorado River and tributaries above station. Diversion to Mittry Lake and monthend contents of Senator Wash Reservoir also are now published with sta 09429490.

COOPERATION.--Records of gate openings furnished by Bureau of Reclamation. Records of sludge return flow from desilting basins furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 5,300 ft³/s (150 m³/s) Aug. 18, 1977; minimum daily, 27 ft³/s (0.76 m³/s) Dec. 15-18, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,200 ft³/s (90.6 m³/s) Mar. 1; minimum daily, 224 ft³/s (6.34 m³/s) June 8-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	233	236	656	1160	3200	344	324	415	501	333	233
2	232	379	236	1020	700	2940	344	346	416	594	333	343
3	232	538	235	963	675	432	344	875	417	323	333	771
4	232	537	235	1250	673	290	623	860	417	463	333	873
5	232	537	235	1380	673	875	429	812	417	323	333	875
6	232	535	235	1050	399	273	523	810	774	323	333	880
7	423	395	383	967	365	246	428	814	413	323	333	878
8	505	233	381	924	236	246	406	814	224	323	333	875
9	232	318	382	936	236	246	334	976	224	323	333	973
10	232	233	235	1560	236	246	334	900	224	323	333	873
11	232	233	235	1910	236	246	427	806	224	323	333	873
12	232	233	235	2080	236	246	334	542	224	323	333	878
13	232	233	235	1910	236	618	334	625	274	323	333	878
14	232	517	235	1770	256	246	334	578	324	530	333	1370
15	232	610	235	1800	427	346	334	578	324	519	521	878
16	232	233	285	1730	236	346	334	657	324	343	333	873
17	232	233	235	1690	236	346	334	740	324	343	333	873
18	232	233	235	1590	236	346	334	740	324	343	333	882
19	232	233	235	1510	236	346	334	732	324	343	333	1040
20	422	233	235	1560	236	346	334	732	324	343	333	875
21	423	233	235	1320	236	346	334	744	324	343	333	764
22	232	233	235	1220	236	346	428	744	324	343	333	651
23	232	233	235	1300	236	346	334	746	324	343	427	649
24	232	233	235	742	236	432	334	921	324	343	522	681
25	422	233	235	672	236	689	334	916	324	343	333	871
26	232	450	236	698	236	1300	334	742	324	532	333	878
27	232	247	1030	630	438	818	334	740	324	437	333	880
28	232	240	2010	488	985	350	334	744	607	343	333	882
29	232	235	460	554	---	346	334	740	539	343	333	880
30	232	235	236	662	---	346	334	740	459	343	333	610
31	232	---	236	954	---	346	---	585	---	343	283	---
TOTAL	8227	9501	10576	37496	10763	18091	10976	22623	10804	11608	10744	24640
MEAN	265	317	341	1210	384	584	366	730	360	374	347	821
MAX	505	610	2010	2080	1160	3200	623	976	774	594	522	1370
MIN	232	233	235	488	236	246	334	324	224	323	283	233
AC-FT	16320	18850	20980	74370	21550	35880	21770	44870	21430	23020	21310	48870
CAL YR 1977	TOTAL	180408	MEAN 494	MAX 5300	MIN 214	AC-FT 357800						
WTR YR 1978	TOTAL	186049	MEAN 510	MAX 3200	MIN 224	AC-FT 369000						

COLORADO RIVER MAIN STEM

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA

LOCATION.--Lat 32°48'44", long 114°30'51", in SE¼NE¼ sec.35, T.15 S., R.24 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on right bank 1.4 mi (2.3 km) downstream from Laguna Dam, 2.8 mi (4.5 km) northeast of Bard, Calif., and 10 mi (16 km) northeast of Yuma, Ariz.

DRAINAGE AREA.--188,600 mi² (488,500 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 120.84 ft (36.832 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good. Natural flow of Colorado River at this point is affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals, diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas. Flow past station consists mainly of water released through Imperial Dam, sludge from the desilting basins at Imperial Dam, seepage through Imperial Dam, and seepage from the All-American Canal and the Gila Gravity Main Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,030 ft³/s (142 m³/s) Aug. 18, 1977, gage height, 12.88 ft (3.926 m); minimum daily, 71 ft³/s (2.01 m³/s) May 29, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,080 ft³/s (87.2 m³/s) Mar. 2, gage height, 9.98 ft (3.042 m); minimum daily, 209 ft³/s (5.92 m³/s) Dec. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	218	247	495	1150	2530	368	301	643	649	574	530
2	250	315	244	1110	774	2850	341	490	486	368	435	441
3	327	501	244	1060	632	943	339	770	441	346	387	481
4	325	508	242	1160	639	425	320	853	429	335	390	766
5	325	493	244	1540	645	477	311	852	426	327	382	918
6	325	496	241	1170	694	473	309	859	429	300	376	911
7	325	522	225	999	651	600	322	847	322	284	368	905
8	325	536	209	893	589	551	296	842	261	501	362	892
9	325	511	224	960	389	463	302	877	251	589	360	901
10	325	405	218	1320	322	311	297	917	298	486	351	892
11	325	278	223	1950	321	300	432	885	354	360	362	870
12	325	269	356	2070	314	299	630	766	332	349	368	870
13	325	265	462	1970	311	258	563	681	311	354	362	870
14	325	243	449	1830	320	279	427	630	322	343	357	911
15	330	271	414	1850	275	425	361	612	362	349	314	921
16	360	260	415	1730	238	544	351	628	338	360	308	895
17	370	223	354	1720	241	504	347	760	314	365	311	889
18	330	375	304	1610	247	469	345	785	314	365	314	876
19	265	493	302	1540	250	386	365	785	311	368	332	905
20	269	474	307	1500	254	376	358	773	314	349	354	918
21	255	325	305	1350	259	369	343	772	314	338	351	910
22	248	266	295	1300	260	358	321	775	316	341	346	846
23	242	260	277	1260	349	349	329	778	314	341	341	787
24	237	260	274	928	464	333	282	808	308	346	330	730
25	244	257	275	789	423	329	260	847	306	346	314	882
26	238	215	277	806	291	715	267	744	300	360	322	904
27	221	218	231	716	263	944	271	727	308	371	324	909
28	220	255	1660	719	286	460	284	734	316	360	322	917
29	218	253	850	718	---	493	318	727	324	349	322	915
30	220	250	329	748	---	626	300	728	586	475	319	792
31	219	---	290	766	---	541	---	721	---	637	379	---
TOTAL	8888	10215	10987	38577	11851	18980	10359	23274	10650	12011	11037	25154
MEAN	287	341	354	1244	423	612	345	751	355	387	356	838
MAX	370	536	1660	2070	1150	2850	630	917	643	649	574	921
MIN	218	215	209	495	238	258	260	301	251	284	308	441
AC-FT	17630	20260	21790	76520	23510	37650	20550	46160	21120	23820	21890	49890
CAL YR 1977 TOTAL	188628			MEAN 517	MAX 5000	MIN 209	AC-FT 374100					
WTR YR 1978 TOTAL	191983			MEAN 526	MAX 2850	MIN 209	AC-FT 380800					

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--July 1972 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT											
03...	0110	321	1450	8.1	25.5	380	228	105	29	165	3.7
10...	0120	327	1370	8.3	28.0	370	221	97	31	150	3.4
17...	0125	238	1610	7.8	22.0	390	224	102	33	200	4.4
24...	0230	238	1420	7.9	--	380	226	95	35	160	3.6
31...	0120	217	1410	7.8	23.5	375	221	94	34	160	3.6
NOV											
07...	0140	504	1390	7.9	--	375	221	94	34	155	3.5
14...	0545	548	1500	7.7	16.0	385	224	100	33	175	3.9
21...	0145	393	1540	7.8	17.0	390	224	99	35	180	4.0
28...	0130	266	1440	7.8	16.5	385	228	97	35	165	3.7
DEC											
05...	0445	200	1470	7.9	20.0	385	222	98	34	170	3.8
12...	0135	223	1370	7.8	20.5	375	221	95	34	150	3.4
19...	0200	292	1480	7.9	14.5	385	222	98	34	170	3.8
26...	0310	261	1530	7.8	16.5	390	226	101	34	180	4.0
JAN											
02...	0135	1070	1400	7.9	16.5	375	218	97	32	155	3.5
09...	0125	735	1590	7.9	14.5	420	244	103	40	185	3.9
16...	0035	1590	1510	7.9	15.5	395	230	102	34	175	3.8
23...	0200	1170	1530	7.9	16.5	405	238	103	36	175	3.8
30...	0330	772	1600	7.9	14.0	415	241	106	37	185	3.9
FEB											
06...	0050	634	1460	8.1	16.5	390	226	98	35	165	3.6
13...	0140	300	1520	8.0	18.0	385	221	101	32	180	4.0
20...	0300	261	1380	7.9	16.0	370	214	93	34	155	3.5
27...	0050	281	1440	7.9	17.0	375	219	97	32	165	3.7
MAR											
06...	0105	294	1320	7.9	18.5	365	216	96	31	140	3.2
13...	0130	290	1490	7.8	17.0	385	221	100	33	175	3.9
20...	0050	379	1350	7.9	19.0	365	216	97	30	150	3.4
27...	0130	1490	1200	8.0	21.5	345	200	90	29	125	2.9
APR											
03...	0050	338	1390	8.0	20.0	375	218	96	33	155	3.5
10...	0045	242	1310	8.2	19.5	365	208	95	31	140	3.2
17...	0140	338	1390	8.0	20.0	375	219	98	32	155	3.5
24...	0500	280	1310	7.8	20.0	365	208	95	31	140	3.2
MAY											
01...	0030	303	1310	8.1	18.5	365	208	94	32	140	3.2
08...	0115	835	1330	8.0	23.5	375	212	96	33	140	3.1
15...	0115	194	1360	8.0	24.0	380	222	98	33	145	3.2
22...	0025	763	1300	8.0	23.5	365	208	94	32	140	3.2
29...	0100	719	1340	8.0	28.0	380	221	96	34	140	3.1
JUN											
05...	0100	415	1400	8.0	25.0	385	228	98	34	155	3.4
12...	0035	316	1350	7.9	26.5	375	226	95	34	145	3.2
19...	0140	295	1330	7.9	29.5	365	211	94	32	145	3.3
26...	0040	232	1360	7.8	27.0	370	218	96	32	150	3.4
JUL											
03...	0110	362	1310	7.8	26.0	360	214	93	31	140	3.2
10...	0200	530	1340	8.0	29.5	370	218	93	34	145	3.3
17...	0030	300	1320	7.8	29.5	360	211	90	33	145	3.3
24...	0050	269	1330	8.0	28.5	360	209	90	33	145	3.3
31...	0205	586	1310	7.9	31.0	350	202	86	33	145	3.4
AUG											
07...	0100	335	1360	7.9	29.0	370	219	93	34	150	3.4
14...	0235	314	1340	7.8	29.0	365	216	92	33	145	3.3
21...	0140	308	1330	7.9	29.0	365	216	91	34	145	3.3
28...	0110	290	1390	7.9	26.5	370	216	97	31	155	3.5
SEP											
04...	0010	924	1340	8.0	29.0	365	218	94	32	145	3.3
11...	0200	892	1320	7.9	27.0	360	211	91	32	145	3.3
18...	0115	921	1330	7.9	25.5	365	214	93	32	145	3.3
25...	0030	816	1350	7.9	27.0	370	221	94	33	145	3.3

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA--Continued

COOPERATION.--Daily specific conductance record furnished by Bureau of Reclamation.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,800 micromhos Feb. 9; minimum daily, 1,190 micromhos Mar. 28.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT											
03...	6.0	186	0	355	155	.6	11	922	919	1.25	.14
10...	5.7	182	0	345	138	.5	9.5	870	867	1.18	.09
17...	6.0	202	0	380	188	.5	13	1020	1020	1.39	.09
24...	5.2	188	0	350	150	.6	10	898	899	1.22	.09
31...	5.5	188	0	350	148	.5	10	896	895	1.22	.09
NOV											
07...	5.6	188	0	350	140	.4	9.8	888	882	1.21	.11
14...	5.5	196	0	360	170	.5	12	954	954	1.30	.11
21...	5.7	202	0	365	175	.5	12	972	973	1.32	.09
28...	5.2	192	0	360	150	.5	8.9	918	917	1.25	.11
DEC											
05...	5.2	198	0	360	158	.6	11	942	935	1.28	.14
12...	5.5	188	0	345	138	.5	9.5	876	871	1.19	.14
19...	5.5	198	0	360	160	.5	11	944	938	1.28	.11
26...	5.8	200	0	365	172	.5	9.8	976	968	1.33	.16
JAN											
02...	5.2	192	0	350	142	.5	10	894	887	1.22	.11
09...	5.7	214	0	385	175	.5	10	1020	1010	1.39	.16
16...	5.4	202	0	365	165	.5	9.0	964	957	1.31	.18
23...	5.4	204	0	370	170	.5	10	982	970	1.34	.14
30...	5.5	212	0	380	182	.6	10	1030	1010	1.40	.14
FEB											
06...	5.4	200	0	360	155	.5	10	930	929	1.26	.16
13...	5.4	200	0	360	175	.5	11	966	964	1.31	.14
20...	5.2	190	0	335	145	.5	10	884	873	1.20	.23
27...	5.6	190	0	340	165	.5	10	918	910	1.25	.16
MAR											
06...	5.3	182	0	330	130	.6	10	838	834	1.14	.16
13...	5.6	200	0	345	172	.4	10	942	941	1.28	.20
20...	5.6	182	0	325	145	.4	10	856	854	1.16	.25
27...	5.2	176	0	310	108	.5	8.4	764	764	1.04	.09
APR											
03...	5.5	192	0	335	148	.5	8.8	878	877	1.19	.11
10...	5.4	192	0	325	128	.5	10	830	830	1.13	.07
17...	5.6	190	0	330	152	.4	8.8	880	876	1.20	.07
24...	5.4	192	0	325	128	.5	9.0	834	829	1.13	.07
MAY											
01...	5.6	192	0	325	128	.6	9.2	828	830	1.13	.07
08...	5.6	198	0	330	130	.4	9.2	846	843	1.15	.09
15...	5.6	192	0	335	140	.5	9.8	866	862	1.18	.11
22...	5.5	192	0	325	128	.6	9.2	828	830	1.13	.11
29...	5.4	194	0	335	130	.6	9.0	858	846	1.17	.09
JUN											
05...	5.6	192	0	340	150	.6	9.8	886	888	1.20	.11
12...	5.5	182	0	335	140	.5	9.2	854	855	1.16	.09
19...	5.4	188	0	335	128	.5	9.0	840	842	1.14	.07
26...	5.5	186	0	340	135	.6	8.8	858	860	1.17	.09
JUL											
03...	5.5	178	0	335	125	.4	8.8	824	827	1.12	.07
10...	5.6	186	0	335	132	.5	8.8	844	846	1.15	.07
17...	5.5	182	0	335	128	.5	7.8	834	835	1.13	.07
24...	5.5	184	0	335	130	.4	9.0	836	839	1.14	.07
31...	5.7	180	0	330	126	.5	9.0	830	825	1.13	.09
AUG											
07...	5.4	184	0	340	138	.5	9.8	862	862	1.17	.05
14...	5.5	182	0	335	134	.5	9.5	850	845	1.16	.07
21...	5.6	182	0	335	130	.5	9.2	840	841	1.14	.09
28...	5.5	188	0	345	142	.5	9.8	878	879	1.19	.07
SEP											
04...	5.5	180	0	340	130	.5	9.5	846	846	1.15	.09
11...	5.6	182	0	335	128	.4	8.5	836	836	1.14	.11
18...	5.5	184	0	335	130	.5	8.5	846	841	1.15	.07
25...	5.5	182	0	340	135	.4	9.0	852	852	1.16	.09

COLORADO RIVER MAIN STEM

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1460	1420	1540	1360	1450	1240	1410	1330	1300	1310	1310	1310
2	1450	1440	1550	1420	1360	1220	1410	1320	1400	1310	1340	1350
3	1480	1410	1540	1600	1380	1210	1400	1280	1430	1320	1330	1370
4	1430	1360	1540	1660	1420	1260	1400	1270	1420	1320	1370	1350
5	1430	1350	1500	1660	1420	1260	1280	1280	1430	1320	1380	1330
6	1420	1370	1480	1570	1470	1320	1290	1290	1400	1330	1390	1310
7	1410	1390	1460	1570	1540	1350	1260	1290	1370	1320	1380	1300
8	1420	1420	1460	1570	1580	1360	1300	1340	1440	1320	1390	1330
9	1420	1470	1400	1610	1600	1520	1280	1310	1370	1300	1360	1350
10	1380	1570	1400	1630	1600	1530	1310	1290	1380	1350	1390	1350
11	1410	1540	1400	1610	1580	1490	1310	1270	1320	1330	1340	1330
12	1460	1510	1380	1570	1560	1510	1240	1290	1360	1350	1340	1310
13	1500	1500	1360	1560	1530	1490	1270	1330	1380	1340	1350	1290
14	1520	1560	1400	1530	1540	1370	1420	1360	1340	1370	1350	1280
15	1520	1470	1460	1540	1520	1280	1390	1370	1320	1350	1340	1290
16	1530	1420	1590	1520	1400	1260	1390	1330	1310	1320	1330	1310
17	1610	1400	1500	1540	1380	1310	1410	1300	1330	1330	1330	1320
18	1620	1410	1500	1530	1390	1430	1370	1270	1320	1330	1330	1330
19	1590	1380	1510	1530	1390	1380	1350	1300	1330	1370	1330	1310
20	1540	1370	1510	1530	1390	1360	1340	1320	1340	1320	1320	1310
21	1460	1540	1510	1530	1400	1340	1340	1290	1320	1320	1340	1320
22	1420	1580	1500	1540	1380	1360	1330	1300	1310	1330	1350	1310
23	1400	1570	1490	1540	1350	1360	1310	1280	1350	1330	1330	1350
24	1420	1530	1510	1530	1310	1360	1330	1300	1350	1340	1330	1350
25	1410	1540	1520	1560	1500	1290	1310	1300	1350	1330	1350	1350
26	1430	1510	1550	1570	1490	1300	1280	1290	1380	1320	---	1330
27	1450	1440	1600	1570	1440	1210	1280	1320	1350	1290	---	1300
28	1400	1440	1460	1590	1340	1190	1270	1330	1330	1310	1410	1300
29	1410	1470	1280	1570	---	1260	1290	1350	1320	1330	1400	1300
30	1410	1500	1320	1620	---	1230	1340	1310	1330	1330	1360	1310
31	1410	---	1380	1570	---	1270	---	1280	---	1310	1360	---
MEAN	1460	1460	1470	1560	1460	1330	1330	1310	1360	1330	1350	1320
WIR YR 1978	MEAN	1400		MAX	1800		MIN	1190				

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COLORADO RIVER MAIN STEM

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, AZ

LOCATION.--Lat 32°43'22", long 114°32'46", in SE¼NE¼ sec.19, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15030107, 0.6 mi (1.0 km) upstream from Gila River, 5 mi (8 km) east of Yuma, 9 mi (14 km) downstream from Laguna Dam, 12 mi (19 km) upstream from northerly international boundary, and 14 mi (22 km) downstream from Imperial Dam.

DRAINAGE AREA.--188,700 mi² (488,700 km²), approximately, including 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming, which is noncontributing.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO ₃)	HARD- NESS, NONCAR- BONATE (MG/L CaCO ₃)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT											
03...	1350	1640	7.9	25.0	480	290	120	43	190	3.8	5.3
11...	1320	1540	7.8	26.5	440	270	110	40	180	3.7	5.3
17...	1355	1750	7.8	24.5	450	260	110	42	210	4.3	5.5
25...	1355	1650	7.8	24.0	440	250	110	39	180	3.8	5.3
31...	1150	1650	7.8	20.5	440	260	110	41	200	4.1	5.3
NOV											
07...	1320	1500	7.9	19.0	400	250	100	36	190	4.1	5.3
14...	1200	1670	7.7	18.0	440	250	110	39	210	4.4	5.7
21...	1345	1660	7.8	18.0	440	250	110	39	210	4.4	5.6
28...	1050	1600	7.7	17.0	460	280	120	40	190	3.8	5.2
DEC											
05...	1330	1650	7.8	17.0	470	280	120	42	180	3.6	5.6
12...	1110	1570	7.8	15.5	440	270	110	40	180	3.7	5.6
19...	1355	1650	7.8	15.0	440	260	110	39	200	4.2	5.7
JAN											
03...	1240	1650	7.9	15.5	410	240	100	39	200	4.3	5.8
09...	1145	1640	7.9	14.5	430	260	110	38	190	4.0	5.5
16...	1600	1510	8.0	--	400	250	100	37	170	3.7	5.4
23...	1440	1570	8.0	15.5	410	240	100	39	180	3.9	5.2
30...	1050	1650	7.8	14.5	440	250	110	39	190	4.0	5.5
FEB											
06...	1400	1540	8.0	17.0	400	250	100	36	180	3.9	5.4
13...	1320	1670	7.9	18.0	440	250	110	39	200	4.2	5.5
21...	1435	1550	7.9	16.5	430	250	110	37	180	3.8	5.1
27...	1340	1600	7.9	18.5	430	250	110	38	180	3.8	5.2
MAR											
06...	1345	1470	7.9	18.5	400	250	100	37	160	3.5	5.5
13...	1100	1640	7.8	18.0	440	260	110	39	190	4.0	5.5
20...	1025	1470	8.0	19.0	390	250	97	37	170	3.7	5.2
27...	1340	1210	8.1	21.5	340	200	83	33	130	3.1	5.1
APR											
03...	1340	1520	8.0	21.0	430	250	110	37	150	3.2	5.3
10...	1100	1470	8.1	19.0	430	250	110	37	160	3.4	5.6
17...	1325	1520	8.0	20.5	400	220	100	37	180	3.9	5.7
24...	0810	1450	7.8	20.0	400	230	100	37	160	3.5	5.5
MAY											
01...	1355	1470	7.9	21.0	420	240	110	36	160	3.4	5.9
08...	1330	1400	8.0	23.5	380	210	93	35	150	3.4	5.8
15...	1325	1450	8.1	27.0	390	220	98	35	160	3.5	5.9
22...	1345	1350	8.0	27.5	390	220	97	35	150	3.3	5.2
30...	1420	1370	7.9	26.5	390	250	99	35	160	3.5	6.2
JUN											
05...	1400	1510	8.0	26.5	410	230	100	38	180	3.9	6.4
12...	1050	1510	7.9	27.0	410	240	100	39	170	3.7	5.8
19...	1350	1470	7.9	29.5	400	240	100	37	170	3.7	5.6
25...	1340	1490	7.8	28.0	420	250	110	35	170	3.6	5.6
JUL											
03...	1355	1430	7.9	29.5	410	250	100	38	150	3.2	5.4
10...	1050	1440	7.9	23.1	410	250	98	41	170	3.6	5.2
17...	1405	1450	7.9	30.5	390	230	100	34	170	3.7	5.1
24...	1420	1460	7.9	30.5	400	240	100	37	160	3.5	5.4
31...	1355	1360	7.9	31.5	360	210	92	32	150	3.4	5.5
AUG											
07...	1340	1480	7.9	30.5	410	250	100	38	160	3.5	5.6
14...	1500	1470	8.0	30.0	400	250	100	36	170	3.7	5.4
21...	1115	1460	7.9	29.5	390	230	98	36	180	4.0	5.6
28...	1310	1500	8.0	27.0	420	250	110	35	160	3.4	5.3
SEP											
05...	1445	1360	8.1	30.5	370	220	93	33	150	3.4	5.5
11...	1045	1360	8.0	26.0	380	250	95	35	150	3.3	5.0
18...	1425	1390	8.0	26.0	410	250	110	33	160	3.4	5.1
25...	1410	1400	8.0	26.5	380	220	98	33	160	3.6	4.8

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, AZ--Continued

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT											
03...	230	0	440	.6	15	1080	1130	1.47	--	250	10
11...	210	0	410	.6	15	1030	1040	1.40	--	240	20
17...	230	0	390	.8	18	1110	1090	1.51	--	290	10
25...	220	0	400	.6	15	1050	1040	1.43	--	250	20
31...	220	0	400	.6	16	1050	1060	1.43	--	250	0
NOV											
01...	--	--	--	--	--	1030	--	1.40	--	--	--
07...	210	0	390	.6	13	966	999	1.31	--	220	30
14...	230	0	430	.6	16	1090	1130	1.48	--	280	0
21...	220	0	410	.7	15	1080	1100	1.47	--	270	0
28...	220	0	400	.5	14	1020	1050	1.43	--	250	20
DEC											
05...	230	0	410	.7	15	1070	1070	1.46	--	270	10
12...	210	0	370	.7	14	1020	994	1.39	--	250	10
19...	210	0	400	.6	15	1050	1060	1.43	--	260	10
30...	--	--	--	--	--	934	--	1.27	--	--	--
JAN											
03...	210	0	390	.6	13	1050	1030	1.43	--	260	10
09...	210	0	430	.6	15	1060	1070	1.44	--	250	0
16...	190	0	370	.4	12	966	959	1.31	--	230	20
23...	210	0	410	.6	12	1010	1020	1.37	--	230	10
30...	220	0	390	.6	14	1060	1040	1.44	--	260	0
FEB											
06...	210	0	380	.6	13	990	989	1.35	--	230	10
13...	230	0	380	.7	16	1070	1050	1.46	--	260	20
21...	210	0	370	.6	14	992	990	1.35	--	230	0
27...	220	0	370	.6	15	1020	1010	1.39	--	250	20
MAR											
06...	210	0	340	.6	11	940	908	1.28	--	220	0
13...	210	0	380	.6	11	1050	1030	1.43	--	250	0
20...	200	0	390	.5	11	948	960	1.29	--	230	10
27...	180	0	320	.4	8.7	774	779	1.05	--	170	10
APR											
03...	210	0	350	.6	13	974	940	1.32	--	230	20
10...	220	0	360	.5	13	940	955	1.28	--	220	20
17...	220	0	350	.6	13	978	965	1.33	--	230	20
24...	210	0	360	.6	12	926	929	1.26	--	220	10
MAY											
01...	220	0	350	.5	12	934	933	1.27	--	230	20
08...	200	0	350	.5	11	890	884	1.21	--	210	0
15...	210	0	360	.5	12	926	925	1.26	--	220	0
22...	200	0	340	.5	10	868	867	1.18	--	200	30
30...	200	0	340	.5	11	876	891	1.19	--	200	0
JUN											
05...	210	0	370	.6	12	968	981	1.32	--	230	0
12...	210	0	360	.6	14	960	953	1.31	--	230	0
19...	200	--	360	.6	13	936	945	1.27	--	230	20
25...	200	0	350	.6	11	942	941	1.28	--	230	20
26...	--	--	--	--	--	942	941	1.28	--	--	--
JUL											
03...	--	--	350	.5	12	900	902	1.22	--	230	20
10...	--	--	350	.6	12	912	933	1.24	--	220	10
17...	200	0	350	.5	12	918	921	1.25	.06	210	40
24...	200	0	360	.6	12	926	934	1.26	.07	220	10
31...	180	0	330	.6	11	860	860	1.20	.04	210	<10
AUG											
07...	--	--	370	.6	13	970	944	1.32	--	220	0
14...	200	0	380	.6	14	940	967	1.28	.09	220	10
21...	200	0	380	.6	13	934	962	1.27	.06	210	10
28...	200	0	370	.6	13	972	953	1.32	.06	230	20
SEP											
05...	180	0	350	.5	11	880	872	1.20	.06	220	10
11...	190	0	350	.5	11	874	881	1.19	.13	220	20
18...	190	0	370	.4	11	894	934	1.22	.08	220	20
25...	190	0	350	.5	11	930	902	1.26	.07	220	40

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09430500 GILA RIVER NEAR GILA, NM

LOCATION.--Lat 33°03'40", long 108°32'12", in NE¼NW¼ sec.30, T.14 S., R.16 W., Grant County, Hydrologic Unit 15040001, on left bank at Hooker damsite, 1.6 mi (2.6 km) upstream from Mogollon Creek, 7 mi (11 km) northeast of Gila, and at mile 572.5 (921.2 km).

DRAINAGE AREA.--1,864 mi² (4,828 km²).

PERIOD OF RECORD.--April to December 1914, December 1927 to current year. Monthly discharge only December 1927 to September 1930, published in WSP 1313.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1944(M), 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 4,655.8 ft (1,419.09 m) National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Dec. 31, 1928, at site 5 mi (8 km) upstream at different datum. Dec. 31, 1928, to Jan. 7, 1942, at site 200 ft (61 m) upstream at same datum.

REMARKS.--Records good. Diversions for irrigation of about 500 acres (2.0 km³) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--51 years (water years 1928-78), 134 ft³/s (3.795 m³/s) 97,080 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,400 ft³/s (719 m³/s) Sept. 29, 1941, gage height, 17.2 ft (5.24 m), from floodmark, from rating curve extended above 3,900 ft³/s (110 m³/s) on basis of velocity-area studies; minimum, 14 ft³/s (0.40 m³/s) July 15, 1971.

EXTREMES OUTSIDE PERIOD OF RECORD.--Other major floods occurred in November 1905, December 1906, and January 1916.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 600 ft³/s (17 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 31	1400	640 18.1	3.25 0.991
Mar. 3	Unknown	*4,790 136	6.76 2.060

Minimum, 22 ft³/s (0.62 m³/s) July 7-10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	64	63	65	381	1190	315	161	82	38	36	42
2	62	60	62	64	257	8000	341	161	79	37	41	42
3	62	60	62	63	206	4000	327	169	73	34	42	46
4	62	60	62	62	177	2000	287	155	71	31	90	44
5	65	60	60	61	157	1180	261	138	68	29	128	42
6	72	65	60	60	151	1220	241	138	66	27	108	41
7	74	78	59	60	145	1040	229	142	67	25	99	39
8	76	78	59	59	141	805	214	146	66	25	95	37
9	78	74	58	58	135	633	213	134	64	25	104	35
10	80	74	59	59	128	531	210	124	62	25	79	33
11	78	72	59	64	129	476	200	116	58	25	66	32
12	74	72	59	63	130	423	180	115	54	28	56	31
13	72	72	59	61	126	403	168	121	52	31	49	30
14	70	69	59	59	133	372	161	126	50	33	43	31
15	69	69	59	63	136	358	166	133	48	32	40	31
16	67	69	59	64	137	332	176	146	47	30	37	32
17	65	67	58	64	132	298	180	157	44	28	36	31
18	65	65	59	88	125	273	180	155	42	27	35	30
19	65	65	58	81	120	270	178	148	40	27	34	30
20	64	64	59	86	117	306	175	139	38	28	42	30
21	64	62	58	85	124	370	166	148	36	29	43	31
22	64	62	57	88	140	424	161	145	35	31	44	32
23	64	62	57	86	159	424	157	132	35	33	49	34
24	64	62	60	88	170	436	150	124	33	35	50	36
25	62	62	60	86	183	395	145	121	32	40	46	37
26	60	62	60	83	195	370	148	116	31	40	53	40
27	60	62	63	82	211	351	153	111	31	44	65	42
28	60	63	65	81	322	347	164	106	33	38	59	40
29	60	63	72	84	---	334	171	99	37	35	50	37
30	67	63	72	87	---	326	170	92	36	35	45	36
31	65	---	68	424	---	319	---	87	---	33	43	---
TOTAL	2074	1980	1884	2618	4667	28206	5987	4105	1510	978	1807	1074
MEAN	66.9	66.0	60.8	84.5	167	910	200	132	50.3	31.5	58.3	35.8
MAX	80	78	72	424	381	8000	341	169	82	44	128	46
MIN	60	60	57	58	117	270	145	87	31	25	34	30
AC-FT	4110	3930	3740	5140	9260	55950	11880	8140	3000	1940	3580	2130
CAL YR 1977	TOTAL	30843	MEAN	84.5	MAX	565	MIN	20	AC-FT	61180		
WTR YR 1978	TOTAL	56890	MEAN	156	MAX	8000	MIN	25	AC-FT	112800		

09431500 GILA RIVER NEAR REDROCK, NM

LOCATION.--Lat 32°43'37", long 108°40'30", in W½ sec.23, T.18 S., R.18 W., Grant County, Hydrologic Unit 15040002, on left bank 0.2 mi (0.3 km) downstream from Copper Canyon, 0.2 mi (0.3 km) upstream from lower end of box canyon, 4.7 mi (7.6 km) northeast of Redrock, 14 mi (23 km) downstream from Mangas Creek, and at mile 539.2 (867.6 km).

DRAINAGE AREA.--2,829 mi² (7,327 km²).

PERIOD OF RECORD.--September 1904 to February 1905 (gage heights only). May 1905 to December 1906, January to December 1907 and July to October 1908 (gage height only). November 1908 to December 1910, January 1911 to January 1912 and May to June 1912 (gage heights only). August 1912 to September 1955, October 1962 to current year. Monthly or annual discharge only for some periods, published in WSP 1313. Published as "near Cliff" 1904-7.

REVISED RECORDS.--WSP 1213: 1906, 1911-15, 1931, 1936-37, 1939, 1941, 1944, 1945(P), 1946(M), 1947. WSP 1283: Drainage area. WSP 1926: 1955.

GAGE.--Water-stage recorder. Altitude of gage is 4,090 ft (1,247 m), from plane table survey. Prior to Dec. 31, 1907, nonrecording gage at site 13.5 mi (21.7 km) upstream at different datum. May 14, 1908, to July 16, 1909, nonrecording gage at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Records fair. Diversions for irrigation of about 5,000 acres (20 km²) above station. National Weather Service gage height telemeter at station. Water quality records for the current year are published in Water Resources Data for New Mexico.

AVERAGE DISCHARGE.--62 years (water years 1906, 1909-10, 1913-55, 1963-78), 196 ft³/s (5.551 m³/s), 142,000 acre-ft/yr (175 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s) Sept. 29, 1941, gage height, 31 ft (9.4 m), from floodmarks, computed on basis of known peak flow for station below Blue Creek; minimum, 2.2 ft³/s (0.062 m³/s) Aug. 5, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,700 ft³/s (360 m³/s) Mar. 3, gage height, 15.6 ft (4.755 m), base discharge, 3,000 ft³/s (85 m³/s); minimum, 3.1 ft³/s (0.09 m³/s) July 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	61	61	82	120	2390	533	180	88	33	13	51
2	53	61	62	80	578	10300	540	176	81	32	47	84
3	51	60	59	87	414	9080	504	186	77	30	134	44
4	53	56	63	77	325	3950	443	186	72	29	52	34
5	51	57	70	70	253	2060	381	160	66	29	74	26
6	63	69	71	66	220	2010	341	147	58	28	55	25
7	72	78	61	69	180	1650	318	147	48	28	48	24
8	64	93	66	81	160	1200	289	159	45	26	78	22
9	64	89	64	83	145	898	257	157	42	17	106	21
10	109	95	66	66	135	711	260	129	40	13	71	20
11	100	87	72	60	122	582	224	111	40	9.1	62	19
12	91	85	65	61	127	490	210	111	39	8.4	52	19
13	79	85	62	61	141	475	195	111	39	9.2	43	19
14	71	81	63	59	175	426	190	103	42	11	38	22
15	61	81	63	62	184	391	193	113	39	13	34	18
16	58	84	63	93	191	369	197	123	35	8.0	30	15
17	65	84	64	105	173	341	204	129	24	7.2	28	14
18	63	82	62	108	142	323	201	137	21	5.8	26	14
19	61	85	61	106	122	326	197	143	17	4.6	214	13
20	60	73	59	114	117	374	192	131	12	3.6	63	14
21	58	78	59	103	118	481	187	143	11	4.7	57	13
22	50	80	57	105	143	583	167	149	11	7.9	57	15
23	57	75	58	101	182	647	159	137	11	11	64	14
24	70	67	62	105	210	695	154	124	11	19	187	14
25	47	70	58	104	220	637	153	114	11	23	137	13
26	40	81	57	97	272	586	137	120	11	19	90	17
27	45	92	74	94	311	560	145	109	11	17	72	14
28	52	72	81	79	399	523	163	102	23	12	64	16
29	53	65	86	78	---	508	167	88	30	9.2	56	13
30	57	62	89	86	---	492	172	83	34	8.5	90	20
31	57	---	87	160	---	508	---	90	---	7.1	60	---
TOTAL	1935	2288	2045	2702	5879	44566	7473	4098	1089	483.3	2202	667
MEAN	62.4	76.3	66.0	87.2	210	1438	249	132	36.3	15.6	71.0	22.2
MAX	109	95	89	160	578	10300	540	186	88	33	214	84
MIN	40	56	57	59	117	323	137	83	11	3.6	13	13
AC-FT	3840	4540	4060	5360	11660	88400	14820	8130	2160	959	4370	1320
CAL YR 1977 TOTAL	31890.0		MEAN	87.4	MAX	783	MIN	13	AC-FT	63250		
WTR YR 1978 TOTAL	75427.3		MEAN	207	MAX	10300	MIN	3.6	AC-FT	149600		

GILA RIVER BASIN

09432000 GILA RIVER BELOW BLUE CREEK, NEAR VIRDEN, NM

LOCATION.--Lat 32°38'53", long 108°50'43", in SE¼SW¼ sec.18, T.19 S., R.19 W., Grant County, Hydrologic Unit 15040002, on left bank at head of canyon, 1.4 mi (2.3 km) downstream from Blue Creek, 10 mi (16 km) east of Virden, and 16 mi (26 km) upstream from New Mexico-Arizona State line.

DRAINAGE AREA.--3,203 mi² (8,296 km²), excluding Animas River basin.

PERIOD OF RECORD.--May to November 1914, March to September 1915, July 1927 to current year. July 1927 to May 1931 monthly discharge only, published in WSP 1313, computed as sum of flow at Virden Bridge, 9 mi (14 km) downstream, and in Sunset Canal. Published as "Gila River near Duncan, Ariz.," 1914-15 and as "Gila River at Fuller's Ranch, near Duncan, Ariz.," 1931-38.

REVISED RECORDS.--WSP 1283: Drainage area. WSP 1313: 1929, 1931-32(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,875 ft (1,181.1 m) (from river-profile map). May 11, 1914, to Sept. 30, 1915, at site 6 mi (10 km) downstream, 1,000 ft (300 m) upstream from intake of Sunset Canal. June 1 to July 7, 1931, nonrecording gage at present site and datum.

REMARKS.--Records good. Station is above all Duncan Valley diversions. Diversions for irrigation of about 6,200 acres (25.1 km²) above station.

AVERAGE DISCHARGE.--51 years (water years 1928-78), 176 ft³/s (4.984 m³/s), 127,500 acre-ft/yr (157 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,700 ft³/s (1,180 m³/s) Sept. 29, 1941, gage height, 25.78 ft (7.858 m); minimum, 1 ft³/s (0.028 m³/s) July 14, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,800 ft³/s (221 m³/s) Mar. 3, gage height, 14.25 ft (4.343 m), base discharge, 1,900 ft³/s (54 m³/s); minimum daily, 3.5 ft³/s (.099 m³/s) July 25, 26, Aug. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	55	69	78	514	937	546	179	73	15	3.5	54
2	49	57	68	78	364	5300	554	179	75	15	5.4	53
3	49	57	69	78	287	7340	542	174	73	14	24	89
4	49	56	67	79	240	4290	502	172	71	13	90	53
5	48	56	72	74	203	2550	458	154	64	13	48	30
6	66	61	72	73	181	2280	422	147	62	12	63	26
7	57	63	70	73	165	1940	396	150	56	12	51	25
8	55	69	69	74	156	1520	364	148	46	11	52	19
9	55	70	69	80	148	1260	337	150	46	11	94	19
10	59	72	69	75	141	1140	331	139	43	10	66	13
11	66	72	70	70	136	1060	313	123	40	9.7	57	13
12	64	71	70	68	138	960	287	114	36	9.0	47	12
13	61	71	69	68	145	910	266	111	34	8.0	35	10
14	58	71	68	69	172	850	250	108	33	7.6	29	10
15	55	71	68	69	224	795	243	102	32	7.6	28	9.9
16	54	71	67	70	253	758	243	103	30	6.7	26	9.4
17	55	72	68	86	214	707	240	110	28	5.8	23	8.8
18	55	73	68	94	188	666	237	113	26	5.4	21	8.0
19	55	71	67	94	170	629	235	114	24	5.0	58	7.9
20	55	73	66	97	165	638	222	113	21	4.5	161	7.9
21	55	73	66	95	165	661	214	114	18	4.5	54	8.4
22	51	73	65	95	179	721	203	118	17	4.5	57	9.0
23	50	73	65	92	203	749	194	116	16	4.5	48	9.4
24	56	72	67	95	235	767	185	105	14	4.0	113	9.4
25	54	71	67	95	243	717	179	96	12	3.5	77	9.5
26	49	71	66	94	271	666	172	92	12	3.5	73	9.5
27	49	83	68	91	289	652	166	94	12	5.0	58	10
28	50	76	77	85	313	602	170	88	14	4.8	53	9.7
29	51	71	84	84	---	579	172	80	14	4.5	50	9.9
30	52	70	79	86	---	562	177	76	14	4.3	62	8.4
31	55	---	83	193	---	554	---	74	---	4.3	59	---
TOTAL	1688	2065	2162	2652	6102	43760	8820	3756	1056	242.7	1685.9	571.1
MEAN	54.5	68.8	69.7	85.5	218	1412	294	121	35.2	7.83	54.4	19.0
MAX	66	83	84	193	514	7340	554	179	75	15	161	89
MIN	48	55	65	68	136	554	166	74	12	3.5	3.5	7.9
AC-FT	3350	4100	4290	5260	12100	86800	17490	7450	2090	481	3340	1130

CAL YR 1977 TOTAL 33543.0 MEAN 91.9 MAX 1360 MIN 14 AC-FT 66530
WTR YR 1978 TOTAL 74560.7 MEAN 204 MAX 7340 MIN 3.5 AC-FT 147900

09432500 DIVERSIONS FROM GILA RIVER IN DUNCAN VALLEY, NM-AZ

LOCATION.--Duncan Valley lies along Gila River in Hidalgo County, N. Mex., and Greenlee County, Ariz. The part in New Mexico is also known as Virden Valley. The valley extends from a point about 8 mi (13 km) east of State line to vicinity of Guthrie, Ariz. Ten canals, listed in the following table in downstream order, and several pumps have rights to divert water from Gila River for irrigation in the valley. The first three canals listed divert in New Mexico and the others divert in Arizona. Intake of Sunset Canal at eastern end of valley, is 6 mi (10 km) downstream from station on Gila River below Blue Creek, near Virden, N. Mex. (09432000). Intake of York Canal, at western end, is about 14 mi (23 km) upstream from station on Gila River near Clifton, Ariz. (09442000).

PERIOD OF RECORD.--January 1936 to current year (combined monthly diversions and annual diversions by each canal). See WSP 1313 for summary of records of each canal (some since 1914) prior to 1951. Records of daily discharge for Sunset and New Model Canals have been published in reports of Geological Survey. Records of daily discharge since 1936 published in reports of Gila Water Commissioner.

GAGE.--Water-stage recorders and Parshall flumes.

REMARKS.--Record shows total diversions, unadjusted for return flows. Water obtained by pumping from ground water for irrigation in the valley is not included in these records. Decreed area for irrigation for the valley is 8,061 acres (32.6 km²). Water was issued for 6,300 acres (25.5 km²) during calendar year 1977.

COOPERATION.--Records furnished by Gila Water Commissioner.

ANNUAL DIVERSIONS, IN ACRE-FEET, TO EACH CANAL DURING CALENDAR YEAR 1977 AND WATER YEAR 1978

Canal	Calendar year 1977	Water year 1978
09433000. Sunset	5,560	8,890
09436000. New Model	2,080	2,980
09437500. Valley	1,020	1,700
09439000. Duncan	0	0
09439500. Black-McCleskey	0	0
09440000. Colmenero	0	0
09440100. Albert	0	0
09440200. Sexton	0	0
09440300. R. Sexton	0	0
09440500. York	0	0
Direct pumping	0	0
Total	8,660	13,570

COMBINED MONTHLY DISCHARGE OF CANALS DIVERTING FROM GILA RIVER IN DUNCAN VALLEY, NM-AZ,
DURING WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Discharge, in cubic feet per second			Diversions in acre-feet
	Maximum	Minimum	Mean	
October	27.2	3.9	15.1	932
November	29.0	6.0	20.7	1,230
December	26.3	13.3	16.4	1,010
CAL YR 1977	51.9	0	12.0	8,660
January	0	0	0	0
February	14.6	0	.73	41
March	74.0	0	26.0	1,600
April	75.5	59.1	67.4	4,010
May	64.8	12.5	34.7	2,130
June	30.8	4.0	14.1	836
July	16.0	0	5.4	330
August	26.0	0	14.2	876
September	17.8	3.4	9.6	571
WTR YR 1978	75.5	0	18.7	13,570

GILA RIVER BASIN

09442000 GILA RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 32°57'57", long 109°18'35", in NE¼SE¼ sec.25, T.5 S., R.29 E., Greenlee County, Hydrologic Unit 15040002, on right bank 500 ft (150 m) downstream from bridge on county road, 6 mi (10 km) upstream from San Francisco River, and 6 mi (10 km) south of Clifton. Prior to Apr. 10, 1978, at site 500 ft (150 m) upstream.

DRAINAGE AREA.--4,010 mi² (10,386 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1910 to July 1918 (published as "at Guthrie"), October 1927 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1059: 1911-12, 1915, 1917. WSP 1179: 1929(M), 1934(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,336.82 ft (1,017.063 m) National Geodetic Vertical Datum of 1929 (adjusted). Nov. 6, 1910, to July 11, 1918, non-recording gage or water-stage recorder at two sites about 6 mi (10 km) upstream at Guthrie at different datums. March 1928 to June 1948 water-stage recorder at site 500 ft (150 m) upstream at datum 1.35 ft (0.411 m) lower. June 1948 to Oct. 17, 1967, water-stage recorder at site 0.2 mi (0.3 km) upstream at datum 2.68 ft (0.817 m) higher. Oct. 18, 1967, to June 23, 1974, at present site and datum. June 24, 1974 to Apr. 9, 1978 at site 500 ft (150 m) upstream at datum 0.44 ft (0.134 m) lower.

REMARKS.--Records good. Diversions for irrigation of about 14,300 acres (57.9 km²) above station. Station is below all Duncan Valley diversions.

AVERAGE DISCHARGE.--57 years (water years 1912-17, 1928-78), 183 ft³/s (5.183 m³/s), 132,600 acre-ft/yr (163 hm³/yr); median of yearly mean discharges, 141 ft³/s (3.99 m³/s), 102,200 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Oct. 21, 1972, gage height, 18.7 ft (5.70 m), from high-water mark in gage well; minimum daily, 5 ft³/s (0.14 m³/s) Aug. 24, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,420 ft³/s (238 m³/s) Mar. 4, gage height, 11.86 ft (3.615 m), base discharge 2,500 ft³/s (71 m³/s); minimum daily, 6.3 ft³/s (0.178 m³/s) July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	26	45	75	344	347	445	110	33	20	24	40
2	19	27	45	79	353	2460	448	123	29	19	23	90
3	17	33	45	81	257	5560	452	128	33	19	20	84
4	16	36	45	81	228	7240	390	123	32	18	34	76
5	17	38	45	82	206	3380	360	121	29	18	48	60
6	28	39	47	79	190	2130	330	110	28	19	41	142
7	118	52	50	75	172	1780	300	103	24	19	41	40
8	49	59	48	71	160	1480	270	106	24	19	41	35
9	36	63	46	73	152	1190	260	106	24	19	36	30
10	28	65	51	80	150	1030	248	110	23	19	60	30
11	26	67	54	79	150	900	230	98	23	18	70	25
12	41	56	54	69	142	835	210	86	23	18	58	25
13	49	49	54	68	141	810	176	79	23	18	50	20
14	47	49	54	68	170	790	157	82	23	18	43	20
15	42	47	55	74	216	760	149	82	21	18	36	20
16	29	46	53	79	247	740	137	79	19	18	33	18
17	22	45	53	64	226	720	132	72	19	17	29	18
18	21	48	53	100	202	710	135	66	19	17	26	18
19	22	52	53	102	182	680	135	66	19	19	25	18
20	21	48	53	111	170	670	140	64	21	19	55	18
21	20	49	53	108	168	650	126	65	21	19	122	18
22	20	45	56	102	174	630	117	65	23	48	102	19
23	19	48	55	100	190	610	112	65	24	30	68	19
24	19	48	54	98	209	590	108	74	23	26	60	18
25	19	46	52	98	223	550	105	68	21	25	68	19
26	20	49	55	99	233	530	105	59	19	31	77	18
27	20	52	55	93	247	510	103	46	21	412	62	18
28	20	56	56	93	247	480	98	43	24	50	62	20
29	20	53	75	88	---	458	106	42	21	30	58	21
30	20	46	77	86	---	445	110	40	21	10	54	20
31	24	---	74	111	---	442	---	36	---	6.3	50	---
TOTAL	889	1437	1665	2686	5749	40107	6194	2517	707	1056.3	1576	1017
MEAN	28.7	47.9	53.7	86.6	205	1294	206	81.2	23.6	34.1	50.8	33.9
MAX	118	67	77	111	353	7240	452	128	33	412	122	142
MIN	16	26	45	68	141	347	98	36	19	6.3	20	18
AC-FT	1760	2850	3300	5330	11400	79550	12290	4990	1400	2100	3130	2020
CAL YR 1977	TOTAL	24895.6	MEAN	68.2	MAX	1420	MIN	9.3	AC-FT	49380		
WTR YR 1978	TOTAL	65600.3	MEAN	180	MAX	7240	MIN	6.3	AC-FT	130100		

GILA RIVER BASIN

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09442000 GILA RIVER NEAR CLIFTON, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 18...	1030	20	655	8.5	20.0	30	8.2	70	140	0	41	8.6
NOV 16...	1400	50	600	8.4	16.0	70	9.0	83	190	0	42	9.7
DEC 16...	1000	57	590	8.3	9.0	60	10.0	24	150	0	45	9.4
JAN 17...	1015	82	550	8.5	11.0	140	10.0	138	140	0	42	9.4
FEB 07...	1430	150	420	8.2	15.5	170	8.2	130	140	0	42	7.5
MAR 24...	1330	136	300	8.1	16.5	--	8.6	143	95	0	28	6.2
APR 12...	1300	142	460	8.2	20.0	120	9.2	94	140	0	41	8.4
MAY 17...	1400	70	660	8.3	24.0	40	7.7	80	170	0	50	11
JUN 14...	1300	20	630	8.2	37.5	2	7.3	54	120	0	34	8.9
JUL 19...	1245	10	640	8.5	38.0	2	7.4	82	110	0	32	8.3
AUG 10...	1430	70	750	8.2	29.0	1900	6.3	5400	170	0	53	10
SEP 15...	1150	22	730	8.3	26.0	1	8.2	K120	120	0	35	7.6

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
UCT 18...	90	3.3	4.3	230	0	81	36	1.9	43	421	419	.57
NOV 16...	82	3.0	3.7	230	3	69	31	1.9	41	371	397	.50
DEC 16...	75	2.7	3.7	220	0	71	30	1.9	39	371	386	.50
JAN 17...	66	2.4	3.1	210	1	67	29	1.2	17	338	341	.46
FEB 07...	42	1.6	2.7	170	0	48	22	1.9	34	270	286	.37
MAR 24...	28	1.2	2.5	120	0	38	13	1.4	29	200	209	.27
APR 12...	48	1.8	3.5	180	0	60	27	1.6	30	298	311	.41
MAY 17...	84	2.8	4.6	240	0	94	39	1.8	39	415	445	.56
JUN 14...	92	3.6	4.9	200	0	90	44	1.8	43	399	418	.54
JUL 19...	95	3.9	4.9	200	5	85	43	1.9	44	399	418	.54
AUG 10...	96	3.2	5.9	230	0	130	43	2.1	38	498	497	.68
SEP 15...	98	3.9	4.4	210	0	90	40	1.9	42	392	423	.53

K Based on non-ideal colony count.

GILA RIVER BASIN

09442000 GILA RIVER NEAR CLIFTON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO. TOTAL (MG/L AS P)	PHOS- PHORUS, URTHO, DIS- SOLVED (MG/L AS P)
UCT								
18...	.44	--	--	.25	.69	.09	--	--
NOV								
16...	.45	--	.74	.29	.74	--	.20	--
DEC								
16...	.35	.48	--	.36	.69	.13	--	.07
JAN								
17...	.27	.25	--	.26	.53	.32	--	.02
FEB								
07...	.28	.34	--	.53	.81	.35	--	.06
MAR								
24...	.35	.71	--	.64	.91	.80	--	.07
APR								
12...	.43	.44	--	.57	1.0	.46	--	.07
MAY								
17...	.64	.71	--	.31	.95	.09	--	.01
JUN								
14...	.05	.11	--	.67	.72	.02	--	.01
JUL								
19...	.02	.04	--	.39	.41	.03	--	.01
AUG								
10...	1.2	1.1	--	5.4	6.6	4.4	--	.10
SEP								
15...	.12	.14	--	.57	.69	.03	--	.02

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CAIUMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
UCT								
18...	5	100	240	160	<10	30	10	1700
NOV								
16...	4	500	170	130	0	12	33	4000
DEC								
16...	4	100	180	120	1	0	60	4100
JAN								
17...	4	200	160	110	8	20	34	5400
FEB								
07...	3	200	110	80	1	20	41	10000
MAR								
24...	1	400	90	50	2	10	33	10000
APR								
12...	6	300	160	80	2	10	19	8100
MAY								
17...	4	0	190	140	1	10	13	2500
JUN								
14...	5	50	230	160	1	10	9	310
JUL								
19...	6	200	210	170	0	0	8	220
AUG								
10...	13	800	250	160	4	70	270	71000
SEP								
15...	6	0	260	170	1	0	10	870

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09442000 GILA RIVER NEAR CLIFTON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 18...	70	<100	60	4	.3	0	<10	30
NOV 16...	30	9	160	0	.0	1	0	40
DEC 16...	30	21	170	0	.2	0	0	50
JAN 17...	20	46	270	0	.0	0	0	70
FEB 07...	20	19	480	0	.3	1	0	60
MAR 24...	30	19	540	0	.0	4	1	100
APR 12...	40	13	310	10	.0	0	0	50
MAY 17...	0	7	90	0	.0	0	0	30
JUN 14...	0	8	10	0	.2	1	0	20
JUL 19...	20	6	10	0	.0	0	0	10
AUG 10...	60	170	3300	0	.0	2	0	380
SEP 15...	80	6	40	20	.1	0	0	50

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	SEMI- MENT, SUS- PENDED (MG/L)	SFDT- MENT DTS- CHARGE, SUS- PENDED (17DAY)
OCT 19...	1.8	.00	1	--	--
NOV 16...	3.2	.00	6	--	--
DEC 16...	2.5	.00	4	--	--
JAN 17...	4.3	.00	2	483	107
FEB 07...	9.7	.00	2	--	--
MAR 24...	11	.00	2	17400	6390
APR 12...	6.2	.00	2	--	--
MAY 17...	2.4	.00	1	--	--
JUN 14...	1.2	.00	2	--	--
JUL 19...	1.3	.00	2	--	--
AUG 10...	42	.00	5	--	--
SEP 15...	--	.00	0	--	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09442680 SAN FRANCISCO RIVER NEAR RESERVE, NM

LOCATION.--Lat 33°44'12", long 108°46'14", in NE¼NW¼SE¼ sec.35, T.6 S., R.19 W., Catron County, Hydrologic Unit 15040004, on left bank 1,300 ft (400 m) downstream from Rainbow Bridge Canyon, 1.7 mi (2.7 km) northwest of Reserve, and at mile 563.1 (096.0 km).

DRAINAGE AREA.--350 mi² (907 km²), approximately.

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

GAGE.--Water-stage recorder. Altitude of gage is 5,820 ft (1,774 m), from topographic map. Prior to Dec. 15, 1972, at site 1,800 ft (549 m) upstream at different datum.

REMARKS.--Records fair. Possible minor regulation by Luna Lake, 27 mi (43 km) upstream. Diversions for irrigation of about 500 acres (2.0 km²) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--19 years, 22.9 ft³/s (0.649 m³/s), 16,590 acre-ft/yr (20.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s (337 m³/s) Oct. 20, 1972, gage height, 7.47 ft (2.277 m) in gage well, 8.05 ft (2.454 m), from outside floodmarks, site and datum then in use, from rating curve extended above 9,000 ft³/s (255 m³/s) on basis of velocity-area study; minimum, 1.0 ft³/s (0.028 m³/s) Mar. 16, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, about 15 ft (4.6 m), as determined in 1962 from old floodmarks. Major floods of Nov. 26, 1905 and Dec. 3, 1906, exceeded 20,000 ft³/s (566 m³/s) at Alma (downstream). See WSP 1313.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 275 ft³/s (7.79 m³/s) Mar. 1, gage height, 3.80 ft (1.158 m), no peak above base of 450 ft³/s (13 m³/s); minimum, 1.5 ft³/s (0.042 m³/s) July 20, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	5.9	5.5	6.0	9.5	99	60	7.9	3.0	2.9	17	6.1
2	5.3	5.9	5.5	5.8	9.2	141	62	9.6	2.8	2.6	13	5.4
3	5.3	5.8	5.7	5.7	8.5	113	53	9.0	2.7	2.4	8.8	4.9
4	5.6	5.8	5.4	5.9	8.3	93	44	8.0	2.6	2.4	6.7	4.1
5	5.8	6.0	5.4	5.9	8.5	92	41	7.4	2.4	2.3	5.8	4.9
6	6.3	7.1	5.3	6.0	8.9	101	36	8.6	2.5	2.2	4.5	4.7
7	7.4	8.0	5.0	6.1	8.9	87	33	9.1	2.6	2.0	2.7	4.7
8	6.1	7.3	5.2	5.7	8.8	75	29	8.0	2.4	2.1	5.3	4.4
9	24	6.6	5.2	5.7	8.5	73	28	7.2	2.2	2.1	5.2	4.3
10	8.6	6.2	4.9	6.3	8.4	74	28	6.7	2.0	2.2	4.6	3.9
11	11	6.1	4.8	6.5	10	72	26	6.6	1.9	8.1	3.9	3.9
12	8.5	6.2	4.8	6.2	8.4	67	23	6.2	1.9	4.1	4.9	3.6
13	6.5	6.0	4.8	6.0	8.0	63	21	5.7	2.1	3.4	5.4	3.5
14	5.9	6.2	4.5	6.0	9.0	66	17	5.5	2.0	3.8	8.0	3.5
15	5.6	6.2	4.7	7.1	8.9	58	16	5.4	2.1	8.0	6.1	3.1
16	5.4	6.2	4.8	6.8	8.4	49	15	5.5	2.0	5.7	4.8	4.0
17	5.9	6.1	4.2	7.1	7.6	46	14	5.1	2.0	3.9	4.0	9.5
18	6.4	6.1	4.7	7.3	7.1	48	13	4.1	2.0	3.1	3.2	6.1
19	6.7	6.0	5.0	6.9	7.1	54	13	3.9	2.0	3.2	6.4	5.3
20	6.6	6.0	4.1	6.9	7.7	63	12	4.7	2.0	2.0	20	5.1
21	6.6	5.9	4.0	7.0	8.4	69	11	4.6	1.8	1.8	11	4.9
22	6.8	5.8	5.0	6.6	8.4	72	11	4.7	1.8	3.0	16	9.4
23	6.8	5.6	5.5	6.6	8.6	87	9.6	4.5	1.9	2.8	16	5.7
24	6.7	5.7	5.2	6.7	8.5	98	9.2	4.1	1.9	4.0	27	7.9
25	6.5	5.9	5.1	6.4	8.3	88	9.1	4.1	1.7	4.1	13	11
26	6.5	6.0	5.1	6.7	8.4	77	8.2	3.9	1.9	3.8	13	7.1
27	6.4	6.0	5.7	6.9	8.5	71	7.8	3.8	2.0	3.7	11	6.1
28	6.6	6.0	5.7	7.3	16	68	7.7	3.6	2.6	3.3	8.2	5.7
29	6.7	5.9	5.9	7.5	---	65	7.4	3.4	2.7	2.0	8.2	5.5
30	6.9	5.7	5.8	7.9	---	61	7.4	3.3	3.5	2.6	7.6	5.3
31	6.3	---	6.0	10	---	60	---	3.0	---	3.4	7.3	---
TOTAL	221.4	184.2	158.5	205.5	244.8	2350	672.4	177.2	67.0	103.0	278.6	163.6
MEAN	7.14	6.14	5.11	6.63	8.74	75.8	22.4	5.72	2.23	3.32	8.99	5.45
MAX	24	8.0	6.0	10	16	141	62	9.6	3.5	8.1	27	11
MIN	5.3	5.6	4.0	5.7	7.1	46	7.4	3.0	1.7	1.8	2.7	3.1
AC-FT	439	365	314	408	486	4660	1330	351	133	204	553	325

CAL YR 1977 TOTAL 2641.8 MEAN 7.24 MAX 115 MIN 1.4 AC-FT 5240
WTR YR 1978 TOTAL 4826.2 MEAN 15.2 MAX 141 MIN 1.7 AC-FT 9570

09443000 SAN FRANCISCO RIVER NEAR ALMA, NM

LOCATION.--Lat 33°22'05", long 108°54'35", in SW¼SE¼ sec.4, T.11 S., R.20 W., Catron County, Hydrologic Unit 15040004, on right bank 1.2 mi (1.9 km) downstream from Alma, 4 mi (6 km) northwest of Glenwood, 6 mi (10 km) upstream from Whitewater Creek, and at mile 523.5 (842.3 km).

DRAINAGE AREA.--1,546 mi² (4,004 km²).

PERIOD OF RECORD.--September 1904 to January 1914, fragmentary (see WSP 1313), January 1964 to current year. Prior to October 1911, published as "at Alma."

GAGE.--Water-stage recorder. Altitude of gage is 4,842 ft (1,476 m), from topographic map. Prior to Aug. 11, 1912, nonrecording gages at various sites, within 500 ft (150 m) of each other, 0.8 mi (1.3 km) upstream, at different datums. Aug. 11, 1912, to Feb. 2, 1914, nonrecording gage at approximately present site and datum. Jan. 10, 1964, to Nov. 1, 1972, at datum 3.00 ft (0.91 m) higher.

REMARKS.--Records good. Diversions for irrigation of about 1,500 acres (6.1 km²) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--14 years (water years 1965-78), 63.2 ft³/s (1.790 m³/s), 45,790 acre-ft/yr (56.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,600 ft³/s (867 m³/s) Oct. 20, 1972, gage height, 18.16 ft (5.535 m), present datum, from floodmarks in well, from rating curve extended above 3,500 ft³/s (99.1 m³/s) on basis of slope-area measurement of peak flow; no flow many days.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 60,000 ft³/s (1,700 m³/s) or greater were computed at Clifton, AZ.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Mar. 2	1500	*4,390	124	8.26	2.518
Aug. 23	1730	1,600	45.3	6.30	1.920

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	10	7.1	17	427	161	7.7	2.5	1.6	4.5	.60
2	.00	.00	8.7	7.1	16	2630	164	23	2.5	1.4	1.4	.30
3	.00	1.8	8.2	7.1	16	2220	139	23	2.1	1.4	30	2.5
4	.00	6.9	8.2	6.8	15	945	129	24	1.9	1.3	33	.40
5	.00	7.8	8.2	6.8	14	572	113	27	1.9	1.4	13	10
6	.00	29	7.8	7.1	14	545	106	27	2.1	1.4	8.6	1.2
7	.00	30	6.9	6.8	14	394	95	29	2.2	1.3	3.5	.40
8	.00	24	6.9	7.1	14	273	87	27	2.2	1.3	25	.40
9	35	20	6.9	7.1	14	213	84	25	2.2	1.2	13	.30
10	140	18	7.4	7.4	14	187	78	23	2.2	1.2	6.5	.30
11	33	16	7.4	8.3	16	180	70	14	2.2	1.2	2.1	.10
12	24	15	7.4	8.3	19	168	61	5.5	2.1	1.2	14	.10
13	21	15	7.4	8.3	18	168	54	5.3	1.9	1.3	3.9	.10
14	19	14	6.9	8.3	20	159	50	4.5	1.9	1.6	1.9	.00
15	18	14	6.5	9.2	20	151	44	4.3	2.1	1.6	1.6	.00
16	16	12	6.9	9.5	21	137	40	3.7	2.2	1.4	1.4	1.4
17	15	12	6.0	10	21	129	37	3.5	2.1	1.4	1.3	.00
18	14	11	6.9	11	19	129	31	3.5	1.9	1.3	1.3	.70
19	14	11	6.9	11	18	133	27	3.5	1.9	1.3	1.3	1.8
20	13	9.6	5.6	12	18	153	32	3.5	1.8	1.4	1.3	.75
21	13	10	3.8	12	18	189	35	3.5	1.8	1.4	11	.60
22	13	10	3.8	12	18	203	30	3.5	1.8	11	48	1.0
23	12	10	7.4	13	18	228	23	3.3	1.8	1.8	58	1.2
24	8.4	10	6.9	13	11	235	22	3.3	1.6	1.4	19	.80
25	.00	10	6.9	12	11	225	16	3.1	1.6	1.3	31	9.4
26	.00	9.1	6.9	12	11	205	14	2.9	1.6	8.8	24	20
27	.00	9.1	6.9	12	11	195	12	2.9	1.8	2.5	13	12
28	.00	9.1	7.1	11	15	191	12	2.7	1.8	1.3	8.6	8.3
29	.00	9.1	7.8	11	---	180	10	2.5	1.9	1.0	2.9	6.0
30	.00	9.6	7.8	12	---	166	10	2.7	1.8	1.0	7.1	.00
31	.00	---	7.8	14	---	161	---	2.5	---	1.0	1.9	---
TOTAL	408.40	363.10	220.2	300.3	451	12091	1786	319.9	60.5	59.7	393.1	80.65
MEAN	13.2	12.1	7.10	9.69	16.1	390	59.5	10.3	2.02	1.93	12.7	2.69
MAX	140	30	10	14	21	2630	164	29	2.9	11	58	20
MIN	.00	.00	3.8	6.8	11	129	10	2.5	1.6	1.0	1.3	.00
AC-FT	810	720	437	596	895	23980	3540	635	120	118	780	160

CAL YR 1977	TOTAL	5204.60	MEAN	14.3	MAX	275	MIN	.00	AC-FT	10320
WTR YR 1978	TOTAL	16533.85	MEAN	45.3	MAX	2630	MIN	.00	AC-FT	32790

09444000 SAN FRANCISCO RIVER NEAR GLENWOOD, NM

LOCATION.--Lat 33°14'48", long 108°52'47", in NE¼NW¼ sec.23, T.12 S., R.20 W., Catron County, Hydrologic Unit 15040004, on left bank 0.2 mi (0.3 km) upstream from hot springs, 5 mi (8 km) south of Glenwood, 6 mi (10 km) downstream from Whitewater Creek, and at mile 511.5 (823.0 km).

DRAINAGE AREA.--1,653 mi² (4,281 km²).

PERIOD OF RECORD.--October 1927 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1213: 1931, 1934, 1936-37, 1940-42, 1943-44(M), 1945-47. WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,560 ft (1,390 m), from topographic map; prior to Feb. 15, 1934, at site 4.5 mi (7.2 km) upstream at datum 98.82 ft (30.120 m) higher.

REMARKS.--Records good. Diversions for irrigation of about 2,000 acres (8.1 km²) above station. National Weather Service gage height telemeter at station. Water quality records for the current year are published in Water Resources Data for New Mexico.

AVERAGE DISCHARGE.--51 years, 69.8 ft³/s (1.977 m³/s), 50,570 acre-ft/yr (62.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,100 ft³/s (966 m³/s) Oct. 20, 1972, gage height, 16.61 ft (5.063 m), from rating curve extended above 22,000 ft³/s (623 m³/s); minimum, 1.5 ft³/s (0.042 m³/s) Aug. 6, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Major floods probably occurred Jan. 19 and Oct. 14, 1916, when discharges of 60,000 ft³/s (1,700 m³/s) or greater were computed for station at Clifton, AZ. On Nov. 26, 1905, a peak of 25,000 ft³/s (708 m³/s) was measured (by float-area method) at station at Alma (about 12 mi or 19 km upstream, drainage area, 1,560 mi² or 4,040 km²); a similar measurement of 21,000 ft³/s (595 m³/s) was made at the Alma station for peak of Dec. 3, 1906.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 800 ft³/s (23 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 2	1600	*3,750 106	8.35 2.545
July 22	1545	1,380 39.1	5.74 1.750

Minimum, 15 ft³/s (0.42 m³/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	25	25	33	502	249	60	31	21	20	28
2	20	24	26	24	34	2870	246	64	29	18	27	42
3	19	24	26	23	33	2750	223	63	29	18	40	26
4	22	24	25	23	33	1080	195	56	32	19	76	25
5	23	25	24	24	32	566	174	57	30	19	57	30
6	31	31	24	24	33	558	160	67	30	17	33	25
7	27	44	23	24	33	461	148	71	29	16	27	23
8	29	39	23	23	33	341	144	69	27	17	30	22
9	25	36	24	23	32	268	137	58	26	16	49	23
10	178	35	24	24	32	250	124	50	27	16	29	22
11	58	34	23	24	33	245	110	57	27	17	25	22
12	39	33	22	24	36	222	104	53	27	17	28	19
13	36	32	22	24	37	224	101	57	26	17	28	16
14	33	31	22	24	39	203	100	67	29	16	24	19
15	31	32	24	25	39	196	100	74	28	15	23	21
16	31	31	22	26	40	174	98	72	26	16	23	20
17	29	30	20	26	40	153	97	60	26	16	21	22
18	29	30	24	26	39	150	87	56	25	15	21	22
19	27	31	24	26	37	162	75	46	23	15	21	21
20	27	29	23	27	36	191	69	42	22	15	22	20
21	26	29	23	28	36	240	77	47	24	15	20	20
22	24	30	22	28	36	275	78	50	23	16	64	20
23	24	30	23	28	36	311	66	47	24	38	71	21
24	23	29	25	27	36	334	61	44	24	30	59	20
25	23	28	24	26	37	311	60	41	24	28	52	20
26	23	28	23	26	37	280	65	39	24	36	56	35
27	22	28	23	27	37	262	73	37	25	32	44	26
28	22	28	22	26	38	254	74	33	31	24	39	28
29	22	28	24	27	---	249	67	32	29	22	35	21
30	25	26	24	26	---	237	61	35	23	20	37	19
31	25	---	25	31	---	234	---	32	---	20	32	---
TOTAL	995	904	728	789	997	14553	3423	1636	800	682	1133	698
MEAN	32.1	30.1	23.5	25.5	35.6	469	114	52.8	26.7	22.0	36.5	23.3
MAX	178	44	26	31	40	2870	249	74	32	61	76	42
MIN	19	24	20	23	32	150	60	32	22	15	20	16
AC-FT	1970	1790	1440	1560	1980	28870	6790	3250	1590	1350	2250	1380

CAL YR 1977	TOTAL	12113	MEAN	33.2	MAX	374	MIN	14	AC-FT	24030
WTR YR 1978	TOTAL	27338	MEAN	74.9	MAX	2870	MIN	15	AC-FT	54220

GILA RIVER BASIN

273

09444200 BLUE RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 33°17'27", long 109°11'44", in sec.6, T.2 S., R.31 E. (unsurveyed), Greenlee County, Hydrologic Unit 15040004, in Apache National Forest, on right bank 0.1 mi (0.2 km) downstream from county road crossing, 0.9 mi (1.4 km) upstream from Clear Creek, 8 mi (13 km) upstream from mouth, and 17 mi (27 km) northeast of Clifton.

DRAINAGE AREA.--506 mi² (1,311 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 4,160 ft (1,268 m), from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--10 years (water years 1969-78), 51.4 ft³/s (1.456 m³/s), 37,240 acre-ft/yr (45.9 hm³/yr); median of yearly mean discharges, 30 ft³/s (0.850 m³/s) 21,700 acre-ft/yr (27 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) Oct. 20, 1972, gage height, 22.56 ft (6.876 m), from rating curve extended above 960 ft³/s (27 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 1.7 ft³/s (0.048 m³/s) July 11, 12, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,660 ft³/s (104 m³/s) Mar. 2, gage height, 10.61 ft (3.234 m), base discharge, 800 ft³/s (23 m³/s); minimum daily, 2.9 ft³/s (0.082 m³/s) July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	6.1	7.3	6.4	105	1360	229	42	5.9	4.7	3.4	4.9
2	5.7	6.5	6.7	6.5	56	2330	226	42	5.3	4.6	13	58
3	5.4	6.4	6.6	6.5	41	1960	189	43	5.1	4.5	31	35
4	6.3	6.2	6.5	6.5	33	821	167	36	5.2	4.5	11	18
5	7.0	5.8	6.5	6.7	28	514	147	32	5.0	4.5	12	62
6	12	6.9	6.4	6.7	31	519	131	37	5.7	4.5	33	14
7	36	10	6.3	6.7	33	396	120	41	6.1	4.5	19	13
8	21	11	6.3	6.7	31	294	118	35	5.7	4.7	17	11
9	16	9.6	6.3	6.3	28	251	109	31	5.9	4.5	21	8.2
10	12	8.9	6.5	6.6	26	240	99	27	6.1	4.4	20	8.2
11	11	8.6	6.5	7.4	91	225	86	26	5.8	4.5	55	7.1
12	10	8.5	6.5	7.1	64	221	80	26	6.1	5.1	26	7.1
13	9.8	8.4	6.4	7.1	46	216	76	23	6.7	4.7	25	6.5
14	9.4	8.2	6.2	7.1	65	178	76	22	6.2	4.5	20	8.8
15	8.7	7.6	5.7	32	61	161	80	21	5.0	4.0	16	9.3
16	8.2	7.5	5.7	47	64	140	80	21	6.1	3.9	12	15
17	7.9	7.3	5.3	45	57	127	78	21	5.9	3.5	7.7	39
18	7.5	7.5	5.4	35	45	120	74	21	5.7	3.6	4.9	19
19	7.2	7.6	5.5	19	41	141	69	17	5.6	3.4	4.9	15
20	6.8	7.5	5.0	33	38	165	65	15	5.4	3.5	66	15
21	6.7	7.6	4.6	34	40	219	62	15	5.3	3.3	37	9.9
22	6.7	7.7	4.7	29	42	236	58	13	5.2	15	113	8.9
23	5.9	7.7	5.1	18	44	306	56	12	5.1	11	20	6.0
24	5.6	7.6	5.1	17	43	291	51	11	4.9	76	30	6.0
25	5.5	7.7	4.9	12	42	247	48	11	4.8	26	34	45
26	5.2	7.5	5.3	12	43	225	50	10	4.8	23	40	52
27	5.0	7.3	5.6	11	44	217	52	9.3	5.3	14	34	30
28	5.1	7.5	5.9	11	81	207	54	8.8	6.4	7.0	22	20
29	6.1	7.6	7.2	10	---	196	48	8.1	5.5	4.1	14	20
30	7.7	7.6	8.5	15	---	193	46	6.9	5.0	3.3	11	15
31	6.7	---	6.9	188	---	195	---	6.3	---	2.9	7.7	---
TOTAL	280.0	231.9	187.4	662.3	1363	12931	2824	690.4	166.8	271.7	782.6	586.9
MEAN	9.03	7.73	6.05	21.4	48.7	417	94.1	22.3	5.56	8.76	25.2	19.6
MAX	36	11	8.5	188	105	2330	229	43	6.7	76	113	62
MIN	5.0	5.8	4.6	6.3	26	120	46	6.3	4.8	2.9	3.4	4.9
AC-FT	555	460	372	1310	2700	25650	5600	1370	331	539	1550	1160
CAL YR 1977	TOTAL	5392.8	MEAN	14.8	MAX	160	MIN	3.4	AC-FT	10700		
WTR YR 1978	TOTAL	20978.0	MEAN	57.5	MAX	2330	MIN	2.9	AC-FT	41610		

GILA RIVER BASIN

09444500 SAN FRANCISCO RIVER AT CLIFTON, AZ

LOCATION.--Lat 33°02'58", long 109°17'43", in SW¼SE¼ sec.30, T.4 S., R.30 E., Greenlee County, Hydrologic Unit 15040004, on downstream side of right pier at Railroad Boulevard Bridge (U.S. Highway 666), at Clifton, 9.9 mi (15.9 km) upstream from mouth.

DRAINAGE AREA.--2,766 mi² (7,164 km²).

PERIOD OF RECORD.--October 1910 to March 1911, July 1911 to June 1912, September 1912, November 1912 to March 1913, May 1913 to July 1918, July 1927 to current year. Monthly discharge only for some periods, published in WSP 1313. Published as "San Francisco River at dam above Clifton" in 1911 and under both names in 1912.

REVISED RECORDS.--WSP 1049: 1911, 1913-15, 1917. WSP 1283: Drainage area. WSP 1313: 1927-30(M), 1932(M), 1934(M).
WRD Ariz. 1972: 1917(M).

Gage.--Water-stage recorder. Datum of gage is 3,436.16 ft (1,047.342 m) National Geodetic Vertical Datum of 1929. See WSP 1713 or 1733 for history of changes prior to Apr. 7, 1959. Apr. 7, 1959, to Mar. 23, 1961, at site 1,140 ft (347 m) downstream at datum 5.37 ft (1.637 m) lower.

REMARKS.--Records good. Diversions for mining, municipal use, and for irrigation of about 2,700 acres (10.9 km²) above station.

AVERAGE DISCHARGE.--54 years (water years 1914-15, 1917, 1928-78) 188 ft³/s (5.324 m³/s), 136,200 acre-ft/yr (168 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (116 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,000 ft³/s (1,810 m³/s) Oct. 20, 1972, gage height, 17.0 ft (5.18 m), from high-water mark, from rating curve extended above 6,400 ft³/s (181 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 6.1 ft³/s (0.173 m³/s) June 21, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,500 ft³/s (269 m³/s) Mar. 3, gage height, 8.00 ft (2.438 m), base discharge, 2,000 ft³/s (57 m³/s); minimum daily, 15 ft³/s (0.425 m³/s) July 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	45	52	53	213	1210	580	131	58	41	51	46
2	34	44	52	53	97	6820	574	129	55	36	51	138
3	34	44	52	53	66	7430	514	134	55	32	91	139
4	33	44	52	52	56	3010	455	121	51	30	89	82
5	33	42	52	51	51	1580	420	108	51	29	268	90
6	38	48	52	51	51	1480	390	105	46	28	124	62
7	55	51	50	51	55	1310	355	129	45	26	80	53
8	59	63	50	51	56	1050	345	124	44	25	66	47
9	66	62	46	51	56	806	340	117	44	24	68	45
10	144	58	47	52	53	701	309	99	44	28	93	40
11	166	56	51	55	78	673	271	89	44	28	69	34
12	83	55	51	55	161	598	235	95	45	28	108	37
13	68	55	51	53	103	624	220	97	44	25	69	39
14	58	55	52	53	119	526	220	97	44	25	62	35
15	53	53	50	58	185	460	227	114	42	28	53	33
16	48	53	50	160	173	440	227	129	41	28	46	36
17	47	52	50	89	161	400	224	117	40	24	40	42
18	45	52	50	138	124	385	216	99	38	19	36	50
19	45	52	50	89	103	405	196	93	39	20	64	47
20	44	52	50	89	93	455	173	83	33	20	73	44
21	42	51	50	110	87	508	167	78	28	15	80	40
22	41	51	50	108	93	574	170	80	27	20	183	38
23	39	51	50	89	108	638	161	81	27	78	139	38
24	40	51	50	81	119	673	144	78	27	104	137	38
25	35	51	51	76	124	673	136	76	28	106	103	40
26	32	51	52	71	121	617	129	69	28	63	91	181
27	32	51	52	68	126	592	134	69	27	68	97	76
28	37	51	53	65	142	580	149	66	31	63	73	56
29	40	52	56	62	---	568	149	62	51	48	62	47
30	44	52	56	63	---	556	142	60	51	45	65	35
31	44	---	55	318	---	544	---	59	---	44	52	---
TOTAL	1615	1548	1585	2468	2974	36886	7972	2988	1228	1198	2683	1728
MEAN	52.1	51.6	51.1	79.6	106	1190	266	96.4	40.9	38.6	86.5	57.6
MAX	166	63	56	318	213	7430	580	134	58	106	268	181
MIN	32	42	46	51	51	385	129	59	27	15	36	33
AC-FT	3200	3070	3140	4900	5900	73160	15810	5930	2440	2380	5320	3430
CAL YR 1977	TOTAL	25405	MEAN	69.6	MAX	568	MIN	18	AC-FT	50390		
WTR YR 1978	TOTAL	64873	MEAN	178	MAX	7430	MIN	15	AC-FT	128700		

GILA RIVER BASIN

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09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 33°01'33", long 109°18'06", in NE¼NW¼SW¼ sec.6, T.5 S., R.30 E., Greenlee County, Hydrologic Unit 15040004, 0.9 mi (1.4 km) downstream from Clifton sewage treatment facility, 1.2 mi (1.9 km) south of Clifton, and 7.7 mi (12.4 km) upstream from mouth.

DRAINAGE AREA.--2,770 mi² (7,170 km²), approximately.

PERIOD OF RECORD.--January 1976 to current year.

REMARKS.--Streamflow ungaged. Gaging station 09444500 San Francisco River at Clifton located 2.2 mi (3.5 km) upstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS, NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
UCT 18...	1400	40	1430	8.4	22.0	45	7.8	100	250	73	75	14
NOV 16...	1100	50	970	8.8	12.0	10	10.5	20	210	37	62	14
DEC 16...	1220	52	1420	8.6	10.0	4	10.0	4	260	97	47	35
JAN 17...	1200	87	800	9.4	10.0	110	11.8	360	180	42	52	13
FEB 07...	1600	80	1100	8.4	16.0	45	8.2	39	240	71	71	14
MAR 24...	1130	846	380	8.0	14.0	--	8.1	73	120	21	34	8.3
APR 12...	1400	258	680	7.6	21.0	15	7.9	5	160	30	48	10
MAY 17...	1100	120	760	8.1	22.0	4	8.4	90	180	57	57	9.2
JUN 14...	1500	47	1720	7.7	31.5	1	6.7	--	290	140	92	15
JUL 19...	1030	20	3090	8.2	28.0	2	8.6	38	440	280	150	17
AUG 10...	1100	89	800	7.9	25.0	2600	6.8	9600	190	63	58	12
SEP 19...	1030	57	1500	8.0	21.0	39	8.1	210	280	120	87	15

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
UCT 18...	170	4.7	10	210	0	23	290	1.0	42	741	729	1.01
NOV 16...	110	3.3	6.8	210	2	24	180	.9	39	541	542	.74
DEC 16...	180	4.8	11	200	0	28	320	.9	40	790	761	1.07
JAN 17...	87	2.8	5.2	170	1	29	140	.5	16	434	428	.59
FEB 07...	130	3.7	8.5	200	0	29	240	.9	37	625	630	.85
MAR 24...	33	1.3	2.8	120	0	25	43	.4	30	229	237	.31
APR 12...	73	2.5	.1	160	0	27	120	.5	25	381	383	.52
MAY 17...	110	3.6	6.5	150	0	49	170	.6	27	486	503	.66
JUN 14...	230	5.9	15	190	0	36	420	.9	29	990	936	1.35
JUL 19...	420	8.7	27	200	0	45	870	1.3	44	1830	1670	2.49
AUG 10...	110	3.4	7.9	160	0	28	200	.9	36	588	535	.80
SEP 19...	190	5.0	12	200	0	32	360	.9	42	884	838	1.20

GILA RIVER BASIN

09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 18...	.03	--	.38	.41	.17	--
NOV 16...	.03	--	.30	.33	.09	--
DEC 16...	.02	.02	.15	.17	.05	.03
JAN 17...	.06	.10	.35	.41	.21	.03
FEB 07...	.04	.05	.49	.53	.20	.07
MAR 24...	.12	.14	.34	.46	.46	.06
APR 12...	.05	.20	.23	.28	.13	.01
MAY 17...	.02	.01	.32	.34	.06	.01
JUN 14...	.02	1.0	.78	.80	.07	.04
JUL 19...	.02	.05	1.9	1.9	.07	.05
AUG 10...	.47	.43	9.0	9.5	7.9	.28
SEP 19...	.04	.04	.25	.29	.13	.08

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BURUN, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 18...	3	100	150	100	10	20	20	1800	40
NOV 16...	3	300	140	80	1	4	24	690	40
DEC 16...	3	100	150	100	1	20	11	310	20
JAN 17...	3	100	100	60	3	20	240	4400	20
FEB 07...	12	100	130	80	1	10	34	1300	20
MAR 24...	1	300	50	40	1	0	45	4100	40
APR 12...	6	300	110	50	1	0	10	460	20
MAY 17...	2	0	110	60	2	10	10	310	0
JUN 14...	3	200	210	120	1	0	13	120	0
JUL 19...	4	300	250	220	0	10	12	200	40
AUG 10...	9	700	160	90	4	100	530	68000	50
SEP 19...	4	100	180	140	1	10	22	2500	10

GILA RIVER BASIN

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09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)
OCT 18...	<100	40	3.8	0	<10	50	2.2	.00	1
NOV 16...	13	20	.0	0	0	40	1.9	.00	10
DEC 16...	4	40	.1	0	0	20	1.1	.00	1
JAN 17...	16	30	.4	0	0	70	6.3	.00	3
FEB 07...	9	20	.0	1	0	40	3.5	.00	2
MAR 24...	8	0	.0	2	1	30	8.1	.00	3
APR 12...	7	20	.0	0	0	10	2.6	.00	5
MAY 17...	15	10	.0	0	1	40	2.2	.00	0
JUN 14...	3	40	.1	0	0	20	1.6	.00	2
JUL 19...	5	120	.0	0	0	20	1.6	.00	0
AUG 10...	84	0	.0	1	1	290	74	.00	1
SEP 19...	4	40	.0	0	0	30	4.2	.00	1

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELURIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
SEP 19...	1030	0	.0	0	.0	.0	.0	.0	.0	.0	.0	.0
DATE		HEPTA- CHLOR- EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALATHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TUXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
SEP 19...		.0	.0	.0	.0	.0	.0	0	.0	0	0	.0

< Actual value is known to be less than value shown.

09445000 WILLOW CREEK DIVERSION FROM BLACK RIVER, NEAR MORENCI, AZ

LOCATION.--Lat 33°24'46", long 109°43'08", in SW¼ sec.23, T.1 N., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, on left bank just downstream from end of diversion pipeline, 3.6 mi (5.8 km) northeast of Point of Pines, 5.0 mi (8.0 km) southeast of pumping plant on Black River, and 29 mi (47 km) northwest of Morenci.

PERIOD OF RECORD.--April 1945 to current year.

GAGE.--Water-stage recorder and steel-edged rectangular weir. Datum of gage is 5,957.16 ft (1,815.742 m) National Geodetic Vertical Datum of 1929. Prior to June 26, 1946, at end of pipeline at that time, 3.5 mi (5.6 km) upstream at datum about 50 ft (15 m) higher.

REMARKS.--Records excellent. The entire flow consists of Black River (head of Salt River) water which is pumped into headwater of Willow Creek (tributary of Eagle Creek) for industrial and municipal supply in vicinity of Morenci.

AVERAGE DISCHARGE.--33 years, 10.4 ft³/s (0.295 m³/s), 7,530 acre-ft/yr (9.28 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s (0.79 m³/s) May 18, 19, 21-26, 1970; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	12	5.4	5.4	5.3	22	26	22	7.1	17	16
2	17	17	12	5.4	5.2	.00	23	26	23	.02	17	18
3	17	17	12	5.4	5.2	.00	24	26	24	.00	12	18
4	17	17	12	5.6	5.4	14	26	26	26	.00	17	18
5	17	17	12	5.6	5.6	24	26	26	26	.00	25	18
6	17	17	12	5.6	5.6	25	26	26	25	.00	19	18
7	17	15	12	5.6	5.6	25	26	26	20	.00	17	18
8	17	12	12	5.6	5.6	20	26	26	18	6.2	19	18
9	17	12	7.7	5.6	5.6	18	26	26	18	21	17	15
10	17	12	5.4	5.6	5.6	18	26	26	18	22	17	13
11	18	12	5.4	5.6	2.6	18	26	26	22	21	19	13
12	18	12	5.4	5.6	5.6	18	26	25	25	22	18	13
13	18	12	5.4	5.6	5.6	18	26	23	25	20	18	16
14	18	12	5.4	5.6	5.6	18	26	23	25	10	18	18
15	17	12	5.4	4.4	5.6	18	26	23	25	25	18	18
16	17	12	5.4	1.0	5.6	18	26	23	25	26	21	18
17	17	12	5.4	5.4	5.6	18	26	23	25	25	21	18
18	17	12	5.4	5.4	5.6	18	26	23	25	26	23	18
19	17	12	5.4	5.4	5.6	18	26	23	25	23	18	18
20	17	12	5.4	5.4	5.6	18	26	23	25	25	12	18
21	17	12	5.4	5.4	5.6	18	26	23	26	26	22	21
22	17	12	5.4	5.4	5.6	16	26	23	26	26	20	22
23	17	12	5.4	5.4	5.6	17	26	22	26	27	12	22
24	17	12	5.4	5.4	5.6	17	26	22	26	20	20	22
25	17	12	5.4	5.4	5.6	18	26	22	26	17	14	22
26	17	12	5.4	5.4	5.6	18	26	22	26	17	14	22
27	17	12	5.4	5.4	5.6	18	26	22	24	17	14	22
28	17	10	5.4	5.4	5.6	18	26	22	23	17	14	19
29	17	12	5.4	5.4	---	18	26	22	23	17	13	16
30	17	12	5.4	5.4	---	20	26	22	23	17	13	18
31	17	---	5.4	5.4	---	22	---	22	---	17	13	---
TOTAL	531	391	222.5	164.2	152.6	527.30	771	739	716	497.32	532	544
MEAN	17.1	13.0	7.18	5.30	5.45	17.0	25.7	23.8	23.9	16.0	17.2	18.1
MAX	18	17	12	5.6	5.6	25	26	26	26	27	25	22
MIN	17	10	5.4	1.0	2.6	.00	22	22	18	.00	12	13
AC-FT	1050	776	441	326	303	1050	1530	1470	1420	986	1060	1080
CAL YR 1977	TOTAL	4529.74	MEAN	12.4	MAX	22	MIN	.02	AC-FT	8980		
WTR YR 1978	TOTAL	5787.92	MEAN	15.9	MAX	27	MIN	.00	AC-FT	11480		

GILA RIVER BASIN

09447000 EAGLE CREEK ABOVE PUMPING PLANT, NEAR MORENCI, AZ

LOCATION.--Lat 33°04'16", long 109°27'10", in SE¼NE¼ sec.22, T.4 S., R.28 E., Greenlee County, Hydrologic Unit 15040005, on left bank 3 mi (5 km) upstream from Phelps Dodge Corp. pumping plant, 5 mi (8 km) west of Morenci, and 13 mi (21 km) upstream from mouth.

DRAINAGE AREA.--613 mi² (1,588 km²).

PERIOD OF RECORD.--April 1944 to current year.

REVISED RECORDS.--WSP 1850-C: 1966.

GAGE.--Water-stage recorder, Parshall flume and weir. Datum of gage is 3,701 ft (1,128 m) unadjusted. Apr. 1944 to Jan. 30, 1978, at site 1,000 ft (305 m) downstream at datum 6.37 ft (1.942 m) lower. Since Nov. 15, 1952, supplementary water-stage recorder 900 ft (274 m) downstream on right bank at datum 6.37 ft (1.942 m) lower. Aug. 23, 1950, to Nov. 15, 1952, supplementary water-stage recorder at site 1,100 ft (335 m) downstream at different datum.

REMARKS.--Records good. Diversions above station for irrigation of about 500 acres (2.02 km²), mostly above Willow Creek. Water from Black River was pumped into Eagle Creek basin, 52 mi (84 km) upstream from this station, for 12 months (see sta 09445000) and water was pumped from wells into Eagle Creek near Double Circle Ranch below Willow Creek for 9 months. The monthly quantities pumped are shown in table below. Diversion by pumping for industrial and municipal use in and near Morenci and Clifton are made from Eagle Creek, 3 mi (5 km) downstream from this station and from San Francisco River near Clifton. Monthly quantities diverted are shown in the table below; 90 percent of the pumpage was from Eagle Creek.

AVERAGE DISCHARGE (unadjusted).--34 years, 44.0 ft³/s (1.246 m³/s), 31,880 acre-ft/yr (39.3 hm³/yr); median of yearly mean discharges, 35 ft³/s (0.99 m³/s), 25,400 acre-ft/yr (31 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s (595 m³/s) Dec. 30, 1965, gage height, 12.8 ft (3.90 m), at supplementary gage; minimum, 3.2 ft³/s (0.091 m³/s) July 1, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum (*) and peaks above base of 800 ft³/s (23 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (b) (ft) (m)	
Mar. 1	2030	(a)	(a)	*7.80	2.380
Mar. 2	1430	*3,900	110	7.40	2.256
Aug. 19	1830	2,520	71.4	6.45	1.966

Minimum daily, 3.9 ft³/s (0.110 m³/s) July 10.

(a) Result of backwater from diversion dam.

(b) At supplementary gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	33	30	22	128	1000	85	37	23	20	26	18
2	25	33	30	21	138	2400	85	38	23	18	25	33
3	25	33	30	21	82	1770	81	38	23	15	26	30
4	26	33	30	21	58	1000	74	37	22	10	26	28
5	28	33	30	21	46	750	71	35	24	7.9	28	27
6	32	33	30	21	42	766	67	38	25	6.2	28	26
7	39	34	30	21	41	609	63	40	24	5.1	30	26
8	37	34	28	21	40	328	61	37	24	4.4	30	26
9	32	32	28	21	41	225	61	35	22	4.1	28	26
10	33	31	28	21	42	172	61	34	18	3.9	27	25
11	32	31	26	23	59	170	57	33	17	4.1	27	24
12	32	31	24	22	112	166	54	33	16	4.9	29	22
13	32	30	23	22	92	172	51	33	18	13	48	22
14	32	30	22	21	88	169	49	31	22	14	35	22
15	31	30	22	26	99	161	47	30	22	15	30	24
16	31	30	22	49	95	149	46	30	21	10	26	36
17	31	30	22	35	87	138	46	30	21	11	25	44
18	31	30	21	32	68	123	46	30	21	15	26	37
19	30	30	21	30	58	115	46	29	21	18	196	30
20	31	30	21	32	51	115	44	29	21	22	119	28
21	30	30	21	30	47	120	44	28	20	20	50	28
22	30	30	20	29	48	124	42	28	20	39	45	28
23	31	30	21	28	48	131	41	28	20	56	38	30
24	31	30	22	28	52	132	40	26	20	44	34	31
25	30	30	20	27	56	114	39	26	19	47	40	32
26	30	30	21	26	59	104	39	26	19	65	36	63
27	30	30	22	26	62	98	38	26	20	61	26	53
28	32	30	22	26	65	95	38	26	23	45	22	40
29	32	30	24	25	---	88	38	25	26	33	20	36
30	34	30	24	25	---	84	38	25	24	32	20	32
31	33	---	22	81	---	82	---	25	---	28	19	---
TOTAL	959	931	757	854	1904	11670	1590	966	639	691.6	1185	927
MEAN	30.9	31.0	24.4	27.5	68.0	376	53.0	31.2	21.3	22.3	38.2	30.9
MAX	39	34	30	81	138	2400	85	40	26	65	196	63
MIN	25	30	20	21	40	82	38	25	16	3.9	19	18
AC-FT	1900	1850	1500	1690	3780	23150	3150	1920	1270	1370	2350	1840
(†)	496	528	397	360	342	32	0	0	0	198	560	496
(‡)	1420	1630	1370	1530	1490	1420	1470	1380	1250	955	1370	1350
CAL YR 1977 TOTAL	12214.0			MEAN 33.5	MAX 279	MIN 19	AC-FT 24230	† 6,060		‡ 16,530		
WTR YR 1978 TOTAL	23073.6			MEAN 63.2	MAX 2400	MIN 3.9	AC-FT 45770	† 3,410		‡ 16,640		

† Pumpage, in acre-feet, into Eagle Creek, from Eagle Creek Wells.

‡ Pumpage, in acre-feet, to Clifton and Morenci, from San Francisco River and Eagle Creek.

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ

LOCATION.--Lat 32°52'06", long 109°30'38", in SE4NE4 sec.31, T.6 S., R.28 E., Graham County, Hydrologic Unit 15040005, on left bank 0.6 mi (1.0 km) downstream from intake of Brown Canal, 8 mi (13 km) northeast of Solomon, and 17 mi (27 km) downstream from San Francisco River. Records include flow of Brown Canal, which is measured 2,000 ft (610 m) downstream from intake.

DRAINAGE AREA.--7,896 mi² (20,451 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1914 to current year. Monthly discharge only for some periods, published in WSP 1313. Prior to October 1932 and October 1940 to September 1949 published as "near Solomonsville" and October 1932 to October 1933 and May 1935 to September 1940 as "below Bonita Creek near Solomonsville."

REVISED RECORDS.--WSP 1059: 1914, 1916-17, 1923(M), 1924-25, 1927, 1929-31(M). WSP 1179: 1915, 1918-19(M). WSP 1313: 1934. WSP 1733: 1923.

GAGE.--Water-stage recorder. Datum of gage is 3,064.88 ft (934.175 m) National Geodetic Vertical Datum of 1929. See WSP 1733 for history of changes prior to Jan. 1, 1941. Supplementary water-stage recorder and Parshall flume on Brown Canal.

REMARKS.--Records good. Records show water reaching head of Safford Valley. Diversions above station for mining, municipal use, and for irrigation of about 17,500 acres (70.8 km²), much of it by pumping from ground water.

COOPERATION.--Record for Brown Canal furnished by Gila Water Commissioner.

AVERAGE DISCHARGE.--64 years, 436 ft³/s (12.35 m³/s), 315,900 acre-ft/yr (390 hm³/yr); median of yearly mean discharges, 310 ft³/s (8.8 m³/s), 225,000 acre-ft/yr (277 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 100,000 ft³/s (2,830 m³/s) Jan. 19, 1916, gage height, 15.89 ft (4.843 m), present datum, from rating curve extended above 35,000 ft³/s (990 m³/s) on basis of slope-area measurement at gage height 15.6 ft (4.75 m) and velocity-area study of peak flow; minimum, 11 ft³/s (0.31 m³/s) June 25, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21,600 ft³/s (612 m³/s) Mar. 2, gage height, 10.20 ft (3.109 m), base discharge 4,000 ft³/s (113 m³/s); minimum daily, 30 ft³/s (0.85 m³/s) July 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	102	109	159	640	1820	1320	263	100	77	209	108
2	73	102	109	156	658	15700	1370	263	98	68	182	110
3	70	104	109	156	527	17400	1340	270	93	60	159	236
4	67	107	111	159	429	15300	1240	266	91	54	189	210
5	70	107	111	153	566	6760	1160	252	85	54	238	164
6	75	113	109	152	333	4820	1060	241	81	53	273	199
7	143	127	109	151	316	4350	959	252	77	51	200	142
8	162	144	107	152	299	5310	881	260	69	47	195	103
9	139	154	104	150	288	2470	846	242	68	45	184	89
10	154	149	104	154	273	2180	784	231	67	44	202	62
11	194	146	108	143	296	1950	720	211	66	44	224	72
12	159	141	113	155	420	1690	649	195	73	45	198	66
13	151	134	113	128	377	1590	577	192	72	44	204	66
14	146	129	115	124	364	1410	524	189	68	40	190	69
15	138	127	115	152	456	1300	489	194	68	40	171	68
16	122	115	112	194	496	1250	468	197	65	41	156	65
17	109	113	112	203	473	1230	441	203	67	39	136	68
18	100	113	112	210	403	1220	431	191	62	35	122	76
19	92	115	111	197	351	1190	402	179	59	32	178	61
20	92	118	111	197	315	1240	373	169	58	31	328	79
21	86	118	109	216	296	1320	338	157	56	30	219	76
22	82	118	109	210	292	1450	314	150	52	32	256	72
23	78	109	112	203	311	1490	304	152	48	34	210	68
24	75	109	112	183	334	1550	289	155	48	157	178	70
25	73	109	114	178	368	1560	265	154	47	150	190	72
26	70	111	116	172	385	1540	262	141	49	125	176	120
27	66	113	121	172	402	1510	259	132	51	359	162	156
28	68	115	126	164	416	1470	260	123	52	218	155	126
29	82	120	139	164	---	1400	267	120	57	169	135	105
30	94	111	153	156	---	1380	266	114	73	159	124	---
31	100	---	145	302	---	1310	---	109	---	144	121	---
TOTAL	3208	3593	3560	5125	10884	102140	18858	5967	2020	2551	5864	3103
MEAN	103	120	115	165	389	3295	629	192	67.3	82.3	189	103
MAX	194	154	153	302	658	17400	1370	270	100	359	328	236
MIN	66	102	104	124	273	1190	259	109	47	30	121	65
AC-FT	6360	7130	7060	10170	21590	202600	57400	11840	4010	5060	11630	6150
CAL YR 1977	TOTAL	65985	MEAN 181	MAX 1890	MIN 26	AC-FT 130900						
WTR YR 1978	TOTAL	166873	MEAN 457	MAX 17400	MIN 30	AC-FT 331000						

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1965 to September 1975, January 1976 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1965 to September 1975.

WATER TEMPERATURES: January 1965 to September 1975.

SUSPENDED-SEDIMENT DISCHARGE: February 1965 to September 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT								
19...	1530	100	1170	8.6	22.5	50	7.6	28
NOV								
17...	1100	130	850	8.8	13.0	35	10.4	16
DEC								
14...	1430	107	1140	8.6	11.0	25	11.0	4
JAN								
16...	1500	194	820	8.6	11.5	150	9.6	80
FEB								
06...	1215	326	685	8.3	12.0	180	10.4	220
MAR								
23...	1030	1450	398	8.1	15.0	--	10.3	120
APR								
13...	1300	719	620	8.4	19.0	55	8.0	4
MAY								
16...	1500	180	900	8.3	26.0	10	7.2	5
JUN								
09...	1500	52	1340	7.6	30.5	1	6.6	10
JUL								
18...	1700	35	1750	8.5	31.5	2	6.5	--
AUG								
09...	1530	30	1100	8.3	30.5	450	6.4	700
SEP								
20...	1130	.28	7500	7.8	25.0	--	8.3	K362
21...	1100	70	1300	8.4	20.0	36	--	140

DATE	STREP- TUCCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
OCT									
19...	--	230	62	69	15	140	4.0	8.4	210
NOV									
17...	--	210	24	60	14	120	3.6	6.1	210
DEC									
14...	--	230	61	67	14	140	4.1	7.9	200
JAN									
16...	--	190	28	56	13	100	3.1	5.7	200
FEB									
06...	--	170	28	49	11	70	2.4	4.7	170
MAR									
23...	--	120	5	34	8.5	37	1.5	3.4	140
APR									
13...	--	160	23	47	11	70	2.4	4.8	170
MAY									
16...	--	200	41	59	12	110	3.4	6.8	190
JUN									
09...	--	270	100	79	17	170	4.5	11	200
JUL									
18...	--	300	150	91	18	210	5.3	13	190
AUG									
09...	--	230	62	69	13	140	4.1	9.3	200
SEP									
20...	29	1200	1000	310	97	1200	15	21	--
21...	--	260	90	81	15	170	4.6	9.6	200

K Based on non-ideal colony count.

GILA RIVER BASIN

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT 19...	0	54	220	1.3	42	657	653	.89
NOV 17...	7	55	150	1.4	39	536	556	.73
DEC 14...	0	60	210	1.5	38	633	638	.86
JAN 16...	1	56	130	.9	19	482	482	.66
FEB 06...	0	43	99	.9	15	391	378	.53
MAR 23...	0	36	36	.9	31	248	257	.34
APR 13...	0	47	91	1.1	31	375	388	.51
MAY 16...	0	64	170	1.2	33	554	550	.75
JUN 09...	0	74	300	1.2	41	794	792	1.08
JUL 18...	0	81	380	1.4	45	944	931	1.28
AUG 09...	0	66	200	1.3	39	647	639	.88
SEP 20...	--	680	2100	1.6	29	4620	4520	6.28
21...	6	68	280	1.3	42	767	772	1.04

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,NH4 + ORG. TUT IN BUT MAT (MG/KG AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, URTHU, DIS- SOLVED (MG/L AS P)
OCT 19...	.12	--	--	--	.48	--	--	--	.60	.15	--	--
NOV 17...	.16	--	--	--	.35	--	--	--	.51	.11	--	--
DEC 14...	.08	.10	--	--	.49	--	--	--	.57	.09	--	.04
JAN 16...	.23	.33	--	--	.44	--	--	--	.67	.45	--	.02
FEB 06...	.48	.40	--	--	.57	--	--	--	1.1	.24	--	.03
MAR 23...	.26	.27	--	--	.58	--	--	--	.84	.52	--	.06
APR 13...	.22	.32	--	--	.39	--	--	--	.61	.26	--	.07
MAY 16...	.14	.14	--	--	.54	--	--	--	.68	.08	--	.03
JUN 09...	.04	.06	--	--	.35	--	--	84	.39	.07	--	.00
JUL 18...	.02	.03	--	--	.39	--	--	--	.41	.05	--	.02
AUG 09...	.45	.47	--	--	1.7	--	--	--	2.2	.98	--	.14
SEP 20...	.01	--	.01	.90	.91	.32	.59	--	.92	.10	.00	--
21...	.02	.03	--	--	.32	--	--	--	.34	.09	--	.08

GILA RIVER BASIN

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09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL FM BOT- TOM MA- TERIAL (UG/G AS AS)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CU)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT 19...	4	--	100	--	220	120	<10	--	15
NOV 17...	4	--	500	--	130	110	1	--	8
DEC 14...	4	--	100	--	170	120	0	--	10
JAN 16...	3	--	200	--	130	100	2	--	20
FEB 06...	3	--	100	--	130	100	2	--	0
MAR 23...	2	--	400	--	80	50	1	--	10
APR 13...	5	--	100	--	140	70	2	--	10
MAY 16...	3	--	0	--	140	110	1	--	5
JUN 09...	4	1	50	50	230	150	1	0	5
JUL 18...	4	--	200	--	210	170	0	--	0
AUG 09...	5	--	300	--	180	120	4	--	30
SEP 20...	2	--	200	--	1000	--	1	--	0
21...	5	--	0	--	200	150	1	--	0

DATE	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 19...	--	20	--	3000	60	<100	--	130	4
NOV 17...	--	20	--	1800	40	15	--	100	4
DEC 14...	--	21	--	1100	20	5	--	60	10
JAN 16...	--	88	--	2600	10	16	--	330	0
FEB 06...	--	5	--	9000	60	30	--	450	20
MAR 23...	--	120	--	7500	40	15	--	370	0
APR 13...	--	33	--	2800	0	11	--	120	0
MAY 16...	--	41	--	930	0	6	--	50	0
JUN 09...	1	16	100	170	30	15	0	30	0
JUL 18...	--	37	--	1000	20	8	--	50	0
AUG 09...	--	11	--	20000	50	39	--	820	0
SEP 20...	--	9	--	420	--	3	--	400	--
21...	--	24	--	2200	20	5	--	100	20

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY RECOVER. FM BOTTOM TUM MATERIAL (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, TOTAL IN BOTTOM TUM MATERIAL (UG/G)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, RECOVER. FM BOTTOM TUM MATERIAL (UG/G AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, RECOVER. FM BOTTOM TUM MATERIAL (UG/G AS ZN)
UCT								
19...	.0	--	0	--	<10	--	50	--
NOV								
17...	.0	--	0	--	0	--	30	--
DEC								
14...	.0	--	0	--	0	--	40	--
JAN								
16...	.0	--	0	--	0	--	60	--
FEB								
06...	.0	--	4	--	0	--	50	--
MAR								
23...	.0	--	3	--	1	--	70	--
APR								
13...	.0	--	0	--	0	--	30	--
MAY								
16...	.1	--	0	--	0	--	60	--
JUN								
09...	.0	.0	0	0	0	1	20	38
JUL								
18...	.0	--	0	--	0	--	20	--
AUG								
09...	.5	--	0	--	0	--	100	--
SEP								
20...	.0	--	0	--	0	--	40	--
21...	.0	--	0	--	0	--	40	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	CYANIDE TOTAL IN BOTTOM TUM MATERIAL (UG/G AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	SEDIM- ENT, SUS- PENDED (MG/L)	SEDIM- ENT DTS- CHARGE, SUS- PENDED (T/DAY)
UCT									
19...	2.4	.00	--	5	--	--	--	--	--
NOV									
17...	2.1	.00	--	3	--	--	--	--	--
DEC									
14...	1.7	.00	--	4	--	--	--	--	--
JAN									
16...	6.3	.00	--	3	--	--	--	--	--
FEB									
06...	10	.00	--	3	--	--	--	670	590
MAR									
23...	8.3	.00	--	0	--	--	--	--	--
APR									
13...	3.8	.00	--	4	--	--	--	--	--
MAY									
16...	1.9	.00	--	0	--	--	--	--	--
JUN									
09...	1.4	.00	0	0	690	8.43	5.75	--	--
JUL									
18...	1.4	.00	--	1	--	--	--	--	--
AUG									
09...	13	.00	--	0	--	--	--	--	--
SEP									
20...	--	.00	--	0	--	--	--	--	--
21...	2.3	.00	--	0	--	--	--	--	--

< Actual value is known to be less than value shown.

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUN 9, 78
TIME	1500
TOTAL CELLS/ML	690
DIVERSITY: DIVISION	0.4
..CLASS	0.4
...ORDER	0.4
....FAMILY	1.3
.....GENUS	1.3

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...VULVOCALES		
....CHLAMYDOMONADACEAE		
.....CHLAMYDOMONAS	57	8
CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...PENNALES		
....ACHNANTHACEAE		
.....COCCONEIS	14	2
...CYMBELLACEAE		
....CYMBELLA	29	4
...NAVICULACEAE		
....NAVICULA	72	10
...NITZSCHACEAE		
....NITZSCHIA	520*	75

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

09449000 DIVERSIONS FROM GILA RIVER IN SAFFORD VALLEY, AZ

LOCATION.--Safford Valley lies along Gila River in Graham County, extending from vicinity of Bonita Creek on the east to San Carlos Indian Reservation on the west. Eleven canals and one pump, listed in the following table in downstream order, divert water from Gila River for irrigation in the valley. Intake of Consolidated Brown Canal, at upper end of the valley, is 0.6 mi (1.0 km) upstream from station on Gila River near Solomon (09448500). Intake of Colvin-Jones Canal, at the lower end, is 25.8 mi (41.5 km) upstream from station at Calva (09466500). Record of canals obtained below wasteways used for regulation.

PERIOD OF RECORD.--January 1936 to current year (records of combined monthly diversions and annual diversions by each canal); records of monthly diversion 1914-15 and records of monthly and daily diversion 1920-31 for all canals except Colvin-Jones; records for Brown Canal also for water year 1931-32. Tidwell Canal was published as Michelana Canal in records for 1914-15 and 1920-31. Brown Canal and Tidwell Canal combined as Consolidated Brown Canal after Mar. 1, 1976. Records of daily discharge since 1936 published in reports of Gila Water Commissioner.

GAGES.--Water-stage recorders and Parshall flumes.

REMARKS.--Record shows total diversions unadjusted for return flow. Decreed area for irrigation in Safford Valley is 32,512 acres (132 km²). Water was issued for 32,306 acres (131 km²) during calendar year 1977. Water obtained by pumping from ground water for irrigation in the valley is not included.

COOPERATION.--Records furnished by Gila Water Commissioner.

ANNUAL DIVERSIONS, IN ACRE-FEET, TO EACH CANAL DURING CALENDAR YEAR 1977 AND WATER YEAR 1978

Canal	Calendar year 1977	Water year 1978
09449500. Consolidated Brown.....	1,900	3,960
09452000. Fourness.....	189	229
09452500. San Jose.....	4,730	12,410
09453000. Montezuma.....	4,430	14,830
09453500. Union.....	8,260	20,100
09458000. Graham.....	3,260	7,410
09459500. Smithville.....	2,470	6,270
09461500. Dodge-Nevada.....	2,090	4,570
09462500. Curtis.....	1,680	4,770
09463500. Ft. Thomas.....	2,310	6,670
09464000. Colvin-Jones.....	0	0
09464500. T. D. Burton.....	0	0
Total.....	31,320	81,220

COMBINED MONTHLY DISCHARGE OF CANALS DIVERTING FROM GILA RIVER IN SAFFORD VALLEY, AZ,
DURING WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Discharge, in cubic feet per second			Diversions in acre-feet
	Maximum	Minimum	Mean	
October.....	69.9	14.8	38.3	2,350
November.....	42.0	6.7	25.1	1,490
December.....	125	69.5	93.9	5,770
CAL YR 1977.....	166	0	43.3	31,320
January.....	58.5	0	31.0	1,900
February.....	132	13.5	40.9	2,270
March.....	387	57.0	257	15,780
April.....	387	254.	346	20,590
May.....	269	88.6	178	10,940
June.....	74.3	29.5	46.8	2,780
July.....	224	22.7	64.9	3,990
August.....	231	59.7	132	8,120
September.....	176	51.1	87.9	5,230
WTR YR 1978.....	387	0	112	81,220

GILA RIVER BASIN

287

09457000 SAN SIMON RIVER NEAR SOLOMON, AZ

LOCATION.--Lat 32°48'06", long 109°38'19", in NW¼NE¼ sec.25, T.7 S., R.26 E., Graham County, Hydrologic Unit 15040006, 1.0 mi (1.6 km) southwest of Solomon and 2.2 mi (3.5 km) upstream from mouth.

DRAINAGE AREA.--2,192 mi² (5,677 km²).

PERIOD OF RECORD.--June 1931 to September 1932, May 1935 to current year. Published as "San Simon Creek near Solomonsville" prior to October 1949 and as "San Simon Creek near Solomon" October 1949 to September 1961.

GAGE.--Water-stage recorder. Datum of gage is 2,960.15 ft (902.254 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Records do not include waste water passing station from San Jose Canal, which diverts from Gila River. Irrigation of about 13,800 acres (55.8 km²) above station, mostly by pumping from ground water. Floodflows are partly regulated by six flood-control detention structures on main stream and tributaries; combined maximum capacity in excess of 10,500 acre-ft (12.9 hm³).

AVERAGE DISCHARGE.--44 years, 12.2 ft³/s (0.346 m³/s), 8,840 acre-ft/yr (10.9 hm³/yr); median of yearly mean discharges, 8.9 ft³/s (0.25 m³/s) 6,400 acre-ft/yr (7.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s (779 m³/s) Aug. 9, 1931, gage height, 19.0 ft (5.79 m), by slope-area measurement of peak flow; no flow for most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,630 ft³/s (46.2 m³/s) July 22, gage height, 9.68 ft (2.950 m), no peak above base of 2,500 ft³/s (71 m³/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OC	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	55
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.1	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	43	4.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	50	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	151	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	5.8	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	5.0	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	18	.00	.00	.00	.00	.00	.00	78	.00
22	.00	.00	.00	4.6	.00	.00	.00	.00	.00	338	.00	.00
23	.00	.00	.00	1.0	.00	.00	.00	.00	.00	47	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	291	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	.00	.00
28	.00	.00	58	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	20	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	43.00	18.10	58.00	235.40	.00	.00	.00	.00	.00	681.00	81.10	55.00
MEAN	1.39	.60	1.87	7.59	.000	.000	.000	.000	.000	22.0	2.62	1.83
MAX	43	14	38	151	.00	.00	.00	.00	.00	338	78	55
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	85	36	115	467	.00	.00	.00	.00	.00	1350	161	109
CAL YR 1977	TOTAL	2856.50	MEAN 7.83	MAX 378	MIN .00	AC-FT 5670						
WTR YR 1978	TOTAL	1171.60	MEAN 3.21	MAX 338	MIN .00	AC-FT 2320						

GILA RIVER BASIN

09458050 MARIJILDA WASH NEAR SAFFORD, AZ

LOCATION.--Lat 32°41'43", long 109°47'28", in NE¼ sec.33, T.8 S., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, on right bank, in Coronado National Forest, 10 mi (16 km) southwest of Safford.

DRAINAGE AREA.--10.9 mi² (28.2 km²).

PERIOD OF RECORD.--May 1971 to September 1978 (discontinued).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,500 ft (1,370 m), from topographic map.

REMARKS.--Records good. No regulation or diversion above station. Diversion to Lebanon ditch downstream.

AVERAGE DISCHARGE.--7 years, 4.40 ft³/s (0.125 m³/s), 3,190 acre-ft/yr (3.93 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 883 ft³/s (25.0 m³/s) Sept. 13, 1977, gage height, 5.10 ft (1.554 m), from rating curve extended above 668 ft³/s (18.9 m³/s); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 18, 1978 (1979 water year, after station was discontinued), discharge 5,770 ft³/s (163.4 m³/s), from slope-area measurement of peak flow; gage height, 6.8 ft (2.07 m), from flood marks at gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 20 ft³/s (0.57 m³/s):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 15	2230	28	0.79	Mar. 2	0800	*317	8.98
Jan. 31	0200	62	1.76	Apr. 1	0930	40	1.13

Minimum daily, 0.07 ft³/s (0.002 m³/s) Aug. 11, 14-18, Sept. 20, 22, 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.45	.23	.54	14	207	38	19	9.0	.80	.33	.08
2	.17	.37	.23	.49	8.7	264	30	16	8.4	.69	.32	.08
3	.17	.37	.20	.45	5.9	125	25	13	8.1	.42	.27	.15
4	.17	.37	.20	.41	4.8	50	24	12	7.6	.53	.25	1.4
5	.14	.37	.20	.37	3.6	38	21	13	7.1	.45	.26	.45
6	.26	.45	.20	.37	4.8	31	20	19	6.7	.43	.22	.54
7	2.6	.45	.20	.33	5.7	25	20	17	6.2	.40	.13	.36
8	1.6	.45	.20	.29	5.5	20	20	14	5.5	.37	.10	.28
9	1.1	.45	.20	.26	4.0	18	17	13	5.3	.39	.09	.26
10	.92	.41	.17	.26	4.4	17	14	14	4.8	.42	.08	.21
11	.80	.37	.17	.45	15	15	12	18	4.4	.50	.07	.14
12	.69	.37	.17	.41	9.3	14	12	20	4.2	.47	.08	.10
13	.64	.33	.17	.37	7.1	14	14	22	3.8	.41	.08	.09
14	.59	.33	.17	.37	6.9	13	17	27	3.5	.34	.07	.08
15	.54	.29	.17	8.2	6.4	11	19	29	3.1	.30	.07	.08
16	.49	.29	.17	9.7	5.9	11	19	28	2.8	.22	.07	.08
17	.49	.26	.17	6.2	5.1	10	18	25	2.4	.85	.07	.08
18	.49	.26	.17	5.9	4.4	11	17	22	2.3	.94	.07	.08
19	.45	.26	.17	3.6	3.8	13	17	20	1.9	1.4	.78	.08
20	.41	.29	.17	3.3	3.5	17	18	20	1.7	1.6	.10	.07
21	.41	.33	.17	2.6	3.6	20	18	21	1.4	.96	.13	.08
22	.41	.33	.17	2.2	3.8	24	17	21	1.3	.88	.35	.07
23	.41	.29	.17	2.1	3.8	26	17	20	1.1	.91	.33	.14
24	.41	.29	.17	1.9	4.0	22	18	18	1.1	1.2	.30	.21
25	.41	.26	.17	1.4	4.0	22	20	15	.92	2.5	.26	.24
26	.37	.26	.20	1.2	4.0	22	22	14	.86	1.1	.24	.17
27	.37	.26	.37	1.2	4.9	22	25	12	.98	.82	.15	.12
28	.33	.23	.96	1.1	25	23	25	11	1.1	.60	.11	.08
29	.37	.23	1.2	1.5	---	24	25	9.8	1.2	.46	.09	.07
30	.54	.23	.98	7.1	---	26	21	9.3	1.1	.38	.08	.07
31	.49	---	.69	36	---	30	---	9.0	---	.38	.08	---
TOTAL	17.44	9.90	8.98	100.57	180.5	1185	598	541.1	109.86	22.12	5.65	6.44
MEAN	.56	.33	.29	3.24	6.45	38.2	19.4	17.5	3.66	.71	.18	.21
MAX	2.6	.45	1.2	.36	25	264	38	29	9.0	2.5	.78	1.4
MIN	.14	.23	.17	.26	3.5	10	12	9.0	.86	.22	.07	.07
AC-FT	35	20	18	149	358	2350	1190	1070	218	44	11	.13
CAL YR 1977	TOTAL	293.86	MEAN	.81	MAX	20	MIN	.00	AC-FT	583		
WTR YR 1978	TOTAL	2785.56	MEAN	7.63	MAX	264	MIN	.07	AC-FT	5550		

09466500 GILA RIVER AT CALVA, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°11'08", long 110°13'10", in SW¼ sec.8, T.3 S., R.21 E. (unsurveyed), Graham County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, on right upstream abutment of Southern Pacific Railroad bridge at head of San Carlos Reservoir, 2.0 mi (3.2 km) west of Calva.

DRAINAGE AREA.--11,470 mi² (29,710 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,517.29 ft (767.270 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1954, and Aug. 25, 1958, to Dec. 31, 1962, at datum 2.52 ft (0.768 m) lower. Oct. 1, 1954, to Aug. 24, 1958, at datum 5.52 ft (1.682 m) lower. Dec. 31, 1962, to Oct. 20, 1972, at site 530 ft (162 m) downstream at datum 3.65 ft (1.113 m) lower. Oct. 20, 1972, to Sept. 30, 1974, supplementary gage at bridge on U.S. Highway 70, 6.2 mi (10.0 km) upstream at datum 2,560.19 ft (780.346 m) NGVD.

REMARKS.--Records good except those above 1,000 ft³/s (24 m³/s), which are poor. Diversion above station for irrigation of about 69,000 acres (279 km²), metallurgical treatment of ores, and municipal uses.

AVERAGE DISCHARGE.--49 years, 263 ft³/s (7.448 m³/s), 190,000 acre-ft/yr (234 hm³/yr); median of yearly mean discharges, 180 ft³/s (5.10 m³/s), 130,000 acre-ft/yr (160 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,000 ft³/s (2,270 m³/s) Oct. 20, 1972, gage height, 15.88 ft (4.840 m) at supplementary gage, from rating curve extended above 44,000 ft³/s (1,250 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1914, probably in excess of 100,000 ft³/s (2,830 m³/s) Jan. 20, 1916, determined on basis of peak discharge at stations near Solomon and at Kelvin.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,000 ft³/s (538 m³/s) Mar. 4, gage height, 10.88 ft (3.316 m), base discharge, 3,000 ft³/s (85 m³/s); minimum daily, 0.10 ft³/s (0.003 m³/s) Sept. 25-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	42	56	50	253	247	668	76	27	6.7	56	.60
2	8.2	40	49	74	582	1770	650	74	28	6.7	44	.60
3	8.5	40	47	79	605	1850	650	76	31	6.7	8.9	.70
4	8.2	44	45	79	470	18000	615	76	30	6.7	6.7	5.5
5	8.2	44	43	85	406	12500	560	74	27	6.3	6.0	62
6	62	45	41	84	363	6100	510	72	26	6.0	5.0	14
7	25	50	39	85	359	4220	458	70	24	5.8	4.7	7.4
8	20	50	32	84	323	3560	432	68	21	5.5	4.4	4.1
9	50	50	29	80	323	2680	395	66	18	5.5	4.4	3.0
10	63	55	25	65	297	2230	356	63	14	5.0	3.9	2.6
11	36	58	22	59	486	1820	320	58	12	5.5	3.2	2.6
12	43	62	21	65	420	1540	278	55	10	5.8	2.8	2.1
13	42	63	20	63	359	1390	238	55	10	7.0	2.8	1.5
14	40	64	21	66	360	1240	224	52	10	6.3	2.8	1.0
15	37	63	21	100	330	1060	207	50	11	7.8	2.6	.70
16	32	63	22	195	310	928	172	47	10	5.0	2.5	.60
17	40	62	22	192	300	851	150	45	10	3.6	2.1	.60
18	37	62	23	278	270	762	140	43	9.6	6.0	1.9	.40
19	34	63	23	238	260	728	130	42	9.3	3.8	1.7	.30
20	32	62	24	178	240	710	120	41	9.3	3.4	1.7	.20
21	32	64	24	174	229	674	111	39	8.9	4.1	1.6	.20
22	31	64	25	185	207	674	105	39	8.5	15	1.5	.20
23	30	60	25	161	207	788	98	38	9.3	10	1.4	.20
24	30	57	26	153	207	844	91	36	8.9	6.0	2.8	.20
25	31	59	27	142	214	907	84	34	8.5	14	5.8	.10
26	28	58	27	149	255	865	84	33	8.2	6.3	2.8	.10
27	28	58	29	142	246	800	82	30	8.5	5.5	1.7	.10
28	28	57	30	129	258	770	80	29	17	4.7	1.3	.10
29	29	59	33	132	---	752	78	28	8.5	3.6	1.0	.10
30	32	64	55	132	---	716	76	26	8.2	32	1.0	.10
31	35	---	56	134	---	716	---	26	---	12	.70	---
TOTAL	968.3	1682	984	3832	9139	78762	8162	1561	441.7	228.3	189.70	111.90
MEAN	31.2	56.1	31.7	124	326	2541	272	50.4	14.7	7.36	6.12	3.73
MAX	63	64	58	278	605	18000	668	76	31	32	56	62
MIN	8.2	40	20	50	207	297	76	26	8.2	3.4	.70	.10
AC-FT	1920	3340	1950	7600	18130	156200	16190	3100	876	453	376	222

CAL YR 1977 TOTAL 31988.45 MEAN 87.6 MAX 1560 MIN .51 AC-FT 63450
WTR YR 1978 TOTAL 106061.90 MEAN 291 MAX 18000 MIN .10 AC-FT 210400

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 19...	1000	45	2750	8.4	16.0	480	9.0	800
NOV 14...	1130	60	2075	8.3	11.5	360	13.5	300
DEC 14...	1030	20	7000	8.5	6.5	15	12.8	24
JAN 15...	1000	302	1700	7.9	9.0	3300	9.4	4530
FEB 10...	1100	290	1465	7.9	12.5	240	9.4	240
MAR 22...	0930	680	1650	7.9	17.0	230	9.1	100
APR 11...	1300	316	2800	8.1	20.0	85	8.2	19
MAY 16...	1100	50	7900	8.0	30.0	3	11.0	34
JUN 12...	1100	37	7600	7.9	23.0	0	8.6	92
JUL 18...	1015	6.0	7400	8.2	37.0	25	13.0	--
AUG 09...	1200	39	7500	8.3	32.0	--	10.0	50

DATE	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT 19...	2600	420	210	120	29	360	7.7	9.5	260
NOV 14...	2300	350	140	100	24	310	7.2	7.3	260
DEC 14...	123	1100	820	300	81	1000	13	17	320
JAN 15...	2700	320	120	89	23	280	6.8	7.7	240
FEB 10...	1000	280	100	82	19	180	4.7	5.8	220
MAR 22...	263	330	150	94	24	220	5.2	7.1	220
APR 11...	323	500	270	140	37	400	7.8	9.6	280
MAY 16...	216	1300	990	320	110	1200	15	20	--
JUN 12...	1430	1100	1100	340	62	1200	16	18	--
JUL 18...	--	1200	1000	310	99	1200	15	21	--
AUG 09...	330	1100	950	300	90	1100	14	21	--

GILA RIVER BASIN

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09466500 GILA RIVER AT CALVA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLOR- IDE, DIS- SOLVED (MG/L AS CL)	FLUOR- IDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTIT- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT 19...	0	190	570	1.3	38	1450	1450	1.97
NOV 14...	0	160	420	1.5	38	1180	1190	1.60
DEC 14...	0	680	1700	1.7	36	4010	3970	5.45
JAN 15...	0	170	380	1.3	27	1080	1100	1.47
FEB 10...	0	120	260	1.1	22	822	799	1.12
MAR 22...	0	160	520	1.3	33	954	968	1.30
APR 11...	0	260	650	1.1	15	1640	1650	2.23
MAY 16...	--	780	1900	1.4	29	4460	4520	6.07
JUN 12...	--	750	2200	1.7	24	4680	4610	6.36
JUL 18...	--	730	2000	1.7	36	4480	4510	6.09
AUG 09...	--	700	1900	1.6	31	4370	4250	5.94

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN,NH4 + ORG. TOT IN BUT MAT (MG/KG AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHU, DIS- SOLVED (MG/L AS P)
OCT 19...	.36	.39	.07	1.4	1.5	--	.38	--	1.9	.63	.57	.55
NOV 14...	.38	--	.01	.72	.73	--	--	--	1.1	.33	.08	--
DEC 14...	.85	--	.04	--	--	--	.35	--	--	.03	.00	--
JAN 15...	.63	--	.28	--	--	--	.42	--	--	2.8	.06	--
FEB 10...	.47	--	.03	.52	.55	.26	.29	--	1.0	.83	.07	--
MAR 22...	.71	--	.08	1.1	1.2	.85	.35	--	1.9	.82	.11	--
APR 11...	.94	--	.06	.44	.50	.00	1.0	--	1.4	.38	.05	--
MAY 16...	.25	--	.01	--	--	--	.52	--	--	.02	.01	--
JUN 12...	.01	--	.00	.38	.38	.00	.64	490	.39	.01	.00	--
JUL 18...	.02	--	.00	1.4	1.4	.80	.60	--	1.4	.19	.04	--
AUG 09...	.02	--	.02	1.1	1.1	.71	.39	--	1.1	.12	.00	--

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	ARSENIC IN BOT- TOM MA- TERIAL (UG/G AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BARIUM, FM BOT- TOM MA- TERIAL (UG/G AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 19...	6	--	--	700	--	--	410	310	10	--
NOV 14...	8	5	--	300	100	--	400	290	1	1
DEC 14...	3	--	--	200	--	--	1100	--	3	--
JAN 15...	21	--	--	1500	--	--	340	--	0	--
FEB 10...	6	6	--	200	100	--	230	--	2	2
MAR 22...	3	--	--	400	--	--	240	--	1	--
APR 11...	7	--	--	400	--	--	450	--	2	--
MAY 16...	2	--	--	100	--	--	1200	--	1	--
JUN 12...	3	--	3	50	--	60	1100	--	1	--
JUL 18...	4	--	--	200	--	--	1100	--	0	--
AUG 09...	3	3	--	200	--	--	1100	--	0	0

DATE	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 19...	--	85	--	--	--	--	120	--	--	24000
NOV 14...	--	20	--	--	9	0	110	4	--	17000
DEC 14...	--	10	--	--	--	--	17	--	--	680
JAN 15...	--	140	--	--	--	--	500	--	--	120000
FEB 10...	--	30	0	--	10	0	90	5	--	17000
MAR 22...	--	20	--	--	--	--	140	--	--	11000
APR 11...	--	10	--	--	--	--	50	--	--	4000
MAY 16...	--	25	--	--	--	--	16	--	--	100
JUN 12...	0	15	--	6	--	--	11	--	20	90
JUL 18...	--	0	--	--	--	--	14	--	--	560
AUG 09...	--	10	0	--	4	0	8	1	--	740

GILA RIVER BASIN

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09466500 GILA RIVER AT CALVA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG)
OCT 19...	40	<100	--	--	910	20	.0	--	--
NOV 14...	70	22	5	--	8	0	.0	.0	--
DEC 14...	--	33	--	--	350	--	.0	--	--
JAN 15...	--	4	--	--	5800	--	.2	--	--
FEB 10...	20	21	0	--	620	0	.0	.0	--
MAR 22...	--	15	--	--	620	--	.0	--	--
APR 11...	--	11	--	--	240	--	.0	--	--
MAY 16...	--	6	--	--	280	--	.0	--	--
JUN 12...	--	15	--	0	60	--	.1	--	.0
JUL 18...	--	5	--	--	330	--	.0	--	--
AUG 09...	30	8	9	--	710	540	.0	.0	--

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN)
OCT 19...	0	--	--	<10	--	--	140	--	--
NOV 14...	1	0	--	0	0	--	120	30	--
DEC 14...	1	--	--	0	--	--	40	--	--
JAN 15...	2	--	--	0	--	0	600	--	--
FEB 10...	1	0	--	0	0	--	120	20	--
MAR 22...	2	--	--	1	--	--	80	--	--
APR 11...	0	--	--	0	--	--	40	--	--
MAY 16...	0	--	--	0	--	--	30	--	--
JUN 12...	0	--	0	0	--	0	30	--	11
JUL 18...	0	--	--	0	--	--	30	--	--
AUG 09...	0	0	--	0	0	--	20	10	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	LYAMIDE TOTAL (MG/L AS N)	CYANIDE TOTAL IN BOT- TOM MA- TERIAL (UG/G AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL INITIAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL WET WEIGHT G/SQ M	SENI- MENT, SUS- PENDED (MG/L)	SED- MENT CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIFV UTAM. % FINE THAN .062 MM
OCT 10...	12	.00	--	0	--	--	--	755	92	97
NOV 10...	--	.00	--	1	6000	35.5	33.0	735	119	98
DEC 14...	3.6	.00	--	2	--	--	--	40	2.2	61
JAN 15...	66	.00	--	4	--	--	--	11100	9050	76
FEB 10...	11	.00	--	1	--	--	--	1040	814	75
MAR 08...	--	--	--	--	--	--	--	7920	--	98
APR 22...	--	.00	--	0	140	--	--	604	1190	81
MAY 11...	6.8	.00	--	1	--	--	--	--	--	--
JUN 16...	6.4	.00	--	2	6100	64.0	65.3	71	9.6	62
JUL 12...	5.4	.00	0	4	--	--	--	5	.30	41
AUG 18...	13	.00	--	1	26000	2.76	2.13	--	--	--
SEP 09...	--	.00	--	4	22000	--	--	67	1.1	76

DATE	TIME	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDO, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JUN 12...	1100	0	.0	0	.0	.0	.0	.0	.0	.0	.0	.0

DATE	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATERIAL (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METHYL PARA- THION, TOT. IN BOTTOM MATERIAL (UG/KG)	METHYL TRI- THION, TOT. IN BOTTOM MATERIAL (UG/KG)	PARA- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TRI- THION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4,5-T TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SILVEX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
JUN 12...	.0	.0	.0	.0	.0	.3	0	.0	8	0	1.0

GILA RIVER BASIN

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09466500 GILA RIVER AT CALVA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 14,77 1130	MAR 22,78 0930	MAY 16,78 1100	JUL 18,78 1015
TOTAL CELLS/ML	6000	140	6100	26000
DIVERSITY: DIVISION	0.0	0.0	0.5	0.9
..CLASS	0.0	0.0	0.5	0.9
...ORDER	0.3	0.0	1.3	1.1
...FAMILY	2.1	2.4	1.6	1.1
....GENUS	2.1	2.7	1.7	1.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
....SCENEDESMACEAE								
.....SCENEDESMUS	--	-	--	-	--	-	1500	6
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	230	4	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	--	-	14	10	94	2	--	-
..CENTRALES								
...CUSCINOUSCACEAE								
...CYCLOTELLA	350	6	--	-	4100#	66	20000#	77
...PENNALES								
...ACHNANTHACEAE								
....COCCONEIS	*	0	--	-	--	-	--	-
...CYMBELLACEAE								
....CYMBELLA	--	-	27#	20	--	-	--	-
....RHOPALUDIA	--	-	14	10	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	14	10	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	1100#	18	27#	20	230	4	210	1
...GOMPHONEMACEAE								
....GOMPHONEMA	--	-	14	10	--	-	--	-
...NAVICULACEAE								
....NAVICULA	2100#	35	--	-	940#	15	210	1
...NITZSCHACEAE								
....NITZSCHIA	1100#	18	27#	20	94	2	--	-
...SURIRELLACEAE								
....SURIRELLA	1400#	24	--	-	230	4	210	1
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCALES								
....CHROCOCCACEAE								
.....ANACYSTIS	--	-	--	-	230	4	--	-
...HORMUGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	--	-	3900	15

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

09468500 SAN CARLOS RIVER NEAR PERIDOT, AZ

LOCATION.--Lat 33°19'16", long 110°26'54", in NW¼ sec.30, T.1 S., R.19 E. (unsurveyed), Gila County, Hydrologic Unit 15040007, in San Carlos Indian Reservation, on right bank 750 ft (229 m) downstream from highway crossing, 0.8 mi (1.3 km) north of Peridot, and 2.4 mi (3.9 km) south of San Carlos.

DRAINAGE AREA.--1,027 mi² (2,660 km²).

PERIOD OF RECORD.--August 1910 to January 1911 (gage heights only), April 1914 to July 1915, August to September 1915 (monthly discharge only), October 1929 to current year. Prior to October 1929 published as "at San Carlos."

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder since Apr. 26, 1914. Datum of gage is 2,578.90 ft (786.049 m) National Geodetic Vertical Datum of 1929.

See WSP 1713 or 1733 for history of changes prior to Feb. 1, 1942. Feb. 1, 1942, to Mar. 4, 1969, at site 750 ft (229 m) upstream at different datums. Mar. 5, 1969, to Aug. 13, 1970, at site 300 ft (91 m) upstream at datum 0.88 ft (0.268 m) higher. Supplementary water-stage recorder Dec. 21, 1967, to July 2, 1968, at site 4 mi (6 km) downstream at datum in use prior to Feb. 1, 1942.

REMARKS.--Records fair. Diversions above station for irrigation of about 600 acres (2.43 km²). Small inflow from sewage treatment system about 2 mi (3.2 km) upstream.

AVERAGE DISCHARGE.--49 years (water years 1930-78), 47.3 ft³/s (1.34 m³/s), 34,270 acre-ft/yr (42.3 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,600 ft³/s (1,150 m³/s) Mar. 14, 1941, gage height, 11.4 ft (3.47 m), site and datum then in use, from rating curve extended above 23,000 ft³/s (650 m³/s) on basis of rate of change in storage in San Carlos Reservoir; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,200 ft³/s (62 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1830	3,100 87.8	6.23 1.899	July 22	1830	2,780 78.7	5.45 1.661
Jan. 31	2000	2,210 62.6	5.46 1.664	July 29	2000	2,540 71.9	5.25 1.600
Feb. 11	0830	5,700 161	8.58 2.615	Aug. 1	2130	9,650 273	9.20 2.807
Mar. 2	0400	*18,600 527	11.78 3.591				

Minimum daily, 0.30 ft³/s (.008 m³/s) July 9-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	5.3	6.4	8.0	1120	9130	22	8.1	2.8	.40	725	4.2
2	2.9	5.8	6.7	8.0	295	13100	21	8.4	3.1	.60	75	3.1
3	3.1	5.8	6.0	8.1	120	2920	22	8.1	2.6	.70	25	3.8
4	3.1	5.8	6.0	8.1	83	793	19	7.4	3.1	.60	68	3.4
5	3.6	5.8	6.7	8.1	68	547	18	6.4	3.1	.40	30	16
6	460	5.5	6.7	8.1	66	748	15	7.0	2.4	.40	28	16
7	295	5.5	6.7	8.1	66	606	14	8.4	2.2	.40	22	7.4
8	57	5.5	6.7	8.4	104	410	13	7.8	1.9	.40	74	5.8
9	20	5.5	6.7	9.2	135	222	13	6.0	2.2	.30	35	5.3
10	10	5.8	6.7	9.5	122	162	13	6.0	1.8	.30	19	5.3
11	5.5	6.0	7.0	11	2870	155	13	5.0	1.6	.30	16	5.0
12	4.8	6.0	7.4	11	614	266	11	4.1	1.9	.70	12	4.6
13	4.6	6.0	7.4	10	276	562	10	2.8	2.1	.60	9.5	4.3
14	4.6	6.0	7.4	10	421	308	10	2.8	1.8	.60	8.8	4.6
15	4.6	6.0	7.4	18	431	199	10	2.4	1.8	3.3	8.4	4.8
16	4.1	6.0	7.8	14	374	145	10	2.6	1.3	1.1	8.1	5.0
17	3.8	5.8	8.4	41	230	103	10	2.8	1.0	31	7.0	5.0
18	3.8	5.8	8.4	128	122	93	9.5	2.6	.80	7.1	8.4	4.8
19	3.6	5.5	8.1	45	90	61	8.8	2.9	.70	2.8	77	4.6
20	3.4	6.0	7.8	47	58	54	7.8	2.4	.60	1.9	12	4.6
21	3.4	6.4	7.8	85	53	49	8.1	2.8	.40	1.9	11	4.6
22	4.1	6.4	8.0	100	70	45	10	3.3	.40	200	8.4	4.1
23	4.1	6.7	8.0	86	66	45	10	2.8	.40	19	7.4	4.1
24	4.1	6.4	8.0	73	56	40	9.2	3.1	.40	10	6.7	4.1
25	4.1	6.4	8.0	48	48	39	8.4	2.9	.40	9.5	7.8	4.1
26	4.1	6.7	8.0	40	41	34	8.1	2.9	.40	34	6.4	32
27	4.6	6.7	8.0	33	34	31	7.4	2.8	.60	19	5.3	18
28	4.8	6.4	8.0	32	1760	26	7.0	3.3	1.4	10	5.0	9.2
29	5.3	6.4	8.0	31	---	25	7.0	2.8	1.9	223	4.6	7.0
30	5.3	6.4	8.0	30	---	23	7.4	2.8	1.1	104	4.6	5.5
31	5.3	---	8.0	853	---	22	---	2.6	---	99	4.8	---
TOTAL	950.0	180.3	230.2	1829.6	9791	31043	352.7	136.1	46.20	784.00	1536.2	210.3
MEAN	30.6	6.01	7.43	59.0	350	1001	11.8	4.39	1.54	25.3	43.1	7.01
MAX	460	6.7	8.4	853	2870	13100	22	8.4	3.1	223	723	32
MIN	2.9	5.3	6.0	8.0	34	22	7.0	2.4	.40	.30	4.6	3.1
AC-FT	1880	358	457	5630	19420	61570	700	270	92	1560	2650	417

CAL YR 1977 TOTAL 6340.50 MEAN 17.5 MAX 496 MIN .00 AC-FI 12660
WTR YR 1978 TOTAL 46889.60 MEAN 128 MAX 13100 MIN .30 AC-FI 93010

GILA RIVER BASIN

09469000 SAN CARLOS RESERVOIR AT COOLIDGE DAM, AZ

LOCATION.--Lat 33°10'32", long 110°31'38", in NW¼ sec.17, T.3 S., R.18 E. (unsurveyed), Gila County, Hydrologic Unit 15040005, in San Carlos Indian Reservation, at right intake tower of Coolidge Dam on Gila River.

DRAINAGE AREA.--12,886 mi² (33,375 km²).

REVISED RECORDS.--WSP 1049: 1929, 1934, 1937-38. WSP 1283: Drainage area.

PERIOD OF RECORD.--November 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 15, 1937, series of stakes with tops at known elevations for reference points on right bank about 1,000 ft (300 m) upstream from dam. Jan. 15, 1937, to Dec. 31, 1947, water-stage recorder at present site at datum 0.72 ft (0.219 m) lower.

REMARKS.--Reservoir is formed by concrete multiple-dome dam. Dam completed Oct. 25, 1928; storage began Nov. 15, 1928. Usable capacity (from capacity table computed by San Carlos Irrigation District, based on an estimate of 20,000 acre-ft (25 hm³) of sediment deposited since 1966; used since Jan. 1, 1976) 1,073,000 acre-ft (1,320 hm³) between elevations 2,382.63 ft (726.226 m)—sill of lowest outlet gate—and 2,519.0 ft (767.79 m)—crest of spillway. No dead storage. Figures given herein represent usable contents. Reservoir is used to store water for irrigation of San Carlos project and for power development, dependent on irrigation demands.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 843,300 acre-ft (1,040 hm³) June 1, 1973, elevation, 2,504.67 ft (763.423 m); no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 272,000 acre-ft (335 hm³) Apr. 7-13, elevation, 2,459.11 ft (749.537 m); minimum, 13,500 acre-ft (16.6 hm³) Oct. 1, 2, 5, elevation, 2,403.74 ft (732.660 m).

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

2,400	8,250	2,430	85,400
2,405	15,310	2,440	135,500
2,410	24,400	2,450	200,100
2,420	49,100	2,460	279,100

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13500	18200	20700	17400	28700	66500	268000	259000	235000	194000	149000	107000
2	13500	18300	20700	17500	30400	104000	269000	258000	234000	193000	150000	106000
3	13600	18400	20700	17600	31400	120000	270000	258000	233000	191000	148000	104000
4	13600	18400	20700	17800	32100	150000	270000	257000	232000	190000	147000	103000
5	13500	18500	20700	18000	32800	182000	271000	257000	231000	188000	146000	102000
6	14700	18600	20700	18200	33300	199000	271000	256000	229000	187000	145000	100000
7	16600	18600	20700	18400	33700	210000	272000	256000	228000	185000	143000	98600
8	16800	18700	20700	18500	34200	218000	272000	255000	227000	184000	142000	97300
9	17000	18800	20600	18700	34600	224000	272000	255000	226000	182000	141000	96000
10	17100	18800	20600	18900	35200	228000	272000	254000	224000	180000	139000	94600
11	17200	18900	20400	19000	38700	232000	272000	254000	223000	179000	137000	93300
12	17200	19000	20300	19200	41400	235000	272000	253000	222000	178000	136000	91900
13	17300	19100	20200	19300	42500	240000	272000	253000	220000	176000	135000	90500
14	17400	19200	20100	19500	43400	243000	271000	252000	219000	174000	133000	89200
15	17500	19300	19900	20000	44700	247000	271000	251000	218000	172000	132000	88100
16	17600	19400	19700	20600	45700	249000	270000	250000	216000	171000	130000	87000
17	17700	19500	19500	21200	46600	251000	270000	250000	215000	169000	129000	85900
18	17800	19600	19300	21700	47400	252000	269000	249000	213000	167000	128000	84900
19	17900	19700	19100	22300	48100	254000	268000	248000	212000	165000	126000	83800
20	17900	19800	18900	22800	48700	255000	268000	247000	211000	164000	125000	83000
21	17900	19900	18600	23100	49100	257000	267000	246000	209000	162000	124000	82300
22	17900	20000	18400	23600	49600	258000	266000	245000	208000	161000	123000	81400
23	18000	20100	18200	24000	50000	259000	265000	244000	206000	160000	121000	80600
24	18000	20200	18000	24300	50400	260000	265000	243000	205000	158000	120000	80000
25	18000	20200	17800	24600	50800	261000	264000	242000	203000	157000	118000	79400
26	18000	20400	17600	25000	51300	263000	263000	241000	201000	156000	117000	78800
27	18000	20500	17400	25300	51700	264000	262000	240000	200000	154000	115000	78400
28	18100	20600	17300	25500	53300	265000	261000	239000	198000	153000	113000	78000
29	18100	20600	17200	25800	---	266000	260000	238000	197000	151000	112000	77600
30	18200	20700	17200	26200	---	267000	260000	237000	195000	151000	110000	77200
31	18200	---	17300	26900	---	267000	---	236000	---	150000	108000	---
MAX	18200	20700	20700	26900	53300	267000	272000	259000	235000	194000	150000	107000
MIN	13500	18200	17200	17400	28700	66500	260000	236000	195000	150000	108000	77200
†	2406.00	2407.96	2406.09	2411.11	2421.46	2458.60	2457.66	2454.76	2449.30	2442.40	2434.90	2427.95
‡	+4700	+2500	-3400	+9600	+26400	+213700	-7000	-24000	-41000	-45000	-42000	-30800
CAL YR 1977	MAX	20700	MIN	4.0	‡	+14,240						
WTR YR 1978	MAX	272000	MIN	13500	‡	+63,700						

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

GILA RIVER BASIN

09469500 GILA RIVER BELOW COOLIDGE DAM, AZ

LOCATION.--Lat 33°10'10", long 110°31'50", in SW¼ sec.17, T.3 S., R.18 E. (unsurveyed), Pinal County, Hydrologic Unit 15050100, on left bank 2,200 ft (670 m) downstream from Coolidge Dam.

DRAINAGE AREA.--12,886 mi² (33,375 km²).

PERIOD OF RECORD.--July to October 1899, April 1900 to March 1902, July to September 1902, December 1902 to December 1904; January to May 1905 (gage heights only); June to November 1905; August 1910 to February 1911 (gage heights only); April 1914 to current year. Published as "at San Carlos" 1899-1911, as "near San Carlos" 1914-26, and as "at Coolidge Dam" 1927-38.

REVISED RECORDS.--WSP 629: 1915-16. WSP 1049: 1899-1904. WSP 1149: 1917(M), 1921, 1922(M), 1923, 1924(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 2,309.33 ft (703.884 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 5, 1911, nonrecording gage at various sites and datums upstream from mouth of San Carlos River. Apr. 29, 1914, to Mar. 8, 1937, water-stage recorder at various sites within 1 mi (1.6 km) upstream from present site at different datums.

REMARKS.--Records excellent except those below 10 ft³/s (0.28 m³/s), which are fair. Flow regulated by San Carlos Reservoir since Nov. 15, 1928. (See sta 09469000.) Record includes flow of Warm Springs, which enters between dam and gage. Large diversions above San Carlos Reservoir for irrigation, metallurgical treatment of ore, and municipal supply; about 69,000 acres (279 km²) of land was irrigated, a considerable portion by pumping from ground water.

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir).--66 years (water years 1901, 1904, 1915-78), 340 ft³/s (9.629 m³/s), 246,300 acre-ft/yr (303 hm³/yr); median of yearly mean discharges, 210 ft³/s (5.95 m³/s), 152,000 acre-ft/yr (190 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--1914-28: Maximum discharge, 130,000 ft³/s (3,680 m³/s) Jan. 20, 1916, estimated on basis of peak discharge near Solomon and at Kelvin; no flow at times.
1928-78: Maximum discharge, 1,350 ft³/s (38.2 m³/s) July 28, 1952, gage height, 4.64 ft (1.414 m); no flow at times prior to 1938; minimum daily since 1958, 0.40 ft³/s (0.011 m³/s) in several years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 811 ft³/s (23.0 m³/s) July 14, 15; minimum daily, 3.7 ft³/s (0.105 m³/s) Jan. 6-10, Jan. 18 to Feb. 10, 12-19, Mar. 5-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	5.4	50	8.8	3.7	5.4	300	386	468	674	720	752
2	9.6	5.4	51	8.8	3.7	5.4	298	349	481	674	724	752
3	9.6	5.4	51	8.0	3.7	4.8	282	340	493	671	724	752
4	9.6	5.4	51	4.8	3.7	4.2	272	313	503	671	724	740
5	10	5.4	51	4.2	3.7	3.7	272	298	548	667	716	716
6	10	6.0	50	3.7	3.7	3.7	293	298	567	667	682	728
7	8.8	6.6	50	3.7	3.7	3.7	358	298	561	674	615	728
8	8.8	6.6	50	3.7	3.7	3.7	363	306	590	678	572	697
9	8.0	6.6	53	3.7	3.7	3.7	368	324	607	709	678	642
10	8.0	6.0	82	3.7	3.7	4.2	368	327	590	720	682	642
11	8.0	5.4	104	4.2	4.2	4.2	354	330	584	726	682	645
12	8.0	5.4	102	4.2	3.7	4.2	324	330	577	781	678	638
13	8.0	6.0	102	4.2	3.7	4.2	378	327	577	790	678	604
14	8.0	6.0	111	4.2	3.7	4.2	426	335	577	811	678	564
15	7.3	6.6	128	4.2	3.7	4.2	426	374	584	811	678	528
16	6.6	6.6	148	4.2	3.7	4.2	426	429	606	802	678	487
17	6.6	6.6	154	4.2	3.7	4.2	426	450	618	795	674	490
18	14	6.6	154	3.7	3.7	4.2	435	450	618	798	674	481
19	6.6	6.0	156	3.7	3.7	4.2	459	450	632	798	667	471
20	6.6	6.0	154	3.7	4.2	4.2	478	450	656	766	674	450
21	6.6	5.4	152	3.7	4.8	4.5	478	447	652	794	671	397
22	6.6	4.8	152	3.7	5.4	115	478	456	663	728	671	383
23	6.6	4.8	152	3.7	5.4	197	478	484	678	752	709	357
24	6.6	4.8	152	3.7	4.8	202	370	512	682	701	712	330
25	6.0	4.8	152	3.7	4.8	202	459	503	697	697	736	306
26	6.0	4.8	152	3.7	4.8	202	447	487	697	701	744	251
27	6.0	4.8	152	3.7	4.8	213	459	462	686	701	761	230
28	6.0	4.8	152	3.7	5.4	261	459	450	686	701	757	232
29	5.4	4.8	114	3.7	---	303	459	429	697	697	757	230
30	5.4	20	43	3.7	---	305	459	426	689	693	752	232
31	5.4	---	8.8	3.7	---	295	---	458	---	724	752	---
TOTAL	238.3	183.8	3233.8	134.3	115.2	2384.0	11852	12258	18264	22572	21620	15455
MEAN	7.69	6.13	104	4.33	4.11	76.9	395	395	609	728	697	515
MAX	14	20	156	8.8	5.4	305	478	512	697	811	761	752
MIN	5.4	4.8	8.8	3.7	3.7	3.7	272	298	468	667	572	230
AC-FT	473	365	6410	266	228	4730	23510	24310	36230	44770	42880	31650

CAL YR 1977 TOTAL 25435.90 MEAN 69.7 MAX 253 MIN .80 AC-FT 50450
WTR YR 1978 TOTAL 108310.40 MEAN 297 MAX 811 MIN 3.7 AC-FT 214800

09470000 GILA RIVER AT WINKELMAN, AZ

LOCATION.--Lat 33°00'06", long 110°45'55", in NW¼NE¼ sec.13, T.5 S., R.15 E., Gila County, Hydrologic Unit 15050100, on right bank 1 mi (2 km) north of Winkelman, 2.2 mi (3.5 km) upstream from San Pedro River, and 29 mi (47 km) downstream from Coolidge Dam.

DRAINAGE AREA.--13,268 mi² (34,364 km²), of which 382 mi² (989 km²) is below Coolidge Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1917 to June 1918, September 1941 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,921.76 ft (585.752 m) National Geodetic Vertical Datum of 1929. Sept. 10, 1917, to June 27, 1918, nonrecording gage at bridge 1.4 mi (2.3 km) downstream at different datum. September 1941 to Jan. 5, 1964, at site about 400 ft (120 m) upstream at datum 0.81 ft (0.247 m) lower. Supplementary nonrecording gage 1.3 mi (2.1 km) downstream since Aug. 9, 1963, at datum 15.68 ft (4.170 m) lower; supplementary water-stage recorder Jan. 6, 1964, to Nov. 24, 1975, at bridge 1.4 mi (2.3 km) downstream at datum 14.76 ft (4.499 m) lower.

REMARKS.--Records good. Large diversions above station for irrigation, metallurgical treatment of ore, and municipal supply, but none between Coolidge Dam and this station. About 69,000 acres (279 km²) irrigated in the basin above Coolidge Dam, a considerable portion by pumping from ground water. Flow regulated by San Carlos Reservoir (See sta 09469000).

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir).--37 years (water years 1942-78), 246 ft³/s (6.97 m³/s), 178,200 acre-ft/yr (220 hm³/yr); median of yearly mean discharges, 170 ft³/s (4.81 m³/s), 123,000 acre-ft/yr (150 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,000 ft³/s (1,560 m³/s) of which 500 ft³/s (14.2 m³/s) was released by Coolidge Dam, Aug. 9, 1944, gage height, 18.40 ft (5.608 m), from rating curve extended above 2,900 ft³/s (82 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges, unadjusted for release from Coolidge Dam, above base of 1,300 ft³/s (37 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	2100	*5,020 142	11.04 3.365	June 28	1915	1,320 37.4	5.16 1.573
Jan. 15	2200	3,710 105	9.25 2.819	July 22	2145	1,470 41.6	5.45 1.661
Feb. 11	1100	3,420 96.8	8.81 2.685	Aug. 1	0715	4,660 132	10.58 3.225
Mar. 2	2345	2,880 81.6	7.97 2.429				

Minimum daily, 8.9 ft³/s (0.25 m³/s) Oct. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	10	26	39	75	719	365	480	411	648	1680	862
2	18	9.4	52	29	65	1410	337	400	424	640	1420	866
3	14	11	70	26	46	1230	325	360	435	651	753	866
4	12	10	72	24	34	517	296	330	433	654	788	871
5	11	10	72	22	28	229	293	310	455	655	757	922
6	1040	11	72	20	27	334	296	300	490	654	733	850
7	284	14	70	19	53	228	385	300	491	657	703	854
8	45	16	67	18	58	154	388	300	519	681	526	854
9	27	14	65	17	49	125	401	300	531	689	695	772
10	22	12	67	18	56	110	397	310	542	738	726	737
11	20	12	94	20	2060	105	390	315	513	746	730	745
12	20	12	113	20	327	129	353	320	505	763	733	749
13	20	12	113	19	180	205	341	320	504	817	737	721
14	20	13	114	19	532	124	435	320	501	844	737	669
15	19	14	125	683	353	98	446	335	501	878	745	636
16	18	15	133	353	200	83	450	370	513	880	749	580
17	18	16	156	143	180	74	453	400	516	880	753	556
18	17	16	159	121	160	69	453	410	502	878	749	545
19	17	18	160	61	140	65	468	410	494	904	757	515
20	17	18	158	62	130	61	493	399	531	966	757	515
21	16	19	158	79	120	58	506	407	548	876	757	427
22	16	19	160	48	110	55	508	405	547	1000	761	408
23	16	20	160	36	110	211	514	426	575	858	749	379
24	16	21	159	29	100	256	512	464	596	858	788	331
25	16	22	159	25	100	253	324	476	617	898	825	325
26	14	22	160	23	90	250	500	472	628	813	837	258
27	9.2	23	161	21	90	250	480	440	660	840	850	225
28	8.9	24	162	20	180	267	480	421	740	828	862	209
29	10	25	163	19	---	342	480	395	657	834	862	209
30	11	25	123	19	---	354	480	378	670	840	862	206
31	11	---	74	38	---	334	---	380	---	972	866	---
TOTAL	1845.1	483.4	3597	2110	5653	8699	12549	11653	16049	24840	25247	17662
MEAN	59.5	16.1	116	68.1	202	281	418	376	535	801	814	589
MAX	1040	25	163	683	2060	1410	514	480	740	1000	1680	922
MIN	8.9	9.4	26	17	27	55	293	300	411	640	526	206
AC-FT	3660	959	7130	4190	11210	17250	24890	23110	31830	49270	50080	35030

CAL YR 1977 TOTAL 28878.39 MEAN 79.1 MAX 1040 MIN .03 AC-FT 57280
WTR YR 1978 TOTAL 130387.50 MEAN 357 MAX 2060 MIN 8.9 AC-FT 258600

GILA RIVER BASIN

09470000 GILA RIVER AT WINKELMAN, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 26...	1530	15	1650	8.1	22.0	15	8.4	28
DEC 01...	1300	26	1550	8.0	12.0	65	11.0	8
JAN 30...	1500	50	1560	8.2	13.0	--	10.6	320
MAR 02...	1730	1640	440	8.3	12.5	--	10.1	2600
JUL 18...	1400	879	1060	8.2	18.0	--	8.2	79

DATE	STREP- TOCOCCEI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT 26...	--	370	120	99	30	200	4.5	7.8	310
DEC 01...	29	290	110	80	23	200	5.1	7.9	230
JAN 30...	--	410	170	110	34	190	4.1	8.2	--
MAR 02...	--	210	49	64	12	16	.5	3.6	--
JUL 18...	--	210	67	58	15	130	3.9	4.7	--

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT 26...	0	140	270	.8	24	924	925	1.26
DEC 01...	0	130	290	.9	22	875	868	1.19
JAN 30...	--	190	260	.6	25	933	962	1.27
MAR 02...	--	63	11	.5	23	293	299	.40
JUL 18...	--	94	170	.8	29	585	586	.80

09470000 GILA RIVER AT WINKELMAN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, NH4 + URG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHURUS, DIS- SOLVED (MG/L AS P)	PHOS- PHURUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 26...	.09	.12	.02	--	--	--	.08	--	.12	.08	.01
DEC 01...	.01	.02	.00	--	--	--	.28	--	.13	.02	.01
JAN 30...	.24	--	.01	.62	.63	.09	.54	.87	.01	.00	--
MAR 02...	.34	--	.10	8.1	8.2	7.9	.27	8.5	4.1	.03	--
JUL 18...	.25	--	.00	.89	.89	.47	.42	1.1	.24	.14	--

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BURUN, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRU- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 26...	5	100	240	230	2	10	10	560	40	9
DEC 01...	5	100	250	210	2	10	24	3000	20	9
JAN 30...	4	200	250	--	0	0	9	540	--	5
MAR 02...	8	1400	200	--	1	160	1100	330000	--	700
JUL 18...	5	200	200	--	1	0	14	2000	--	12

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)
OCT 26...	280	0	.4	0	1	20	--	.00	3
DEC 01...	220	0	.0	0	1	20	5.1	.00	3
JAN 30...	490	--	.0	0	0	10	3.5	.00	1
MAR 02...	11000	--	.8	1	9	1100	141	10	2
JUL 18...	160	--	.0	0	0	20	8.5	.00	5

GILA RIVER BASIN

09470500 SAN PEDRO RIVER AT PALOMINAS, AZ

LOCATION.--Lat 31°22'48", long 110°06'38", in SW¼SE¼ sec.33, T.23 S., R.22 E., Cochise County, Hydrologic Unit 15050202, near left bank on downstream side of pier of bridge on State Highway 92, 0.7 mi (1.1 km) east of Palominas, 2.5 mi (4.0 km) upstream from Green Brush Draw, 4.5 mi (7.2 km) downstream from international boundary, and 12 mi (19 km) southwest of Bisbee.

DRAINAGE AREA.--741 mi² (1,919 km²), of which 649 mi² (1,681 km²) is in Mexico.

PERIOD OF RECORD.--May 1930 to October 1933, May 1935 to July 1941, July 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,187.62 ft (1,276.387 m) National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). See WSP 1733 for history of changes prior to Nov. 24, 1955.

REMARKS.--Records fair. Small diversions for irrigation of a few hundred acres above station, mostly in Mexico. Records show approximate flow of river at international boundary.

AVERAGE DISCHARGE.--36 years (water years 1931-33, 1936-40, 1951-78), 31.7 ft³/s (0.898 m³/s), 22,970 acre-ft/yr (28.3 hm³/yr); median of yearly mean discharges, 23 ft³/s (0.65 m³/s), 16,700 acre-ft/yr (21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s (623 m³/s) Aug. 14, 1940, gage height, 16.16 ft (4.926 m), present datum, from rating curve extended above 5,600 ft³/s (160 m³/s) on basis of slope-area measurement of peak flow; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood since at least 1906 occurred Sept. 28, 1926, gage height, about 23.9 ft (7.28 m), present datum, from floodmarks; discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,500 ft³/s (411 m³/s) Oct. 9, gage height, 16.04 ft (4.889 m), base discharge, 2,400 ft³/s (68 m³/s); no flow June 8 to July 14, Sept. 10-22, 24-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	22	11	15	24	33	16	3.3	.45	.00	41	12
2	15	21	12	14	23	275	14	4.4	.45	.00	74	16
3	10	18	11	13	21	241	12	3.6	.30	.00	205	9.7
4	5.0	17	10	12	20	165	11	4.3	.60	.00	49	10
5	2.0	15	11	11	20	90	10	3.9	.60	.00	25	65
6	12	14	10	11	25	72	9.0	4.5	.45	.00	15	41
7	8.4	16	9.5	10	25	102	7.4	3.2	.15	.00	9.0	16
8	9190	16	9.5	9.5	26	78	7.4	3.3	.00	.00	5.0	5.0
9	10300	14	9.5	9.5	26	63	7.0	4.2	.00	.00	5.0	.50
10	2050	11	9.5	9.7	24	57	7.0	4.3	.00	.00	4.0	.00
11	634	11	9.5	13	27	47	7.0	2.3	.00	.00	7.0	.00
12	401	11	9.5	14	35	47	7.0	1.2	.00	.00	34	.00
13	288	11	9.5	12	35	88	7.0	1.3	.00	.00	7.0	.00
14	140	12	9.5	10	34	179	7.0	1.3	.00	.00	3.0	.00
15	75	16	9.6	12	38	163	7.0	1.2	.00	33	2.0	.00
16	60	16	9.6	42	39	110	7.0	1.2	.00	22	2.0	.00
17	190	15	9.7	26	39	74	7.0	1.0	.00	15	2.0	.00
18	65	14	9.7	25	35	58	7.0	1.0	.00	9.5	1.9	.00
19	45	14	9.5	24	30	51	7.0	1.0	.00	5.6	1.9	.00
20	40	14	9.5	24	26	45	7.0	1.4	.00	2.5	1.5	.00
21	35	14	9.5	39	24	41	7.0	1.0	.00	1.4	1.9	.00
22	32	14	10	34	22	36	7.0	1.0	.00	27	1.9	.00
23	30	14	11	30	21	34	7.0	.75	.00	42	95	1.2
24	28	14	11	28	21	32	6.8	.75	.00	18	167	.00
25	27	14	11	25	21	30	5.5	.90	.00	19	30	.00
26	26	13	12	26	21	28	4.0	1.2	.00	57	11	.00
27	25	14	13	25	20	26	4.2	.60	.00	66	11	.00
28	25	14	14	24	21	24	3.4	.60	.00	23	11	.00
29	25	12	17	23	---	22	3.1	.60	.00	14	38	.00
30	25	14	18	22	---	20	3.1	.60	.00	21	21	.00
31	30	---	16	23	---	18	---	.45	---	109	15	---
TOTAL	23858.4	435	341.1	615.7	741	2349	221.9	60.35	3.00	485.00	897.1	176.40
MEAN	770	14.5	11.0	19.9	26.5	75.8	7.40	1.95	.10	15.6	28.9	5.88
MAX	10300	22	18	42	39	275	16	4.5	.60	109	205	65
MIN	2.0	11	9.5	9.5	20	18	3.1	.45	.00	.00	1.5	.00
AC-FT	47320	863	677	1220	1470	4660	440	120	6.0	962	1780	350
CAL YR 1977	TOTAL	31655.70	MEAN	86.7	MAX	10300	MIN	.00	AC-FT	62790		
WTR YR 1978	TOTAL	30183.95	MEAN	82.7	MAX	10300	MIN	.00	AC-FT	59870		

09471000 SAN PEDRO RIVER AT CHARLESTON, AZ

LOCATION.--Lat 31°37'33", long 110°10'26", in NE¼NE¼ sec.11, T.21 S., R.21 E., Cochise County, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, at downstream side of pier near center of highway bridge, 0.3 mi (0.5 km) south of Charleston, 1.5 mi (2.4 km) upstream from Charleston damsite, and 9 mi (14 km) upstream from Babocomari River.

DRAINAGE AREA.--1,219 mi² (3,157 km²), of which 696 mi² (1,803 km²) is in Mexico.

PERIOD OF RECORD.--January and February 1904 (gage heights only); March 1904 to August 1906; November 1910 to December 1911 (gage heights only); September 1912 to current year. Monthly discharge only October 1926 to May 1928 and December 1933 to April 1935, published in WSP 1313. Published as "near Lewis Springs" 1910-11, and as "near Fairbank" 1911-26.

REVISED RECORDS.--WSP 1119: 1939(M). WSP 1213: 1914, 1916(M), 1918(M), 1919, 1920(M), 1922-23(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,954.01 ft (1,205.182 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1942, nonrecording gage or water-stage recorder at various sites within 6.5 mi (10.5 km) downstream at different datums.

REMARKS.--Records good. Diversions above station, mostly by pumping from ground water, for irrigation of 2,900 acres (11.7 km²)—in 1974—excluding an unknown amount in Mexico. Record shows flow available at Charleston damsite.

AVERAGE DISCHARGE.--67 years (water years 1905, 1913-78), 60.1 ft³/s (1.702 m³/s), 43,540 acre-ft/yr (53.7 hm³/yr); median of yearly mean discharges, 50 ft³/s (1.42 m³/s), 36,200 acre-ft/yr (45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 98,000 ft³/s (2,780 m³/s) Sept. 28, 1926, gage height, 21.9 ft (6.68 m), site and datum then in use, by slope-area measurement of peak flow; minimum since 1928, 0.40 ft³/s (0.011 m³/s) June 7, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 7,600 ft³/s or 220 m³/s) and peak discharges above base of 3,000 ft³/s (85 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1930	3,980 113	6.23 1.899
Oct. 9	1400	*23,700 671	10.60 3.231

Minimum, 2.2 ft³/s (0.062 m³/s) July 6, gage height, 1.92 ft (0.585 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	47	20	31	28	77	32	12	6.4	3.0	78	8.0
2	15	44	24	31	28	263	31	12	6.1	2.8	42	6.7
3	13	42	28	31	28	246	31	12	6.1	2.6	253	6.1
4	12	41	28	28	28	161	26	12	6.1	2.6	120	5.8
5	63	40	16	24	26	125	23	12	6.1	2.6	36	26
6	434	38	28	26	31	100	23	12	5.5	2.4	17	36
7	137	38	23	24	38	108	23	12	5.5	2.6	11	38
8	5870	40	23	24	34	102	23	12	5.5	2.6	9.0	18
9	18400	36	23	23	35	95	23	12	5.5	3.0	14	11
10	5670	35	23	24	32	78	26	11	5.5	3.0	8.0	7.0
11	838	35	23	26	34	68	31	11	4.9	3.0	7.0	6.7
12	414	34	23	28	41	62	23	10	4.9	3.0	8.0	5.8
13	262	34	23	29	54	76	22	12	4.6	18	13	4.9
14	192	32	19	26	58	128	18	11	4.6	22	8.0	4.9
15	147	32	34	26	58	144	22	10	4.6	6.4	7.0	4.9
16	120	32	22	35	60	122	28	9.5	4.0	6.4	5.2	4.3
17	138	29	22	56	62	100	31	9.5	4.0	7.5	4.3	4.0
18	125	29	22	41	60	82	32	8.5	3.8	6.1	3.8	3.6
19	100	29	22	35	52	76	23	9.0	3.8	5.5	7.5	3.2
20	86	29	22	34	47	66	31	9.0	3.4	5.2	7.0	3.2
21	80	29	22	38	42	60	28	9.5	3.4	18	9.5	3.6
22	72	29	22	54	40	56	17	8.5	3.4	40	10	3.6
23	66	29	23	47	35	52	18	7.5	3.4	19	6.4	3.6
24	60	28	26	42	31	50	14	8.0	3.2	18	176	3.6
25	58	28	26	40	29	50	14	8.0	3.2	14	46	3.8
26	50	28	29	34	29	47	13	8.0	3.0	9.5	38	5.8
27	48	26	29	32	31	42	14	8.0	3.2	141	8.5	4.9
28	47	26	29	29	35	41	14	7.0	3.6	23	150	4.3
29	47	18	26	28	---	38	13	7.0	3.6	9.0	31	4.6
30	48	30	29	26	---	36	12	7.0	3.4	5.8	31	4.9
31	64	---	31	28	---	35	---	6.7	---	118	13	---
TOTAL	33694	987	760	1000	1106	2786	679	303.7	134.3	525.6	1178.2	250.8
MEAN	1087	32.9	24.5	32.3	39.5	89.9	22.6	9.80	4.48	17.0	38.0	8.36
MAX	18400	47	34	56	62	263	32	12	6.4	141	253	38
MIN	12	18	16	23	26	35	12	6.7	3.0	2.4	3.8	3.2
AC-FT	66830	1960	1510	1980	2190	5530	1350	602	266	1040	2340	497
CAL YR 1977	TOTAL	47053.4	MEAN 129	MAX 18400	MIN 1.8	AC-FT 93330						
WTR YR 1978	TOTAL	43404.6	MEAN 119	MAX 18400	MIN 2.4	AC-FT 86090						

GILA RIVER BASIN

09471550 SAN PEDRO RIVER NEAR TOMBSTONE, AZ

LOCATION.--Lat 31°45'03", long 110°12'02", in SE¼ sec.28, T.19 S., R.21 E. (unsurveyed), Cochise County, Hydrologic Unit 15050202, in Spanish land grant of San Juan de las Boquillas y Nogales, on right bank 0.5 mi (0.8 km) downstream from Willow Wash, 2.6 mi (4.2 km) north of Fairbank, and 8 mi (13 km) northwest of Tombstone.

DRAINAGE AREA.--1,740 mi² (4,510 km²) approximately, of which 696 mi² (1,800 km²) is in Mexico.

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

GAGE.--Water-stage recorder. Altitude of gage is 3,780 ft (1,152 m), from topographic map.

REMARKS.--Records fair. Diversions above station, mostly by pumping from ground water, for irrigation of 2,900 acres (11.7 km²)—in 1974—excluding an unknown amount in Mexico.

AVERAGE DISCHARGE.--11 years, 47.0 ft³/s (1.331 m³/s), 34,050 acre-ft/yr (42.0 hm³/yr); median of yearly mean discharges, 41 ft³/s (1.16 m³/s), 29,700 acre-ft per year (37 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,200 ft³/s (685 m³/s) Oct. 9, 1977, gage height, 11.40 ft (3.475 m), from rating curve extended above 4,900 ft³/s (140 m³/s) on basis of slope-area measurements at gage heights 8.89 ft (2.710 m) and 11.40 ft (3.475 m); no flow at times during each summer.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s (85 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	2200	3,730 106	6.12 1.865
Oct. 9	1530	*24,200 685	11.40 3.475

No flow at times during summer.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	50	25	33	35	42	31	11	4.1	.00	205	5.0
2	15	40	27	35	34	246	31	13	3.6	.00	38	4.0
3	13	38	27	38	34	349	29	12	3.3	.00	273	3.5
4	11	36	27	34	35	207	27	11	3.1	.00	132	3.0
5	60	35	26	31	33	128	28	11	2.6	.00	25	36
6	430	35	24	33	31	99	25	12	2.8	.00	10	8.0
7	338	36	28	32	36	93	24	12	2.9	.00	9.0	6.0
8	5420	34	25	31	35	102	23	11	2.7	.00	8.0	5.0
9	17100	32	23	28	31	85	25	10	2.5	.00	7.0	4.0
10	4700	32	26	31	34	71	21	10	2.3	.00	6.0	3.0
11	810	33	27	32	34	61	19	11	2.3	.00	6.0	2.8
12	392	30	24	32	34	56	19	9.2	2.3	.00	6.0	2.2
13	246	28	25	32	38	67	18	9.2	2.3	.00	6.0	1.9
14	166	31	25	32	49	113	18	9.4	2.0	24	6.0	1.5
15	117	29	29	34	45	192	18	8.8	1.9	4.3	5.0	1.0
16	96	29	25	35	47	156	17	9.8	1.8	3.0	4.0	.44
17	106	27	24	53	50	107	16	8.2	1.7	32	3.0	.00
18	136	27	25	46	54	86	16	7.5	1.5	2.3	2.0	.00
19	91	25	23	42	46	72	16	7.8	1.1	1.8	2.0	.00
20	80	26	22	45	45	57	15	7.6	.60	1.4	3.0	.00
21	62	26	24	42	41	59	16	6.5	.00	1.0	4.0	.00
22	62	25	26	53	37	57	14	6.7	.00	32	5.0	1.2
23	59	26	22	58	36	55	14	6.3	.00	37	6.0	.54
24	52	26	21	52	33	51	12	5.9	.00	16	153	.00
25	50	24	23	46	30	46	14	5.8	.00	40	70	.03
26	48	24	26	43	31	43	14	6.0	.00	12	35	.00
27	50	26	31	41	30	40	13	5.8	.00	89	11	.00
28	47	28	34	38	31	36	13	5.9	.00	31	166	.00
29	47	28	35	38	---	39	11	5.7	.60	23	47	.00
30	45	24	33	35	---	35	11	4.5	.50	22	7.4	.00
31	55	---	34	35	---	34	---	5.0	---	47	6.8	---
TOTAL	30924	910	816	1190	1049	2884	568	265.6	48.50	418.80	1267.2	89.11
MEAN	998	30.3	26.3	38.4	37.5	93.0	18.9	8.57	1.62	13.5	40.9	2.97
MAX	17100	50	35	58	54	349	31	13	4.1	89	273	36
MIN	11	24	21	28	30	34	11	4.5	.00	.00	2.0	.00
AC-FT	61340	1800	1620	2360	2080	5720	1130	527	96	831	2510	177
CAL YR 1977	TOTAL	45258.25	MEAN 124	MAX 17100	MIN .00	AC-FT 89770						
WTR YR 1978	TOTAL	40430.21	MEAN 111	MAX 17100	MIN .00	AC-FT 80190						

09472000 SAN PEDRO RIVER NEAR REDINGTON, AZ

LOCATION.--Lat 32°22'50", long 110°26'45", in NE¼NW¼ sec.19, T.12 S., R.19 E., Cochise County, Hydrologic Unit 15050203, on left bank, 0.3 mi (0.5 km) upstream from Cochise-Pima County line, 4.3 mi (6.9 km) southeast of Redington, and 30 mi (48 km) north of Benson.

DRAINAGE AREA.--2,939 mi² (7,612 km²), of which 696 mi² (1,803 km²) is in Mexico.

PERIOD OF RECORD.--June 1943 to June 1947, July 1950 to current year (monthly discharge only, July 1954 to March 1955). Also extremes for water years 1948-50, published in WSP 1179.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,930.04 ft (893.076 m) National Geodetic Vertical Datum of 1929. June 1943 to June 1947, and Oct. 1, 1962, to June 27, 1963, at present site at datum 7.49 ft (2.283 m) higher. July 1950 to Sept. 30, 1962, at site 400 ft (120 m) upstream at datum 10.47 ft (3.191 m) higher. Supplementary water-stage recorder 50 ft upstream at same datum since June 29, 1977.

REMARKS.--Records poor. Diversions above station for irrigation of about 11,000 acres (44.5 km²) in 1974, excluding an unknown amount in Mexico. Diversion above gage into formerly used ditch on right bank was placed in operation in January 1972; diversion was observed Dec. 3, Jan. 5, Feb. 8, Apr. 3, May 5, and June 7.

AVERAGE DISCHARGE.--31 years (water years 1944-46, 1951-78), 44.2 ft³/s (1.252 m³/s), 32,020 acre-ft/yr (39.5 hm³/yr); median of yearly discharges, 31 ft³/s (0.88 m³/s), 22,500 acre-ft/yr (28 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,600 ft³/s (810 m³/s) Aug. 2, 1951, gage height, 20.2 ft (6.16 m), present site and datum, from rating curve extended above 16,000 ft³/s (450 m³/s) on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1906, about 90,000 ft³/s (2,550 m³/s) Sept. 28, 1926, gage height, 29.0 ft (8.84 m), present site and datum, from floodmark, computed on basis of peak discharge of same flood for station at Charleston and for Gila River at Kelvin.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,000 ft³/s (651 m³/s) Oct. 10, gage height, 21.40 ft (6.523 m), from slope-area measurement of peak flow, base discharge, 3,000 ft³/s (85 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	10	.00	.00	20	15	20	.00	.00	.00	5.1	4.1
2	2.0	10	.00	.00	20	538	20	.00	.00	.00	92	4.5
3	2.0	10	.00	.00	20	774	19	.00	.00	.00	44	5.5
4	1.0	10	.00	.00	20	479	19	.00	.00	.00	166	3.2
5	1.0	10	.00	.00	20	380	19	.00	.00	.00	45	7.2
6	52	10	.00	.00	20	200	19	.00	.00	.00	15	2.7
7	399	9.0	.00	.00	20	150	15	.00	.00	.00	6.4	1.7
8	665	9.0	.00	.00	17	80	15	.00	.00	.00	4.0	1.4
9	9200	9.0	.00	.00	20	60	15	.00	.00	.00	4.1	1.2
10	15000	4.0	.00	.00	19	50	15	.00	.00	.00	3.5	.80
11	1400	.00	.00	.00	401	50	15	.00	.00	130	4.6	.80
12	700	.00	.00	.00	400	40	15	.00	.00	51	168	.90
13	592	.00	.00	.00	200	40	10	.00	.00	10	16	.70
14	450	.00	.00	1.0	100	30	10	.00	.00	11	4.6	.60
15	250	.00	.00	118	50	30	10	.00	.00	9.2	4.0	14
16	100	.00	.00	464	25	30	5.0	.00	.00	11	4.0	1.7
17	50	.00	.00	360	25	30	.00	.00	.00	12	3.1	1.1
18	30	.00	.00	150	20	30	.00	.00	.00	9.0	2.5	.70
19	30	.00	.00	75	20	25	.00	.00	.00	6.6	70	.50
20	20	.00	.00	50	20	25	.00	.00	.00	5.9	13	.40
21	20	.00	.00	30	20	25	.00	.00	.00	5.0	4.9	.30
22	20	.00	.00	25	20	25	.00	.00	.00	6.4	3.7	289
23	15	.00	.00	25	15	25	.00	.00	.00	5.8	2.6	8.0
24	15	.00	.00	20	15	25	.00	.00	.00	14	10	1.9
25	15	.00	.00	20	15	20	.00	.00	.00	13	10	1.4
26	15	.00	.00	20	15	20	.00	.00	.00	7.1	6.6	1.1
27	10	.00	.00	20	15	20	.00	.00	.00	36	8.4	.90
28	10	.00	.00	20	15	20	.00	.00	.00	6.4	4.9	.60
29	10	.00	.00	20	---	20	.00	.00	.00	4.9	15	.70
30	10	.00	.00	20	---	20	.00	.00	.00	42	45	.70
31	10	---	.00	20	---	20	---	.00	---	25	7.5	---
TOTAL	29097.0	91.00	.00	1458.00	1587	3296	241.00	.00	.00	421.30	793.5	358.30
MEAN	939	3.03	.000	47.0	56.7	106	8.03	.000	.000	13.6	25.6	11.9
MAX	15000	10	.00	464	401	774	20	.00	.00	130	168	289
MIN	1.0	.00	.00	.00	15	15	.00	.00	.00	.00	2.5	.30
AC-FT	57710	180	.00	2890	3150	6540	478	.00	.00	836	1570	711
CAL YR 1977	TOTAL	34029.10	MEAN	93.2	MAX	15000	MIN	.00	AC-FT	67500		
WTR YR 1978	TOTAL	37343.10	MEAN	102	MAX	15000	MIN	.00	AC-FT	74070		

09473000 ARAVAIPA CREEK NEAR MAMMOTH, AZ

LOCATION.--Lat 32°50'37", long 110°37'07", in NW¼NW¼ sec.9, T.7 S., R.17 E., Pinal County, Hydrologic Unit 15050203, on right bank 6 mi (10 km) upstream from mouth and 9 mi (14 km) north of Mammoth.

DRAINAGE AREA.--541 mi² (1,401 km²).

PERIOD OF RECORD.--May 1931 to December 1942 (published as "near Feldman"), May 1966 to current year. Monthly discharge only July 1941 to December 1942, published in WSP 1313.

REVISED RECORDS.--WRD Ariz. 1968: 1967.

GAGE.--Water-stage recorder. Altitude of gage is 2,350 ft (716 m), from topographic map. May 1931 to December 1942 at site 0.3 mi (0.5 km) downstream at different datum.

REMARKS.--Records fair except those above 100 ft³/s (2.8 m³/s), which are poor. Diversions for irrigation of several hundred acres above station.

AVERAGE DISCHARGE.--23 years, 27.2 ft³/s (0.770 m³/s), 19,710 acre-ft/yr (24.3 hm³/yr); median of yearly mean discharges, 20 ft³/s (0.57 m³/s), 14,500 acre-ft/yr (18 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge since at least 1931, 10,500 ft³/s (297 m³/s) Dec. 19, 1967, gage height, 11.86 ft (3.615 m), in gage well, 14.25 ft (4.343 m), from profile past gage, from rating curve extended above 430 ft³/s (12 m³/s) on basis of slope-area measurement at gage height 12.5 ft (3.81 m), from profile past gage; minimum, 0.3 ft³/s (0.008 m³/s) Aug. 30, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 20,000 ft³/s (566 m³/s) occurred Aug. 2, 1919, at site of former gaging station 6 mi (10 km) downstream, operated April 1919 to September 1921, gage height, 6.3 ft (1.92 m), from floodmark, site and datum then in use, from rating curve extended above 5,100 ft³/s (140 m³/s) on basis of velocity-area study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,500 ft³/s (71 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 2	2230	3,400 96.3	a5.5 1.68
Aug. 1	0415	*5,100 144	a6.4 1.95

Minimum daily, 1.2 ft³/s (0.034 m³/s) Oct. 4.
a From high-water mark in gage well.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	2.3	8.4	10	50	910	32	17	7.2	9.5	199	10
2	5.0	2.2	8.0	9.8	20	1660	25	28	6.6	6.9	194	10
3	4.7	2.3	8.3	9.5	10	1470	24	25	6.0	6.4	53	17
4	1.2	3.7	8.4	9.1	10	328	19	19	5.6	6.5	91	16
5	6.8	3.6	8.5	8.6	10	278	14	18	5.3	6.6	75	118
6	37	55	8.7	8.2	15	435	11	27	5.1	6.7	42	18
7	52	21	8.4	8.4	50	287	10	24	4.8	7.8	38	16
8	14	14	8.7	7.5	20	171	12	19	4.8	7.8	35	15
9	17	12	8.8	7.4	15	136	14	18	4.9	7.1	133	13
10	11	12	8.3	8.0	15	122	15	13	5.2	8.0	26	12
11	9.6	11	7.8	11	100	115	12	12	5.1	13	14	11
12	8.4	12	8.3	9.5	60	116	12	15	5.4	15	13	10
13	7.7	11	8.4	8.6	100	178	11	12	8.4	14	11	8.7
14	7.7	11	8.2	8.2	275	120	12	8.4	7.6	13	11	11
15	6.3	10	8.6	440	236	85	17	6.8	6.8	7.2	11	11
16	4.5	8.6	8.7	375	215	65	17	5.3	6.5	5.6	11	11
17	5.8	9.1	8.9	100	143	55	13	5.0	6.8	18	11	6.9
18	5.4	9.2	8.8	30	120	51	11	4.7	7.1	25	11	7.9
19	5.7	9.6	8.8	20	80	46	13	4.7	7.5	13	14	8.1
20	5.5	9.4	8.7	15	72	42	13	4.8	7.9	7.6	27	5.8
21	4.9	9.5	8.8	10	49	40	11	9.7	8.0	6.0	18	6.0
22	4.1	10	8.8	10	37	39	9.0	13	8.5	71	17	5.5
23	4.3	9.5	8.8	10	33	38	16	9.3	8.9	76	14	4.2
24	4.0	8.8	8.7	10	30	34	17	7.0	9.5	18	14	3.7
25	5.4	8.0	8.9	10	28	32	12	9.1	9.5	30	13	4.6
26	4.6	7.8	8.9	10	27	31	15	14	9.8	14	12	4.5
27	2.4	7.9	9.9	10	50	30	16	14	78	11	10	4.8
28	2.1	8.1	25	10	300	29	17	13	67	8.7	10	7.1
29	3.0	8.1	39	10	---	29	16	13	23	8.1	10	7.9
30	5.6	8.3	17	10	---	29	16	12	17	52	10	9.2
31	2.8	---	12	20	---	27	---	10	---	31	10	---
TOTAL	264.2	315.0	325.5	1223.8	2170	7028	452.0	410.8	363.8	530.5	1158	393.9
MEAN	8.52	10.5	10.5	39.5	77.5	227	15.1	13.3	12.1	17.1	37.4	13.1
MAX	52	55	39	440	300	1660	32	28	78	76	199	118
MIN	1.2	2.2	7.8	7.4	10	27	9.0	4.7	4.8	5.6	10	3.7
AC-FT	524	625	646	2430	4300	13940	897	815	722	1050	2300	781
CAL YR 1977	TOTAL	3758.84	MEAN	10.3	MAX	153	MIN	.94	AC-FT	7460		
WTR YR 1978	TOTAL	14635.50	MEAN	40.1	MAX	1660	MIN	1.2	AC-FT	29030		

09473500 SAN PEDRO RIVER AT WINKELMAN, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 32°58'38", long 110°46'11", in SE¼SW¼ sec.24, T.5 S., R.15 E., Pinal County, Hydrologic Unit 15050203, on right bank 0.7 mi (1.1 km) south of Winkelman, and 1.0 mi (1.6 km) upstream from mouth.

DRAINAGE AREA.--4,471 mi² (11,580 km²); of which 696 mi² (1,803 km²) is in Mexico.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to August 1890 (monthly discharge only), January 1966 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,925 ft (587 m), from topographic map. Apr. 8 to Aug. 31, 1890, nonrecording gage at site about 1,000 ft (300 m) upstream at different datum. Jan. 1, 1966, to Sept. 30, 1968, water-stage recorder at present site at datum 0.27 ft (0.082 m) lower.

REMARKS.--Records poor. Diversions above station, mostly by pumping from ground water, for municipal and industrial use, and for irrigation of about 13,300 acres (53.8 km²) in 1974, excluding an unknown amount in Mexico.

AVERAGE DISCHARGE.--12 years, 44.1 ft³/s (1.249 m³/s), 31,950 acre-ft/yr (39.4 hm³/yr); median of yearly mean discharges, 35 ft³/s (0.99 m³/s) 25,400 acre-ft/yr (31 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) Oct. 10, 1977, gage height, 14.0 ft (4.267 m); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22-23, 1965, reached a stage of 12.2 ft (3.72 m), from floodmarks, present site, datum used Jan. 1, 1966, to Sept. 30, 1968—discharge, 16,800 ft³/s (476 m³/s) at site 3.5 mi (5.6 km) upstream—by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s (110 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 10	1800	*16,000 453	14.0 4.267
Mar. 3	1100	8,670 246	12.09 3.685

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	8.0	2.0	2.0	20	540	13	3.4	.00	.00	173	11
2	.20	8.0	2.0	2.0	20	4550	11	9.2	.00	.00	198	9.2
3	.00	8.0	2.0	2.0	20	4870	11	3.4	.00	.00	21	9.4
4	.00	8.0	2.0	2.0	20	1270	9.9	3.8	.00	.00	36	11
5	.30	8.0	2.0	2.0	20	491	9.2	5.7	.00	.00	130	137
6	383	30	2.0	2.0	20	732	9.9	3.0	.00	.00	42	7.0
7	373	14	2.0	2.0	20	500	9.2	.95	.00	.00	22	5.5
8	219	10	2.0	2.0	20	234	8.5	.80	.00	.00	17	4.4
9	2070	9.0	2.0	2.0	20	122	8.5	.80	.00	.00	55	2.7
10	9980	8.0	2.0	2.0	20	84	8.5	.80	.00	.00	62	1.2
11	3000	7.0	2.0	2.0	25	65	8.5	1.0	.00	.00	6.4	.82
12	558	6.0	2.0	2.0	30	62	7.1	.95	.00	.18	60	.10
13	400	5.0	2.0	2.0	40	92	6.4	1.0	.00	.19	189	.17
14	200	4.0	2.0	50	100	97	5.7	.85	.00	3.0	80	.09
15	100	4.0	2.0	200	250	66	4.6	.85	.00	.55	86	.12
16	50	3.0	2.0	500	200	65	5.7	.85	.00	.85	61	.04
17	30	3.0	2.0	300	150	60	4.2	.65	.00	.00	58	3.2
18	20	3.0	2.0	100	100	55	4.6	.16	.00	20	53	4.6
19	15	2.0	2.0	50	80	40	5.0	.24	.00	4.6	131	1.6
20	10	2.0	2.0	30	70	35	4.2	.55	.00	.75	223	.25
21	9.0	2.0	2.0	20	60	30	5.7	.50	.00	.00	107	.00
22	9.0	2.0	2.0	15	50	25	4.6	.30	.00	.00	46	193
23	9.0	2.0	2.0	10	45	20	6.4	.09	.00	.117	32	85
24	8.0	2.0	2.0	10	44	20	4.6	.00	.00	.60	32	15
25	8.0	2.0	2.0	10	55	17	5.0	.00	.00	.50	32	8.3
26	8.0	2.0	2.0	10	43	13	6.4	.00	.00	.50	23	5.9
27	8.0	2.0	2.0	10	43	18	4.2	.00	.00	.09	20	4.2
28	8.0	2.0	2.0	10	43	15	5.0	.00	.00	2.6	44	.84
29	8.0	2.0	2.0	10	---	12	6.4	.00	.55	9.4	11	.38
30	8.0	2.0	2.0	10	---	9.9	4.6	.00	.00	9.2	10	.32
31	8.0	---	2.0	15	---	11	---	.00	---	107	27	---
TOTAL	17500.00	170.0	62.0	1386.0	1628	14220.9	207.6	39.84	.55	313.64	2087.4	522.33
MEAN	565	5.67	2.00	44.7	58.1	459	6.92	1.29	.018	10.1	67.3	17.4
MAX	9980	30	2.0	500	250	4870	13	9.2	.55	117	223	193
MIN	.00	2.0	2.0	2.0	20	9.9	4.2	.00	.00	.00	6.4	.00
AC-FT	34710	337	123	2750	3230	28210	412	79	1.1	622	4140	1040
CAL YR 1977	TOTAL	24384.60	MEAN	66.8	MAX	9980	MIN	.00	AC-FT	48370		
WTR YR 1978	TOTAL	38138.26	MEAN	104	MAX	9980	MIN	.00	AC-FT	75650		

NOTE.--No gage-height record Oct. 10 to Feb. 24.

09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1966 to September 1976.

WATER TEMPERATURES: January 1966 to September 1976.

SUSPENDED-SEDIMENT DISCHARGE: January 1966 to September 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT								
11...	1300	556	900	8.4	23.0	47000	--	--
26...	1400	8.3	1530	8.1	28.5	320	7.7	56
NOV								
29...	1500	2.0	1600	8.2	21.0	30	8.7	32
JAN								
30...	1200	3.0	1700	8.2	14.5	--	10.3	18
MAR								
02...	1200	4200	530	8.3	12.0	--	9.9	6200
24...	1300	9.6	1550	7.6	15.0	--	--	--
APR								
12...	1500	9.4	1650	8.1	16.0	--	9.6	37

DATE	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT									
11...	--	270	69	79	17	93	2.5	6.3	240
26...	140	420	240	120	30	180	3.8	8.9	220
NOV									
29...	57	490	320	140	35	210	4.1	9.4	210
JAN									
30...	40	560	350	170	34	170	3.1	10	--
MAR									
02...	22000	210	38	65	11	40	1.2	4.4	--
24...	--	480	320	140	31	170	3.4	11	--
APR									
12...	110	500	330	140	36	200	3.9	11	--

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT								
11...	1	240	13	1.3	21	599	590	.81
26...	0	490	91	2.0	33	1050	1070	1.43
NOV								
29...	0	560	140	1.9	35	1250	1240	1.70
JAN								
30...	--	510	120	1.7	34	1210	1180	1.65
MAR								
02...	--	100	10	.9	29	369	376	.50
24...	--	510	98	1.8	34	1050	1090	1.43
APR								
12...	--	540	130	1.8	32	1220	1190	1.66

GILA RIVER BASIN

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09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + URG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHURUS, DIS- SOLVED (MG/L AS P)	PHOS- PHURUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT											
11...	--	--	--	--	--	--	--	--	7.1	.07	--
26...	.60	.65	.01	--	--	--	.33	--	.32	.02	.03
NOV											
29...	.41	.54	.04	--	--	--	.15	--	.02	.02	.00
JAN											
30...	.81	--	.01	.81	.82	.40	.42	1.6	.03	.01	--
MAR											
02...	.18	--	.11	.42	.53	.13	.40	.71	8.9	.05	--
24...	.81	--	.05	.56	.61	.26	.35	1.4	.16	.00	--
APR											
12...	1.2	--	.01	1.6	1.6	1.2	.36	2.8	.05	.02	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
OCT										
11...	220	5	4000	200	430	--	0	0	260	0
26...	8	--	200	--	300	280	2	--	20	--
NOV										
29...	6	4	100	100	360	350	2	2	10	10
JAN										
30...	5	--	200	--	340	--	0	--	0	--
MAR										
02...	17	5	5500	200	430	--	22	0	330	0
24...	8	3	400	200	--	--	0	0	15	5
APR										
12...	4	--	200	--	380	--	2	--	5	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT									
11...	8	0	1800	6	3000	90	29	3	38000
26...	--	--	38	--	9500	40	19	--	510
NOV									
29...	2	2	10	2	240	20	6	4	40
JAN									
30...	--	--	5	--	550	--	6	--	90
MAR									
02...	--	0	2800	9	330000	0	2700	6	39000
24...	2	0	56	5	11000	360	15	5	190
APR									
12...	--	--	43	--	950	--	18	--	40

GILA RIVER BASIN

09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT									
11...	0	9.1	.2	2	1	0	0	2400	10
26...	0	.2	--	1	--	2	--	50	--
NOV									
29...	0	.0	.0	1	0	1	0	10	10
JAN									
30...	--	.3	--	0	--	0	--	20	--
MAR									
02...	0	.5	.0	2	0	2	0	3400	10
24...	5	.9	.0	1	1	0	0	70	10
APR									
12...	--	.0	--	1	--	0	--	100	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)
OCT				
26...	--	.00	2	--
NOV				
29...	1.9	.00	4	--
JAN				
30...	2.2	.00	1	--
MAR				
02...	380	13	3	0
APR				
12...	2.9	.00	1	2200

09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .002 MM
OCT 26...	1400	8.3	28.5	478	11	97	--
JAN 30...	1200	3.0	14.5	160	1.3	71	--
MAR 02...	1200	4200	12.0	43800	497000	--	18
APR 12...	1500	9.4	16.0	82	2.1	82	--
AUG 01...	1100	87	33.0	16200	3810	99	--
SEP 12...	1500	.10	34.0	220	.06	77	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
OCT 26...	--	--	--	--	--	--
JAN 30...	--	--	--	--	--	--
MAR 02...	19	35	74	92	99	100
APR 12...	--	--	--	--	--	--
AUG 01...	--	--	--	--	--	--
SEP 12...	--	--	--	--	--	--

DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
MAR 02...	1200	7	17	38	78	96	99	100

GILA RIVER BASIN

09473500 SAN PEDRO RIVER AT WINKEIMAN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE TIME	MAR 2, 78 1200	APR 12, 78 1500
TOTAL CELLS/ML	0	2200
DIVERSITY: DIVISION	0.0	0.8
..CLASS	0.0	0.8
..ORDER	0.0	1.1
...FAMILY	0.0	1.4
....GENUS	0.0	1.4

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
...CHLOROCOCCALES				
....SCENEDESMACEAE				
.....SCENEDESMUS	--	-	20	1
CHRYSOPHYTA				
..BACILLARIOPHYCEAE				
...CENTRALES				
....COSCINODISCACEAE				
.....CYCLOTELLA	--	-	40	2
..PENNALES				
...NAVICULACEAE				
....NAVICULA	--	-	60	3
...NITZSCHIACEAE				
....NITZSCHIA	--	-	1500#	70
...SURIRELLACEAE				
.....SURIRELLA	--	-	60	3
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...CHROCOCCALES				
....CHRUCCOCCAEAE				
.....AGMENELLUM	--	-	80	4
..HORMOGONALES				
...NOSTOCACEAE				
....ANABAENA	--	-	400#	18

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09474000 GILA RIVER AT KELVIN, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°06'10", long 110°58'33", in NE¼NW¼ sec.12, T.4 S., R.13 E., Pinal County, Hydrologic Unit 15050100, on left bank at Kelvin, 500 ft (152 m) downstream from Mineral Creek, 18 mi (29 km) downstream from San Pedro River, and 19 mi (31 km) upstream from Ashurst-Hayden Dam.

DRAINAGE AREA.--18,011 mi² (46,648 km²), of which 5,125 mi² (13,274 km²) is below Coolidge Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1911 to current year.

REVISED RECORDS.--WSP 329: 1911. WSP 609: 1916(M). WSP 629: 1914-17. WSP 1119: 1913, 1915, 1917(M), 1921(M), 1922-23, 1927(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,745.02 ft (531.882 m) National Geodetic Vertical Datum of 1929. Prior to June 15, 1914, and Dec. 1, 1914, to Aug. 31, 1915, nonrecording gages at several sites within 2 mi (3 km) of present site at different datums. Sept. 1, 1915, to Sept. 30, 1963, water-stage recorder at site 900 ft (270 m) downstream at datum 1.80 ft (0.549 m) lower.

REMARKS.--Records good. Large diversions above station for irrigation, of which about 90 percent is above Coolidge Dam. About 82,000 acres (332 km²) irrigated, a considerable portion by pumping from ground water. Flow regulated by San Carlos Reservoir 49 mi (79 km) upstream since Nov. 15, 1928. (See sta 09469000.) San Pedro River contributes major portion of unregulated inflow.

AVERAGE DISCHARGE (adjusted for storage in San Carlos Reservoir).--67 years, 454 ft³/s (12.86 m³/s), 328,900 acre-ft/yr (406 hm³/yr); median of yearly mean discharges, 300 ft³/s (8.50 m³/s), 217,000 acre-ft/yr (268 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 132,000 ft³/s (3,740 m³/s) Jan. 20, 1916, gage height, 19.5 ft (5.94 m), from rating curve extended above slope-area measurement at gage height 16.2 ft (4.94 m) for flood of Sept. 28, 1926; minimum daily, 0.1 ft³/s (0.003 m³/s) June 25, 1961.

Maximum discharge since completion of Coolidge Dam, 42,800 ft³/s (1,210 m³/s) Aug. 8, 1930, gage height, 12.6 ft (3.84 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s (113 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 11	1000	*16,100 456	20.40 6.218
Feb. 12	0500	4,130 117	10.73 3.271
Mar. 3	0100	6,680 189	13.23 4.033

Minimum daily, 8.2 ft³/s (0.23 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	20	10	57	236	1540	374	466	398	740	1480	800
2	20	17	12	41	285	5440	353	401	422	725	1550	800
3	13	15	30	34	193	6300	347	353	446	725	918	790
4	11	15	37	31	84	3280	341	335	450	715	918	795
5	8.2	15	39	30	68	1180	329	305	462	700	900	967
6	292	17	40	28	64	1330	326	296	506	685	795	810
7	903	46	42	26	91	1220	362	293	522	685	730	775
8	317	25	42	25	120	785	394	288	522	700	602	760
9	1360	18	42	24	114	482	415	290	562	715	615	720
10	3550	16	42	26	89	341	415	299	578	735	735	675
11	10400	14	52	29	2420	314	408	296	574	750	690	640
12	879	13	86	26	2110	335	390	296	566	810	700	625
13	288	13	89	24	682	546	356	296	558	828	805	606
14	158	13	91	24	702	510	398	290	558	828	735	586
15	105	12	94	286	1030	404	436	296	550	834	720	554
16	76	12	108	2740	635	278	443	329	558	834	710	514
17	65	12	117	566	429	245	446	380	558	822	700	474
18	56	12	125	730	214	236	446	401	558	840	700	462
19	56	12	126	297	172	224	466	412	558	834	750	443
20	44	12	126	190	150	208	486	412	566	822	760	443
21	42	11	125	304	137	197	502	412	590	822	735	418
22	37	11	127	168	129	190	502	412	590	822	725	467
23	31	10	127	104	118	264	502	415	598	1020	725	515
24	28	10	129	81	113	311	502	443	615	816	730	347
25	26	10	130	68	108	296	407	470	635	840	755	311
26	25	10	130	60	104	285	474	470	660	780	780	280
27	24	11	133	55	103	293	462	462	670	775	785	234
28	22	10	133	48	186	290	462	440	760	755	790	214
29	23	9.8	140	45	---	332	462	426	810	760	785	210
30	23	9.8	147	46	---	365	458	398	760	760	780	206
31	23	---	99	81	---	368	---	387	---	902	785	---
TOTAL	18935.2	431.6	2770	6294	10888	28389	12664	11469	17160	24379	24888	16441
MEAN	611	14.4	89.4	203	389	916	422	370	572	786	803	548
MAX	10400	46	147	2740	2420	6300	502	470	810	1020	1550	967
MIN	8.2	9.8	10	24	64	190	326	288	398	685	602	206
AC-FT	37560	856	5490	12480	21600	56310	25120	22750	34040	48360	49370	32610
CAL YR 1977 TOTAL	50208.90			MEAN 138	MAX 10400	MIN 20	AC-FT 99590					
WTR YR 1978 TOTAL	174708.80			MEAN 479	MAX 10400	MIN 8.2	AC-FT 346500					

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

WATER-QUALITY RECORDS

LOCATION.--Water samples collected at Florence-Kelvin road bridge 200 ft (60 m) upstream from Mineral Creek, and 700 ft (200 m) upstream from gaging station.

PERIOD OF RECORD.--December 1950 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1976.

WATER TEMPERATURES: December 1950 to September 1976.

SUSPENDED-SEDIMENT DISCHARGE: January 1958 to September 1976.

REMARKS.--No inflow from Mineral Creek between sampling point and gaging station except during infrequent periods of heavy local rains. Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT								
11...	1700	11500	980	8.3	22.5	72000	--	--
26...	1430	25	2200	8.0	22.0	25	8.8	18
DEC								
01...	1500	9.7	2700	7.9	13.0	10	10.8	15
JAN								
30...	1400	56	2300	8.1	13.0	--	10.7	80
MAR								
03...	1745	5600	475	8.3	11.0	--	--	--
JUL								
19...	1300	850	1040	8.1	23.0	--	7.7	410

DATE	STREP- TOCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
OCT									
11...	--	290	84	86	18	110	2.8	6.8	250
26...	80	670	440	180	54	240	4.0	9.8	280
DEC									
01...	43	840	580	220	70	280	4.2	9.7	310
JAN									
30...	290	710	470	200	51	240	3.9	11	--
MAR									
03...	--	190	57	59	10	30	1.0	4.1	160
JUL									
19...	K6600	210	72	60	15	130	3.9	4.8	--

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT								
11...	0	260	25	1.4	22	660	653	.90
26...	0	510	280	1.2	28	1470	1440	2.00
DEC								
01...	0	620	360	.9	26	1810	1740	2.46
JAN								
30...	--	510	310	.9	29	1560	1500	2.12
MAR								
03...	0	100	12	--	--	--	--	--
JUL								
19...	--	98	170	.8	29	586	592	.80

K Based on non-ideal colony count.

09474000 GILA RIVER AT KELVIN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + URG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. TOT IN BUT MAT (MG/KG AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHURUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, URTHU, DIS- SOLVED (MG/L AS P)
OCT 11...	--	--	--	--	--	--	--	--	--	4.2	.07	--
26...	.20	.18	.01	--	--	--	.03	--	--	.08	.07	.01
DEC 01...	.06	.04	.04	--	--	--	.24	--	--	.05	.03	.03
JAN 30...	.39	--	.01	.44	.45	.10	.35	--	.84	.02	.04	--
JUL 19...	.30	--	.01	1.4	1.4	.88	.52	58	1.7	.46	.14	--

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS)	BARIIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIIUM, DIS- SOLVED (UG/L AS BA)	BARIIUM, RECov. FM BOT- TOM MA- TERIAL (UG/G AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 11...	220	5	--	5000	300	--	450	--	1	1
26...	5	--	--	200	--	--	280	260	2	--
DEC 01...	4	3	--	100	100	--	310	270	3	2
JAN 30...	4	--	--	200	--	--	280	--	0	--
MAR 03...	13	--	--	1700	--	--	210	90	0	--
JUL 19...	6	--	3	300	--	70	210	--	2	--

DATE	CADMIUM RECov. FM BOT- TOM MA- TERIAL (UG/G AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	CHRO- MIUM, RECov. FM BOT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	CUPPER, RECov. FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 11...	--	290	10	--	250	0	2000	6	--	280000
26...	--	10	--	--	--	--	8	--	--	540
DEC 01...	--	10	20	--	1	1	17	4	--	350
JAN 30...	--	0	--	--	--	--	10	--	--	400
MAR 03...	--	160	--	--	--	--	1000	--	--	180000
JUL 19...	15	0	--	3	--	--	50	--	300	11000

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LEAD, RECOV. FM BUT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	MERCURY RECOV. FM BUT- TOM MA- TERIAL (UG/L AS HG)
OCT									
11...	40	28	3	--	36000	0	7.6	.2	--
26...	30	5	--	--	480	0	.0	--	--
DEC									
01...	20	12	5	--	850	0	.0	.0	--
JAN									
30...	--	5	--	--	650	--	.1	--	--
MAR									
03...	150	700	--	--	11000	0	1.1	--	--
JUL									
19...	--	27	--	0	400	--	.0	--	.1

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	SILVER, RECOV. FM BUT- TOM MA- TERIAL (UG/G AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	ZINC, RECOV. FM BUT- TOM MA- TERIAL (UG/G AS ZN)
OCT									
11...	2	1	--	0	0	--	2500	20	--
26...	0	--	--	1	--	--	10	--	--
DEC									
01...	0	0	--	1	0	--	10	10	--
JAN									
30...	0	--	--	0	--	--	40	--	--
MAR									
03...	3	--	--	2	--	--	1000	--	--
JUL									
19...	0	--	0	0	--	2	60	--	35

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	CYANIDE TOTAL IN BOT- TOM MA- TERIAL (UG/G AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)
OCT					
26...	--	.00	--	2	--
DEC					
01...	2.6	.00	--	2	--
JAN					
30...	3.2	.00	--	1	--
APR					
13...	--	--	--	--	200
JUL					
19...	10	.00	0	1	840

09474000 GILA RIVER AT KELVIN, AZ--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDIM- ENT, SUS- PENDED (MG/L)	SEDIM- ENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .002 MM
OCT							
11...	1700	11500	22.5	50000	550000	--	56
26...	1430	25	22.0	106	7.2	87	--
JAN							
30...	1400	56	13.0	140	21	53	--
MAR							
03...	1500	5970	12.0	9100	147000	--	41
MAY							
19...	1600	412	22.0	130	145	76	--
JUN							
06...	1300	488	23.0	130	171	77	--
SEP							
12...	1230	625	23.5	70	116	20	--
		SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM
OCT							
11...	72	94	99	99	99	100	--
26...	--	--	--	--	--	--	--
JAN							
30...	--	--	--	--	--	--	--
MAR							
03...	57	82	88	90	92	96	100
MAY							
19...	--	--	--	--	--	--	--
JUN							
06...	--	--	--	--	--	--	--
SEP							
12...	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM
OCT										
11...	1700	1	1	1	11	35	47	61	78	100
MAR										
03...	1500	--	--	1	7	31	62	83	91	100

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	APR 13, 78 1300	JUL 19, 78 1300
TOTAL CELLS/ML	200	840
DIVERSITY: DIVISION	0.5	1.5
..CLASS	0.5	1.5
..ORDER	1.2	1.7
...FAMILY	1.8	2.4
....GENUS	1.8	2.4

ORGANISM	CELLS /ML	PEN- CENT	CELLS /ML	PEN- CENT
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
..CHLOROCOCCALES				
...CHAKACIACEAE				
....CHAKACIUM	--	-	22	3
...DUCYSTACEAE				
...ANKISTRODESMUS	20	10	22	3
CHRYSOPHYTA				
..BACILLARIOPHYCEAE				
..CENTRALES				
...COSCINOUSCACEAE				
....CYCLOTELLA	40#	20	44	5
..PENNALES				
...ACHNANTHACEAE				
...COCCONEIS	--	-	88	11
...GOMPHONEMACEAE				
....GOMPHONEMA	--	-	22	3
...NAVICULACEAE				
....NAVICULA	80#	40	110	13
...NITZSCHIAEAE				
....NITZSCHIA	60#	30	88	11
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...HORMOGONALES				
...NOSTOCACEAE				
....ANABAENA	--	-	400#	47
EUGLENOPHYTA (EUGLENOIDS)				
..EUGLENOPHYCEAE				
..EUGLENALES				
...EUGLENACEAE				
....TRACHELOMONAS	--	-	44	5

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

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09475000 GILA RIVER AT ASHURST-HAYDEN DAM, NEAR FLORENCE, AZ

LOCATION.--Lat 33°05'59", long 111°14'46", in SW¼NW¼ sec.8, T.4 S., R.11 E., Pinal County, Hydrologic Unit 15050100, on left bank at Ashurst-Hayden Dam, 9 mi (14 km) northeast of Florence.

DRAINAGE AREA.--18,305 mi² (47,410 km²).

PERIOD OF RECORD.--July 1923 to current year (head on crest of dam only). Records of monthly diversions to Florence-Casa Grande Canal, January 1928 to current year.

GAGE.--Gila River: Water-stage recorder. Permanent crest of dam is 1,563.00 ft (476.402 m) National Geodetic Vertical Datum of 1929. For normal operation, crest is raised to 1,566.00 ft (477.317 m) by 3.0 ft (0.91 m) gates. Prior to December 1960, permanent crest at 1,562.6 ft (476.28 m) and normally raised about 1.2 ft (0.37 m) by use of flashboards. Prior to Apr. 12, 1932, nonrecording gage at same site and datum.

09475500. Florence-Casa Grande Canal: Water-stage recorder and Parshall flume at China Wash 2.6 mi (4.2 km) downstream from dam. Prior to Jan. 12, 1937, water-stage recorder 900 ft (270 m) downstream from dam.

REMARKS.--Records show daily mean head on dam and monthly diversions to Florence-Casa Grande Canal. Mean head is often not representative of flow passing dam because of sluiceway and crest-gate openings. Florence-Casa Grande Canal diverts water at dam supplemented by pumping from ground water for irrigation of land under 100,000-acre (400-km²) San Carlos project. Canal records adjusted for sluicing through the dam or from the canal and pumping (but not natural losses), to show water available at dam, except for flow through dam or spillover dam during times of flood runoff. Flow regulated by San Carlos Reservoir. (See sta 09469000.) Diversions above station for irrigation of about 82,000 acres (330 km²), a considerable portion of which is irrigated by pumping from ground water.

COOPERATION.--Records furnished by Bureau of Indian Affairs.

EXTREMES FOR PERIOD OF RECORD.--Maximum head on dam, 8.0 ft (2.44 m) Sept. 28, 1926; no flow over dam most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum head on dam, 4.05 ft (1.234 m) Oct. 11; no flow over dam for most of year.

DAILY MEAN HEAD, IN FEET, OVER DAM, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	a	0	0	0	0	0.33	0
2	0	0	0	0	0	a	0	0	0	0	.27	0
3	0	0	0	0	0	a	0	0	0	0	e	0
4	0	0	0	0	0	a	0	0	0	0	e	0
5	0	0	0	0	0	a	0	0	0	0	0	.04
6	0	0	0	0	0	a	0	0	0	0	0	.01
7	.69	0	0	0	0	a	0	0	0	0	0	0
8	0	0	0	0	0	a	0	0	0	0	0	0
9	.63	0	0	0	0	0	0	0	0	0	0	0
10	1.73	0	0	0	0	0	0	0	0	0	0	0
11	2.99	0	0	0	d.07	0	0	0	0	0	0	0
12	.26	0	0	0	a	0	0	0	0	0	0	0
13	0	0	0	0	a	0	0	0	0	0	0	0
14	0	0	0	0	a	0	0	0	0	0	0	0
15	0	0	0	.05	a	0	0	0	0	0	0	0
16	0	0	0	d1.0	a	0	0	0	0	0	0	0
17	0	0	0	a	0	0	0	0	0	0	0	0
18	0	0	0	a	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	.03	0	.03
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	-----	0	0	0	0	0	0	0
29	0	0	0	0	-----	0	0	0	0	0	0	0
30	0	0	0	0	-----	0	0	0	0	0	0	0
31	0	-----	0	0	-----	0	-----	0	-----	e	0	-----

a No gage-height record with flow over crest of dam.

d Doubtful gage-height record.

e Flow over crest of dam for short time, but mean for day less than 0.01 ft.

NOTE.--No gage-height record Jan. 16-31, Feb. 11 to Mar. 16.

GILA RIVER BASIN

09475000 GILA RIVER AT ASHURST-HAYDEN DAM, NEAR FLORENCE, AZ--Continued

MONTHLY DIVERSIONS TO FLORENCE-CASA GRANDE CANAL
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Discharge, in cubic feet per second			Diversion in acre-feet	Water sluiced above flume (acre-feet) †
	Maximum	Minimum	Mean		
October	1,170	3.0	182	11,190	95
November	37	1.4	9.44	562	0
December	162	5.0	79.2	4,870	0
CAL YR 1977	1,170	0	84.7	61,310	202
January	874	19	160	9,830	298
February	346	34	138	7,650	0
March	514	146	296	18,210	0
April	473	332	411	24,480	0
May	455	269	349	21,450	0
June	789	372	547	32,560	0
July	934	625	725	44,600	0
August	1,040	526	744	45,740	536
September	855	195	530	31,520	0
WTR YR 1978	1,170	1.4	349	252,700	929

† Included in first four columns of table.

NOTE.--Diversion records are those at canal gaging station at flume 2.6 mi (4.2 km) downstream from dam; values are adjusted for sluicing through the dam or from canal and pumping between intake and flume, but are not adjusted for natural losses. Adjusted values show water available at Ashurst-Hayden Dam, except for spill over the dam or water sluiced through the dam during times of flood runoff.

09479500 GILA RIVER NEAR LAVERN, AZ

LOCATION.--Lat 33°15'25", long 112°09'59", in SW 1/4 sec.16, T.2 S., R.2 E., Pinal County, Hydrologic Unit 15050100, in Gila River Indian Reservation, on left abutment of highway bridge, 2.1 mi (3.4 km) upstream from Santa Cruz River, 2.6 mi (4.2 km) south of Komatke, and 7.3 mi (11.7 km) south of Laveen.

DRAINAGE AREA.--20,615 mi² (53,393 km²), of which 696 mi² (1,803 km²) is in Mexico.

PERIOD OF RECORD.--January 1940 to September 1946, December 1947 to current year.

GAGE.--Water-stage recorder above concrete diversion dam. Datum of gage is 1,018.90 ft (310.561 m) National Geodetic Vertical Datum of 1929. Since July 9, 1969, supplementary water-stage recorder on overflow channel at highway bridge 0.2 mi (0.3 km) south at same datum. Oct. 16, 1940, to July 8, 1969, supplementary staff gage or water-stage recorder on overflow channel at datum 0.23 ft (0.070 m) lower.

REMARKS.--Records fair except those for period of no gage-height record, which are poor. Records include flow over dam and in overflow channel. Large diversions above station for irrigation. Some low flow is waste water from irrigated lands. Flow partly regulated by storage in San Carlos Reservoir. (See elsewhere in this report.)

AVERAGE DISCHARGE.--36 years (water years 1941-46, 1949-78), 22.1 ft³/s (0.626 m³/s), 16,010 acre-ft/yr (19.7 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s) 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,900 ft³/s (337 m³/s) Jan. 2, 1941, gage height, 9.33 ft (2.844 m); maximum gage height, 10.08 ft (3.072 m) Dec. 26, 1965; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 700 ft³/s (20 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 13	1545	*6,360 180	9.64 2.938	Feb. 17	0430	1,160 32.9	8.02 2.444
Jan. 18	1830	760 21.5	7.62 2.323	Mar. 6	1915	1,930 54.7	8.16 2.487

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	1.8	1.6	1.3	1.3	.27	.00	.00	.00	.28	1.0	1.0
2	.20	1.8	1.1	1.3	1.3	1.5	.00	.00	.00	.00	1.0	1.0
3	.00	1.9	1.7	1.8	1.3	.437	.00	.00	.00	.00	1.0	1.0
4	.20	1.9	1.8	1.9	1.3	.473	.00	.00	.00	.00	1.0	1.0
5	2.6	1.8	1.8	1.9	1.3	1120	.02	.00	.00	.00	1.0	1.0
6	6.4	1.8	1.9	1.9	1.3	1690	.00	.00	2.5	.00	1.0	1.0
7	15	1.9	1.8	2.1	1.3	1310	.00	.40	5.2	.00	1.0	1.0
8	11	1.9	1.8	2.6	1.3	.424	.00	1.7	5.8	.00	1.0	1.2
9	7.1	1.9	1.8	2.6	1.3	141	.26	1.9	4.8	.00	1.0	1.1
10	4.4	1.9	1.9	3.3	1.3	26	.59	1.9	.34	.00	1.0	1.7
11	177	1.8	1.7	4.2	1.3	1.4	.04	2.1	.00	.71	1.0	1.9
12	865	1.7	1.7	2.8	1.1	.53	.00	2.5	.23	.65	1.0	.59
13	2940	1.7	1.5	2.1	538	.81	.00	2.4	4.4	.36	1.0	.88
14	1160	1.7	1.2	1.7	1110	24	.00	2.3	.62	1.4	1.0	1.9
15	52	1.7	1.4	29	1160	26	.00	2.3	.00	.18	1.0	1.9
16	16	1.7	1.4	4.9	1200	16	.00	2.4	.00	.00	.00	1.9
17	13	1.8	1.2	202	1060	13	.00	2.1	.00	.00	.00	1.9
18	1.8	1.5	1.3	562	401	3.8	.00	2.0	.00	.00	.00	1.9
19	1.3	1.7	1.5	190	70	.06	.00	2.5	.00	.18	.00	1.9
20	1.3	1.8	1.8	57	7.1	.00	.00	2.6	.00	1.1	.00	2.3
21	1.7	1.9	1.5	53	.71	.00	.00	2.6	.00	1.3	.00	1.9
22	1.9	1.9	.97	6.7	.57	.00	.00	2.6	.00	5.0	.00	1.9
23	1.9	1.9	.63	10	.22	.00	.00	2.6	.00	2.0	.00	.17
24	1.9	2.0	.42	4.9	.00	.00	.28	2.6	.00	1.0	.00	.00
25	1.9	2.0	.42	3.0	.00	.00	.49	2.6	.00	.00	.00	.00
26	1.9	2.1	.42	2.1	.00	.00	.02	2.6	.00	.00	.00	.00
27	1.9	2.0	.42	1.9	.00	.00	.00	1.1	.00	.00	.00	.00
28	1.8	2.0	.64	1.9	.00	.00	.00	.03	.00	.00	.00	.00
29	1.9	1.9	1.5	1.7	---	.00	.00	.00	.00	.00	.00	.00
30	1.8	2.0	3.6	1.3	---	.00	.00	.00	.02	.00	.00	.00
31	1.9	---	.77	1.3	---	.00	---	.00	---	.00	.00	---
TOTAL	5297.90	55.4	43.14	1124.2	5583.00	6210.17	1.70	45.83	23.91	14.16	15.00	32.04
MEAN	171	1.85	1.34	36.3	199	200	.057	1.48	.80	.46	.48	1.07
MAX	2940	2.1	3.6	562	1200	1690	.59	2.6	5.8	5.0	1.0	2.3
MIN	.00	1.5	.42	1.3	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	10510	110	86	2250	11070	12320	3.4	91	47	28	30	64

CAL YR 1977 TOTAL 5735.60 MEAN 15.7 MAX 2940 MIN .00 AC-FT 11380
WTR YR 1978 TOTAL 18446.50 MEAN 50.5 MAX 2940 MIN .00 AC-FT 36590

NOTE.--No gage-height record July 22 to Sept. 8.

GILA RIVER BASIN

09480000 SANTA CRUZ RIVER NEAR LOCHIEL, AZ

LOCATION.--Lat 31°21'19", long 110°35'20", in SW¼ sec.11, T.24 S., R.17 E. (unsurveyed), Santa Cruz County, Hydrologic Unit 15050301, on southern border of Spanish land grant of San Rafael, near left bank on downstream side of pier of bridge on county road, 1.7 mi (2.7 km) upstream from international boundary and 2.5 mi (4.0 km) northeast of Lochiel.

DRAINAGE AREA.--82.2 mi² (212.9 km²).

PERIOD OF RECORD.--January 1949 to current year.

REVISED RECORDS.--WSP 1733: 1951.

GAGE.--Water-stage recorder. Altitude of gage is 4,620 ft (1,408 m), from topographic map.

REMARKS.--Records fair. Small diversions for irrigation of 200 acres (809,000 m²) above station, mostly by pumping from ground water.

AVERAGE DISCHARGE.--29 years, 3.22 ft³/s (0.091 m³/s), 2,330 acre-ft/yr (2.87 hm³/yr); median of yearly mean discharges, 1.9 ft³/s (0.054 m³/s), 1,400 acre-ft/yr (1.73 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s (340 m³/s) Oct. 9, 1977, gage height, 10.21 ft (3.112 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 9	0930	*12,000 340	10.21 3.112	Aug. 3	2115	632 17.9	5.42 1.652
July 22	1500	700 19.8	4.87 1.484				

No flow June 11, July 1-9 and 12-20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	7.1	2.5	1.8	1.2	3.9	2.3	1.2	.20	.00	.76	1.2
2	.14	7.0	2.5	1.8	1.2	3.9	2.4	1.2	.19	.00	.26	1.2
3	.17	6.5	2.5	1.8	1.1	2.5	2.3	1.2	.19	.00	.83	1.2
4	.20	6.0	2.5	1.6	1.1	2.0	2.2	.99	.19	.00	.25	1.2
5	.22	5.5	2.5	1.6	1.1	1.8	2.2	.65	.21	.00	1.4	1.2
6	.25	5.6	2.5	1.6	1.2	2.2	2.2	.56	.20	.00	1.1	1.2
7	1.1	6.5	2.5	1.4	1.2	1.9	1.9	.74	.19	.00	1.0	1.1
8	349	5.5	2.5	1.1	1.2	1.7	2.0	.75	.25	.00	1.0	1.1
9	1710	5.1	2.5	1.3	1.1	1.8	2.3	.42	.20	.00	.99	1.1
10	78	5.0	2.5	1.4	1.2	1.9	2.3	.57	.12	.20	.97	1.0
11	33	5.0	2.5	2.7	3.3	1.9	2.1	.58	.00	.16	1.0	1.0
12	19	5.0	2.9	1.7	4.4	2.3	2.0	.51	.17	.00	1.8	1.0
13	14	4.8	2.8	1.4	1.8	2.9	1.9	.46	.24	.00	1.5	.99
14	12	4.8	2.6	1.5	25	2.5	1.8	.54	.27	.00	1.4	.98
15	11	4.5	2.6	4.6	22	2.3	1.8	.50	.28	.00	1.4	.97
16	11	3.9	2.6	3.1	3.9	2.1	1.8	.34	.17	.00	1.4	.97
17	21	3.8	2.6	1.9	2.6	2.2	1.8	.28	.22	.00	1.5	.96
18	17	3.8	2.5	1.7	2.2	2.3	1.8	.32	.25	.00	1.5	.93
19	11	3.9	2.4	1.6	2.1	2.4	1.6	.26	.28	.00	1.5	.92
20	9.2	4.1	2.2	2.0	1.8	2.4	1.5	.21	.28	.00	1.5	.92
21	9.1	3.9	1.8	2.0	1.7	2.3	1.5	.22	.30	.14	1.5	1.6
22	8.7	3.9	2.0	1.8	1.7	2.3	1.5	.26	.33	104	1.5	1.6
23	8.5	3.8	2.0	1.4	1.7	2.3	1.5	.22	.30	1.8	7.3	.94
24	8.2	3.8	2.2	1.6	1.7	2.3	1.5	.24	.30	.82	1.7	.82
25	8.2	3.6	2.1	1.5	1.7	2.2	1.4	.24	.28	1.7	1.4	.83
26	8.2	3.6	2.4	1.5	1.7	2.3	1.3	.22	.28	18	1.3	.81
27	7.7	3.6	2.6	1.2	2.1	2.3	1.3	.22	.30	30	1.3	.80
28	7.4	2.9	3.0	1.2	2.6	2.3	1.3	.23	.33	.86	1.2	.80
29	8.1	2.6	2.2	1.2	---	2.3	1.2	.23	.35	.70	1.2	.79
30	7.4	2.3	1.9	1.2	---	2.2	1.2	.22	.18	2.4	1.2	.77
31	6.8	---	2.0	1.5	---	2.3	---	.23	---	1.7	1.1	---
TOTAL	2385.68	137.4	75.1	53.7	95.6	72.0	53.9	14.81	7.05	164.28	176.42	50.30
MEAN	77.0	4.58	2.42	1.73	3.41	2.32	1.80	.48	.24	5.30	5.69	1.68
MAX	1710	7.1	3.0	4.6	25	3.9	2.4	1.2	.35	104	83	16
MIN	.10	2.3	1.8	1.1	1.1	1.7	1.2	.21	.00	.00	.76	.77
AC-FT	4730	273	149	107	190	143	107	29	14	326	350	100

CAL YR 1977 TOTAL 3026.62 MEAN 8.29 MAX 1710 MIN .04 AC-FT 6000
WTR YR 1978 TOTAL 3286.24 MEAN 9.00 MAX 1710 MIN .00 AC-FT 6520

09480500 SANTA CRUZ RIVER NEAR NOGALES, AZ

LOCATION.--Lat 31°20'40", long 110°51'03", in NW¼ sec.18, T.24 S., R.15 E. (unsurveyed), Santa Cruz County, Hydrologic Unit 15050301, in Spanish land grant of Maria Santisima del Carmen, on left bank 0.8 mi (1.3 km) downstream from international boundary and 5.5 mi (8.8 km) east of Nogales.

DRAINAGE AREA.--533 mi² (1,380 km²), of which 348 mi² (901 km²) is in Mexico.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to November 1907 and April 1909 to December 1912 (discharge measurements and fragmentary gage-height record), January 1913 to June 1922 (October 1915 to September 1916 monthly discharge only), May 1930 to December 1933, July 1935 to current year. Water-year estimates for 1913, 1915-16, 1920-22, 1930, 1934-35, published in WSP 1733.

REVISED RECORDS.--WSP 959: 1935(M). WSP 1213: 1915-16, 1930-32(M), 1934(M), 1936-37(M). WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,702.54 ft (1,128.534 m) National Geodetic Vertical Datum of 1929 (levels by International Boundary and Water Commission). Prior to June 30, 1922, nonrecording gage or water-stage recorder at various sites 5 to 6 mi (8 to 10 km) downstream at different datums.

REMARKS.--Records fair. Diversions above station of about 4,600 acre-ft/yr (5.67 hm³/yr) for irrigation of about 2,300 acres (9.3 km²) in Mexico. Diversion 19 mi (31 km) upstream for municipal supply of city of Nogales, Sonora, began in 1949; diversion in 1968 totaled 3,500 acre-ft/yr (4.32 hm³/yr).

AVERAGE DISCHARGE.--59 years (water years 1913-22, 1930-78), 24.4 ft³/s (0.691 m³/s), 17,680 acre-ft/yr (21.8 hm³/yr); median of yearly mean discharges, 19 ft³/s (0.54 m³/s), 13,800 acre-ft/yr (17.0 hm³/yr).

EXTREMES FOR PERIOD OF 1930-78.--Maximum discharge, 31,000 ft³/s (878 m³/s) Oct. 9, 1977, gage height, 15.5 ft (4.72 m), from rating curve extended above 1,660 ft³/s (47.0 m³/s) on basis of slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,000 ft³/s (57 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 8	1730	19,300 547	12.5 3.81	Aug. 1	1730	4,480 127	7.52 2.292
Oct. 9	1630	*31,000 878	15.5 4.72	Aug. 2	2030	2,830 80	6.61 2.015

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	44	25	15	15	600	31	15	.30	.00	466	2.2
2	.10	40	24	15	14	740	25	15	.30	.00	535	3.5
3	.10	39	24	16	14	346	25	12	.30	.00	414	2.5
4	.10	38	24	17	13	196	28	9.0	.20	.00	199	3.9
5	.10	37	23	17	13	165	34	8.0	.20	.00	98	102
6	8.1	37	22	17	16	210	31	7.7	.20	.00	52	33
7	214	39	22	18	16	245	32	8.0	.20	.00	37	5.1
8	10200	39	20	18	14	158	30	7.4	.10	.00	33	3.7
9	13200	38	20	18	14	127	34	7.0	.10	.00	27	6.7
10	1910	37	20	19	15	112	33	6.4	.10	2.0	25	5.1
11	504	36	19	19	90	96	30	6.1	.10	.10	36	3.7
12	298	36	19	20	98	112	29	6.1	.10	.00	170	2.5
13	200	36	18	20	72	240	27	5.1	.00	.00	110	1.6
14	165	36	18	21	295	220	25	4.6	.00	.00	33	1.1
15	141	33	18	21	196	134	24	4.1	.00	.00	20	.90
16	124	30	17	21	134	101	24	4.4	.00	.00	16	.90
17	127	30	17	20	107	81	25	3.5	.00	.00	14	1.0
18	121	29	16	20	93	74	23	3.0	.00	.00	12	.90
19	101	28	16	18	70	66	21	2.5	.00	2.4	11	1.0
20	88	28	16	20	61	59	21	2.5	.00	.00	16	1.0
21	79	28	14	19	52	55	21	2.1	.00	.00	30	32
22	76	28	15	21	44	54	19	2.1	.00	2.4	14	2.0
23	68	27	15	19	43	50	20	1.7	.00	7.6	12	2.5
24	64	26	15	19	39	49	20	1.4	.00	.40	12	1.3
25	55	27	16	19	38	49	19	1.2	.00	.00	11	1.1
26	52	25	17	18	38	44	18	1.0	.00	1.7	7.0	1.1
27	52	26	18	18	43	41	18	.80	.00	9.2	4.4	.80
28	49	27	21	18	93	39	18	.70	.00	.20	2.8	.80
29	49	27	17	18	---	40	17	.50	.00	.00	3.0	.80
30	49	25	16	18	---	39	15	.40	.00	.00	2.3	.80
31	44	---	17	18	---	38	---	.30	---	131	2.2	---
TOTAL	28038.50	976	579	575	1750	4580	737	149.40	2.20	157.00	2424.7	225.50
MEAN	904	32.5	18.7	18.5	62.5	148	24.6	4.82	.073	5.06	78.2	7.52
MAX	13200	44	25	21	295	740	34	15	.30	131	535	102
MIN	.00	25	14	15	13	38	15	.30	.00	.00	2.2	.80
AC-FT	55610	1940	1150	1140	3470	9080	1460	296	4.4	311	4810	447
CAL YR 1977	TOTAL	31568.60	MEAN	86.5	MAX	13200	MIN	.00	AC-FT	62620		
WTR YR 1978	TOTAL	40194.30	MEAN	110	MAX	13200	MIN	.00	AC-FT	79730		

GILA RIVER BASIN

09480500 SANTA CRUZ RIVER NEAR NOGALES, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1970 to current year.

REMARKS.--Records of temperature, specific conductance, and suspended-sediment concentration of individual samples available in district office at Tucson, Ariz.

MONTHLY AND ANNUAL SUMMARY OF SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Suspended-sediment discharge (tons)
October 1977	1,700,000
November	351
December	86.9
January 1978	82.1
February	6,280
March	69,700
April	177
May	56.1
June	0.9
July	1,590
August	28,600
September	1,650
Total for year	1,808,574.0

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM
JUL 27...	1000	10	21.0	25100	678	49	63	84	98	99	100
31...	1000	50	21.0	24500	3310	46	60	83	98	100	--

09481710 SANTA CRUZ RIVER AT RIO RICO, AZ

LOCATION.--Lat 31°28'13", long 110°59'30", in NW¼NW¼SW¼ sec.35, T.22 S., R.13 E., Santa Cruz County, Hydrologic Unit 15050301, in Spanish land grant of Luis Maria Baca (float No. 3), at bridge at community of Rio Rico, 1.6 mi (2.6 km) downstream from Sonoita Creek, 1.6 mi (2.6 km) northwest of site of abandoned settlement of Calabasas, 9 mi (14.5 km) north of Nogales, Ariz., and 16.5 mi (26.5 km) downstream from international boundary.

DRAINAGE AREA.--1,004 mi² (2,600 km²).

PERIOD OF RECORD.--January 1976 to current year.

REMARKS.--Streamflow ungaged. Most low flow is effluent from Nogales International Sewage Treatment Plant located approximately 2.5 mi (4.0 km) upstream.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NUNCAK- BUNATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV 04...	1300	30	560	8.4	20.0	1800	7.8	44000	130	0	41	7.6
DEC 02...	1400	19	600	8.0	22.0	160	7.5	6200	200	26	63	10
JAN 26...	1400	12	650	8.1	18.0	--	7.2	K430	210	38	65	11

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
NOV 04...	72	2.7	6.2	220	1	54	29	.6	34	349	368	.47
DEC 02...	43	1.3	6.9	210	0	68	28	.5	36	359	381	.49
JAN 26...	48	1.5	8.0	--	--	86	31	.5	33	398	385	.54

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + URG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHURUS, DIS- SOLVED (MG/L AS P)	PHOS- PHURUS, ORTHO, DIS- SOLVED (MG/L AS P)
NOV 04...	2.7	2.8	.04	--	--	--	.35	--	2.2	.56	.56
DEC 02...	3.9	3.9	.04	--	--	--	.37	--	2.0	1.5	1.4
JAN 26...	2.9	--	2.8	5.7	8.5	4.7	3.8	11	1.4	1.3	--

K Based on non-ideal colony count.

GILA RIVER BASIN

09481710 SANTA CRUZ RIVER AT RIO RICO, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
NOV 04...	20	900	150	90	10	60	220	4500	60	91
DEC 02...	10	200	110	90	2	20	39	11000	50	26
JAN 26...	6	200	150	--	4	10	20	5300	--	28
DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	
NOV 04...	2600	0	.7	1	2	380	--	.00	--	
DEC 02...	670	0	.0	0	2	50	10	.00	2	
JAN 26...	460	--	.0	3	0	60	13	.00	3	

09482000 SANTA CRUZ RIVER AT CONTINENTAL, AZ

LOCATION.--Lat 31°51'12", long 110°58'40", in NE¼NE¼ sec.23, T.18 S., R.13 E. (unsurveyed), Pima County, Hydrologic Unit 15050301, in Spanish land grant of San Ignacio de la Canoa, near left bank on downstream side of pier of highway bridge at Continental.

DRAINAGE AREA.--1,662 mi² (4,305 km²), of which 395 mi² (1,023 km²) is in Mexico.

PERIOD OF RECORD.--May 1940 to December 1946, October 1951 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,832.28 ft (863.279 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 8, 1965, at datum 4.07 ft (1.241 m) higher.

REMARKS.--Records poor. Irrigation above station of about 12,500 acres (50.6 km²) including about 2,300 acres (9.3 km²) in Mexico, mostly by pumping from ground water.

AVERAGE DISCHARGE.--33 years, 19.8 ft³/s (0.561 m³/s), 14,350 acre-ft/yr (17.7 hm³/yr); median of yearly mean discharges, 11 ft³/s (0.31 m³/s), 8,000 acre-ft/yr (9.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,500 ft³/s (750 m³/s) Oct. 9, 1977, gage height, 16.70 ft (5.090 m), from rating curve extended above 18,000 ft³/s or 510 m³/s on basis of velocity-area study and runoff comparison with downstream station; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended as explained above) and peak discharges above base of 2,000 ft³/s (57 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1530	2,710 76.7	6.68 2.036	July 27	0100	3,900 110	5.40 1.646
Oct. 9	1530	*26,500 750	16.70 5.090	Aug. 1	2030	5,900 167	6.11 1.862
June 28	2100	2,730 77.3	4.73 1.442	Aug. 11	1930	9,090 257	7.28 2.219
July 25	2000	4,700 133	5.60 1.707				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	340	.00	.00	.00	.00	820	.00
2	.00	.00	.00	.00	.00	1030	.00	.00	.00	.00	414	.00
3	.00	.00	.00	.00	.00	704	.00	.00	.00	.00	278	.00
4	65	.00	.00	.00	.00	304	.00	.00	.00	.00	55	.00
5	24	.00	.00	.00	.00	142	.00	.00	.00	.00	.00	.00
6	441	.00	.00	.00	.00	175	.00	.00	.00	.00	.00	.00
7	499	.00	.00	.00	.00	258	.00	.00	.00	.00	.00	.00
8	3810	.00	.00	.00	.00	158	.00	.00	.00	.00	87	.00
9	13200	.00	.00	.00	.00	76	.00	.00	.00	.00	.00	.00
10	4720	.00	.00	2.9	1.10	36	.00	.00	.00	.00	.00	.00
11	450	.00	.00	.80	137	12	.00	.00	.00	.00	715	.00
12	190	.00	.00	.00	358	7.7	.00	.00	.00	.00	28	.00
13	10	.00	.00	.00	280	236	.00	.00	.00	.00	6.4	.00
14	1.0	.00	.00	.00	289	325	.00	.00	.00	.00	2.6	.00
15	.00	.00	.00	.00	539	200	.00	.00	.00	.00	.00	.50
16	.00	.00	.00	.00	258	70	.00	.00	.00	.00	.00	.40
17	.00	.00	.00	.00	102	10	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	20	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	93	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	95	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	241	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	157	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	450	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	180	1.0	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	5.3	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	23410.00	.00	.00	193.00	1984.10	4083.70	.00	.00	185.30	849.00	2406.00	.90
MEAN	755	.000	.000	6.23	70.9	132	.000	.000	6.18	27.4	77.6	.030
MAX	13200	.00	.00	95	539	1030	.00	.00	180	450	820	.50
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	46430	.00	.00	383	3940	8100	.00	.00	368	1680	4770	1.8

CAL YR 1977	TOTAL	26571.50	MEAN	72.8	MAX	13200	MIN	.00	AC-FT	52700
WTR YR 1978	TOTAL	33112.00	MEAN	90.7	MAX	13200	MIN	.00	AC-FT	65680

GILA RIVER BASIN

09482400 AIRPORT WASH AT TUCSON, AZ

LOCATION.--Lat 32°09'09", long 110°58'52", in NE¼SE¼ sec.2, T.15 S., R.13 E., Pima County, Hydrologic Unit 15050301, 25 ft (7.6 m) upstream from Santa Clara Avenue, 0.7 mi (1.1 km) upstream from mouth, 4.3 mi (6.9 km) downstream from confluence of North and South Forks, and 4.9 mi (7.9 km) south of city hall in Tucson.

DRAINAGE AREA.--23.0 mi² (59.6 km²).

PERIOD OF RECORD.--September 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,460 ft (750 m), from topographic map. Prior to July 1, 1974, at site 1.8 mi (2.9 km) upstream at different datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--13 years, 0.41 ft³/s (0.012 m³/s), 296 acre-ft/yr (365,000 m³/yr); median of yearly mean discharges, 0.34 ft³/s (0.010 m³/s), 250 acre-ft/yr (310,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 896 ft³/s (25.4 m³/s) Sept. 25, 1976, gage height, 2.64 ft (0.805 m), from rating curve extended above 60 ft³/s (1.7 m³/s) on basis of critical-depth computations; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 150 ft³/s (4.2 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Aug. 11	2030	160 4.53	1.66 .506
Sept. 21	1745	*405 11.5	2.08 .634

No flow for most of the year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	8.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.20	.02	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.10	1.3	.00	.00	.00	.00	.00	8.3	.00
12	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.30	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	2.5	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	24
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	1.6	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.10	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	8.60	.00	1.60	3.40	1.32	.20	.00	.00	.00	.10	11.60	24.10
MEAN	.28	.000	.052	.13	.047	.006	.000	.000	.000	.003	.37	.80
MAX	8.3	.00	1.6	2.5	1.3	.20	.00	.00	.00	.10	8.3	24
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	17	.00	3.2	7.7	2.6	.4	.00	.00	.00	.2	23	48
CAL YR 1977	TOTAL 48.58	MEAN .13	MAX 13	MIN .00	AC-FT 96							
WTR YR 1978	TOTAL 51.42	MEAN .14	MAX 24	MIN .00	AC-FT 102							

09482500 SANTA CRUZ RIVER AT TUCSON, AZ

LOCATION.--Lat 32°13'16", long 110°58'52", in NE¼NE¼ sec.14, T.14 S., R.13 E., Pima County, Hydrologic Unit 15050301, on downstream side of center pier of Congress Street Bridge in Tucson.

DRAINAGE AREA.--2,222 mi² (5,755 km²), of which 395 mi² (1,023 km²) is in Mexico, adjusted for 15.2 mi² (39.4 km²) of Tucson Arroyo drainage area contributing to this station effective July 1956.

PERIOD OF RECORD.--October 1905 to current year (monthly discharge only, January 1907 to September 1912, January to September 1914).

REVISED RECORDS.--WSP 859: 1915(M). WSP 1283: Drainage area. WSP 1313: 1939(M).

GAGE.--Water-stage recorder, and, since June 27, 1978, crest-stage gage. Datum of gage is 2,317.82 ft (706.472 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1929, nonrecording gages or reference points for measuring to water surface at various places on bridge at same site and various datums. Nov. 27, 1929, to Oct. 27, 1970, water-stage recorder at present site: at datum 9.08 ft (2.768 m) higher Nov. 27, 1929, to June 18, 1958; at datum 5.08 ft (1.548 m) higher June 18, 1958, to May 21, 1963; at datum 0.62 ft (0.189 m) lower May 21, 1963, to Oct. 27, 1970. No gage Oct. 27, 1970, to Oct. 1, 1971, and Oct. 10, 1977, to Feb. 14, 1979.

REMARKS.--Records poor. Irrigation above station of about 26,000 acres (105 km²), including about 2,300 acres (9.31 km²) in Mexico, mostly by pumping from ground water. Ground water is also pumped above the station for municipal supply and mining. Since October 1969 all flow past station is published, including waste water when known.

AVERAGE DISCHARGE.--73 years, 21.9 ft³/s (0.620 m³/s), 15,870 acre-ft/yr (19.6 hm³/yr); median of yearly mean discharges, 14 ft³/s (0.40 m³/s), 10,100 acre-ft/yr (12 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s (671 m³/s) Oct. 10, 1977, gage height, 21.8 ft (6.64 m), from flood-marks, from rating curve extended above 4,000 ft³/s (113 m³/s) on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 4,000 ft³/s or 113 m³/s on basis of slope area measurement of peak flow) and peak discharges above base of 1,700 ft³/s (48 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 10	0100†	*23,700 671	21.8‡ 6.64
Aug. 2	0200	5,030 142	7.35 2.240
Aug. 12	0100	2,260 64.0	6.25 1.905

No flow for many days.

† About

‡ From floodmarks

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	178	.00	6.6	.00	.00	32	.00
2	.00	.00	.00	.00	.00	1090	.00	.00	.00	.00	1040	.00
3	.00	.00	.00	.00	.00	654	.00	.00	.00	.00	16	.00
4	.00	.00	.00	.00	.00	220	.00	.00	.00	.00	206	.00
5	.00	.00	.00	.00	.00	50	.00	.00	.00	.00	.10	.90
6	800	.00	.00	.00	.00	43	.00	28	.00	.00	.00	.00
7	650	.00	.00	.00	.00	143	.00	1.2	.00	.00	.00	.00
8	530	.00	.00	.00	.00	99	.00	.00	.00	1.4	4.0	.00
9	5360	.00	.00	.00	.00	18	.00	.00	.00	.00	1.2	.00
10	11200	.00	.00	100	5.0	24	.00	.00	.00	120	.00	.00
11	700	.00	.00	20	100	14	.00	.00	.00	.00	21	.00
12	100	.00	.00	.00	400	64	.00	.00	.00	.00	225	.00
13	3.0	.00	.00	.00	230	153	.00	.00	.00	.00	.10	.00
14	1.0	.00	.00	.00	230	173	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	300	403	154	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	20	277	81	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	60	35	14	.00	.00	.00	3.3	2.2	.00
18	.00	.00	.00	10	11	.00	.00	.00	.00	.40	.00	.00
19	.00	.00	.00	.00	1.7	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	3.0	.00	.00	.00	.00	.00	30	.00	.00
21	.00	.00	.00	50	.00	.00	.00	.00	.00	.10	.00	38
22	.00	.00	.00	50	.00	.00	.00	.00	.00	.00	.00	4.6
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.3	.50	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	35	.00	.00
27	.00	.00	20	.00	.00	.00	.00	.00	8.7	248	.00	.00
28	.00	.00	100	.00	1.6	.00	.00	.00	.00	.30	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	114	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	17	60	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	70	.00	---
TOTAL	20344.00	.00	120.00	815.00	1834.30	3176.00	.00	36.00	159.70	572.00	1548.60	43.50
MEAN	656	.000	3.8†	26.3	65.5	102	.000	1.16	4.66	18.5	50.0	1.45
MAX	11200	.00	100	500	483	1090	.00	28	114	248	1040	38
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	40350	.00	238	1620	3640	6300	.00	71	277	1130	3070	86
CAL YR 1977 TOTAL	23035.50		MEAN 63.1	MAX 11200	MIN .00	AC-FT 45690						
WTR YR 1978 TOTAL	28629.10		MEAN 78.4	MAX 11200	MIN .00	AC-FT 56790						

GILA RIVER BASIN

09482950 RAILROAD WASH AT TUCSON, AZ

LOCATION.--Lat 32°12'48", long 110°56'45", in SE¼NE¼ sec.18, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050301, on right bank 200 ft (61 m) upstream from Winsett Street in Tucson.

DRAINAGE AREA.--1.9 mi² (4.9 km²).

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 2,430 ft (741 m), from topographic map.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 312 ft³/s (8.84 m³/s) July 11, 1976, gage height, 3.15 ft (0.960 m); no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s (2.8 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1300	*223 6.32	3.42 1.042	Dec. 28	0825	163 4.62	2.94 0.896
Oct. 9	0700	128 3.62	2.65 0.808	Aug. 4	1935	180 5.10	3.08 0.939

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	6.1	.80	.00	.04	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.2	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00
6	16	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	5.5	.18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.12	.00	.00	.00	.00	.00	.00	1.0	.00	1.0	.00	.00
9	6.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	2.2	.00	.00	.00	.00	.00	5.1	.00
12	.00	.00	.00	.00	5.5	1.3	.00	.00	.00	.00	3.7	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.44	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	2.6	.00	.00	.00	.00	.00	.00	1.3	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.70
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	16	.00	.85	.00	.00	.00	.00	.00	.00	.00
29	5.0	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	3.1	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.72	.00	---
TOTAL	33.52	.34	16.00	15.89	15.09	2.10	.00	1.04	.00	7.62	17.42	.70
MEAN	1.08	.011	.52	.51	.54	.068	.000	.034	.000	.25	.56	.023
MAX	16	.18	16	13	6.1	1.3	.00	1.0	.00	3.1	7.2	.70
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	66	.7	32	32	30	4.2	.00	2.1	.00	15	35	1.4

CAL YR 1977 TOTAL 116.06 MEAN .32 MAX 20 MIN .00 AC-FT 230
WTR YR 1978 TOTAL 109.72 MEAN .30 MAX 16 MIN .00 AC-FT 218

NOTE.--No gage-height record Aug. 18 to Sept. 22.

09483000 TUCSON ARROYO AT VINE AVENUE, TUCSON, AZ

LOCATION.--Lat 32°13'00", long 110°56'54", in SW¼NE¼ sec.18, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050301, on right bank at Vine Avenue in Tucson, 0.2 mi (0.3 km) downstream from Arroyo Chico.

DRAINAGE AREA.--8.2 mi² (21.2 km²) since June 1956. Prior to August 1945, 27.0 mi² (69.9 km²). See WSP 1733 for history of progressive reduction of drainage area by flood-control diversion structures.

PERIOD OF RECORD.--June 1944 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,411.9 ft (735.15 m) National Geodetic Vertical Datum of 1929 (city of Tucson bench mark).

REMARKS.--Records fair. A flood-control project, at upper end of natural basin, diverts runoff from 3.6 mi² (9.3 km²) into Lakeside Reservoir (Atterbury) which is in Pantano Wash drainage area. Another flood-control project diverts runoff from 15.2 mi² (39.4 km²) near the upper end of basin into a flood-control detention reservoir in SE¼ sec.29, T.14 S., R.14 E., from which reservoir water is released to Julian Wash, which enters Santa Cruz River upstream from Tucson Arroyo. Since October 1969, all flow past the station is published.

AVERAGE DISCHARGE.--8 years (water years 1945-52), 0.68 ft³/s (0.019 m³/s), 493 acre-ft/yr (608,000 m³/yr), representing flow from 23.4 mi² (60.6 km²); 22 years (water years 1957-78), 0.89 ft³/s (0.025 m³/s), 645 acre-ft/yr (795,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s (142 m³/s) Aug. 22, 1961, gage height, 10.35 ft (3.155 m), from rating curve extended above 2,100 ft³/s (60 m³/s) on basis of slope-area measurements at gage heights 10.13 and 10.35 ft (3.088 and 3.155 m); no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 300 ft³/s (8.5 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1300	*764 21.6	6.45 1.966	July 25	Unknown	396 11.2	5.53 1.686
Oct. 9	0700	402 11.4	5.48 1.670	July 30	2200	619 17.5	6.10 1.859
Dec. 28	0845	734 20.8	6.38 1.945	Aug. 4	1945	639 18.1	6.15 1.875
Jan. 15	0900	390 11.0	5.51 1.679	Sept. 21	1645	551 15.6	5.93 1.807
Feb. 1	0215	340 9.63	5.36 1.634				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	15	9.6	.00	.44	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.30	.00	.01	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.93	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	.00
5	.00	.00	.00	.00	.00	.51	.00	.00	.00	.00	1.1	.00
6	46	.73	.00	.00	.00	1.7	.00	6.7	.00	.00	.00	.00
7	17	1.5	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00
8	.67	.00	.00	.00	.00	.00	.00	.00	.00	3.6	.00	.00
9	24	.00	.00	.00	.00	.00	.00	.00	.00	1.3	.00	.00
10	.00	.00	.00	19	.00	.29	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	11	3.0	.06	.00	.00	.00	.00	8.2	.00
12	.00	.00	.00	.00	7.0	7.8	.00	.00	.00	.00	4.8	.00
13	.00	.00	.00	.00	.00	.65	.00	.00	.00	.00	.30	.00
14	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.32	.00	.00
15	.00	.00	.00	68	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	14	.00	.00	.00	.00	.00	.00	8.4	.00
18	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00	.01	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	5.9	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	35
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	15	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.67	.00	.00	.00	.00	.00	.59	.00	.00	.00
28	.00	.00	72	.00	3.8	.00	.00	.00	.00	.00	.00	.00
29	4.3	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.27	---	.00	.00	.00	.00	24	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	1.7	.00	---
TOTAL	91.97	2.03	72.67	118.71	29.80	21.84	.00	7.35	.59	45.92	48.81	35.06
MEAN	2.97	.068	2.34	3.83	1.06	.70	.000	.24	.020	1.48	1.57	1.17
MAX	46	1.3	72	68	15	9.6	.00	6.7	.59	24	26	35
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	182	4.0	144	235	59	43	.00	15	1.2	91	97	70

CAL YR 1977 TOTAL 372.16 MEAN 1.02 MAX 73 MIN .00 AC-FT 738
WTR YR 1978 TOTAL 474.75 MEAN 1.30 MAX 72 MIN .00 AC-FT 942

GILA RIVER BASIN

09483010 HIGH SCHOOL WASH AT TUCSON, AZ

LOCATION.--Lat 32°13'28", long 110°56'48", in SE¼SE¼ sec.7, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050301, on right bank 200 ft (61 m) upstream from Cherry Avenue in Tucson.

DRAINAGE AREA.--0.95 mi² (2.46 km²).

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder and concrete flume Altitude of gage is 2,415 ft (736 m), from topographic map.

REMARKS.--Entire drainage basin is an urban residential area.

AVERAGE DISCHARGE.--5 years, 0.084 ft³/s (0.002 m³/s), 60.9 acre-ft/yr (75,100 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 195 ft³/s (5.52 m³/s) July 16, 1975, gage height, 3.21 ft (0.978 m); no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 50 ft³/s (1.4 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 7	1900	*178 5.04	3.06 0.933	July 30	2230	111 3.14	2.38 0.725
Oct. 9	0630	88 2.49	2.10 0.640	Aug. 11	0145	74 2.10	1.92 0.585
Feb. 1	0200	87 2.46	2.09 0.637	Aug. 17	2100	89 2.52	2.12 0.646

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	2.4	.92	.00	.06	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
5	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00
6	.91	.54	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	6.8	.29	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
8	1.4	.00	.00	.00	.02	.00	.01	.00	.00	.58	.16	.00
9	2.4	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
10	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.50	1.7	.99	.00	.00	.00	.00	2.0	.00
12	.00	.00	.00	.00	2.2	.00	.00	.00	.00	.00	.09	.00
13	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.39	.00	.00	.00	.00	.18	.00	.00
15	.00	.00	.00	5.4	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	1.9	.00	.00	.00	.00	.00	.00	3.0	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.78	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	3.2	.00	.00	.00	.00	.00	.61	.00	.00	.00
28	.00	.00	.79	.00	.68	.00	.00	.00	.00	.00	.00	.00
29	.25	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.07	---	.00	.00	.00	.00	4.2	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.03	.00	---
TOTAL	11.76	.63	3.99	8.57	7.44	2.08	.01	.06	.61	5.81	5.36	.00
MEAN	.38	.021	.13	.27	.27	.067	.000	.002	.020	.19	.17	.000
MAX	6.8	.54	3.2	3.4	2.4	.99	.01	.06	.61	4.2	3.0	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	25	1.2	7.9	17	15	4.1	.02	.1	1.2	12	11	.00

CAL YR 1977 TOTAL 30.66 MEAN .084 MAX 6.8 MIN .00 AC-FT 61
WTR YR 1978 TOTAL 46.12 MEAN .13 MAX 6.8 MIN .00 AC-FT 91

NOTE.--No gage-height record Nov. 23 to Dec. 25.

GILA RIVER BASIN

333

09485390 ATTERBURY WASH TRIBUTARY AT TUCSON, AZ

LOCATION.--Lat 32°11'09", long 110°49'17", in SW 1/4 sec.28, T.14 S., R.15 E., Pima County, Hydrologic Unit 15050302, on left bank 500 ft (150 m) downstream from Stella Road in Tucson.

DRAINAGE AREA.--5.13 mi² (13.29 km²).

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 2,710 ft (826 m), from topographic map.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 390 ft³/s (11.0 m³/s) Aug. 11, 1977, gage height, 3.70 ft (1.128 m); no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 87 ft³/s (2.46 m³/s) Dec. 28, gage height, 1.78 ft (0.542 m), base discharge, 50 ft³/s (1.4 m³/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.34	.82	.00	.02	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00
6	1.7	.05	.00	.00	.00	.00	.00	.88	.00	.00	.00	.00
7	9.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.49	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	2.2	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.29	1.1	.00	.00	.00	.00	.08	.00	.00
12	.00	.00	.00	.00	6.2	2.6	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.01	.68	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.61	.00	.00
15	.00	.00	.00	12	.85	.00	.00	.00	.00	.48	.00	.00
16	.00	.00	.00	.41	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.07	.05	.00
18	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.44	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.44	.00	.00	.00	.00	.00	.27	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.25	.00	.00	.00	.00	.00	.07	.00	.00	.00
28	.00	.00	7.8	.00	.80	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.09	.00	---	.00	.00	.00	.14	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	11.70	.05	8.14	17.55	11.30	4.54	.00	.90	.21	4.00	.05	.00
MEAN	.38	.002	.26	.57	.40	.15	.000	.029	.007	.13	.002	.000
MAX	9.0	.05	7.8	12	6.2	2.6	.00	.88	.14	2.0	.05	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	23	.10	16	55	22	9.0	.00	1.8	.4	7.9	.10	.00
CAL YR 1977	TOTAL 68.63	MEAN .19	MAX 15	MIN .00	AC-FT 136							
WTR YR 1978	TOTAL 58.44	MEAN .16	MAX 12	MIN .00	AC-FT 116							

NOTE.--No gage-height record Aug. 18 to Sept. 30.

09485550 (revised) ARCADIA WASH AT TUCSON, AZ

LOCATION.--Lat 32°14'37", long 110°53'05", in SE¼NW¼ sec.2, T.14 S., R.14 E., Pima County, Hydrologic Unit 15050302, on right bank 150 ft (46 m) downstream from Pima Street in Tucson.

DRAINAGE AREA.--3.49 mi² (9.04 km²).

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorder and concrete flume. Altitude of gage is 2,485 ft (757 m), from topographic map.

REMARKS.--Entire drainage basin is an urban, residential area.

COOPERATION.--Records furnished by Water Resources Research Center, University of Arizona.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 661 ft³/s (18.7 m³/s) Sept. 21, 1978, gage height, 4.75 ft (1.448 m); no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s (2.8 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 28	0530	142	4.02	2.08	0.634		
July 8	2030	182	5.15	2.39	0.728		
July 25	1530	595	16.9	4.50	1.372		
				Aug. 17	1600	277	7.84
				Sept. 21	1600	*661	18.7
							3.00 0.914
							4.75 1.448

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.1	2.2	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8	.00
5	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.13	.00
6	1.4	.00	.00	.00	.00	.00	.00	.99	.00	.00	.00	.00
7	1.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.2	.00	.00
9	2.4	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00
10	.00	.00	.00	6.2	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	2.6	.02	.00	.00	.00	.00	.83	.00
12	.00	.00	.00	.00	7.2	2.1	.00	.00	.00	.00	.04	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	11	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	2.5	.00	.00	.00	.00	.00	.00	6.0	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	25
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	10	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	9.7	.00	.40	.00	.00	.00	.00	.00	.00	.00
29	.49	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.08	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.10	.00	---
TOTAL	5.79	.00	9.70	19.86	11.57	4.36	.00	.99	.00	17.59	8.80	25.00
MEAN	.19	.000	.31	.64	.41	.14	.000	.032	.000	.56	.28	.83
MAX	2.4	.00	9.7	11	7.2	2.2	.00	.99	.00	10	6.0	25
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	11	.00	19	59	25	8.6	.00	2.0	.00	34	17	50

CAL YR 1977 TOTAL 29.59 MEAN .081 MAX 9.7 MIN .00 AC-FT 59
WTR YR 1978 TOTAL 105.46 MEAN .28 MAX 25 MIN .00 AC-FT 205

GILA RIVER BASIN

09486300 CANADA DEL ORO NEAR TUCSON, AZ

LOCATION.--Lat 32°22'27", long 111°00'31", in SW¼NW¼ sec.22, T.12 S., R.13 E., Pima County, Hydrologic Unit 15050301, on right bank at upstream side of Overton Road, 4.7 mi (7.6 km) upstream from mouth, and 10.5 mi (16.9 km) north of city hall in Tucson.

DRAINAGE AREA.--250 mi² (648 km²).

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,374.39 ft (723.714 m) National Geodetic Vertical Datum of 1929 (Project bench mark).

REMARKS.--Records poor. Lago del Oro—capacity 9,400 acre-ft (11.6 hm³)—16 mi (26 km) upstream, has contained no storage since May 4, 1971, as gates were opened by court order; however, peak flows are regulated while passing through the lake.

AVERAGE DISCHARGE.--13 years, 1.69 ft³/s (0.048 m³/s), 1,220 acre-ft/yr (1.50 hm³/yr); median of yearly mean discharges, 1.2 ft³/s (0.03 m³/s), 870 acre-ft/yr (1.07 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,900 ft³/s (394 m³/s) Dec. 20, 1967, gage height, 7.65 ft (2.332 m), from high-water mark in gage well, from rating curve extended above 580 ft³/s (16.4 m³/s) on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1700	1,110 31.4	3.75 1.143	Jan. 16	0100	*2,070 58.6	4.40 1.341
Oct. 9	0800	664 18.8	3.35 1.021	Mar. 1	1330	628 17.8	3.18 0.969

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	167	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	7.6	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9
6	106	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	74	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	30	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	13	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	37	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	155	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00
28	.00	.00	.00	.00	2.6	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	15	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	180.00	.00	15.00	192.00	45.60	184.60	.00	.00	.00	3.50	.00	5.90
MEAN	5.81	.000	.48	6.19	1.63	5.95	.000	.000	.000	.11	.000	.20
MAX	106	.00	15	155	30	167	.00	.00	.00	2.0	.00	5.9
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	357	.00	30	381	90	366	.00	.00	.00	6.9	.00	12

CAL YR 1977 TOTAL 663.50 MEAN 1.82 MAX 165 MIN .00 AC-FT 1320
WTR YR 1978 TOTAL 626.60 MEAN 1.72 MAX 167 MIN .00 AC-FT 1240

09486500 SANTA CRUZ RIVER AT CORTARO, AZ

LOCATION.--Lat 32°21'04", long 111°05'38", in NW¼NW¼ sec.35, T.12 S., R.12 E., Pima County, Hydrologic Unit 15050302, on downstream side of right bridge pier 0.5 mi (0.8 km) southwest of Cortaro, 2.6 mi (4.2 km) downstream from Canada del Oro, and 3.7 mi (6.0 km) downstream from Rillito Creek.

DRAINAGE AREA.--3,503 mi² (9,073 km²), of which 395 mi² (1,023 km²) is in Mexico.

PERIOD OF RECORD.--October 1939 to June 1947 (published as "at Rillito"), July 1950 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,133.13 ft (650.178 m) National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Prior to June 30, 1947, at site 5.5 mi (8.8 km) downstream at different datum. July 8, 1950, to Jan. 20, 1966, at present site at datum 4.00 ft (1.219 m) higher. Supplementary water-stage recorder on downstream side of left bridge pier at same datum since Aug. 29, 1969.

REMARKS.--Records poor. Many diversions above station, mostly by pumping from ground water, for irrigation of about 34,000 acres (138 km²). Waste water from irrigation and from sewage-disposal plant is included in flow past station; included only in water years 1951, 1952, and since 1970 water year. This year most of flow shown below 50 ft³/s (1.42 m³/s) is waste water.

AVERAGE DISCHARGE (unadjusted for waste water and sewage effluent).--35 years (water years 1940-46, 1951-78), 39.4 ft³/s (1.12 m³/s) 28,550 acre-ft/yr (35.2 hm³/yr); median of yearly mean discharges, 28 ft³/s (0.79 m³/s), 20,300 acre-ft/yr (25 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s (651 m³/s) Oct. 10, 1977, gage height, 15.6 ft (4.75 m); no natural flow for most of each year. (See REMARKS.)

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,700 ft³/s (76 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	1830	4,910 139	10.35 3.155	Mar. 2	1200	7,820 221	11.13 3.392
Oct. 10	1000	*23,000 651	15.6 4.75	Aug. 2	0330	2,800 79.3	8.89 2.710
Jan. 15	1830	3,440 97.4	9.55 2.911				

No flow Oct. 17 and Nov. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	20	38	45	72	3920	20	20	15	30	64	15
2	23	8.6	40	40	24	5010	20	20	15	25	1270	15
3	26	.00	40	35	16	4250	20	20	15	25	162	15
4	22	10	33	35	15	983	20	20	15	25	568	15
5	22	29	37	30	10	250	20	20	15	25	100	15
6	885	31	38	30	8.0	150	20	20	15	25	50	15
7	672	37	38	30	6.0	75	20	20	15	25	30	15
8	544	32	37	30	5.0	50	20	20	15	25	25	15
9	6540	31	35	30	12	40	20	20	15	25	20	15
10	12600	29	32	20	20	35	20	20	15	79	20	15
11	1210	32	32	225	530	30	20	20	15	30	332	15
12	275	25	34	54	353	49	20	20	15	25	548	15
13	50	24	34	54	230	99	20	20	15	24	100	15
14	15	27	34	41	230	93	20	20	15	22	50	15
15	14	31	34	831	513	30	20	20	15	20	40	15
16	20	29	34	1080	339	20	20	20	15	20	30	15
17	.00	31	34	345	150	20	20	20	15	20	25	15
18	7.0	34	32	200	125	20	20	20	15	20	20	15
19	5.0	33	33	50	100	20	20	20	15	20	15	15
20	5.0	32	35	40	50	20	20	20	15	20	15	15
21	5.0	39	34	35	40	20	20	19	15	20	15	23
22	5.0	45	35	33	35	20	20	18	15	20	15	30
23	5.0	47	35	30	35	20	20	17	15	20	15	25
24	5.0	41	35	28	35	20	20	16	15	20	15	20
25	5.0	44	31	26	35	20	20	15	15	27	15	15
26	5.0	42	32	25	35	20	20	15	15	20	15	15
27	5.0	36	39	23	35	20	20	15	15	216	15	15
28	10	38	341	22	146	20	20	15	15	30	15	15
29	15	39	167	21	---	20	20	15	20	25	15	15
30	22	37	65	23	---	20	20	15	34	25	15	15
31	20	---	50	28	---	20	---	15	---	130	15	---
TOTAL	23062.00	933.60	1568	3539	3204.0	15384	600	575	474	1083	3649	488
MEAN	744	31.1	50.6	114	114	496	20.0	18.5	15.8	34.9	118	16.3
MAX	12600	47	341	1080	530	5010	20	20	34	216	1270	30
MIN	.00	.00	31	20	5.0	20	20	15	15	20	15	15
AC-FT	45740	1850	3110	7020	6360	30510	1190	1140	940	2150	7240	968
CAL YR 1977	TOTAL	37535.60	MEAN 103	MAX 12600	MIN .00	AC-FT 74450						
WTR YR 1978	TOTAL	54559.60	MEAN 149	MAX 12600	MIN .00	AC-FT 108200						

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	1.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	3.8	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	5.1	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	2.2	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.70	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	2.0	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.80	.00	2.70	4.30	6.20	6.60	.00	.00	.00	.00	.20	.00
MEAN	.058	.000	.087	.14	.22	.21	.000	.000	.000	.000	.006	.000
MAX	1.6	.00	2.0	2.2	5.1	3.8	.00	.00	.00	.00	.20	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	3.6	.00	5.4	8.5	12	13	.00	.00	.00	.00	.4	.00
CAL YR 1977	TOTAL 43.10		MEAN .12	MAX 19	MIN .00	AC-FT 85						
WTR YR 1978	TOTAL 21.80		MEAN .060	MAX 5.1	MIN .00	AC-FT 43						

GILA RIVER BASIN

09489000 SANTA CRUZ RIVER NEAR LAVERN, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°13'56", long 112°10'08", in NE¼NE¼ sec.29, T.2 S., R.2 E., Pinal County, Hydrologic Unit 15050303, in Gila River Indian Reservation, on downstream side of highway bridge, 3.4 mi (5.5 km) upstream from mouth, 4.3 mi (6.9 km) south of Komatke, and 9 mi (14 km) south of Laveen.

DRAINAGE AREA.--8,581 mi² (22,225 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1940 to September 1946, December 1947 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,020.86 ft (311.158 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Many diversions above station, mostly by pumping from ground water, for municipal uses and for irrigation of about 240,000 acres (970 km²), not including San Carlos Project. Much of the low flow passing this station is drainage and wasteway return from irrigated lands upstream and pumpage from ground water; such flow is excluded when it can be identified.

AVERAGE DISCHARGE.--36 years (water years 1941-46, 1949-78), 18.3 ft³/s (0.518 m³/s), 13,260 acre-ft/yr (16.3 hm³/yr); median of yearly mean discharges, 11 ft³/s (0.31 m³/s), 7,970 acre-ft/yr (9.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft³/s (261 m³/s) Sept. 29, 1962, gage height, 17.50 ft (5.334 m); no flow for most of time in recent years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 380 ft³/s (11 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 13	1430	*2,010 56.9	14.59 4.447	Feb. 14	2300	900 25.5	12.50 3.810
Jan. 19	0230	696 19.7	12.03 3.667	Mar. 6	0745	1,570 44.5	13.94 4.249

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR BEGINNING 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCI	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.0	.08	61	2.0	24	2.8	.00	.00	.00	.02	.03
2	.00	.87	.40	7.4	1.4	21	.86	.00	.00	.00	2.1	.02
3	.00	.72	.54	.82	.67	36	.70	.00	.00	.00	6.7	.02
4	.00	.41	.46	.51	.50	561	.68	.00	.00	.00	7.9	.02
5	.00	.20	.43	.17	.33	790	.64	.00	.00	.00	1.1	.02
6	5.8	.12	.40	.15	2.0	432	.86	.00	.00	.00	1.0	.01
7	.00	.08	.40	.09	3.1	595	.59	.00	.20	.00	.10	.01
8	.00	.07	.41	.08	2.4	40	.16	.00	.10	.00	.13	.01
9	.00	.06	.40	.07	1.7	.42	.22	.00	.00	.00	.07	.00
10	47	.05	.53	15	.82	.01	.13	.00	.00	.00	.07	.00
11	141	.05	.62	39	1.6	.00	.08	.00	.00	.00	.06	.00
12	751	.05	.97	40	.43	.08	.07	.00	.00	.00	.06	.00
13	1780	.04	.71	70	3.0	10	5.3	.00	.00	.00	.38	.00
14	929	.04	.52	195	610	55	2.5	.00	.00	.00	.46	.00
15	123	.04	.63	143	541	29	.38	.00	.00	.00	.08	.00
16	17	.04	.45	151	146	8.9	.11	.00	.00	.00	.07	.00
17	2.9	.04	.22	88	214	4.9	.08	.00	.00	.00	.06	.00
18	2.7	.03	.58	428	335	8.1	.07	.00	.00	.00	.05	.00
19	1.7	.03	1.1	470	148	3.1	.06	.00	.00	.00	.03	.00
20	1.3	.03	2.1	179	33	4.1	.03	.00	.00	.00	.02	.00
21	1.6	.03	2.7	102	5.9	5.7	.00	.00	.00	.00	.02	.00
22	1.2	.17	2.5	19	.85	2.2	.00	.00	.00	12	.02	.00
23	.74	.44	2.3	3.9	.16	1.9	.00	.00	.00	.12	.23	.00
24	.64	.16	2.1	1.4	.07	1.7	.00	.00	.00	32	1.4	.00
25	.59	.08	1.7	.59	.03	1.6	.00	.00	.00	76	.12	.00
26	.56	.14	.45	.42	.01	1.4	.00	.00	.00	25	.09	.00
27	.52	.21	.15	.27	.00	3.1	.00	.00	.00	2.0	.07	.00
28	.53	.09	.08	.61	.69	2.1	.00	.00	.00	.17	.06	.00
29	6.9	.08	.43	.52	---	1.2	.00	.00	.00	.07	.05	.00
30	3.6	.13	.58	.68	---	1.2	.00	.00	.00	.06	.04	.00
31	1.2	---	1.4	1.2	---	1.4	---	.00	---	.04	.03	---
TOTAL	3820.48	5.50	26.34	2019.18	2104.66	2948.11	16.32	.00	.30	147.46	45.36	.14
MEAN	123	.18	.85	65.1	75.2	95.1	.54	.000	.010	4.76	1.46	.005
MAX	1780	1.0	2.7	470	610	932	5.3	.00	.20	76	23	.03
MIN	.00	.03	.08	.07	.00	.00	.00	.00	.00	.00	.02	.00
AC-FT	7580	11	52	4010	4170	5850	32	.00	.6	242	90	.3
CAL YR 1977 TOTAL	3935.99	MEAN 10.8	MAX 1780	MIN .00	AC-FT 7810							
WTR YR 1978 TOTAL	11133.85	MEAN 30.5	MAX 1780	MIN .00	AC-FT 22080							

GILA RIVER BASIN

339

09489000 SANTA CRUZ RIVER NEAR LAVERN, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1974 to current year.

REMARKS.--Some low flow is entirely waste water from irrigated lands.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT									
11...	1545	55	375	7.6	25.0	4100	--	7.0	K88000
14...	1045	976	577	8.2	21.0	9000	--	6.7	102000
JAN									
26...	1100	.28	270	7.9	6.0	300	--	11.0	K500
MAR									
01...	1130	16	760	9.2	14.5	3200	--	8.9	K1100
APR									
05...	1100	.14	1630	8.0	19.0	20	--	5.5	K26
AUG									
03...	1000	1.6	755	9.5	24.0	--	5600	4.3	K69000

DATE	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
OCT									
11...	84000	82	0	28	2.9	42	2.0	7.8	170
14...	160000	120	0	38	5.2	67	2.7	6.4	160
JAN									
26...	4400	81	0	27	3.2	27	1.2	3.9	110
MAR									
01...	47000	42	0	14	1.6	150	10	2.5	140
APR									
05...	72	420	340	120	29	190	4.0	10	99
AUG									
03...	K151000	19	0	7.0	.3	150	15	2.6	--

DATE	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT								
11...	0	30	14	.6	19	222	228	.30
14...	0	97	28	.9	25	358	346	.49
JAN								
26...	0	30	10	.3	11	174	167	.24
MAR								
01...	21	100	100	1.5	10	481	470	.65
APR								
05...	0	380	280	1.1	5.2	1080	1060	1.47
AUG								
03...	--	70	72	1.7	18	435	418	.59

K Based on non-ideal colony count.

GILA RIVER BASIN

09489000 SANTA CRUZ RIVER NEAR LAVEEN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH ₄ + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT									
11...	1.1	.08	--	--	--	.95	--	5.3	.28
14...	3.6	.05	--	--	--	1.4	--	13	.24
JAN									
26...	1.1	.07	--	--	--	.35	--	.71	.30
MAR									
01...	2.5	.15	.76	.91	.38	.53	3.4	5.8	.19
APR									
05...	4.1	.25	1.7	1.9	.20	1.7	6.0	.16	.04
AUG									
03...	.94	.41	9.6	10	7.3	2.7	11	9.9	.27
DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CU)	CADMIUM DIS- SOLVED (UG/L AS CU)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)
OCT									
11...	100	14	600	0	10	2	60	0	100
JAN									
26...	9	8	100	100	1	1	20	10	4
AUG									
03...	65	28	1200	30	4	0	120	0	--
DATE	CUBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT									
11...	0	270	16	77000	150	300	3	4500	0
JAN									
26...	0	33	7	8700	30	19	2	250	10
AUG									
03...	2	--	45	130000	210	3	0	8600	10

GILA RIVER BASIN

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09489000 SANTA CRUZ RIVER NEAR LAVERN, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 11...	.3	.0	2	0	30	0	470	10
JAN 26...	.0	.0	0	0	0	0	50	20
AUG 03...	.1	.1	2	1	1	0	660	10

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 11...	52	44000	5530	821	100
14...	232	--	15100	39800	100
JAN 26...	9.4	--	2000	1.5	100
MAR 01...	25	--	--	--	--
APR 05...	7.2	20000	44	.02	91
AUG 03...	--	110	--	--	--

GILA RIVER BASIN

09489000 SANTA CRUZ RIVER NEAR LAVERN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	UCI 11,77 1545	APR 5,78 1100	AUG 3,78 1000			
TOTAL CELLS/ML	44000	20000	110			
DIVERSITY: DIVISION	0.1	2.0	0.0			
..CLASS	0.1	2.1	0.0			
...ORDER	0.1	2.2	0.0			
...FAMILY	0.1	2.5	0.0			
...GENUS	1.0	2.6	0.0			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCUCCALES						
....UOCCYSTACEAE						
....ANKISTRUESMUS	--	-	6900#	35	--	-
....SELENASTRUM	--	-	140	1	--	-
....SCENEDESMACEAE						
....SCENEDESMUS	--	-	1400	7	--	-
..VULVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMUNAS	--	-	430	2	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	430	2	110#	100
..PENNALES						
...ACHNANTHACEAE						
....CUCCONEIS	530	1	--	-	--	-
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	140	1	--	-
...NITZSCHACEAE						
....NITZSCHIA	--	-	290	1	--	-
..CHRYSOPHYCEAE						
...CHRYSOMONADALES						
....UCHROMONADACEAE						
....OCHROMONAS	--	-	430	2	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
....CRYPTOMONADACEAE						
....CRYPTOMUNAS	--	-	3400#	17	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCALES						
....CHROCOCCACEAE						
....ANACYSTIS	--	-	4900#	25	--	-
...HORMOGONALES						
....USCILLATORIACEAE						
....LYNGBYA	16000#	36	--	-	--	-
....OSCILLATORIA	27000#	63	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
....EUGLENA	--	-	1000	5	--	-
....PHACUS	--	-	*	0	--	-
....TRACHELUMUNAS	--	-	140	1	--	-
PYRRHOPHYTA (FIRE ALGAE)						
..DINOPHYCEAE						
...PERIDINIALES						
....GLENODINIACEAE						
....GLENODINIUM	--	-	140	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM; MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09489070 NORTH FORK OF EAST FORK BLACK RIVER NEAR ALPINE, AZ

LOCATION.--Lat 33°54'11", long 109°19'20", in SW¼NE¼ sec.19, T.6 N., R.29 E. (unsurveyed), Apache County, Hydrologic Unit 15060101, in Apache National Forest, on right bank 1.4 mi (2.3 km) downstream from Crosby Crossing and 12 mi (19 km) northwest of Alpine.

DRAINAGE AREA.--38.1 mi² (98.7 km²).

PERIOD OF RECORD.--June 1965 to September 1978 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 8,650 ft (2,637 m), from topographic map.

REMARKS.--Records good except those for Jan. 16 to Mar. 23, which are poor. Minor storage at headwaters for recreation and stock purposes; the largest is Big Lake. No diversions above station.

AVERAGE DISCHARGE.--13 years, 12.7 ft³/s (0.360 m³/s), 9,200 acre-ft/yr (11.3 hm³/yr); median of yearly mean discharges, 9.2 ft³/s (0.26 m³/s) 6,700 acre-ft/yr (8.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,070 ft³/s (30.3 m³/s) Apr. 17, 1973, gage height, 4.64 ft (1.414 m), from rating curve extended above 260 ft³/s (7.4 m³/s) on basis of culvert and road overflow computation at gage height 3.80 ft (1.158 m); maximum gage height, 4.75 ft (1.448 m) Mar. 11, 1975 (result of ice jam); minimum daily discharge, 0.20 ft³/s (0.006 m³/s) Dec. 20, 1968, to Mar. 15, 1969, and Jan. 6-10, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 75 ft³/s (2.1 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 7	1545	144 4.08	2.54 0.774
Mar. 31	1530	*383 10.8	3.40 1.036

Minimum daily, 0.27 ft³/s (0.008 m³/s) Dec. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	.57	.41	.40	.30	5.0	229	12	1.3	.62	2.5	.30
2	.50	.53	.54	.59	.30	6.0	208	11	1.3	.57	1.8	1.0
3	.50	.55	.55	.67	.30	7.0	231	14	1.2	.55	1.1	.70
4	.50	.54	.55	.68	.30	8.0	212	12	1.1	.53	.75	.50
5	.50	.53	.51	.68	.30	9.0	199	24	1.1	.51	1.1	.30
6	4.7	1.3	.45	.67	.30	9.0	213	15	1.3	.50	.73	.30
7	3.6	1.2	.44	.66	.30	10	208	12	2.1	.52	.83	.30
8	1.2	1.1	.52	.52	.30	90	136	12	1.9	.59	1.1	.30
9	.85	.69	.46	.54	.30	70	91	7.9	1.6	.74	.99	.30
10	.68	.93	.49	.63	.30	60	70	6.1	3.1	1.7	1.2	.30
11	.60	.68	.52	.66	.30	60	91	6.3	1.2	2.2	.87	.30
12	.58	.61	.47	.64	.30	50	122	4.5	.89	1.1	.74	.30
13	.56	.72	.41	.53	.30	40	117	3.7	.87	.91	.70	.30
14	.60	.72	.47	.57	.30	50	102	3.3	.86	.78	.60	.30
15	.53	.66	.49	.68	.30	50	89	3.0	.77	.90	.50	.30
16	.52	.63	.27	.50	.30	30	70	3.2	.74	.81	.40	.30
17	.53	.60	.44	.40	.30	20	56	3.5	.71	.61	.30	.30
18	.53	.60	.54	.50	.30	25	45	2.5	.70	.60	.30	.30
19	.53	.56	.45	.50	.30	30	40	2.2	.67	.71	.30	.30
20	.51	.59	.29	.50	.30	40	38	2.6	.64	.77	1.6	.30
21	.44	.61	.35	.50	.30	50	36	3.8	.64	.98	1.3	.30
22	.51	.55	.51	.50	.30	60	29	2.4	.63	.81	3.4	.30
23	.52	.56	.56	.50	.30	70	26	2.0	.64	.74	2.0	.30
24	.51	.52	.57	.50	.30	75	23	2.1	.64	.89	1.3	.30
25	.44	.60	.67	.40	.30	80	21	1.9	.58	1.4	1.3	.70
26	.44	.54	.67	.50	.30	85	20	1.7	.57	.93	1.0	.50
27	.50	.56	.72	.50	.50	82	20	1.6	.69	.99	.70	.30
28	.51	.55	.57	.50	2.0	86	16	1.6	.95	.68	.50	.30
29	1.2	.48	.70	.50	---	111	14	1.5	.95	.63	.40	.30
30	.99	.49	.66	.50	---	163	13	1.4	.74	.57	.30	.30
31	.62	---	.72	.50	---	270	---	1.3	---	.59	.50	---
TOTAL	25.85	20.37	15.93	14.32	10.30	1801.0	2785	182.1	31.08	25.43	31.11	11.50
MEAN	.83	.68	.51	.46	.37	58.1	92.8	5.87	1.04	.82	1.00	.38
MAX	4.7	1.3	.72	.68	2.0	270	231	24	3.1	2.2	3.4	1.0
MIN	.44	.48	.27	.50	.30	5.0	13	1.3	.57	.50	.30	.30
ACFT	51	40	32	28	20	3570	5520	361	62	50	62	22
CAL YR 1977 TOTAL	1348.50			MEAN 3.69	MAX 150	MIN .24	ACFT 2670					
WIR YR 1978 TOTAL	4953.79			MEAN 13.6	MAX 270	MIN .27	ACFT 9830					

NOTE.--No gage-height record Jan. 16 to Mar. 23, Aug. 13 to Sept. 30.

09489100 BLACK RIVER NEAR MAVERICK, AZ

LOCATION.--Lat 33°42'27", long 109°26'48", in SW¼ sec.30, T.4 N., R.28 E., Apache County, Hydrologic Unit 15060101, in Apache National Forest, on right bank 1.0 mi (1.6 km) downstream from Fish Creek, 1.1 mi (1.8 km) upstream from Conklin Creek, and 6 mi (10 km) southeast of Maverick.

DRAINAGE AREA.--315 mi² (816 km²).

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,850 ft (2,088 m), from topographic map. Prior to Sept. 19, 1973, at datum 0.85 ft (0.259 m) higher.

REMARKS.--Records good. Minor storage for recreational and stock purposes near headwaters. No diversion above station.

AVERAGE DISCHARGE.--16 years, 131 ft³/s (3.710 m³/s), 94,910 acre-ft/yr (117 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s (314 m³/s) Oct. 20, 1972, gage height, 8.14 ft (2.481 m), from rating curve extended above 2,100 ft³/s (59 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 9.6 ft³/s (0.27 m³/s) Dec. 7, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 400 ft³/s (11 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Mar. 1	1700	*2,390	67.7	4.91	1.497
Mar. 31	2215	2,120	60.0	4.70	1.433

Minimum daily, 11 ft³/s (0.31 m³/s) Dec. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	24	20	22	54	1640	1730	218	46	17	38	21
2	18	22	17	20	57	1240	1360	204	46	17	42	34
3	19	21	16	18	56	1090	1320	201	44	16	31	30
4	22	20	19	21	51	784	1230	178	42	16	27	24
5	23	20	22	19	52	749	1090	169	41	16	31	21
6	30	20	17	21	60	611	1090	194	41	16	29	19
7	104	20	16	21	71	471	1100	181	41	16	26	18
8	66	20	18	14	76	466	1040	175	39	16	39	18
9	45	20	17	15	73	510	763	145	39	18	34	18
10	37	24	19	25	82	498	648	130	39	18	46	18
11	33	34	19	22	80	420	593	123	38	21	45	17
12	29	38	17	17	62	395	674	117	37	23	32	16
13	28	35	16	15	69	346	763	112	35	23	27	16
14	27	30	17	21	64	333	756	111	34	22	23	17
15	26	33	19	26	53	320	770	113	33	23	21	17
16	24	30	19	22	55	324	700	110	32	19	19	21
17	23	29	13	24	40	395	623	105	30	17	18	25
18	23	24	20	20	43	521	521	99	28	16	17	23
19	22	26	22	15	41	694	476	90	27	18	19	19
20	22	27	11	21	48	854	450	87	26	20	43	18
21	21	24	12	26	55	942	420	89	24	25	40	17
22	21	23	17	23	64	1310	375	83	24	23	64	20
23	21	23	24	22	78	1520	351	75	22	20	48	24
24	21	22	21	21	97	1280	333	71	21	22	40	21
25	20	22	18	17	118	1190	320	66	23	35	42	28
26	20	21	19	21	132	1200	315	62	26	32	36	24
27	19	20	23	22	130	1210	315	59	24	31	29	22
28	19	20	25	26	577	1190	291	55	22	24	25	20
29	24	19	28	28	---	1190	264	52	20	20	22	18
30	38	20	26	30	---	1290	238	49	18	20	22	18
31	27	---	24	37	---	1500	---	47	---	19	25	---
TOTAL	896	731	591	672	2438	26483	20919	3570	962	639	1000	622
MEAN	28.9	24.4	19.1	21.7	87.1	854	697	115	32.1	20.6	32.3	20.7
MAX	109	38	28	37	577	1640	1730	218	46	35	64	34
MIN	18	19	11	14	40	320	238	47	18	16	17	16
AC-FT	1780	1450	1170	1330	4840	52530	41490	7080	1910	1270	1980	1230
CAL YR 1977	TOTAL	13912	MEAN	38.1	MAX	493	MIN	11	AC-FT	27590		
WTR YR 1978	TOTAL	59523	MEAN	163	MAX	1730	MIN	11	AC-FT	118100		

09489200 PACHETA CREEK AT MAVERICK, AZ

LOCATION.--Lat 33°44'23", long 109°32'24", at corner of secs.28, 29, 32, 33, T.4½ N., R.27 E. (unsurveyed), Apache County, Hydrologic Unit 15060101, in Fort Apache Indian Reservation, on left bank 0.5 mi (0.8 km) southeast of Maverick.

DRAINAGE AREA.--14.8 mi² (38.3 km²).

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1970 published as Pachete Creek at Maverick.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 7,850 ft (2,393 m), by barometer.

REMARKS.--Records good.

AVERAGE DISCHARGE.--21 years, 8.28 ft³/s (0.234 m³/s), 6,000 acre-ft/yr (7.40 hm³/yr); median of yearly mean discharges, 6.8 ft³/s (0.19 m³/s), 4,930 acre-ft/yr (6.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 323 ft³/s (9.15 m³/s) May 13, 1973, gage height, 4.36 ft (1.329 m); minimum daily, 0.2 ft³/s (0.006 m³/s) many days in 1959-60.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 35 ft³/s (1.0 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Mar. 1	1030	92	2.60	3.50	1.067
Mar. 22	2000	112	3.17	3.67	1.119
Mar. 30	1600	*173	4.90	3.98	1.213

Minimum daily, 1.0 ft³/s (0.028 m³/s), Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.4	1.4	1.1	1.2	45	136	31	4.3	1.6	2.3	1.4
2	1.7	1.4	1.4	1.1	1.3	38	117	24	4.0	1.6	1.5	1.6
3	1.7	1.4	1.4	1.1	1.3	35	115	20	3.9	1.6	1.4	1.7
4	1.7	1.4	1.4	1.3	1.3	35	108	19	3.6	1.6	1.3	1.5
5	1.7	1.3	1.4	1.1	1.3	35	102	20	3.5	1.6	1.3	1.4
6	2.4	1.3	1.3	1.1	1.3	37	104	26	3.4	1.6	1.3	1.4
7	3.0	1.3	1.3	1.1	1.3	45	106	24	3.3	1.6	1.4	1.4
8	2.3	1.6	1.3	1.1	1.4	42	107	23	3.1	1.7	1.4	1.3
9	2.1	1.4	1.3	1.1	1.4	44	91	18	2.9	1.7	1.4	1.3
10	2.0	1.3	1.3	1.1	1.4	40	77	16	2.7	1.6	1.4	1.3
11	1.8	1.4	1.3	1.1	1.4	34	76	16	2.5	1.7	1.4	1.3
12	1.7	1.4	1.3	1.1	1.4	31	77	15	2.4	1.7	1.4	1.3
13	1.7	1.4	1.2	1.1	1.4	27	87	15	2.2	1.7	1.3	1.3
14	1.6	1.4	1.2	1.1	1.4	25	90	16	2.1	1.7	1.3	1.3
15	1.7	1.4	1.2	1.1	1.4	25	94	17	2.0	1.6	1.3	1.3
16	1.7	1.3	1.2	1.0	1.3	25	94	16	1.9	1.6	1.3	1.3
17	1.7	1.3	1.2	1.1	1.3	29	90	16	1.8	1.6	1.3	1.3
18	1.7	1.4	1.2	1.1	2.5	37	82	14	1.8	1.7	1.3	1.3
19	1.7	1.4	1.2	1.1	1.3	49	70	12	1.8	1.6	1.6	1.2
20	1.7	1.4	1.2	1.2	1.3	61	60	11	1.8	1.4	2.1	1.2
21	1.7	1.3	1.2	1.2	1.3	73	58	10	1.6	1.4	1.6	1.2
22	1.7	1.3	1.2	1.2	1.3	91	53	9.3	1.6	1.5	1.5	1.2
23	1.7	1.3	1.2	1.2	1.3	97	50	8.8	1.6	1.5	1.4	1.2
24	1.7	1.3	1.2	1.2	1.3	88	50	8.0	1.6	1.5	1.4	1.2
25	1.7	1.3	1.2	1.2	1.3	88	51	7.3	1.6	1.5	1.4	1.3
26	1.7	1.3	1.2	1.2	1.3	92	52	6.9	1.6	1.5	1.3	1.2
27	1.7	1.5	1.2	1.2	1.3	94	55	6.1	1.6	1.4	1.3	1.2
28	1.7	1.4	1.1	1.2	10	90	52	5.5	1.7	1.4	1.3	1.2
29	1.8	1.4	1.1	1.2	---	90	45	5.1	1.7	1.3	1.4	1.2
30	1.8	1.4	1.1	1.2	---	130	38	4.7	1.6	1.3	1.4	1.3
31	1.7	---	1.1	1.2	---	139	---	4.6	---	1.3	1.5	---
TOTAL	56.2	41.1	38.5	35.4	46.8	1811	2387	445.3	71.0	48.1	44.5	39.3
MEAN	1.81	1.37	1.24	1.14	1.67	58.4	79.6	14.4	2.37	1.55	1.44	1.31
MAX	3.0	1.6	1.4	1.3	10	139	136	31	4.3	1.7	2.3	1.7
MIN	1.6	1.3	1.1	1.0	1.2	25	38	4.6	1.6	1.3	1.3	1.2
AC-FT	111	82	76	70	93	3590	4730	883	141	95	88	78

CAL YR 1977	TOTAL	881.68	MEAN	2.42	MAX	22	MIN	.41	AC-FT	1750
WTR YR 1978	TOTAL	5064.20	MEAN	13.9	MAX	139	MIN	1.0	AC-FT	10040

NOTE.--No gage-height record Oct. 11 to Nov. 11.

09489500 BLACK RIVER BELOW PUMPING PLANT, NEAR POINT OF PINES, AZ

LOCATION.--Lat 33°28'36", long 109°45'48", in W $\frac{1}{2}$ sec.32, T.2 N., R.25 E. (unsurveyed), Graham County, Hydrologic Unit 15060101, in San Carlos Indian Reservation on left bank 0.9 mi (1.4 km) downstream from Phelps Dodge Corp. pumping plant, 1.3 mi (2.1 km) downstream from Freezeout Creek, 8 mi (13 km) northwest of Point of Pines, and 63 mi (101 km) upstream from confluence with White River.

DRAINAGE AREA.--560 mi² (1,450 km²).

PERIOD OF RECORD.--June 1953 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,725 ft (1,745.0 m), from topographic map.

REMARKS.--Records good. Water is diverted at pumping plant 0.9 mi (1.4 km) upstream and pumped into headwaters of Willow Creek (tributary of Eagle Creek) for mining, metallurgical treatment of ores, and domestic supply in vicinity of Morenci. (See sta 09445000.)

AVERAGE DISCHARGE (adjusted for diversion to Willow Creek).--25 years, 188 ft³/s (5.324 m³/s), 136,200 acre-ft/yr (168 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,000 acre-ft/yr (125 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,900 ft³/s (507 m³/s) Oct. 19, 1972, gage height, 18.0 ft (5.49 m), from flood-marks, from rating curve extended above 5,000 ft³/s (140 m³/s); minimum daily, 2.6 ft³/s (0.074 m³/s) July 5, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	1915	*5,980 169	10.3 3.14
Apr. 1	0530	2,330 66.0	6.43 1.960

Minimum daily, 6.1 ft³/s (0.17 m³/s) July 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	36	27	40	227	4110	2140	462	70	57	26	26
2	20	29	26	37	203	5740	1830	408	65	44	46	43
3	20	27	25	35	159	3870	1680	368	60	40	64	44
4	20	26	26	32	133	1960	1600	357	55	38	50	38
5	26	24	29	34	118	1490	1430	324	54	37	40	31
6	36	26	29	32	120	1320	1400	335	51	36	46	25
7	65	33	27	33	151	1120	1380	332	57	35	51	21
8	113	52	24	33	172	1010	1370	321	54	25	45	19
9	78	47	30	28	168	1010	1190	293	55	9.1	53	22
10	58	42	33	26	161	1010	1040	263	52	10	51	24
11	48	38	34	36	191	935	927	246	45	13	61	25
12	40	38	34	38	168	844	922	235	39	16	62	23
13	35	38	32	31	149	841	994	227	36	21	45	18
14	33	36	30	28	147	820	998	220	33	41	37	15
15	31	35	30	39	131	772	1040	218	32	23	29	17
16	29	33	31	37	125	731	996	214	30	14	20	19
17	28	33	34	48	111	771	926	208	28	9.0	15	23
18	26	32	28	30	90	881	833	198	25	6.1	11	27
19	26	32	31	41	91	1070	778	185	22	10	13	25
20	25	32	33	43	93	1270	735	171	20	6.9	43	21
21	24	32	25	35	107	1400	703	167	18	8.8	47	14
22	24	32	23	42	138	1580	654	159	16	28	50	11
23	24	30	28	39	162	2050	624	144	15	31	71	11
24	23	30	36	35	189	1830	596	132	13	27	57	20
25	22	30	34	30	217	1680	581	125	12	40	53	18
26	22	32	31	35	241	1640	564	116	10	48	54	25
27	21	32	33	41	242	1690	567	109	13	52	47	26
28	21	33	39	40	737	1650	555	98	19	42	38	29
29	25	32	42	42	---	1650	514	91	27	32	34	29
30	35	29	45	50	---	1680	474	82	22	28	30	21
31	43	---	42	127	---	1860	---	76	---	29	28	---
TOTAL	1062	1001	973	1257	4941	50335	30046	6904	1053	836.9	1317	710
MEAN	34.3	33.4	31.4	40.5	176	1624	1002	223	35.1	27.0	42.5	23.7
MAX	113	52	45	127	737	5740	2140	462	70	52	71	44
MIN	20	24	23	26	90	731	479	76	10	6.1	11	11
AC-FT	2110	1990	1930	2490	9800	99840	59600	13690	2090	1660	2610	1410
MEAN†	51.4	46.4	38.6	45.8	182	1640	1030	247	59.0	43.0	59.6	41.8
AC-FT†	3160	2760	2370	2820	10100	100900	61130	15160	3510	2650	3670	2490
CAL YR 1977 TOTAL	19044.0			MEAN 52.2		MAX 446	MIN 8.8	AC-FT 37770	MEAN † 64.6		AC-FT † 46,760	
WTR YR 1978 TOTAL	100435.9			MEAN 275		MAX 5740	MIN 6.1	AC-FT 199200	MEAN † 291		AC-FT † 210,700	

† Adjusted for Willow Creek diversion from Black River, near Morenci, Ariz.

09489700 BIG BONITO CREEK NEAR FORT APACHE, AZ

LOCATION.--Lat 33°40'02", long 109°50'46", in NE¼ sec.28, T.4 N., R.24 E. (unsurveyed), Apache County, Hydrologic Unit 15060101, in Fort Apache Indian Reservation, near right bank on downstream side of pier of highway bridge, 1.9 mi (3.1 km) upstream from Tonto Creek, 3.7 mi (6.0 km) southeast of Chino Springs, and 12 mi (19 km) southeast of Fort Apache.

DRAINAGE AREA.--119 mi² (308 km²).

PERIOD OF RECORD.--October 1957 to current year. Prior to October 1969 published as "Big Bonita Creek near Fort Apache."

REVISED RECORDS.--WRD Ariz. 1969: 1967.

GAGE.--Water-stage recorder. Altitude of gage is 5,910 ft (1,801 m), by barometer.

REMARKS.--Records good. No storage or diversion above station.

AVERAGE DISCHARGE.--21 years, 61.5 ft³/s (1.742 m³/s), 44,560 acre-ft/yr (54.9 hm³/yr); median of yearly mean discharges, 54 ft³/s (1.53 m³/s), 39,100 acre-ft/yr (48 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,870 ft³/s (81.3 m³/s) Mar. 3, 1978, gage height, 7.77 ft (2.368 m); maximum gage height, 8.43 ft (2.569 m) Oct. 20, 1972 (backwater from bridge downstream); minimum daily, 4.2 ft³/s (0.12 m³/s) Nov. 30, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 150 ft³/s (4.2 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 1	0145	239 6.77	3.78 1.152	Mar. 23	0400	771 21.8	5.06 1.542
Mar. 1	1500	2,630 74.4	7.55 2.301	Apr. 1	1545	785 22.2	5.09 1.551
Mar. 3	0015	*2,870 81.3	7.77 2.368	May 15	0415	209 5.92	3.30 1.006

Minimum daily, 7.3 ft³/s (0.21 m³/s) Dec. 7, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	14	10	17	194	1820	757	217	59	12	100	15
2	9.9	13	10	15	133	2190	614	195	54	11	74	15
3	9.6	13	10	14	98	1500	533	168	51	11	51	14
4	10	12	10	14	82	569	490	155	48	10	53	13
5	12	12	10	13	74	394	461	164	46	9.7	41	12
6	26	15	8.8	12	77	324	461	181	44	9.3	32	11
7	98	21	7.3	13	98	259	472	162	42	12	31	11
8	69	18	8.0	10	103	236	479	147	39	13	32	10
9	46	16	9.6	11	93	241	382	137	36	14	37	10
10	36	15	9.2	14	83	226	299	138	34	14	50	10
11	30	16	9.7	13	87	190	271	145	32	13	49	10
12	26	15	8.5	12	75	175	283	150	30	13	40	10
13	23	14	7.4	9.0	68	154	338	164	28	12	32	10
14	21	14	8.5	12	63	142	361	185	27	11	26	10
15	20	12	9.8	16	57	134	386	198	25	10	22	9.8
16	18	12	10	20	54	129	392	190	23	10	21	12
17	17	12	7.8	22	45	144	361	175	21	10	20	15
18	17	12	11	21	44	186	318	155	20	11	23	12
19	15	12	10	22	50	259	294	137	19	12	35	10
20	15	12	7.5	22	49	364	288	126	18	11	60	9.8
21	14	11	8.0	17	62	455	283	117	17	10	40	9.4
22	14	11	15	19	76	589	273	112	16	10	27	9.3
23	14	11	11	24	88	704	266	110	15	18	20	9.2
24	14	11	10	20	94	575	268	104	14	35	23	9.1
25	13	11	9.6	21	97	536	276	94	13	60	30	10
26	12	10	9.2	26	100	564	291	85	13	40	27	16
27	12	10	12	28	94	608	312	78	13	25	18	12
28	12	10	19	28	584	602	294	71	15	22	14	11
29	15	10	19	32	---	601	276	66	20	22	13	9.7
30	26	10	21	41	---	618	253	63	15	40	14	9.3
31	16	---	19	150	---	661	---	63	---	60	15	---
TOTAL	690.5	385	335.3	708.0	2822	16149	11032	4252	847	571.0	1070	334.6
MEAN	22.3	12.8	10.8	22.8	101	521	368	137	28.2	18.4	34.5	11.2
MAX	98	21	21	150	584	2190	757	217	59	60	100	16
MIN	9.6	10	7.3	9.0	44	129	253	63	13	9.3	13	9.1
AC-FT	1370	764	665	1400	5600	32030	21880	8430	1680	1130	2120	664

CAL YR 1977 TOTAL 9489.2 MEAN 26.0 MAX 158 MIN 5.3 AC-FT 18820
WTR YR 1978 TOTAL 39196.4 MEAN 107 MAX 2190 MIN 7.3 AC-FT 77750

NOTE.--No gage-height record Aug. 11 to Sept. 12.

GILA RIVER BASIN

09490500 BLACK RIVER NEAR FORT APACHE, AZ

LOCATION.--Lat 33°42'46", long 110°12'40", in NW¼ sec.12, T.4 N., R.20 E. (unsurveyed), Gila County, Hydrologic Unit 15060101, on downstream side of first pier from right on highway bridge, 5 mi (8 km) upstream from confluence with White River and 14 mi (23 km) west of Fort Apache.

DRAINAGE AREA.--1,232 mi² (3,191 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1912 to December 1915, September 1916, October 1917 to January 1918, April 1918, October 1957 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WSP 1313: 1914-15, Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 4,345 ft (1,324.4 m), from river-profile map. November 1912 to July 1918, nonrecording gages or water-stage recorders at several sites within 1 mi (2 km) of present site at various datums.

REMARKS.--Records good. One transbasin diversion for industrial and municipal use (see record of Willow Creek diversion from Black River, near Morenci). Negligible storage in several small recreational lakes.

AVERAGE DISCHARGE.--24 years (water years 1913-15, 1958-78), 366 ft³/s (10.37 m³/s), 265,200 acre-ft/yr (327 hm³/yr); median of yearly mean discharges, 280 ft³/s (7.93 m³/s), 203,000 acre-ft/yr (250 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,200 ft³/s (940 m³/s) Mar. 2, 1978, gage height, 22.33 ft (6.806 m), from rating curve extended above 8,900 ft³/s (250 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 11 ft³/s (0.31 m³/s) July 6, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 8,900 ft³/s or 250 m³/s on basis of slope-area measurement of peak flow) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 31	1530	3,220 91.2	8.12 2.475	Mar. 12	2315	3,070 86.9	7.94 2.420
Feb. 11	1045	2,390 67.7	7.11 2.167	Apr. 1	1830	3,890 110	8.81 2.685
Mar. 2	0245	*33,200 940	22.33 6.806				

Minimum daily, 18 ft³/s (0.51 m³/s) July 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	60	46	75	2430	15900	3510	842	130	33	59	42
2	34	62	45	71	1270	24200	3460	760	120	30	111	43
3	32	55	42	66	729	13200	3230	660	110	26	107	42
4	30	50	43	63	500	4720	2600	613	105	35	100	51
5	29	46	43	60	370	3170	2600	536	100	32	130	53
6	43	48	44	59	317	3440	2470	550	95	30	91	48
7	59	52	47	57	362	2740	2090	582	90	29	74	43
8	152	56	45	58	555	2330	2100	543	85	28	73	37
9	169	62	45	56	532	1920	1970	491	86	27	74	34
10	140	72	41	53	425	1740	1670	409	81	26	74	31
11	106	66	44	57	1690	1730	1470	360	76	23	88	30
12	90	63	49	56	1300	1920	1390	343	71	18	93	30
13	77	60	50	60	732	2270	1490	341	65	22	93	31
14	69	58	49	61	690	1910	1600	350	60	23	81	31
15	63	58	47	59	720	1450	1630	368	56	23	67	31
16	56	56	47	68	102	1260	1650	384	52	36	58	31
17	55	54	44	47	545	1210	1580	366	49	28	51	35
18	52	54	45	158	363	1290	1460	335	46	24	45	45
19	50	52	51	133	291	1500	1340	302	43	20	40	40
20	46	51	51	107	277	1840	1270	271	40	19	36	35
21	46	52	46	97	283	2120	1230	247	36	19	41	35
22	45	52	43	100	374	2300	1180	232	34	19	63	30
23	44	50	43	97	482	3160	1110	230	32	21	61	35
24	43	49	51	112	540	3160	1060	220	30	21	63	35
25	42	48	50	66	577	2720	1050	210	28	34	73	35
26	42	47	55	62	595	2670	1050	190	26	39	62	40
27	41	48	57	67	609	2760	1070	180	25	61	59	45
28	41	47	57	77	3200	2760	1080	170	24	62	57	30
29	44	47	65	88	---	2760	1010	160	23	60	52	35
30	46	48	72	93	---	2720	931	150	29	50	47	30
31	54	---	76	1660	---	3000	---	140	---	56	43	---
TOTAL	1882	1623	1536	4013	21658	119770	51551	11535	1847	974	2166	1113
MEAN	60.7	54.1	49.5	129	774	3864	1718	372	61.6	31.4	69.9	37.1
MAX	169	72	76	1660	3200	24200	3510	842	130	62	130	53
MIN	29	46	41	53	277	1210	931	140	23	18	36	30
AC-FT	3730	3220	3050	7960	42960	237600	102300	22880	3660	1930	4300	2210
CAL YR 1977	TOTAL	32481	MEAN	89.0	MAX	715	MIN	19	AC-FT	64430		
WTR YR 1978	TOTAL	219668	MEAN	602	MAX	24200	MIN	18	AC-FT	435700		

GILA RIVER BASIN

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09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CUN- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	
UCT									
12...	1400	80	120	8.3	18.0	3	--	8.8	
NOV									
07...	1100	47	130	7.8	10.0	3	--	9.7	
DEC									
07...	1630	38	142	9.6	5.0	1	--	11.1	
JAN									
10...	1400	49	128	7.7	6.0	1	--	10.5	
FEB									
14...	1345	710	110	8.3	4.0	15	--	11.0	
MAR									
15...	1230	1650	100	--	9.0	8	--	9.8	
APR									
18...	1500	1620	70	7.5	12.0	4	--	9.0	
JUN									
07...	1100	43	100	7.3	21.0	0	--	8.3	
JUL									
13...	1415	16	153	8.6	28.0	--	.40	8.5	
AUG									
16...	1035	30	135	8.2	23.5	--	1.3	7.6	
SEP									
12...	1300	20	150	8.2	24.0	1	--	7.8	
DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BUNATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BUNATE (MG/L AS HCU3)
OCT									
12...	28	56	0	14	5.2	5.9	.3	1.5	74
NOV									
07...	7	64	0	15	6.4	7.2	.4	1.5	86
DEC									
07...	0	78	7	21	6.3	6.9	.3	1.4	87
JAN									
10...	<1	58	0	14	5.5	6.5	.4	1.3	73
FEB									
14...	6	51	13	12	5.0	3.5	.2	1.1	46
MAR									
15...	3	46	18	11	4.5	5.2	.2	1.2	34
APR									
18...	0	33	7	8.4	2.9	2.4	.2	.8	31
JUN									
07...	3	47	0	12	4.1	4.4	.3	1.4	61
JUL									
13...	11	74	0	19	6.4	6.7	.3	1.9	94
AUG									
16...	5	59	0	15	5.2	5.7	.3	1.7	80
SEP									
12...	K6	71	0	18	6.3	6.7	.3	1.8	94

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

GILA RIVER BASIN

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT 12...	0	4.3	1.2	.2	22	95	91	.13
NOV 07...	0	5.2	1.5	.1	20	93	99	.13
DEC 07...	0	5.5	1.5	.1	22	88	108	.12
JAN 10...	0	3.2	1.8	.0	7.4	89	76	.12
FEB 14...	0	16	1.4	.1	17	79	79	.11
MAR 15...	--	15	1.4	.1	19	71	74	.10
APR 18...	0	9.2	2.5	.1	17	56	60	.08
JUN 07...	0	5.4	1.1	.1	19	73	78	.10
JUL 13...	0	7.7	1.6	.1	18	91	108	.12
AUG 16...	0	5.0	1.6	.1	23	83	97	.11
SEP 12...	0	5.9	1.6	.1	24	95	111	.13
DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)		
OCT 12...	.06	--	.16	.22	.06	--		
NOV 07...	.01	--	.35	.36	.04	--		
DEC 07...	.02	.01	.56	.58	.07	.15		
JAN 10...	.09	.03	.19	.28	.04	.01		
FEB 14...	.05	.01	.13	.18	.11	.05		
MAR 15...	.42	.34	1.5	1.9	.17	.07		
APR 18...	.03	.15	.44	.47	.06	.12		
JUN 07...	.02	.02	.15	.17	.10	.08		
JUL 13...	.01	.04	.44	.45	.03	.02		
AUG 16...	.01	.01	.49	.50	.05	.05		
SEP 12...	.02	.01	.34	.36	.05	.04		

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
UCT 12...	1	0	40	10	<10	5	<10	190
NOV 07...	1	400	40	20	2	12	9	350
DEC 07...	1	0	70	6	0	0	5	40
JAN 10...	0	0	60	9	0	10	3	70
FEB 14...	0	100	70	20	0	10	6	1400
MAR 15...	1	0	60	10	3	20	6	1200
APR 18...	2	300	80	10	1	0	4	380
JUN 07...	1	200	80	9	2	0	7	50
JUL 13...	0	200	40	10	0	0	7	100
AUG 16...	1	300	60	10	1	0	6	40
SEP 12...	1	0	60	30	3	0	6	80

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
UCT 12...	50	<100	10	4	.0	0	<10	30
NOV 07...	50	14	4	8	.0	0	0	40
DEC 07...	20	3	10	10	.1	0	0	20
JAN 10...	40	2	10	20	.0	0	0	20
FEB 14...	50	9	20	0	.4	0	8	20
MAR 15...	30	7	30	0	.0	0	0	20
APR 18...	40	6	20	0	.0	0	0	0
JUN 07...	0	7	10	5	.0	0	0	10
JUL 13...	30	3	20	0	.0	0	0	10
AUG 16...	<10	4	10	3	.0	0	0	20
SEP 12...	30	3	10	0	.0	0	0	10

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)
UCT				
12...	2.0	.00	--	--
NOV				
07...	1.6	.00	7	--
DEC				
07...	.7	.00	5	--
JAN				
10...	18	.00	1	--
FEB				
14...	5.0	.00	2	--
MAR				
15...	3.9	.00	2	--
APR				
18...	2.5	.00	3	--
JUN				
07...	1.3	.00	1	570
JUL				
13...	2.2	.00	2	--
AUG				
16...	2.5	.00	0	--
SEP				
12...	2.0	.00	5	--

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUN 7, 78
TIME	1100
TOTAL CELLS/ML	570
DIVERSITY: DIVISION	1.0
..CLASS	1.0
...ORDER	1.1
...FAMILY	2.5
...GENUS	2.5

ORGANISM	CELLS /ML	PER- CENT
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCEAE		
....CYCLOTELLA	15	3
..PENNALES		
...ACHNANTHACEAE		
....CUCULONEIS	59	10
...CYMBELLACEAE		
....CYMBELLA	59	10
...EUNOTIACEAE		
....EUNOTIA	15	3
...GOMPHONEMACEAE		
....GOMPHONEMA	100#	18
...NAVICULACEAE		
....NAVICULA	59	10
...NITZSCHACEAE		
....NITZSCHIA	29	5
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	230#	41

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

353

09490800 NORTH FORK WHITE RIVER NEAR GREER, AZ

LOCATION.--Lat 34°00'55", long 109°38'37", in SW¼ sec.7, T.7 N., R.26 E. (unsurveyed), Apache County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on right bank 300 ft (91 m) upstream from Bear Cienega Creek and 11 mi (18 km) west of Greer.

DRAINAGE AREA.--39 mi² (101 km²), approximately.

PERIOD OF RECORD.--June 1965 to September 1978 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 8,372 ft (2,551.8 m). Prior to Nov. 13, 1965, at datum 1.08 ft (0.329 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--13 years, 24.6 ft³/s (0.697 m³/s), 17,820 acre-ft/yr (22.0 hm³/yr); median of yearly mean discharges, 22 ft³/s (0.62 m³/s) 15,900 acre-ft/yr (20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 510 ft³/s (14.4 m³/s) Apr. 28, 1973, gage height, 4.15 ft (1.265 m); minimum daily, 4.6 ft³/s (0.13 m³/s) July 29, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s (2.8 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	2015	101 2.86	2.94 0.896	Apr. 3	1800	107 3.03	2.56 0.780
Feb. 11	1130	118 3.34	2.91 0.887	Apr. 7	1915	119 3.37	2.71 0.826
Mar. 30	1600	*153 4.33	3.08 0.939	Apr. 14	1830	130 3.68	2.87 0.875

Minimum daily, 4.6 ft³/s (0.13 m³/s) July 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	12	5.0	6.7	10	28	104	66	70	18	15	8.0
2	8.7	12	5.0	9.0	10	58	87	62	65	18	12	9.4
3	11	11	5.0	8.0	10	20	90	60	65	16	6.8	8.0
4	16	10	6.0	8.4	10	15	88	59	60	16	13	7.4
5	11	7.9	6.0	6.8	11	15	87	61	60	15	9.8	7.1
6	44	11	10	7.0	11	15	91	63	56	14	5.9	7.1
7	45	11	13	7.8	11	15	96	60	56	10	5.6	7.4
8	27	10	10	7.0	12	15	84	62	55	11	10	7.7
9	22	10	12	7.0	12	14	66	60	54	12	9.4	7.7
10	19	10	12	7.6	12	14	60	60	53	12	11	8.0
11	17	10	12	6.8	95	13	59	62	53	12	11	7.7
12	16	10	14	7.0	95	20	71	66	51	12	13	7.4
13	15	10	11	7.0	73	12	87	71	49	10	9.4	9.3
14	14	9.4	12	7.0	34	12	96	81	49	16	80	8.5
15	13	8.7	10	7.1	14	16	95	69	46	12	7.7	8.1
16	12	7.8	8.1	6.9	10	19	83	91	44	8.7	7.4	14
17	12	9.6	12	7.0	10	21	73	88	40	7.7	7.4	15
18	12	7.8	7.4	7.0	10	25	63	82	37	10	8.0	9.7
19	11	5.2	7.0	7.0	10	33	61	80	35	14	8.0	9.0
20	11	5.3	6.1	7.0	10	42	60	78	33	12	17	8.5
21	11	6.3	7.5	7.0	10	49	59	79	31	9.8	15	8.4
22	11	7.4	7.5	7.0	10	64	57	81	30	8.0	14	8.9
23	11	5.8	7.1	7.0	10	66	56	61	26	8.4	12	11
24	11	8.7	6.8	7.0	10	66	59	80	25	18	12	12
25	10	5.0	8.5	7.0	10	71	62	80	24	24	12	14
26	9.9	6.7	6.5	8.0	10	80	69	80	23	9.4	10	11
27	9.7	5.0	7.0	8.0	14	90	74	75	23	7.1	8.7	8.7
28	9.2	4.8	7.8	8.0	33	97	73	75	24	5.0	8.0	7.6
29	26	5.0	7.4	8.0	---	108	72	75	22	4.6	8.0	7.1
30	17	5.0	7.0	8.0	---	108	69	70	20	4.8	8.0	7.3
31	13	---	6.8	8.0	---	101	---	70	---	4.8	8.0	---
TOTAL	484.6	248.4	267.5	228.1	577	1322	2251	2247	1283	360.3	583.1	271.0
MEAN	15.6	8.28	8.63	7.36	20.6	42.6	73.0	72.5	42.8	11.6	12.4	9.03
MAX	45	12	14	9.0	95	108	104	91	70	24	80	15
MIN	8.7	4.8	5.0	6.7	10	12	56	59	20	4.6	5.6	7.1
AC-FT	961	493	531	452	1140	2620	4460	4460	2540	715	760	538

CAL YR 1977 TOTAL 5811.9 MEAN 15.9 MAX 80 MIN 4.7 AC-FT 11530
WTR YR 1978 TOTAL 9423.0 MEAN 27.2 MAX 106 MIN 4.6 AC-FT 19680

GILA RIVER BASIN

09491000 NORTH FORK WHITE RIVER NEAR McNARY, AZ

LOCATION.--Lat 34°02'47", long 109°44'02", in E½ sec.31, T.8 N., R.25 E. (unsurveyed), Apache County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on left bank 1.9 mi (3.1 km) downstream from Paradise Creek and 7 mi (11 km) southeast of McNary.

DRAINAGE AREA.--66 mi² (171 km²), approximately.

PERIOD OF RECORD.--June 1945 to June 1947, May 1948 to June 1949, May 1950 to September 1954 (monthly discharge only, July to September 1954), June 1957 to current year. Maximum discharge only for water years 1955-56, published in WSP 1513. Prior to Oct. 1, 1963, published as White River near McNary.

REVISED RECORDS.--WSP 1243: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 7,723 ft (2,354.0 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. No storage above station. Water diverted about 5 mi (8 km) upstream from station for use at McNary.

AVERAGE DISCHARGE.--26 years (water years 1946, 1951-53, 1958-78), 43.1 ft³/s (1.221 m³/s), 31,230 acre-ft/yr (38.5 hm³/yr); median of yearly mean discharges, 40 ft³/s (1.13 m³/s), 29,000 acre-ft/yr (36 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s (36.5 m³/s) Sept. 19, 1946, gage height, 5.36 ft (1.634 m), from rating curve extended above 350 ft³/s (9.9 m³/s); minimum recorded, 4 ft³/s (0.11 m³/s) Nov. 19, 1948, and Nov. 29, 1950, caused by ice jam upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 455 ft³/s (12.9 m³/s) Mar. 31, gage height, 3.46 ft (1.055 m), base discharge, 180 ft³/s (5.1 m³/s); minimum daily, 11 ft³/s (0.31 m³/s) Jan. 16, 17, Sept. 12, 19-22, 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 19/7 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	19	16	15	15	22	340	143	120	22	23	14
2	12	18	16	18	17	23	258	125	120	21	25	14
3	12	18	17	23	17	25	242	113	110	20	18	14
4	18	17	16	20	17	27	237	105	110	18	20	13
5	15	18	19	17	17	30	220	109	100	18	22	13
6	47	23	22	15	17	35	224	117	97	17	17	13
7	59	21	22	13	17	40	233	108	95	16	16	13
8	34	20	21	23	17	41	213	108	93	17	18	12
9	28	20	20	26	17	41	158	103	86	18	20	12
10	26	20	22	26	17	38	132	103	76	18	18	12
11	24	20	21	14	17	35	125	110	75	18	16	12
12	22	20	20	12	17	35	150	110	73	18	23	11
13	21	20	19	13	16	33	188	146	69	17	19	12
14	20	18	16	13	15	31	213	181	66	21	17	12
15	19	17	17	13	15	32	225	215	62	21	16	12
16	19	16	16	11	15	32	207	220	59	16	15	17
17	18	17	16	11	15	37	180	206	54	15	15	17
18	16	16	15	12	15	46	152	168	49	15	14	12
19	18	14	15	14	15	64	141	179	46	19	19	11
20	16	14	15	14	15	85	137	168	42	18	25	11
21	18	14	15	14	15	103	135	168	39	17	20	11
22	18	15	15	14	15	164	126	173	37	14	20	11
23	17	15	15	14	15	166	121	176	34	14	18	14
24	17	18	15	13	16	173	129	166	32	20	17	17
25	17	16	15	13	17	175	143	156	29	40	16	15
26	16	15	18	13	18	188	166	143	28	23	16	16
27	16	13	20	13	19	190	189	134	27	18	15	12
28	16	13	20	13	20	190	182	125	29	16	14	11
29	30	14	17	14	---	207	172	125	28	15	14	11
30	26	18	16	14	---	244	158	125	24	14	14	11
31	20	---	16	15	---	326	---	125	---	15	14	---
TOTAL	671	517	551	473	456	2898	5496	4473	1909	569	558	366
MEAN	21.6	17.2	17.6	15.3	16.4	93.5	183	144	63.6	18.4	18.0	12.9
MAX	59	23	22	26	20	326	340	220	120	40	25	17
MIN	12	13	15	11	15	22	121	103	24	14	14	11
AC-FT	1330	1030	1090	938	908	5750	10900	6870	3790	1130	1110	766

CAL YR 1977 TOTAL 8531.2 MEAN 23.4 MAX 144 MIN 8.9 AC-FT 16920
WTR YR 1978 TOTAL 16959.0 MEAN 51.9 MAX 340 MIN 11 AC-FT 37610

NOTE.--No gage-height record Feb. 2 to Mar. 6.

09492400 EAST FORK WHITE RIVER NEAR FORT APACHE, AZ

LOCATION.--Lat 33°49'20", long 109°48'50", in SE¼ sec.16, T.5 N., R.24 E. (unsurveyed), Apache County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on left bank 600 ft (180 m) downstream from highway bridge, 0.1 mi (0.2 km) upstream from Rock Creek and 10 mi (16 km) east of Fort Apache.

DRAINAGE AREA.--38.8 mi² (100.5 km²).

PERIOD OF RECORD.--August 1957 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,050 ft (1,844 m), by barometer. Prior to Dec. 29, 1960, at site 600 ft (180 m) upstream at datum 12.78 ft (3.895 m) higher. Dec. 29, 1960, to Sept. 28, 1962, at site 600 ft (180 m) upstream at datum 12.92 ft (3.938 m) higher.

REMARKS.--Records good except those for winter periods, which are poor.

AVERAGE DISCHARGE.--21 years, 31.9 ft³/s (0.903 m³/s), 23,110 acre-ft/yr (28.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 663 ft³/s (18.8 m³/s) Aug. 17, 1961, gage height, 4.82 ft (1.469 m), present site and datum, from floodmark, from rating curve extended above 170 ft³/s (4.8 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 4.0 ft³/s (0.11 m³/s) Nov. 29, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s (2.83 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	1400	*272 7.70	2.76 0.841	Apr. 27	0500	202 5.72	2.41 0.735
Mar. 23	0315	160 4.53	2.18 0.664	May 6	0700	127 3.60	2.03 0.619
Apr. 1	0800	212 6.00	2.46 0.750	May 15	0015	226 6.40	2.53 0.771
Apr. 8	0015	168 4.76	2.24 0.683	May 23	1945	163 4.62	2.24 0.683
Apr. 16	0100	165 4.67	2.22 0.677				

Minimum daily, 5.2 ft³/s (0.15 m³/s) Dec. 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NUV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	11	6.9	9.4	33	217	192	142	93	16	32	8.7
2	9.5	10	10	8.1	28	204	165	118	92	14	39	10
3	9.1	9.7	8.9	8.7	23	140	146	104	87	14	25	10
4	10	9.3	7.9	8.8	21	88	140	98	82	13	24	8.1
5	9.7	9.1	7.6	8.3	21	79	135	108	78	12	20	7.5
6	33	14	7.1	8.2	22	71	142	114	73	12	17	7.1
7	60	12	7.2	8.3	23	62	152	102	66	11	15	6.7
8	40	12	8.7	7.6	24	60	156	94	61	13	17	6.2
9	29	10	8.3	9.5	22	64	127	90	59	14	17	6.1
10	25	11	7.4	8.6	20	64	106	99	59	14	21	5.8
11	22	11	7.4	8.8	21	58	97	112	58	12	20	5.5
12	20	10	6.6	7.8	19	55	104	132	55	12	22	7.0
13	18	9.8	6.9	7.9	19	50	120	163	52	12	17	8.7
14	17	10	8.7	9.2	17	49	131	193	49	14	15	8.4
15	16	9.8	8.2	9.7	16	46	144	212	46	12	13	8.3
16	15	9.5	7.4	9.4	15	47	154	200	43	11	12	11
17	14	9.1	6.4	9.8	15	54	147	183	40	10	12	11
18	14	9.1	7.7	9.7	19	69	135	162	37	10	11	9.0
19	13	9.1	7.2	10	21	85	130	145	34	12	18	8.6
20	13	9.0	5.2	10	22	96	134	140	32	12	28	8.3
21	13	8.6	11	9.0	22	110	136	141	29	11	16	8.1
22	12	8.4	9.2	9.0	24	133	132	149	27	9.7	15	8.0
23	12	8.6	7.6	9.0	26	141	132	152	25	10	13	8.3
24	11	7.9	7.4	9.0	29	122	139	147	23	11	12	8.7
25	11	9.0	6.9	8.0	31	122	155	130	22	26	14	11
26	10	8.1	6.9	9.0	31	134	172	111	20	15	11	11
27	9.9	8.4	13	10	29	149	192	101	20	18	9.8	8.9
28	9.8	8.2	13	10	106	147	186	95	22	13	8.8	8.5
29	17	6.8	12	10	---	148	175	92	22	11	8.3	8.2
30	17	8.5	11	15	---	160	161	92	17	11	8.4	8.0
31	12	---	10	30	---	173	---	94	---	12	10	---
TOTAL	531.2	287.0	259.7	305.8	721	5197	4337	4015	1423	397.7	521.3	250.7
MEAN	17.1	9.57	8.36	9.86	23.8	103	145	130	47.4	12.8	16.8	8.36
MAX	60	14	13	30	106	217	192	212	93	26	39	11
MIN	9.1	6.8	5.2	7.6	15	46	97	90	17	9.7	8.3	5.5
AC-FT	1050	569	515	607	1430	6340	8600	7960	2820	789	1030	497
CAL YR 1977	TOTAL	6489.4	MEAN	17.8	MAX	74	MIN	5.2	AC-FT	12870		
WTR YR 1978	TOTAL	16246.4	MEAN	44.5	MAX	217	MIN	5.2	AC-FT	52220		

GILA RIVER BASIN

09494000 WHITE RIVER NEAR FORT APACHE, AZ

LOCATION.--Lat 33°44'11", long 110°09'58", in SE¼ sec.32, T.4½ N., R.21 E. (unsurveyed), Gila County, Hydrologic Unit 15060102, in Fort Apache Indian Reservation, on right bank 2,200 ft (670 m) downstream from highway bridge, 4.5 mi (7.2 km) upstream from confluence with Black River, and 11 mi (18 km) west of Fort Apache.

DRAINAGE AREA.--632 mi² (1,637 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1917 to September 1918 (published as "at Wanslee's Ranch"), October 1957 to current year. Monthly discharge only for some periods, published in WSP 1313.

REVISED RECORDS.--WRD Ariz. 1971: 1967(M).

GAGE.--Water-stage recorder. Datum of gage is 4,365.99 ft (1,330.754 m) National Geodetic Vertical Datum of 1929. Oct. 12, 1917, to Aug. 31, 1918, nonrecording gage at site 2,100 ft (640 m) upstream at different datum.

REMARKS.--Records good. Small diversions above station for irrigation of about 1,460 acres (5.91 km²). Negligible storage above station in several small recreational lakes.

AVERAGE DISCHARGE.--22 years, 174 ft³/s (4.928 m³/s), 126,100 acre-ft/yr (155 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,670 ft³/s (246 m³/s) Aug. 12, 1971, gage height, 13.8 ft (4.21 m), from rating curve extended above 3,800 ft³/s (110 m³/s) on basis of slope-area measurements at gage heights 9.2 and 13.8 ft (2.80 and 4.21 m); no flow July 18-21, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	1830	*6,590 187	11.05 3.368	Aug. 1	0130	3,460 98.0	7.96 2.426
Mar. 23	0900	2,370 67.1	7.07 2.155	Aug. 12	0215	1,610 45.6	6.13 1.868

Minimum daily, 24 ft³/s (0.68 m³/s) Dec. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	58	37	42	344	3470	1610	618	300	61	376	40
2	36	53	35	39	230	4640	1630	568	290	59	170	35
3	37	52	46	36	176	2820	1370	525	280	47	100	35
4	36	50	45	38	147	1250	1260	469	260	55	110	45
5	34	47	40	40	135	928	1150	461	240	54	87	50
6	80	52	36	39	136	793	1170	522	230	53	84	45
7	380	76	35	37	164	650	1150	514	215	52	76	40
8	200	70	31	36	170	552	1180	479	189	51	73	35
9	150	67	34	30	161	530	975	452	180	51	73	30
10	120	55	33	34	145	526	784	427	175	50	72	30
11	90	58	34	42	231	461	685	436	170	50	69	30
12	66	56	35	39	159	440	667	464	167	46	225	30
13	65	55	32	34	141	437	716	520	159	40	78	28
14	61	52	30	32	137	405	641	611	148	37	64	29
15	57	52	32	39	131	358	945	723	136	41	59	28
16	54	50	34	49	127	339	932	721	127	42	54	38
17	51	49	32	39	106	344	675	682	116	35	51	38
18	49	47	30	38	87	422	762	616	106	32	46	38
19	49	48	34	45	88	541	698	563	105	37	43	31
20	50	46	32	40	101	706	681	510	97	38	59	27
21	50	45	24	35	125	856	675	486	89	38	67	27
22	50	44	25	35	132	1270	656	467	84	37	56	29
23	49	44	32	35	166	1820	606	491	76	34	55	30
24	49	44	35	45	184	1360	605	460	70	33	51	35
25	48	42	33	40	194	1160	645	459	67	42	51	43
26	46	45	31	43	204	1170	695	400	64	37	54	39
27	46	43	33	45	197	1240	786	360	65	35	52	30
28	47	43	45	50	222	1210	787	360	65	47	50	41
29	60	42	51	50	---	1160	748	350	69	38	45	38
30	86	58	48	57	---	1230	681	320	65	33	40	37
31	72	---	46	148	---	1370	---	300	---	42	40	---
TOTAL	2306	1523	1096	1341	4536	34418	27137	15354	4400	1415	2532	1091
MEAN	74.4	50.8	35.4	44.9	162	1110	905	495	147	45.6	81.7	36.4
MAX	380	76	51	148	344	4640	1810	723	300	67	376	39
MIN	34	38	24	30	87	339	605	300	65	32	40	27
AC-FT	4570	3020	2170	2760	9000	66270	53630	30410	8730	2810	5020	2160
CAL YR 1977	TOTAL	29635	MEAN	81.2	MAX	484	MIN	19	AC-FT	58780		
WTR YR 1978	TOTAL	97181	MEAN	266	MAX	4640	MIN	24	AC-FT	192800		

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
UCT 12...	1600	70	300	8.2	17.0	8	--	8.4
NOV 07...	1400	74	335	9.5	11.0	7	--	10.1
DEC 07...	1430	30	500	9.3	5.0	1	--	11.3
JAN 10...	1630	51	450	8.3	5.5	1	--	11.0
FEB 14...	1500	320	260	8.9	4.0	9	--	11.4
APR 18...	1700	950	100	7.8	11.0	6	--	9.2
MAY 09...	1325	500	150	7.9	13.0	--	4.6	9.0
JUN 07...	0930	235	175	8.3	14.0	2	--	8.7
JUL 13...	1230	40	350	8.5	26.0	3	--	7.4
AUG 16...	1230	70	400	8.4	22.0	--	17	7.6
SEP 12...	1600	42	400	8.4	24.0	4	--	7.6

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT 12...	42	150	34	44	9.4	7.0	.3	2.2	140
NOV 07...	49	170	39	50	11	8.9	.3	2.5	160
DEC 07...	0	200	64	60	13	11	.3	2.3	170
JAN 10...	7	230	76	68	15	10	.3	2.4	190
FEB 14...	800	130	31	38	8.5	6.2	.2	1.5	120
APR 18...	2	57	12	17	3.5	2.7	.2	.9	55
MAY 09...	7	62	7	18	4.2	3.6	.2	1.0	67
JUN 07...	23	79	14	24	4.7	4.0	.2	1.5	80
JUL 13...	32	170	51	50	12	8.1	.3	2.3	150
AUG 16...	42	190	42	55	12	8.0	.3	2.4	170
SEP 12...	K9	190	70	56	13	9.8	.3	2.5	150

K Based on non-ideal colony count.

GILA RIVER BASIN

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT 12...	0	43	2.6	.2	21	185	198	.25
NOV 07...	0	54	3.3	.1	20	228	229	.31
DEC 07...	0	66	8.5	.2	20	267	265	.36
JAN 10...	0	78	8.2	.1	18	296	294	.40
FEB 14...	0	35	2.4	.1	19	162	170	.22
APR 18...	0	10	1.3	.1	15	77	78	.10
MAY 09...	0	15	1.6	.1	16	91	93	.12
JUN 07...	0	20	1.5	.1	17	113	112	.15
JUL 13...	0	57	4.2	.1	17	226	225	.31
AUG 16...	3	58	3.3	.1	20	242	246	.33
SEP 12...	0	73	6.1	.2	20	249	255	.34

DATE	NITROGEN, NO2+NO3 DIS- SOLVED TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS- SOLVED TOTAL (MG/L AS N)	NITROGEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHOPHOSPHATE, DIS- SOLVED (MG/L AS P)
OCT 12...	.03	--	.32	.35	.05	--
NOV 07...	.01	--	.66	.67	.04	--
DEC 07...	.02	.01	.46	.48	.02	.01
JAN 10...	.02	.03	.11	.13	.09	.01
FEB 14...	.03	.01	.11	.14	.08	.02
APR 18...	.05	.03	.27	.32	.06	.02
MAY 09...	.00	.01	.15	.15	.06	.02
JUN 07...	.00	.02	.27	.27	.03	.01
JUL 13...	.00	.02	.26	.26	.02	.01
AUG 16...	.01	.00	.70	.71	.08	.02
SEP 12...	.02	.05	.18	.20	.02	.00

GILA RIVER BASIN

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09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CK)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
UCT								
12...	1	200	80	20	<10	0	10	330
NOV								
07...	1	300	70	20	5	16	14	360
DEC								
07...	1	0	90	20	1	0	5	60
JAN								
10...	1	100	50	30	0	10	5	120
FEB								
14...	1	0	70	20	3	10	7	600
APR								
18...	2	200	90	10	1	0	4	960
MAY								
09...	1	100	510	20	0	0	2	630
JUN								
07...	1	300	80	10	0	5	5	260
JUL								
13...	1	200	70	20	0	10	6	160
AUG								
16...	2	200	70	30	1	0	8	400
SEP								
12...	3	0	80	40	8	10	8	170

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
UCT								
12...	30	<100	20	4	.0	0	<10	30
NOV								
07...	50	45	20	10	.0	0	0	40
DEC								
07...	10	3	20	10	.0	0	0	60
JAN								
10...	30	2	0	10	.0	0	0	30
FEB								
14...	50	40	20	0	.0	0	5	20
APR								
18...	30	5	30	0	.0	0	0	10
MAY								
09...	30	5	20	0	.0	0	0	30
JUN								
07...	0	6	20	5	.0	0	0	10
JUL								
13...	10	3	20	0	.0	0	0	10
AUG								
16...	<10	20	30	4	.0	0	0	40
SEP								
12...	10	7	20	0	.0	0	0	10

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)
OCT								
12...	1.8	.00	--	--	--	--	--	--
NOV								
07...	1.4	.00	4	--	--	--	--	--
DEC								
07...	.9	.00	5	--	--	--	--	--
JAN								
10...	.7	.00	2	--	--	--	--	--
FEB								
14...	2.7	.00	2	--	--	--	--	--
APR								
18...	3.0	.00	5	--	--	--	--	--
MAY								
09...	3.1	.00	0	--	--	--	--	--
JUN								
07...	2.1	.00	1	500	--	--	--	--
JUL								
13...	2.0	.00	1	--	6.85	6.85	.190	.000
AUG								
16...	--	.00	0	--	--	--	--	--
SEP								
12...	2.0	.00	3	--	--	--	--	--

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUN 7, 78
TIME	0930
TOTAL CELLS/ML	500
DIVERSITY: DIVISION	1.0
..CLASS	1.0
...URGER	1.0
...FAMILY	2.4
...GENUS	2.5

ORGANISM	CELLS /ML	PER- CENT
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...PENNACEAE		
...ACHNANIACEAE		
...ACHNANTHES	14	3
...RHOICUSPHENIA	14	3
...CYMBELLACEAE		
...CYMBELLA	14	3
...EPIHEMIA	14	3
...FRAGILARIACEAE		
...SYNEDRA	86	17
...GOMPHONEMACEAE		
...GOMPHONEMA	72	14
...NAVICULACEAE		
...NAVICULA	29	6
...NITZSCHACEAE		
...NITZSCHIA	43	9
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...OSCILLATORIACEAE		
...OSCILLATORIA	210	43

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

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09495000 FORESTDALE CREEK DIVERSION FROM SHOW LOW CREEK, NEAR SHOW LOW, AZ

LOCATION.--Lat 34°10'40", long 110°00'56", in SE¼NW¼ sec.16, T.9 N., R.22 E., Navajo County, Hydrologic Unit 15020005, in Sitgreaves National Forest, on right bank 170 ft (50 m) downstream from terminal structure of Show Low Creek diversion works, 4,350 ft (1,330 m) west of pumping plant on Show Low Lake, and 5 mi (8 km) south of Show Low.

PERIOD OF RECORD.--May 1953 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 6,621.57 ft (2,018.255 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good. Entire flow consists of water pumped from Show Low Lake, in Little Colorado River basin, into headwaters of Forestdale Creek in Gila River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s (0.79 m³/s) June 2, 3, 5, 1973, Mar. 17-25, 27-30, Apr. 2-15, Apr. 18 to May 5, 1975; no flow for most of time.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	19	26	13	25	23	.00	.00
2	.00	.00	.00	.00	.00	17	26	11	23	23	.00	.00
3	.00	.00	.00	.00	.00	13	27	5.4	23	23	.00	.00
4	.00	.00	.00	.00	.00	.00	27	15	25	23	.00	.00
5	.00	.00	.00	.00	.00	.00	23	26	25	23	.00	.00
6	.00	.00	.00	.00	.00	12	21	26	25	22	.00	.00
7	.00	.00	.00	.00	11	26	21	26	25	22	.00	.00
8	.00	.00	.00	.00	18	26	18	26	25	22	.00	.00
9	.00	.00	.00	.00	18	26	15	26	25	22	.00	.00
10	.00	.00	.00	.00	18	26	15	26	24	22	.00	.00
11	.00	.00	.00	.00	15	26	15	26	24	21	.00	.00
12	.00	.00	.00	.00	18	26	15	26	24	21	.00	.00
13	.00	.00	.00	.00	18	26	15	26	24	21	.00	.00
14	.00	.00	.00	.00	18	26	15	26	24	18	.00	.00
15	.00	.00	.00	.00	18	26	15	26	24	18	.00	.00
16	.00	.00	.00	.00	18	26	15	26	24	21	.00	.00
17	.00	.00	.00	.00	18	26	15	26	24	20	.00	.00
18	.00	.00	.00	.00	18	26	15	26	24	21	.00	.00
19	.00	.00	.00	.00	18	26	15	26	24	20	.00	.00
20	.00	.00	.00	.00	18	26	15	15	24	19	.00	.00
21	.00	.00	.00	.00	18	26	15	14	24	19	.00	.00
22	.00	.00	.00	.00	18	26	14	25	24	16	.00	.00
23	.00	.00	.00	.00	18	26	13	25	24	15	.00	.00
24	.00	.00	.00	.00	17	26	13	25	24	5.0	.00	.00
25	.00	.00	.00	.00	17	26	13	25	23	2.2	.00	.00
26	.00	.00	.00	.00	17	26	13	25	23	.00	.00	.00
27	.00	.00	.00	.00	17	26	13	25	23	.00	.00	.00
28	.00	.00	.00	.00	18	26	13	25	23	.00	.00	.00
29	.00	.00	.00	.00	---	26	13	25	23	.00	.00	.00
30	.00	.00	.00	.00	---	26	13	25	23	.00	.00	.00
31	.00	---	.00	.00	---	26	---	25	---	.00	.00	---
TOTAL	.00	.00	.00	.00	382.00	711.00	502	713.4	719	482.20	.00	.00
MEAN	.000	.000	.000	.000	13.6	22.9	16.7	23.0	24.0	15.6	.000	.000
MAX	.00	.00	.00	.00	18	26	27	26	25	23	.00	.00
MIN	.00	.00	.00	.00	.00	.00	13	5.4	23	.00	.00	.00
AC-FT	.00	.00	.00	.00	756	1410	996	1420	1430	956	.00	.00
CAL YR 1977	TOTAL	449.00	MEAN 1.23	MAX 20	MIN .00	AC-FT 891						
WTR YR 1978	TOTAL	3509.60	MEAN 9.62	MAX 27	MIN .00	AC-FT 6960						

09496500 CARRIZO CREEK NEAR SHOW LOW, AZ

LOCATION.--Lat 33°59'09", long 110°16'52", in sec.24, T.7 N., R.19 E. (unsurveyed), Gila County, Hydrologic Unit 15060104, in Fort Apache Indian Reservation, on right bank 500 ft (152 m) upstream from bridge on U.S. Highway 60, 1 mi (2 km) downstream from Corduroy Creek, 23 mi (37 km) southwest of Show Low, and 24 mi (39 km) upstream from mouth. Prior to June 1976 at site on bridge pier 400 ft (122 m) downstream.

DRAINAGE AREA.--439 mi² (1,137 km²).

PERIOD OF RECORD.--June 1951 to June 1961, June 1967 to June 1976, October 1975 to June 1976 (monthly discharges only), April 1977 to current year.

REVISED RECORDS.--WRD Ariz. 1968: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,749.52 ft or 447.654 m (revised) National Geodetic Vertical Datum of 1929. Prior to June 1976 at site on bridge pier 400 ft (122 m) downstream at same datum.

REMARKS.--Records good. Diversions for irrigation above station of less than 300 acres (1.21 km²). Records include transbasin diversion from Show Low Creek. (See sta 09495000.)

AVERAGE DISCHARGE.--18 years (water years 1952-60, 1968-75, 1978), 45.0 ft³/s (1.274 m³/s), 32,600 acre-ft/yr (40.2 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr), unadjusted for transbasin diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,500 ft³/s (581 m³/s) Jan. 18, 1952, gage height, 12.08 ft (3.682 m), from rating curve extended above 2,000 ft³/s (57 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.2 ft³/s (0.006 m³/s) July 12, 1951, Sept. 21, 1959, at site then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1951, about 23,000 ft³/s (650 m³/s) Dec. 30, 1965, gage height, 13.0 ft (3.96 m), from floodmark at previous site, from rating curve extended above 2,000 ft³/s (57 m³/s) on basis of slope-area measurement at gage height 12.08 ft (3.682 m).

EXTREMES FOR CURRENT PERIOD.--Maximum discharges (*) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
July 3, 1977	2100	1,710 48.4	4.96 1.512	Mar. 1, 1978	1515	*12,700 360	12.07 3.679
Aug. 11, 1977	Unknown	*5,060 143	7.80 2.377	Aug. 12, 1978	0115	2,250 63.7	5.51 1.679

Minimum daily, 0.85 ft³/s (0.024 m³/s) June 19-20, July 11, 1977.

Minimum daily, 1.3 ft³/s (0.037 m³/s) Jan. 7, 1978.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	9.0	3.0	1.0	3.8	1.7
2							---	9.0	3.2	1.0	19	4.7
3							---	8.0	3.2	127	5.1	13
4							---	7.0	3.6	36	5.4	3.8
5							---	6.6	3.8	3.8	2.3	2.6
6							---	6.6	4.0	2.8	2.2	5.9
7							---	6.4	3.8	1.8	9.6	3.2
8							24	6.6	3.8	1.5	6.0	1.7
9							24	7.0	3.6	1.1	4.0	1.4
10							20	7.0	3.0	.94	19	1.8
11							17	6.4	2.2	.85	502	2.2
12							18	6.1	1.7	7.5	10	3.0
13							19	5.8	1.3	4.0	7.3	3.2
14							19	6.6	1.1	2.2	4.8	3.2
15							20	7.0	.94	1.4	5.1	2.6
16							22	6.4	.94	30	24	2.2
17							21	5.3	1.0	4.9	22	2.2
18							20	5.6	.94	3.6	9.3	1.7
19							20	5.1	.85	6.9	82	1.7
20							19	4.6	.85	9.3	14	1.4
21							19	4.6	1.0	6.1	4.6	1.4
22							19	4.2	1.3	7.0	4.6	1.4
23							18	4.2	1.5	47	5.4	2.0
24							16	3.8	1.4	13	2.8	2.0
25							15	4.2	1.5	9.0	2.6	1.8
26							14	4.6	1.7	8.6	2.2	1.8
27							13	4.0	1.5	6.6	2.0	1.8
28							12	3.6	1.3	5.3	2.0	7.6
29							12	3.6	1.1	4.4	1.8	3.8
30							11	3.4	1.1	4.6	1.7	3.0
31							---	3.2	---	4.6	1.7	---
TOTAL							---	175.5	60.22	363.79	784.3	89.8
MEAN							---	5.66	2.01	11.7	25.3	2.99
MAX							---	9.0	4.0	127	502	13
MIN							---	3.2	.85	.85	1.7	1.4
AC-FT							---	348	119	722	1560	178

GILA RIVER BASIN

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09496500 CARRIZO CREEK NEAR SHOW LOW, AZ--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	4.4	4.5	4.8	220	5210	75	15	18	20	5.1	2.8
2	2.5	4.4	4.6	4.6	81	4060	95	17	18	20	17	3.4
3	2.5	4.4	4.7	4.0	46	5850	71	17	16	20	11	3.6
4	2.4	4.4	4.6	2.2	24	1410	57	12	17	19	6.2	3.0
5	2.5	4.4	4.4	3.6	25	1100	51	15	20	19	6.0	2.9
6	77	7.6	4.4	3.8	20	1040	49	27	20	19	5.7	2.8
7	13	5.6	4.4	1.3	20	668	45	25	21	19	18	2.4
8	1.2	6.9	4.4	5.3	42	402	34	24	23	20	14	2.3
9	5.0	5.6	4.6	6.0	42	244	38	22	23	20	18	2.3
10	4.2	5.5	4.6	6.0	34	250	45	21	22	20	12	2.3
11	3.4	5.1	4.6	6.0	71	229	38	20	22	24	35	2.0
12	3.6	5.1	4.6	7.0	66	279	35	20	22	21	578	1.7
13	3.5	4.8	4.6	7.0	56	325	32	19	22	20	14	1.7
14	3.4	4.8	4.6	8.0	56	284	31	19	22	20	8.3	1.8
15	3.5	4.8	4.6	9.0	54	226	28	19	21	17	6.5	1.8
16	3.5	4.8	4.6	10	54	157	27	19	21	18	5.6	4.2
17	3.2	4.9	4.6	11	50	126	27	18	21	25	5.1	3.7
18	3.4	4.9	4.4	11	38	118	25	19	21	21	4.9	3.1
19	3.6	4.8	4.4	11	40	120	25	19	21	20	4.9	2.5
20	3.6	4.9	2.6	11	40	152	25	19	21	18	8.3	2.8
21	3.6	4.6	1.4	10	46	119	24	15	21	20	31	2.6
22	4.0	4.6	2.6	9.1	64	169	17	12	21	18	7.8	2.6
23	4.0	4.7	4.4	9.3	104	355	16	19	24	15	6.3	80
24	4.0	4.6	4.4	9.0	154	145	15	19	20	14	5.3	32
25	4.0	4.7	4.2	9.5	171	120	15	19	20	9.3	4.7	9.7
26	3.6	4.7	4.4	6.9	170	91	14	19	20	11	5.7	5.1
27	3.6	4.7	4.6	6.7	154	78	15	19	20	7.3	5.1	3.4
28	4.0	4.8	5.1	6.9	1760	71	12	19	23	4.9	2.8	3.0
29	7.6	4.6	5.5	7.0	---	66	12	19	21	4.0	2.8	2.6
30	5.2	4.7	5.1	7.9	---	58	12	20	21	20	2.8	2.3
31	4.6	---	5.1	40	---	54	---	18	---	11	2.7	---
TOTAL	202.7	149.6	137.0	254.9	3720	21636	1002	584	623	534.5	861.6	196.4
MEAN	6.54	4.49	4.42	8.22	135	698	35.4	18.8	20.8	17.2	27.8	6.55
MAX	77	7.6	5.5	40	1760	5210	95	27	24	25	578	80
MIN	2.4	4.4	1.4	1.3	20	54	12	12	16	4.0	2.7	1.7
AC-FT	402	247	272	506	7580	42910	1490	1160	1240	1060	1710	390

WTR YR 1978 TOTAL 24901.7 MEAN 81.9 MAX 5210 MIN 1.3 AC-FT 59310

NOTE.--No gage-height record Dec. 17 to Jan. 19.

09497500 SALT RIVER NEAR CHRYSOTILE, AZ

LOCATION.--Lat 33°47'53", long 110°29'57", in sec.25, T.5 N., R.17 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in San Carlos Indian Reservation, on left bank 1,200 ft (366 m) upstream from bridge on U.S. Highway 60, 5.7 mi (9.2 km) northeast of Chrysotile, 8 mi (13 km) upstream from Cibecue Creek, and 33 mi (53 km) downstream from confluence of Black and White Rivers.

DRAINAGE AREA.--2,849 mi² (7,379 km²).

PERIOD OF RECORD.--September 1924 to current year (monthly discharge only July to December 1954).

REVISED RECORDS.--WSP 859: 1926-27, 1929-30, 1934, 1936. WSP 899: 1927, 1932, 1937, 1938(M). WSP 1313: 1925-26(M), 1929-30(M), 1935-36(M), 1944(M). WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,354.57 ft (1,022.473 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Several diversions for irrigation above station of about 3,100 acres (12.5 km²), one diversion into the basin (see record of Forestdale Creek diversion from Show Low Creek, near Show Low), and one diversion out of the basin (see record of Willow Creek diversion from Black River, near Morenci).

AVERAGE DISCHARGE.--54 years, 595 ft³/s (16.85 m³/s), 431,100 acre-ft/yr (532 hm³/yr); median of yearly mean discharges, 450 ft³/s (12.7 m³/s), 326,000 acre-ft/yr (400 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,900 ft³/s (1,500 m³/s) Feb. 7, 1937, gage height, 15.18 ft (4.627 m); minimum, 49 ft³/s (1.39 m³/s) July 6, 7, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood peak of 74,000 ft³/s (2,100 m³/s) occurred prior to 1924 and is believed to be the peak of the flood of Jan. 19, 1916, gage height, 18 ft (5.5 m), from floodmarks, from rating curve extended above 52,000 ft³/s (1,500 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,500 ft³/s (99 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 1	0630	4,640 131	5.57 1.698	Mar. 23	1515	5,650 160	6.07 1.850
Mar. 2	0715	*45,300 1,280	14.93 4.551	Apr. 1	2230	5,460 155	5.98 1.823
Mar. 13	0415	4,370 124	5.43 1.655				

Minimum daily, 107 ft³/s (3.03 m³/s) Sept. 12-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	182	139	184	3770	27800	4630	1300	539	199	601	135
2	128	173	135	177	2120	37600	4950	1300	536	197	479	178
3	124	173	130	169	1140	23600	4090	1240	528	185	447	143
4	120	160	147	162	808	9450	3760	1120	521	174	301	140
5	116	151	140	159	636	5270	3480	1030	494	165	332	191
6	248	155	137	159	554	5600	3210	1010	436	179	297	150
7	520	179	139	154	548	4380	3200	1080	425	175	274	159
8	399	192	135	151	720	3060	3210	1070	410	173	229	130
9	370	183	132	148	810	2620	3060	1010	388	171	250	124
10	341	182	135	144	743	2450	2600	953	389	174	425	117
11	278	182	132	156	2150	2420	2300	894	375	191	237	111
12	240	178	136	161	2040	2200	2200	882	366	213	704	107
13	215	173	141	153	1080	3580	2500	896	359	176	304	107
14	195	170	139	151	925	2870	2700	949	345	176	253	107
15	185	167	136	157	992	2120	2800	1040	330	172	217	110
16	175	164	137	175	962	1740	2700	1110	317	166	193	120
17	170	161	138	209	844	1570	2500	1100	308	182	174	159
18	162	158	137	288	626	1600	2200	1060	297	176	165	132
19	160	155	133	315	511	1890	2000	986	280	170	153	129
20	157	153	140	273	469	2380	1900	916	275	157	148	122
21	152	150	137	250	481	2850	1800	854	250	154	188	115
22	149	150	119	229	571	3270	1700	821	243	147	206	115
23	148	149	123	227	701	4890	1600	805	231	146	193	112
24	147	148	133	224	850	4870	1600	795	219	143	184	163
25	145	147	142	221	899	4080	1600	766	205	141	184	154
26	144	145	139	186	922	3790	1600	707	194	183	194	137
27	142	146	147	171	935	3820	1700	663	187	256	185	153
28	142	146	152	183	4270	3820	1700	621	191	224	172	156
29	167	143	176	201	---	3700	1600	569	197	205	157	126
30	240	143	183	215	---	3700	1400	567	204	233	148	126
31	198	---	183	1380	---	3900	---	548	---	336	136	---
TOTAL	6212	4858	4372	7132	32057	186890	76290	28682	10034	5759	8130	4008
MEAN	200	162	141	230	1145	6029	2543	925	335	186	262	134
MAX	520	192	183	1380	4270	37600	4950	1300	539	336	704	191
MIN	116	143	119	144	469	1570	1400	548	187	141	136	107
AC-FT	12320	9640	8670	14150	63590	370700	151300	56890	19910	11420	16130	7950
CAL YR 1977	TOTAL	88001	MEAN	241	MAX	1180	MIN	87	AC-FT	174500		
WTR YR 1978	TOTAL	374429	MEAN	1026	MAX	37600	MIN	107	AC-FT	742700		

09497800 CIBECUE CREEK NEAR CHRYSOTILE, AZ

LOCATION.--Lat 33°50'35", long 110°33'25", in E½ sec.8, T.5 N., R.17 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Fort Apache Indian Reservation, on right bank 0.5 mi (0.8 km) upstream from mouth and 7 mi (11 km) north of Chrysotile.

DRAINAGE AREA.--295 mi² (764 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft (975 m), from topographic map.

REMARKS.--Records poor. Small diversions for irrigation in the vicinity of the village of Cibecue.

AVERAGE DISCHARGE.--19 years, 38.9 ft³/s (1.102 m³/s), 28,180 acre-ft/yr (34.7 hm³/yr); median of yearly mean discharges, 29 ft³/s (0.82 m³/s), 21,000 acre-ft/yr (26 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,200 ft³/s (629 m³/s) Sept. 2, 1977, gage height, 17.3 ft (5.27 m), on basis of slope-area measurement at gage height 17.3 ft (5.27 m); minimum daily, 4.1 ft³/s (0.12 m³/s) Aug. 17-19, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	1200	*6,540 185	9.27 2.825	Aug. 7	2345	3,340 94.6	6.64 2.024
July 25	2030	1,400 39.6	4.80 1.463	Aug. 10	1800	1,350 38.2	4.75 1.448
July 30	2300	1,860 52.7	5.26 1.603	Sept. 23	2330	1,710 48.4	5.12 1.561
Aug. 6	2215	2,130 60.3	5.53 1.686				

Minimum daily, 7.0 ft³/s (0.198 m³/s) Oct. 20-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	8.0	10	10	31	3410	140	25	7.5	8.0	31	13
2	7.5	8.0	10	10	27	2520	120	20	7.5	8.0	20	13
3	7.5	9.0	11	9.5	33	1740	110	20	8.5	8.0	20	13
4	7.5	9.0	11	10	32	950	100	35	20	8.0	20	13
5	7.5	9.0	11	10	24	1020	90	33	19	8.0	30	13
6	25	9.0	11	10	28	700	85	44	19	8.0	160	13
7	20	9.0	11	10	27	500	78	31	18	9.0	186	12
8	85	9.0	11	9.5	24	350	75	28	15	9.0	206	12
9	7.5	9.5	11	9.5	34	270	70	25	13	9.0	80	12
10	7.5	9.5	11	11	45	230	60	21	11	12	160	12
11	7.5	9.0	11	13	155	200	55	18	10	14	34	12
12	7.5	9.0	11	13	47	220	50	17	9.0	35	13	13
13	7.5	8.5	11	10	37	260	50	15	9.0	22	12	13
14	7.5	8.5	11	9.5	46	200	45	13	8.0	18	12	12
15	7.5	8.5	11	15	45	170	45	12	8.0	15	12	13
16	7.5	8.8	10	15	34	150	40	12	8.0	12	12	16
17	7.5	8.8	10	55	34	110	40	11	8.0	10	12	13
18	7.5	8.6	10	40	31	105	40	10	8.0	12	12	13
19	7.5	8.6	10	20	24	110	35	9.1	8.0	11	12	11
20	7.0	8.5	10	24	24	115	35	9.0	8.0	10	16	11
21	7.0	9.5	10	17	24	105	30	9.0	8.0	9.5	25	10
22	7.0	9.5	10	14	30	100	30	9.0	8.0	8.4	13	12
23	7.0	9.5	10	13	33	200	30	8.5	8.0	10	13	37
24	7.0	10	10	13	36	150	30	8.0	8.0	32	13	115
25	8.0	10	10	10	44	310	20	8.5	8.0	219	14	32
26	8.0	10	10	11	51	120	25	8.5	8.0	135	14	12
27	8.0	10	10	11	58	110	25	8.0	8.0	82	14	9.0
28	8.0	10	11	11	1050	100	25	8.0	8.0	52	14	9.0
29	8.0	10	11	11	---	90	25	8.0	8.0	39	14	9.0
30	8.0	10	12	12	---	85	25	7.5	8.0	178	14	8.5
31	8.0	---	11	28	---	100	---	7.5	---	128	14	---
TOTAL	341.0	274.3	328	465.0	2138	14780	1628	498.6	302.5	1138.9	1222	506.5
MEAN	11.0	9.14	10.6	15.0	76.4	477	54.3	16.1	10.1	36.7	39.4	16.9
MAX	85	10	12	55	1050	3410	140	44	20	219	206	115
MIN	7.0	8.0	10	9.5	27	85	20	7.5	7.5	8.0	12	8.5
AC-FT	676	544	651	922	4240	29320	3230	989	600	2260	2420	1000

CAL YR 1977 TOTAL 6647.2 MEAN 18.2 MAX 1300 MIN 6.8 AC-FT 13180
WTR YR 1978 TOTAL 23622.8 MEAN 64.7 MAX 3410 MIN 7.0 AC-FT 46860

NOTE.--No gage-height record June 8 to July 11 and Mar. 6 to May 4.

GILA RIVER BASIN

09497850 CANYON CREEK NEAR GLOBE, AZ

LOCATION.--Lat 33°49'47", long 110°39'50", in sec.17, T.6 N., R.16 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, on left bank 1.9 mi (3.1 km) upstream from mouth, 10 mi (16 km) northwest of Seneca, and 31 mi (50 km) north of Globe.

DRAINAGE AREA.--316 mi² (818 km²).

PERIOD OF RECORD.--October 1975 to current year (monthly discharge only, October 1976 to September 1977).

GAGE.--Water-stage recorder. Altitude of gage is 3,080 ft (940 m), from topographic map.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s (598 m³/s) Mar. 1, 1978, gage height, 18.8 ft (5.73 m), from rating curve based on slope-area measurement at gage height 18.8 ft (5.73 m) and step-backwater computation; minimum not determined, probably occurred in June 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve as explained above) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m)	Gage height (ft) (m)
Jan. 31	2145	1,260 35.7	6.26 1.908
Mar. 1	Unknown	*21,100 598	18.8 5.73
Mar. 23	0045	1,310 37.1	6.34 1.932

Minimum daily, 4.0 ft³/s (0.113 m³/s) Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	13	9.2	9.9	434	11000	404	37	15	6.4	4.5	6.4
2	12	12	9.2	9.5	126	7600	340	45	14	5.7	4.5	7.0
3	11	11	9.2	9.2	48	3170	241	41	14	5.7	7.0	7.0
4	11	8.0	9.2	8.9	33	1380	207	37	13	5.7	16	7.7
5	10	8.0	9.2	8.9	30	1430	174	33	13	6.4	11	8.3
6	11	8.2	9.2	8.5	36	1370	148	36	13	5.7	9.9	16
7	75	9.5	9.2	8.5	85	918	128	36	13	6.4	20	13
8	42	10	9.2	8.5	108	708	110	30	11	6.4	21	9.0
9	22	9.8	9.2	8.5	80	614	108	28	11	6.4	15	7.0
10	127	9.5	8.2	9.2	65	490	88	28	11	6.4	48	6.4
11	16	9.2	8.2	13	340	351	108	27	10	20	18	6.4
12	15	9.2	8.2	14	220	388	108	26	9.7	14	13	5.7
13	14	8.9	8.2	12	130	569	90	25	9.0	11	9.2	5.7
14	13	8.9	8.2	11	200	448	77	25	8.3	9.0	7.0	5.0
15	13	8.9	8.2	14	200	347	64	24	7.7	8.3	5.7	4.5
16	13	8.9	8.2	21	390	289	59	23	7.7	7.0	5.0	8.3
17	13	8.9	8.2	59	110	284	53	23	7.0	6.4	5.7	11
18	12	8.9	8.2	121	75	279	47	23	7.0	7.0	5.0	6.4
19	12	8.9	8.0	67	60	279	46	22	7.0	7.0	4.5	5.7
20	10	8.9	8.0	54	50	379	42	21	7.0	13	6.4	5.7
21	10	8.5	8.0	34	40	363	41	21	6.4	10	6.4	4.5
22	10	8.5	8.0	24	35	693	40	20	6.4	10	6.4	4.5
23	10	8.5	7.7	22	35	768	38	19	6.4	146	5.7	4.0
24	10	8.9	8.2	20	35	420	39	19	5.7	19	5.7	44
25	10	9.1	8.2	14	40	379	39	19	5.1	13	6.4	15
26	11	9.1	8.2	15	45	375	39	19	4.5	9.7	8.3	8.3
27	10	8.9	8.5	16	50	371	38	19	4.5	15	7.7	6.4
28	10	8.9	8.9	15	2800	316	37	19	5.1	14	6.4	5.7
29	13	9.2	9.9	16	---	293	37	17	5.7	9.7	6.4	5.7
30	13	9.2	11	20	---	287	36	16	5.7	7.7	6.4	5.7
31	13	---	11	382	---	310	---	15	---	5.7	7.0	---
TOTAL	585	277.4	270.2	1053.6	5900	36868	3026	793	263.9	423.7	309.2	256.0
MEAN	18.9	9.25	8.72	34.0	211	1189	101	25.6	8.80	13.7	9.97	8.53
MAX	127	13	11	382	2800	11000	404	45	15	146	48	44
MIN	10	8.0	7.7	8.5	30	279	36	15	4.5	5.7	4.5	4.0
AC-FT	1160	550	536	2090	11700	73130	6000	1570	523	840	613	508

WTR YR 1978 TOTAL 50026.0 MEAN 137 MAX 11000 MIN 4.0 AC-FT 99230

NOTE.--No gage-height record Feb. 28 to Mar. 2.

09497980 CHERRY CREEK NEAR GLOBE, AZ

LOCATION.--Lat 33°49'40", long 110°51'20", in SW¼ sec.30, T.6 N., R.15 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Tonto National Forest, on left bank 0.2 mi (0.3 km) upstream from Devils Chasm, 13 mi (21 km) upstream from mouth, and 30 mi (48 km) north of Globe.

DRAINAGE AREA.--200 mi² (518 km²).

PERIOD OF RECORD.--May 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,200 ft (980 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 33.6 ft³/s (0.952 m³/s), 24,340 acre-ft/yr (30.0 hm³/yr); median of yearly mean discharges, 21 ft³/s (0.59 m³/s), 15,200 acre-ft/yr (19 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,300 ft³/s (235 m³/s) Oct. 19, 1972, gage height, 14.0 ft (4.27 m), from flood-marks, from rating curve extended above 330 ft³/s (9.3 m³/s) on basis of slope-area measurements at gage heights 5.85, 6.70, 8.70, and 12.3 ft (1.783, 2.042, 2.652, and 3.75 m); minimum daily, 2.4 ft³/s (0.068 m³/s) Sept. 17, 22, 25, 29, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 330 ft³/s or 9.3 m³/s as explained above) and peak discharges above base of 750 ft³/s (21.2 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 31	1700	904 25.6	4.01 1.222
Feb. 11	0300	920 26.1	4.05 1.234
Mar. 1	1200	*5,370 152	10.91 3.325

Minimum daily, 2.4 ft³/s (0.068 m³/s) Sept. 17, 22, 25, 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	4.9	4.1	5.8	565	2700	19	15	6.9	5.7	7.0	3.9
2	7.0	4.7	4.1	5.7	154	3680	20	17	6.9	5.7	7.5	4.1
3	7.0	4.5	4.1	5.7	76	1920	17	16	6.9	5.7	7.5	4.1
4	6.0	4.5	4.1	5.7	56	729	14	14	6.4	5.7	7.7	4.6
5	6.0	4.5	4.1	5.7	40	750	12	13	7.0	5.7	7.5	5.7
6	5.0	4.5	4.1	5.7	35	520	11	15	7.0	5.7	6.0	4.2
7	5.0	5.0	4.1	6.1	30	380	10	14	7.0	5.7	7.5	4.1
8	5.0	4.9	4.1	5.9	25	243	9.9	12	7.0	5.7	7.5	4.0
9	5.0	4.5	4.1	5.7	25	210	12	12	7.0	5.4	7.5	4.2
10	10	4.5	4.1	6.0	74	190	13	11	7.0	5.2	7.0	4.1
11	8.0	4.5	4.1	8.7	538	180	12	12	7.0	5.2	6.7	3.8
12	5.0	4.5	4.1	6.4	210	200	12	11	7.0	5.2	5.7	3.6
13	5.0	4.5	4.1	5.7	125	250	11	11	7.0	5.2	5.5	4.0
14	5.0	4.5	4.5	5.2	231	240	10	10	7.0	5.4	4.9	4.2
15	5.0	4.5	4.7	13	203	211	9.7	10	6.6	4.9	5.0	2.6
16	5.0	4.5	5.0	12	151	111	9.1	9.7	6.5	5.2	5.1	2.5
17	5.0	4.5	5.0	118	121	71	9.8	9.7	6.5	5.0	5.1	2.4
18	5.0	4.5	5.2	153	88	53	9.7	9.1	6.5	5.3	5.1	4.3
19	5.2	4.5	5.2	46	70	41	9.8	9.1	6.5	5.2	4.9	4.2
20	5.2	4.5	5.2	53	61	51	10	9.1	6.4	5.7	4.1	4.0
21	5.2	4.5	5.2	23	87	24	9.8	7.9	6.3	5.7	4.1	4.1
22	5.2	4.5	5.2	18	133	47	10	7.9	6.3	6.1	4.5	2.4
23	4.9	4.5	5.2	16	162	136	9.9	7.4	6.2	7.8	4.2	4.1
24	4.9	4.5	5.2	14	159	61	10	7.4	6.1	7.5	4.1	3.1
25	4.5	4.5	5.2	11	128	56	9.5	7.9	6.1	8.3	4.0	2.4
26	4.5	4.5	5.2	11	99	25	8.8	7.4	6.1	22	5.8	2.7
27	4.6	4.5	5.7	9.8	87	20	8.4	7.4	6.1	12	5.9	2.5
28	4.7	4.5	5.7	9.4	1510	17	8.1	7.4	6.4	8.4	4.0	2.5
29	5.7	4.1	6.1	9.1	---	14	10	7.4	6.5	7.3	4.1	2.4
30	5.2	4.1	6.1	12	---	12	12	6.9	5.8	7.0	4.0	4.4
31	4.9	---	6.1	480	---	11	---	6.9	---	6.6	4.0	---
TOTAL	170.7	155.7	148.8	1072.3	5043	15113	337.5	321.6	198.0	207.2	171.5	109.2
MEAN	5.51	4.52	4.80	34.6	180	423	11.2	10.4	6.60	6.68	5.53	3.64
MAX	10	5.0	6.1	480	1510	3680	20	17	7.0	22	8.0	5.7
MIN	4.5	4.1	4.1	5.2	25	11	8.1	6.9	5.8	4.9	5.8	2.4
AC-FT	339	269	295	2150	10000	26010	669	638	393	411	340	217

CAL YR 1977 TOTAL 2859.2 MEAN 7.83 MAX 88 MIN 3.7 AC-FT 5670
WTR YR 1978 TOTAL 21028.3 MEAN 57.6 MAX 3680 MIN 2.4 AC-FT 41710

09498500 SALT RIVER NEAR ROOSEVELT, AZ

LOCATION.--Lat 33°37'10", long 110°55'15", in SE¼ sec.9, T.3 N., R.14 E. (unsurveyed), Gila County, Hydrologic Unit 15060103, in Tonto National Forest on left bank 100 ft (30 m) downstream from bridge on State Highway 288, 0.3 mi (0.5 km) downstream from Pinal Creek, 1 mi (2 km) upstream from diversion dam for power canal, 14 mi (23 km) east of village of Roosevelt, and 17 mi (27 km) upstream from Roosevelt Dam.

DRAINAGE AREA.--4,306 mi² (11,153 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1913 to current year (monthly discharge only January to September 1913) see WSP 1313.

REVISED RECORDS.--WSP 1049: 1914, 1916, 1918-19, 1926. WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,177.14 ft (663.592 m) National Geodetic Vertical Datum of 1929. Prior to 1925, nonrecording gage at diversion dam about 1 mi (2 km) downstream at different datum. Nonrecording gage at present site and datum 1925 to Jan. 17, 1935. May 20, 1955, to July 30, 1959, supplementary water-stage recorder at diversion dam.

REMARKS.--Records good. Several small diversions for irrigation of about 4,000 acres (16.2 km²) above station and two transbasin diversions above station, one into basin from Show Low Creek and one out of basin to Willow Creek. Records show inflow to Roosevelt Lake. Tonto Creek also contributes to Roosevelt Lake; see records elsewhere in this report.

AVERAGE DISCHARGE.--65 years, 838 ft³/s (23.73 m³/s), 607,100 acre-ft/yr (749 hm³/yr); median of yearly mean discharges, 650 ft³/s (18.4 m³/s), 471,000 acre-ft/yr (581 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 117,000 ft³/s (3,310 m³/s) Mar. 14, 1941, gage height, 24.4 ft (7.44 m), from rating curve extended above 55,000 ft³/s (1,600 m³/s) on basis of velocity-area studies and float-area measurements at 66,000 ft³/s (1,870 m³/s) and 102,000 ft³/s (2,890 m³/s); maximum gage height, 28.55 ft (8.702 m) Mar. 2, 1978; minimum discharge, 59 ft³/s (1.67 m³/s) all or part of each day, July 1-4, 7-12, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of about 42 ft³/s (1.19 m³/s) was reported Aug. 5, 1911.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s (113 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 1	1400	8,050 228	12.58 3.834	Mar. 13	1100	5,820 165	11.70 3.566
Feb. 12	0230	4,780 135	11.16 3.402	Mar. 24	0030	6,600 187	11.98 3.652
Mar. 2	0300	*89,400 2,530	28.55 8.702	Apr. 2	0630	6,620 187	11.98 3.652

Minimum daily, 137 ft³/s (3.88 m³/s) July 17, 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	218	170	202	6030	51000	5520	1670	535	182	444	163
2	161	202	165	202	4500	77200	6320	1550	530	182	682	156
3	149	198	161	198	2060	49400	5320	1450	515	178	700	178
4	145	223	158	192	1290	19700	4860	1340	490	170	580	170
5	143	192	165	185	945	9480	4560	1220	470	160	445	185
6	185	188	168	185	777	9680	4180	1200	440	158	455	200
7	630	226	161	180	707	7200	4060	1230	426	158	565	190
8	475	226	158	175	819	5020	4100	1220	418	154	723	168
9	430	229	156	170	986	4000	4120	1160	390	149	410	161
10	390	218	156	179	980	3670	3470	1110	366	147	448	156
11	342	215	154	188	3210	3440	2860	1120	340	143	450	147
12	283	218	156	182	3800	3350	2540	996	330	170	509	143
13	256	210	158	182	1900	4890	2430	973	320	205	775	141
14	235	205	158	182	1540	4310	2730	996	310	163	346	139
15	220	200	156	210	1620	3360	2890	1060	300	154	301	139
16	210	195	156	223	1440	2730	2990	1150	298	149	262	145
17	198	192	154	298	1280	2250	2940	1160	283	137	238	147
18	195	192	154	488	966	2130	2720	1120	274	143	223	175
19	185	190	156	435	728	2280	2460	1050	265	149	208	168
20	180	188	152	414	604	2760	2260	996	247	149	198	158
21	172	182	152	350	592	3450	2120	924	241	139	188	154
22	170	182	154	301	714	4000	2040	869	232	137	200	152
23	170	182	145	283	847	5720	1940	861	220	195	226	149
24	170	180	145	280	1020	6250	1850	840	205	208	220	338
25	168	178	152	277	1110	5420	1800	819	195	170	208	310
26	168	175	161	259	1150	4820	1800	798	185	285	205	247
27	165	172	165	235	1160	4800	1850	735	175	292	208	192
28	165	174	168	218	8260	4870	1960	670	215	314	200	190
29	192	175	192	226	---	4870	1920	634	205	277	188	182
30	226	172	196	250	---	4870	1810	592	188	268	185	170
31	247	---	202	644	---	5040	---	560	---	431	170	---
TOTAL	7205	5897	5006	7993	51437	321980	92420	32093	9608	5916	11160	5313
MEAN	232	197	161	258	1837	10390	3081	1035	320	191	360	177
MAX	630	229	202	644	8260	77200	6320	1670	535	431	775	338
MIN	143	172	145	170	592	2130	1800	560	175	137	170	139
AC-FT	14290	11700	9930	15850	102000	638600	183300	63660	19060	11730	22140	10540
CAL YR 1977 TOTAL	99421			272	MAX 1920	MIN 96	AC-FT 197200					
WTR YR 1978 TOTAL	556028			MEAN 1523	MAX 77200	MIN 137	AC-FT 1103000					

GILA RIVER BASIN

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1958 to October 1967, January 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: April 1958 to October 1967.

INSTRUMENTATION.--Water temperature recorder from April 1958 to October 1967.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	
DATE	TIME									
OCT 27...	1115	166	3750	8.2	17.0	15	--	8.8	K4	
NOV 29...	1045	175	3780	8.1	11.0	--	--	11.2	K2	
DEC 29...	1115	188	3000	7.9	10.0	15	--	9.9	340	
JAN 25...	1100	259	2440	8.6	6.0	15	--	13.4	K10	
MAR 10...	1300	3900	445	7.8	11.5	40	--	10.0	K10	
APR 10...	1130	3470	378	7.9	11.0	20	--	10.0	K6	
MAY 03...	1100	1470	660	8.2	15.0	3	--	9.3	K8	
JUN 07...	1100	422	1550	8.2	22.0	1	--	8.0	K20	
JUL 06...	1130	156	3500	8.2	25.0	1	--	8.3	K14	
AUG 02...	1115	707	2920	8.1	27.5	920	--	7.0	K8000	
30...	1030	182	2980	8.0	24.5	37	--	7.6	K43	
SEP 27...	1300	180	3480	8.3	25.0	--	580	8.6	700	
		HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)
DATE										
OCT 27...	360	190	91	33	630	14	13	210		0
NOV 29...	390	200	98	36	600	13	15	230		0
DEC 29...	380	200	96	35	730	16	16	220		0
JAN 25...	320	130	85	26	390	9.5	9.4	230		1
MAR 10...	120	33	34	9.3	46	1.8	2.4	110		0
APR 10...	91	31	26	6.4	43	2.0	1.8	73		0
MAY 03...	120	37	33	8.0	91	3.7	3.2	96		0
JUN 07...	220	89	60	17	240	7.0	6.2	160		0
JUL 06...	390	250	96	37	580	13	13	170		0
AUG 02...	330	150	91	24	460	11	12	210		0
30...	320	160	82	29	520	13	15	200		0
SEP 27...	340	170	86	30	600	14	12	200		0

K Based on non-ideal colony count.

GILA RIVER BASIN

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
UCT								
27...	160	1000	.3	22	2030	2050	2.76	.14
NOV								
29...	140	980	.2	20	--	2000	2.72	.00
DEC								
29...	160	1100	.2	20	2350	2270	3.20	.05
JAN								
25...	120	590	.2	18	1360	1350	1.85	.01
MAR								
10...	41	70	.1	16	273	274	.37	.16
APR								
10...	23	73	.1	15	214	225	.29	.05
MAY								
03...	35	140	.1	16	363	374	.49	.01
JUN								
07...	67	390	.2	17	816	877	1.11	.05
JUL								
06...	120	970	.2	17	1960	1920	2.67	.01
AUG								
02...	110	740	.2	16	1650	1560	2.24	.25
30...	130	860	.2	21	1770	1760	2.41	.02
SEP								
27...	150	1000	.2	17	2030	1990	2.76	.06

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, OKTHO, DIS- SOLVED (MG/L AS P)
UCT							
27...	.14	.14	--	.17	.31	.02	.03
NOV							
29...	.04	.00	--	--	--	.00	.00
DEC							
29...	.12	.05	.33	--	.45	.00	.01
JAN							
25...	.01	.01	--	.01	.02	.04	.00
MAR							
10...	.01	.16	--	.61	.62	.13	.04
APR							
10...	.04	.05	--	.31	.35	.10	.03
MAY							
03...	.01	.01	--	.15	.16	.04	.01
JUN							
07...	.15	.05	--	.40	.55	.03	.06
JUL							
06...	.01	.01	--	.25	.26	.02	.05
AUG							
02...	.26	.25	--	3.3	3.6	1.1	.05
30...	.01	.02	--	.28	.29	.05	.02
SEP							
27...	.70	.06	--	1.5	2.2	.34	.03

GILA RIVER BASIN

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09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 27...	8	100	440	340	<10	15	<10	380	20	<100
NOV 29...	8	300	400	350	1	0	8	950	10	10
DEC 29...	7	100	500	380	2	10	15	700	20	8
JAN 25...	5	0	240	220	3	0	12	520	0	18
MAR 10...	3	100	110	50	0	10	100	5100	50	19
APR 10...	2	0	90	30	3	0	5	1000	50	28
MAY 03...	3	0	120	50	6	10	4	440	20	88
JUN 07...	4	200	250	140	1	0	8	160	10	8
JUL 06...	4	300	370	320	6	10	20	40	30	15
AUG 02...	15	400	320	260	2	40	--	24000	40	38
30...	7	200	360	300	1	0	11	810	40	16
SEP 27...	7	200	390	350	0	20	22	10000	20	13

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)
OCT 27...	30	8	.0	0	<10	40	1.6	.00	0
NOV 29...	20	8	.0	0	0	10	1.3	.00	2
DEC 29...	50	50	.1	0	1	30	.9	.00	0
JAN 25...	30	20	.0	0	0	30	1.9	1.0	4
MAR 10...	140	20	.0	0	1	60	--	.00	1
APR 10...	40	10	.0	0	0	10	3.2	.00	3
MAY 03...	30	20	.0	0	0	20	2.3	.00	0
JUN 07...	30	10	.0	0	0	20	1.6	.00	0
JUL 06...	60	30	.0	0	0	50	2.1	.00	0
AUG 02...	1200	10	.0	3	0	140	29	.00	2
30...	90	10	.0	0	0	30	3.0	.00	0
SEP 27...	450	0	.0	0	0	50	--	.00	0

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	SEDI- MENT, SUS- PENDEU (MG/L)
UCT							
27...	1.6	.00	0	--	--	--	--
NOV							
29...	1.3	.00	2	--	--	--	--
DEC							
29...	.9	.00	0	--	--	--	--
JAN							
25...	1.9	1.0	4	--	--	--	--
MAR							
02...	--	--	--	--	--	--	8520
10...	--	.00	1	--	--	--	--
APR							
10...	3.2	.00	3	--	--	--	--
MAY							
03...	2.3	.00	0	--	--	--	--
JUN							
07...	1.6	.00	0	--	--	--	--
JUL							
06...	2.1	.00	0	260	--	--	--
AUG							
02...	29	.00	2	--	--	--	--
30...	3.0	.00	0	--	--	--	--
SEP							
27...	--	.00	0	--	6.61	6.06	--

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUL 6, 78
TIME	1130
TOTAL CELLS/ML	260
DIVERSITY: DIVISION	1.0
..CLASS	1.0
...ORDER	1.0
....FAMILY	1.3
.....GENUS	1.3

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...VOLVOCALES		
....VOLVOCACEAE		
.....PANDORINA	150#	58
CHRYSPHYTA		
..BACILLARIOPHYCEAE		
...PENNALES		
....ACHNANTHACEAE		
.....CUCCONEIS	86#	33
...NAVICULACEAE		
....NAVICULA	22	8

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09498870 RYE CREEK NEAR GISELA, AZ

LOCATION.--Lat 34°01'57", long 111°17'26", in SW¼ sec.13, T.8 N., R.10 E., Gila County, Hydrologic Unit 15060105, in Tonto National Forest, on right bank, 0.5 mi (0.8 km) upstream from mouth, 0.8 mi (1.3 km) downstream from bridge on county road, and 4.8 mi (7.7 km) south of Gisela.

DRAINAGE AREA.--122 mi² (316 km²).

PERIOD OF RECORD.--December 1965 to current year.

REVISED RECORDS.--WRD Ariz. 1969: 1967.

GAGE.--Water-stage recorder. Altitude of gage is 2,730 ft (832 m), from topographic map. Prior to Dec. 19, 1967, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--12 years, 18.7 ft³/s (0.530 m³/s), 13,550 acre-ft/yr (16.7 hm³/yr); median of yearly mean discharges, 9.3 ft³/s (0.26 m³/s), 6,700 acre-ft/yr (8.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,400 ft³/s (1,260 m³/s) Sept. 5, 1970, gage height, 14.1 ft (4.30 m), in gage well, 18.7 ft (5.70 m), from profile past gage, from rating curve extended above 850 ft³/s (24 m³/s) on basis of slope-area measurements at gage height 9.0 and 14.1 ft (2.74 and 4.30 m), present datum; minimum daily, 0.20 ft³/s (0.006 m³/s) July 5, 6, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 600 ft³/s (17 m³/s):

Date	Time	Discharge		Gage height	
		(ft ³ /s)	(m ³ /s)	(ft)	(m)
Mar. 1	0800	5,850	166	6.30	1.920
Mar. 2	0900	*8,220	233	6.60	2.012
Mar. 5	2100	2,400	68.0	3.50	1.067

Minimum daily, 0.40 ft³/s (0.011 m³/s) Jan. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	.75	.70	.75	223	2920	35	9.1	5.5	4.2	6.6	3.2
2	1.2	.75	.70	.70	77	4780	35	10	5.5	4.0	11	3.2
3	1.2	.75	.70	.75	36	3430	32	11	5.5	3.7	10	3.0
4	1.2	.75	.75	.75	22	1220	26	10	5.8	3.7	6.6	3.4
5	1.2	.75	.60	.70	12	1370	24	9.6	5.8	3.7	6.2	2.4
6	.35	.75	.60	.70	11	1320	21	9.6	5.5	4.0	28	2.2
7	1.8	.75	.60	.60	12	714	19	9.1	5.5	4.0	43	2.0
8	1.2	.67	.60	.60	18	420	17	8.2	5.5	4.0	7.8	2.0
9	1.0	.67	.60	.60	25	275	18	8.6	5.5	4.0	6.9	2.2
10	.94	.67	.60	1.5	53	220	17	8.2	5.1	4.2	6.6	2.2
11	.94	.67	.60	4.0	348	162	17	7.3	5.1	5.8	6.2	2.2
12	.94	.67	.70	.96	164	202	18	6.9	4.8	4.0	58	2.0
13	.94	.67	.70	.75	100	193	17	6.2	5.1	4.2	8.6	2.0
14	.94	.67	.70	.75	178	171	17	6.6	5.1	4.2	5.5	18
15	.94	.59	.70	223	96	158	15	7.3	4.2	4.2	5.1	2.4
16	.94	.59	.70	119	75	154	14	6.2	4.0	4.2	4.8	2.2
17	.94	.60	.70	423	63	112	13	6.2	4.2	4.0	4.8	2.0
18	.84	.60	.70	283	50	98	13	6.2	4.2	3.4	4.5	2.0
19	.84	.60	.70	122	42	88	13	6.2	4.2	3.7	4.5	2.0
20	.84	.70	.60	83	38	81	13	6.2	4.5	3.4	4.2	2.0
21	.84	.70	.70	41	42	72	13	6.2	4.5	3.2	4.2	2.0
22	.84	.70	.70	11	46	146	12	5.8	4.5	3.2	4.5	2.0
23	.84	.70	.70	4.5	50	114	9.6	5.5	4.5	3.4	4.0	1.7
24	.75	.75	.70	2.4	44	83	8.6	5.5	4.5	4.0	4.0	1.8
25	.75	.70	.70	1.7	43	66	8.6	5.8	4.2	3.7	4.0	5.4
26	.75	.70	.70	1.4	41	55	8.2	5.8	4.0	60	3.7	2.0
27	.75	.70	.70	1.2	37	50	7.8	5.5	4.0	29	3.7	1.8
28	.75	.70	.84	.60	1230	46	7.8	5.5	4.8	9.6	3.4	1.8
29	.75	.70	.94	.60	---	41	7.8	5.1	4.8	8.2	3.4	2.0
30	.75	.70	1.2	.40	---	37	8.2	5.1	4.2	6.9	3.2	2.2
31	.75	---	.84	212	---	36	---	5.5	---	6.2	3.2	---
TOTAL	63.56	20.67	21.97	1544.11	3192	18834	485.6	220.0	144.6	218.0	280.2	85.3
MEAN	2.05	.69	.71	49.8	114	608	16.2	7.10	4.82	7.03	9.04	2.84
MAX	35	.75	1.2	423	1230	4780	35	11	5.8	60	58	18
MIN	.75	.59	.60	.40	11	36	7.8	5.1	4.0	3.2	3.2	1.7
AC-FT	126	41	44	3060	6330	37360	963	436	287	432	556	169
CAL YR 1977	TOTAL	744.60	MEAN	2.04	MAX	200	MIN	.35	AC-FT	1480		
WTR YR 1978	TOTAL	25110.01	MEAN	68.8	MAX	4780	MIN	.40	AC-FT	49810		

09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ

LOCATION.--Lat 33°58'48", long 111°18'10", in SW¼NE¼ sec.2, T.7 N., R.10 E., Gila County, Hydrologic Unit 15060105, in Tonto National Forest, on left bank 600 ft (183 m) upstream from Gun Creek, 17 mi (27 km) upstream from high-water line of Roosevelt Lake, and 24 mi (39 km) northwest of Roosevelt.

DRAINAGE AREA.--675 mi² (1,750 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1940 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,523.14 ft (769.053 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--37 years (water years 1942-78), 123 ft³/s (3.483 m³/s), 89,110 acre-ft/yr (110 hm³/yr); median of yearly mean discharges, 83 ft³/s (2.35 m³/s), 60,100 acre-ft/yr (74 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s (1,500 m³/s) Sept. 5, 1970, gage height, 18.2 ft (5.55 m), from rating curve extended above 27,000 ft³/s (765 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,700 ft³/s (48 m³/s):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage height (ft)	Gage height (m)
Jan. 15	1930	2,070	58.6	6.30	1.920	Mar. 2	1030	*45,800	1,300	16.50	5.029
Jan. 17	1500	3,900	110	7.23	2.204	Mar. 5	1730	21,400	606	10.30	3.139
Feb. 1	0400	3,740	106	7.15	2.179	Mar. 12	2400	4,410	125	6.20	1.890
Feb. 11	0700	6,600	187	8.25	2.515	Mar. 22	1600	6,760	191	6.90	2.103
Feb. 15	0030	2,300	65.1	6.78	2.067	Jul. 26	2100	2,810	79.6	6.70	2.042

Minimum daily, 5.5 ft³/s (0.156 m³/s) Oct. 2-3, 25-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	11	9.8	19	2370	28600	628	85	21	10	6.6	6.6
2	5.5	9.1	9.1	16	533	32200	595	100	21	11	7.7	6.6
3	5.5	8.4	9.8	15	212	20900	339	74	20	9.8	9.8	6.0
4	6.0	9.8	9.8	13	109	3280	284	65	19	9.8	9.1	18
5	5.5	8.4	9.8	12	67	7820	263	70	19	9.1	7.1	16
6	118	13	9.8	11	53	6090	239	65	20	8.4	14	27
7	59	15	9.1	9.8	89	2940	225	59	19	8.4	7.7	15
8	37	16	9.1	9.1	103	1830	230	57	16	9.8	16	13
9	19	14	9.1	9.1	100	1330	244	53	16	9.1	38	9.1
10	15	12	8.4	15	96	972	194	49	15	9.1	26	9.1
11	14	11	8.4	63	4170	868	190	47	14	9.8	100	7.7
12	12	9.1	9.8	47	2230	2080	199	45	13	11	70	7.1
13	11	10	10	31	1000	2770	199	45	13	11	49	6.6
14	10	10	10	23	1750	1830	178	44	13	13	32	82
15	9.1	10	11	860	1330	1260	155	38	13	10	26	30
16	8.4	10	10	900	940	612	141	35	11	35	22	15
17	8.4	9.1	9.8	1850	798	333	134	34	11	19	14	12
18	7.7	10	10	1570	556	284	124	34	10	16	10	11
19	7.7	10	10	824	419	279	112	32	10	13	9.8	9.8
20	7.7	10	10	840	394	316	103	30	9.1	9.8	9.1	7.7
21	7.7	10	9.8	540	351	289	97	23	9.1	8.4	8.4	7.7
22	6.6	9.8	9.1	375	433	2830	92	23	9.1	16	8.4	7.7
23	6.0	10	9.8	268	467	3140	84	22	8.4	18	8.4	8.4
24	6.0	10	9.8	212	446	1480	77	21	7.7	26	7.7	8.4
25	5.5	10	9.8	167	381	1120	69	20	7.7	16	7.1	59
26	5.5	9.8	9.8	134	328	789	65	21	7.7	160	7.1	18
27	6.0	9.8	9.8	124	279	742	61	22	7.7	78	6.6	12
28	7.1	9.8	11	115	8560	620	55	21	11	30	6.0	10
29	9.1	10	16	109	---	510	55	20	13	16	6.0	9.1
30	10	10	20	115	---	406	53	20	12	13	6.6	8.4
31	11	---	21	1650	---	413	---	19	---	9.8	6.0	---
TOTAL	453.6	315.1	328.7	10946.0	28564	128933	5484	1293	396.5	633.3	562.2	464.0
MEAN	14.6	10.5	10.6	353	1020	4159	183	41.7	13.2	20.4	18.1	15.5
MAX	118	16	21	1850	8560	32200	628	100	21	160	100	82
MIN	5.5	8.4	8.4	9.1	53	279	53	19	7.7	8.4	6.0	6.0
AC-FT	900	625	652	21710	56660	255700	10880	2560	786	1260	1120	920
CAL YR 1977	TOTAL	7496.00	MEAN	20.5	MAX	232	MIN	.00	AC-FT	14870		
WTR YR 1978	TOTAL	178373.40	MEAN	489	MAX	32200	MIN	5.5	AC-FT	353800		

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT									
27...	1530	9.1	610	8.1	19.5	2	--	10.4	K22
NOV									
29...	1445	10	660	8.1	12.5	--	--	10.4	K17
DEC									
29...	1445	16	620	7.5	14.0	15	--	11.2	440
JAN									
25...	1500	170	300	8.1	8.5	6	--	11.6	K20
MAR									
09...	1630	1270	205	7.7	13.0	35	--	--	K4
APR									
10...	1545	196	266	8.0	18.4	1	--	8.4	K4
MAY									
03...	1530	74	355	8.4	22.1	1	--	7.8	K22
JUN									
07...	1530	21	455	8.0	28.0	0	--	7.7	K4
JUL									
06...	1745	8.4	420	8.5	25.0	--	.50	8.0	K1
AUG									
02...	1600	11	495	8.1	31.0	30	--	5.8	K1000
30...	1500	7.7	470	8.2	30.0	5	--	8.2	K2
SEP									
27...	0900	1.1	550	8.3	20.0	--	8.0	8.3	E3600

DATE	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)
OCT									
27...	190	35	50	16	50	1.6	2.2	190	0
NOV									
29...	220	45	59	17	52	1.5	2.4	210	0
DEC									
29...	210	54	56	16	49	1.5	2.3	190	0
JAN									
25...	130	30	37	8.8	19	.7	1.4	120	0
MAR									
09...	110	16	31	6.9	6.5	.3	1.6	110	0
APR									
10...	130	20	37	8.3	11	.4	1.2	130	0
MAY									
03...	140	4	42	9.4	18	.7	1.6	170	0
JUN									
07...	170	22	48	12	31	1.0	2.1	180	0
JUL									
06...	150	31	40	12	36	1.3	2.3	130	7
AUG									
02...	160	17	46	12	38	1.3	2.6	180	0
30...	160	24	44	13	40	1.4	2.5	170	0
SEP									
27...	190	28	54	14	43	1.3	2.5	200	0

K Based on non-ideal colony count.

E Estimated.

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
UCT								
27...	11	87	.5	13	319	324	.43	.01
NOV								
29...	14	92	.5	14	--	355	.48	.00
DEC								
29...	17	87	.7	12	322	334	.44	.08
JAN								
25...	16	51	.5	15	183	189	.25	.23
MAR								
04...	16	6.7	.2	13	138	137	.19	.27
APR								
10...	16	13	.2	11	150	162	.20	.10
MAY								
03...	17	25	.3	12	198	210	.27	.11
JUN								
07...	19	54	.4	13	264	268	.36	.02
JUL								
06...	19	63	.5	9.0	229	253	.31	.03
AUG								
02...	11	58	.3	17	277	274	.38	.02
30...	15	62	.4	16	276	277	.38	.01
SEP								
27...	16	76	.5	14	318	319	.43	.01

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHURUS, ORTHO, DIS- SOLVED (MG/L AS P)
UCT							
27...	.01	.01	--	.05	.06	.00	.00
NOV							
29...	.05	.00	--	.09	.14	.00	.01
DEC							
29...	.22	.08	.24	--	.46	.00	.00
JAN							
25...	.29	.23	--	.11	.40	.04	.03
MAR							
09...	.09	.27	--	.28	.37	.06	.02
APR							
10...	.08	.10	--	.21	.29	.00	.01
MAY							
03...	.07	.11	--	.17	.24	.00	.01
JUN							
07...	.02	.02	--	.25	.27	.02	.03
JUL							
06...	.02	.03	--	.19	.21	.00	.00
AUG							
02...	.02	.02	--	.64	.66	.06	.01
30...	.02	.01	--	.13	.15	.02	.02
SEP							
27...	.01	.01	--	.20	.21	.04	.01

GILA RIVER BASIN

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09499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECUV- ERABLE (UG/L AS BA)	BORON, TOTAL RECUV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECUV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECUV- ERABLE (UG/L AS CR)	CUPPER, TOTAL RECUV- ERABLE (UG/L AS CU)	IRON, TOTAL RECUV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECUV- ERABLE (UG/L AS PB)
OCT 27...	5	100	160	80	10	5	<10	140	20	<100
NOV 29...	4	300	130	90	2	0	2	70	20	16
DEC 29...	3	100	210	80	2	10	7	620	10	12
JAN 25...	2	100	80	30	5	10	7	370	10	9
MAR 09...	3	100	140	40	3	10	120	6300	20	300
APR 10...	3	100	80	30	2	0	7	110	20	14
MAY 03...	3	0	100	20	2	0	4	40	0	14
JUN 07...	4	200	200	50	1	0	5	0	0	12
JUL 06...	1	300	120	70	7	0	8	100	50	16
AUG 02...	7	300	140	80	1	10	7	1100	<10	5
SEP 30...	6	200	120	80	0	0	6	180	50	3
SEP 27...	5	0	150	90	1	0	5	870	10	11

DATE	MANGA- NESE, TOTAL RECUV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECUV- ERABLE (UG/L AS HG)	SELLE- NIUM, TOTAL RECUV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECUV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECUV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)
OCT 27...	30	20	.0	0	<10	40	1.3	.00	1
NOV 29...	20	20	.0	0	0	0	1.4	.00	3
DEC 29...	50	50	.0	0	0	10	2.4	.00	0
JAN 25...	20	10	.0	0	1	30	3.7	.00	4
MAR 09...	130	0	.0	0	1	80	5.8	.00	1
APR 10...	0	0	.0	0	0	10	2.4	.00	2
MAY 03...	0	0	.0	0	0	10	1.6	.00	0
JUN 07...	0	0	.0	0	0	10	.9	.00	0
JUL 06...	10	10	.0	0	0	10	2.3	.00	0
AUG 02...	70	20	.1	0	0	20	2.7	.00	2
SEP 30...	30	10	.0	0	0	10	2.2	.00	1
SEP 27...	40	10	.0	0	0	20	--	.00	1

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M
OCT						
27...	1.3	.00	1	--	--	--
NOV						
29...	1.4	.00	3	--	--	--
DEC						
29...	2.4	.00	0	--	--	--
JAN						
25...	3.7	.00	4	--	--	--
MAR						
09...	5.8	.00	1	--	--	--
APR						
10...	2.4	.00	2	--	--	--
MAY						
03...	1.6	.00	0	--	--	--
JUN						
07...	.9	.00	0	--	--	--
JUL						
06...	2.3	.00	0	3400	--	--
AUG						
02...	2.7	.00	2	--	7.17	6.22
30...	2.2	.00	1	--	--	--
SEP						
27...	--	.00	1	--	--	--

00499000 TONTO CREEK ABOVE GUN CREEK NEAR ROOSEVELT, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	JUL 6, 78
TIME	1745
TOTAL CELLS/ML	3400
DIVERSITY: DIVISION	1.2
..CLASS	1.2
..ORDER	1.2
...FAMILY	1.8
....GENUS	2.0

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCEAE		
...SCENEDESMACEAE		
....SCENEDESMUS	190	6
...VOLVOCEAE		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMUNAS	24	1
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...PENNALES		
...ACHNANTHACEAE		
....ACHNANTHES	24	1
...CYMBELLACEAE		
....CYMBELLA	140	4
...EPITHEMIA	1900#	54
...DIATOMACEAE		
...DIATOMA	48	1
...FRAGILARIACEAE		
...SYNEDRA	72	2
...GOMPHONEMACEAE		
...GOMPHUNEMA	24	1
...NAVICULACEAE		
....NAVICULA	170	5
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONIALES		
...USCILLATORIALES		
....USCILLATORIA	840#	25
EUGLENOPHYTA (EUGLENIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELUMUNAS	24	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09501000 RESERVOIR SYSTEM ON SALT RIVER AT AND BELOW ROOSEVELT DAM, AZ

LOCATION.--This system comprises four storage reservoirs created by four separate dams on Salt River, Hydrologic Unit 15060106: Roosevelt Lake, formed by Roosevelt Dam in sec.20, T.4 N., R.12 E. (unsurveyed), on State Highway 88; Apache Lake, formed by Horse Mesa Dam, 17 mi (27 km) downstream from Roosevelt Dam; Canyon Lake, formed by Mormon Flat Dam, 27 mi (43 km) downstream from Roosevelt Dam; Saguaro Lake, formed by Stewart Mountain Dam, 37 mi (60 km) downstream from Roosevelt Dam. Contents given herein are combined contents of the four reservoirs.

DRAINAGE AREA.--6,211 mi² (16,086 km²), at Stewart Mountain Dam.

PERIOD OF RECORD.--April 1910 to current year. Prior to October 1934, monthend contents only, published in WSP 1313. Evaporation: April 1958 to June 1963.

REVISED RECORDS.--WSP 1283: Drainage area. WRD Ariz. 1975: 1974.

GAGES.--Roosevelt Lake, water-stage indicator in powerplant connected to long distance transmitter on lake (water-stage recorder prior to Jan. 1, 1967); Apache Lake, water-stage indicator in powerplant connected to long distance transmitter on lake since April 1949 (prior to that date, nonrecording gage or reference mark); Canyon and Saguaro Lakes, mercury column gages.

REMARKS.--Total capacity of the four reservoirs is 1,755,000 acre-ft (2,160 km³), divided as follows: Roosevelt Lake, 1,382,000 acre-ft (1,700 km³); Apache Lake, 245,000 acre-ft (302 km³); Canyon Lake, 58,000 acre-ft (71.5 km³); Saguaro Lake, 70,000 acre-ft (86.3 km³). Dead storage negligible. Dams forming these reservoirs were built as follows: Roosevelt 1905-11; Horse Mesa 1924-27; Mormon Flat 1923-26; Stewart Mountain 1928-30. The four dams forming these reservoirs completely develop the fall in the Salt River from Roosevelt Lake to Stewart Mountain Dam. Elevation of water surface varies from 1,422.0 ft (433.43 m), sill of lowest outlet in Stewart Mountain Dam, to 2,136 ft (651.1 m), top of spillway gates in raised position on Roosevelt Dam. Since 1910, spill over Roosevelt Dam because of capacity or near capacity storage has occurred only during the following periods: Apr. 15 to June 21, 1915, Jan. 19 to May 30, 1916, Apr. 21 to June 7, 1917, Feb. 17 to June 3, 1920, Apr. 13 to July 24, 1941, Dec. 30, 1965, to Jan. 10, 1966, Feb. 16 to Apr. 26, 1968, and Mar. 18 to Apr. 24, Apr. 27 to May 1, May 3, 6, 8-11, 16-19, 21-24, 28, 1973; during each period a considerable amount of water was uncontrolled or released down the Salt River channel past the Stewart Mountain damsite and could not be diverted for irrigation. Records given herein represent usable contents. Water from this system is used for irrigation of Salt River Valley and for generation of power.

COOPERATION.--Records of daily contents furnished by Salt River Valley Water Users' Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents of system, 1,764,000 acre-ft (2,180 km³) May 22, 1941; minimum, 20,680 acre-ft (25.5 km³) Sept. 16, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system, 1,691,000 acre-ft (2,090 km³) May 2, 3; minimum, 439,700 acre-ft (542 km³) Oct. 28.

CONTENTS, IN ACRE-FeET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	451900	442500	449900	461000	497400	701600	1594000	1688000	1656000	1568000	1476000	1394000
2	450500	442000	450300	460900	512800	923400	1604000	1691000	1653000	1565000	1472000	1391000
3	449900	441900	450800	461700	524500	1133000	1612000	1691000	1649000	1562000	1472000	1387000
4	448900	442500	451200	461700	526800	1234000	1621000	1690000	1647000	1559000	1473000	1384000
5	448800	443000	451400	461900	529300	1268000	1629000	1689000	1644000	1555000	1470000	1380000
6	448300	443000	451300	462100	531000	1307000	1636000	1689000	1643000	1553000	1468000	1378000
7	447700	441600	451600	462400	532900	1338000	1642000	1687000	1640000	1550000	1466000	1375000
8	448000	443800	452300	462300	535100	1357000	1648000	1686000	1637000	1546000	1466000	1372000
9	447900	444400	452400	462600	537900	1371000	1653000	1687000	1634000	1542000	1461000	1368000
10	448200	445400	452800	462600	541200	1381000	1658000	1686000	1633000	1541000	1459000	1365000
11	448200	444600	453300	462700	551700	1390000	1662000	1685000	1629000	1536000	1456000	1362000
12	447900	444800	453100	462200	567100	1400000	1666000	1685000	1626000	1535000	1454000	1358000
13	447100	445700	451900	467700	579400	1416000	1669000	1683000	1624000	1530000	1449000	1355000
14	446000	445800	452200	465700	569700	1433000	1673000	1683000	1622000	1527000	1448000	1351000
15	446100	445800	452600	466800	599300	1446000	1675000	1682000	1617000	1525000	1446000	1348000
16	445600	446200	453700	468500	612500	1455000	1678000	1681000	1613000	1521000	1443000	1345000
17	445100	446300	454600	470200	610400	1464000	1681000	1680000	1610000	1519000	1440000	1342000
18	444300	446600	454600	475900	616200	1468000	1683000	1678000	1608000	1515000	1437000	1339000
19	443200	446700	455100	481700	619100	1473000	1684000	1678000	1605000	1512000	1434000	1337000
20	443300	446900	456600	481800	620200	1479000	1685000	1676000	1602000	1509000	1430000	1334000
21	442400	447300	455800	482100	622900	1485000	1686000	1675000	1599000	1506000	1427000	1331000
22	441800	448200	459000	483000	625500	1494000	1686000	1674000	1596000	1502000	1425000	1328000
23	441500	448100	458900	487700	627600	1505000	1686000	1672000	1593000	1501000	1422000	1326000
24	440900	448300	457500	485100	629700	1519000	1686000	1670000	1590000	1498000	1419000	1324000
25	440400	448700	457800	486000	633100	1531000	1688000	1668000	1587000	1496000	1415000	1322000
26	440500	449000	460000	486500	637900	1541000	1687000	1668000	1584000	1492000	1413000	1320000
27	439800	449100	460100	486700	640900	1551000	1687000	1666000	1581000	1490000	1410000	1318000
28	439700	449200	460600	487900	645500	1560000	1687000	1664000	1576000	1489000	1407000	1315000
29	440400	449400	460800	488600	---	1569000	1688000	1663000	1574000	1488000	1402000	1315000
30	440900	449500	462300	489700	---	1578000	1688000	1661000	1571000	1484000	1400000	1311000
31	441200	---	460300	490500	---	1586000	---	1658000	---	1479000	1397000	---
MAX	451900	449500	462300	490500	645500	1586000	1688000	1691000	1656000	1568000	1476000	1394000
MIN	439700	441600	449900	460900	497400	701600	1594000	1658000	1571000	1430000	1397000	1311000
(†)	-9400	+7400	+11100	+36400	+204200	+892400	+94000	-32000	-88000	-92000	-82000	-84000
CAL YR 1977	MAX	951700	MIN	439700	†	-464200						
WTR YR 1978	MAX	1691000	MIN	439700	†	+858100						

* Prior to Oct. 1, 1972, contents were given at 2400.

† Change in contents, in acre-feet (from 0800 first of month).

NOTE.--Contents at 0800 Oct. 1, 1978, 1,310,000 acre-feet.

GILA RIVER BASIN

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09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°33'10", long 111°34'33", in NW¼NW¼ sec.6, T.2 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060106, on left bank 3.5 mi (5.6 km) downstream from Stewart Mountain Dam and 6 mi (10 km) upstream from Verde River.

DRAINAGE AREA.--6,232 mi² (16,141 km²) of which 21 mi² (54 km²) is below Stewart Mountain Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1930 to current year. Monthly discharge only for some periods, published in WSP 1313. Published as "at Stewart Mountain Dam" 1934-41.

REVISED RECORDS.--WSP 1343: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 1,370 ft (418 m), from topographic map. Prior to Sept. 27, 1934, at site 3.2 mi (5.1 km) upstream at different datum. Sept. 27, 1934, to Jan. 20, 1950, at site 2.8 mi (4.5 km) upstream at datum 1,396.33 ft (425.601 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by four reservoirs above station. (See elsewhere in this report.) Entire flow (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam, 10 mi (16 km) downstream, for irrigation in Salt River Valley and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE.--48 years, 831 ft³/s (23.53 m³/s), 602,000 acre-ft/yr (742 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,600 ft³/s (1,460 m³/s) Jan. 1, 1966, gage height, 22.4 ft (6.83 m), from floodmarks; maximum daily discharge, 38,600 ft³/s (1,090 m³/s) Jan. 1, 1966; no flow at times in recent years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	JCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	490	9.0	.80	.00	.00	1290	550	1350	1710	1630	1620	1750
2	484	6.0	.80	.00	.00	16100	412	1300	1700	1650	1690	1720
3	504	4.8	.70	.00	.00	8460	412	1310	1670	1700	1670	1720
4	531	4.0	.66	.00	.00	2300	266	1410	1710	1670	1590	1760
5	587	3.3	.70	.00	.00	54	9.6	1500	1720	1670	1510	1740
6	615	4.0	.70	.00	.00	20	94	1540	1680	1670	1500	1750
7	541	3.7	.70	.00	.00	12	918	1560	1730	1650	1550	1770
8	490	2.7	.70	.00	.00	7.7	1070	1440	1750	1680	1690	1790
9	413	2.3	.70	.00	.00	5.3	960	1410	1770	1660	1720	1780
10	365	2.0	.67	.00	.00	4.2	732	1510	1780	1620	1750	1790
11	443	1.7	.67	.00	2.9	3.4	555	1550	1690	1660	1660	1800
12	519	1.5	.60	.00	1.6	4.6	520	1530	1620	1700	1680	1780
13	600	1.3	.60	.00	1.6	3.8	710	1420	1710	1760	1690	1770
14	590	1.1	.60	.00	10	3.0	960	1380	2060	1710	1690	1770
15	428	.97	.60	.00	3.6	2.6	1010	1410	1760	1710	1690	1690
16	484	.93	.60	.00	2.6	2.4	1190	1580	1750	1740	1700	1590
17	472	.87	.70	.00	2.1	2.2	1320	1640	1760	1740	1720	1490
18	508	.80	.70	.00	1.8	173	1750	1600	1770	1740	1710	1450
19	503	.77	.70	.00	1.5	216	1770	1600	1740	1710	1690	1440
20	497	.77	.70	.00	.90	218	1740	1590	1730	1740	1640	1450
21	471	.80	.50	.00	.70	218	1740	1390	1730	1730	1540	1440
22	383	.80	.00	.00	.40	357	1730	1350	1720	1700	1690	1390
23	380	.80	.00	.00	.00	24	1700	1500	1730	1710	1710	1300
24	383	.80	.00	.00	.00	6.8	1640	1640	1700	1720	1780	1240
25	380	.80	.00	.00	.00	4.0	1710	1650	1680	1690	1760	1230
26	384	.80	.00	.00	.00	2.5	1710	1640	1600	1660	1740	1270
27	291	.80	.00	.00	.00	2.0	1690	1670	1630	1620	1750	1250
28	52	.80	.00	.00	.00	1.6	1660	1540	1600	1760	1740	1260
29	41	.80	.00	.00	---	1.3	1550	1610	1590	1730	1720	1360
30	34	.80	.00	.00	---	62	1360	1700	1620	1710	1770	1330
31	24	---	.00	.00	---	822	---	1720	---	1670	1740	---
TOTAL	12887	60.51	14.10	.00	29.70	30383.4	53438.6	47040	51410	52510	52100	46870
MEAN	416	2.02	.45	.000	1.06	980	1115	1517	1714	1694	1681	1562
MAX	615	9.0	.80	.00	10	16100	1770	1720	2060	1760	1780	1800
MIN	24	.77	.00	.00	.00	1.3	9.6	1300	1590	1620	1500	1230
AC-FT	25560	120	28	.00	59	60270	66330	93300	102000	104200	103300	92970
CAL YR 1977	TOTAL	314992.61	MEAN 863	MAX 2420	MIN .00	AC-FT 624800						
WTR YR 1978	TOTAL	326743.31	MEAN 895	MAX 16100	MIN .00	AC-FT 648100						

GILA RIVER BASIN

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

WATER-QUALITY RECORDS

LOCATION.--Water samples collected at Stewart Mountain Dam, 3.5 mi (5.6 km) upstream from gaging station.

PERIOD OF RECORD.--December 1950 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to current year.

WATER TEMPERATURES: December 1950 to current year.

REMARKS.--No inflow between sampling point and gaging station except during infrequent periods of heavy local rains. Unpublished daily specific conductance measurements for period December 1950 to September 1964, available from district office in Tucson, Ariz.

No flow at sampling point during all or part of October, November, December, January, February, and March.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,490 micromhos Aug. 20, 1951; minimum daily, 615 micromhos on several days during April 1974.

WATER TEMPERATURES: Maximum, 29.0°C Aug. 24, 26, 27, 1951, Sept. 11, 12, 1969; minimum, 9.5°C Feb. 14, 1951.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,500 micromhos June 3, 6; minimum daily, 705 micromhos Sept. 26.

WATER TEMPERATURES: Maximum, 24.0°C Oct. 3, 4, 7, Sept. 5, 6; minimum, 10.0°C Mar. 22, 31.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 28...	1215	51	1580	7.7	23.5	3	--	4.7	K6
APR 07...	0930	882	1180	7.5	14.0	6	--	6.1	<1
MAY 02...	1445	1310	1260	7.1	16.0	3	--	5.9	<1
JUN 06...	1415	1690	1360	7.4	17.5	1	--	--	<1
JUL 05...	1600	1700	1140	7.6	19.0	--	2.1	3.5	K3
AUG 01...	1500	1610	910	7.5	20.0	--	3.0	3.2	7
29...	1315	1700	830	7.5	20.5	--	2.9	2.4	4
SEP 26...	1315	1290	745	7.5	20.0	--	3.0	4.4	6

DATE	STREP- TOCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION (MG/L AS K)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT 28...	K2	220	81	57	19	230	6.7	6.1	170
APR 07...	84	180	67	48	15	160	5.2	5.7	140
MAY 02...	K2	150	24	48	6.5	210	7.5	6.8	150
JUN 06...	--	200	74	51	17	210	6.5	6.6	150
JUL 05...	2	180	83	47	16	160	5.1	5.3	--
AUG 01...	10	140	33	39	11	130	4.7	4.5	--
29...	K3	150	78	43	11	100	3.5	4.3	--
SEP 26...	6	140	42	41	9.7	92	3.4	3.8	--

< Actual value is known to be less than value shown.

K Based on non-ideal colony count.

GILA RIVER BASIN

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09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT 28...	0	68	350	.4	17	835	831	1.14
APR 07...	0	58	260	.4	16	629	632	.86
MAY 02...	0	62	300	.3	17	700	725	.95
JUN 06...	0	64	340	.3	17	855	780	1.16
JUL 05...	--	57	260	.3	15	621	621	.84
AUG 01...	--	47	200	.2	14	506	512	.69
29...	--	54	170	.2	14	459	442	.62
SEP 26...	--	44	150	.3	14	428	415	.58

DATE	NITRO- GEN, NO2+NO3 (MG/L AS N)	NITRO- GEN, AMMONIA (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + URG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHURUS, DIS- SOLVED (MG/L AS P)
OCT 28...	.01	.00	--	--	--	.50	--	.04	.02
APR 07...	.37	.06	.69	.75	.01	.74	1.1	.07	.06
MAY 02...	.19	.04	.60	.64	.35	.29	.83	.06	.03
JUN 06...	.09	.04	.55	.59	.24	.35	.68	.04	.01
JUL 05...	.09	.00	.43	.43	.23	.20	.52	.03	.02
AUG 01...	.11	.01	.41	.42	.09	.33	.53	.04	.02
29...	.13	.03	.55	.38	.11	.27	.51	.04	.03
SEP 26...	.05	.00	1.5	1.5	1.1	.37	1.6	.14	.04

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)
OCT 28...	7	6	200	0	<10	0	10	0	<50
MAY 02...	4	3	200	200	2	1	0	0	2
AUG 01...	4	3	200	60	1	<1	0	0	2

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CUBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECUV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECUV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECUV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECUV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 28...	0	<10	2	130	30	<100	1	120	40
MAY 02...	0	3	0	110	20	19	10	30	10
AUG 01...	0	5	2	180	<10	0	4	70	30

DATE	MERCURY TOTAL RECUV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECUV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECUV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
UCT 28...	.0	.0	0	0	<10	0	30	10
MAY 02...	.0	.0	0	0	0	0	10	10
AUG 01...	.0	.0	0	0	0	0	20	7

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	LENGTH OF EXPO- SURE (DAYS)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)
UCT 28...	2.8	--	--	--	--	--	--
APR 07...	3.5	--	120	--	--	--	--
MAY 02...	--	25	--	1.10	.551	2.52	1.57
JUN 06...	3.0	--	710	--	--	--	--
JUL 05...	4.9	--	290	--	--	--	--
AUG 01...	5.6	27	450	.472	.157	6.95	3.55
AUG 29...	--	--	490	--	--	--	--
SEP 26...	--	--	1000	--	--	--	--

< Actual value is known to be less than value shown.

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1400				---	---	1080	1220	1230	1180	940	845
2	1400				1080	---	1050	1220	1420	1180	940	840
3	1400				---	---	1070	1220	1500	1140	940	830
4	1400				---	---	1030	1220	1440	1140	940	820
5	1400				---	---	---	---	1480	1140	940	820
6	1400				---	---	---	1200	1500	1160	925	740
7	1400				---	---	1000	1210	1480	1150	925	740
8	1400				---	---	1010	1230	1420	1130	940	740
9	1400				---	---	1010	1210	1460	1110	920	730
10	1400				---	---	1030	1220	1400	1100	915	725
11	1300				---	---	1000	1240	1400	1060	915	730
12	1300				---	---	1090	1290	1360	1080	895	730
13	1300				---	---	1090	1220	---	1060	880	730
14	1400				---	---	1000	1220	1370	1080	890	720
15	1400				---	---	1000	1210	1370	1030	890	720
16	1300				---	---	1000	1220	1340	1020	880	720
17	1300				---	---	1000	1210	1480	1040	875	720
18	1300				---	---	1000	1210	1440	---	870	720
19	1300				---	---	1000	1200	1440	---	870	720
20	1300				---	1090	1000	1290	1320	990	870	720
21	1400				---	1080	1060	1250	1300	985	865	710
22	1400				---	1030	1060	1270	1300	1000	860	710
23	1400				---	---	1060	1290	1260	990	860	710
24	1300				---	---	1010	1290	1260	980	860	710
25	1300				---	---	1020	1290	1240	960	860	710
26	1400				---	---	1020	1290	1220	975	845	705
27	1400				---	---	1090	1240	1230	980	850	710
28	---				---	---	1100	1240	1220	955	845	710
29	---				---	---	---	1240	1200	930	845	710
30	---				---	---	1220	1240	1190	940	840	710
31	---				---	1080	---	1230	---	950	845	---
MAX	1400				1080	1090	1220	1290	1500	1180	940	845
MIN	1300				1080	1030	1000	1200	1190	930	840	705
WTR YR 1978	MAX	1500		MIN	705							

GILA RIVER BASIN

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.0				---	---	19.0	18.0	17.0	19.0	20.0	22.0
2	23.0				15.0	---	18.0	18.0	17.0	20.0	21.0	22.0
3	24.0				---	---	17.0	18.0	18.0	20.0	20.0	23.0
4	24.0				---	---	18.0	18.0	17.0	20.0	20.0	23.0
5	23.0				---	---	---	---	18.0	20.0	22.0	24.0
6	23.0				---	---	---	18.0	20.0	20.0	21.0	24.0
7	24.0				---	---	19.0	19.0	18.0	20.0	22.0	23.0
8	23.0				---	---	14.0	18.0	19.0	20.0	22.0	23.0
9	22.0				---	---	---	19.0	19.0	20.0	22.0	23.0
10	22.0				---	---	15.0	19.0	19.0	20.0	23.0	22.0
11	22.0				---	---	15.0	19.0	19.0	20.0	22.0	22.0
12	22.0				---	---	15.0	19.0	19.0	19.0	23.0	23.0
13	22.0				---	---	17.0	17.0	---	20.0	22.0	23.0
14	22.0				---	---	16.0	---	19.0	---	22.0	22.0
15	19.0				---	---	17.0	17.0	19.0	20.0	23.0	22.0
16	19.0				---	---	15.0	17.0	19.0	20.0	23.0	21.0
17	19.0				---	---	18.0	17.0	19.0	20.0	22.0	21.0
18	19.0				---	---	18.0	18.0	19.0	---	23.0	20.0
19	19.0				---	---	18.0	17.0	19.0	---	21.0	20.0
20	19.0				---	15.0	18.0	17.0	19.0	20.0	21.0	20.0
21	19.0				---	16.0	18.0	18.0	19.0	21.0	21.0	20.0
22	19.0				---	10.0	18.0	18.0	19.0	20.0	21.0	20.0
23	19.0				---	---	18.0	18.0	19.0	20.0	21.0	20.0
24	19.0				---	---	18.0	18.0	18.0	20.0	21.0	20.0
25	18.0				---	---	18.0	18.0	18.0	20.0	21.0	20.0
26	19.0				---	---	18.0	18.0	18.0	20.0	20.0	20.0
27	19.0				---	---	18.0	17.0	18.0	20.0	21.0	22.0
28	---				---	---	18.0	17.0	18.0	20.0	21.0	22.0
29	---				---	---	---	17.0	19.0	20.0	21.0	21.0
30	---				---	---	18.0	17.0	19.0	20.0	21.0	22.0
31	---				---	10.0	---	17.0	---	20.0	20.0	---
MAX	24.0				15.0	16.0	19.0	19.0	20.0	21.0	23.0	24.0
MIN	18.0				15.0	10.0	14.0	17.0	17.0	19.0	20.0	20.0
WTR YR 1978	MAX	24.0		MIN	10.0							

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	APR 7,78 0930	JUN 6,78 1415	JUL 5,78 1600	AUG 1,78 1500	AUG 29,78 1315	SEP 26,78 1315				
TOTAL CELLS/ML	120	710	290	450	490	1000				
DIVERSITY: DIVISION	1.4	1.5	1.0	0.9	1.4	1.0				
..CLASS	1.4	1.5	1.0	0.9	1.4	1.0				
...ORDER	1.4	2.4	1.7	1.1	1.5	1.3				
...FAMILY	1.7	2.9	2.2	2.0	2.2	1.8				
....GENUS	1.7	0.0	2.2	2.3	2.2	0.0				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLORUPHYCEAE										
...CHLOROCOCCALES										
...HYDRODICTYACEAE										
....PEUJASTRUM	--	-	--	-	--	-	11	2	--	-
...MICRACTINIAEAE										
....GOLENKINIA	--	-	--	-	--	-	5	1	--	-
...MICRACTINIUM	--	-	--	-	--	-	11	2	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	45	6	--	-	11	2	--	-
....KIRCHNERIELLA	--	-	45	6	--	-	--	-	--	-
...OOCYSTIS	--	-	89	13	--	-	--	-	--	-
...TETRAEDRUM	--	-	67	9	48#	17	54	12	16	3
...SCENEDESMACEAE										
....CRUCIGENIA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMUS	--	-	45	6	97#	33	220#	48	120#	24
...TETRASTRUM	--	-	--	-	--	-	11	2	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	68#	56	45	6	72#	25	3	1	--	-
..VOLVOCAEAE										
...PANDURINA	--	-	--	-	--	-	13	3	--	-
..ZYGNEMATALES										
...DESMIDIACEAE										
....COSMARIUM	--	-	45	6	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCAEAE										
....CYCLOTELLA	--	-	89	13	--	-	8	2	48	10
....MELOSIRA	--	-	--	-	--	-	--	-	--	-
..PENNALES										
...DIATOMACEAE										
....DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEURA	14	11	89	13	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	45	6	--	-	--	-	11	2
...NITZSCHIAEAE										
....NITZSCHIA	14	11	22	3	--	-	--	-	5	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...HORMOGONALES										
...OSCILLATORIAEAE										
....LYNGBYA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIA	--	-	--	-	--	-	--	-	210#	43
...SPIRULINA	--	-	--	-	24	8	--	-	--	-
...RIVULARIAEAE										
....RAPHIDIOPSIS	--	-	--	-	--	-	100#	23	75#	15
..CHROOCOCCALES										
...UNKNOWN 218010101021000	--	-	45	6	--	-	--	-	--	-
...UNKNOWN 218010101023000	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENUIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
....EUGLENA	27#	22	--	-	--	-	--	-	5	1
...TRACHELOMONAS	--	-	45	6	48#	17	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09502800 WILLIAMSON VALLEY WASH NEAR PAULDEN, AZ

LOCATION.--Lat 34°52'00", long 112°36'45", in SE4SE4 sec.7, T.17 N., R.3 W., Yavapai County, Hydrologic Unit 15060201, on left bank 3.6 mi (5.8 km) north of Simmons and 8.5 mi (13.7 km) west of Paulden.

DRAINAGE AREA.--255 mi² (660 km²).

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,455 ft (1,357.9 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 1.00 ft (0.305 m) higher. Datum of 4,447 ft (1,355.4 m) published in WRD Ariz. 1971-76 was in error.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 10.8 ft³/s (0.306 m³/s), 7,820 acre-ft/yr (9.64 hm³/yr); median of yearly mean discharges, 4.9 ft³/s (0.14 m³/s), 3,600 acre-ft/yr (4.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,490 ft³/s (212 m³/s) Mar. 1, 1978, gage height, 8.22 ft (2.505 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 100 ft³/s (2.83 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1930	104 2.95	3.92 1.195	Mar. 1	0815	*7,490 212	8.22 2.505
Feb. 10	Unknown	895 25.3	5.55 1.692	Mar. 5	1130	3,640 103	6.52 1.987
Feb. 28	1315	3,540 100	7.32 2.231	Mar. 12	2315	792 22.4	4.41 1.344

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.3	2.1	1.7	6.5	4180	7.1	6.3	.00	.00	3.0	.00
2	1.3	1.3	2.1	1.6	2.0	1850	7.6	6.0	.00	.00	.28	.00
3	1.3	1.3	1.9	1.7	1.6	1740	7.5	5.8	.00	.00	.59	.00
4	1.3	1.3	1.6	2.0	1.4	318	6.8	5.6	.00	.00	.00	.00
5	1.4	1.3	1.6	1.9	1.5	1160	6.7	5.6	.00	.00	.00	1.1
6	5.6	1.3	1.8	1.9	1.6	648	6.4	5.5	.00	.00	.00	.30
7	1.9	1.5	1.8	1.9	1.2	242	6.4	5.7	.00	.00	.00	.05
8	1.4	1.4	1.9	1.9	1.2	110	7.8	5.5	.00	.00	2.6	.02
9	1.5	1.3	1.9	2.0	1.2	60	11	5.1	.00	.00	3.0	.00
10	1.4	1.3	2.0	2.9	300	40	9.5	4.4	.00	.00	2.0	.00
11	1.3	1.3	2.0	2.5	100	66	7.9	4.0	.00	.00	1.4	.00
12	1.3	1.4	2.0	1.9	50	560	7.0	3.9	.00	.00	.39	.00
13	1.3	1.4	2.0	1.9	20	373	6.2	3.9	.00	.00	.05	.00
14	1.4	1.4	2.1	1.9	10	183	5.8	2.5	.00	.00	.02	.00
15	1.2	1.5	2.0	36	20	82	5.5	.79	.00	.00	.00	.00
16	1.3	1.5	1.8	11	20	10	5.5	.07	.00	.00	.00	.00
17	1.3	1.5	1.7	14	10	31	5.4	.00	.00	.00	.00	.00
18	1.4	1.5	1.9	5.0	10	23	5.3	.00	.00	.00	.00	.00
19	1.3	1.6	1.8	2.6	6.0	18	5.3	.00	.00	.00	.00	.00
20	1.6	1.6	1.6	11	3.0	15	5.1	.00	.00	.00	.00	.00
21	1.4	1.6	1.7	2.2	2.6	11	5.1	.00	.00	.00	.00	.00
22	1.4	1.7	1.8	1.6	2.6	16	4.9	.00	.00	.00	.00	.00
23	1.4	1.7	1.7	1.5	2.6	20	4.9	.00	.00	.00	.00	.00
24	1.2	1.7	1.7	1.2	2.6	11	4.9	.00	.00	.00	.00	.00
25	1.3	1.8	1.6	1.2	2.6	8.5	4.8	.00	.00	.00	.00	.00
26	1.3	1.8	1.8	1.2	2.6	7.8	4.6	.00	.00	.00	.00	.00
27	1.3	1.9	1.9	1.2	2.6	7.4	4.8	.00	.00	.00	.00	.00
28	1.3	1.9	2.2	1.2	1540	7.3	5.4	.00	.00	.00	.00	.00
29	1.3	1.9	2.0	1.1	---	6.9	5.6	.00	.00	.00	.00	.00
30	1.3	2.0	2.0	1.3	---	6.9	5.5	.00	.00	.00	.00	.00
31	1.3	---	1.8	8.4	---	7.0	---	.00	---	1.3	.00	---
TOTAL	44.5	46.0	58.2	129.4	2125.4	11818.8	186.3	70.66	.00	1.30	13.33	1.47
MEAN	1.44	1.53	1.88	4.17	75.9	381	6.21	2.28	.000	.042	.43	.049
MAX	5.6	2.0	2.2	36	1540	4180	11	6.3	.00	1.3	3.0	1.1
MIN	1.2	1.3	1.6	1.1	1.2	6.9	4.6	.00	.00	.00	.00	.00
AC-FT	88	91	115	257	4220	23440	370	140	.00	2.6	26	2.9

CAL YR 1977 TOTAL 999.18 MEAN 2.74 MAX 233 MIN .27 AC-FT 1980
WTR YR 1978 TOTAL 14495.36 MEAN 39.7 MAX 4180 MIN .00 AC-FT 28750

GILA RIVER BASIN

389

09503700 VERDE RIVER NEAR PAULDEN, AZ

LOCATION.--Lat 34°53'40", long 112°20'32", in SW¼SW¼ sec.35, T.18 N., R.1 W., Yavapai County, Hydrologic Unit 15060201, in Prescott National Forest, on right bank 0.3 mi (0.5 km) upstream from Verde Valley Ranch, 7 mi (11 km) east of Paulden, 8 mi (13 km) upstream from Hell Canyon, 8 mi (13 km) downstream from Granite Creek, and 10 mi (16 km) downstream from Sullivan Lake.

DRAINAGE AREA.--2,530 mi² (6,550 km²), approximately (includes 373 mi² or 966 km² in Aubrey Valley Playa, a closed basin).

PERIOD OF RECORD.--July 1963 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,117 ft (1,255 m), from topographic map.

REMARKS.--Records good. Diversions and storage above station for irrigation and municipal use.

AVERAGE DISCHARGE.--15 years, 35.7 ft³/s (1.011 m³/s), 25,860 acre-ft/yr (31.9 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,080 ft³/s (229 m³/s) Mar. 1, 1978, gage height, 9.66 ft (2.944 m); minimum daily, 15 ft³/s (0.42 m³/s) May 13-23, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 300 ft³/s (8.50 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 11	1600	546 15.5	4.27 1.301	Mar. 6	1745	1,990 56.4	6.65 2.027
Mar. 1	1530	*8,080 229	9.66 2.944	Mar. 13	1015	632 17.9	4.91 1.496
Mar. 5	1945	2,770 78.4	7.26 2.213	Aug. 10	1815	1,970 55.8	6.62 2.018

Minimum daily, 20 ft³/s (0.57 m³/s) July 2-4, 7, 11-13, 19, 27-30, Aug. 28 to Sept. 12, Sept. 14, 15, 28-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	23	22	23	22	4000	27	26	22	21	29	20
2	21	23	22	23	22	6210	28	25	22	20	22	20
3	21	22	22	23	22	3400	28	24	22	20	82	20
4	21	22	22	23	22	1130	27	24	22	20	30	20
5	22	22	22	23	22	1030	27	24	22	21	23	20
6	30	22	22	22	22	1610	27	24	21	21	22	20
7	23	23	22	22	22	722	27	24	21	20	21	20
8	22	22	21	22	22	264	28	24	21	21	21	20
9	22	22	21	22	22	141	27	24	21	21	21	20
10	21	22	21	23	22	92	27	23	21	21	214	20
11	22	22	21	24	213	69	27	23	21	20	31	20
12	21	22	21	22	177	261	27	23	21	20	86	20
13	22	22	21	22	64	469	28	23	21	20	72	21
14	21	22	21	22	37	338	28	23	21	21	131	20
15	21	22	21	22	30	218	28	23	21	21	43	20
16	21	22	21	22	39	168	28	23	21	21	26	21
17	21	22	21	22	30	107	25	22	21	21	22	21
18	22	22	21	22	28	74	25	23	21	21	21	21
19	22	22	22	24	24	56	25	23	21	20	21	21
20	22	22	22	24	23	41	25	23	21	21	21	21
21	22	22	22	22	23	35	25	23	21	21	21	21
22	22	22	22	22	22	32	25	23	21	21	21	21
23	22	22	22	22	22	31	25	22	21	21	21	21
24	22	22	22	22	22	30	25	22	21	22	21	21
25	22	22	22	22	22	29	25	23	21	22	21	21
26	22	22	23	22	22	28	25	23	21	21	21	21
27	22	22	23	22	23	28	24	23	21	20	21	21
28	22	22	23	22	227	28	24	22	21	20	20	20
29	23	22	24	22	---	28	24	22	21	20	20	20
30	23	22	24	22	---	28	24	22	21	20	20	20
31	23	---	23	22	---	27	---	22	---	32	20	---
TOTAL	684	663	679	694	1266	20724	777	718	635	652	1186	613
MEAN	22.1	22.1	21.9	22.4	45.2	669	25.9	23.2	21.2	21.0	38.3	20.4
MAX	30	23	24	24	227	6210	28	26	22	32	214	21
MIN	21	22	21	22	22	27	24	22	21	20	20	20
AC-FT	1360	1320	1350	1380	2510	41110	1540	1420	1260	1290	2350	1220

CAL YR 1977	TOTAL	9308	MEAN	25.5	MAX	408	MIN	20	AC-FT	18460
WTR YR 1978	TOTAL	24291	MEAN	60.2	MAX	6210	MIN	20	AC-FT	56100

GILA RIVER BASIN

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09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1976 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
OCT								
27...	1000	76	490	8.0	14.5	15	--	9.0
NOV								
29...	1400	76	500	8.2	12.5	3	--	10.6
DEC								
21...	1600	73	490	8.4	10.5	2	--	10.0
JAN								
25...	1400	77	495	8.1	11.5	5	--	10.3
FEB								
24...	1400	337	193	7.7	10.0	25	--	11.6
MAR								
18...	1500	578	240	7.8	13.0	40	--	8.9
APR								
26...	1300	82	500	8.1	20.0	1	--	8.9
MAY								
10...	1800	68	495	8.2	21.0	--	2.0	8.3
JUN								
13...	1330	65	490	8.0	25.0	--	--	--
JUL								
10...	1300	63	--	8.3	25.0	--	--	9.6
AUG								
08...	1200	70	490	8.3	25.5	70	--	7.0
SEP								
11...	1500	58	475	8.2	24.0	--	--	--

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)
OCT									
27...	38	240	0	53	26	24	.7	2.0	310
NOV									
29...	K11	240	0	54	25	26	.7	2.0	310
DEC									
21...	K2	190	6	43	20	7.0	.2	1.1	220
JAN									
25...	K1	240	0	54	25	24	.7	2.1	310
FEB									
24...	K11	92	2	23	8.5	6.7	.3	1.1	110
MAR									
18...	K2	100	4	26	9.1	8.8	.4	1.7	120
APR									
26...	K13	240	0	56	24	20	.6	2.1	310
MAY									
10...	K13	240	0	55	24	21	.6	2.5	310
JUN									
13...	K3	210	0	44	24	19	.6	1.7	290
JUL									
10...	K10	210	0	43	24	22	.7	2.2	260
AUG									
08...	78	230	0	53	24	23	.7	2.5	300
SEP									
11...	61	220	0	52	23	21	.6	2.2	280

K Based on non-ideal colony count.

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT 27...	0	6.7	13	.3	20	288	299	.39
NOV 29...	0	9.1	15	.3	20	286	305	.39
DEC 21...	2	7.2	7.7	.1	16	198	213	.27
JAN 25...	0	9.0	11	.2	20	284	300	.39
FEB 24...	--	6.8	4.6	.1	15	124	120	.17
MAR 18...	0	7.9	4.8	.1	17	126	136	.17
APR 26...	0	9.1	13	.2	15	260	293	.35
MAY 10...	0	10	13	.2	17	266	296	.36
JUN 13...	0	9.7	12	.2	17	--	271	.37
JUL 10...	0	9.0	14	.2	17	--	260	.35
AUG 08...	1	8.1	12	.2	21	273	294	.37
SEP 11...	0	10	14	.2	18	--	279	.38

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 27...	.12	.20	.19	.31	.03	.01
NOV 29...	.25	.17	.04	.29	.00	.01
DEC 21...	.08	.08	--	.09	.10	.00
JAN 25...	.20	.28	.05	.25	.04	.01
FEB 24...	.11	.01	.08	.19	.11	.01
MAR 18...	.23	.24	.25	.48	.20	.08
APR 26...	.04	.06	.17	.21	.02	.01
MAY 10...	.05	.04	.20	.25	.03	.01
JUN 13...	.01	.04	.25	.26	.01	.01
JUL 10...	.01	.03	.53	.54	.00	.02
AUG 08...	.25	.23	.58	.83	.12	.03
SEP 11...	.02	.05	.34	.36	.03	.01

GILA RIVER BASIN

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09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CH)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
UCT								
27...	21	200	190	170	<10	5	<10	410
NOV								
29...	20	400	210	170	1	0	8	200
DEC								
21...	6	100	50	20	1	--	43	130
JAN								
25...	18	200	170	150	1	10	5	210
FEB								
24...	5	100	130	50	0	10	7	1400
MAR								
18...	6	100	110	60	2	20	5	1700
APR								
26...	15	400	200	160	1	0	10	80
MAY								
10...	16	300	310	160	1	0	10	230
JUN								
13...	14	100	190	150	5	10	26	140
JUL								
10...	18	400	190	160	2	10	9	50
AUG								
08...	15	300	200	160	3	10	15	1700
SEP								
11...	16	400	180	190	11	0	11	300

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
UCT								
27...	40	<100	30	20	.0	0	<10	30
NOV								
29...	40	6	20	8	.0	0	0	20
DEC								
21...	60	4	10	10	.0	0	0	20
JAN								
25...	0	2	20	10	.1	0	0	30
FEB								
24...	250	6	30	10	.0	1	0	30
MAR								
18...	10	5	40	0	.0	9	1	10
APR								
26...	40	5	20	0	.0	0	0	40
MAY								
10...	20	7	20	0	.0	0	0	40
JUN								
13...	0	5	30	0	.0	0	0	50
JUL								
10...	40	16	10	10	.0	0	0	20
AUG								
08...	<10	21	90	5	.1	0	0	30
SEP								
11...	10	76	20	10	.0	0	0	20

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	LENGTH OF EXPO- SURE (DAYS)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)
UCT							
27...	.7	.00	0	--	--	--	--
NOV							
29...	2.0	.00	1	--	--	--	--
DEC							
21...	1.7	.00	3	--	--	--	--
JAN							
25...	.7	.00	3	--	--	--	--
FEB							
24...	5.3	.00	1	--	--	--	--
MAR							
18...	5.4	.00	0	--	--	--	--
APR							
26...	.9	.00	0	--	--	--	--
MAY							
10...	1.6	.00	0	--	1100	--	--
JUN							
13...	1.1	.00	0	35	--	10.0	2.22
JUL							
10...	1.7	.00	3	--	--	--	--
AUG							
08...	5.0	.00	1	--	--	--	--
SEP							
11...	1.4	.00	1	--	--	--	--

09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	MAY 10, 78
TIME	1800
TOTAL CELLS/ML	1100
DIVERSITY: DIVISION	0.7
CLASS	0.7
ORDER	1.4
FAMILY	2.8
GENUS	3.1

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYIA (GREEN ALGAE)		
CHLOROPHYCEAE		
VULVOCALES		
CHLAMYDOMONADACEAE		
CARTERIA	140	13
ZYGNEMATALES		
DESMIDIACEAE		
CLUSTERIUM	53	5
CHRYSOPHYIA		
BACILLARIOPHYCEAE		
CENTRALES		
COCINODISACEAE		
CYCLOTELLA	120	11
MELUSIRA	70	6
PENNALES		
ACHNANTHACEAE		
ACHNANTHES	53	5
CUCULONIS	33	3
CYMBELLACEAE		
CYMBELLA	110	10
FRAGILARIAEAE		
SYNEDRA	33	3
GOMPHONEMATAEAE		
GOMPHONEMA	18	2
NAVICULACEAE		
NAVICULA	320*	29
STAUROUNIS	18	2
NITZSCHIAEAE		
NITZSCHIA	120	11

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

09504200 VERDE RIVER NEAR CORNVILLE, AZ

LOCATION.--Lat 34°40'58", long 111°57'58", in SE¼NE¼ sec.19, T.15 N., R.4 E., Yavapai County, Hydrologic Unit 15060202, on boundary between Coconino and Prescott National Forests, 1.8 mi (2.9 km) upstream from Oak Creek, 3.1 mi (5 km) southwest of Cornville, and 21.6 mi (34.8 km) downstream from gaging station 09504000 Verde River near Clarkdale.

DRAINAGE AREA.--3,650 mi² (9,450 km²), approximately (includes 373 mi² or 966 km² in Aubrey Valley Playa, a closed basin).

PERIOD OF RECORD.--October 1976 to current year.

REMARKS.--Streamflow ungaged.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
OCT								
26...	1100	72	550	8.3	15.0	30	--	10.4
NOV								
30...	1000	64	560	8.2	9.0	9	--	9.4
DEC								
22...	1000	77	560	8.1	7.5	9	--	10.4
JAN								
26...	1000	84	560	8.4	6.5	25	--	10.2
FEB								
27...	1300	270	268	7.7	10.5	40	--	10.4
MAR								
22...	1000	ET50	260	8.0	13.0	150	--	8.8
APR								
27...	0900	61	610	8.1	18.0	3	--	9.8
MAY								
11...	0830	44	630	8.1	17.5	--	7.0	8.1
JUN								
14...	1400	44	580	8.0	26.0	--	--	--
JUL								
11...	1230	53	490	8.1	25.0	--	--	8.2
AUG								
09...	0900	47	610	8.2	27.0	70	--	--
SEP								
12...	1300	48	600	8.6	25.0	--	--	6.8

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NUNCAR- BUNATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BUNATE (MG/L AS HCO3)
OCT									
26...	80	270	8	54	33	27	.7	2.3	320
NOV									
30...	32	290	13	59	35	28	.7	2.3	340
DEC									
22...	32	280	13	56	33	27	.7	2.2	320
JAN									
26...	26	270	0	58	31	25	.7	2.3	320
FEB									
27...	K230	140	12	31	14	9.6	.4	1.3	150
MAR									
22...	410	120	13	28	12	8.3	.3	1.7	130
APR									
27...	K14	290	32	62	34	26	.7	2.9	320
MAY									
11...	49	310	36	65	37	31	.8	2.9	340
JUN									
14...	K30	290	40	57	37	28	.7	2.5	310
JUL									
11...	K160	310	44	60	38	28	.7	3.2	320
AUG									
09...	490	270	0	55	32	30	.8	2.8	340
SEP									
12...	220	280	7	59	32	28	.7	3.5	320

E Estimated.

K Based on non-ideal colony count.

GILA RIVER BASIN

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09504200 VERDE RIVER NEAR CORNVILLE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FI)
UCT								
26...	0	33	14	.3	21	338	343	.46
NOV								
30...	0	36	17	.2	20	343	365	.47
DEC								
22...	0	36	15	.2	20	341	348	.46
JAN								
26...	6	35	13	.3	21	327	351	.44
FEB								
27...	0	16	6.1	.1	16	165	168	.22
MAR								
22...	0	20	5.6	.1	17	143	158	.19
APR								
27...	0	52	16	.2	17	339	369	.46
MAY								
11...	0	63	18	.2	18	381	404	.52
JUN								
14...	--	46	14	.2	20	--	358	.49
JUL								
11...	0	49	19	.2	20	--	376	.51
AUG								
09...	0	39	16	.2	25	357	370	.49
SEP								
12...	6	37	17	.3	23	--	365	.50

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. TOT IN BUT MAT (MG/KG AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
UCT							
26...	.05	.07	.18	--	.23	.07	.01
NOV							
30...	.02	.00	.07	--	.09	.01	.01
DEC							
22...	.11	.10	.10	--	.21	.04	.00
JAN							
26...	.24	.26	.04	--	.28	.08	.03
FEB							
27...	.15	.01	.15	--	.30	.15	.02
MAR							
22...	.27	.30	.36	--	.63	.43	.04
APR							
27...	.20	.15	.41	--	.61	.04	.01
MAY							
11...	.21	.25	.24	95	.45	.07	.02
JUN							
14...	.04	.05	.38	--	.42	.01	.01
JUL							
11...	.07	.19	.68	--	.75	.02	.01
AUG							
09...	.40	.39	.57	--	.97	.11	.03
SEP							
12...	.13	.23	.54	--	.67	.13	.02

GILA RIVER BASIN

09504200 VERDE RIVER NEAR CORNVILLE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC IN BUT- TOM MA- TERIAL (UG/G AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, RECOV. FM BUT- TOM MA- TERIAL (UG/G AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CU)	CADMIUM RECOV. FM BUT- TOM MA- TERIAL (UG/G AS CU)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT 26...	22	--	100	--	240	180	<10	--	10
NOV 30...	17	--	800	--	250	180	0	--	0
DEC 22...	15	--	100	--	200	170	1	--	0
JAN 26...	45	--	200	--	170	160	0	--	0
FEB 27...	6	--	100	--	130	70	0	--	10
MAR 22...	14	--	300	--	80	70	0	--	10
APR 27...	11	--	500	--	200	160	2	--	0
MAY 11...	14	7	300	40	340	170	0	40	10
JUN 14...	14	--	200	--	230	170	1	--	0
JUL 11...	17	--	300	--	240	180	3	--	0
AUG 09...	14	--	100	--	240	180	4	--	10
SEP 12...	14	--	400	--	260	270	2	--	0

DATE	CHRO- MIUM, RECOV. FM BUT- TOM MA- TERIAL (UG/G)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, RECOV. FM BUT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, RECOV. FM BUT- TOM MA- TERIAL (UG/G AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 26...	--	10	--	1000	30	<100	--	60	20
NOV 30...	--	9	--	310	30	5	--	30	8
DEC 22...	--	19	--	460	40	7	--	30	20
JAN 26...	--	19	--	940	40	5	--	40	20
FEB 27...	--	18	--	2100	20	9	--	50	10
MAR 22...	--	180	--	8600	10	32	--	240	10
APR 27...	--	18	--	130	30	25	--	40	30
MAY 11...	2	24	28	500	10	7	30	70	30
JUN 14...	--	11	--	110	20	10	--	30	10
JUL 11...	--	12	--	150	160	25	--	40	40
AUG 09...	--	31	--	1700	<10	32	--	100	10
SEP 12...	--	30	--	1500	10	12	--	80	10

< Actual value is known to be less than value shown.

09504200 VERDE RIVER NEAR CORNVILLE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/L AS HG)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/L AS SE)	SELE- NIUM, TOTAL IN BOT- TOM MA- TERIAL (UG/G)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN)
OCT								
26...	.4	--	1	--	<10	--	50	--
NOV								
30...	.0	--	1	--	0	--	10	--
DEC								
22...	.0	--	1	--	1	--	20	--
JAN								
26...	.0	--	1	--	1	--	40	--
FEB								
27...	.0	--	0	--	0	--	50	--
MAR								
22...	.0	--	3	--	1	--	280	--
APR								
27...	.0	--	1	--	0	--	60	--
MAY								
11...	.0	.03	1	0	0	0	90	93
JUN								
14...	.0	--	1	--	0	--	30	--
JUL								
11...	.0	--	1	--	0	--	40	--
AUG								
09...	.0	--	1	--	4	--	60	--
SEP								
12...	4.5	--	0	--	0	--	60	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	LENGTH OF EXPOSURE (DAYS)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)
OCT									
26...	1.3	.00	0	--	--	--	--	--	--
NOV									
30...	1.2	.00	4	--	--	--	--	--	--
DEC									
22...	1.2	.00	2	--	--	--	--	--	--
JAN									
26...	1.7	.00	4	--	--	--	--	--	--
FEB									
27...	4.9	.00	4	--	--	--	--	--	--
MAR									
22...	7.8	.00	0	--	--	--	--	--	--
APR									
27...	1.7	.00	0	--	--	--	--	--	--
MAY									
11...	2.4	.00	0	14	3400	20.6	17.6	13.7	1.59
JUN									
14...	2.0	.00	1	--	--	--	--	--	--
JUL									
11...	3.1	.00	1	--	--	--	--	--	--
AUG									
09...	2.4	.00	2	--	--	--	--	--	--
SEP									
12...	3.7	.00	0	--	--	--	--	--	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09504200 VERDE RIVER NEAR CORNVILLE, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	MAY 11, 78
TIME	0830
TOTAL CELLS/ML	3400
DIVERSITY: DIVISION	1.1
..CLASS	1.2
...ORDER	1.7
....FAMILY	2.0
.....GENUS	2.4

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCUCCALES		
....MICRACIINIACEAE		
.....GULENKINIA	370	11
....MICRACIINIUM	450	14
...VULVOCALES		
..CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	110	3
..ZYGNEMALES		
...OESMIDIACEAE		
....CLUSTERIUM	110	3
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
....COSCINODISCALEAE		
.....CYCLOTELLA	140	4
..PENNALES		
...GOMPHONEMACEAE		
....GOMPHONEMA	20	1
...NAVICULACEAE		
....NAVICULA	1100#	31
....NITZSCHIA	370	11
...SIRIOIDACEAE		
....SIRIOIDACEAE	570#	17
..CHRYSMONADACEAE		
...UCHROMONADACEAE		
....UCHROMONAS	28	1
EUGLENOPHYTA (EUGLENIDS)		
..EUGLENOPHYCEAE		
...EUGLENACEAE		
....EUGLENA	57	2
....TRACHELUMONAS	57	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09504500 OAK CREEK NEAR CORNVILLE, AZ

LOCATION.--lat 34°45'56", long 111°53'24", in NW¼SE¼ sec.23, T.16N., R.4 E., Yavapai County, Hydrologic Unit 15060202, near left bank on downstream side of pier of county highway bridge, 0.2 mi (0.3 km) upstream from Page Springs, 4 mi (6 km) northeast of Cornville, and 15 mi (24 km) upstream from mouth.

DRAINAGE AREA.--357 mi² (925 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1940 to September 1945, April 1948 to current year.

REVISED RECORDS.--WSP 1149: 1948(M). WRD Ariz. 1974: 1973.

GAGE.--Water-stage recorder. Altitude of gage is 3,470 ft (1,058 m), from topographic map.

REMARKS.--Records good. Regulation during low flow by several small diversions for irrigation above station.

AVERAGE DISCHARGE.--35 years, 84.3 ft³/s (2.387 m³/s), 61,080 acre-ft/yr (75.3 hm³/yr); median of yearly mean discharges, 73 ft³/s (2.07 m³/s), 52,900 acre-ft/yr (65 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s (700 m³/s) Sept. 5, 1970, gage height, 16.48 ft (5.023 m); minimum, 6 ft³/s (0.17 m³/s) July 27, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1885, 23 ft (7.0 m) in March 1938, from floodmarks (upstream side of bridge).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,300 ft³/s (37 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 6	0845	1,620 45.9	6.47 1.972	Mar. 1	0845	*17,400 493	14.25 4.343
Feb. 1	0300	1,610 45.6	6.18 1.884	Mar. 5	1300	5,400 153	9.24 2.816
Feb. 11	0300	1,700 48.1	6.32 1.926	Mar. 22	0915	3,830 108	7.83 2.387

Minimum daily, 14 ft³/s (0.396 m³/s) Sept. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	30	36	36	869	11100	162	35	19	16	109	15
2	28	30	35	37	277	5770	576	45	18	17	54	20
3	27	30	34	37	246	4460	868	37	19	15	27	19
4	25	31	36	37	178	1090	376	34	22	15	20	18
5	24	31	37	37	143	2780	214	33	20	15	17	16
6	363	31	36	37	403	2040	137	32	19	16	17	14
7	61	45	35	37	624	924	93	31	20	16	16	59
8	43	32	34	37	644	624	79	29	19	16	16	25
9	38	32	35	37	380	555	112	26	19	16	15	19
10	35	32	36	100	292	555	245	25	19	17	16	18
11	30	33	37	60	621	560	275	25	19	17	18	21
12	26	33	37	45	212	686	149	25	18	24	56	20
13	26	33	30	37	176	574	91	23	18	19	44	18
14	25	33	30	37	300	412	64	22	19	18	26	19
15	24	33	36	290	182	386	51	21	19	22	21	24
16	25	33	36	227	137	273	45	20	18	29	17	24
17	25	34	36	399	117	237	44	19	17	24	15	23
18	26	34	41	209	100	309	39	21	19	20	16	22
19	25	34	36	127	89	371	35	23	17	17	15	20
20	26	34	36	157	85	536	31	22	17	17	16	20
21	30	34	36	85	104	555	31	23	16	19	15	21
22	29	35	35	77	184	1910	28	22	16	19	20	22
23	30	35	35	69	254	1550	27	21	16	17	17	23
24	31	35	35	61	305	759	27	19	16	17	17	25
25	29	35	36	54	340	485	25	20	16	18	49	25
26	29	35	38	49	359	362	23	20	16	31	21	23
27	29	35	39	47	372	309	27	21	16	41	17	24
28	29	35	41	48	4780	288	31	22	15	26	18	23
29	30	36	51	54	---	230	30	20	16	19	16	21
30	30	36	44	73	---	177	31	18	16	18	15	21
31	30	---	40	404	---	153	---	17	---	18	15	---
TOTAL	1257	1009	1139	3041	12773	41020	3966	771	534	609	771	662
MEAN	40.5	33.6	36.7	98.1	456	1323	132	24.9	17.8	19.6	24.9	22.1
MAX	363	45	51	404	4780	11100	868	45	22	41	109	59
MIN	24	30	30	36	85	153	23	17	15	15	15	14
AC-FT	2490	2000	2260	6030	25340	81360	7870	1530	1060	1210	1530	1310
CAL YR 1977	TOTAL	12165	MEAN	33.3	MAX	363	MIN	16	AC-FT	24130		
WTR YR 1978	TOTAL	67552	MEAN	185	MAX	11100	MIN	14	AC-FT	134000		

NOTE.--No gage-height record Oct. 26 to Nov. 30, Feb. 28 to Mar. 1.

09504500 OAK CREEK NEAR CORNVILLE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1954 to September 1964, March 1976 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June 1954 to September 1964.

INSTRUMENTATION.--Water temperature recorder from June 1954 to September 1964.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)
OCT								
26...	1500	27	360	8.2	18.5	5	--	9.0
NOV								
30...	1400	35	375	8.3	12.0	3	--	9.6
DEC								
22...	1300	35	350	8.3	8.0	--	--	10.7
JAN								
26...	1200	49	565	8.4	7.5	5	--	10.9
FEB								
27...	1500	269	120	7.7	7.0	15	--	10.6
MAR								
01...	1600	12200	100	7.7	6.0	--	--	--
22...	1100	2170	145	7.9	11.0	120	--	9.4
APR								
27...	1000	28	410	8.1	16.0	1	--	8.8
MAY								
11...	1000	25	365	8.0	19.5	--	.60	9.6
JUN								
14...	1030	20	400	8.3	29.0	--	--	--
JUL								
11...	0900	18	420	8.2	23.0	--	--	7.8
AUG								
09...	1245	18	410	8.0	23.5	20	--	7.7
SEP								
12...	0930	19	380	8.7	21.0	--	--	--

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
OCT									
26...	630	200	0	42	22	7.8	.2	1.3	240
NOV									
30...	64	200	2	45	21	7.9	.2	1.1	240
DEC									
22...	K4	240	0	53	25	26	.7	2.0	300
JAN									
26...	34	170	10	38	18	6.3	.2	1.0	190
FEB									
27...	40	61	3	14	6.4	2.5	.1	.7	71
MAR									
01...	--	61	0	17	4.4	2.0	.1	1.3	78
22...	560	60	10	15	5.4	1.8	.1	.9	60
APR									
27...	160	190	4	44	20	7.2	.2	1.3	230
MAY									
11...	1900	--	--	--	--	--	--	--	230
JUN									
14...	300	220	18	45	25	.4	.0	1.3	240
JUL									
11...	K1400	200	8	44	23	10	.3	1.5	240
AUG									
09...	670	190	0	43	21	12	.4	1.5	250
SEP									
12...	1200	210	9	48	21	9.0	.3	1.5	240

K Based on non-ideal colony count.

GILA RIVER BASIN

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09504500 OAK CREEK NEAR CORNVILLE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
OCT								
26...	0	2.8	9.5	.1	16	215	220	.29
NOV								
30...	0	3.9	9.4	.1	16	208	223	.28
DEC								
22...	0	12	14	.2	20	288	301	.39
JAN								
26...	2	4.6	6.4	.1	15	168	185	.23
FEB								
27...	0	5.2	1.8	.1	12	76	78	.10
MAR								
01...	0	4.3	5.4	.1	7.6	80	79	.11
22...	0	5.4	2.4	.1	10	61	71	.08
APR								
27...	0	5.0	8.8	.1	14	190	214	.26
MAY								
11...	0	4.5	9.6	.1	13	202	--	.27
JUN								
14...	0	4.3	12	.1	16	--	223	.30
JUL								
11...	0	4.8	14	.1	16	--	232	.32
AUG								
09...	0	8.7	14	.1	16	226	240	.31
SEP								
12...	0	4.9	15	.1	16	--	233	.32

DATE	NITRO- GEN, NO2+NO3 DIS- TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT						
26...	.05	.05	.23	.28	.03	.01
NOV						
30...	.08	.03	.04	.12	.01	.01
DEC						
22...	.24	.23	.22	.46	.02	.00
JAN						
26...	.03	.01	.05	.08	.03	.01
FEB						
27...	.01	.03	.04	.05	.06	.01
MAR						
22...	.05	.04	.45	.50	.31	.03
APR						
27...	.05	.05	.18	.23	.03	.01
MAY						
11...	.04	.05	.67	.71	.01	.01
JUN						
14...	.05	.10	.26	.31	.01	.01
JUL						
11...	.11	.12	--	--	.00	.02
AUG						
09...	.10	.13	.51	.61	.06	.01
SEP						
12...	.07	.14	.52	.59	.07	.01

GILA RIVER BASIN

09504500 OAK CREEK NEAR CORNVILLE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 26...	9	100	60	30	<10	5	<10	150
NOV 30...	9	300	60	40	0	0	2	120
DEC 22...	17	200	190	170	0	0	15	150
JAN 26...	7	100	30	20	0	0	8	270
FEB 27...	2	0	80	20	0	10	5	680
MAR 01...	--	--	--	50	--	--	--	--
22...	5	300	50	40	0	10	12	4500
APR 27...	8	300	70	20	1	0	2	80
MAY 11...	8	100	1100	30	0	0	5	120
JUN 14...	9	200	90	60	4	0	5	70
JUL 11...	13	300	70	40	1	10	8	210
AUG 09...	10	100	90	30	9	0	8	490
SEP 12...	8	400	70	20	3	0	7	940

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 26...	30	<100	20	10	.0	0	<10	40
NOV 30...	60	3	20	0	.0	0	0	0
DEC 22...	30	4	0	10	.0	0	1	20
JAN 26...	0	2	20	20	.0	0	0	20
FEB 27...	30	4	20	10	.0	0	0	20
MAR 01...	110	--	--	--	--	--	--	--
22...	60	4	160	10	.0	3	0	20
APR 27...	10	5	10	0	.7	0	0	10
MAY 11...	--	5	20	--	.0	0	0	30
JUN 14...	0	26	20	5	.0	0	0	10
JUL 11...	90	18	20	20	.2	0	0	20
AUG 09...	<10	130	70	20	.0	0	0	30
SEP 12...	10	42	70	10	.0	0	0	20

< Actual value is known to be less than value shown.

09504500 OAK CREEK NEAR CORNVILLE, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS TOTAL ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)
UCT								
26...	1.1	.00	0	--	--	--	--	--
NOV								
30...	2.1	.00	4	--	--	--	--	--
DEC								
22...	.5	.00	7	--	--	--	--	--
JAN								
26...	1.9	.00	6	--	--	--	--	--
FEB								
27...	4.4	.00	2	--	--	--	--	--
MAR								
22...	14	.00	2	--	--	--	--	--
APR								
27...	2.2	.00	2	--	--	--	--	--
MAY								
11...	4.7	.00	0	95	5.04	3.31	3.95	1.59
JUN								
14...	1.8	.00	5	--	--	--	--	--
JUL								
11...	2.1	.00	1	--	--	--	--	--
AUG								
09...	2.9	.00	2	--	--	--	--	--
SEP								
12...	3.1	.00	1	--	--	--	--	--

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE	MAY 11, 78
TIME	1000
TOTAL CELLS/ML	95
DIVERSITY: DIVISION	0.7
..CLASS	0.7
...URUM	1.4
...FAMILY	2.3
....GENUS	2.3

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...VULVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	19#	20
CHRYSPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCEACEAE		
....CYCLOTELLA	19#	20
..PENNALES		
...ACHNANTHACEAE		
...CUCCONEIS	19#	20
...CYMBELLACEAE		
...CYMBELLA	19#	20
...NAVICULACEAE		
....NAVICULA	19#	20

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09505200 WET BEAVER CREEK NEAR RIMROCK, AZ

LOCATION.--Lat 34°40'29", long 111°40'17", in NW¼SW¼ sec.24, T.15 N., R.6 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on right bank 4.5 mi (7.2 km) northeast of Rimrock and 5.7 mi (9.2 km) upstream from Red Tank Draw.

DRAINAGE AREA.--111 mi² (287 km²).

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

REVISED RECORDS.--WRD Ariz. 1969: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,020 ft (1,225 m), from topographic map.

REMARKS.--Records good. No known diversion or regulation above station.

AVERAGE DISCHARGE.--17 years, 32.4 ft³/s (0.918 m³/s), 23,470 acre-ft/yr (28.9 hm³/yr); median of yearly mean discharges, 26 ft³/s (0.74 m³/s), 18,800 acre-ft/yr (23 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,670 ft³/s (217 m³/s) Sept. 5, 1970, gage height, 12.41 ft (3.783 m); minimum, 5.4 ft³/s (0.15 m³/s) Aug. 14, 1962, July 1, 2, 5, 8, 9, 12, 21, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, (*) and peak discharges above base of 600 ft³/s (17 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	0930	*4,360 123	10.46 3.188	Mar. 13	1930	816 23.1	6.50 1.981
Mar. 2	2245	3,480 98.6	9.73 2.966	Mar. 22	0530	2,450 69.4	8.71 2.655
Mar. 5	1845	2,250 63.7	8.51 2.594				

Minimum daily, 5.8 ft³/s (0.16 m³/s) Dec. 12-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	7.0	6.4	7.1	174	2920	151	9.3	7.6	6.6	7.1	6.9
2	6.6	7.1	6.4	7.7	85	1930	144	9.2	7.6	6.6	7.3	6.9
3	6.6	7.1	6.4	7.3	55	1550	137	8.8	7.6	6.4	7.1	6.8
4	6.6	7.1	6.2	7.3	37	349	74	8.6	7.6	6.2	6.9	7.0
5	6.6	7.0	6.2	7.6	26	1100	56	8.6	7.6	6.2	7.1	7.0
6	9.9	7.6	6.2	7.6	77	634	43	8.7	7.6	6.4	7.1	7.0
7	7.6	7.7	6.2	7.6	156	303	34	8.6	7.6	6.2	7.1	6.9
8	7.1	7.5	6.0	7.9	96	216	30	8.1	7.3	6.4	7.1	6.9
9	6.7	7.3	6.0	8.0	73	180	36	8.0	7.3	6.4	7.1	7.0
10	6.6	7.3	6.0	8.9	53	154	48	8.0	7.3	6.4	7.1	6.9
11	6.3	7.3	6.0	8.6	105	187	80	7.9	7.3	6.2	7.3	6.9
12	6.0	7.1	5.8	8.0	70	472	46	7.9	7.3	6.2	9.0	7.0
13	6.2	7.1	5.8	7.9	63	416	30	7.8	7.1	6.2	7.9	7.0
14	6.2	7.1	5.8	7.6	60	326	22	7.8	7.2	6.2	7.3	7.1
15	6.2	7.1	5.8	10	50	164	16	7.8	7.1	6.3	7.3	7.2
16	6.4	6.9	6.0	15	48	119	13	7.9	7.1	6.4	6.9	7.2
17	6.4	6.9	6.0	47	36	120	11	7.9	7.1	6.2	6.6	7.1
18	6.4	6.9	6.0	51	27	144	9.8	7.9	7.1	6.2	6.6	7.0
19	6.4	6.9	6.2	23	21	143	9.4	7.9	7.1	6.2	6.7	7.0
20	6.4	6.7	6.1	20	19	210	9.1	7.6	7.1	6.4	6.6	7.0
21	6.5	6.7	6.0	22	52	239	9.0	7.6	6.9	6.6	6.6	7.0
22	6.6	6.7	6.4	16	176	1210	9.0	7.6	6.9	6.6	6.7	7.0
23	6.8	6.8	6.4	12	260	851	9.0	7.6	6.9	6.6	6.6	7.0
24	6.8	6.8	6.4	11	187	296	9.0	7.6	6.9	6.6	6.7	7.0
25	6.8	6.6	6.7	9.0	144	228	6.9	7.9	6.9	6.6	6.6	7.0
26	6.7	6.6	6.7	8.2	135	188	8.9	7.6	6.9	6.6	6.5	7.1
27	6.7	6.7	7.1	8.0	110	192	8.9	7.6	6.6	6.6	6.5	7.0
28	6.8	6.5	7.1	7.7	1990	206	8.6	7.6	6.9	6.4	6.6	7.0
29	7.1	6.2	7.1	7.4	---	172	8.6	7.6	6.9	6.6	6.6	7.0
30	7.5	6.4	7.3	9.2	---	144	8.7	7.6	6.6	6.6	6.6	7.0
31	7.2	---	7.2	99	---	144	---	7.6	---	6.9	6.6	---
TOTAL	209.8	208.7	195.9	484.6	4385	15507	1092.9	248.2	215.0	199.2	216.0	219.9
MEAN	6.77	6.96	6.32	15.6	157	500	36.4	8.01	7.17	6.43	6.97	7.00
MAX	9.9	7.7	7.3	99	1990	2920	151	9.3	7.6	6.9	9.0	7.2
MIN	6.0	6.2	5.8	7.1	19	119	8.6	7.6	6.6	6.2	6.5	6.8
AC-FT	416	414	389	961	8700	30760	2170	492	426	395	428	416
CAL YR 1977 TOTAL	2767.5		MEAN 7.58	MAX 102	MIN 5.6	AC-FT 5490						
WTR YR 1978 TOTAL	23172.2		MEAN 63.5	MAX 2920	MIN 5.8	AC-FT 45960						

09505250 RED TANK DRAW NEAR RIMROCK, AZ

LOCATION.--Lat 34°41'43", long 111°42'49", in SE¼NE¼ sec.16, T.15 N., R.6 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on left bank 2.5 mi (4.0 km) downstream from confluence of Rarick and Mullican Canyons, and 3.5 mi (5.6 km) northeast of Rimrock.

DRAINAGE AREA.--49.4 mi² (128 km²).

PERIOD OF RECORD.--April 1957 to Sept. 1978 (discontinued).

GAGE.--Water-stage recorder. Concrete control prior to Sept. 5, 1970. Altitude of gage is 3,920 ft (1,195 m), from topographic map. Prior to Sept. 5, 1970, at datum 0.29 ft (0.088 m) higher.

REMARKS.--Records good except those for period of missing record, May 13 to June 13, which are poor.

AVERAGE DISCHARGE.--21 years, 7.24 ft³/s (0.205 m³/s), 5,240 acre-ft/yr (6.46 hm³/yr); median of yearly mean discharges, 4.6 ft³/s (0.13 m³/s) 3,300 acre-ft/yr (4.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 ft³/s (297 m³/s) Sept. 5, 1970, recorded gage height, 12.69 ft (3.868 m), about 13.3 ft (4.05 m), from profile past gage, from rating curve extended above 1,100 ft³/s (31 m³/s), on basis of slope-area measurement of peak flow; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 200 ft³/s (5.7 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1645	459 13.0	5.67 1.728	Mar. 1	0945	*2,600 73.6	8.74 2.664
Jan. 31	2000	348 9.85	5.33 1.625	Mar. 5	1130	881 24.9	6.60 2.012
Feb. 11	0015	588 16.7	5.94 1.810	Mar. 11	2400	688 19.5	6.22 1.896
Feb. 23	1930	441 12.5	5.54 1.689	Mar. 22	2300	1,460 41.3	7.54 2.298

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	150	1260	.73	.29	.00	.00	.00	.00
2	.00	.00	.00	.00	31	600	.66	.26	.00	.00	.00	.00
3	.00	.00	.00	.00	10	584	13	.29	.00	.00	.00	.00
4	.00	.00	.00	.00	4.5	52	6.5	.28	.00	.00	.00	.00
5	.00	.00	.00	.00	2.5	342	2.6	.26	.00	.00	.00	.00
6	.00	.00	.00	.00	11	205	1.4	.26	.00	.00	.00	.00
7	1.6	.00	.00	.00	48	78	.90	.26	.00	.00	.00	.00
8	.70	.00	.00	.00	24	26	.85	.25	.00	.00	.00	.00
9	.36	.00	.00	.00	12	11	.76	.25	.00	.00	.00	.00
10	.28	.00	.00	.00	11	5.7	.66	.23	.00	.00	.00	.00
11	.23	.00	.00	.01	158	104	2.2	.22	.00	.00	.00	.00
12	.18	.00	.00	.01	55	327	1.7	.22	.00	.00	.00	.00
13	.17	.00	.00	.00	42	168	1.1	.21	.00	.00	.00	.00
14	.14	.00	.00	.00	67	148	.81	.20	.00	.00	.00	.00
15	.12	.00	.00	103	30	62	.68	.20	.00	.00	.00	.00
16	.09	.00	.00	35	21	28	.65	.10	.00	.00	.00	.00
17	.08	.00	.00	166	14	16	.59	.10	.00	.00	.00	.00
18	.07	.00	.00	61	7.9	13	.51	.10	.00	.00	.00	.00
19	.07	.00	.00	29	4.6	7.6	.47	.10	.00	.00	.00	.00
20	.06	.00	.00	28	3.1	6.2	.45	.10	.00	.00	.00	.00
21	.06	.00	.00	26	19	4.4	.40	.00	.00	.00	.00	.00
22	.04	.00	.00	12	116	438	.38	.00	.00	.00	.00	.00
23	.02	.00	.00	5.4	168	417	.38	.00	.00	.00	.00	.00
24	.00	.00	.00	3.0	110	65	.36	.00	.00	.00	.00	.00
25	.00	.00	.00	1.4	68	17	.36	.00	.00	.00	.00	.00
26	.00	.00	.00	.89	43	6.5	.34	.00	.00	.00	.00	.00
27	.00	.00	.00	.73	46	5.3	.32	.00	.00	.00	.00	.00
28	.00	.00	.00	.63	924	1.8	.29	.00	.00	.00	.00	.00
29	.00	.00	.00	2.7	---	1.2	.26	.00	.00	.00	.00	.00
30	.00	.00	.00	6.7	---	.85	.28	.00	.00	.00	.00	.00
31	.00	---	.00	94	---	.69	---	.00	---	.00	.00	---
TOTAL	4.27	.00	.00	575.47	2200.6	4991.24	40.59	4.18	.00	.00	.00	.00
MEAN	.14	.000	.000	18.6	78.6	161	1.35	.13	.000	.000	.000	.000
MAX	1.6	.00	.00	166	924	1260	13	.29	.00	.00	.00	.00
MIN	.00	.00	.00	.00	2.5	.69	.26	.00	.00	.00	.00	.00
AC-FT	8.5	.00	.00	1140	4360	9910	81	8.3	.00	.00	.00	.00

CAL YR 1977 TOTAL 36.09 MEAN .099 MAX 7.6 MIN .00 AC-FT 72
WTR YR 1978 TOTAL 7822.35 MEAN 21.4 MAX 1260 MIN .00 AC-FT 15520

NOTE.--No gage-height record May 13 to June 13.

GILA RIVER BASIN

09505260 MONTEZUMA WELL OUTLET NEAR RIMROCK, AZ

LOCATION.--Lat 34°38'53", long 111°45'02", in NE¼, sec.31, T.15 N., R.6 E., Yavapai County, Hydrologic Unit 15060202, in Montezuma Castle National Monument, on left bank 100 ft (30.5 m) downstream from outlet of Montezuma Well, and 2.5 mi (4.0 km) northeast of Rimrock.

PERIOD OF RECORD.--1948-59, 1961, 1976 (three or less discharge measurements each year); April 1977 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 3,560 ft (1,085 m), from topographic map.

REMARKS.--Records fair. No diversions between outlet and gage since June 1977 when gate was removed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3.01 ft³/s (0.085 m³/s) Apr. 12, 1978, minimum observed, 1.43 ft³/s (0.040 m³/s) June 9, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2.9 ft³/s (0.082 m³/s) Mar. 23, 27, Apr. 17-28; minimum daily, 2.3 ft³/s (0.065 m³/s) Dec. 11-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6
2	2.0	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6
3	2.0	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6
4	2.0	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6
5	2.0	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6
6	2.5	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
7	2.5	2.4	2.4	2.6	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.6
8	2.5	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
9	2.5	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
10	2.5	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
11	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
12	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
13	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
14	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
15	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.7	2.6	2.6	2.7
16	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
17	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
18	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
19	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
20	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
21	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
22	2.4	2.4	2.4	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
23	2.4	2.4	2.5	2.7	2.7	2.9	2.9	2.8	2.6	2.6	2.6	2.7
24	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.7
25	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.6	2.7	2.6	2.5
26	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.5
27	2.4	2.4	2.5	2.7	2.7	2.9	2.9	2.8	2.6	2.6	2.6	2.6
28	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.6
29	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.6
30	2.4	2.4	2.5	2.7	2.7	2.8	2.8	2.8	2.6	2.6	2.6	2.6
31	2.4	---	2.5	2.7	---	2.8	---	2.7	---	2.6	2.6	---
TOTAL	75.4	72.0	74.4	83.0	75.0	87.0	85.2	86.5	74.5	80.7	80.6	79.3
MEAN	2.43	2.32	2.40	2.68	2.42	2.81	2.74	2.79	2.65	2.60	2.60	2.56
MAX	2.0	2.4	2.5	2.7	2.7	2.9	2.9	2.8	2.7	2.7	2.6	2.7
MIN	2.4	2.4	2.5	2.6	2.7	2.8	2.8	2.7	2.6	2.6	2.6	2.5
ALERT	151	143	144	165	150	173	164	172	158	160	160	157

WTR YR 1978 TOTAL 460.2 MEAN 2.65 MAX 2.9 MIN 2.5 ALERT 1400

GILA RIVER BASIN

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09505300 RATTLESNAKE CANYON NEAR RIMROCK, AZ

LOCATION.--Lat 34°46'01", long 111°40'23", in NW¼SW¼ sec.24, T.16 N., R.6 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on left bank 2.6 mi (4.2 km) upstream from mouth, 7 mi (11 km) northeast of Beaver Creek Ranger Station, and 9 mi (14 km) northeast of Rimrock.

DRAINAGE AREA.--24.6 mi² (63.7 km²).

PERIOD OF RECORD.--June 1957 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,870 ft (1,484 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--21 years, 7.37 ft³/s (0.209 m³/s), 5,340 acre-ft/yr (6.58 hm³/yr); median of yearly mean discharges, 5.1 ft³/s (0.14 m³/s), 3,700 acre-ft/yr (4.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,590 ft³/s (102 m³/s) Sept. 5, 1970, gage height, 11.50 ft (3.505 m), from rating curve extended above 1,100 ft³/s (31 m³/s) on basis of computation of peak flow over weir at gage height 8.50 ft (2.591 m) and slope-area measurement at gage height 11.50 ft (3.505 m); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 150 ft³/s (4.2 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 31	1900	706 20.0	6.85 2.088	Mar. 5	1100	651 18.4	6.66 2.030
Feb. 23	1815	193 5.47	4.65 1.417	Mar. 11	2315	361 10.7	5.59 1.704
Mar. 1	1015	*1,610 45.6	9.00 2.743	Mar. 22	0500	919 26.0	7.50 2.286

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	109	813	51	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	26	545	100	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	17	329	90	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	14	80	30	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	11	322	20	.00	.00	.00	.00	.00
6	5.0	.00	.00	.00	66	135	10	.00	.00	.00	.00	.00
7	1.0	.00	.00	.00	48	60	5.0	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	54	43	10	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	23	42	20	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	24	41	30	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	48	130	20	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	32	154	10	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	25	92	8.0	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	23	101	5.0	.00	.00	.00	.00	.00
15	.00	.00	.00	58	18	51	3.0	.00	.00	.00	.00	.00
16	.00	.00	.00	15	16	37	2.0	.00	.00	.00	.00	.00
17	.00	.00	.00	95	11	42	1.0	.00	.00	.00	.00	.00
18	.00	.00	.00	23	8.7	48	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	17	7.9	54	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	13	16	66	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	9.0	44	66	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	7.2	60	326	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	6.4	66	189	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	1.6	47	75	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.60	35	61	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.32	29	52	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.80	93	53	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	5.4	639	51	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	11	---	44	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	11	---	41	.00	.00	.00	.00	.00	.00
31	.00	---	.00	157	---	38	---	.00	---	.00	.00	---
TOTAL	6.00	.00	.00	431.32	1608.6	4181	415.00	.00	.00	.00	.00	.00
MEAN	.19	.000	.000	13.9	57.5	135	13.8	.000	.000	.000	.000	.000
MAX	5.0	.00	.00	157	639	813	100	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	7.9	37	.00	.00	.00	.00	.00	.00
AC-FT	12	.00	.00	856	3190	8290	823	.00	.00	.00	.00	.00

CAL YR 1977 TOTAL 91.17 MEAN .25 MAX 31 MIN .00 AC-FT 181
WTR YR 1978 TOTAL 6641.92 MEAN 18.2 MAX 813 MIN .00 AC-FT 13170

NOTE.--No gage-height record Oct. 1-17, and Apr. 1 to July 15.

09505350 DRY BEAVER CREEK NEAR RIMROCK, AZ

LOCATION.--Lat 34°43'43", long 111°46'30", in NE¼NW¼ sec.1, T.15 N., R.5 E., Yavapai County, Hydrologic Unit 15060202, in Coconino National Forest, on left upstream abutment of abandoned highway bridge, 400 ft (122 m) upstream from present State Highway 179 and 5.5 mi (8.8 km) north of Rimrock.

DRAINAGE AREA.--142 mi² (368 km²).

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WRD Ariz. 1969: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,694.38 ft (1,126.047 m) National Geodetic Vertical Datum of 1929 (Arizona Highway Department bench mark).

REMARKS.--Records fair. No known diversions above station.

AVERAGE DISCHARGE.--18 years, 37.4 ft³/s (1.06 m³/s), 27,100 acre-ft/yr (33.4 hm³/yr); median of yearly mean discharges, 28 ft³/s (0.79 m³/s), 20,300 acre-ft/yr (25 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s (753 m³/s) Sept. 5, 1970, gage height, 14.35 ft (4.374 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of computation of peak flow over weir at gage height 9.07 ft (2.765 m) and 9.69 ft (2.954 m) and slope-area measurement at gage height 14.35 ft (4.374 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 600 ft³/s (17.0 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 17	1030	835 23.6	4.65 1.417	Mar. 5	1200	3,200 90.6	6.64 2.024
Jan. 31	2000	2,340 66.3	6.05 1.844	Mar. 12	0030	1,230 34.8	5.08 1.548
Feb. 8	0600	631 17.9	4.38 1.335	Mar. 22	0545	3,360 95.2	6.74 2.054
Mar. 1	0515	*8,410 238	9.25 2.819	Apr. 2	2315	716 20.3	4.50 1.372

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	708	4590	197	.00	.00	.00	2.8	.00
2	.00	.00	.00	.00	188	3660	369	.00	.00	.00	.12	.00
3	.00	.00	.00	.00	121	1840	343	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	95	505	126	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	65	1570	79	.00	.00	.00	.00	.00
6	11	.00	.00	.00	351	672	53	.00	.00	.00	.00	.00
7	.47	.00	.00	.00	297	307	39	.00	.00	.00	.00	.00
8	.02	.00	.00	.00	330	213	34	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	165	203	65	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	128	207	116	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	227	399	99	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	122	586	52	.00	.00	.00	1.2	.00
13	.00	.00	.00	.00	106	334	32	.00	.00	.00	.27	.00
14	.00	.00	.00	.00	114	336	20	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	80	212	12	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	71	158	6.9	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	50	149	5.0	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	131	36	3.0	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	71	186	2.0	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	56	33	2.1	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	36	132	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	30	221	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	24	275	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	12	269	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	4.6	237	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	2.8	214	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	1.8	393	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	1.9	2830	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	15	185	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	54	160	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	702	154	---	.00	---	.00	.00	---
TOTAL	11.49	.00	.00	1631.10	7884	21032	1653.90	.00	.00	.00	4.39	.00
MEAN	.37	.000	.000	52.6	282	678	55.1	.000	.000	.000	.14	.000
MAX	11	.00	.00	702	2830	4590	369	.00	.00	.00	2.8	.00
MIN	.00	.00	.00	.00	28	149	.00	.00	.00	.00	.00	.00
AC-FT	23	.00	.00	3240	15640	41720	3280	.00	.00	.00	8.7	.00

CAL YR 1977 TOTAL 406.43 MEAN 1.11 MAX 155 MIN .00 AC-FT 806
WTR YR 1978 TOTAL 32216.88 MEAN 88.3 MAX 4590 MIN .00 AC-FT 63900

NOTE.--No gage-height record Apr. 17 to June 13.

09505550 VERDE RIVER BELOW CAMP VERDE, AZ

LOCATION.--Lat 34°33'02", long 111°51'02", in SW¼NW¼ sec.5, T.13 N., R.5 E., Yavapai County, Hydrologic Unit 15060203, on downstream side of bridge on county highway, 0.5 mi (0.8 km) southeast of Camp Verde, and 2.2 mi (3.5 km) downstream from Beaver Creek.

DRAINAGE AREA.--4,670 mi² (12,100 km²), approximately (includes 373 mi² or 966 km² in Aubrey Valley Playa, a closed basin).

PERIOD OF RECORD.--November 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,045.10 ft (928.146 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. About 10,000 acres (40 km²) above station are irrigated by surface water and ground water.

AVERAGE DISCHARGE.--6 years, 378 ft³/s (10.70 m³/s), 273,900 acre-ft/yr (338 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,000 ft³/s (1,160 m³/s) Mar. 1, 1978, gage height, 19.41 ft (5.916 m); minimum daily, 13 ft³/s (0.368 m³/s) July 6, 7, 1976, July 9, 10, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 5-6, 1970, reached a stage of about 19.0 ft (5.79 m), estimated on basis of stage of 19.5 ft (5.94 m), from profile past gage, discharge, 43,000 ft³/s (1,220 m³/s). A peak discharge of 97,000 ft³/s (2,750 m³/s) was recorded at former gaging station at site 8.5 mi (13.7 km) downstream (below West Clear Creek) on Mar. 3, 1938, and is the highest near this site since at least 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 3,000 ft³/s (85 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 1	0615	3,540 100	8.17 2.490	Mar. 13	0745	4,480 126	8.85 2.697
Mar. 1	1715	*41,000 1,160	19.41 5.916	Mar. 23	0445	8,580 243	10.89 3.319
Mar. 5	2245	14,270 404	12.90 3.932				

Minimum daily, 13.0 ft³/s (0.368 m³/s) July 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	71	99	115	2090	29000	630	60	20	15	29	25
2	100	72	101	113	1260	25800	897	60	20	15	204	25
3	90	71	99	110	755	23500	1570	60	20	16	123	24
4	61	67	99	110	595	8670	1110	50	20	15	110	27
5	61	66	102	100	450	8730	898	50	20	19	103	34
6	1170	78	96	100	567	10100	486	50	20	18	77	44
7	445	101	104	100	1500	5450	361	40	20	15	72	38
8	206	108	106	100	1440	2750	330	40	20	14	56	34
9	165	101	106	100	1340	1980	326	40	20	13	44	39
10	144	99	106	110	646	1650	442	40	20	13	36	31
11	132	99	108	120	1410	1550	505	40	20	14	47	31
12	125	96	115	134	1080	2590	510	30	18	14	186	30
13	110	95	106	122	801	3410	389	30	21	15	163	34
14	74	96	107	109	765	2940	295	30	21	16	157	34
15	70	90	100	120	735	2260	236	30	22	15	146	36
16	69	90	103	500	579	1490	208	29	22	16	123	44
17	76	88	106	1000	450	1190	195	31	20	21	86	44
18	66	87	106	700	345	1100	176	33	19	20	60	44
19	61	88	106	500	285	1100	150	31	20	22	50	45
20	58	90	105	400	250	1340	140	30	19	21	42	45
21	56	92	106	300	262	1520	130	20	18	25	37	46
22	60	90	106	200	542	4220	120	20	18	28	33	43
23	59	92	106	150	406	5800	110	20	17	27	35	41
24	56	92	107	140	1220	2490	100	20	17	26	32	39
25	55	93	110	120	1100	1580	90	20	17	24	31	39
26	59	93	115	110	1020	1200	90	20	17	26	38	38
27	60	93	122	160	881	1000	80	30	18	24	33	37
28	55	96	127	153	7240	951	80	30	20	26	28	37
29	66	93	122	153	---	808	70	20	20	23	27	35
30	78	95	115	158	---	698	70	20	18	21	25	34
31	76	---	113	249	---	657	---	20	---	22	25	---
TOTAL	4070	2682	3333	6706	51508	157444	10590	1044	582	599	2258	1117
MEAN	131	89.4	108	216	1118	5079	353	33.7	19.4	19.3	72.8	37.2
MAX	1170	108	127	1000	7240	29000	1570	60	22	28	204	34
MIN	53	66	96	100	250	637	70	20	17	13	25	24
AC-FT	8070	5320	6610	15300	62100	312500	21010	2070	1150	1190	4480	2220
CAL YR 1977	TOTAL	54109	MEAN	95.4	MAX	1170	MIN	14	AC-FT	67660		
WTR YR 1978	TOTAL	221733	MEAN	607	MAX	29000	MIN	15	AC-FT	439800		

09505800 WEST CLEAR CREEK NEAR CAMP VERDE, AZ

LOCATION.--Lat 34°32'19", long 111°41'36", in NW¼NW¼ sec.11, T.13 N., R.6 E., Yavapai County, Hydrologic Unit 15060203, in Coconino National Forest, on left bank at Bull Pen Ranch, 9 mi (14 km) upstream from mouth, and 9 mi (14 km) east of Camp Verde.

DRAINAGE AREA.--241 mi² (624 km²).

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,630 ft (1,106 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--13 years, 59.0 ft³/s (1.671 m³/s), 42,750 acre-ft/yr (52.7 hm³/yr); median of yearly mean discharges, 46 ft³/s (1.30 m³/s), 33,300 acre-ft/yr (41 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,800 ft³/s (391 m³/s) Mar. 1, 1978, gage height, 10.15 ft (3.094 m), from rating curve extended above 2,700 ft³/s (76 m³/s), on basis of slope-area measurement of peak flow; minimum daily, 12 ft³/s (0.34 m³/s) at times during some months in 1966, 1968-70, 1974, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 2,700 ft³/s or (76 m³/s) on basis of slope-area measurement of peak flow) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Mar. 1	1315	*13,800 391	10.15 3.094
Mar. 5	1300	3,880 110	7.28 2.219
Mar. 22	2130	1,420 40.2	5.75 1.753

Minimum daily, 16 ft³/s (0.45 m³/s) Oct. 10, 16-19, Nov. 10-18, Dec. 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	17	17	20	200	8160	91	29	19	18	20	19
2	17	17	17	20	122	4440	91	28	19	18	23	19
3	17	17	17	19	72	4250	85	30	19	17	20	19
4	17	17	17	19	54	846	78	28	18	17	19	19
5	17	17	17	19	37	1730	68	28	18	17	19	19
6	21	17	17	19	31	1040	58	27	18	18	19	20
7	17	17	17	19	133	673	51	26	18	17	19	20
8	17	17	17	20	162	367	50	26	18	18	19	20
9	17	17	17	20	128	245	47	26	18	19	20	19
10	16	16	16	20	91	181	42	26	17	19	19	19
11	17	16	16	20	140	166	41	26	17	19	19	19
12	17	16	17	20	103	332	40	26	18	18	21	19
13	17	16	17	20	78	456	43	26	17	18	19	20
14	17	16	17	20	76	402	41	26	17	18	18	20
15	17	16	17	20	72	376	38	25	17	18	18	21
16	16	16	17	30	65	234	37	25	17	19	17	21
17	16	16	17	30	54	160	35	24	17	19	17	21
18	16	16	18	40	41	133	33	23	17	19	17	21
19	16	17	18	30	32	133	32	23	17	19	17	20
20	17	17	18	20	29	160	31	23	18	18	17	20
21	20	17	17	20	46	181	30	23	18	19	18	19
22	19	17	17	20	200	664	29	22	18	18	18	20
23	17	17	19	20	271	744	29	22	18	19	18	20
24	17	17	19	20	256	367	29	21	18	20	18	20
25	17	17	19	20	298	238	28	21	18	20	17	20
26	17	17	19	20	349	178	29	21	18	20	17	20
27	17	17	19	20	279	146	28	21	18	19	17	20
28	17	17	19	20	2980	131	28	21	18	23	17	20
29	17	17	20	20	---	120	28	20	18	20	17	20
30	17	17	20	20	---	105	27	19	18	18	18	20
31	17	---	20	20	---	93	---	19	---	18	18	---
TOTAL	533	501	549	685	6599	27451	1317	751	534	577	570	594
MEAN	17.2	16.7	17.7	22.1	229	886	43.4	24.2	17.8	18.6	18.4	19.8
MAX	21	17	20	30	2980	8160	91	30	19	23	23	21
MIN	16	16	16	19	29	93	27	19	17	17	17	19
AC-FT	1060	994	1090	1360	12690	54450	2610	1490	1060	1140	1130	1180
CAL YR 1977	TOTAL	6022	MEAN	16.5	MAX	50	MIN	12	AC-FT	11940		
WTR YR 1978	TOTAL	40461	MEAN	111	MAX	8160	MIN	16	AC-FT	80250		

GILA RIVER BASIN

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09507500 FOSSIL CREEK DIVERSIONS TO CHILDS POWERPLANT, NEAR CAMP VERDE, AZ

LOCATION.--Lat 34°22'06", long 111°39'56", in NE¼SW¼ sec.20, T.11½ N., R.7 E., Yavapai County, Hydrologic Unit 15060203, at head of Stehr Lake, 2.3 mi (3.7 km) northeast of Childs powerplant, 4.4 mi (7.1 km) by flume downstream from Irving powerplant, and 17 mi (27 km) southeast of Camp Verde.

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

GAGE.--Water-stage recorder and weir in concrete flume. Datum of gage is 3,716.2 ft (1,132.70 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Record is obtained at the head of Stehr Lake, a regulatory basin, and shows the water used by Childs powerplant. Most of the flow originates at Fossil Springs, which are fairly constant. Diversion is made from Fossil Creek 8 mi (13 km) upstream from this station and is first used by Irving powerplant. A second diversion from Fossil Creek enters the flume below Irving powerplant. Based on estimates and records for previous years, the flow through the Irving powerplant is estimated to be about 99 percent of the record published herewith.

AVERAGE DISCHARGE.--26 years, 43.0 ft³/s (1.22 m³/s), 31,150 acre-ft/yr (38.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 51 ft³/s (1.44 m³/s) Apr. 17-21, 1952, Jan. 17, 18, 1965; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	46	27	44	46	41	44	48	38	43	48	47
2	45	46	45	44	46	44	45	48	46	44	47	47
3	45	45	45	44	36	37	45	47	45	44	47	47
4	45	42	45	19	47	47	45	47	46	44	47	46
5	45	47	45	9.0	46	47	44	47	46	44	47	47
6	45	47	45	45	48	47	44	47	46	43	49	47
7	45	47	45	44	46	48	46	48	46	43	49	47
8	44	48	45	44	45	45	46	48	45	43	49	47
9	44	47	45	44	45	45	45	48	46	43	48	47
10	44	47	45	45	45	45	45	48	46	43	47	47
11	44	43	45	45	43	46	47	48	45	43	48	47
12	44	47	45	44	47	45	46	48	45	43	48	47
13	45	47	45	44	46	45	46	48	45	43	48	47
14	45	47	45	40	47	41	46	48	45	43	47	47
15	45	47	46	35	46	44	46	48	44	45	47	47
16	46	47	44	24	47	44	46	48	45	44	48	47
17	43	28	44	45	46	45	46	47	45	43	48	47
18	43	47	45	45	46	45	45	47	45	43	48	47
19	39	47	44	48	47	45	46	47	45	43	48	47
20	46	46	24	50	45	43	47	47	44	43	48	46
21	43	46	44	50	45	45	47	47	43	33	48	46
22	45	46	44	47	45	46	47	46	43	46	48	46
23	45	46	44	47	38	44	47	47	43	47	48	46
24	45	46	44	47	45	43	47	46	43	47	47	46
25	46	46	45	47	46	23	47	46	44	47	43	46
26	27	46	44	44	46	42	47	46	44	47	48	46
27	46	46	45	47	45	41	47	46	44	47	48	46
28	46	46	44	48	48	43	47	46	43	47	48	47
29	46	46	44	47	---	45	47	46	45	47	48	47
30	46	46	44	48	---	44	48	46	43	47	47	47
31	46	---	44	49	---	44	---	46	---	47	47	---
TOTAL	1368	1368	1325	1327.0	1268	1349	1381	1460	1333	1369	1476	1401
MEAN	44.1	45.6	42.7	42.8	45.3	43.5	46.0	47.1	44.4	44.2	47.6	46.7
MAX	46	48	45	50	48	48	48	48	46	47	49	47
MIN	27	28	24	9.0	36	23	44	46	38	33	43	46
AC-FT	2710	2710	2630	2630	2520	2680	2740	2900	2640	2720	2930	2780
CAL YR 1977	TOTAL	15269.0	MEAN	41.8	MAX	49	MIN	19	AC-FT	30290		
WTR YR 1978	TOTAL	16425.0	MEAN	45.0	MAX	50	MIN	9.0	AC-FT	32580		

GILA RIVER BASIN

09507580 EAST VERDE RIVER DIVERSION FROM EAST CLEAR CREEK, NEAR PINE, AZ

LOCATION.--Lat 34°25'10", long 111°15'50", in NW¼NE¼ sec.23, T.12 N., R.10 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, at confluence of Mail Creek and East Verde River, 0.9 mi (1.4 km) southeast of Washington Park, and 11 mi (18 km) east of Pine.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and weir in concrete flume. Altitude of gage is 5,774 ft (1,760.0 m), from Phelps Dodge Corporation reference mark.

REMARKS.--Records good. Diversion is 9.5 mi (15.3 km) northeast, from Blue Ridge Reservoir on East Clear Creek, in the Little Colorado River basin, to the East Verde River in the Gila River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 34 ft³/s (0.96 m³/s) Apr. 19, 29, May 5-7, 10, 12, 15, 18, June 2, 1969; no flow for long periods each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	26	22	18	21	22
2	.00	.00	.00	.00	.00	.00	.00	27	22	18	21	21
3	.00	.00	.00	.00	.00	.00	.00	26	22	18	22	21
4	.00	.00	.00	.00	.00	.00	.00	27	22	18	20	21
5	.00	.00	.00	.00	.00	.00	.00	26	22	18	20	21
6	.00	.00	.00	.00	.00	.00	.00	27	22	18	18	21
7	.00	.00	.00	.00	.00	.00	.00	26	23	18	17	21
8	.00	.00	.00	.00	.00	.00	.00	27	23	18	17	21
9	.00	.00	.00	.00	.00	.00	.00	26	21	18	18	21
10	.00	.00	.00	.00	.00	.00	.00	27	18	18	18	21
11	.00	.00	.00	.00	.00	.00	.00	23	18	17	17	21
12	.00	.00	.00	.00	.00	.00	.00	25	18	18	14	21
13	.00	.00	.00	.00	.00	.00	.00	26	18	18	13	21
14	.00	.00	.00	.00	.00	.00	.00	27	18	18	13	21
15	.00	.00	.00	.00	.00	.00	.00	24	18	18	15	21
16	.00	.00	.00	.00	.00	.00	.00	19	18	18	18	21
17	.00	.00	.00	.00	.00	.00	.00	22	18	18	17	21
18	.00	.00	.00	.00	.00	.00	.00	22	18	18	17	21
19	.00	.00	.00	.00	9.5	.00	.00	22	18	18	18	21
20	.00	.00	.00	.00	21	.00	.00	22	17	18	17	20
21	.00	.00	.00	.00	21	.00	.00	22	18	17	18	21
22	.00	.00	.00	.00	21	.00	12	22	18	17	18	21
23	.00	.00	.00	.00	21	.00	22	22	18	18	17	20
24	.00	.00	.00	.00	21	.00	22	22	18	18	19	21
25	.00	.00	.00	.00	21	.00	22	22	18	18	21	21
26	.00	.00	.00	.00	21	.00	22	22	18	18	21	21
27	.00	.00	.00	.00	21	.00	22	24	19	18	21	21
28	.00	.00	.00	.00	12	.00	27	26	19	17	21	21
29	.00	.00	.00	.00	---	.00	26	26	18	18	21	21
30	.00	.00	.00	.00	---	.00	27	24	18	22	21	21
31	.00	---	.00	.00	---	.00	---	22	---	22	21	---
TOTAL	.00	.00	.00	.00	189.50	.00	202.00	751	578	562	570	629
MEAN	.000	.000	.000	.000	6.77	.000	6.75	24.2	19.5	18.1	18.4	21.0
MAX	.00	.00	.00	.00	21	.00	27	27	23	22	22	22
MIN	.00	.00	.00	.00	.00	.00	.00	19	17	17	13	20
AC-FT	.00	.00	.00	.00	376	.00	401	1490	1150	1110	1130	1250
CAL YR 1977	TOTAL	1337.10	MEAN	3.66	MAX	26	MIN	.00	AC-FT	2650		
WTR YR 1978	TOTAL	3481.50	MEAN	9.54	MAX	27	MIN	.00	AC-FT	6910		

GILA RIVER BASIN

415

09507980 EAST VERDE RIVER NEAR CHILDS, AZ

LOCATION.--Lat 34°17'00", long 111°38'50", in sec.21, T.11 N., R.7 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, in Tonto National Forest, on left bank 1.3 mi (2.1 km) upstream from mouth and 6 mi (10 km) southeast of Childs.

DRAINAGE AREA.--328 mi² (850 km²).

PERIOD OF RECORD.--September 1961 to December 1965, May 1967 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,500 ft (760 m), from topographic map. Sept. 1, 1961, to Dec. 15, 1965, at site 1 mi (2 km) upstream at altitude 2,600 ft (790 m), datum raised 0.38 ft (0.116 m) Oct. 4, 1963. May 25, 1967, to July 20, 1972, at present site at datum 1.29 ft (0.393 m) higher.

REMARKS.--Records good. Records include transbasin diversions from East Clear Creek to headwaters of East Verde River. (See sta 09507580.)

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft³/s (666 m³/s) Sept. 5, 1970, gage height, 19.2 ft (5.85 m), from profile past gage, from rating curve extended above 960 ft³/s (27 m³/s) on basis of slope-area measurements at gage heights 8.82 and 19.2 ft (2.688 and 5.85 m); minimum daily, 0.20 ft³/s (0.006 m³/s) June 19 to July 8, 1963, July 21-28, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 1,300 ft³/s or 36.8 m³/s as explained above) and peak discharges above base of 300 ft³/s (8.5 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1800	2,080 58.9	6.26 1.908	Mar. 1	1000	*15,000 424	16.0 4.877
Jan. 17	1400	1,770 50.1	5.90 1.798	Mar. 5	1800	2,850 80.7	7.00 2.134
Jan. 31	2200	940 26.6	4.80 1.463	Mar. 12	2200	1,010 28.6	4.90 1.494
Feb. 11	0500	1,850 52.4	6.00 1.829	Mar. 22	1500	772 21.7	4.60 1.402
Feb. 15	0300	541 15.3	4.21 1.283				

Minimum daily, 1.7 ft³/s (0.018 m³/s) Oct. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	2.9	3.8	8.9	455	726.0	127	57	36	24	32	22
2	4.9	2.9	3.8	7.7	129	689.0	127	65	34	23	34	22
3	3.8	2.9	3.8	6.4	67	441.0	120	65	33	22	34	23
4	3.5	2.7	3.8	5.7	46	123.0	100	60	33	21	30	24
5	3.0	2.7	3.2	5.4	32	156.0	87	54	33	21	24	29
6	4.0	3.0	3.0	5.4	27	135.0	82	53	33	20	23	33
7	4.9	3.2	3.0	5.2	32	695	75	53	33	20	22	30
8	4.6	3.8	3.5	4.9	48	435	75	51	33	20	35	24
9	4.6	4.0	3.5	4.9	53	376	78	50	34	21	44	26
10	4.3	4.0	3.5	8.1	94	293	72	50	32	21	34	26
11	3.8	3.9	3.5	15	1270	265	65	50	30	22	24	24
12	2.5	3.8	3.8	17	503	697	65	48	29	23	49	24
13	2.0	3.8	3.8	14	224	605	62	44	29	21	33	24
14	2.2	3.5	3.8	11	320	380	59	44	28	21	23	27
15	2.0	3.0	3.5	855	320	272	56	43	27	22	19	27
16	1.7	3.5	3.5	556	170	215	53	43	27	22	16	26
17	1.8	3.2	3.5	960	134	188	50	41	27	24	16	25
18	1.8	3.0	3.8	370	82	170	48	40	27	22	17	24
19	1.8	3.5	4.0	89	64	165	46	40	27	20	18	24
20	1.8	4.0	4.0	91	62	182	43	40	26	20	18	22
21	2.0	4.0	4.0	77	111	182	38	40	24	20	19	21
22	2.0	4.0	4.0	43	150	441	37	38	24	20	22	22
23	2.2	4.0	4.3	30	162	412	36	38	23	20	20	23
24	2.2	3.5	4.6	24	145	248	47	37	23	23	18	24
25	2.4	3.5	4.9	17	122	200	50	38	22	24	18	26
26	2.4	3.5	5.2	16	113	179	53	38	22	29	18	25
27	2.2	3.5	5.2	13	100	158	53	38	22	26	20	24
28	2.0	3.8	5.4	11	2240	152	51	38	24	34	20	23
29	2.5	4.0	6.8	11	---	143	51	40	30	24	22	23
30	2.9	3.8	9.4	10	---	129	54	40	28	22	22	23
31	2.9	---	9.8	344	---	124	---	38	---	23	22	---
TOTAL	90.1	104.9	135.7	3636.6	7275	30006	1960	1414	653	725	766	740
MEAN	2.91	3.50	4.38	117	260	968	65.3	45.6	28.4	23.4	24.7	24.7
MAX	5.4	4.0	9.8	960	2240	7260	127	65	36	56	49	33
MIN	1.7	2.7	3.0	4.9	27	124	36	37	22	20	16	21
AC-FT	179	208	269	7210	14430	59520	3890	2800	1690	1440	1520	1470

CAL YR 1977	TOTAL	3265.9	MEAN	8.95	MAX	151	MIN	1.0	AC-FT	6480
WTR YR 1978	TOTAL	47706.3	MEAN	131	MAX	7260	MIN	1.7	AC-FT	94630

GILA RIVER BASIN

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ
(Hydrologic bench mark station)

LOCATION.--Lat 34°09'39", long 111°41'32", in sec.36, T.9½ N., R.6 E. (unsurveyed), Gila County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1.4 mi (2.3 km) upstream from mouth and 13 mi (21 km) south of Childs.

DRAINAGE AREA.--36.4 mi² (94.3 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WRD Ariz. 1970: 1968(M).

GAGE.--Water-stage recorder. Altitude of gage is 2,320 ft (707 m), from topographic map.

REMARKS.--Records fair except those for Mar. 1-4, which are poor.

AVERAGE DISCHARGE.--11 years, 12.1 ft³/s (0.343 m³/s), 8,770 acre-ft/yr (10.8 hm³/yr); median of yearly mean discharges, 6.7 ft³/s (0.19 m³/s), 4,900 acre-ft/yr (6.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s (189 m³/s) Mar. 2, 1978, gage height, 15.66 ft (4.773 m), in gage well, result of slope-area measurement; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (result of slope-area measurement) and peak discharges above base of 100 ft³/s (2.8 m³/s):

Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)
Jan. 15	1830	570	16.1	6.33	1.929	Mar. 5	1530	721	20.4	6.58	2.006
Jan. 17	1245	1,060	30.0	7.15	2.179	Mar. 12	2100	354	10.0	5.76	1.756
Jan. 31	1715	250	7.08	5.55	1.692	Mar. 22	1400	151	4.28	5.08	1.548
Feb. 11	0330	979	27.7	7.03	2.143	Aug. 1	1815	110	3.12	4.90	1.494
Mar. 2	0700	*6,660	189	15.66	4.773						

No flow June 17 to July 31, Sept. 5-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.27	.24	.84	120	2400	8.5	.96	.13	.00	8.0	.06
2	.26	.21	.27	.84	51	3200	10	1.0	.13	.00	.36	.06
3	.24	.21	.27	.84	30	2000	8.7	.98	.13	.00	.16	.06
4	.23	.21	.27	.75	21	300	7.7	1.0	.12	.00	.14	.06
5	.21	.21	.27	.84	16	332	6.5	.88	.12	.00	.13	.00
6	.57	.31	.27	.93	14	286	6.0	.82	.11	.00	.13	.00
7	.56	.24	.27	.90	17	154	5.3	.76	.10	.00	.36	.00
8	.46	.24	.27	.93	24	42	5.1	.69	.10	.00	.36	.00
9	.21	.24	.31	1.0	22	58	6.4	.69	.08	.00	.16	.00
10	.37	.21	.27	1.9	33	42	6.5	.63	.08	.00	.15	.00
11	.32	.24	.27	19	528	40	7.1	.57	.07	.00	.14	.00
12	.30	.24	.31	20	188	214	6.0	.51	.06	.00	.21	.00
13	.30	.24	.31	12	110	200	5.5	.43	.06	.00	.16	.00
14	.29	.21	.27	9.4	146	131	4.8	.38	.06	.00	.13	.00
15	.25	.21	.31	240	118	87	3.9	.34	.05	.00	.15	.00
16	.21	.21	.35	130	95	56	3.6	.30	.05	.00	.14	.00
17	.18	.24	.35	343	72	38	2.9	.27	.00	.00	.14	.00
18	.18	.21	.35	167	50	27	2.4	.25	.00	.00	.14	.00
19	.16	.21	.40	65	37	21	2.1	.25	.00	.00	.13	.00
20	.16	.24	.35	46	31	17	2.0	.22	.00	.00	.13	.00
21	.16	.24	.40	31	29	14	1.7	.20	.00	.00	.13	.00
22	.20	.21	.53	23	26	63	1.5	.17	.00	.00	.12	.00
23	.23	.21	.53	18	26	52	1.4	.16	.00	.00	.12	.00
24	.18	.21	.53	15	23	31	1.2	.16	.00	.00	.11	.00
25	.16	.24	.53	13	19	22	1.1	.16	.00	.00	.10	.00
26	.15	.24	.67	11	17	17	.99	.16	.00	.00	.09	.00
27	.15	.21	.75	9.7	15	14	.97	.16	.00	.00	.08	.00
28	.15	.21	.84	8.7	911	12	.89	.15	.00	.00	.08	.00
29	.25	.21	1.2	7.9	---	11	.81	.15	.00	.00	.07	.00
30	.30	.21	1.2	7.2	---	9.2	.78	.14	.00	.00	.06	.00
31	.28	---	.93	106	---	8.1	---	.14	---	.00	.06	---
TOTAL	7.96	6.79	14.09	1311.67	2784	9948.3	122.34	13.68	1.45	.00	15.68	.24
MEAN	.26	.23	.45	42.3	99.6	321	4.08	.44	.048	.000	.51	.008
MAX	.57	.31	1.2	343	911	3200	10	1.0	.13	.00	8.0	.06
MIN	.15	.21	.24	.75	14	8.1	.78	.14	.00	.00	.06	.00
AC-FT	16	13	28	2600	5530	19730	243	27	2.9	.00	31	.5

CAL YR 1977 TOTAL 388.23 MEAN 1.06 MAX 20 MIN .00 AC-FT 770
WTR YR 1978 TOTAL 14251.20 MEAN 39.0 MAX 3200 MIN .00 AC-FT 28230

GILA RIVER BASIN

417

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1968 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT 17...	1300	.22	430	7.7	23.0	--	--	--	150	0	41	12
NOV 11...	1500	.25	425	7.8	18.0	--	--	--	150	0	40	12
DEC 16...	1400	.35	410	7.8	12.5	10.1	K4	K26	150	0	41	12
JAN 11...	1330	32	130	7.7	10.0	10.6	680	3400	86	42	28	3.8
FEB 09...	1230	25	71	7.2	12.0	8.4	--	48	26	9	6.9	2.1
APR 11...	1530	6.7	137	7.6	18.5	--	--	--	59	10	17	4.1
MAY 11...	1245	.74	275	7.8	21.5	7.3	<1	--	120	0	33	8.7
JUN 08...	1230	.14	360	7.6	27.0	--	<1	K10	160	0	41	13

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
UCT 17...	32	1.1	1.4	240	0	2.2	13	2.0	37	244	259	.33
NOV 11...	33	1.2	1.3	220	0	6.9	20	2.2	34	250	258	.34
DEC 16...	32	1.1	1.2	230	0	7.6	13	2.3	34	242	256	.33
JAN 11...	9.1	.4	1.3	53	0	11	4.9	.8	21	99	106	.13
FEB 09...	4.2	.4	.7	21	0	11	3.1	.4	16	57	55	.08
APR 11...	8.5	.5	1.0	60	0	12	5.3	.8	20	91	98	.12
MAY 11...	17	.7	1.4	150	--	15	13	1.3	30	176	193	.24
JUN 08...	25	.9	1.7	--	--	17	14	1.4	25	228	234	.31

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT 17...	.07	.02	--	--	--	--	--	--
NOV 11...	--	.00	--	--	--	--	--	--
DEC 16...	.02	.00	--	--	--	--	--	--
JAN 11...	.08	.07	--	--	--	--	--	--
FEB 09...	.01	.02	3	0	1	0	5	330
APR 11...	.05	.01	--	--	--	--	--	--
MAY 11...	.03	.01	10	100	0	10	4	10
JUN 08...	.02	.00	--	--	--	--	--	--

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)
OCT 17...	--	--	--	--	--	--	--
NOV 11...	--	--	--	--	--	--	--
DEC 16...	--	--	--	--	--	--	--
JAN 11...	--	--	--	--	--	--	--
FEB 09...	5	0	.0	0	1	10	.00
APR 11...	--	--	--	--	--	--	--
MAY 11...	6	10	.5	0	0	10	.00
JUN 08...	--	--	--	--	--	--	--

DATE	TIME	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT CHARGE, SUS- PENDED (T/DAY)
OCT 17...	1300	23.0	0	.00
NOV 11...	1500	18.0	0	.00
DEC 16...	1400	12.5	0	.00
JAN 11...	1330	10.0	29	2.5
FEB 09...	1230	12.0	0	.00
APR 11...	1530	18.5	0	.00
MAY 11...	1245	21.5	0	.00
JUN 08...	1230	27.0	0	.00

LOCATION.--Lat 34°04'23", long 111°42'56", in sec.35, T.9 N., R.6 E. (unsurveyed), Yavapai County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1.3 mi (2.1 km) downstream from Tangle Creek and 9 mi (14 km) upstream from Horseshoe Dam.

PERIOD OF RECORD. -- August 1945 to current year.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,029.0 ft (618.44 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. About 12,500 acres (51 km²) above station are irrigated by surface water and ground water. Low flow slightly regulated by powerplant 32 mi (51 km) above station, using water from Fossil Creek. This station is above all major reservoirs on Verde River.

AVERAGE DISCHARGE.--33 years, 489 ft³/s (13.85 m³/s), 354,300 acre-ft/yr (437 hm³/yr); median of yearly mean discharges, 380 ft³/s (10.8 m³/s), 275,000 acre-ft/yr (339 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 91,400 ft³/s (2,590 m³/s) Mar. 1, 1978, gage height, 21.2 ft (6.462 m); minimum discharge, 48 ft³/s (1.36 m³/s) June 17, 1956, July 18, 19, 1958, caused by power regulation on Fossil Creek; minimum daily, 61 ft³/s (1.73 m³/s) July 18, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1924, 100,000 ft³/s (2,830 m³/s) Mar. 3, 1938, gage height, 19.0 ft (5.79 m), from floodmarks, based on comparison with peak discharge at other stations on Verde River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 4,000 ft³/s (113 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)		Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Jan. 15	2400	4,120	117	8.65	2.637	Mar. 1	2230	*91,400	2,590	21.2	6.462
Jan. 17	1900	4,480	127	8.98	2.737	Mar. 6	0100	24,300	688	14.80	4.511
Feb. 1	1730	4,240	120	8.76	2.670	Mar. 13	0530	6,390	181	10.02	3.054
Feb. 11	0700	8,230	233	11.11	3.386	Mar. 23	1230	11,000	312	11.87	3.618

Minimum daily, 95 ft³/s (2.69 m³/s) July 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221	202	212	295	2670	65100	1100	257	164	115	152	130
2	223	213	227	286	2860	64700	1110	278	151	112	261	131
3	210	197	202	273	1600	54700	1620	304	156	108	278	130
4	199	217	219	265	1110	17400	2140	302	148	105	317	132
5	206	206	221	286	842	13400	1370	286	146	104	265	137
6	210	229	219	261	686	18800	995	269	144	104	265	138
7	939	213	235	265	1090	10200	781	273	145	102	229	152
8	514	213	221	265	2010	5480	678	267	148	105	252	158
9	709	242	242	261	2150	3640	639	252	146	104	389	156
10	272	223	229	276	1620	2910	624	244	145	100	236	167
11	271	234	246	324	5530	2650	751	231	140	96	189	159
12	250	215	246	286	3390	4610	726	231	138	96	197	148
13	246	225	235	334	2100	6500	730	210	132	95	304	146
14	231	217	246	298	2300	5580	617	202	135	96	316	149
15	212	201	235	1090	2140	4210	531	192	124	99	309	157
16	221	206	253	1940	1540	3020	474	190	125	104	278	156
17	219	192	223	2840	1180	2380	434	178	122	104	280	156
18	204	215	238	2390	914	1910	408	172	122	107	238	162
19	217	178	238	1220	751	1850	388	178	120	115	206	166
20	199	199	242	863	643	1840	375	173	112	117	180	170
21	204	202	259	840	650	2240	353	180	121	121	165	164
22	185	197	240	694	893	3560	330	177	111	125	157	153
23	204	212	255	545	1490	8950	300	170	107	142	144	158
24	202	206	242	477	1920	4940	300	165	107	138	139	163
25	199	225	252	417	1840	2880	290	164	105	139	146	190
26	170	225	252	340	1750	2180	271	156	107	186	139	242
27	202	221	263	377	1720	1750	271	156	106	188	136	241
28	195	215	259	353	10100	1590	263	160	105	182	139	239
29	177	204	291	332	---	1490	242	167	107	145	138	236
30	202	223	300	342	---	1370	263	175	113	132	133	225
31	213	---	282	309	---	1130	---	159	---	132	128	---
TOTAL	8126	6367	7524	19344	57489	322960	19374	6518	3854	3718	6705	5011
MEAN	262	212	243	624	2053	10420	646	210	128	120	216	167
MAX	939	242	300	2840	10100	65100	2140	304	164	188	389	242
MIN	170	178	202	261	643	1130	242	156	105	95	128	130
AC-FT	16120	12630	14920	38370	114000	640600	38430	12930	7640	7370	13300	9940
CAL YR 1977	TOTAL	79563	MEAN	218	MAX	939	MIN	82	AC-FT	157800		
WTR YR 1978	TOTAL	466990	MEAN	1279	MAX	65100	MIN	95	AC-FT	926300		

GILA RIVER BASIN

09509500 RESERVOIR SYSTEM ON VERDE RIVER AT AND BELOW HORSESHOE DAM, AZ

LOCATION.--This system comprises two storage reservoirs created by Horseshoe and Bartlett Dams on Verde River, Hydrologic Unit 15060203. Gages on Horseshoe Reservoir, formed by Horseshoe Dam, lat 33°59'05", long 111°42'35", in sec.2, T.7 N., R.6 E. (unsurveyed); and Bartlett Reservoir, formed by Bartlett Dam, lat 33°49'05", long 111°37'52", in sec.34, T.6 N., R.7 E. (unsurveyed).

DRAINAGE AREA.--6,185 mi² (16,019 km²), at Bartlett Dam.

PERIOD OF RECORD.--July 1939 to current year. Prior to 1946 published as Bartlett Reservoir at Bartlett Dam.

REVISED RECORDS.--WSP 1283: Drainage area.

GAGE.--Water-stage recorders on dam structures. Datum of gage on Horseshoe Reservoir is 1,900.00 ft (579.120 m) and on Bartlett Reservoir 1,599.46 ft (487.515 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1964, Bartlett Reservoir gage datum was 10.00 ft (3.048 m) higher.

REMARKS.--Horseshoe Reservoir is formed by earthfill and rockfill dam; dam completed and storage began Nov. 15, 1945. Bartlett Reservoir is formed by concrete multiple-arch dam; dam completed May 1939 and storage began Feb. 5, 1939. Total capacity of the two reservoirs (capacity tables dated January 1965, based on survey in 1963) is 317,700 acre-ft (392 hm³) divided as follows: Horseshoe Reservoir, 139,200 acre-ft (172 hm³) between elevations 1,915.0 (583.69 m)—sill of outlet gate—and 2,026.0 ft (617.52 m)—top of spillway gates; Bartlett Reservoir, 178,500 acre-ft (220 hm³) between elevations 1,619.46 ft (493.611 m)—10 ft (3.0 m) above sill of outlet gates—and 1,797.46 ft (547.866 m)—top of spillway gates. No dead storage. Records given herein represent usable contents. Water is used for irrigation of Salt River Valley and for municipal supply.

COOPERATION.--Capacity tables furnished by Salt River Valley Water Users' Association.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents of system, 318,000 acre-ft (392 hm³) May 9, 1973; no storage at times when natural flow of river was passed through reservoir system.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system, 317,500 acre-ft (391 hm³) Mar. 27; minimum, 49,930 acre-ft (61.6 hm³) Dec. 30.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54390	64710	56830	50320	87300	276000	314400	303700	286300	243000	199400	176300
2	54900	64530	56710	50550	92730	289800	314400	302800	285400	241800	198000	175300
3	54350	64210	56630	50730	95490	274800	315300	302000	284200	241500	196700	174700
4	54670	63950	57650	50860	97320	275200	316700	301400	283600	240200	197000	174300
5	55020	63570	56660	51000	98530	273000	316500	300400	282700	238600	195700	173700
6	55540	63370	56710	51040	99530	281600	315400	299600	281900	237200	195700	172300
7	57370	63100	56740	51060	101200	263600	315200	299200	281100	235600	195700	171100
8	58490	62920	56760	51060	104800	252600	315200	298800	280200	234200	195600	169900
9	59110	62780	56890	51100	108500	261000	315300	298400	279200	232300	195700	169400
10	59720	62600	57100	51490	111700	268000	315200	297800	278000	231200	195400	169100
11	60340	62270	57290	51830	123600	273700	315400	297200	276900	229800	194800	168900
12	60510	61720	57320	51990	130100	283000	315100	296900	275800	227700	194300	168600
13	60910	61060	57250	52330	133900	295300	315100	296500	274900	225700	194200	168100
14	61270	60220	57260	52710	138900	305500	315100	296100	273800	223900	193900	167800
15	61580	59210	57100	55280	143700	311300	315000	295200	272400	222300	193400	167600
16	61970	58530	57010	59820	146800	312700	314800	294500	270700	221000	192600	167600
17	62230	57880	56480	66120	149200	313900	314600	293700	269300	218700	191600	166800
18	63150	57600	55960	70920	150900	313900	314600	293100	268000	216700	190500	165400
19	63690	57430	55420	73460	152000	314000	313800	292500	266900	214900	189300	164900
20	64100	57310	54730	74920	153100	313800	312800	291900	265100	213000	188200	165400
21	64520	57210	53920	76360	154100	314600	311800	291500	263180	210700	187000	165600
22	64890	57080	53210	77520	155600	315200	311200	291000	261200	208500	185900	165900
23	65280	56930	52770	78410	158000	315700	310900	290800	259100	206700	184900	166200
24	65620	56880	52310	79100	161200	316900	310500	290300	257300	205400	183800	166600
25	65950	57120	52030	79650	164500	317300	309800	289900	255300	204100	182600	166900
26	66260	57130	51470	80130	167400	316900	309100	289400	253200	203900	181500	197100
27	65740	57130	50770	80600	170400	317100	308300	289000	250400	204100	180700	167400
28	65240	57060	50110	80950	188600	317000	307200	288900	248200	203900	179800	167800
29	64990	56950	49970	81340	---	317400	305900	288600	246100	203000	179100	167900
30	64890	56920	49960	81820	---	316100	304800	288200	244400	201900	178200	168200
31	64920	---	50040	82740	---	314300	---	287400	---	200800	177200	---
MAX	66260	64710	57650	82740	188600	317400	316700	303700	286300	243000	199400	197100
MIN	54350	56880	49960	50320	87300	252600	304800	287400	244400	200800	177200	164900
(†)	+10480	-8000	-6880	+32700	+105860	+125700	-9500	-17400	-43000	-43600	-23600	-9000

CAL YR 1976

WTR YR 1977

CAL YR 1977

WTR YR 1978

MAX

66260

MIN

5040

MAX

317400

MIN

49960

† +17,190*

† -25,570*

† -1,500

† +113,760

† Change in contents, in acre-feet.

* Not previously published.

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 33°49'03", long 111°38'08", in SE¼ sec.33, T.6 N., R.7 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 1,300 ft (400 m) downstream from Bartlett Dam, 5.9 mi (9.5 km) upstream from Camp Creek, and 18 mi (29 km) east of town of Cave Creek.

DRAINAGE AREA.--6,185 mi² (16,019 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1888 to current year. (Monthly discharge only August 1888 to December 1903, and January 1910 to September 1913. For some periods prior to December 1903 gage heights, discharge measurements, and daily discharge hydrograph are published in reports of the Geological Survey.) Prior to October 1941, published under different names as follows: "near Fort McDowell," "at mouth," "above Salt River," "at McDowell," "at McDowell near Lehi," "near McDowell," and "above Camp Creek, near McDowell."

REVISED RECORDS.--WSP 1049: 1893, 1913-14, 1917-18, 1926-27, 1929. WSP 1213: 1915-16. WSP 1283: Drainage area.

GAGE.--Water-stage recorder at present site and datum since Mar. 4, 1975, at present site and at datum 2.00 ft (0.610 m) higher, Oct. 1, 1973, to Mar. 3, 1975, and 3.00 ft (0.914 m) higher, Oct. 1, 1961, to Dec. 29, 1965, and Mar. 11, 1971, to Sept. 30, 1973. Altitude of gage is 1,600 ft (488 m), from topographic map. Prior to Feb. 17, 1925, nonrecording gages at several sites about 20 mi (32 km) downstream at various datums. Feb. 17, 1925, to Dec. 31, 1941, water-stage recorder at two sites within 0.5 mi (0.8 km) upstream from Camp Creek, at various datums. Dec. 31, 1941, to Sept. 30, 1961, and Dec. 30, 1965, to Mar. 10, 1971, water-stage recorder at site 1.9 mi (3.1 km) downstream at datum 1,572.34 ft (479.249 m) National Geodetic Vertical Datum of 1929; since Mar. 2, 1978, used as supplementary gage. Feb. 18, 1975 to Feb. 26, 1978, supplementary water-stage recorder at site 30 ft upstream from main gage at same datum.

REMARKS.--Records good except those below 300 ft³/s (8.5 m³/s), which are poor. About 12,500 acres (50.6 km²) above station are irrigated by surface water and ground water. Flow completely regulated by Bartlett Reservoir since Feb. 5, 1939, and Horseshoe Reservoir since Nov. 15, 1945 (see preceding page), except during periods of spill. Water diverted downstream for municipal supply of city of Phoenix, and for irrigation in Fort McDowell Indian Reservation. Remainder (except during infrequent periods of extreme flooding) is diverted at Granite Reef Dam on Salt River 27 mi (43 km) downstream for irrigation in Salt River Valley, and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE (adjusted for storage in Bartlett and Horseshoe Reservoirs).--90 years, 659 ft³/s (18.66 m³/s), 477,000 acre-ft/yr (588 hm³/yr); median of yearly mean discharge, 535 ft³/s (15.2 m³/s), 388,000 acre-ft/yr (473 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--1888-1939: Maximum discharge not determined, probably over 150,000 ft³/s (4,250 m³/s) Feb. 24, 1891; minimum daily, 29 ft³/s (0.82 m³/s) July 11, 13, 1901. Floods of Nov. 27, 1905, and Mar. 4, 1938, reached maximum discharges of 96,000 ft³/s (2,720 m³/s) and 95,000 ft³/s (2,690 m³/s), respectively.
1939-78: Maximum discharge, 101,000 ft³/s (2,860 m³/s) Mar. 2, 1978; no flow at Bartlett Dam at times when gates in dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 101,000 ft³/s (2,860 m³/s) Mar. 2, gage height, 25.9 ft (7.894 m); no flow Sept. 15-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	281	240	165	110	14400	1190	848	641	868	832	669
2	25	318	253	166	129	64500	1180	858	742	669	901	529
3	25	369	235	166	161	67600	1180	801	623	588	942	469
4	15	360	201	166	212	18400	1480	637	499	798	757	380
5	10	379	190	188	243	17600	1820	642	588	976	490	390
6	12	367	184	231	202	14800	1780	586	588	1020	250	530
7	16	334	181	235	178	18400	887	455	606	1020	250	624
8	12	298	196	235	161	12400	598	455	695	1010	250	703
9	9.4	305	195	222	146	100	714	455	798	996	300	449
10	12	343	202	182	161	50	747	455	695	900	480	270
11	12	404	180	179	91	50	736	455	695	938	554	200
12	10	515	170	221	131	50	942	455	695	1180	490	140
13	8.6	566	227	190	120	50	847	455	560	1200	330	110
14	7.0	675	229	139	49	50	689	455	490	1080	450	75
15	7.0	675	266	89	71	1290	580	455	1100	1040	546	.00
16	7.0	561	254	123	44	3600	507	455	1190	957	672	.00
17	7.1	521	487	110	93	3160	467	455	1020	1030	789	.00
18	8.0	325	480	97	101	3160	397	455	827	947	848	.00
19	18	267	482	128	74	3120	887	446	817	1030	848	.00
20	22	227	573	142	119	2980	939	427	1040	1210	848	.00
21	18	202	634	143	139	2980	750	427	1240	1230	786	.00
22	18	245	588	144	159	3530	602	369	1330	1200	661	.00
23	17	221	489	133	179	8400	442	300	1310	1000	713	.00
24	17	198	392	138	182	4930	410	300	1230	801	731	.00
25	16	203	373	153	184	2500	571	300	1200	738	750	.00
26	16	186	557	153	194	1400	619	300	1310	494	620	.00
27	335	185	614	147	190	2160	739	300	1330	446	566	.00
28	452	224	607	148	63	1700	848	300	1350	482	561	.00
29	332	231	416	149	---	1780	848	300	1240	673	494	.00
30	235	223	352	143	---	2150	848	321	1080	773	600	.00
31	205	---	203	129	---	2440	---	546	---	817	669	---
TOTAL	1929.1	10208	10650	4954	3886	279730	25244	14468	27529	28111	18978	5538.00
MEAN	62.2	340	344	160	139	9024	841	467	918	907	612	185
MAX	452	675	634	235	243	67600	1820	858	1350	1230	942	703
MIN	7.0	185	170	89	44	50	397	300	490	446	250	.00
AC-FT	3830	20250	21120	9830	7710	554800	50070	28700	54600	55760	37640	10980
CAL YR 1977 TOTAL	73828.10			202		1360		5.0		146400		
WTR YR 1978 TOTAL	431225.10			1181		67600		.00		855300		

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1950 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to current year.

WATER TEMPERATURES: December 1950 to current year.

REMARKS.--Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from district office in Tucson, Ariz.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 958 micromhos Nov. 10, 1956; minimum daily, 195 micromhos May 13, 14, 1973.

WATER TEMPERATURES: Maximum, 32.0°C July 18, Aug. 14, 1951; minimum, 5.0°C Jan. 30, 1952.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 653 micromhos Dec. 4; minimum daily, 290 micromhos July 20, 21, 22, 24, Sept. 1.

WATER TEMPERATURES: Maximum, 25.0°C Oct. 15; minimum, 9.0°C Jan. 24, Feb. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 28...	1600	232	678	8.2	15.5	2	--	9.5	K8
DEC 29...	1030	360	648	8.4	11.5	1	--	10.3	<1
JAN 23...	1600	142	610	8.5	11.5	1	--	10.6	<1
FEB 27...	1600	162	550	8.6	12.0	3	--	9.7	K2
APR 06...	1000	2100	200	7.8	14.0	30	--	9.7	K8
MAY 02...	0945	839	150	6.9	10.0	65	--	10.4	<1
JUN 06...	1000	588	182	7.3	11.5	25	--	--	<1
JUL 05...	1045	957	248	7.7	15.0	--	4.5	11.2	<1
AUG 01...	1015	817	295	7.9	18.5	--	2.5	11.6	K5
29...	0845	477	305	7.4	19.5	--	477	11.2	<1
SEP 26...	0845	<10	348	8.5	21.5	--	1.1	17.6	K13

DATE	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
NOV 28...	K2	280	30	51	38	41	1.1	4.5	310
DEC 29...	K6	280	28	49	38	40	1.0	3.9	300
JAN 23...	K4	280	21	48	39	40	1.0	4.0	300
FEB 27...	K2	250	32	44	33	33	.9	3.2	260
APR 06...	100	97	7	24	9.0	8.3	.4	1.8	110
MAY 02...	K20	79	8	21	6.4	4.2	.2	1.9	87
JUN 06...	--	90	9	23	8.0	6.4	.3	2.0	99
JUL 05...	K5	130	16	29	13	9.5	.4	1.9	--
AUG 01...	8	120	4	30	12	12	.5	2.1	--
29...	K4	140	13	34	14	14	.5	2.1	--
SEP 26...	K12	170	6	40	16	16	.5	2.4	--

K Based on non-ideal colony count.

< Actual value is known to be less than value shown.

GILA RIVER BASIN

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09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO ₃)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
NOV 28...	0	75	27	.5	12	411	402	.56
DEC 29...	3	71	25	.5	14	389	392	.53
JAN 23...	8	71	23	.4	14	375	395	.51
FEB 27...	0	58	22	.4	15	314	337	.43
APR 06...	0	14	5.6	.2	14	131	131	.18
MAY 02...	0	11	3.0	.1	13	109	104	.15
JUN 06...	0	13	3.7	.2	14	126	119	.17
JUL 05...	--	25	8.4	.2	16	156	169	.21
AUG 01...	--	16	7.3	.1	16	177	168	.24
SEP 29...	--	20	7.9	.2	16	190	186	.26
SEP 26...	--	22	13	.3	15	218	221	.30

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH ₄ + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
NOV 28...	--	--	--	--	--	.18	--	.01	.00
DEC 29...	.05	.02	--	--	--	.32	--	.00	.01
JAN 23...	.04	.07	--	--	--	.07	--	.03	.02
FEB 27...	.15	.02	.25	.27	.14	.13	.42	.06	.04
APR 06...	.20	.10	.34	.44	.00	.44	.64	.11	.05
MAY 02...	.26	.11	.23	.34	.16	.18	.60	.20	.07
JUN 06...	.33	.04	.31	.35	.16	.19	.68	.11	.05
JUL 05...	.22	.00	.30	.30	.03	.27	.52	.08	.05
AUG 01...	.14	.01	.16	.17	.00	.20	.31	.04	.03
SEP 29...	.09	.02	.73	.75	.54	.21	.84	.05	.04
SEP 26...	.01	.00	1.1	1.1	.90	.20	1.1	.08	.02

GILA RIVER BASIN

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)
NOV										
28...	--	--	--	--	--	--	--	--	--	--
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
23...	18	16	100	100	2	2	10	10	0	0
FEB										
27...	--	--	--	--	--	--	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	8	5	200	100	1	1	0	10	3	0
JUN										
06...	--	--	--	--	--	--	--	--	--	--
JUL										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
01...	11	7	200	40	1	<1	10	0	2	1
29...	--	--	--	--	--	--	--	--	--	--

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)
NOV										
28...	--	--	--	--	--	--	--	--	--	--
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
23...	3	2	70	20	7	2	0	0	.2	.0
FEB										
27...	--	--	--	--	--	--	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
02...	13	5	1900	20	20	9	40	0	.0	.0
JUN										
06...	--	--	--	--	--	--	--	--	--	--
JUL										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
01...	5	2	140	<10	4	0	60	40	.0	.0
29...	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than value shown.

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)
NOV 28...	--	--	--	--	--	--	2.8	--	--
DEC 29...	--	--	--	--	--	--	1.8	--	--
JAN 23...	1	1	0	0	10	10	--	--	--
FEB 27...	--	--	--	--	--	--	2.6	--	--
APR 06...	--	--	--	--	--	--	5.4	--	--
MAY 02...	0	0	0	0	10	10	--	9.0	.4
JUN 06...	--	--	--	--	--	--	6.7	--	--
JUL 05...	--	--	--	--	--	--	4.8	--	--
AUG 01...	0	0	0	0	30	5	5.0	--	--
29...	--	--	--	--	--	--	--	5.9	.2

DATE	TIME	TEMPER- ATURE (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	LENGTH OF EXPO- SURE (DAYS)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUOROM (MG/M2)
NOV 28...	1600	15.5	1	67	.63	--	510	--	--	--	--
DEC 29...	1030	11.5	2	67	1.9	--	--	--	--	--	--
JAN 23...	1600	11.5	9	68	3.5	--	--	--	--	--	--
FEB 27...	1600	12.0	--	--	--	35	--	12.4	10.0	10.3	.000
APR 06...	1000	14.0	24	64	136	--	230	--	--	--	--
MAY 02...	0945	10.0	0	--	.00	--	--	--	--	--	--
JUN 06...	1000	11.5	16	86	25	--	0	--	--	--	--
JUL 05...	1045	15.0	7	93	18	--	210	--	--	--	--
AUG 01...	1015	18.5	3	67	6.6	27	38	3.70	1.81	.120	.000
29...	0845	19.5	10	100	13	--	110	--	--	--	--
SEP 26...	0845	21.5	7	82	--	--	7500	--	--	--	--

GILA RIVER BASIN

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROHMUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	560	609	583	578					---	310	290
2	---	570	619	623	572					---	310	292
3	---	570	605	572	578					---	310	292
4	---	570	653	590	578					---	310	292
5	---	570	649	588	578					---	319	292
6	---	580	588	583	580					---	318	295
7	---	580	592	589	578					---	318	297
8	600	570	597	601	581					---	311	299
9	590	580	599	591	608					---	311	300
10	580	610	592	591	573					---	311	305
11	570	590	597	598	570					---	310	300
12	560	580	620	576	593					---	313	305
13	580	590	652	600	567					---	315	305
14	550	630	620	629	580					---	315	305
15	590	580	635	620	594					---	318	310
16	560	600	630	631	578					---	318	315
17	580	630	627	611	578					---	319	320
18	590	640	631	600	581					---	321	332
19	580	600	636	610	587					---	318	340
20	570	630	630	621	574					290	320	350
21	570	600	641	621	580					290	320	---
22	590	620	622	622	578					290	321	---
23	570	620	631	620	570					295	328	---
24	590	620	636	620	570					290	328	---
25	590	620	636	596	568					300	328	---
26	590	630	631	615	560					310	329	---
27	600	620	640	615	---					295	331	---
28	590	610	635	614	---					300	330	---
29	600	620	650	629	---					305	330	---
30	590	620	648	620	---					300	330	---
31	600	---	644	621	---					300	330	---
MAX	600	640	653	631	608					310	331	350
MIN	550	560	588	572	560					290	310	290
WTR YR 1978	MAX	653		MIN	290							

GILA RIVER BASIN

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09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	17.0	15.0	11.0	11.0					---	21.0	20.0
2	---	---	15.0	11.0	11.0					---	21.0	20.0
3	---	18.0	15.0	11.0	11.0					---	21.0	20.0
4	---	18.0	15.0	11.0	11.0					---	22.0	20.0
5	---	19.0	15.0	10.0	11.0					---	20.0	20.0
6	---	18.0	15.0	10.0	11.0					---	20.0	21.0
7	---	17.0	15.0	10.0	11.0					---	20.0	22.0
8	24.0	17.0	14.0	10.0	11.0					---	21.0	22.0
9	23.0	19.0	14.0	10.0	11.0					---	20.0	22.0
10	24.0	18.0	15.0	10.0	10.0					---	20.0	22.0
11	24.0	18.0	15.0	10.0	10.0					---	21.0	22.0
12	24.0	18.0	14.0	10.0	10.0					---	21.0	22.0
13	24.0	17.0	14.0	13.0	10.0					---	21.0	22.0
14	24.0	18.0	14.0	11.0	10.0					---	21.0	20.0
15	25.0	17.0	14.0	10.0	10.0					---	21.0	21.0
16	23.0	17.0	14.0	11.0	9.0					---	21.0	22.0
17	21.0	17.0	14.0	---	10.0					---	21.0	22.0
18	20.0	18.0	14.0	11.0	10.0					---	20.0	20.0
19	21.0	18.0	13.0	11.0	10.0					---	20.0	20.0
20	21.0	17.0	13.0	12.0	10.0					20.0	21.0	---
21	20.0	16.0	12.0	11.0	10.0					20.0	21.0	---
22	20.0	15.0	12.0	10.0	10.0					20.0	20.0	---
23	20.0	15.0	12.0	11.0	10.0					20.0	20.0	---
24	20.0	15.0	12.0	9.0	10.0					20.0	22.0	---
25	20.0	15.0	12.0	11.0	10.0					21.0	22.0	---
26	21.0	16.0	11.0	10.0	10.0					21.0	22.0	---
27	19.0	15.0	11.0	11.0	---					21.0	22.0	---
28	19.0	15.0	11.0	12.0	---					21.0	22.0	---
29	19.0	14.0	11.0	11.0	---					21.0	22.0	---
30	18.0	15.0	11.0	11.0	---					21.0	22.0	---
31	18.0	---	11.0	12.0	---					21.0	20.0	---
MAX	25.0	19.0	15.0	13.0	11.0					21.0	22.0	22.0
MIN	18.0	14.0	11.0	9.0	9.0					20.0	20.0	20.0
WTR YR 1978	MAX	25.0		MIN	9.0							

GILA RIVER BASIN

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 26, 77 1600	APR 6, 78 1000	JUN 6, 78 1000	JUL 5, 78 1045
TOTAL CELLS/ML	510	250	0	210
DIVERSITY: DIVISION	1.5	1.0	0.0	0.0
..CLASS	1.5	1.3	0.0	0.0
..ORDER	2.0	2.0	0.0	0.0
...FAMILY	2.5	2.0	0.0	0.0
....GENUS	0.0	0.0	0.0	0.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOKOCOCCEAE								
...CHAKACIACEAE								
...SCHRUEDERIA	22	4	--	-	--	-	--	-
...OUCYSTACEAE								
...ANKISTROUESMUS	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	45	9	--	-	--	-	--	-
...UOCYSTIS	17	3	--	-	--	-	--	-
...SCENEDESMAEAE								
...ACTINASTRUM	--	-	110#	47	--	-	--	-
...CRUCIGENIA	67	13	--	-	--	-	--	-
...SCENEDESMS	--	-	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
...SPHAEROCYSTIS	61	12	--	-	--	-	--	-
..VOLVOCALLES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	--	-	27	12	--	-	--	-
..ZYGNEMATALES								
...ZYGNEMATAEAE								
...SPIRUGYRA	--	-	--	-	--	-	210#100	
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
..CENTRALES								
...CUSCINOISCAEAE								
...CYCLOTELLA	6	1	54#	24	--	-	--	-
...MELOSIRA	11	2	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
...COCCONEIS	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
...SYNEDRA	17	3	14	6	--	-	--	-
...GUMPHONEMATAEAE								
...GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
...NAVICULA	6	1	--	-	--	-	--	-
...PINNULARIA	6	1	--	-	--	-	--	-
...NITZSCHIAEAE								
...NITZSCHIA	11	2	--	-	--	-	--	-
..CHRYSOPHYCEAE								
...CHRYSONOMADALES								
...UNKNOWN 216020102002000	--	-	27	12	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMUGUNALES								
...OSCILLATORIACEAE								
...OSCILLATORIA	--	-	--	-	--	-	--	-
...CHROOCUCCALES								
...UNKNOWN 218010101006000	--	-	--	-	--	-	--	-
...UNKNOWN 218010101021000	230#	46	--	-	--	-	--	-
PHYRRHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
...PERIDINIAEAE								
...PERIDINIUM	11	2	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	AUG 1,78 1015	AUG 29,78 0845	SEP 26,78 0845			
TOTAL CELLS/ML	38	110	7500			
DIVERSITY: DIVISION	1.0	1.3	0.2			
CLASS	1.0	1.3	0.2			
ORDER	1.2	1.8	0.2			
FAMILY	1.9	2.0	0.2			
GENUS	0.0	2.0	0.9			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCYCEAE						
...CHARACIACEAE						
...SCHROEDERIA	--	-	--	-	--	-
...UOLYSTACEAE						
...ANKISTRUDESMUS	--	-	4	3	--	-
...KIRCHNERIELLA	--	-	--	-	--	-
...UOCYSTIS	--	-	--	-	--	-
...SCENEDESMACEAE						
...ACTINASTRUM	--	-	--	-	--	-
...CRUCIGENIA	--	-	--	-	--	-
...SCENEDESMUS	--	-	--	-	240	3
..TETRASPORALES						
...PALMELLACEAE						
...SPHAEROCYSTIS	--	-	--	-	--	-
..VULVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	--	-	4	3	--	-
..ZYGNEATALES						
...ZYGNEMATAACEAE						
...SPIROGYRA	--	-	--	-	--	-
CHRYSTOPHYTA						
..BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINUODISCACEAE						
...CYCLOTELLA	--	-	18#	17	5900#	79
...MELUSIRA	--	-	--	-	1300#	18
..PENNALES						
...ACHNANTHACEAE						
...CUCONEIS	1	4	--	-	--	-
...FRAGILARIACEAE						
...SYNEDRA	--	-	--	-	--	-
...GOMPHONEMATAACEAE						
...GOMPHUNEMA	3	7	21#	20	--	-
...NAVICULACEAE						
...NAVICULA	7#	16	7	7	--	-
...PINNULARIA	--	-	--	-	--	-
...NITZSCHACEAE						
...NITZSCHIA	5	14	--	-	--	-
..CHRYSTOPHYCEAE						
..CHRYSOMONADALS						
...UNKNOWN 218020102002000	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...HORMOGONALES						
...OSCILLATORIACEAE						
...OSCILLATORIA	20#	54	53#	50	--	-
..CHROOCOCYCEAE						
...UNKNOWN 218010101006000	1	4	--	-	--	-
...UNKNOWN 218010101021000	--	-	--	-	--	-
PYRRHUPHYTA (FIRE ALGAE)						
..PYRRHUPHYCEAE						
...PERIDINIALES						
...PERIDINIACEAE						
...PERIDINIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09510100 EAST FORK SYCAMORE CREEK NEAR SUNFLOWER, AZ

LOCATION.--Lat 33°56'58", long 111°27'39", in NE¼SE¼ sec. 18, T.7 N., R.9 E., Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on left bank 1.7 mi (2.7 km) upstream from confluence with West Fork and 6.0 mi (9.7 km) north of Sunflower.

DRAINAGE AREA.--4.49 mi² (11.6 km²).

PERIOD OF RECORD.--July 1961 to current year. Low-flow records not equivalent prior to Nov. 10, 1964, owing to undetermined amount of underflow between sites.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,140 ft (1,262 m), from topographic map. Prior to Nov. 10, 1964, at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No storage or diversion above station.

AVERAGE DISCHARGE.--17 years, 0.667 ft³/s (0.0189 m³/s), 483 acre-ft/yr (596,000 m³/yr); median of yearly mean discharges, 0.30 ft³/s (0.0085 m³/s), 220 acre-ft/yr (270,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,940 ft³/s (54.9 m³/s) Sept. 5, 1970, gage height, 9.50 ft (2.896 m), from profile past gage, from rating curve extended above 130 ft³/s (3.7 m³/s) on basis of slope-area measurements of peak flow; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 130 ft³/s or 3.7 m³/s as explained above) and peak discharges above base of 20 ft³/s (0.6 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1530	46 1.30	2.60 0.792	Mar. 1 or 2	Unknown	*550 15.5	6.18 1.884
Jan. 31	1500	26 0.74	2.26 0.689	Mar. 5	Unknown	140† 4.0	3.5† 1.07
Feb. 11	0100	35 0.99	2.44 0.744				

No flow for many days.

† About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.04	6.3	140	2.3	.78	.15	.04	.02	.01
2	.00	.00	.00	.03	2.4	180	2.0	.64	.15	.03	.02	.01
3	.00	.00	.00	.03	1.3	50	1.9	.60	.15	.03	.02	.01
4	.00	.00	.00	.03	.91	20	1.7	.55	.14	.03	.02	.01
5	.00	.00	.00	.02	.64	40	1.7	.55	.13	.03	.02	.02
6	.01	.00	.00	.02	.64	30	1.5	.51	.13	.03	.02	.02
7	.01	.00	.00	.02	.60	20	1.5	.47	.13	.02	.02	.01
8	.00	.00	.00	.02	.64	15	1.5	.47	.13	.02	.02	.01
9	.00	.00	.00	.01	.55	10	1.6	.47	.12	.02	.02	.01
10	.00	.00	.00	.01	3.8	8.6	1.4	.47	.10	.02	.02	.01
11	.00	.00	.00	.01	20	6.5	1.3	.43	.10	.02	.02	.01
12	.00	.00	.00	.01	7.5	8.6	1.1	.43	.09	.02	.02	.01
13	.00	.00	.00	.01	5.5	8.2	1.0	.43	.08	.02	.02	.00
14	.00	.00	.00	.01	6.1	7.1	1.0	.39	.08	.02	.02	.00
15	.00	.00	.00	10	5.0	6.1	.96	.39	.07	.01	.02	.00
16	.00	.00	.00	1.4	4.3	5.2	.96	.36	.07	.01	.02	.00
17	.00	.00	.00	7.4	3.6	4.6	.91	.36	.07	.01	.02	.00
18	.00	.00	.00	2.6	3.0	4.3	.86	.32	.06	.01	.02	.00
19	.00	.00	.00	.96	2.8	4.0	.86	.32	.06	.01	.02	.00
20	.00	.00	.00	.73	3.1	3.7	.78	.32	.06	.01	.02	.00
21	.00	.00	.00	.43	4.0	3.4	.78	.32	.06	.01	.02	.00
22	.00	.00	.00	.36	3.8	4.6	.78	.24	.05	.01	.02	.00
23	.00	.00	.00	.28	3.4	3.7	.78	.24	.05	.01	.02	.00
24	.00	.00	.00	.20	2.7	3.4	.78	.24	.05	.01	.02	.00
25	.00	.00	.00	.15	2.1	3.0	.78	.24	.05	.02	.02	.00
26	.00	.00	.00	.14	1.7	2.8	.78	.24	.04	.02	.02	.00
27	.00	.00	.00	.13	1.9	2.6	.68	.24	.04	.02	.02	.00
28	.00	.00	.01	.12	50	2.4	.68	.20	.05	.02	.01	.00
29	.00	.00	.02	.10	---	2.2	.68	.20	.04	.02	.01	.00
30	.00	.00	.03	.23	---	2.2	.68	.16	.04	.02	.01	.00
31	.00	---	.04	16	---	2.0	---	.15	---	.02	.01	---
TOTAL	.02	.00	.10	42.00	148.28	604.2	34.25	11.73	2.54	.59	.58	.14
MEAN	.001	.000	.003	1.35	5.30	19.5	1.14	.38	.085	.019	.019	.005
MAX	.01	.00	.04	16	50	180	2.3	.78	.15	.04	.02	.02
MIN	.00	.00	.00	.01	.55	2.0	.68	.15	.04	.01	.01	.00
AC-FT	.04	.00	.2	83	294	1200	68	23	5.0	1.2	1.2	.3

CAL YR 1977 TOTAL 9.99 MEAN .027 MAX 1.3 MIN .00 AC-FT 20
WTR YR 1978 TOTAL 844.41 MEAN 2.31 MAX 180 MIN .00 AC-FT 1670

NOTE.--No gage-height record Feb. 28 to Mar. 9.

09510200 SYCAMORE CREEK NEAR FORT MCDOWELL, AZ

LOCATION.--Lat 33°41'39", long 111°32'28", in sec.16, T.4 N., R.8 E. (unsurveyed), Maricopa County, Hydrologic Unit 15060203, in Tonto National Forest, on right bank 0.7 mi (1.1 km) southwest of Sugarloaf Mountain, 9 mi (14 km) northeast of Fort McDowell, 10 mi (16 km) upstream from mouth, and 25 mi (40 km) northeast of Scottsdale.

DRAINAGE AREA.--164 mi² (425 km²).

PERIOD OF RECORD.--December 1960 to current year. Prior to Oct. 1, 1963, published as "near McDowell."

REVISED RECORDS.--WRD Ariz. 1970: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,759.33 ft (536.244 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1970, at datum 0.16 ft (0.049 m) lower.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--17 years (water years 1962-78), 23.0 ft³/s (0.651 m³/s), 16,660 acre-ft/yr (20.5 hm³/yr); median of yearly mean discharges, 9.0 ft³/s (0.25 m³/s), 6,500 acre-ft/yr (8.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,200 ft³/s (685 m³/s) Sept. 5, 1970, gage height, 19.7 ft (6.00 m), from profile past gage, from rating curve extended above 3,600 ft³/s (102 m³/s) on basis of slope-area measurements at gage heights 15.0 and 19.7 ft (4.57 and 6.00 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (result of slope-area measurement) and peak discharges above base of 400 ft³/s (11 m³/s):

Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)	Date	Time	Discharge (ft ³ /s)	(m ³ /s)	Gage height (ft)	(m)
Jan. 15	Unknown	1,600†	45	Unknown		Mar. 1 or 2	Unknown	*17,900	507	16.0	4.88
Jan. 31	Unknown	2,000†	57	Unknown		Mar. 5 or 6	Unknown	3,500†	99	Unknown	
Feb. 11	Unknown	2,600†	74	Unknown							

Minimum daily, 0.01 ft³/s (<0.001 m³/s) Nov. 27-30.

† About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.05	.02	.10	300	5600	100	40	10	4.0	1.5	.40
2	.05	.05	.02	.10	200	8300	100	40	10	4.0	1.2	.40
3	.04	.05	.02	.10	100	2600	80	40	10	3.0	3.0	.40
4	.03	.05	.02	.10	60	800	80	30	10	3.0	5.7	.40
5	.03	.05	.03	.10	40	1800	80	30	10	3.0	.50	.40
6	.04	.05	.03	.10	30	1900	80	30	10	3.0	.60	.30
7	.04	.03	.03	.10	30	600	70	30	7.0	3.0	1.0	.30
8	.05	.03	.03	.10	30	500	70	30	7.0	3.0	.90	.30
9	.07	.03	.03	.10	30	400	70	30	7.0	3.0	1.0	.30
10	.07	.03	.04	.10	30	400	70	20	7.0	3.0	.60	.30
11	.09	.03	.04	.10	400	400	50	20	7.0	3.0	.60	.30
12	.09	.04	.04	.10	500	300	50	20	7.0	3.0	.60	.30
13	.09	.05	.04	.10	300	300	50	20	7.0	3.0	.60	.30
14	.09	.05	.04	.50	200	300	50	20	7.0	2.0	.50	.92
15	.07	.05	.05	350	200	300	50	20	7.0	2.0	.50	.62
16	.09	.05	.05	50	200	300	40	20	7.0	2.0	.50	.77
17	.09	.05	.07	250	200	300	40	15	7.0	2.0	.60	.73
18	.09	.05	.07	50	150	200	40	15	5.0	2.0	.60	.62
19	.10	.10	.07	30	150	200	40	15	5.0	2.0	.60	.54
20	.09	.03	.09	20	150	200	40	15	5.0	2.0	.60	.50
21	.09	.03	.17	10	150	200	40	15	5.0	2.0	.60	.34
22	.09	.03	.19	5.0	150	200	40	15	5.0	10	.60	.35
23	.05	.03	.21	5.0	150	200	40	10	5.0	2.0	.60	.34
24	.05	.02	.23	5.0	150	150	40	10	5.0	20	.60	.35
25	.07	.02	.23	5.0	100	150	40	10	5.0	2.0	.60	.60
26	.07	.02	.24	5.0	100	150	40	10	4.0	15	.50	.41
27	.07	.01	.10	5.0	100	150	40	10	4.0	2.0	.50	.42
28	.05	.01	.05	5.0	2600	100	40	10	4.0	2.0	.40	.36
29	.07	.01	.06	5.0	---	100	40	10	4.0	2.0	.40	.32
30	.05	.01	.07	10	---	100	40	10	4.0	2.0	.40	.33
31	.07	---	.07	600	---	100	---	10	---	2.0	.40	---
TOTAL	2.09	1.11	2.45	1411.80	7300	27300	1650	620	197.0	116.0	27.30	13.12
MEAN	.067	.037	.079	45.5	261	881	55.0	20.0	6.57	3.74	.88	.44
MAX	.10	.10	.24	600	2600	8300	100	40	10	20	5.7	.92
MIN	.03	.01	.02	.10	30	100	40	10	4.0	2.0	.40	.30
AC-FT	4.1	2.2	4.9	2800	14480	54150	3270	1230	391	230	54	26
CAL YR 1977	TOTAL	1081.47	MEAN	2.96	MAX	561	MIN	.01	AC-FT	2150		
WTR YR 1978	TOTAL	38640.87	MEAN	106	MAX	8300	MIN	.01	AC-FT	76640		

NOTE.--Doubtful or no gage-height record Jan. 1 to Sept. 13.

GILA RIVER BASIN

09511300 VERDE RIVER NEAR SCOTTSDALE, AZ

LOCATION.--Lat 33°34'52", long 111°40'12", in NE¼ sec.30, T.3 N., R.7 E., Maricopa County, Hydrologic Unit 15060203, on pier near left bank on downstream side of bridge on State Highway 87, in Fort McDowell Indian Reservation, 2.5 mi (4.0 km) upstream from mouth, 3.8 mi (6.1 km) downstream from Fort McDowell, and 16 mi (26 km) northeast of Scottsdale.

DRAINAGE AREA.--6,600 mi² (17,090 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,351.35 ft (411.891 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated by Bartlett and Horseshoe Reservoirs (see sta 09509500) except during periods of spill or floodflow below Bartlett Dam. About 12,500 acres (50.6 km²) above reservoirs are irrigated by surface water and ground water. Below reservoirs water is diverted for municipal supply of city of Phoenix, and for irrigation of an undetermined acreage in Fort McDowell Indian Reservation. Remainder (except during infrequent period of extreme flooding) is diverted at Granite Reef Dam on Salt River, 6 mi (10 km) downstream, for irrigation in Salt River Valley and for municipal use by the city of Phoenix.

AVERAGE DISCHARGE.--17 years, 557 ft³/s (15.77 m³/s), 403,500 acre-ft/yr (497 hm³/yr); median of yearly mean discharges, 430 ft³/s (12.2 m³/s), 312,000 acre-ft/yr (385 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96,000 ft³/s (2,719 m³/s) Mar. 2, 1978, on basis of flood routing, gage height, 18.3 ft (5.58 m); no flow Nov. 8-19, 1961, June 4-22, 1970, Mar. 20-22, 1971, Apr. 2-15, 1974, Sept. 18-24, 1976, May 17-June 11, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96,000 ft³/s (2,719 m³/s) Mar. 2, on basis of flood routing, gage height, 18.3 ft (5.58 m); minimum daily, 2.4 ft³/s (0.068 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	179	202	190	276	8000	1560	686	524	748	707	730
2	52	251	225	181	149	67000	1530	694	634	650	816	633
3	65	313	229	173	150	79000	1510	692	611	545	795	438
4	64	295	200	172	182	26000	1570	634	470	650	886	388
5	22	313	183	170	234	17000	1710	642	531	750	458	315
6	22	314	182	222	246	20000	1790	633	538	750	178	439
7	23	298	167	228	200	19000	1000	600	531	744	137	560
8	20	263	190	229	185	20000	700	500	566	753	130	740
9	18	256	182	224	177	2000	700	500	650	755	127	518
10	17	266	192	230	195	500	750	500	596	734	204	242
11	19	311	185	169	667	500	800	450	581	680	355	150
12	21	374	161	208	164	500	900	450	573	865	411	102
13	20	417	207	206	208	400	900	450	566	938	216	67
14	20	524	203	154	330	300	700	450	400	887	250	58
15	20	606	257	167	155	1200	600	450	650	847	355	43
16	21	496	249	110	147	3500	550	450	742	774	540	27
17	18	450	353	285	122	3200	500	450	715	847	710	19
18	12	356	485	118	125	3200	450	454	642	783	791	14
19	11	229	420	117	95	3200	800	456	588	777	811	12
20	16	226	510	140	107	3000	789	426	675	929	815	11
21	24	181	614	140	141	3000	649	419	826	971	815	9.2
22	24	192	604	139	147	3500	625	402	922	986	639	7.7
23	24	210	507	139	174	8000	621	350	930	876	682	6.4
24	24	177	421	118	179	6000	622	300	884	730	708	5.3
25	24	169	334	152	178	2600	629	250	833	640	786	5.0
26	24	173	483	147	189	1500	629	250	915	419	673	4.3
27	108	161	592	141	195	2200	635	250	969	266	542	4.0
28	398	179	635	139	1660	1800	651	250	1000	240	587	3.4
29	310	203	458	139	---	1900	674	250	954	423	421	2.8
30	274	196	353	142	---	2200	680	250	826	627	545	2.4
31	178	---	275	196	---	2500	---	400	---	661	696	---
TOTAL	1931	8578	10258	5285	6977	312700	26224	13938	20842	22265	16786	5556.5
MEAN	62.3	286	331	170	249	10090	874	450	695	718	541	185
MAX	398	606	635	285	1660	79000	1790	694	1000	986	886	740
MIN	11	161	161	110	95	300	450	250	400	240	127	2.4
AC-FT	3830	17010	20350	10480	13840	620200	52020	27650	41340	44160	33300	11020

CAL YR 1977 TOTAL 68824.86 MEAN 189 MAX 1250 MIN .00 AC-FT 136500
WTR YR 1978 TOTAL 451340.50 MEAN 1237 MAX 79000 MIN 2.4 AC-FT 895200

NOTE.--No gage-height record Feb. 28 to Mar. 21.

09512100 INDIAN BEND WASH AT SCOTTSDALE, AZ

LOCATION.--Lat 33°32'19", long 111°54'57", in SW¼SE¼ sec.2, T.2 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on upstream side of ford on Indian Bend Road, in Scottsdale.

DRAINAGE AREA.--62 mi² (161 km²) approximately, since October 1975. Prior to October 1975, 139 mi² (360 km²); reduction caused by cutoff of upper portion of basin by diversion canal and detention dike (also see REMARKS).

PERIOD OF RECORD.--January 1961 to current year. Prior to October 1972 published as "near Scottsdale."

REVISED RECORDS.--WRD Ariz., 1972: 1968, 1970 (revised figures of daily discharge for water years 1968 and 1970 were inadvertently omitted from WSP 2126).

GAGE.--Water-stage recorder. Datum of gage is 1,280.29 ft (390.232 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Natural flow of wash affected by urbanization and partly regulated by artificial lakes upstream. Upper portion of basin (about 77 mi² or 199 km²) cut off by diversion canal and detention dike in October 1975. Release of excess flood waters may occasionally pass canal into lower portion of basin.

AVERAGE DISCHARGE.--14 years (water years 1962-75), 2.67 ft³/s (0.0756 m³/s), 1,930 acre-ft/yr (2.38 hm³/yr), representing flow from 139 mi² (360 km²); median of yearly mean discharges, 0.30 ft³/s (0.008 m³/s), 220 acre-ft/yr (0.27 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s (595 m³/s) June 22, 1972, gage height, 4.90 ft (1.494 m), from rating curve extended above 7,000 ft³/s (200 m³/s) on basis of partial discharge measurement at gage height 4.2 ft (1.28 m) and slope-conveyance method at gage height 4.90 ft (1.494 m); no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 20 ft³/s (0.6 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)		Gage height (ft) (m)	
Jan. 15	2200	53	1.50	1.23	0.375
Feb. 14	1000	244	6.91	1.61	0.491
Mar. 2	0300	*3,180	90.1	3.50	1.067

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	158	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	933	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	22	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	3.7	.00	.00	.00	.00	2.6	.00
5	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.10	.00
6	.00	.00	.00	.00	.00	64	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	41	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	3.4	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.40	.00	.90	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.50	.20	.80	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	92	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.50	38	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.10	81	6.2	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	8.0	21	6.2	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	25	2.9	4.7	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	4.7	1.6	3.2	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	4.2	1.5	3.2	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	1.3	1.0	3.2	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.90	1.0	2.9	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.70	.80	1.6	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.50	.40	.90	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.90	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.30	.90	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.90	.00	.00	.00	2.3	.00	.00
26	.00	.00	.00	.00	.00	.60	.00	.00	.00	.60	.00	.00
27	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	52	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.10	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	46.40	164.20	1406.10	.00	.00	.00	2.90	2.70	.00
MEAN	.000	.000	.000	1.50	5.86	45.4	.000	.000	.000	.094	.087	.000
MAX	.00	.00	.00	25	81	933	.00	.00	.00	2.3	2.6	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	92	326	2790	.00	.00	.00	5.8	5.4	.00
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		
WTR YR 1978	TOTAL	1622.30	MEAN	4.44	MAX	933	MIN	.00	AC-FT	3220		

09512200 SALT RIVER TRIBUTARY IN SOUTH MOUNTAIN PARK, AT PHOENIX, AZ

LOCATION.--Lat 33°20'49", long 112°05'03", in NE¼NE¼ sec.18, T.1 S., R.3 E., Maricopa County, Hydrologic Unit 15060106, in South Mountain Park, on left bank 6.5 mi (10.5 km) south of Phoenix main post office.

DRAINAGE AREA.--1.75 mi² (4.53 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,405.20 ft (428.305 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. No storage or diversion above station.

AVERAGE DISCHARGE.--17 years, 0.010 ft³/s (0.0003 m³/s), 7.2 acre-ft/yr (8,880 m³/yr); median of yearly mean discharges, 0.003 ft³/s (0.0001 m³/s), 2 acre-ft/yr (2,500 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 670 ft³/s (19.0 m³/s) Sept. 4, 1965, gage height, 9.70 ft (2.957 m), from floodmarks, from rating curve extended above 31 ft³/s (0.88 m³/s) on basis of measurements of peak flow through culvert at gage heights 5.80, 9.09, and 9.52 ft (1.768, 2.771, and 2.902 m); no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 20 ft³/s (0.6 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 29	0045	*86 2.44	4.29 1.308
Jan. 19	1915	21 0.59	2.74 0.835

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	1.0	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	1.00	.30	.00	.20	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.032	.010	.000	.006	.000	.000	.000	.000	.000	.000
MAX	.00	.00	1.0	.30	.00	.20	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	2.0	.6	.00	.4	.00	.00	.00	.00	.00	.00

CAL YR 1977	TOTAL 1.00	MEAN .003	MAX 1.0	MIN .00	AC-FT 2.0
WTR YR 1978	TOTAL 1.50	MEAN .004	MAX 1.0	MIN .00	AC-FT 3.0

GILA RIVER BASIN

435

09512400 CAVE CREEK AT PHOENIX, AZ

LOCATION.--Lat 33°34'56", long 112°06'43", in SW¼ sec.24, T.3 N., R.2 E., Maricopa County, Hydrologic Unit 15060106, on downstream side of bridge at Peoria Avenue in Phoenix, 0.7 mi (1.1 km) upstream from Arizona Canal.

DRAINAGE AREA.--252 mi² (653 km²).

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,236.37 ft (376.846 m) National Geodetic Vertical Datum of 1929 (from Salt River Valley Water Users' Association temporary bench mark). Prior to July 31, 1974, at site 60 ft (18 m) upstream at datum 6.93 ft (2.112 m) higher.

REMARKS.--Records fair. Peak flow regulated from 161 mi² (417 km²) by Cave Creek Dam 12 mi (19 km) upstream. Flow probably affected by urbanization.

AVERAGE DISCHARGE.--21 years, 3.79 ft³/s (0.107 m³/s), 2,750 acre-ft/yr (3.39 hm³/yr); median of yearly mean discharges, 1.0 ft³/s (0.028 m³/s), 720 acre-ft/yr (0.89 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,080 ft³/s (116 m³/s)—including 345 ft³/s (9.77 m³/s) released from Cave Creek Dam—Dec. 19, 1967, gage height, 11.23 ft (3.423 m), present datum; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,090 ft³/s (59.2 m³/s) Mar. 2, gage height, 7.36 ft (2.243 m); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	494	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	1620	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	1540	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	1150	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	1110	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	820	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	400	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	300	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	270	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	229	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.06	34	115	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	188	70	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	181	50	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	204	20	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	2.4	156	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.25	93	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.10	1.6	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	78	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	39	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	2.8	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	57	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	119.82	917.40	8188.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	3.87	32.8	264	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	78	204	1620	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	238	1620	16240	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	0		
WTR YR 1978	TOTAL	9225.22	MEAN	25.3	MAX	1620	MIN	.00	AC-FT	18300		

GILA RIVER BASIN

09512500 AGUA FRIA RIVER NEAR MAYER, AZ

LOCATION.--Lat 34°18'55", long 112°03'48", in NW¼SE¼ sec.20, T.11 N., R.3 E., Yavapai County, Hydrologic Unit 15070102, on left bank at Sycamore damsite, 700 ft (210 m) downstream from Big Bug Creek and 12 mi (19 km) southeast of Mayer.

DRAINAGE AREA.--588 mi² (1,523 km²).

PERIOD OF RECORD.--January 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,434 ft (1,046.7 m), levels by Maricopa County Municipal Water Conservation District No. 1.

REMARKS.--Records fair. Diversions above station for mining and irrigation of about 600 acres (2.4 km²). Perry Canal, which heads 300 ft (90 m) above the gage, diverted no water during the year.

AVERAGE DISCHARGE.--38 years, 17.1 ft³/s (0.484 m³/s), 12,390 acre-ft/yr (15.3 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 ft³/s (561 m³/s) Sept. 5, 1970, gage height, 14.90 ft (4.542 m), from rating curve extended above 1,600 ft³/s (45 m³/s) on basis of slope-area measurement of peak flow; negligible flow at times during the summer months in most years when entire flow was diverted to Perry Canal above station and flow past gage was seepage only.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,300 ft³/s (65 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 11	0030	4,740 134	7.42 2.262	Mar. 5	1400	4,160 118	7.01 2.137
Mar. 1	0900	*9,900 280	10.45 3.185				

Minimum daily, 0.30 ft³/s (0.008 m³/s), Sept. 4-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	.70	.80	.80	49	4260	8.3	3.3	1.7	.70	1.6	.70
2	.70	.60	.90	.80	9.3	2710	11	3.6	1.5	.70	110	.40
3	.70	.50	.90	.80	6.3	1910	9.3	3.0	1.5	.70	170	.40
4	.70	.60	.90	.80	5.0	140	8.8	3.0	1.4	.50	4.0	.30
5	.70	.50	1.1	.70	4.6	1100	8.3	3.3	1.2	.50	1.5	.30
6	25	.60	1.4	.70	4.6	350	6.8	3.0	1.2	.50	.70	.30
7	1.3	.50	1.4	.70	5.9	175	6.3	3.3	1.1	.50	.70	.30
8	.70	.50	1.5	.60	5.4	150	10	3.3	1.0	.60	.70	.30
9	.60	.50	1.4	.40	4.6	125	12	3.0	.90	.60	4.0	.30
10	.60	.50	1.2	2.5	190	100	8.8	2.5	.80	.90	65	.30
11	.60	.50	1.1	1.7	1120	80	8.3	3.0	.80	.70	100	.30
12	.50	.50	1.1	1.7	109	70	10	3.3	.80	.70	110	.30
13	.50	.50	1.0	1.5	67	50	10	2.7	.80	.70	4.0	.30
14	.50	.40	1.1	1.4	392	40	8.8	2.5	.90	.70	1.5	.40
15	.50	.40	1.0	2.1	150	35	7.8	2.5	.90	.70	.70	.50
16	.50	.40	1.0	5.8	95	30	8.3	2.5	1.0	.70	.70	.40
17	.50	.40	1.0	28	60	20	8.3	2.3	1.0	1.2	.60	.40
18	.50	.40	1.0	20	48	17	7.3	2.1	1.0	.60	.50	.40
19	.50	.50	1.0	10	42	14	6.3	2.1	1.0	.50	.40	.40
20	.60	.40	1.0	8.3	42	13	5.8	2.1	1.2	.50	.40	.40
21	.60	.40	1.0	17	42	11	5.4	2.1	1.1	.50	.40	.40
22	.60	.40	.90	4.3	42	35	5.0	2.1	1.1	.70	.40	.40
23	.60	.50	.90	6.8	30	44	4.2	2.1	1.2	5.6	.40	.40
24	.70	.60	.70	5.2	23	26	3.9	2.1	1.0	1.2	.40	.40
25	.70	.70	.70	3.9	13	17	3.6	2.1	1.0	.80	.40	.40
26	.70	.70	.60	3.6	11	13	3.3	2.1	1.0	.90	.40	.40
27	.70	.70	.60	3.3	10	10	3.3	2.1	.80	5.3	.40	.40
28	.80	.60	.90	2.7	484	7.8	3.3	2.1	.90	.90	.40	.40
29	.90	.80	.80	2.5	---	7.3	3.0	2.1	.90	.70	.40	.40
30	.90	.80	.80	2.7	---	6.3	3.0	2.1	.90	.70	.40	.40
31	.80	---	.70	10	---	6.3	---	1.9	---	.90	.40	---
TOTAL	44.90	16.30	30.40	156.30	3064.7	11572.7	208.5	79.3	31.60	31.40	581.40	11.40
MEAN	1.45	.54	.98	5.04	109	373	6.95	2.56	1.05	1.01	18.8	.38
MAX	25	.80	1.5	28	1120	4260	12	3.6	1.7	5.6	170	.70
MIN	.50	.40	.60	.40	4.6	6.3	3.0	1.9	.80	.50	.40	.30
AC-FT	89	32	60	310	6080	22950	414	157	63	62	1150	23

CAL YR 1977 TOTAL 1647.80 MEAN 4.51 MAX 530 MIN .40 AC-FT 3270
WTR YR 1978 TOTAL 15828.90 MEAN 45.4 MAX 4260 MIN .30 AC-FT 31400

09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, AZ

LOCATION.--lat 34°00'56", long 112°10'02", in NW¼NW¼ sec.28, T.8 N., R.2 E., Yavapai County, Hydrologic Unit 15070102, on right bank 2.5 mi (4.0 km) southwest of Rock Springs and 10 mi (16 km) upstream from Lake Pleasant. Prior to Oct. 1, 1974, at site 600 ft (180 m) upstream.

DRAINAGE AREA.--1,130 mi² (2,930 km²), approximately.

PERIOD OF RECORD.--January 1970 to current year (monthly discharge only, October 1973 to September 1974). Low-flow records not equivalent prior to Oct. 1, 1974, due to spring flow in streambed between sites in use.

GAGE.--Water-stage recorder. Altitude of gage is 1,800 ft (549 m), from topographic map. Prior to Oct. 1, 1974, at site 600 ft (180 m) upstream at datum 10.00 ft (3.048 m) higher (now used as supplementary gage).

REMARKS.--Records poor.

AVERAGE DISCHARGE.--8 years, 62.7 ft³/s (1.78 m³/s), 45,430 acre-ft/yr (56.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,100 ft³/s (1,140 m³/s) Sept. 5, 1970, gage height, 20.62 ft (6.285 m), site and datum then in use; 25.3 ft (7.71 m), present site and datum, from profile past gage; no flow at times each year prior to October 1974; since October 1974, no flow May 27 to July 12, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,800 ft³/s (51 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 17	Unknown	3,200 90.6	all.20 3.414
Feb. 11	0530	6,590 187	13.67 4.167
Mar. 2	0700	*39,500 1,120	24.27 7.397

Minimum daily, 0.10 ft³/s (0.003 m³/s) Oct. 17-22, Nov. 10-12, and Nov. 14 to Jan. 8.
a From outside high-water mark.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	.51	.10	.10	76	11500	110	35	3.1	1.2	1.9	.47
2	.42	.57	.10	.10	15	16600	120	35	3.1	1.1	50	.42
3	.36	.57	.10	.10	2.5	11500	120	35	2.8	1.1	110	.42
4	.33	.73	.10	.10	.30	2900	110	30	2.5	1.1	38	.42
5	.28	1.0	.10	.10	.15	4000	100	30	2.8	1.1	6.3	.47
6	.39	1.3	.10	.10	.47	2800	95	30	2.8	1.1	3.1	.47
7	14	1.5	.10	.10	5.6	1700	85	25	2.5	.98	2.5	.47
8	3.1	2.0	.10	.10	6.6	1200	95	25	2.3	.85	1.7	.47
9	.58	1.1	.10	1.0	4.7	900	120	25	2.1	.85	1.5	.47
10	.28	.10	.10	12	338	800	95	20	1.9	.85	1.1	.52
11	.20	.10	.10	11	3130	800	85	20	1.7	.98	33	.58
12	.17	.10	.10	10	424	1000	85	20	1.9	.74	94	.85
13	.15	.11	.10	15	247	1000	75	15	1.9	.66	57	.66
14	.14	.10	.10	10	947	800	65	15	1.8	.66	11	.58
15	.11	.10	.10	312	484	400	70	15	1.7	.58	3.7	.73
16	.11	.10	.10	1200	198	390	65	10	1.7	.66	1.9	.73
17	.10	.10	.10	2400	136	330	60	9.0	1.8	.58	1.2	.73
18	.10	.10	.10	1000	108	280	60	8.0	1.7	.58	.98	.73
19	.10	.10	.10	200	75	240	55	7.0	1.8	.52	.98	.73
20	.10	.10	.10	150	57	200	55	5.9	1.4	.47	.85	.66
21	.10	.10	.10	200	57	190	55	5.3	1.6	.52	.73	.58
22	.10	.10	.10	140	72	260	50	5.0	1.9	.52	.66	.58
23	.12	.10	.10	50	102	230	50	5.0	1.6	1.1	.66	.58
24	.14	.10	.10	30	107	180	50	4.4	1.5	4.7	1.2	.66
25	.18	.10	.10	23	85	150	45	4.4	1.4	3.9	.98	.58
26	.20	.10	.10	19	58	130	45	4.4	1.5	2.5	.85	.58
27	.25	.10	.10	15	42	120	45	4.2	1.4	2.3	.85	.52
28	.31	.10	.10	11	1090	110	40	3.9	1.4	1.5	.85	.58
29	.34	.10	.10	8.1	---	100	40	3.9	1.4	1.1	.58	.52
30	.37	.10	.10	6.6	---	85	40	3.7	1.4	.85	.47	.52
31	.46	---	.10	59	---	80	---	3.4	---	.73	.47	---
TOTAL	24.17	11.39	3.10	5883.50	7868.32	60975	2185	462.5	58.4	36.38	429.01	17.28
MEAN	.78	.38	.10	190	281	1967	72.8	14.9	1.95	1.17	13.8	.58
MAX	14	2.0	.10	2400	3130	16600	120	35	3.1	4.7	110	.85
MIN	.10	.10	.10	.10	.15	80	40	3.4	1.4	.47	.47	.42
AC-FT	48	23	6.1	11670	15610	120900	4330	917	116	72	851	34
CAL YR 1977	TOTAL	923.51	MEAN	2.53	MAX	200	MIN	.00	AC-FT	1830		
WTR YR 1978	TOTAL	77954.05	MEAN	214	MAX	16600	MIN	.10	AC-FT	154600		

NOTE.--No gage-height record Oct. 1 to Jan. 24 and Mar. 2 to May 19.

09513000 AGUA FRIA RIVER AT WADDELL DAM, AZ

LOCATION.--Lat 33°51'20", long 112°15'58", in SW¼ sec.16, T.6 N., R.1 E., Maricopa County, Hydrologic Unit 15070102, at left upstream end of Waddell Dam, and 22 mi (35 km) northwest of Glendale.

DRAINAGE AREA.--1,459 mi² (3,779 km²).

PERIOD OF RECORD.--November 1910 to September 1914 (gage heights only), October 1914 to September 1919, October 1919 to September 1924 (gage heights only), October 1933 to current year (monthly discharge only). Published as "near Glendale" prior to 1920, and as "at Lake Pleasant Dam" 1920 to September 1962.

REVISED RECORDS.--WSP 1213: 1915-16, 1918-19. WSP 1343: Drainage area. WSP 1513: 1956.

GAGE.--Nonrecording gage on Lake Pleasant read once daily. Datum of gage is 1,431.2 ft (436.23 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1924, nonrecording gage or water-stage recorder at several sites in the vicinity of diversion dam 1.5 mi (2.4 km) downstream from Waddell Dam, at different datum.

REMARKS.--Records fair. Figures given herein represent flow into Lake Pleasant. Inflow computed on basis of three factors as follows: 1. Change in contents of Lake Pleasant and in contents of small reservoir behind diversion dam 1.5 mi (2.4 km) downstream from Lake Pleasant. 2. (a) Release from Lake Pleasant, computed from twice-daily readings by Clausen-Pierce weir rule in Beardsley Canal, checked by current-meter measurements by U.S. Geological Survey. (b) Spill from Lake Pleasant, measured over diversion dam based on staff-gage readings. See tables of diversions and spill below. 3. Effect of rainfall and evaporation on lake; evaporation assumed as 0.85 of that measured once daily in 3-ft-square (0.9-m-square) land pan buried 1½ ft (½ m) in ground near left end of Waddell Dam. Effect of bank storage and bank release in Lake Pleasant is not taken into account. For months when inflow to lake is small and other factors relatively large, discordant figures of runoff may appear. Such discrepancies that may be attributed to inaccuracies in the capacity table, or to the fact that bank storage and bank release are not taken into account, result in quantities too large for periods of falling stage, but tend to be compensated for by quantities too small for periods of rising stage. Inaccuracies in figures of release and evaporation, which may be within reasonable limits within themselves, may result in disproportionately large inaccuracies in small figures of inflow computed as residuals. Diversions for irrigation above Lake Pleasant of probably not over 1,000 acres (4.0 km²). Spill occurred in 1941, 1966, 1968, and 1978 water years.

COOPERATION.--Records collected and prepared in cooperation with Maricopa County Municipal Water Conservation District No. 1.

AVERAGE DISCHARGE.--50 years (water years 1915-19, 1934-78), 83.0 ft³/s (2.351 m³/s), 60,130 acre-ft/yr (74.1 hm³/yr); median of yearly mean discharges, 40 ft³/s (1.13 m³/s), 29,000 acre-ft/yr (36 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 105,000 ft³/s (2,970 m³/s) Jan. 28, 1916, gage height, 30 ft (9.1 m), same datum as in 1919, from floodmarks, Nov. 27, 1919, gage height, 33 ft (10.1 m), datum then in use, from floodmarks, from rating curve extended above 13,000 ft³/s (370 m³/s) on basis of velocity-area studies (on basis of comparative gage heights, the flood of Nov. 27, 1919, is believed to have been the greater); no flow during spring and summer of several years.

MONTHLY INFLOW TO LAKE PLEASANT; SPILL AND DIVERSIONS BELOW LAKE PLEASANT, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Inflow to Lake Pleasant		Diversions in acre-feet	Spill in acre-feet
	Mean (cfs)	Runoff in acre-feet		
October.....	2.83	174	0	0
November	2.62	156	0	0
December	7.42	456	0	0
CAL YR 1977	3.90	2,820	25,180	0
January	160	9,860	0	0
February	564	31,350	0	0
March	2,667	164,000	2,410	45,800
April	116	6,920	10,240	1,160
May	31.9	1,960	4,970	0
June	19.7	1,170	6,290	0
July	32.4	1,990	9,660	0
August	35.3	2,170	10,300	0
September	26.2	1,560	7,500	0
WTR YR 1978	305	221,800	51,370	46,960

09513500 LAKE PLEASANT AT WADDELL DAM, AZ

LOCATION.--Lat 35°51'20", long 112°15'58", in SW¼ sec.16, T.6 N., R.1 E., Maricopa County, Hydrologic Unit 15070102, at left upstream end of Waddell Dam on Agua Fria River.

DRAINAGE AREA.--1,459 mi² (3,779 km²).

PERIOD OF RECORD.--February 1928 to current year (annual figures only prior to 1939). Prior to October 1963 published as "at Lake Pleasant Dam."

GAGE.--Nonrecording gage read once daily. Datum of gage is 1,431.2 ft (436.23 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Lake is formed by concrete multiple-arch dam; dam completed and storage began in 1927. Capacity, 157,600 acre-ft (194 hm³), of which 86,870 acre-ft (107 hm³) is between gage heights 62 ft (18.9 m)—28 ft (8.5 m) above centerline of outlet works—and 146.0 ft (44.50 m), crest of spillway, and 70,730 acre-ft (87.2 hm³) between 146.0 ft (44.50 m) and 170.0 ft (51.82 m), top of spillway gates. There is no storage below gage height 62 ft (18.9 m) because of accumulated sediment. Water released from reservoir flows down river channel 1.5 mi (2.4 km) to diversion dam where it is diverted for irrigation near Beardsley. Figures given herein represent usable contents in Lake Pleasant (based on 1965 capacity table). Contents of small reservoir formed by diversion dam is not included.

COOPERATION.--Gage-height record furnished by Maricopa County Municipal Water Conservation District No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 178,500 acre-ft (220 hm³) Apr. 19, 1941, of which 500 acre-ft (616,000 m³) was uncontrolled storage; maximum gage height, 170.28 ft (51.901 m) Feb. 9, 1966; no storage Sept. 5, 1933, July 19 to Aug. 13, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 160,000 acre-ft (197 hm³) Mar. 23-27, maximum gage height, 170.57 ft (51.990 m) Mar. 23, 24; minimum, 2,890 acre-ft (3.56 hm³) Nov. 16-23, minimum gage height, 76.48 ft (23.311 m) Nov. 20, 21.

Capacity table (gage height, in feet, and usable contents, in acre-feet)

75	2,400	110	25,670	160	124,500
80	4,160	120	38,590	170	157,600
85	6,210	130	54,440	170.6	159,800
90	9,640	140	73,530		
100	15,660	150	96,660		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
INSTANTANEOUS OBSERVATIONS AT 1700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2920	2900	2900	3270	13800	68700	159000	153000	147000	139000	128000	117000
2	2920	2900	2900	3270	14500	119000	159000	153000	147000	138000	128000	117000
3	2920	2900	2900	3270	14900	152000	159000	153000	147000	138000	127000	116000
4	2920	2900	2900	3280	15200	152000	159000	153000	147000	138000	127000	116000
5	2920	2900	2900	3280	15400	153000	159000	152000	146000	137000	127000	116000
6	2920	2900	2900	3290	15500	152000	159000	152000	146000	137000	127000	115000
7	2930	2900	2900	3290	15700	153000	159000	152000	146000	137000	127000	115000
8	2930	2900	2900	3290	15900	154000	159000	152000	146000	136000	126000	114000
9	2930	2900	2900	3290	16100	155000	159000	152000	145000	136000	126000	114000
10	2930	2900	2910	3300	16300	156000	159000	151000	145000	136000	125000	114000
11	2930	2900	2910	3730	25500	157000	159000	151000	145000	136000	125000	113000
12	2930	2900	2910	3780	28600	157000	159000	151000	144000	135000	125000	113000
13	2920	2900	2910	3800	29900	157000	159000	151000	144000	135000	125000	113000
14	2920	2900	2910	3800	34300	157000	158000	151000	144000	135000	124000	112000
15	2920	2900	2920	3140	37700	158000	158000	151000	144000	134000	124000	112000
16	2920	2890	2920	3850	39100	158000	158000	151000	143000	134000	124000	112000
17	2910	2890	2920	7800	40000	159000	158000	150000	143000	134000	123000	112000
18	2900	2890	2920	10700	40700	159000	157000	150000	143000	133000	123000	112000
19	2900	2890	2920	11200	41100	159000	157000	150000	143000	133000	123000	111000
20	2900	2890	2930	11600	41500	159000	157000	150000	142000	132000	122000	111000
21	2900	2890	2920	12000	41700	159000	156000	150000	142000	132000	122000	111000
22	2900	2890	2920	12300	42000	159000	156000	149000	142000	132000	122000	110000
23	2900	2890	2920	12400	42500	160000	156000	149000	141000	131000	121000	110000
24	2900	2900	2920	12500	42700	160000	155000	149000	141000	131000	121000	110000
25	2900	2900	2920	12600	42900	160000	155000	149000	141000	131000	120000	110000
26	2900	2900	2920	12700	43100	160000	155000	149000	140000	130000	120000	110000
27	2900	2900	2920	12700	43400	160000	154000	148000	140000	130000	119000	110000
28	2900	2900	2920	12800	44300	159000	154000	148000	140000	130000	119000	110000
29	2910	2900	2970	12800	---	159000	154000	148000	139000	129000	118000	110000
30	2910	2900	3150	12800	---	159000	153000	148000	139000	129000	118000	110000
31	2900	---	3270	13100	---	159000	---	148000	---	128000	118000	---
MAX	2930	2900	3270	13100	44300	160000	159000	153000	147000	139000	128000	117000
MIN	2900	2890	2900	3270	13800	68700	153000	148000	139000	128000	118000	110000
(†)	76.53	76.52	77.59	96.78	123.84	170.42	168.83	167.14	164.58	161.26	157.68	154.93
(‡)	-20	0	+370	+9830	+31200	+114700	-6000	-5000	-9000	-11000	-10000	-8000
CAL YR 1977	MAX	33000	MIN	2850	†	-29430						
WTR YR 1978	MAX	160000	MIN	2890	‡	+107080						

† Gage height, in feet, at 1700 on last day of month.

‡ Change in contents, in acre-feet.

09513780 NEW RIVER NEAR ROCK SPRINGS, AZ

LOCATION.--Lat 33°58'27", long 112°05'54", in SW¼SW¼ sec.6, T.7 N., R.3 E., Maricopa County, Hydrologic Unit 15070102, on right bank 180 ft (55 m) upstream from road crossing and 6 mi (10 km) southeast of Rock Springs.

DRAINAGE AREA.--67.3 mi² (174 km²).

PERIOD OF RECORD.--Water years 1962-65 (annual maximums only), October 1965 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,310 ft (704 m), from topographic map. Jan. 2, 1964, to Sept. 30, 1965, crest-stage gage, and Oct. 28, 1965, to Nov. 16, 1967, water-stage recorder, at same site at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--13 years, 10.5 ft³/s (0.297 m³/s), 7,610 acre-ft/yr (9.38 hm³/yr); median of yearly mean discharges, 4.5 ft³/s (0.13 m³/s), 3,300 acre-ft/yr (4.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,600 ft³/s (527 m³/s) Sept. 5, 1970, gage height, 13.5 ft (4.11 m), from profile past gage, from rating curve extended above 380 ft³/s (11 m³/s) on basis of slope-area measurements at gage heights 3.6, 4.73, 7.3, 10.7, and 13.5 ft (1.10, 1.442, 2.23, 3.26, and 4.11 m); no flow for most of time most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 380 ft³/s or 11 m³/s as explained above) and peak discharges above base of 200 ft³/s (5.7 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1800	908 25.7	3.66 1.116	Feb. 14	0300	668 18.9	3.34 1.018
Jan. 17	1300	2,250 63.7	4.90 1.494	Mar. 2	0630	*13,600 385	9.40 2.865
Jan. 31	1530	304 8.61	2.67 0.814	Mar. 5	1430	1,680 47.6	3.93 1.198
Feb. 10	2130	2,120 60.0	4.81 1.466				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	68	3670	18	4.7	1.3	.00	.00	.00
2	.00	.00	.00	.00	26	5070	18	7.2	1.1	.00	.00	.00
3	.00	.00	.00	.00	16	1730	14	5.4	1.0	.00	.00	.00
4	.00	.00	.00	.00	10	246	12	4.7	.88	.00	.00	.00
5	.00	.00	.00	.00	8.1	617	12	4.0	.75	.00	.00	.00
6	.00	.00	.00	.00	8.7	568	11	3.8	.62	.00	.00	.00
7	.00	.00	.00	.00	10	207	11	3.8	.62	.00	.00	.00
8	.00	.00	.00	.00	11	104	11	3.4	.62	.00	.00	.00
9	.00	.00	.00	.00	9.3	70	11	3.2	.56	.00	.00	.00
10	.00	.00	.00	.00	296	52	9.9	3.0	.56	.00	.00	.00
11	.00	.00	.00	.00	717	43	9.3	2.8	.51	.00	.00	.00
12	.00	.00	.00	.00	142	524	8.7	2.8	.56	.00	.00	.00
13	.00	.00	.00	.00	155	172	8.7	2.3	.51	.00	.00	.00
14	.00	.00	.00	.00	443	111	8.1	2.1	.51	.00	.00	.00
15	.00	.00	.00	238	206	79	8.1	1.9	.00	.00	.00	.00
16	.00	.00	.00	57	132	63	8.1	1.9	.00	.00	.00	.00
17	.00	.00	.00	530	80	51	8.1	1.8	.00	.00	.00	.00
18	.00	.00	.00	78	56	44	7.2	1.7	.00	.00	.00	.00
19	.00	.00	.00	30	36	41	7.2	1.8	.00	.00	.00	.00
20	.00	.00	.00	25	27	38	6.5	1.9	.00	.00	.00	.00
21	.00	.00	.00	35	21	32	6.5	1.8	.00	.00	.00	.00
22	.00	.00	.00	18	17	38	6.1	1.7	.00	.00	.00	.00
23	.00	.00	.00	11	13	31	5.8	1.5	.00	.00	.00	.00
24	.00	.00	.00	7.1	12	27	5.1	1.4	.00	.00	.00	.00
25	.00	.00	.00	5.0	10	24	5.1	1.4	.00	.00	.00	.00
26	.00	.00	.00	3.5	8.7	21	4.7	1.5	.00	.00	.00	.00
27	.00	.00	.00	2.8	8.1	19	4.7	1.7	.00	.00	.00	.00
28	.00	.00	.00	2.2	1920	17	4.4	1.5	.00	.00	.00	.00
29	.00	.00	.00	1.6	---	15	4.0	1.4	.00	.00	.00	.00
30	.00	.00	.00	1.4	---	14	4.0	1.4	.00	.00	.00	.00
31	.00	---	.00	105	---	13	---	1.3	---	.00	.00	---
TOTAL	.00	.00	.00	1151.10	4470.9	13751	258.3	80.8	10.10	.00	.00	.00
MEAN	.000	.000	.000	37.1	160	444	8.61	2.61	.34	.000	.000	.000
MAX	.00	.00	.00	530	1920	5070	18	7.2	1.3	.00	.00	.00
MIN	.00	.00	.00	.00	8.1	13	4.0	1.3	.00	.00	.00	.00
AC-FT	.00	.00	.00	2280	8870	27280	512	160	20	.00	.00	.00

CAL YR 1977	TOTAL	0.50	MEAN	.001	MAX	.50	MIN	.00	AC-FT	1
WTR YR 1978	TOTAL	19722.20	MEAN	54.0	MAX	5070	MIN	.00	AC-FT	39120

09513800 NEW RIVER AT NEW RIVER, AZ

LOCATION.--Lat 33°54'41", long 112°08'26", in NW¼NE¼ sec.34, T.7 N., R.2 E., Maricopa County, Hydrologic Unit 15070102, near center of downstream side of bridge on east frontage road of Interstate Highway 17, 0.5 mi (0.8 km) southwest of village of New River and 10 mi (16 km) south of Rock Springs.

DRAINAGE AREA.--83.3 mi² (215.7 km²).

PERIOD OF RECORD.--December 1960 to current year. Prior to October 1965, published as "near Black Canyon."

REVISED RECORDS.--WRD Ariz. 1972: Drainage area (former site).

GAGE.--Water-stage recorder. Datum of gage is 1,984.02 ft (604.729 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 1, 1972, at site 0.3 mi (0.5 km) downstream at datum 10.86 ft (3.310 m) lower (now used as supplementary gage).

REMARKS.--Records fair except those for February and Mar. 15 to May 26, which are poor. No storage or diversion above station.

AVERAGE DISCHARGE.--17 years (water years 1962-78), 9.50 ft³/s (0.269 m³/s), 6,880 acre-ft/yr (8.48 hm³/yr); median of yearly mean discharges, 3.9 ft³/s (0.11 m³/s), 2,800 acre-ft/yr (3.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft³/s (552 m³/s) Sept. 5, 1970, gage height, 9.98 ft (3.042 m), from rating curve extended above 1,300 ft³/s (37 m³/s) on basis of slope-area measurements at gage heights 5.57, 7.33, 9.12, and 9.98 ft (1.698, 2.234, 2.780, and 3.042 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 960 ft³/s or 27 m³/s on basis of step-backwater computations and slope-area measurement at gage height 12.34 ft or 3.761 m) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)				
Jan. 15	1930	669	18.9	4.33	1.320	Mar. 2	0900	*18,000	510	12.34	3.761
Jan. 17	1400	2,600	73.6	5.52	1.682	Mar. 5	1530	1,690	47.9	5.33	1.625
Feb. 10	2230	1,400	52.1	4.92	1.500	Mar. 12	0830	1,510	42.8	5.16	1.573
Feb. 13	1900	1,640	46.4	5.05	1.539						

No flow for most of year.

a In gage well.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	43	3040	33	5.0	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	4840	34	5.0	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	1550	24	4.0	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	300	21	4.0	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	660	19	3.0	.00	.00	.00	.00
6	.00	.00	.00	.00	10	751	16	3.0	.00	.00	.00	.00
7	.00	.00	.00	.00	5.0	330	17	3.0	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	270	19	3.0	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	226	19	2.0	.00	.00	.00	.00
10	.00	.00	.00	20	310	190	18	2.0	.00	.00	.00	.00
11	.00	.00	.00	.50	970	186	16	2.0	.00	.00	.00	.00
12	.00	.00	.00	.00	140	436	15	2.0	.00	.00	.00	.00
13	.00	.00	.00	.00	270	178	15	1.0	.00	.00	.00	.00
14	.00	.00	.00	.00	510	88	11	1.0	.00	.00	.00	.00
15	.00	.00	.00	213	240	73	9.8	1.0	.00	.00	.00	.00
16	.00	.00	.00	53	158	64	8.9	.50	.00	.00	.00	.00
17	.00	.00	.00	640	80	60	8.0	.50	.00	.00	.00	.00
18	.00	.00	.00	71	56	54	7.0	.50	.00	.00	.00	.00
19	.00	.00	.00	2.2	39	49	7.0	.50	.00	.00	.00	.00
20	.00	.00	.00	.00	27	43	7.0	.50	.00	.00	.00	.00
21	.00	.00	.00	.00	23	40	7.0	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	19	46	6.0	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	13	42	6.0	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	12	35	6.0	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	11	32	6.0	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	8.9	28	5.0	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	8.0	26	5.0	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	1630	24	5.0	.00	.00	.00	.00	.00
29	.00	.00	7.7	.00	---	22	4.0	.00	.00	.00	.00	.00
30	.00	.00	23	.00	---	20	4.0	.00	.00	.00	.00	.00
31	.00	---	.00	87	---	20	---	.00	---	.00	.00	---
TOTAL	.00	.00	30.70	1100.70	4582.90	13723	376.7	43.50	.00	.00	.00	.00
MEAN	.000	.000	.99	35.5	164	443	12.6	1.40	.000	.000	.000	.000
MAX	.00	.00	25	646	1630	4840	34	5.0	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	20	4.0	.00	.00	.00	.00	.00
ACFT	.00	.00	61	2180	9090	27220	751	86	.00	.00	.00	.00

CAL YR 1977 TOTAL 75.30 MFAN .21 MAX 23 MIN .00 ACFT 149
WIR YR 1978 TOTAL 14859.50 MFAN 54.4 MAX 4840 MIN .00 ACFT 39340

09513835 NEW RIVER AT BELL ROAD, NEAR PEORIA, AZ

LOCATION.--Lat 33°38'18", long 112°14'22", in NE4NE4 sec.3, T.3 N., R.1 E., Maricopa County, Hydrologic Unit 15070102, on downstream side of bridge at Bell Road, 1.6 mi (2.6 km) upstream from Skunk Creek, 3.1 mi (5.0 km) north of Peoria, and 9 mi (14 km) upstream from mouth.

DRAINAGE AREA.--187 mi² (484 km²).

PERIOD OF RECORD.--Water years 1963, 1965-67 (annual maximums only), October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,190.00 ft (362.712 m) National Geodetic Vertical Datum of 1929 (Arizona State Highway Department bench mark). Oct. 1, 1965, to Sept. 30, 1967, crest-stage gage at present site and at site 50 ft (15 m) upstream, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--11 years, 8.98 ft³/s (0.254 m³/s), 6,510 acre-ft/yr (8.03 hm³/yr); median of yearly mean discharges, 2.8 ft³/s (0.08 m³/s), 2,000 acre-ft/yr (2.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s (413 m³/s) Dec. 19, 1967, gage height, 13.5 ft (4.11 m), from rating curve extended above 680 ft³/s (19.3 m³/s) on basis of slope-area measurement of peak flow; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above, 1,800 ft³/s or 51 m³/s on basis of slope-area measurement at gage height 11.0 ft or 3.35 m) and peak discharges above base of 300 ft³/s (8.50 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 17	1630	1,900 53.8	5.99 1.826	Mar. 2	Unknown	*12,500 354	all.0 3.35
Feb. 11	0900	1,730 49.0	5.87 1.789	Mar. 5	2000	1,800 51.0	†4.8 1.46
Feb. 14	0200	1,910 54.1	6.00 1.829				

No flow for most of year.

† About.

a From high-water profile past gage.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3320	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	6000	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	2000	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	400	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	550	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	950	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	300	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	120	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	80	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	50	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	60	758	30	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.50	160	10	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	98	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	750	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	20	280	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.50	125	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	626	64	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	150	3.0	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	4.0	.40	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	881	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	861.60	3099.40	13810.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	27.8	111	445	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	626	881	6000	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	1710	6150	27390	.00	.00	.00	.00	.00	.00
CAL YR 1977 TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	0			
WTR YR 1978 TOTAL	17771.00	MEAN	48.7	MAX	6000	MIN	.00	AC-FT	35250			

NOTE.--No gage-height record Mar. 2 to May 4.

09513860 SKUNK CREEK NEAR PHOENIX, AZ

LOCATION.--Lat 33°43'44", long 112°07'12", in SE¼ sec.35, T.5 N., R.2 E., Maricopa County, Hydrologic Unit 15070102, on downstream side of right end of bridge on east frontage road of Interstate Highway 17, 3 mi (5 km) north of Adobe and 20 mi (32 km) north of City Hall in Phoenix.

DRAINAGE AREA.--64.6 mi² (167.3 km²).

PERIOD OF RECORD.--Water years 1960-67 (annual maximums only), October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,459.95 ft (444.993 m) National Geodetic Vertical Datum of 1929. May 1961 to Sept. 30, 1967, crest-stage gage at site 100 ft (30 m) downstream at datum 5.99 ft (1.826 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--11 years, 1.65 ft³/s (0.0467 m³/s), 1,200 acre-ft/yr (1.48 hm³/yr); median of yearly mean discharges, 0.89 ft³/s (0.025 m³/s), 640 acre-ft/yr (0.79 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Aug. 1, 1964, gage height, 10.48 ft (3.194 m), present datum, from rating curve extended above 6,200 ft³/s (180 m³/s); maximum gage height, 12.24 ft (3.731 m) Sept. 5, 1970; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 560 ft³/s or 16 m³/s on the basis of slope-conveyance estimate at gage height 8.75 ft or 2.667 m) and peak discharges above base of 100 ft³/s (2.8 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Dec. 29	0615	103 2.92	5.70 1.737	Feb. 13	2230	1,080 30.6	7.45 2.271
Jan. 10	2015	260 7.36	6.15 1.874	Feb. 28	1900	3,380 95.7	9.50 2.895
Jan. 15	1000	614 17.4	6.82 2.079	Mar. 1	2100	*3,590 102	9.65 2.941
Jan. 17	1200	2,340 66.3	8.70 2.652	Mar. 12	0800	380 10.8	6.40 1.951
Feb. 11	0700	290 8.21	6.22 1.896				

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	560	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	809	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	48	13	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	16	42	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	35	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	111	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	163	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	95	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	289	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	6.0	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	347	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	10	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	10.00	454.50	676.00	1418.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.32	14.7	24.1	45.7	.000	.000	.000	.000	.000	.000
MAX	.00	.00	10	289	347	809	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	20	902	1340	2810	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL	17.00	MEAN	.047	MAX	10	MIN	.00	AC-FT	34		
WTR YR 1978	TOTAL	2558.50	MEAN	7.01	MAX	809	MIN	.00	AC-FT	5070		

09513970 AGUA FRIA RIVER AT AVONDALE, AZ

LOCATION.--Lat 33°26'06", long 112°19'59", in NW¼ sec.14, T.1 N., R.1 W., Maricopa County, Hydrologic Unit 15070102, on downstream side of bridge on U.S. Highway 80, 0.5 mi (0.8 km) east of Avondale, and 3 mi (5 km) upstream from mouth.

DRAINAGE AREA.--2,013 mi² (5,214 km²), of which 1,459 mi² (3,779 km²) above Lake Pleasant is noncontributing except during periods of spill from Waddell Dam. Flood water from drainage area of 247 mi² (640 km²) above McMicken Dam may be diverted into Agua Fria River basin above station.

PERIOD OF RECORD.--Water years 1960-67, 1973 (annual maximums only), October 1967 to September 1972, October 1973 to current year.

GAGE.--Water-stage recorder since Jan. 7, 1974, with supplementary crest-stage gage. Datum of gage is 952.92 ft (290.450 m) National Geodetic Vertical Datum of 1929 (Arizona Highway Department bench mark). Apr. 26, 1961, to Sept. 30, 1967, crest-stage gage; Oct. 1, 1967, to July 21, 1972, water-stage recorder (with supplementary crest-stage gage from Mar. 10 to July 22, 1972) at present site at datum 2.92 ft (0.890 m) lower. July 22, 1972, to Jan. 6, 1974, crest-stage gage only, at railroad bridge upstream at datum 2.92 ft (0.890 m) lower.

REMARKS.--Records poor. Flow partly regulated by Lake Pleasant, 35 mi (56 km) upstream. (See elsewhere in this report.) Records at times may include waste water from the Arizona Canal of the Salt River Project. Excess flood water released from McMicken Dam on Trilby Wash may enter Agua Fria River basin above station; this amount generally is negligible.

AVERAGE DISCHARGE.--10 years (water years 1968-72, 1974-78), 11.2 ft³/s (0.317 m³/s), 8,110 acre-ft/yr (10.0 hm³/yr); median of yearly mean discharges, 1.5 ft³/s (0.04 m³/s), 1,100 acre-ft/yr (1.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s (583 m³/s) Sept. 6, 1970, gage height, 11.21 ft (3.417 m), from rating curve extended above 1,500 ft³/s (42 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 12.70 ft (3.871 m) Dec. 20, 1967; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,100 ft³/s (371 m³/s), from slope-area measurement of peak flow, Mar. 2, gage height, 5.63 ft (1.716 m), from profile past gage; no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	3100	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	7000	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	2200	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	2400	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	1900	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	6200	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	1600	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	600	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	100	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	160	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	450	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	1100	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	150	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	940	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	370	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	200	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	1310.00	2020.00	25100.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	42.3	72.1	810	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	940	1100	7000	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	2600	4010	49790	.00	.00	.00	.00	.00	.00

CAL YR 1977 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT 0
WTR YR 1978 TOTAL 28430.00 MEAN 77.4 MAX 7000 MIN .00 AC-FT 56390

NOTE.--No gage-height record Mar. 2 to July 20.

09515500 HASSAYAMPA RIVER AT BOX DAMSITE, NEAR WICKENBURG, AZ

LOCATION.--Lat 34°02'42", long 112°42'33", in SW¼SE¼ sec.7, T.8 N., R.4 W., Yavapai County, Hydrologic Unit 15070103, on right bank at Box damsite, 5.5 mi (8.8 km) northeast of Wickenburg.

DRAINAGE AREA.--417 mi² (1,080 km²).

PERIOD OF RECORD.--January to June 1938, May 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,236.12 ft (681.569 m) National Geodetic Vertical Datum of 1929. January to June 1938 at site 1 mi (2 km) downstream at datum 23.76 ft (7.242 m) lower. May 1, 1946, to Nov. 17, 1949, at present site at datum 2.16 ft (0.658 m) higher.

REMARKS.--Records poor. Small diversions for irrigation and mining above station.

AVERAGE DISCHARGE.--32 years (water years 1947-78), 18.7 ft³/s (0.530 m³/s), 13,550 acre-ft/yr (16.7 hm³/yr); median of yearly mean discharges, 8.1 ft³/s (0.23 m³/s), 5,900 acre-ft/yr (7.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft³/s (1,640 m³/s) Sept. 5, 1970, gage height, 34.6 ft (10.55 m), from profile past gage, by slope-area measurement of peak flow; no flow for many days in 1964 and 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 1,300 ft³/s or 37 m³/s on basis of slope-area measurement at gage height 34.6 ft or 10.55 m) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Jan. 15	1900	863 24.4	6.40 1.951	Mar. 1	0700	7,710 218	10.66 3.249
Jan. 17	1400	1,320 37.4	6.92 2.109	Mar. 2	0530	*16,000 447	14.50 4.419
Feb. 11	0300	3,550 100	8.49 2.588	Mar. 5	1400	2,780 78.7	6.52 1.987
Feb. 13	2300	584 16.5	6.27 1.911				

Minimum daily, 1.1 ft³/s (0.031 m³/s) Oct. 1-5, 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.5	1.7	2.0	164	5030	127	42	3.9	2.1	32	2.5
2	1.1	1.5	1.5	2.0	100	6480	139	43	3.9	1.9	16	2.5
3	1.1	1.5	1.5	2.0	72	3620	133	42	3.6	1.9	8.0	2.5
4	1.1	1.7	1.5	1.9	55	1240	115	36	3.9	1.9	2.5	2.5
5	1.1	1.7	1.5	1.9	50	2000	112	34	2.9	1.9	2.5	2.5
6	17	1.7	1.5	1.9	53	1830	103	30	2.9	1.8	2.5	2.5
7	7.4	1.7	1.5	1.8	68	1660	95	27	2.3	1.3	2.8	2.5
8	3.6	1.7	1.5	1.8	88	1480	124	29	2.1	1.5	2.5	2.5
9	3.0	1.7	1.7	1.7	95	1400	139	25	2.6	1.5	2.5	2.5
10	2.5	1.5	1.7	1.1	243	1300	121	23	2.6	1.3	2.5	2.5
11	2.0	1.5	1.5	45	1040	1220	100	21	2.6	1.3	29	2.5
12	1.5	1.5	1.5	10	180	1440	95	19	1.9	1.3	10	2.5
13	1.5	1.7	1.5	1.6	212	1210	88	19	2.3	1.9	3.5	2.5
14	1.5	1.7	1.5	2.1	272	1050	81	17	2.6	2.1	2.5	2.5
15	1.5	1.7	1.7	230	260	890	76	15	2.6	2.3	2.5	2.5
16	1.5	1.9	1.7	110	200	744	74	14	2.9	2.1	2.5	2.5
17	1.5	2.1	1.9	300	184	612	68	14	2.6	2.3	2.5	2.5
18	1.5	2.1	1.7	8.0	176	500	62	14	2.6	2.6	2.5	2.5
19	1.5	2.1	1.7	3.2	164	392	60	12	2.9	2.9	2.5	2.5
20	1.5	2.1	1.7	52	157	285	53	12	2.9	3.5	2.5	2.5
21	1.5	1.9	1.7	45	157	200	52	10	3.2	3.9	2.5	2.5
22	1.7	1.9	1.7	8.5	157	310	52	8.5	3.2	3.5	2.5	2.5
23	1.5	1.9	1.9	5.5	168	252	52	7.9	3.2	3.5	2.5	2.5
24	1.5	1.9	2.1	4.7	184	188	48	7.4	2.1	3.5	2.5	2.5
25	1.1	1.9	2.1	4.3	168	139	45	6.9	2.1	5.9	2.5	2.5
26	1.1	1.9	2.3	4.3	168	118	44	6.9	2.3	7.4	2.5	2.5
27	1.5	1.9	2.1	4.3	176	121	44	6.9	3.2	4.7	2.5	2.5
28	1.5	1.9	3.6	3.5	744	121	40	5.1	2.9	3.9	2.5	2.5
29	2.1	1.9	4.0	3.2	---	118	39	3.9	3.2	4.3	2.5	2.5
30	1.5	1.9	3.0	3.2	---	118	38	3.9	2.9	4.7	2.5	2.5
31	1.5	---	2.0	106	---	115	---	3.9	---	6.9	2.5	---
TOTAL	70.6	53.6	90.9	982.4	5755	36183	2419	559.3	84.9	91.6	161.3	75.0
MEAN	2.28	1.79	2.93	31.7	206	1167	80.6	18.0	2.83	2.95	5.20	2.50
MAX	17	2.1	36	300	1040	6480	139	43	3.9	7.4	32	2.5
MIN	1.1	1.5	1.5	1.6	50	115	38	3.9	1.9	1.3	2.5	2.5
AC-FT	140	106	180	1950	11420	71770	4800	1110	166	182	320	149

CAL YR 1977 TOTAL 761.4 MEAN 2.09 MAX 36 MIN 1.0 AC-FT 1510
WTR YR 1978 TOTAL 46526.6 MEAN 1.27 MAX 6480 MIN 1.1 AC-FT 92290

NOTE.--No gage-height record Aug. 3 to Sept. 30.

GILA RIVER BASIN

09517000 HASSAYAMPA RIVER NEAR ARLINGTON, AZ

LOCATION.--Lat 33°20'50", long 112°43'30", in NW¼ sec.13, T.1 S., R.5 W., Maricopa County, Hydrologic Unit 15070104, at former U.S. Highway 80, 1.8 mi (2.9 km) upstream from mouth and 2.8 mi (4.5 km) northeast of Arlington.

DRAINAGE AREA.--1,470 mi² (3,810 km²), approximately.

PERIOD OF RECORD.--Water years 1961-77 (annual maximums only), October 1977 to current year (discharge above 500 ft³/s or 14 m³/s only).

GAGE.--Water-stage recorder. Datum of gage is 831.91 ft (253.566 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Only daily discharges above 500 ft³/s (14 m³/s) are published. Records do not include irrigation return flow past station. Small diversions above station for irrigation and livestock.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s (1,100 m³/s) Sept. 5, 1970, gage height 8.40 ft (2.560 m), result of slope-area measurement of peak flow; no natural flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft³/s (578 m³/s) Mar. 2, gage height, 5.80 ft (1.768 m), result of slope-area measurement, base discharge, 1,000 ft³/s (28.3 m³/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						2700						
2						4540						
3						2450						
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						---						
TOTAL						---						
MEAN						---						
MAX						---						
MIN						---						
ALFT						---						

09517500 CENTENNIAL WASH NEAR ARLINGTON, AZ

LOCATION.--Lat 33°16'12", long 112°47'50", in sec.7, T.2 S., R.5 W., Maricopa County, Hydrologic Unit 15070104, on upstream side of ford on former U.S. Highway 80, 3.0 mi (4.8 km) upstream from Gillespie Dam and 4.4 mi (7.1 km) southwest of Arlington.

DRAINAGE AREA.--1,810 mi² (4,690 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 773.22 ft (235.677 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Flow regulated by several small retention dams in upper end of basin. Records do not include irrigation return flow past station.

AVERAGE DISCHARGE.--17 years, 3.89 ft³/s (0.110 m³/s), 2,820 acre-ft/yr (3.48 hm³/yr); median of yearly mean discharges, 2.2 ft³/s (0.062 m³/s), 1,600 acre-ft/yr (1.97 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s (411 m³/s) July 23, 1961, gage height, 4.70 ft (1.433 m), from rating curve extended above 5,500 ft³/s (160 m³/s); maximum gage height, 4.71 ft (1.436 m) Sept. 5, 1970; no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*), (from rating curve extended above 5,500 ft³/s or 160 m³/s) and peak discharges above base of 1,000 ft³/s (28 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Feb. 14	0400	1,210 34.3	3.73 1.137
Mar. 2	0930	*10,900 309	4.64 1.414
Aug. 4	0300	1,340 37.9	3.75 1.143

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	3260	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	215	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	348	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.60	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	83	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	205	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	116	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	394	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	11	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	203.00	521.00	3554.20	.00	.00	.00	.00	348.60	.00
MEAN	.000	.000	.000	6.55	18.6	115	.000	.000	.000	.000	11.2	.000
MAX	.00	.00	.00	203	394	3260	.00	.00	.00	.00	348	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	403	1030	7060	.00	.00	.00	.00	691	.00
CAL YR 1977 TOTAL	0.00		MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		
WTR YR 1978 TOTAL	4631.80		MEAN	12.7	MAX	3260	MIN	.00	AC-FT	4140		

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ
(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 33°13'45", long 112°46'00", in SE¼NE¼ sec.28, T.2 S., R.5 W., Maricopa County, Hydrologic Unit 15070101, at Gillespie Dam, 8 mi (13 km) downstream from Hassayampa River. Gila Bend Canal diverts from left end, and Enterprise Canal diverts from right end of Gillespie Dam.

DRAINAGE AREA.--49,650 mi² (128,600 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1935 to November 1939 (monthly discharge only published in WSP 1313), December 1939 to September 1971 (published with records for sta 09519500, Gila River below Gillespie Dam), 1972 and 1973 (water year estimates only, listed in REMARKS for sta 09519500), October 1973 to current year. Low-flow records prior to October 1970 are not equivalent as leakage less than 5 ft³/s (0.14 m³/s) is not included.

09518500. Gila Bend Canal: May 1935 to September 1971, October 1973 to current year (since October 1941, monthly discharge only).

09519000. Enterprise Canal: June 1935 to September 1939 (discharge measurements and monthly estimates only), October 1939 to September 1971, April 1974 to current year (since October 1941, monthly discharge only). Published as "Gillespie Canal" prior to 1951.

GAGE.--Gila Bend Canal: Water-stage recorder 200 ft (60.9 m) downstream from headgates.

Enterprise Canal: Water-stage recorder 600 ft (180 m) downstream from intake at dam.

REMARKS.--Records good except those below 1,000 ft³/s (28.3 m³/s), which are fair. Record is obtained by combining, on a daily basis, the flows of Gila Bend Canal, Enterprise Canal, and Gila River below Gillespie Dam (see sta 09519500).

Many large diversions above station for irrigation, municipal, and industrial use. Flow of Gila River and tributaries above this station is regulated by San Carlos Reservoir on Gila River—capacity, 1,073,000 acre-ft (1,320 hm³); by a series of reservoirs on Salt River—capacity, 1,755,000 acre-ft (2,160 hm³); by Bartlett and Horseshoe Reservoirs on Verde River—capacity, 317,700 acre-ft (392 hm³); and by Lake Pleasant on Agua Fria River—capacity, 157,600 acre-ft (194 hm³).

AVERAGE DISCHARGE.--43 years, 193 ft³/s (5.466 m³/s), 139,800 acre-ft/yr (172 hm³/yr); median of yearly mean discharges, 71 ft³/s (2.01 m³/s), 51,400 acre-ft/yr (63 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 80,800 ft³/s (2,290 m³/s) Mar. 4, 1978; no flow except for possible leakage of less than 5 ft³/s (0.14 m³/s) Nov. 24-27, 1966, July 14, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 80,800 ft³/s (2,290 m³/s) Mar. 4; minimum daily, 44 ft³/s (1.25 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	112	201	70	211	282	156	525	90	95	56	45	62
2	106	216	71	191	282	4980	471	100	96	51	55	75
3	90	221	72	147	282	39600	750	93	98	57	60	72
4	81	211	72	107	281	80800	535	88	97	62	78	68
5	62	229	72	211	282	40900	400	80	86	64	53	68
6	72	221	124	253	282	23100	339	82	78	65	50	53
7	77	216	170	210	282	25500	286	82	66	61	65	45
8	81	237	124	233	282	20200	289	84	63	59	101	44
9	66	253	170	256	305	24200	275	88	67	68	108	49
10	70	266	172	235	307	12500	272	89	90	66	115	58
11	71	261	172	435	383	3330	263	92	85	63	104	78
12	82	250	194	329	355	1760	249	93	83	74	96	79
13	73	266	170	210	257	1250	236	90	75	68	73	71
14	68	264	77	190	490	801	228	92	73	71	65	70
15	69	198	170	211	433	658	229	98	63	75	60	84
16	70	122	214	210	433	546	211	86	59	80	72	84
17	1140	99	214	233	661	477	173	75	69	85	70	82
18	738	165	214	328	790	434	144	76	73	80	72	79
19	323	181	237	255	792	434	135	81	66	63	73	76
20	199	209	237	233	805	748	143	83	56	54	77	74
21	162	81	215	305	684	910	153	84	59	54	66	59
22	174	73	195	434	455	1150	143	79	61	56	57	58
23	173	70	214	434	275	1310	141	78	69	65	59	68
24	164	68	214	329	230	1360	136	83	84	81	63	85
25	143	68	193	281	177	3720	137	94	90	91	74	86
26	221	69	214	234	138	4390	129	101	92	115	92	86
27	198	68	173	234	140	2400	120	95	78	110	92	80
28	188	69	148	257	178	1960	109	94	59	76	83	69
29	234	70	193	257	---	1520	105	97	49	72	71	77
30	211	70	258	258	---	1140	101	96	61	78	58	81
31	186	---	235	283	---	675	---	93	---	50	58	---
TOTAL	5704	4992	5268	7974	10543	302909	7427	2736	2240	2170	2265	2120
MEAN	184	166	170	257	377	9771	248	88.3	74.7	70.0	73.1	70.7
MAX	1140	266	258	435	805	80800	750	101	98	115	115	86
MIN	62	68	70	107	138	156	101	75	49	50	45	44
AC-FT	11310	9900	10450	15820	20910	600800	14730	5430	4440	4300	4490	4210
(†)	629	147	133	125	654	3040	6070	3940	2770	2810	3420	2470
(‡)	1370	1220	1290	1150	1030	919	1060	674	1030	1060	572	1090

CAL YR 1977 TOTAL 35935 MEAN 98.5 MAX 1140 MIN 24 AC-FT 71280
WTR YR 1978 TOTAL 356348 MEAN 976 MAX 80800 MIN 44 AC-FT 706800

† Diversions, in acre-feet, to Gila Bend Canal (sta 09518500). For records prior to 1972, see sta 09519500.

‡ Diversions, in acre-feet, to Enterprise Canal (sta 09519000). For records prior to 1972, see sta 09519500.

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1950 to September 1971, March 1974 to current year.

Prior to October 1967, published as 09519500, Gila River below Gillespie Dam, Ariz.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1971, April 1974 to current year.

WATER TEMPERATURES: December 1950 to September 1971, April 1974 to current year.

REMARKS.--Unpublished daily specific conductance measurements for period December 1950 to September 1964 available from district office in Tucson, Ariz.

COOPERATION.--Pesticide analysis performed by Environmental Protection Agency.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 13,200 micromhos July 10, 11, 1966; minimum daily, 236 micromhos Dec. 28, 1967.

WATER TEMPERATURES: Maximum, 36.5°C July 8, 1958, July 22, 1959, Aug. 5, 8, 1966; minimum, 1.5°C Jan. 1, 1951.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 6,220 micromhos June 9; minimum daily, 431 micromhos Mar. 10.

WATER TEMPERATURES: Maximum, 32.0°C July 1, 3, 7; minimum, 10.0°C Jan. 25.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, U-7 OM-MF (COLS./ 100 ML)
OCT									
26...	1045	221	5380	7.9	18.5	65	--	7.7	2600
NOV									
30...	1430	70	4220	7.8	14.0	55	--	8.5	420
DEC									
28...	1145	148	4420	7.7	14.7	20	--	8.4	740
JAN									
24...	1145	324	2100	7.9	10.0	280	--	8.6	K1380
FEB									
28...	1200	176	4250	7.8	15.6	80	--	8.2	--
APR									
05...	1600	400	5420	8.0	21.0	50	--	9.4	K180
MAY									
04...	1045	86	--	8.0	22.0	80	--	8.5	K700
JUN									
08...	0930	63	5760	7.8	26.0	60	--	8.2	240
JUL									
07...	1030	61	5200	8.0	26.0	--	75	10.2	K1800
AUG									
03...	1430	60	5100	8.2	30.0	130	130	10.0	9200
31...	1000	58	4450	8.0	25.5	60	65	9.2	8000
SEP									
28...	1000	69	4300	7.9	24.5	--	60	7.7	4300

DATE	STREP- TOCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS, NUNCAN- BUNATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION (MG/L AS K)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BUNATE (MG/L AS HCO3)	
OCT									
26...	510	940	640	210	100	820	12	10	300
NOV									
30...	2300	830	580	180	92	670	10	13	300
DEC									
28...	820	910	670	200	100	760	11	12	290
JAN									
24...	3000	390	230	96	36	280	6.2	9.5	190
FEB									
28...	--	830	630	190	87	670	10	14	250
APR									
05...	520	660	470	150	70	540	9.1	10	240
MAY									
04...	390	1000	760	240	100	870	12	14	310
JUN									
08...	--	990	740	240	95	900	12	12	300
JUL									
07...	K4940	950	760	200	110	790	11	12	--
AUG									
03...	19400	920	680	210	95	740	11	11	--
31...	2500	880	650	200	92	710	10	10	--
SEP									
28...	2200	640	420	190	40	720	12	12	--

K Based on non-ideal colony count.

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FI)
OCT 26...	0	790	1100	2.3	32	3340	3210	4.61
NOV 30...	0	650	910	1.9	30	2880	2670	3.92
DEC 28...	0	690	1000	2.2	31	3140	2940	4.27
JAN 24...	0	280	570	1.3	21	1280	1190	1.74
FEB 26...	0	650	1000	1.8	25	2760	2740	3.75
APR 05...	0	460	860	1.2	20	2180	2230	2.96
MAY 04...	0	770	1200	2.1	29	3650	3380	4.96
JUN 08...	0	820	1400	2.2	24	3710	3640	5.05
JUL 07...	--	740	1200	2.0	22	3410	3190	4.64
AUG 03...	--	650	1100	1.9	26	3320	2960	4.52
31...	--	680	1000	2.4	30	3150	2860	4.26
SEP 28...	--	660	970	2.0	25	2830	2750	3.65

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 26...	14	1.6	--	--	--	--	--	2.7	--	4.3	6.0
NOV 30...	--	--	--	--	--	--	--	3.8	--	--	4.2
DEC 28...	13	5.8	--	--	--	--	--	6.9	--	3.9	3.9
JAN 24...	7.6	1.8	--	--	--	--	--	3.2	--	2.0	1.5
FEB 28...	2.1	3.6	--	--	1.3	4.9	.00	5.0	7.0	3.1	2.9
APR 05...	6.8	.37	--	--	2.1	2.5	1.4	1.1	9.3	1.8	.99
MAY 04...	.00	.76	2.5	1.7	1.7	--	.80	--	11	1.4	.88
JUN 08...	12	.35	--	--	2.5	2.8	1.3	1.5	15	.96	.63
JUL 07...	11	.32	--	--	2.6	2.9	1.9	1.0	14	.93	.44
AUG 03...	14	.10	--	--	2.9	3.0	1.8	1.2	17	1.4	.77
31...	14	.16	--	--	1.9	2.1	1.8	.27	16	1.3	1.3
SEP 28...	13	1.6	--	--	1.3	2.9	.80	2.1	16	3.2	2.9

GILA RIVER BASIN

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09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
OCT									
26...	12	14	300	200	540	20	0	30	5
NOV									
30...	12	--	300	--	2500	0	--	0	--
DEC									
28...	10	--	0	--	2600	2	--	20	--
JAN									
24...	11	10	200	100	990	5	2	30	10
FEB									
28...	9	--	200	--	2000	0	--	20	--
APR									
05...	13	--	200	--	1400	2	--	10	--
MAY									
04...	11	9	300	100	3000	3	1	10	0
JUN									
08...	11	--	200	--	2900	1	--	5	--
JUL									
07...	8	--	400	--	2600	10	--	20	--
AUG									
03...	11	8	300	200	2900	1	0	10	10
31...	14	--	200	--	2800	0	--	0	--
SEP									
28...	10	--	0	--	2400	1	--	10	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT									
26...	<50	0	<10	6	2600	30	100	6	130
NOV									
30...	--	--	16	--	140	--	11	--	120
DEC									
28...	--	--	10	--	660	--	6	--	160
JAN									
24...	8	1	44	8	12000	20	38	1	450
FEB									
28...	--	--	19	--	4100	--	11	--	550
APR									
05...	--	--	10	--	1800	--	22	--	390
MAY									
04...	5	0	20	2	3400	0	32	12	260
JUN									
08...	--	--	15	--	2600	--	7	--	180
JUL									
07...	--	--	18	--	3200	--	28	--	200
AUG									
03...	5	0	30	4	5800	30	11	0	290
31...	--	--	20	--	4000	--	17	--	160
SEP									
28...	--	--	15	--	3600	--	15	--	200

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 26...	20	.0	.0	9	11	<10	0	90	20
NOV 30...	--	.0	--	10	--	1	--	40	--
DEC 28...	--	.0	--	8	--	0	--	10	--
JAN 24...	90	.0	.0	4	4	1	0	90	20
FEB 28...	--	.0	--	6	--	0	--	70	--
APR 05...	--	.0	--	1	--	0	--	20	--
MAY 04...	140	.0	.0	8	2	1	0	60	30
JUN 08...	--	.0	--	7	--	0	--	50	--
JUL 07...	--	.0	--	5	--	2	--	30	--
AUG 03...	40	.1	.0	9	8	0	0	40	20
SEP 31...	--	.0	--	8	--	0	--	60	--
SEP 28...	--	.0	--	7	--	0	--	40	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS (UG/L)	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ATRA- ZINE, TOTAL (UG/L)
OCT 26...	6.6	--	--	.01	1	--	--	--	--	--
NOV 30...	8.1	--	--	.01	3	--	--	--	--	ND
DEC 28...	6.7	--	--	.01	3	--	--	--	--	--
JAN 24...	11	--	--	.01	4	--	--	--	--	--
FEB 28...	10	--	--	.01	6	ND	--	ND	--	ND
APR 05...	7.9	--	--	.01	2	--	--	--	--	--
MAY 04...	--	8.2	.6	.01	0	ND	ND	ND	ND	ND
JUN 08...	10	--	--	.01	1	--	--	--	--	--
JUL 07...	15	--	--	.01	0	--	--	--	--	--
AUG 03...	15	--	--	.01	1	--	--	--	--	--
SEP 31...	7.7	--	.8	.00	1	--	--	--	--	--
SEP 28...	--	--	--	.01	1	--	--	--	--	--

< Actual value is known to be less than value shown.
 ND Material specifically analyzed for but not detected.

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	DI-ELDRIN TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--
NOV 30...	--	--	--	--	--	--	--	--	--	--
DEC 28...	--	--	--	--	--	--	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	--	--	--
FEB 28...	ND	--	ND	--	ND	ND	--	.17	--	ND
APR 05...	--	--	--	--	--	--	--	--	--	--
MAY 04...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 08...	--	--	--	--	--	--	--	--	--	--
JUL 07...	--	--	--	--	--	--	--	--	--	--
AUG 03...	--	--	--	--	--	--	--	--	--	--
SEP 31...	--	--	--	--	--	--	--	--	--	--
SEP 28...	--	--	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA- TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TUT. IN BOTITUM MATL. (UG/KG)	LINDANE TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--
NOV 30...	--	--	--	--	--	--	--	--	--	--
DEC 28...	--	--	--	--	--	--	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	--	--	--
FEB 28...	--	ND	--	ND	--	ND	--	ND	--	ND
APR 05...	--	--	--	--	--	--	--	--	--	--
MAY 04...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 08...	--	--	--	--	--	--	--	--	--	--
JUL 07...	--	--	--	--	--	--	--	--	--	--
AUG 03...	--	--	--	--	--	--	--	--	--	--
SEP 31...	--	--	--	--	--	--	--	--	--	--
SEP 28...	--	--	--	--	--	--	--	--	--	--

ND Material specifically analyzed for but not detected.

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THIUN, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	MALA- THIUN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TUT. IN BOTTOM MATL. (UG/KG)	METHYL PARA- THIUN, TOTAL (UG/L)	METHYL PARA- THIUN, TUT. IN BOTTOM MATL. (UG/KG)	METHYL TRI- THIUN, TOTAL (UG/L)	METHYL TRI- THIUN, TUT. IN BOTTOM MATL. (UG/KG)	PARA- THIUN, TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--
NOV 30...	--	--	--	--	--	--	--	--	--	--
DEC 28...	--	--	--	--	--	--	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	--	--	--
FEB 28...	--	ND	--	ND	--	ND	--	ND	--	ND
APR 05...	--	--	--	--	--	--	--	--	--	--
MAY 04...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 08...	--	--	--	--	--	--	--	--	--	--
JUL 07...	--	--	--	--	--	--	--	--	--	--
AUG 03...	--	--	--	--	--	--	--	--	--	--
SEP 31...	--	--	--	--	--	--	--	--	--	--
SEP 28...	--	--	--	--	--	--	--	--	--	--

DATE	PARA- THIUN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON (UG/L)	TUX- APHENE, TOTAL (UG/L)	TUXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THIUN (UG/L)	TRI- THIUN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--
NOV 30...	--	ND	--	--	--	--	ND	ND	ND
DEC 28...	--	--	--	--	--	--	--	--	--
JAN 24...	--	--	--	--	--	--	--	--	--
FEB 28...	--	ND	0	--	ND	--	ND	ND	ND
APR 05...	--	--	--	--	--	--	--	--	--
MAY 04...	ND	ND	0	ND	ND	ND	--	--	--
JUN 08...	--	--	--	--	--	--	--	--	--
JUL 07...	--	--	--	--	--	--	--	--	--
AUG 03...	--	--	--	--	--	--	--	--	--
SEP 31...	--	--	--	--	--	--	--	--	--
SEP 28...	--	--	--	--	--	--	--	--	--

ND Material specifically analyzed for but not detected.

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	TEMPER- ATURE (DEG C)	SEDIM- ENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER 0.062 MM	SEDIM- ENT DIS- CHARGE, SUS- PENDED (T/DAY)	LENGTH OF EXPO- SURE (DAYS)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- GRAPHIC FLUORUM (MG/M2)
UCT 26...	1045	18.5	128	97	76	20	--	9.05	6.46	12.7	9.66
NOV 30...	1430	14.0	120	92	23	--	7100	--	--	--	--
DEC 26...	1145	14.7	651	5	260	--	--	--	--	--	--
JAN 24...	1145	10.0	311	97	276	27	--	13.2	9.37	5.85	5.73
APR 05...	1600	21.0	87	87	94	--	16000	--	--	--	--
MAY 04...	1045	22.0	155	51	37	--	--	--	--	--	--
JUN 08...	0930	26.0	114	93	19	--	25000	--	--	--	--
JUL 07...	1030	26.0	179	97	--	--	50000	--	--	--	--
AUG 05...	1430	30.0	267	92	43	--	18000	--	--	--	--
31...	1000	25.5	134	93	21	--	22000	--	--	--	--
SEP 28...	1000	24.5	310	56	58	28	16000	23.0	18.6	15.0	1.69

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5200	4300	3800	---	2050	---	2890	5750	5800	5040	5000	4450
2	---	4100	3800	---	2150	---	---	5290	5470	---	5500	4300
3	4500	4300	3900	3820	1950	---	3750	5110	5390	5500	5500	---
4	5500	4200	---	3820	3380	---	2500	5440	---	---	2750	---
5	5500	4200	3800	3820	---	---	2850	5500	5820	5510	2730	4410
6	5500	---	3900	3350	3500	771	3550	6050	5420	5260	---	4400
7	4300	4500	3900	3550	3820	700	4150	---	5110	5110	4900	4570
8	4900	4300	3800	---	3570	590	4600	5620	5800	5040	4500	4900
9	---	4100	3900	3620	3500	659	---	5300	6220	---	4100	4690
10	---	4000	3800	3500	3510	451	4960	5900	5560	5310	4200	---
11	4700	4000	---	2570	2520	810	4710	5900	---	5400	4000	4690
12	5200	4200	4500	1340	---	---	4580	5250	5450	5000	---	4350
13	4900	---	4400	2850	3500	1300	4800	5800	5380	5030	---	3990
14	4400	4100	4600	2890	1860	2360	4700	---	5550	5240	4850	4100
15	4800	4200	5000	---	1000	2920	4780	5420	5710	5500	5000	3920
16	---	4700	3800	3100	2410	3270	---	5420	5400	---	5150	4020
17	1300	4700	3800	3040	1180	3780	4950	5200	5380	5050	5150	---
18	1200	4700	---	2810	1000	4280	4920	5390	---	5120	5000	3690
19	1900	4500	3700	2000	---	---	5170	5500	5520	4690	4900	3520
20	2800	---	3800	2000	---	4490	5010	5690	6110	4780	---	3490
21	3500	4700	4900	1650	1020	2180	5300	---	5700	4820	5500	4100
22	3800	4900	3900	---	1320	2170	5090	5510	5500	5460	4950	3960
23	---	4600	5100	1350	2130	2000	---	5500	5450	---	5800	4030
24	4000	---	5500	1710	2880	1890	5000	5320	5080	4820	5100	---
25	4400	4200	---	1950	3550	1790	5500	5220	---	4500	4750	3700
26	---	4200	---	---	---	---	5200	5120	5420	4360	5900	3510
27	5000	---	4800	2850	4600	---	5400	4950	5390	3820	---	3600
28	4600	4000	4300	2950	4100	1180	5150	---	5210	3660	5900	4100
29	4800	4000	4500	---	---	1300	4800	---	5600	4140	5900	4000
30	4600	4100	4100	3450	---	1570	---	5200	5100	---	5100	4010
31	4000	---	3900	3480	---	2000	---	5110	---	4460	5200	---
MAX	5500	4900	5500	3820	4600	4490	5400	6050	6220	5510	5900	4900
MIN	1200	4000	3800	1340	1000	451	2500	4950	5080	3660	2730	3490
WTR YR 1978	MAX	6220		MIN	451							

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	19.0	14.0	---	16.0	---	21.0	21.0	25.0	32.0	30.0	27.0
2	---	18.0	13.0	---	16.0	---	---	22.0	24.0	---	24.0	27.0
3	23.0	18.0	13.0	14.0	17.0	---	20.0	24.0	24.5	32.0	24.0	---
4	24.0	19.0	---	14.5	16.0	---	21.0	26.0	---	---	26.5	---
5	25.0	19.0	13.0	14.5	---	---	20.0	24.0	25.0	31.0	24.5	29.0
6	25.0	---	13.0	15.0	16.0	15.0	21.0	22.0	25.0	31.0	---	27.5
7	25.0	17.0	12.0	14.5	16.0	15.0	21.0	---	26.0	32.0	24.0	28.5
8	25.0	16.0	12.0	---	17.0	16.0	14.5	21.0	25.0	25.0	30.0	27.0
9	---	15.0	12.0	13.0	17.0	15.0	---	23.0	27.0	---	24.0	27.5
10	---	15.0	13.0	13.0	16.0	14.0	15.0	23.5	26.5	31.0	30.0	---
11	25.0	15.0	---	12.0	14.5	15.0	14.0	23.5	---	29.5	30.0	26.0
12	24.0	16.0	13.0	12.0	---	---	21.0	23.5	24.5	29.0	---	25.0
13	25.0	---	12.0	13.0	16.0	12.5	22.0	26.0	25.5	29.5	---	25.0
14	23.0	16.0	12.0	13.5	13.0	16.0	21.5	---	24.5	29.5	28.5	25.0
15	22.0	15.0	13.0	---	11.0	17.0	21.5	24.5	25.0	30.0	27.0	25.0
16	---	15.0	13.0	14.5	13.0	17.0	---	23.0	25.0	---	27.5	26.0
17	22.0	15.0	12.0	14.5	11.0	19.0	14.5	21.0	23.0	29.0	27.0	---
18	22.0	15.0	---	15.0	10.5	18.5	23.0	22.0	---	29.0	27.5	24.5
19	22.0	12.0	12.0	15.0	---	---	25.0	22.5	25.0	27.0	27.5	23.0
20	21.0	---	11.0	13.0	---	21.0	25.0	24.0	27.0	31.0	---	21.0
21	20.0	19.0	12.0	13.0	12.0	21.0	21.0	---	23.0	30.0	27.0	20.5
22	20.0	13.0	12.0	---	14.0	21.0	24.0	24.0	24.5	26.0	26.0	---
23	---	14.0	13.0	12.0	16.0	20.0	---	24.0	25.0	---	26.0	23.5
24	24.0	---	13.0	10.5	15.0	20.0	22.0	24.0	25.5	28.5	26.0	24.5
25	20.0	15.0	---	10.0	17.0	20.0	24.0	23.5	---	29.0	27.0	---
26	---	15.0	---	---	---	---	25.0	22.0	25.0	30.0	25.0	26.0
27	19.0	---	15.0	11.0	16.0	---	24.0	27.0	25.0	30.0	---	26.0
28	19.0	15.0	15.0	13.5	17.0	20.0	24.0	---	22.5	30.0	25.0	25.0
29	20.0	15.0	12.0	---	---	21.0	25.0	---	25.0	30.5	25.0	25.0
30	21.0	14.0	12.0	15.5	---	21.0	---	---	24.0	---	25.0	25.5
31	14.0	---	15.0	16.0	---	23.0	---	25.5	---	29.5	26.0	---
MAX	25.0	19.0	15.0	16.0	18.0	23.0	25.0	27.0	27.0	32.0	30.0	29.0
MIN	19.0	12.0	11.0	10.0	10.5	12.5	15.0	21.0	22.5	25.0	25.0	20.5
WTR YR 1978	MAX	32.0		MIN	10.0							

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 30, 77 1430	APR 5, 78 1600	JUN 8, 78 0930	JUL 7, 78 1030
TOTAL CELLS/ML	7100	10000	25000	50000
DIVERSITY: DIVISION	1.7	0.7	1.4	0.1
..CLASS	1.7	0.7	1.4	0.1
...ORDER	1.8	1.6	1.9	0.1
...FAMILY	2.6	2.0	2.5	0.1
...GENUS	2.7	2.1	2.7	0.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHAMACIACEAE								
...SCHROEDERIA	--	-	--	-	--	-	--	-
...CUELASTRACEAE								
...CUELASTRUM	--	-	--	-	--	-	--	-
...MICRACIACEAE								
...MICRACIUM	--	-	1600	10	3200	13	--	-
...DUCYSTACEAE								
...ANKISTRODESMS	*	0	500	3	*	0	--	-
...CHUDATELLA	91	1	--	-	--	-	--	-
...DUCYSTIS	--	-	--	-	800	3	--	-
...TREUBARIA	--	-	130	1	--	-	--	-
...SCENEDESMAEAE								
...ACIINASTRUM	--	-	1000	6	--	-	--	-
...CRUCIGENIA	*	0	--	-	4800#	20	--	-
...SCENEDESMS	2300#	32	500	3	1200	5	970	2
...TETRASTRUM	--	-	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
...SPHAERUCYSTIS	--	-	--	-	300	1	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	46	1	10000#	61	700	3	--	-
...VULVOCAEAE								
...EUDORINA	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALLES								
...NAVICULACEAE								
...ENTOMONEIS	200	3	*	0	--	-	--	-
..CENTRALES								
...CUSCINODISCACEAE								
...CYCLOTETRA	140	2	1300	8	8500#	35	49000#	98
...MELOSIRA	91	1	--	-	--	-	--	-
...STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALLES								
...CYMBELLACEAE								
...AMPHURA	46	1	--	-	--	-	--	-
...FRAGILARIACEAE								
...SYNEURA	--	-	750	5	--	-	--	-
...GUMPHONEMATAEAE								
...GOMPHONEMA	46	1	--	-	--	-	--	-
...NAVICULACEAE								
...CALONEIS	--	-	--	-	200	1	--	-
...NAVICULA	46	1	130	1	900	4	--	-
...PINNULARIA	--	-	--	-	*	0	--	-
...NITZSCHIAEAE								
...NITZSCHIA	590	8	--	-	300	1	--	-
...SURIPELLACEAE								
...SURIPELLA	110	2	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
...CHROMONAS	*	0	--	-	--	-	--	-
...CRYPTOMONADACEAE								
...CRYPTOMONAS	68	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMOGONIALES								
...NUSTOCACEAE								
...ANABAENA	--	-	--	-	--	-	--	-
...ANABAENOPSIS	1300#	18	--	-	--	-	--	-
...OSCILLATORIAEAE								
...OSCILLATORIA	2000#	28	--	-	3500	14	--	-
EUGLENOPHYTA (EUGLENIIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...EUGLENA	91	1	500	3	--	-	--	-
...PHACUS	*	0	--	-	--	-	--	-

NOTE: # = DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* = OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

DATE TIME	AUG 3,78 1430	AUG 31,78 1000	SEP 28,78 1000
TOTAL CELLS/ML	18000	22000	16000
DIVERSITY: DIVISION	1.5	1.4	1.5
..CLASS	1.5	1.4	1.5
...ORDER	1.8	1.6	1.5
...FAMILY	2.4	1.7	1.5
...GENUS	2.5	1.8	1.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCUCCALES						
...CHARACIACEAE						
...SCHROEDERIA	*	0	120	1	--	-
...COELASTRACEAE						
...COELASTRUM	370	2	--	-	--	-
...MICRACIINIACEAE						
...MICRACIINIUM	2200	12	490	2	--	-
...UOCYSTACEAE						
...ANKISTRUDISMUS	370	2	120	1	--	-
...CHODAIELLA	--	-	--	-	--	-
...OUCYSTIS	--	-	--	-	--	-
...TREUBARIA	--	-	--	-	--	-
...SCENEDESMACEAE						
...ACTINASTRUM	370	2	--	-	--	-
...CHUCIGENIA	--	-	--	-	--	-
...SCENEDESMUS	1500	8	2900	13	3600#	22
...TETRASTRUM	--	-	490	2	--	-
...TETRASTRALES						
...PALMELLACEAE						
...SPHAEROCYSTIS	180	1	--	-	--	-
...VULVOCALES						
...CHLAMYDOMONADACEAE						
...CARTERIA	--	-	--	-	--	-
...CHLAMYDOMUNAS	--	-	--	-	--	-
...VULVACEAE						
...EUDURINA	1500	8	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...PENNALES						
...NAVICULACEAE						
...ENTOMUNEIS	--	-	--	-	--	-
..CENTRALLS						
...COSCINODISCACEAE						
...CYCLOTELLA	--	-	12000#	55	10000#	61
...MELUSIRA	--	-	--	-	--	-
...STEPHANODISCUS	8500#	47	--	-	--	-
...PENNALES						
...CYMBELLACEAE						
...AMPHORA	--	-	--	-	--	-
...FRAGILARIACEAE						
...SYNEDRA	--	-	--	-	--	-
...GOMPHONEMACEAE						
...GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
...CALONEIS	--	-	--	-	--	-
...NAVICULA	--	-	--	-	100	1
...PINNULARIA	--	-	--	-	--	-
...NITZSCHIA	--	-	610	3	500	2
...SUKIRELLACEAE						
...SUKIRELLA	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
...CHROMONAS	--	-	--	-	--	-
...CRYPTOMONADACEAE						
...CRYPTOMUNAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...HORMOGONALES						
...NOSTOCACEAE						
...ANABAENA	680	4	--	-	2400	15
...ANABAENOPSIS	--	-	--	-	--	-
...USCILLATORIACEAE						
...OSCILLATORIA	2400	13	5100#	23	--	-
EUGLENOPHYTA (EUGLENIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
...EUGLENA	--	-	--	-	--	-
...PHACUS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09519500 GILA RIVER BELOW GILLESPIE DAM, AZ

LOCATION.--Lat 33°13'45", long 112°46'00", in SE¼NE¼ sec.28, T.2 S., R.5 W., Maricopa County, Hydrologic Unit 15070101, at left end of Gillespie Dam, 8 mi (13 km) downstream from Hassayampa River.

DRAINAGE AREA.--49,650 mi² (128,600 km²).

PERIOD OF RECORD.--August 1921 to current year. Low-flow records prior to October 1970 are not equivalent as leakage of less than 5 ft³/s (0.14 m³/s) not included, and from October 1971 to September 1973, when no leakage was included. Annual estimate of leakage was listed in REMARKS for the 1972 water year. Prior to 1939, published as "at Gillespie Dam."

REVISED RECORDS.--WSP 1213: 1939. WSP 1243: 1924(M). WSP 1926: Drainage area.

GAGE.--Water-stage recorder since July 28, 1924. Datum of gage is 9.95 ft (3.033 m) below average elevation of crest of dam, which is 753.46 ft (229.655 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1924, depth of water read on crest at left end of dam. Nov. 11, 1924, to July 22, 1932, datum of gage was at average elevation of dam crest. July 23, 1932, to Apr. 27, 1955, datum of gage was 5.00 ft (1.524 m) below average elevation of crest of dam. Since Apr. 2, 1974, supplementary water-stage recorder and concrete control 70 ft (21.3 m) downstream from crest of dam at datum 5.64 ft (1.719 m) lower than datum of base gage.

REMARKS.--Records good except those below 1,000 ft³/s (28.3 m³/s), which are fair. Flow consists of water passing over the dam, and through the dam, but does not include water diverted to Gila Bend or Enterprise Canals. See sta 09518000, Gila River above diversions, at Gillespie Dam, for records of flow reaching dam, and of diversions to Gila Bend and Enterprise Canals.
For diversions and regulation above station, see REMARKS for sta 09518000.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,900 ft³/s (2,630 m³/s) Mar. 3, 1978, gage height, 16.08 ft (4.901 m), present datum; maximum gage height, 16.1 ft (4.91 m) Jan. 2, 1966; probably no flow at times—periods of no flow unknown due to not publishing leakage of less than 5 ft³/s (0.14 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1891, 250,000 ft³/s (7,100 m³/s), estimated, in February 1891.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 1,000 ft³/s (28.3 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 17	1800	1,480 41.9	10.47 3.191
Mar. 3	1730	*92,900 2,630	16.08 4.901
Mar. 26	0015	5,480 155	11.04 3.365

Minimum daily. 7.0 ft³/s (0.20 m³/s) June 20, 26, 27, 30, July 3 to Aug. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	178	48	190	260	113	405	15	16	8.0	7.0	9.0
2	45	193	49	170	260	4920	353	14	17	8.0	7.0	10
3	40	198	50	127	260	39500	629	14	17	7.0	7.0	10
4	36	168	50	67	260	80700	408	14	17	7.0	7.0	11
5	22	206	50	190	260	40800	276	12	17	7.0	7.0	11
6	26	198	102	213	260	25000	221	11	14	7.0	7.0	10
7	29	192	148	190	260	25400	171	11	12	7.0	7.0	10
8	30	213	102	213	260	20100	167	11	11	7.0	7.0	10
9	38	229	148	236	284	24100	142	11	11	7.0	7.0	10
10	42	243	149	213	284	12400	145	11	12	7.0	7.0	10
11	42	237	149	413	359	3270	152	12	12	7.0	7.0	10
12	43	226	171	308	333	1700	114	13	12	7.0	7.0	10
13	42	243	147	190	236	1210	97	12	12	7.0	7.0	10
14	43	241	54	170	469	778	95	12	12	7.0	7.0	10
15	45	176	147	190	413	620	97	13	12	7.0	8.0	10
16	46	100	190	190	413	522	82	14	10	7.0	9.0	10
17	1110	77	190	213	641	472	53	12	8.0	7.0	9.0	10
18	713	142	190	308	769	428	28	12	8.0	7.0	9.0	10
19	298	157	213	236	769	428	20	13	8.0	7.0	9.0	10
20	174	185	213	213	769	727	20	14	7.0	7.0	9.0	11
21	137	57	190	264	641	863	20	14	8.0	7.0	9.0	11
22	149	50	170	413	413	1090	19	15	8.0	7.0	9.0	11
23	148	47	190	413	236	1240	18	14	8.0	7.0	9.0	11
24	139	45	190	308	190	1290	16	13	9.0	7.0	9.0	12
25	116	45	170	260	130	3620	15	15	8.0	7.0	9.0	12
26	195	46	190	213	83	4270	15	15	7.0	7.0	9.0	13
27	173	46	150	213	70	2280	14	13	7.0	7.0	9.0	13
28	162	47	126	236	110	1850	14	13	8.0	7.0	9.0	13
29	206	48	170	236	---	1410	13	15	8.0	7.0	9.0	13
30	186	48	236	236	---	1020	13	16	7.0	7.0	9.0	13
31	162	---	213	260	---	555	---	16	---	7.0	9.0	---
TOTAL	4689	4301	4555	7332	9692	300676	3832	410	523.0	219.0	250.0	324.0
MEAN	151	143	147	237	346	9699	128	13.2	10.8	7.06	8.06	10.8
MAX	1110	243	236	413	769	80700	629	16	17	8.0	9.0	13
MIN	22	45	48	67	70	113	13	11	7.0	7.0	7.0	9.0
AC-FT	9300	8530	9030	14540	19220	596400	7600	813	641	434	496	643

CAL YR 1977 TOTAL 22050.9 MEAN 60.4 MAX 1110 MIN 1.1 AC-FT 43740
WTR YR 1978 TOTAL 336603.0 MEAN 922 MAX 80700 MIN 7.0 AC-FT 667700

GILA RIVER BASIN

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09519800 GILA RIVER BELOW PAINTED ROCK DAM, AZ

LOCATION.--Lat 33°04'30", long 113°00'50", in SE¼ sec.18, T.4 S., R.7 W., Maricopa County, Hydrologic Unit 15070201, on left bank 0.3 mi (0.5 km) downstream from Painted Rock Dam and 19 mi (31 km) northeast of Sentinel.

DRAINAGE AREA.--50,910 mi² (131,860 km²), approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 518.69 ft (158.097 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Supplementary gage May 5, 1969, to Mar. 30, 1973, at site 0.3 mi (0.5 km) upstream, at datum 2.87 ft (0.875 m) higher.

REMARKS.--Records fair. Many diversions above station for irrigation. Flow above station regulated by many reservoirs, the largest of which is Painted Rock Reservoir—capacity, 2,491,000 acre-ft (3,070 hm³). (See REMARKS for sta 09518000, Gila River above diversions, at Gillespie Dam.)

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,860 ft³/s (81.0 m³/s) Apr. 5, 1973, gage height, 10.29 ft (3.136 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s (30.0 m³/s) Mar. 4, gage height, 6.51 ft (1.984 m); no flow Oct. 1 to Mar. 3 and May 15-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	304	280	309	328	300	331
2	.00	.00	.00	.00	.00	.00	259	265	292	331	322	278
3	.00	.00	.00	.00	.00	.00	280	65	250	180	334	182
4	.00	.00	.00	.00	.00	504	298	330	210	9.0	320	94
5	.00	.00	.00	.00	.00	360	268	453	270	9.0	310	170
6	.00	.00	.00	.00	.00	310	259	456	335	9.0	304	300
7	.00	.00	.00	.00	.00	259	307	325	340	25	337	308
8	.00	.00	.00	.00	.00	304	337	415	337	50	344	286
9	.00	.00	.00	.00	.00	510	316	472	331	50	376	70
10	.00	.00	.00	.00	.00	585	292	452	325	50	334	20
11	.00	.00	.00	.00	.00	536	307	468	324	160	328	65
12	.00	.00	.00	.00	.00	581	348	507	316	260	316	100
13	.00	.00	.00	.00	.00	528	328	440	316	265	240	110
14	.00	.00	.00	.00	.00	484	289	200	307	271	280	115
15	.00	.00	.00	.00	.00	493	256	.00	298	271	340	70
16	.00	.00	.00	.00	.00	500	226	.00	292	271	348	8.0
17	.00	.00	.00	.00	.00	456	271	.00	286	265	352	8.0
18	.00	.00	.00	.00	.00	416	313	.00	280	265	344	7.0
19	.00	.00	.00	.00	.00	380	277	40	274	260	298	7.0
20	.00	.00	.00	.00	.00	497	259	160	304	190	220	6.0
21	.00	.00	.00	.00	.00	520	320	160	324	60	270	6.0
22	.00	.00	.00	.00	.00	492	356	180	319	20	331	30
23	.00	.00	.00	.00	.00	420	328	250	316	10	340	50
24	.00	.00	.00	.00	.00	352	352	270	310	10	360	20
25	.00	.00	.00	.00	.00	316	376	290	301	10	344	60
26	.00	.00	.00	.00	.00	280	334	307	295	30	313	80
27	.00	.00	.00	.00	.00	307	337	292	292	50	230	80
28	.00	.00	.00	.00	.00	337	380	270	286	100	260	100
29	.00	.00	.00	.00	---	450	337	230	286	170	334	190
30	.00	.00	.00	.00	---	380	289	260	310	90	331	200
31	.00	---	.00	.00	---	290	---	301	---	160	331	---
TOTAL	.00	.00	.00	.00	.00	11847.00	9203	8138.00	9035	4229.0	9791	3351.0
MEAN	.000	.000	.000	.000	.000	382	307	263	301	136	316	112
MAX	.00	.00	.00	.00	.00	585	380	507	340	331	376	331
MIN	.00	.00	.00	.00	.00	.00	226	.00	210	9.0	220	6.0
AC-FT	.00	.00	.00	.00	.00	23500	18250	16140	17920	8390	19420	6650
(†)	0	0	0	0	0	372700	339900	311300	281800	260800	239900	223600
CAL YR 1977	TOTAL	101.20	MEAN	.28	MAX	2.6	MIN	.00	AC-FT	201		
WTR YR 1978	TOTAL	55594.00	MEAN	152	MAX	585	MIN	.00	AC-FT	110300		

† Contents, in acre-feet, at end of month (at 2400), furnished by Corps of Engineers since Oct. 1, 1977.

09520170 RIO CORNEZ NEAR AJO, AZ

LOCATION.--Lat 32°29'58", long 112°52'50", in SE4NE4 sec.4, T.11 S., R.6 W., Pima County, Hydrologic Unit 15070202, on downstream side of bridge on State Highway 85, and 8 mi (13 km) north of Ajo.

DRAINAGE AREA.--243 mi² (629 km²).

PERIOD OF RECORD.--January 1967 to September 30, 1978 (converted from continuous-record to partial-record station).

GAGE.--Water-stage recorder. Datum of gage is 1,309.45 ft (399.120 m) National Geodetic Vertical Datum of 1929 (State Highway Department bench mark).

REMARKS.--Records poor.

AVERAGE DISCHARGE.--11 years, 4.21 ft³/s (0.119 m³/s), 3,050 acre-ft/yr (3.76 hm³/yr); median of yearly mean discharges, 3.0 ft³/s (0.085 m³/s), 2,200 acre-ft/yr (2.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,030 ft³/s (227 m³/s) Sept. 4, 1976, gage height, 10.41 ft (3.173 m), from rating curve extended above 520 ft³/s (15 m³/s) on the basis of slope-area measurement at gage height 9.70 ft (2.957 m); no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 4	1800	742 21.0	6.91 2.106	Jan. 15	2300	916 25.9	7.06 2.152
Oct. 6	2400	*7,220 204.5	10.14 3.091	Mar. 6	0015	3,050 86.4	8.45 2.576
Jan. 10	2015	659 18.7	6.84 2.085	Mar. 12	0930	3,230 91.5	8.54 2.603

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	121	.00	.00	.00	.00	.00	.00
6	530	.00	.00	.00	.00	406	.00	.00	.00	.00	.00	.00
7	726	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	41	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	68	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	681	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	29	1.0	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	55	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	65	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	48	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	12	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	44	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1283.00	.00	.00	278.00	84.00	1209.00	.00	.00	.00	.00	.00	.00
MEAN	41.4	.000	.000	8.97	3.00	39.0	.000	.000	.000	.000	.000	.000
MAX	726	.00	.00	68	55	681	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2540	.00	.00	551	167	2400	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL	2120.30	MEAN 5.81	MAX 726	MIN .00	AC-FT 4210						
WTR YR 1978	TOTAL	2854.00	MEAN 7.82	MAX 726	MIN .00	AC-FT 5660						

GILA RIVER BASIN

463

09520360 GILA RIVER NEAR MOHAWK, AZ

LOCATION.--Lat 32°47'18", long 113°45'48", on section line between sec.25 and 26, T.7 S., R.15 W., Yuma County, Hydrologic Unit 15070201, in center of channel, 70 ft (21 m) upstream from Avenue 51E, and 4.0 mi (6.4 km) north of Mohawk.

DRAINAGE AREA.--55,430 mi² (143,560 km²), approximately.

PERIOD OF RECORD.--February to April 1966 (published in WSP 1850-C), April 1973 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 300 ft (91.4 m), revised, from topographic map.

REMARKS.--Records fair. Flow regulated by Painted Rock Dam; capacity of reservoir at Painted Rock Dam is 2,492,000 acre-ft or 3,070 hm³, (see REMARKS for sta 09519800). No release flow from Painted Rock Dam reached this station this year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,730 ft³/s (49.0 m³/s) June 2, 1973, gage height, 7.44 ft (2.268 m); no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 334 ft³/s (9.46 m³/s) Feb. 14, gage height, 4.87 ft (1.484 m); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	10	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	195	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	4.8	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	10.00	199.80	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.32	7.14	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	10	195	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	20	596	.00	.00	.00	.00	.00	.00	.00
CAL YR 1977	TOTAL	75.00	MEAN	.21	MAX	39	MIN	.00	AC-FT	149		
WTR YR 1978	TOTAL	209.80	MEAN	.57	MAX	195	MIN	.00	AC-FT	416		

GILA RIVER BASIN

09520500 GILA RIVER NEAR DOME, AZ

LOCATION.--Lat 32°45'39", long 114°25'11", in SW¼ sec.4, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, on right bank 440 ft (134 m) upstream from McPhal bridge on old route of State Highway 95, 3 mi (5 km) west of Dome, and 12 mi (19 km) upstream from mouth.

DRAINAGE AREA.--57,850 mi² (149,800 km²), approximately—includes 373 mi² (966 km²) in Aubrey Valley Playa, a closed basin, but excludes all other closed basins.

PERIOD OF RECORD.--January 1903 to current year. Monthly total, maximum, and minimum daily discharges only for January 1903 to December 1904 and January 1906 to July 1929 in WSP 918 or WSP 1313. Published as "at Yuma and Gila City" 1903, as "near Dome." 1904, and as "at Dome (Gila City)" 1905-6. Records for 1907-29 are published in WSP 918 as "at Yuma and at and near Dome." as "at Dome (Gila City)" 1905-6. Records for 1907-29 are published in WSP 918 as "at Yuma and at and near Dome."

REVISED RECORDS.--WSP 918: 1905. WSP 1733: July 1942. WSP 1926: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 148.18 ft (45.165 m) National Geodetic Vertical Datum of 1929. Prior to October 1903 and January 1907 to April 1929, no gage; discharge estimated. October 1903 to December 1906, principal nonrecording gage 4 mi (6 km) upstream at datum 158.37 ft (48.271 m) National Geodetic Vertical Datum of 1929, supplemented by many nonrecording gages at different datums.

REMARKS.--Records fair. Most low flow during this year is waste and drainage return from Wellton-Mohawk Division of Gila Project. Many diversions above station for irrigation. Flow above station regulated by reservoirs at and above Painted Rock Dam; capacity of reservoir at Painted Rock Dam is 2,492,000 acre-ft or 3,070 km³ (see also REMARKS for sta 09518000). Most of flow for 1966 and 1973 water years was release flow from Painted Rock Dam.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,700 ft³/s (586 m³/s) Feb. 15, 1932, gage height, 16.75 ft (5.105 m); no flow for part or all of each year since 1903, except for 1961-62, 1968-73, 1975, 1977 water years.
Maximum daily discharge, 200,000 ft³/s (5,700 m³/s), roughly estimated, Jan. 22, 1916.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 264 ft³/s (7.48 m³/s) Mar. 1, gage height, 7.47 ft (2.277 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	.59	.38	.44	.89	127	.47	.80	.08	.00	.00	.00
2	.88	.56	.44	.42	1.1	37	.43	.63	.04	.00	.00	.00
3	.85	.55	.44	.40	1.3	7.2	.36	.42	.00	.00	.00	.00
4	.86	.56	.50	.44	1.1	2.9	.39	.25	.00	.00	.00	.00
5	.87	.55	.45	.48	.95	1.8	.43	.18	.00	.00	.00	.00
6	1.2	.51	.35	.47	.86	1.6	.43	.11	.00	.00	.00	.00
7	1.2	.47	.33	.47	.98	1.8	.42	.09	.00	.00	.00	.00
8	1.1	.44	.35	.38	.96	1.5	.43	.08	.00	.00	.00	.00
9	1.0	.37	.31	.36	.84	1.3	.45	.13	.00	.00	.00	.00
10	.97	.34	.30	19	.77	1.2	.43	.21	.00	.00	.00	.00
11	.90	.33	.30	78	.67	1.1	.43	.15	.12	.00	.00	.00
12	.77	.37	.30	8.3	.60	1.1	.47	.11	.15	.00	.00	.00
13	.70	.38	.30	2.4	.71	.99	.47	.25	.07	.00	.00	.00
14	.77	.37	.30	1.3	4.2	1.2	.47	.26	.01	.00	.00	.00
15	.82	.32	.30	1.0	2.1	1.4	.51	.16	.00	.00	.00	.00
16	.84	.32	.30	.89	1.2	1.6	.51	.09	.00	.00	.00	.00
17	.88	.34	.30	.80	.84	1.3	.45	.04	.00	.00	.00	.00
18	.89	.41	.25	.69	.68	1.1	.50	.03	.00	.00	.00	.00
19	.83	.40	.25	.66	.59	1.0	.43	.05	.00	.00	.00	.00
20	.75	.30	.25	.71	.52	.92	.37	.21	.00	.00	.00	.00
21	.68	.29	.27	.68	.55	.74	.31	.16	.00	.00	.00	.00
22	.71	.29	.31	.68	.86	.64	.28	.10	.00	.00	.00	.00
23	.75	.28	.36	.69	.98	.95	.27	.05	.00	.00	.00	.00
24	.72	.28	.34	.66	1.0	1.0	.25	.03	.00	.00	.00	.00
25	.68	.32	.37	.65	1.0	1.0	.24	.02	.00	.00	.00	.00
26	.70	.30	.40	.71	.99	.88	.21	.02	.00	.00	.00	.00
27	.65	.28	.36	.73	.98	.77	.20	.11	.00	.00	.00	.00
28	.64	.27	.42	.78	1.3	.73	.42	.13	.00	.00	.00	.00
29	.64	.24	.44	.79	---	.71	.37	.09	.00	.00	.00	.00
30	.63	.28	.44	.83	---	.60	.63	.07	.00	.00	.00	.00
31	.60	---	.44	.94	---	.48	---	.09	---	.00	.00	---
TOTAL	25.43	11.31	10.85	125.75	29.52	203.51	12.01	5.12	.47	.00	.00	.00
MEAN	.82	.38	.35	4.06	1.05	6.56	.40	.17	.016	.000	.000	.000
MAX	1.2	.59	.50	.78	4.2	127	.63	.80	.15	.00	.00	.00
MIN	.60	.24	.25	.36	.52	.48	.20	.02	.00	.00	.00	.00
AC-FT	50	22	22	249	59	404	24	10	.9	.00	.00	.00
CAL YR 1977	TOTAL	1551.73	MEAN 4.25	MAX 1050	MIN .01	AC-FT 3080						
WTR YR 1978	TOTAL	423.97	MEAN 1.16	MAX 127	MIN .00	AC-FT 841						

GILA RIVER BASIN

465

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ
(National stream-quality accounting network station)

LOCATION.--Lat 32°42'38", long 114°33'06", in NW¼NE¼ sec.30, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, on left bank just upstream from South Gila Pump Outlet Channel No. 1, 0.6 mi (1.0 km) upstream from mouth, and 4 mi (6 km) east of Yuma.

DRAINAGE AREA.--57,950 mi² (150,090 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1975 to current year.

GAGE.--Water-stage recorder and weir. Datum of gage is 122.01 ft (37.189 m) U.S. Bureau of Reclamation datum.

REMARKS.--Records good. Daily discharge is obtained by combining flow past gage with flow for South Gila Pump Outlet Channel No. 1 (see sta 09529360) so as to give total flow of Gila River at mouth.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 757 ft³/s (21.4 m³/s) Sept. 11, 1977; minimum daily, 41 ft³/s (1.16 m³/s) Nov. 7, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 335 ft³/s (9.49 m³/s) Nov. 27; minimum daily, 44 ft³/s (1.25 m³/s) Jan. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	55	80	58	67	163	102	79	82	94	91	92
2	52	55	83	64	58	166	97	83	78	94	83	87
3	56	57	84	63	57	122	98	81	78	94	79	76
4	53	56	82	63	58	119	99	83	79	92	66	75
5	56	59	83	63	56	115	90	78	77	93	65	75
6	55	59	82	63	55	108	88	79	79	97	65	73
7	55	61	86	64	56	100	94	79	81	91	71	73
8	50	61	83	63	64	117	111	76	76	94	84	75
9	47	62	82	59	82	116	107	73	74	92	86	70
10	47	61	81	292	79	111	103	77	74	89	92	69
11	52	59	85	156	80	115	105	84	73	86	89	67
12	50	64	83	59	79	111	110	86	72	87	83	53
13	53	60	81	61	79	110	107	86	73	79	83	62
14	53	65	79	51	82	111	107	85	75	82	85	60
15	53	61	81	59	78	105	107	82	68	85	87	67
16	53	60	81	48	87	100	106	76	67	85	86	71
17	53	66	80	56	89	95	103	76	66	85	89	75
18	53	61	81	53	97	94	101	76	67	87	89	70
19	53	61	79	53	98	97	104	76	66	84	90	67
20	53	60	80	46	96	94	114	75	66	84	92	66
21	57	64	83	46	106	94	115	80	66	81	93	71
22	57	64	82	46	111	92	117	75	67	83	93	72
23	56	70	79	50	110	89	113	75	69	83	92	61
24	54	60	79	51	114	89	113	76	68	84	90	49
25	53	64	79	44	110	93	114	77	65	88	88	50
26	52	254	80	46	114	90	114	77	65	92	85	48
27	52	335	73	56	105	89	117	78	66	90	84	45
28	52	101	56	82	112	89	114	76	68	88	84	52
29	50	79	56	60	---	90	104	76	60	89	86	56
30	51	77	56	56	---	91	95	79	78	88	86	52
31	51	---	56	69	---	93	---	78	---	87	81	---
TOTAL	1632	2371	2415	2100	2379	3268	3169	2437	2143	2727	2617	1979
MEAN	52.6	79.0	77.9	67.7	85.0	105	106	78.6	71.4	88.0	84.4	66.0
MAX	57	335	86	292	114	166	117	86	82	97	93	92
MIN	47	55	56	44	55	89	88	73	60	79	65	45
AC-FT	3240	4700	4790	4170	4720	6480	6290	4830	4250	5410	5190	3930
CAL YR 1977	TOTAL	33817	MEAN 92.6	MAX 757	MIN 47	AC-FT	67080					
WTR YR 1978	TOTAL	29237	MEAN 80.1	MAX 335	MIN 44	AC-FT	57990					

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
OCT												
03...	1355	54	3220	--	25.0	--	--	--	--	--	--	--
05...	1010	55	3370	7.7	24.0	4	--	8.1	443	680	680	430
11...	1405	51	3280	--	25.5	--	--	--	--	--	--	--
17...	1405	42	3250	7.7	24.5	--	--	--	--	--	640	390
25...	1425	57	3250	--	--	--	--	--	--	--	--	--
31...	1200	50	3200	--	23.5	--	--	--	--	--	--	--
NOV												
07...	1400	58	3190	--	23.0	--	--	--	--	--	--	--
09...	1100	58	3140	8.0	22.5	3	--	8.2	56	560	670	420
14...	1230	65	3090	--	21.0	--	--	--	--	--	--	--
21...	1410	60	2960	7.8	22.0	--	--	--	--	--	540	310
28...	1120	97	2430	--	21.0	--	--	--	--	--	--	--
DEC												
05...	1410	86	3160	--	23.0	--	--	--	--	--	--	--
07...	1045	90	3070	7.7	20.5	5	--	8.2	380	640	620	390
12...	1140	84	3190	--	21.0	--	--	--	--	--	--	--
19...	1425	81	3220	7.7	21.5	--	--	--	--	--	630	400
JAN												
03...	1210	64	3320	--	20.5	--	--	--	--	--	--	--
09...	1210	63	3320	--	21.0	--	--	--	--	--	--	--
11...	1130	211	4540	7.7	14.0	60	--	9.2	43500	5900	1100	870
16...	1530	50	3000	--	21.5	--	--	--	--	--	--	--
22...	1150	487	945	7.6	--	--	--	--	--	--	180	53
23...	1500	45	3040	7.8	21.5	--	--	--	--	--	610	360
30...	1120	49	3130	--	21.5	--	--	--	--	--	--	--
FEB												
06...	1425	56	3020	--	23.0	--	--	--	--	--	--	--
08...	1030	58	3010	7.7	21.5	2	--	8.6	70	230	580	330
13...	1355	79	3200	--	22.0	--	--	--	--	--	--	--
21...	1455	112	3500	7.9	23.0	--	--	--	--	--	710	460
27...	1405	97	3530	--	23.0	--	--	--	--	--	--	--
MAR												
06...	1330	112	3470	--	23.5	--	--	--	--	--	--	--
08...	1100	115	3540	7.8	22.0	2	--	8.3	93	57	700	450
13...	1130	110	3480	--	21.5	--	--	--	--	--	--	--
20...	1055	93	3600	7.9	22.0	--	--	--	--	--	710	450
27...	1405	72	3650	--	24.5	--	--	--	--	--	--	--
APR												
03...	1420	100	3640	--	24.5	--	--	--	--	--	--	--
10...	1125	108	3680	--	24.0	--	--	--	--	--	--	--
12...	1100	111	3590	8.0	24.0	3	--	7.8	36	74	690	430
17...	1350	109	3740	--	--	--	--	--	--	--	--	--
24...	0845	117	3680	7.7	21.0	--	--	--	--	--	730	460
MAY												
01...	1420	79	3190	--	--	--	--	--	--	--	--	--
08...	1450	78	3150	--	23.5	--	--	--	--	--	--	--
10...	1030	87	3010	8.0	24.0	3	--	8.2	110	200	580	340
15...	1355	82	3100	--	26.5	--	--	--	--	--	--	--
22...	1415	72	3150	7.7	27.5	--	--	--	--	--	590	350
30...	1445	77	3120	--	--	--	--	--	--	--	--	--
JUN												
05...	1435	79	3170	--	26.0	--	--	--	--	--	--	--
12...	1125	70	3170	--	25.0	--	--	--	--	--	--	--
14...	1015	73	3060	7.8	24.0	--	1.4	7.6	190	160	590	--
19...	1400	66	3260	--	28.0	--	--	--	--	--	--	--
26...	1405	63	3240	7.7	26.0	--	--	--	--	--	640	400
JUL												
03...	1420	91	3710	--	27.5	--	--	--	--	--	--	--
10...	1115	87	3760	--	25.5	--	--	--	--	--	--	--
12...	1100	89	3670	8.0	25.0	--	1.5	8.3	290	120	720	--
17...	1435	89	3720	--	27.0	--	--	--	--	--	--	--
24...	1445	82	3810	7.8	26.5	--	--	--	--	--	770	540
31...	1400	91	3770	--	28.0	--	--	--	--	--	--	--
AUG												
07...	1410	66	4020	--	27.0	--	--	--	--	--	--	--
09...	1115	80	3760	7.7	25.0	--	1.0	8.2	180	86	740	490
14...	1520	87	3730	--	27.5	--	--	--	--	--	--	--
21...	1135	92	3570	7.8	26.5	--	--	--	--	--	680	440
28...	1335	85	3740	--	26.0	--	--	--	--	--	--	--
SEP												
05...	1510	52	2960	--	28.0	--	--	--	--	--	--	--
11...	1105	67	3040	--	23.5	--	--	--	--	--	--	--
13...	1000	65	3550	7.8	23.5	--	2.3	9.4	440	140	680	--
18...	1445	46	3080	--	25.0	--	--	--	--	--	--	--
25...	1435	53	3050	7.9	25.5	--	--	--	--	--	570	330

K Based on non-ideal colony count.

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT												
03...	--	--	--	--	--	--	--	--	--	--	--	--
05...	160	67	500	8.4	7.5	300	0	510	670	1.0	23	2140
11...	--	--	--	--	--	--	--	--	--	--	--	--
17...	150	64	460	7.9	6.9	300	0	500	620	1.1	28	2010
25...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
07...	--	--	--	--	--	--	--	--	--	--	--	--
09...	160	65	460	7.8	6.9	300	0	490	580	1.0	24	1980
14...	--	--	--	--	--	--	--	--	--	--	--	--
21...	130	53	460	8.6	6.2	290	0	480	550	1.0	24	1870
28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
05...	--	--	--	--	--	--	--	--	--	--	--	--
07...	150	60	430	7.5	7.5	280	0	510	610	.7	22	1960
12...	--	--	--	--	--	--	--	--	--	--	--	--
19...	150	63	480	8.3	7.3	280	0	480	650	1.1	25	2000
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
11...	240	110	600	8.1	11	220	0	530	1200	.5	12	2880
16...	--	--	--	--	--	--	--	--	--	--	--	--
22...	49	15	120	3.8	7.0	160	0	110	140	.4	5.8	543
23...	150	58	440	7.7	6.7	290	0	540	560	1.0	23	1920
30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
06...	--	--	--	--	--	--	--	--	--	--	--	--
08...	140	55	430	7.8	7.2	300	0	510	530	1.2	24	1930
13...	--	--	--	--	--	--	--	--	--	--	--	--
21...	170	69	480	7.8	7.6	300	0	460	730	.9	25	2150
27...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
06...	--	--	--	--	--	--	--	--	--	--	--	--
08...	160	74	510	8.4	8.6	310	0	470	780	.9	23	2190
13...	--	--	--	--	--	--	--	--	--	--	--	--
20...	160	75	520	8.5	7.9	310	0	470	740	.8	20	2220
27...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
03...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
12...	160	71	520	8.6	9.1	320	0	510	720	.8	23	2190
17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	170	74	540	8.7	8.1	330	0	520	600	.9	25	2260
MAY												
01...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
10...	140	56	480	8.7	8.3	290	0	420	640	1.0	24	1860
15...	--	--	--	--	--	--	--	--	--	--	--	--
22...	140	59	460	8.2	7.4	290	0	440	650	1.0	24	1940
30...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
14...	140	59	450	8.0	7.5	--	--	450	600	1.0	21	1890
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	160	58	480	8.3	7.1	290	0	440	650	1.0	20	2000
JUL												
03...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
12...	170	72	530	8.6	8.2	--	--	540	780	.9	25	2260
17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	180	79	540	8.4	6.5	290	0	460	810	.9	24	2370
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
07...	--	--	--	--	--	--	--	--	--	--	--	--
09...	170	76	540	8.7	8.5	--	--	480	640	.9	23	2240
14...	--	--	--	--	--	--	--	--	--	--	--	--
21...	160	69	500	8.3	7.6	300	0	480	730	1.0	27	2190
28...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
05...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
13...	160	68	510	8.5	8.2	--	--	470	780	.8	23	2230
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	140	54	460	8.4	6.2	290	0	470	570	1.0	24	1840

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
UCT											
03...	--	--	--	--	--	--	--	--	--	--	--
05...	2090	2.91	.70	.84	.12	--	--	--	.05	.03	.04
11...	--	--	--	--	--	--	--	--	--	--	--
17...	1980	2.73	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
09...	1940	2.69	.78	.96	.31	--	--	--	.04	.03	.00
14...	--	--	--	--	--	--	--	--	--	--	--
21...	1850	2.54	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
07...	1930	2.67	.62	.64	.18	--	--	--	.04	.07	.01
12...	--	--	--	--	--	--	--	--	--	--	--
19...	2000	2.72	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
11...	2810	3.92	.64	.63	.21	--	--	--	.21	.05	.04
16...	--	--	--	--	--	--	--	--	--	--	--
22...	527	.74	--	.13	--	--	--	--	--	--	--
23...	1920	2.61	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
FEB											
06...	--	--	--	--	--	--	--	--	--	--	--
08...	1850	2.62	1.2	1.3	.23	.46	.69	1.9	.05	.04	.04
13...	--	--	--	--	--	--	--	--	--	--	--
21...	2090	2.92	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
06...	--	--	--	--	--	--	--	--	--	--	--
08...	2180	2.98	.64	.73	.24	.33	.57	1.2	.06	.05	.00
13...	--	--	--	--	--	--	--	--	--	--	--
20...	2150	3.02	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
12...	2180	2.98	.90	.90	.17	.47	.64	1.5	.05	.04	.04
17...	--	--	--	--	--	--	--	--	--	--	--
24...	2300	3.07	--	--	--	--	--	--	--	--	--
MAY											
01...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
10...	1920	2.53	.67	.73	.19	.40	.59	1.3	.05	.03	.01
15...	--	--	--	--	--	--	--	--	--	--	--
22...	1930	2.64	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
14...	--	2.57	.88	.87	.18	.66	.84	1.7	.03	.04	.04
19...	--	--	--	--	--	--	--	--	--	--	--
26...	1960	2.72	--	--	--	--	--	--	--	--	--
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
12...	--	3.07	1.2	1.2	.07	.53	.60	1.8	.03	.03	.02
17...	--	--	--	--	--	--	--	--	--	--	--
24...	2250	3.22	--	1.1	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07...	--	--	--	--	--	--	--	--	--	--	--
09...	2290	3.05	.81	--	.16	.54	.70	1.5	.03	.02	--
14...	--	--	--	--	--	--	--	--	--	--	--
21...	2130	2.98	--	1.0	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
13...	--	3.03	1.1	1.1	.28	.82	1.1	2.2	.07	.05	.02
18...	--	--	--	--	--	--	--	--	--	--	--
25...	1880	2.50	--	1.9	--	--	--	--	--	--	--

GILA RIVER BASIN

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09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)
OCT									
05...	--	--	--	--	--	.0	--	--	--
17...	10	--	--	--	--	--	--	--	--
NOV									
09...	10	<100	24	1000	1100	.0	.0	10	14
21...	0	--	--	--	--	--	--	--	--
DEC									
19...	10	--	--	--	--	--	--	--	--
JAN									
22...	40	--	--	--	--	--	--	--	--
23...	10	--	--	--	--	--	--	--	--
FEB									
08...	10	8	0	830	810	.1	.0	15	13
21...	10	--	--	--	--	--	--	--	--
MAR									
20...	10	--	--	--	--	--	--	--	--
APR									
24...	10	--	--	--	--	--	--	--	--
MAY									
10...	10	6	4	1400	1200	.0	.0	6	6
22...	0	--	--	--	--	--	--	--	--
JUN									
26...	10	--	--	--	--	--	--	--	--
JUL									
24...	10	--	--	--	--	--	--	--	--
AUG									
09...	20	7	2	620	600	.1	.1	7	7
21...	0	--	--	--	--	--	--	--	--
SEP									
25...	20	--	--	--	--	--	--	--	--

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, TOTAL RECOV- ERABLE (UG/L AS B)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT									
05...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	670	--
NOV									
09...	10	20	--	--	12	10	660	650	10
21...	--	--	--	--	--	--	--	650	--
DEC									
19...	--	--	--	--	--	--	--	690	--
JAN									
22...	--	--	--	--	--	--	--	250	--
23...	--	--	--	--	--	--	--	650	--
FEB									
08...	30	20	--	3.4	11	11	710	670	1
21...	--	--	--	--	--	--	--	680	--
MAR									
20...	--	--	--	--	--	--	--	670	--
APR									
24...	--	--	--	--	--	--	--	750	--
MAY									
10...	30	20	1.3	1.8	13	10	710	690	2
22...	--	--	--	--	--	--	--	670	--
JUN									
26...	--	--	--	--	--	--	--	690	--
JUL									
24...	--	--	--	--	--	--	--	740	--
AUG									
09...	30	20	.2	3.6	9	9	--	--	1
21...	--	--	--	--	--	--	--	740	--
SEP									
25...	--	--	--	--	--	--	--	710	--

< Actual value is known to be less than value shown.

GILA RIVER BASIN

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CU)	CUPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	CUPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT								
05...	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--
NOV								
09...	3	20	16	<50	0	10	5	230
21...	--	--	--	--	--	--	--	--
DEC								
19...	--	--	--	--	--	--	--	--
JAN								
22...	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--
FEB								
08...	0	0	10	0	0	7	6	200
21...	--	--	--	--	--	--	--	--
MAR								
20...	--	--	--	--	--	--	--	--
APR								
24...	--	--	--	--	--	--	--	--
MAY								
10...	1	30	10	3	2	10	1	370
22...	--	--	--	--	--	--	--	--
JUN								
26...	--	--	--	--	--	--	--	--
JUL								
24...	--	--	--	--	--	--	--	--
AUG								
09...	0	0	10	2	0	9	3	70
21...	--	--	--	--	--	--	--	--
SEP								
25...	--	--	--	--	--	--	--	--

DATE	TIME	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV							
09...	1100	280	15.8	12.1	23	3.6	20
FEB							
08...	1030	1600	--	--	14	2.2	33
MAY							
10...	1030	1500	--	--	9	2.1	49
JUN							
14...	1015	1100	--	--	6	1.2	56
JUL							
12...	1100	1300	--	--	--	--	--
AUG							
09...	1115	--	20.2	17.9	--	--	--
SEP							
13...	1000	1700	--	--	8	1.4	50

< Actual value is known to be less than value shown.

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON								
DATE TIME	NOV 9, 77 1100	FEB 8, 78 1030	MAY 10, 78 1030	JUN 14, 78 1015				
TOTAL CELLS/ML	280	1600	1500	1100				
DIVERSITY: DIVISION	1.8	0.7	0.7	0.4				
..CLASS	1.8	0.7	0.7	0.4				
...ORDER	2.3	1.4	1.5	1.3				
...FAMILY	2.8	1.5	2.1	2.4				
...GENUS	2.8	1.5	2.2	2.6				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHAKACIACEAE								
...SCHRUEDERIA	5	2	--	-	--	-	--	-
...OUCYSTACEAE								
...ANKISTRODESMUS	--	-	--	-	--	-	29	3
...SCENEDESMACEAE								
...SCENEDESMUS	9	3	28	2	290#	19	--	-
...TETRASPOALES								
...PALMELLACEAE								
...SPHAERUCYSTIS	--	-	220	14	--	-	--	-
...VOLVUCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	9	3	69	4	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
..CENTRALES								
...CHAETOCERACEAE								
...CHAETOCEROS	--	-	14	1	--	-	--	-
...COSCINOUDISCACEAE								
...CYCLOTELLA	52#	19	1100#	70	580#	38	--	-
...MELOSIKA	--	-	--	-	--	-	380#	36
...STEPHANODISCUS	--	-	--	-	--	-	--	-
..PENNALES								
...ACHNANTHACEAE								
...ACHNANTHES	--	-	110	7	--	-	--	-
...COCCONEIS	14	5	--	-	--	-	73	7
...CYMBELLACEAE								
...AMPHURA	14	5	--	-	72	5	--	-
...CYMBELLA	--	-	14	1	--	-	73	7
...FRAGILARIACEAE								
...SYNEDRA	5	2	--	-	--	-	--	-
...GOMPHONEMACEAE								
...GOMPHONEMA	--	-	--	-	--	-	44	4
...NAVICULACEAE								
...CALONEIS	--	-	--	-	72	5	--	-
...NAVICULA	24	8	14	1	--	-	230#	22
...NEIDIUM	--	-	--	-	140	10	--	-
...PINNULARIA	--	-	--	-	--	-	59	5
...NITZSCHACEAE								
...NITZSCHIA	9	3	--	-	360#	24	150	14
...UNKNOWN 216030207020000	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
...CRYPTUCHRYSIDACEAE								
...CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONODACEAE								
...CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCOCCALES								
...CHRUCCOCCACEAE								
...ANACYSTIS	95#	34	--	-	--	-	--	-
...HORMOGONALES								
...OSCILLATORIA								
...OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENUIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...EUGLENA	43#	15	--	-	--	-	29	3

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

GILA RIVER BASIN

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JUL 12, 78 1100	AUG 9, 78 1115	SEP 13, 78 1000
TOTAL CELLS/ML	1300	500	1700
DIVERSITY: DIVISION	0.3	1.1	1.3
..CLASS	0.3	1.1	1.3
...ORDER	1.0	1.8	1.4
...FAMILY	2.3	2.7	2.0
....GENUS	2.5	0.0	2.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCUCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	--	-	--	-
...UOOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	18	6	--	-
...TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
...VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	67	5	--	-	22	1
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...CHAETOCERACEAE						
....CHAETOCERUS	--	-	--	-	--	-
...COSCINODISCAEAE						
....CYCLOTELLA	290#	22	89#	29	43	3
....MELUSIRA	--	-	4	1	--	-
....STEPHANODISCUS	--	-	4	1	--	-
...PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	13	4	--	-
...COCCONEIS	--	-	--	-	43	3
...CYMBELLACEAE						
....AMPHORA	--	-	20	7	590#	36
....CYMBELLA	240#	19	9	3	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMACEAE						
....GOMPHONEMA	44	3	13	4	65	4
...NAVICULACEAE						
....CALONEIS	--	-	--	-	--	-
....NAVICULA	380#	29	53#	18	87	5
....NEIDIUM	--	-	--	-	--	-
...PINNULARIA	44	3	--	-	--	-
...NITZSCHACEAE						
....NITZSCHIA	220#	17	16	5	--	-
...UNKNOWN 216030207020000	--	-	7	2	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDALES						
...CRYPTOCHRYSIACEAE						
....CHRUOMONAS	--	-	--	-	22	1
...CRYPTOMONODACEAE						
....CRYPTOMONAS	--	-	2	1	43	3
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCALES						
...CHROCOCCACEAE						
....ANACYSTIS	--	-	--	-	--	-
...HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	53#	18	740#	45
EUGLENOPHYTA (EUGLENIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	2	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

LOCATION.--Lat 32°43'54", long 114°37'55", in SW¼SW¼ sec.26, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on right bank 1,000 ft (305 m) downstream from Yuma Main Canal wasteway, 0.6 mi (1.0 km) downstream from former gaging station on Colorado River at Yuma, 1.1 mi (1.8 km) northwest of post office in Yuma, 5.2 mi (8.4 km) downstream from Gila River, and 6.4 mi (10.3 km) upstream from northerly international boundary.

PERIOD OF RECORD.--October 1963 to current year. If records for Yuma Main Canal wasteway at Yuma (sta 09525000) and Reservation Main Drain No. 4 (sta 09530000) are subtracted from records at this station, records equivalent to those published 1902-64 as "Colorado River at Yuma" (sta 09521000) can be obtained.

REMARKS.--Records excellent. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, municipal, and industrial uses, and return flows from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,310 ft³/s (150 m³/s) Aug. 19, 1977, gage height, 17.28 ft (5.267 m); minimum daily, 260 ft³/s (7.36 m³/s) Jan. 17, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,240 ft³/s (91.8 m³/s) Mar. 2, gage height, 13.83 ft (4.215 m); minimum daily, 415 ft³/s (11.8 m³/s) Dec. 11.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	643	664	948	494	1230	1750	648	520	1230	924	742	1490
2	666	682	1190	1320	1130	3060	607	647	1260	557	676	1270
3	666	660	482	1300	884	2190	616	1420	1240	546	611	1270
4	652	651	444	1260	910	798	601	1350	1220	551	581	1310
5	662	642	441	1630	911	709	579	1320	1390	553	610	1280
6	659	744	442	1460	1040	668	574	1300	1380	540	613	1310
7	656	630	453	1240	1040	762	593	1270	1320	506	612	1310
8	659	654	418	1040	1130	758	575	1270	526	603	609	1440
9	668	628	432	1130	1170	716	578	1270	469	768	602	1450
10	658	688	424	1300	1250	604	563	1230	476	707	601	1330
11	663	653	415	2250	1200	582	594	1240	553	567	601	1300
12	685	661	454	2180	1130	596	835	1220	529	543	595	1340
13	665	662	587	2180	565	555	785	1280	524	529	587	1350
14	666	694	589	2090	551	532	702	1240	511	531	582	1370
15	679	714	571	2050	525	595	634	1260	529	520	541	1360
16	660	705	535	1990	489	696	617	1270	521	531	491	1350
17	666	708	550	1960	480	693	612	1310	497	527	484	1350
18	663	711	485	1930	484	665	612	1280	489	532	473	1330
19	655	710	478	1870	478	626	623	1270	485	538	482	1350
20	660	735	478	1750	468	595	633	1260	489	529	522	1310
21	678	783	482	1690	478	594	630	1270	485	509	513	1320
22	694	790	477	1610	480	591	604	1270	493	514	499	1300
23	687	783	463	1530	499	585	601	1260	498	525	497	1360
24	736	781	468	1350	627	563	558	1290	487	521	483	1320
25	754	774	458	939	607	564	519	1260	484	530	478	1350
26	763	774	450	984	516	659	511	1230	477	528	466	1360
27	756	757	418	950	459	1280	517	1260	485	554	468	1360
28	745	777	1110	955	473	747	526	1260	486	551	467	1390
29	721	766	1300	957	---	648	572	1260	476	533	466	1400
30	730	776	507	1120	---	820	556	1280	564	562	469	1430
31	669	---	462	1070	---	770	---	1270	---	768	524	---
TOTAL	21184	21357	17411	45579	21204	25971	18175	38137	20573	17697	16945	40460
MEAN	683	712	562	1470	757	838	606	1230	686	571	547	1349
MAX	763	790	1300	2250	1250	3060	835	1420	1390	924	742	1490
MIN	643	628	415	494	459	532	511	520	469	506	466	1270
AC-FT	42020	42360	34530	90410	42060	51510	36050	75640	40810	35100	33610	80250
CAL YR 1977	TOTAL	3										

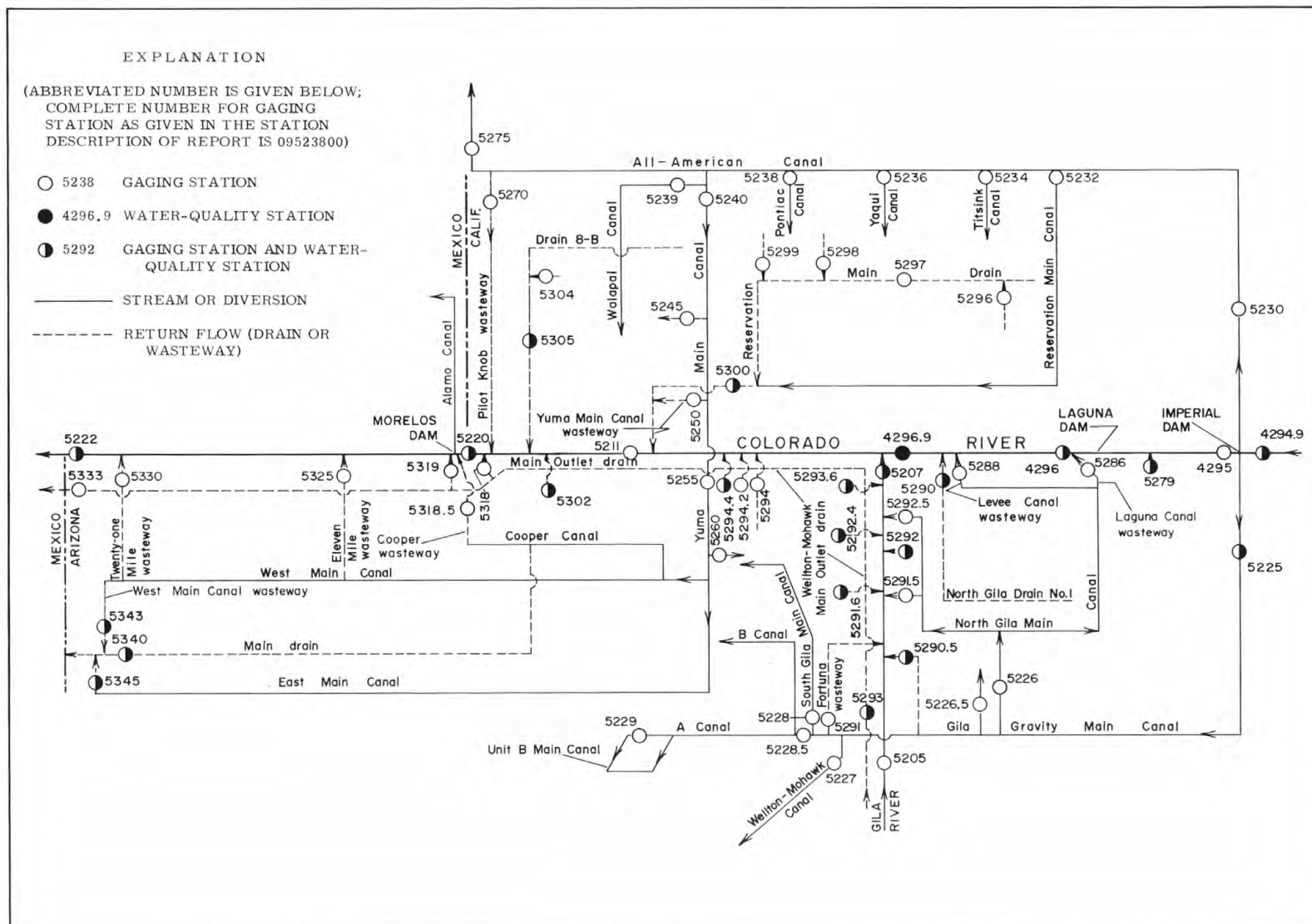


FIGURE 6.--SCHEMATIC DIAGRAM SHOWING GAGING STATIONS AND WATER-QUALITY STATIONS ON STREAMS, DIVERSIONS, AND RETURN FLOWS BETWEEN IMPERIAL DAM AND THE SOUTHERLY INTERNATIONAL BOUNDARY.

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY
ABOVE MORELOS DAM, NEAR ANDRADE, CA

(National stream-quality accounting network and pesticide station)

LOCATION.--Lat 32°43'07", long 114°43'05", in NE¼SE¼ sec.21, T.8 S., R.24 W., Gila and Salt River meridian, in Arizona, Yuma County, Hydrologic Unit 15030108, on left bank at northerly international boundary, 0.5 mi (0.8 km) east of Andrade, 1.1 mi (1.8 km) upstream from Morelos Dam, 1.1 mi (1.8 km) downstream from Rockwood Gate, and 6.4 mi (10.3 km) downstream from gaging station on Colorado River below Yuma Main Canal wasteway.

DRAINAGE AREA.--246,700 mi² (639,000 km²), approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1950 to current year. Prior to October 1958 published as "at international boundary."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Supplementary water-stage recorder 1,680 ft (510 m) upstream at same datum.

REMARKS.--This record shows water passing northerly international boundary. Minor diversions to the United States below this station by pumping from ground water for irrigation in the floodway between river and Yuma levee.

COOPERATION.--Records furnished by International Boundary and Water Commission, U.S. Section (discharge figures rounded in accordance with Geological Survey standard practice).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,390 ft³/s (719 m³/s) Jan. 1, 1953; maximum elevation, 114.34 ft (34.851 m) Aug. 18, 1977; minimum discharge, 495 ft³/s (14.0 m³/s) Sept. 28, 1970; minimum elevation, 101.82 ft (31.035 m) Sept. 18, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,190 ft³/s (147 m³/s) Mar. 3, elevation, 108.26 ft (32.998 m); minimum discharge, 674 ft³/s (19.1 m³/s) Oct. 1; elevation, 102.23 ft (31.160 m).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	748	773	1170	1700	1200	5280	3410	2020	1350	2420	3200	1580
2	764	800	1460	1480	1280	4810	3410	1750	1380	2520	3190	1500
3	776	798	1730	1510	982	4450	3600	1440	1390	2680	3290	1470
4	764	764	1900	1390	1050	2400	3600	1480	1390	2680	3320	1510
5	776	752	1930	1550	1040	2550	3700	1400	1520	2690	3370	1510
6	776	878	2000	1640	1180	2390	3760	1390	1520	2780	3370	1510
7	764	729	2020	1400	1160	2350	3760	1380	1510	2780	3320	1470
8	752	764	1990	1090	1270	2340	3910	1380	1640	2800	3200	1460
9	776	729	2100	1180	1300	2410	3890	1400	1650	2800	3200	1510
10	764	812	2070	1290	1450	2410	4050	1360	1650	2810	3200	1410
11	764	752	2230	2010	1420	2650	4050	1380	1710	2880	3190	1400
12	788	788	2230	2160	1400	2650	4070	1350	1740	2890	3160	1380
13	776	788	2290	2160	1710	2660	4060	1370	1740	2920	3160	1380
14	764	848	2290	2100	2020	2680	4070	1360	1890	2920	2950	1390
15	776	848	2360	2010	2150	2660	4030	1360	1870	2920	2940	1390
16	788	860	2370	2010	2140	2660	4050	1380	1870	2920	2890	1380
17	788	860	2360	1970	2280	2680	3980	1410	1900	2900	2820	1380
18	788	860	2360	1940	2410	2680	3900	1380	1920	2920	2760	1360
19	797	848	2360	1940	2410	2680	3920	1400	1980	2920	2660	1380
20	764	896	2360	1750	2520	2900	3890	1390	2020	2920	2660	1360
21	788	956	2360	1750	2550	2900	3900	1390	1990	2930	2660	1360
22	812	956	2360	1640	2520	2880	3880	1400	2060	2930	2450	1350
23	812	956	2290	1550	2560	3070	3920	1380	2070	2930	2310	1350
24	884	968	2280	1500	2520	3120	3890	1400	2070	2940	2190	1360
25	872	956	2160	1070	2520	3230	3670	1400	2120	2950	2090	1380
26	896	968	2150	1120	2520	3360	3420	1380	2120	2950	1990	1390
27	896	956	2090	1080	2560	3500	3180	1360	2230	2990	1990	1360
28	896	948	2550	1090	2550	3530	2860	1390	2250	3020	1990	1390
29	872	944	3100	1080	---	3540	2580	1360	2210	3020	2000	1400
30	872	980	1900	1250	---	3540	2270	1390	2160	3020	1920	1430
31	814	---	1850	1240	---	3540	---	1360	---	2980	1840	---
TOTAL	24867	25735	66670	48650	52672	91500	110680	43990	54920	88730	85280	42520
MEAN	802	858	2151	1569	1681	2952	3689	1419	1831	2862	2751	1417
MAX	896	980	3100	2160	2560	4810	4070	2020	2250	3020	3370	1580
MIN	748	729	1170	1070	982	2330	2270	1350	1350	2420	1840	1350
AC-FT	49320	51050	132200	96500	104500	181500	219500	87250	108900	176000	169200	84340
CAL YR 1977	TOTAL	740622	MEAN	2029	MAX	11300	MIN	729	AC-FI	1469000		
WTR YR 1978	TOTAL	736214	MEAN	2017	MAX	4610	MIN	729	AC-FI	1460000		

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to current year.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (CULS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS Ca)
OCT												
03...	0830	752	1820	8.2	24.5	--	--	--	--	450	263	--
04...	0820	800	1750	7.8	23.5	7.4	23	190	340	--	--	--
11...	0820	800	1750	8.2	--	--	--	--	--	445	266	--
17...	0830	800	1790	7.9	25.0	--	--	--	--	445	260	--
18...	0820	764	--	--	22.5	--	18	--	--	--	--	--
25...	0830	872	1700	7.9	23.0	--	--	--	--	435	256	--
31...	0835	884	1700	7.9	--	--	--	--	--	435	260	--
NOV												
07...	0830	729	1720	7.9	--	--	--	--	--	435	253	--
08...	0830	764	1760	7.8	16.5	8.1	23	120	270	--	--	91
14...	0830	872	1730	7.9	--	--	--	--	--	435	254	--
21...	0900	932	1710	7.9	16.0	--	29	--	--	430	253	--
28...	0835	920	1690	7.9	20.0	--	--	--	--	430	253	--
DEC												
05...	0830	1920	1570	7.9	--	--	--	--	--	410	244	--
06...	0845	2000	1590	7.8	15.0	8.8	49	1500	290	--	--	--
12...	0830	2230	1510	7.9	15.0	--	--	--	--	405	242	--
19...	0830	2360	1530	8.0	13.5	--	0	--	--	405	242	--
27...	0830	2190	1690	7.9	16.5	--	--	--	--	435	253	--
JAN												
03...	0835	1520	1650	7.9	15.0	--	--	--	--	425	244	--
09...	0830	1220	1710	7.9	--	--	--	--	--	435	252	--
10...	0845	--	--	--	--	--	--	420	440	--	--	--
16...	0845	2080	1580	7.9	14.0	--	--	--	--	410	241	--
23...	0840	1520	1620	7.9	13.0	--	--	--	--	420	244	--
24...	0845	1560	--	--	13.5	--	21	--	--	--	--	--
30...	0830	1210	1720	7.9	--	--	--	--	--	425	243	--
FEB												
06...	0800	1200	1640	8.1	--	--	--	--	--	420	243	--
07...	0840	1150	1750	7.9	15.5	8.8	23	150	190	--	--	110
13...	0830	1690	1600	8.1	--	--	--	--	--	410	234	--
21...	0830	2540	1440	8.0	14.5	--	21	--	--	385	229	--
27...	0845	2560	1470	8.0	17.0	--	--	--	--	395	238	--
MAR												
06...	0835	2460	1500	8.0	16.5	--	--	--	--	405	241	--
07...	0830	2300	1580	8.0	17.0	8.1	13	97	210	--	--	--
13...	0830	2650	1460	7.9	--	--	--	--	--	390	234	--
20...	0830	2950	1370	8.0	--	--	--	--	--	375	226	--
21...	0900	2930	--	--	19.5	--	26	--	--	--	--	--
27...	0830	3270	1320	8.0	20.0	--	--	--	--	370	219	--
APR												
03...	0820	3620	1350	8.2	--	--	--	--	--	375	219	--
10...	0830	4100	1340	8.1	--	--	--	--	--	370	216	--
11...	0830	4050	1350	7.9	18.5	8.2	12	250	59	--	--	--
17...	0830	3930	1350	8.0	--	--	--	--	--	375	221	--
24...	0830	3850	1350	7.9	20.0	--	--	--	--	375	218	--
25...	1030	3700	--	--	21.0	--	17	--	--	--	--	--
MAY												
01...	0830	1950	1420	8.1	--	--	--	--	--	390	232	--
08...	0830	1410	1510	8.0	--	--	--	--	--	405	233	--
09...	0830	1420	1500	7.9	22.0	8.1	25	K4000	540	--	--	100
15...	0815	1380	1560	8.1	--	--	--	--	--	410	244	--
22...	0840	1410	1490	8.0	24.5	--	--	--	--	395	228	--
23...	0910	1400	--	--	22.5	--	17	--	--	--	--	--
30...	0830	1390	1550	7.9	23.5	--	--	--	--	410	238	--

COLORADO RIVER MAIN STEM

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COOPERATION.--Quarterly pesticide analysis performed by Environmental Protection Agency.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,230 micromhos Dec. 9, 1969; minimum, 1,020 micromhos Sept. 27, 1976.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,840 micromhos Oct. 18; minimum, 1,270 micromhos Mar. 3.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
UCT											
03...	120	--	37	--	220	4.5	--	6.0	228	0	405
04...	--	--	--	--	--	--	--	--	--	--	--
11...	114	--	39	--	210	4.3	--	6.0	218	0	400
17...	114	--	39	--	215	4.4	--	6.0	226	0	400
18...	--	--	--	--	--	--	--	--	--	--	--
25...	112	--	38	--	205	4.3	--	5.6	218	0	395
31...	108	--	40	--	205	4.3	--	5.6	214	0	395
NOV											
07...	109	--	40	--	210	4.4	--	5.7	222	0	395
08...	--	38	--	120	--	--	5.9	5.7	--	--	--
14...	111	--	38	--	210	4.4	--	5.6	220	0	395
21...	108	--	39	--	205	4.3	--	5.7	216	0	395
28...	108	--	39	--	200	4.2	--	5.4	216	0	390
DEC											
05...	105	--	36	--	180	3.9	--	5.4	202	0	370
06...	--	--	--	--	--	--	--	--	--	--	--
12...	101	--	37	--	170	3.7	--	5.6	198	0	355
19...	103	--	36	--	175	3.8	--	5.6	198	0	360
27...	110	--	39	--	200	4.2	--	5.9	222	0	385
JAN											
03...	112	--	35	--	195	4.1	--	5.5	220	0	380
09...	113	--	37	--	205	4.3	--	5.8	224	0	390
10...	--	--	--	--	--	--	--	--	--	--	--
16...	106	--	35	--	185	4.0	--	5.5	206	0	375
23...	109	--	36	--	190	4.0	--	5.7	214	0	375
24...	--	--	--	--	--	--	--	--	--	--	--
30...	113	--	35	--	210	4.4	--	5.6	222	0	390
FEB											
06...	108	--	37	--	195	4.1	--	5.4	216	0	380
07...	--	39	--	210	--	--	5.9	--	--	--	--
13...	107	--	35	--	190	4.1	--	5.4	214	0	365
21...	104	--	31	--	160	3.5	--	5.3	190	0	335
27...	102	--	34	--	165	3.6	--	5.6	192	0	340
MAR											
06...	102	--	37	--	170	3.7	--	5.6	200	0	350
07...	--	--	--	--	--	--	--	--	--	--	--
13...	98	--	35	--	165	3.6	--	5.6	190	0	340
20...	100	--	31	--	150	3.4	--	5.6	182	0	330
21...	--	--	--	--	--	--	--	--	--	--	--
27...	100	--	29	--	140	3.2	--	5.6	184	0	320
APR											
03...	97	--	32	--	145	3.3	--	5.4	190	0	325
10...	97	--	31	--	145	3.3	--	5.4	188	0	325
11...	--	--	--	--	--	--	--	--	--	--	--
17...	98	--	32	--	145	3.3	--	5.4	188	0	325
24...	98	--	32	--	145	3.3	--	5.5	192	0	325
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
01...	102	--	33	--	155	3.4	--	5.6	192	0	340
08...	103	--	36	--	170	3.7	--	5.6	210	0	350
09...	--	35	--	170	--	--	5.9	--	--	--	--
15...	103	--	37	--	180	3.9	--	5.6	202	0	370
22...	103	--	34	--	170	3.7	--	5.6	204	0	345
23...	--	--	--	--	--	--	--	--	--	--	--
30...	103	--	37	--	180	3.9	--	5.6	210	0	365

COLORADO RIVER MAIN STEM

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WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL)	CULI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS Ca)
JUN												
05...	0830	1560	1560	8.0	--	--	--	--	--	410	241	--
12...	0830	1740	1530	8.0	--	--	--	--	--	405	240	--
13...	0830	1740	1500	8.0	26.5	6.8	27	100	44	--	--	--
19...	0830	1990	1430	8.0	26.5	--	--	--	--	385	224	--
26...	0830	2120	1410	7.9	--	--	--	--	--	385	228	--
28...	0830	2260	--	--	--	--	--	87	--	--	--	--
JUL												
03...	0820	2680	1400	7.9	27.0	--	--	--	--	380	224	--
05...	0830	2660	--	--	--	--	--	77	--	--	--	--
10...	0800	2900	1400	7.9	28.0	6.6	14	--	--	380	224	--
11...	0835	--	--	--	--	--	--	55	26	--	--	--
17...	0830	2930	1380	7.9	--	--	--	36	--	375	224	--
24...	0830	2940	1350	8.0	29.0	--	12	--	--	375	226	--
25...	0820	2940	--	--	29.5	--	--	47	--	--	--	--
31...	0830	3020	1360	7.9	--	--	--	--	--	380	231	--
AUG												
02...	0830	3180	--	--	--	--	--	39	--	--	--	--
07...	0830	3300	1360	7.9	--	--	--	--	--	380	229	--
08...	0830	3190	1380	7.9	29.0	6.2	24	100	53	--	--	86
14...	0830	2930	1400	7.9	--	--	--	--	--	380	228	--
16...	0830	2880	--	--	--	--	--	83	--	--	--	--
21...	0830	2640	1490	8.0	--	--	--	--	--	395	236	--
24...	0830	2170	--	--	--	--	--	55	--	--	--	--
28...	0820	1980	1510	8.0	25.5	--	11	--	--	395	232	--
30...	0920	1880	--	--	27.0	--	--	100	--	--	--	--
SEP												
05...	0900	1560	1480	8.0	28.0	--	--	--	--	390	230	--
06...	0830	1560	--	--	--	--	--	340	--	--	--	--
11...	0840	1390	1490	7.9	25.5	--	--	--	--	395	231	--
12...	0830	1400	1480	7.8	26.0	7.0	14	220	280	--	--	--
18...	0840	1380	1520	7.9	--	--	--	--	--	400	236	--
19...	0855	1360	--	--	24.5	--	--	170	--	--	--	--
25...	0840	1390	1510	8.0	25.5	--	7	--	--	395	231	--
28...	0830	1430	--	--	--	--	--	K3000	--	--	--	--

[illegible]

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ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L SIU2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, RESIDUE AT 105 DEG. C, DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FI)	NITROGEN, NITRATE DIS- SOLVED (MG/L AS N)	NITROGEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT									
03...	232	.6	14	1160	--	1150	1.58	--	.45
04...	--	--	--	--	--	--	--	.42	--
11...	220	.5	14	1120	--	1110	1.52	--	.41
17...	228	.5	14	1130	--	1130	1.54	--	.41
18...	--	--	--	--	--	--	--	.35	--
25...	208	.6	12	1080	--	1080	1.47	--	.38
31...	208	.5	12	1090	--	1080	1.48	--	.36
NOV									
07...	212	.6	12	1100	--	1090	1.50	--	.27
08...	--	--	--	--	1100	--	--	.35	--
14...	215	.6	13	1100	--	1100	1.50	--	.27
21...	210	.5	13	1080	--	1080	1.47	.26	.25
28...	205	.5	12	1080	--	1070	1.47	--	.27
DEC									
05...	185	.6	11	1010	--	994	1.37	--	.23
06...	--	--	--	--	--	--	--	.22	--
12...	175	.5	10	966	--	955	1.31	--	.23
19...	178	.5	11	972	--	966	1.32	.25	.20
27...	205	.5	12	1090	--	1070	1.48	--	.25
JAN									
03...	195	.5	11	1050	--	1040	1.43	--	.23
09...	208	.5	11	1090	--	1080	1.48	--	.20
10...	--	--	--	--	--	--	--	.30	--
16...	182	.5	10	1010	--	1000	1.37	--	.20
23...	190	.5	11	1030	--	1020	1.40	--	.18
24...	--	--	--	--	--	--	--	.17	--
30...	210	.6	11	1100	--	1090	1.50	--	.20
FEB									
06...	195	.6	11	1050	--	1040	1.43	--	.27
07...	--	--	--	--	--	--	--	.31	--
13...	192	.5	11	1020	--	1010	1.39	--	.23
21...	168	.5	11	910	--	910	1.24	.25	.23
27...	175	.5	12	936	--	930	1.27	--	.20
MAR									
06...	175	.6	11	954	--	952	1.30	--	.29
07...	--	--	--	--	--	--	--	.24	--
13...	170	.5	11	924	--	921	1.26	--	.36
20...	150	.4	10	870	--	868	1.18	--	.27
21...	--	--	--	--	--	--	--	.17	--
27...	138	.5	9.5	836	--	834	1.14	--	.20
APR									
03...	142	.5	8.8	852	--	850	1.16	--	.11
10...	140	.5	11	850	--	848	1.16	--	.14
11...	--	--	--	--	--	--	--	.11	--
17...	142	.4	8.0	854	--	844	1.16	--	.11
24...	142	.5	9.5	856	--	853	1.17	--	.11
25...	--	--	--	--	--	--	--	.17	--
MAY									
01...	155	.6	10	896	--	897	1.22	--	.20
08...	172	.5	11	954	--	952	1.30	--	.18
09...	--	--	--	--	940	--	--	.16	--
15...	182	.5	10	992	--	989	1.35	--	.18
22...	170	.6	11	946	--	940	1.29	--	.27
23...	--	--	--	--	--	--	--	.18	--
30...	180	.6	10	990	--	985	1.35	--	.20
JUN									
05...	182	.6	11	984	--	986	1.34	--	.16
12...	175	.5	11	970	--	967	1.32	--	.16
13...	--	--	--	--	--	--	--	.27	--
19...	152	.5	9.5	902	--	903	1.23	--	.11
26...	148	.6	9.0	892	--	891	1.21	--	.11
JUL									
03...	148	.5	9.2	886	--	884	1.20	--	.14
10...	148	.5	9.5	884	--	884	1.20	.12	.11
17...	145	.6	8.5	870	--	864	1.18	--	.14
24...	138	.4	9.0	854	--	852	1.16	.14	.16
31...	142	.6	9.8	860	--	858	1.17	--	.11
AUG									
07...	142	.5	10	862	--	860	1.17	--	.14
08...	--	--	--	--	--	--	--	.11	--
14...	150	.5	9.8	880	--	883	1.20	--	.14
21...	168	.5	10	944	--	941	1.28	--	.16
28...	170	.5	11	960	--	957	1.31	.14	.14
SEP									
05...	164	.5	10	938	--	936	1.28	--	.20
11...	165	.5	10	946	--	941	1.29	--	.11
12...	--	--	--	--	--	--	--	.22	.25
18...	172	.5	11	964	--	961	1.31	--	.20
25...	168	.5	11	958	--	955	1.30	.25	.27

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WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, URICAC, DIS- SOLVED (MG/L AS P)
OCT									
03...	--	--	--	--	--	--	--	--	--
04...	.01	.01	.51	.05	.24	.72	.13	--	.10
11...	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
18...	.01	--	--	.05	.52	.91	.11	--	--
25...	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--
NOV									
07...	--	--	--	--	--	--	--	--	--
08...	.01	.01	.55	.25	.09	.68	.13	.10	.07
14...	--	--	--	--	--	--	--	--	--
21...	.01	--	--	.21	.26	.74	.08	--	--
28...	--	--	--	--	--	--	--	--	--
DEC									
05...	--	--	--	--	--	--	--	--	--
06...	.01	.00	.24	.13	.19	.55	.01	--	.01
12...	--	--	--	--	--	--	--	--	--
19...	.02	--	--	.20	.49	.96	.04	--	--
27...	--	--	--	--	--	--	--	--	--
JAN									
03...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
10...	--	.00	--	--	.60	1.2	--	--	--
16...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
24...	.01	--	--	.14	.20	.52	.09	--	--
30...	--	--	--	--	--	--	--	--	--
FEB									
06...	--	--	--	--	--	--	--	--	--
07...	.01	.01	.51	.18	.56	.86	.11	.09	.07
13...	--	--	--	--	--	--	--	--	--
21...	.01	--	--	.20	.29	.75	.10	--	--
27...	--	--	--	--	--	--	--	--	--
MAR									
06...	--	--	--	--	--	--	--	--	--
07...	.01	.01	.53	.22	.56	1.0	.08	--	.01
13...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
21...	.01	--	--	.09	.75	1.0	.12	--	--
27...	--	--	--	--	--	--	--	--	--
APR									
03...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
11...	.01	.01	.20	.09	.78	.99	.07	--	.02
17...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
25...	.01	--	--	.01	.52	.71	.06	--	--
MAY									
01...	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--
09...	.01	.01	.25	.15	.45	.77	.11	.05	.06
15...	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--
23...	.02	--	--	.10	.55	.85	.07	--	--
30...	--	--	--	--	--	--	--	--	--
JUN									
05...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
13...	.02	.01	.21	.18	.52	.99	.06	--	.04
19...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
JUL									
03...	--	--	--	--	--	--	--	--	--
10...	.01	.01	.15	.05	.49	.65	.04	--	.01
17...	--	--	--	--	--	--	--	--	--
24...	.01	.01	.18	.00	.52	.67	.04	--	.01
31...	--	--	--	--	--	--	--	--	--
AUG									
07...	--	--	--	--	--	--	--	--	--
08...	.01	.01	.14	.05	.50	.45	.03	.01	.03
14...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
28...	.01	.01	.22	.09	.23	.47	.07	--	.03
SEP									
05...	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--
12...	.03	.03	.28	.10	.43	.78	.09	--	.04
18...	--	--	--	--	--	--	--	--	--
25...	.02	.05	.28	.08	.67	1.2	.06	--	.04

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)
OCT								
04...	--	--	--	--	--	--	--	530
18...	--	--	--	--	--	--	--	370
NOV								
08...	3	4	4	0	0	4	2	1300
21...	--	--	--	--	--	--	--	300
DEC								
06...	--	--	--	--	--	--	--	430
19...	--	--	--	--	--	--	--	410
JAN								
24...	--	--	--	--	--	--	--	410
FEB								
07...	2	0	0	0	0	3	2	430
21...	--	--	--	--	--	--	--	1100
MAR								
07...	--	--	--	--	--	--	--	370
21...	--	--	--	--	--	--	--	540
APR								
11...	--	--	--	--	--	--	--	510
25...	--	--	--	--	--	--	--	310
MAY								
09...	2	0	0	2	1	10	0	540
23...	--	--	--	--	--	--	--	660
JUN								
13...	--	--	--	--	--	--	--	350
JUL								
10...	--	--	--	--	--	--	--	550
24...	--	--	--	--	--	--	--	470
AUG								
08...	<1	0	0	2	<1	5	1	570
28...	--	--	--	--	--	--	--	270
SEP								
12...	--	--	--	--	--	--	--	550
25...	--	--	--	--	--	--	--	490

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV								
08...	0830	<12	<.4	6.2	5.8	.9	.09	3.6
MAY								
09...	0830	<12	.9	11	9.7	1.1	.14	--

< Actual value is known to be less than value shown.

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ATRA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDO, TOTAL (UG/L)	DDO, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 04...	0820	.0	--	.00	--	--	.0	--	.00	--	.00	--
NOV 08...	0835	ND	--	ND	--	ND	ND	--	ND	--	ND	--
FEB 07...	0840	.0	--	.00	--	--	.0	--	.00	--	.00	--
07...	0850	ND	--	ND	--	ND	ND	--	ND	--	ND	--
MAR 07...	0830	.0	--	.00	--	--	.0	--	.00	--	.00	--
APR 11...	0830	.0	--	.00	--	--	.0	--	.00	--	.00	--
MAY 09...	0830	.0	--	.00	--	--	.0	--	.00	--	.00	--
09...	0835	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUL 11...	0835	.0	--	.00	--	--	.0	--	.00	--	.00	--
AUG 08...	0830	.0	--	.00	--	--	.0	--	.00	--	.00	--
08...	0835	ND	--	ND	--	ND	ND	--	ND	--	ND	--
SEP 12...	0830	.0	--	.00	--	--	.0	--	.00	--	.00	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- AZINON, TOTAL (UG/L)	DI- AZINON, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL (UG/L)
OCT 04...	.00	--	.00	--	.00	--	.00	--	.00	--	.00
NOV 08...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB 07...	.00	--	.01	--	.00	--	.00	--	.00	--	.00
07...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAR 07...	.00	--	.01	--	.00	--	.00	--	.00	--	.00
APR 11...	.00	--	.00	--	.00	--	.00	--	.00	--	.00
MAY 09...	.00	--	.00	--	.00	--	.00	--	.00	--	.00
09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUL 11...	.00	--	.00	--	.00	--	.00	--	.00	--	.00
AUG 08...	.00	--	.00	--	.00	--	.00	--	.00	--	.00
08...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP 12...	.00	--	.00	--	.00	--	.00	--	.00	--	.00

ND Material specifically analyzed for but not detected.

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	MALA- THION, IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL PARA- THION, TOT. IN BOTTOM MATL. (UG/KG)
OCT 04...	--	.00	--	.00	--	.00	--	--	--	.00	--
NOV 08...	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB 07...	--	.00	--	.00	--	.00	--	--	--	.00	--
07...	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAR 07...	--	.00	--	.00	--	.00	--	--	--	.00	--
APR 11...	--	.00	--	.00	--	.00	--	--	--	.00	--
MAY 09...	--	.00	--	.00	--	.00	--	--	--	.00	--
09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUL 11...	--	.00	--	.00	--	.00	--	--	--	.00	--
AUG 08...	--	.00	--	.00	--	.00	--	--	--	.00	--
08...	--	ND	--	ND	--	ND	--	ND	--	ND	--
SEP 12...	--	.00	--	.00	--	.00	--	--	--	.00	--

DATE	METHYL TRI- THION, TOTAL (UG/L)	METHYL TRI- THION, TOT. IN BOTTOM MATL. (UG/KG)	PARA- THION, TOTAL (UG/L)	PARA- THION, IN BOT- TOM MA- TERIAL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOX- APHENE, IN BOT- TOM MA- TERIAL (UG/KG)	TRI- THION, TOTAL (UG/L)	TRI- THION, IN BOT- TOM MA- TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
OCT 04...	.00	--	.00	--	0	--	.00	--	.15	.00	.00
NOV 08...	ND	--	ND	--	ND	--	ND	--	ND	ND	ND
FEB 07...	.00	--	.00	--	0	--	.00	--	.01	.00	.00
07...	ND	--	ND	--	ND	--	ND	--	ND	ND	ND
MAR 07...	.00	--	.00	--	0	--	.00	--	.00	.00	.00
APR 11...	.00	--	.00	--	0	--	.00	--	.00	.00	.00
MAY 09...	.00	--	.00	--	0	--	.00	--	.00	.00	.00
09...	ND	ND	ND	ND	ND	ND	ND	ND	--	--	--
JUL 11...	.00	--	.00	--	0	--	.00	--	.00	.00	.00
AUG 08...	.00	--	.00	--	0	--	.00	--	--	--	--
08...	ND	--	ND	--	ND	--	ND	--	--	--	--
SEP 12...	.00	--	.00	--	0	--	.00	--	.00	.00	.00

DATE	TIME	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLORO- PHYLL A PHYTO- PLANK- TON, UNCORR. (UG/L)	CHLORO- PHYLL B PHYTO- PLANK- TON, UNCORR. (UG/L)
NOV 08...	0830	2400	9.53	7.64	--	--
FEB 07...	0840	5200	--	--	4.97	.957
MAY 09...	0830	5300	32.3	29.3	10.5	3.10
JUN 13...	0830	980	--	--	.000	.000
JUL 11...	0835	4200	--	--	--	--
AUG 08...	0830	2100	60.0	54.9	.000	.000
SEP 12...	0830	3900	--	--	.000	.000

ND Material specifically analyzed for but not detected.

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--ContinuedSPECIFIC CONDUCTANCE (MICROMHSCM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1750	1710	1680	1600	1670	1600	1340	1420	1550	1420	1370	1580
2	1800	1730	1650	1500	1510	1330	1350	1440	1570	1430	1360	1560
3	1820	1730	1650	1650	1650	1270	1350	1470	1570	1400	1370	1570
4	1770	1690	1560	1740	1610	1410	1340	1450	1580	1390	1360	1530
5	1790	1670	1570	1730	1630	1450	1350	1460	1560	1390	1360	1460
6	1780	1680	1520	1600	1640	1500	1310	1460	1550	1390	1370	1450
7	1770	1720	1490	1670	1680	1540	1340	1460	1520	1370	1360	1470
8	1780	1720	1470	1720	1690	1540	1330	1510	1510	1410	1370	1470
9	1760	1730	1470	1710	1740	1540	1370	1490	1490	1400	1360	1470
10	1750	1770	1470	1720	1660	1520	1340	1460	1560	1400	1370	1470
11	1750	1760	1490	1570	1630	1500	1330	1460	1550	1360	1350	1490
12	1740	1730	1510	1650	1620	1490	1330	1490	1530	1360	1360	1460
13	1760	1750	1490	1600	1600	1460	1320	1560	1520	1360	1380	1470
14	1780	1730	1490	1600	1570	1440	1330	1540	1470	1360	1400	1470
15	1780	1740	1490	1540	1520	1430	1350	1560	1450	1380	1390	1450
16	1780	1700	1500	1500	1490	1420	1390	1540	1470	1400	1400	1490
17	1790	1680	1480	1570	1540	1370	1350	1510	1460	1380	1400	1480
18	1840	1670	1480	1600	1470	1390	1350	1480	1480	1380	1410	1520
19	1770	1660	1530	1600	1510	1400	1360	1470	1430	1370	1450	1500
20	1760	1650	1500	1620	1520	1370	1360	1480	1430	1370	1450	1480
21	1770	1710	1490	1610	1440	1360	1350	1490	1400	1370	1490	1510
22	1710	1730	1490	1610	1460	1360	1350	1490	1400	1370	1470	1500
23	1720	1710	1490	1620	1470	1370	1370	1510	1370	1380	1450	1530
24	1690	1670	1520	1620	1470	1360	1350	1530	1410	1350	1460	1530
25	1700	1660	1580	1720	1490	1360	1370	1520	1450	1370	1490	1510
26	1660	1670	1610	1720	1490	1360	1400	1530	1410	1360	1510	1470
27	1640	1640	1690	1760	1470	1320	1420	1560	1390	1370	1530	1430
28	1670	1630	1620	1730	1460	1330	1460	1550	1360	1360	1510	1430
29	1680	1630	1400	1740	---	1330	1470	1580	1390	1390	1500	1420
30	1700	1700	1490	1720	---	1320	1430	1530	1400	1420	1490	1420
31	1700	---	1520	1770	---	1320	---	1540	---	1360	1500	---
MEAN	1750	1710	1530	1660	1560	1410	1360	1500	1470	1380	1420	1490
WTR YR 1978	MEAN	1520	MAX	1840	MIN	1270						

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 8, 77 0830	FEB 7, 78 0840	MAY 9, 78 0830	JUN 13, 78 0830
TOTAL CELLS/ML	2400	5200	5300	980
DIVERSITY: DIVISION	1.8	0.3	1.4	1.5
..CLASS	1.8	0.3	1.4	1.5
..ORDER	2.5	0.4	2.0	1.9
...FAMILY	3.2	0.5	2.2	2.3
....GENUS	3.5	0.9	2.2	2.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...COELASTRACEAE								
...COELASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
...GOLENKINIA	--	-	45	1	--	-	--	-
...DUCYSTACEAE								
...ANKISTRODESMUS	72	3	--	-	--	-	15	1
...CHODATELLA	--	-	--	-	--	-	--	-
...DICTYOSPHAERIUM	*	0	--	-	--	-	--	-
...FRANCEIA	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	24	1	--	-	--	-	--	-
...UDCYSTIS	95	4	--	-	--	-	--	-
...SELENASTRUM	--	-	--	-	--	-	180#	18
...SCENEDESMACEAE								
...ACTINASTRUM	--	-	--	-	--	-	--	-
...SCENEDESMUS	170	7	45	1	880#	17	--	-
...TETRASPORALES								
...PALMELLACEAE								
...GLOEUCYSTIS	--	-	--	-	--	-	--	-
...VOLVUCALES								
...CHLAMYDOMONADACEAE								
...CARTERIA	--	-	--	-	--	-	--	-
...CHLAMYDOMONAS	72	3	90	2	--	-	--	-
...ZYGNEMATALES								
...DESMIDIACEAE								
...COSMARIUM	--	-	--	-	--	-	--	-
...STAUSTRUM	--	-	--	-	34	1	--	-
CHRYSTOPHYTA								
..BACILLARIOPHYCEAE								
..PENNALES								
...NAVICULACEAE								
...ENTOMONEIS	--	-	--	-	--	-	--	-
..CENTRALES								
...CUSCINODISCACEAE								
...CYCLOTILLA	160	6	4300#	83	2200#	42	120	12
...MELOSTIRA	520#	22	540	10	--	-	15	1
...STEPHANODISCUS	--	-	--	-	34	1	--	-
..PENNALES								
...ACHNANTHACEAE								
...ACHNANTHES	--	-	--	-	--	-	--	-
...COCCONEIS	--	-	--	-	--	-	15	1
...CYMBELLACEAE								
...AMPHURA	*	0	--	-	--	-	--	-
...CYMBELLA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
...DIATOMA	24	1	--	-	--	-	--	-
...FRAGILARIACEAE								
...SYNEDRA	120	5	--	-	440	8	29	3
...GUMPHONEMACEAE								
...GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
...DIPLONETS	--	-	--	-	--	-	15	1
...NAVICULA	110	4	--	-	270	5	59	6
...PINNULARIA	--	-	--	-	--	-	--	-
...NITZSCHIA								
...NITZSCHIA	110	4	90	2	100	2	160#	16
..CHRYSTOPHYCEAE								
...CHRYSDOMONADALES								
...OCHROMONADACEAE								
...UCHROMUNAS	--	-	--	-	--	-	--	-
..XANTHOPHYCEAE								
...HETEROCOCCALES								
...CHLOROTHECIACEAE								
...UPHUCYTUM	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDALES								
...CRYPTUCHRYSIDACEAE								
...CHROMUNAS	--	-	--	-	34	1	--	-
...CRYPTOMONODACEAE								
...CRYPTOMONAS	24	1	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - UNSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	NOV 8, 77 0830	FEB 7, 78 0840	MAY 9, 78 0830	JUN 13, 78 0830				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCCOCCALES								
....CHRUCCOCCAEAE								
....ANACYSTIS	130	5	--	-	--	-	--	-
...HORMUGUNALES								
...NOSTOCACEAE								
....ANABAENA	140	6	--	-	--	-	--	-
...OSCILLATORIACEAE								
....USCILLATORIA	520#	22	--	-	1300#	24	380#	39
EUGLENOPHYTA (EUGLENOIDS)								
..EUGLENOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
....EUGLENA	72	3	--	-	--	-	--	-
....PHACUS	*	0	--	-	--	-	--	-
....TRACHELOMONAS	24	1	45	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON						
DATE TIME	JUL 11,78 0835	AUG 8,78 0830	SEP 12,78 0830			
TOTAL CELLS/ML	4200	2100	3900			
DIVERSITY: DIVISION	1.2	1.6	1.0			
..CLASS	1.2	1.6	1.2			
..ORDER	1.9	2.1	2.1			
..FAMILY	2.3	3.1	2.7			
...GENUS	2.3	3.3	3.0			
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...COELASTRACEAE						
....COELASTRUM	270	6	180	9	--	-
...MICRACETINACEAE						
....GULENKINIA	--	-	44	2	--	-
...UOCYSTACEAE						
....ANKISTRODESUS	--	-	22	1	29	1
...CHODATELLA	22	1	44	2	29	1
...DICTYOSPHAERIUM	--	-	--	-	120	3
...FRANCEIA	--	-	--	-	59	2
...KIRCHNERIELLA	22	1	--	-	--	-
...OOCYSTIS	--	-	--	-	--	-
...SELENASTRUM	--	-	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	180	9	--	-
...SCENEDESMUS	490	12	89	4	590#	15
...TETRASTRALES						
...PALMELLACEAE						
...GLOEOCYSTIS	--	-	--	-	120	3
...VULVOCALES						
...CHLAMYDOMONADACEAE						
...CARTERIA	--	-	44	2	29	1
...CHLAMYDOMONAS	--	-	44	2	29	1
...ZYGEMATALES						
...UESMIDIACEAE						
...CUSMARIUM	22	1	--	-	--	-
...STAUSTRUM	--	-	--	-	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...PENNALES						
...NAVICULACEAE						
...ENTOMONEIS	--	-	--	-	88	2
...CENTRALES						
...COSCIUDISCACEAE						
...CYCLOTELLA	44	1	130	6	1700#	42
...MELUSIRA	--	-	--	-	--	-
...STEPHANODISCUS	--	-	--	-	--	-
...PENNALES						
...ACHNANTHACEAE						
...ACHNANTHES	--	-	--	-	88	2
...COCCONEIS	22	1	44	2	29	1
...CYMBELLACEAE						
...AMPHORA	--	-	44	2	59	2
...CYMBELLA	22	1	--	-	--	-
...DIATOMACEAE						
...DIATOMA	--	-	22	1	--	-
...FRAGILARIACEAE						
...SYNEDRA	--	-	--	-	29	1
...GOMPHONEMACEAE						
...GOMPHONEMA	--	-	22	1	--	-
...NAVICULACEAE						
...DIPLONEIS	--	-	--	-	--	-
...NAVICULA	130	3	130	6	350	9
...PINNULARIA	--	-	22	1	--	-
...NITZSCHIA	220	5	220	11	350	9
...NITZSCHIA						
..CHRYSOPHYCEAE						
...CHRYSUMONADACEAE						
...UCHROMONADACEAE						
...UCHROMONAS	--	-	--	-	88	2
...XANTHOPHYCEAE						
...METEROCOCCACEAE						
...CHLOROTHECIACEAE						
...OPHIOTYLIUM	--	-	--	-	29	1
CRYPTOPHYTA (CRYPTOMONADS)						
..CRYPTOPHYCEAE						
...CRYPTOMONIDACEAE						
...CRYPTOCHRYSIACEAE						
...CHROMONAS	--	-	--	-	--	-
...CRYPTOMONODACEAE						
...CRYPTOMONAS	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JUL 11,78 0835		AUG 8,78 0830		SEP 12,78 0830	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHRUCCOCCALES						
...CHROCCUCCAEAE						
....ANACYSTIS	930#	22	44	2	--	-
..HURMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...USCILLATORIACEAE						
....OSCILLATORIA	2000#	47	730#	35	150	4
EUGLENOPHYTA (EUGLENOIDS)						
..EUGLENOPHYCEAE						
...EUGLENALES						
....EUGLENACEAE						
.....EUGLENA	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-
....TRACHELUMUNAS	44	1	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

COLORADO RIVER MAIN STEM

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ

LOCATION.--Lat 32°29'48", long 114°48'48", in Mexico, on right bank about 1,000 ft (300 m) upstream from southerly international boundary, 2 mi (3 km) west of San Luis, Ariz., and 21.9 mi (35.2 km), downstream from Morelos Dam.

DRAINAGE AREA.--246,700 mi² (639,000 km²), approximately, including all closed basins entirely within the drainage boundary, also 3,959 mi² (10,254 km²) in Great Divide basin in southern Wyoming (previously considered part of the Missouri River basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1950 to current year. Prior to October 1960, monthly discharge only published in WSP 1733.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to June 24, 1954, at site 1,100 ft (340 m) downstream at same datum. August 1956 to September 1966, supplementary water-stage recorders at various sites within 6 mi (10 km) upstream used to compute discharge during periods of backwater from diversion dike downstream.

REMARKS.--This record shows water passing southerly international boundary. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for municipal use and irrigation, and return flow from irrigated areas.

COOPERATION.--Records furnished by International Boundary and Water Commission, U.S. Section (discharge figures rounded in accordance with Geological Survey standard practice).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,610 ft³/s (810 m³/s) Dec. 18, 1952; maximum elevation, 84.84 ft (25.859 m) Nov. 29, 1957; no flow at times 1956-58, 1964-69, 1971-72, 1975, 1977-78.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,010 ft³/s (56.9 m³/s) Mar. 3, elevation, 80.10 ft (24.414 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	850	439	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	766	460	512	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	679	362	1750	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	683	76	1370	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	594	48	195	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	719	57	87	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	677	173	61	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	431	198	40	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	246	196	25	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	222	68	15	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	419	22	9.3	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	1060	14	6.5	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	1330	9.0	3.6	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	1350	95	.40	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	1300	110	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	1210	16	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	1200	5.8	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	1150	1.8	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	1150	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	1110	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	937	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	896	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	832	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	790	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	676	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	380	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	34	242	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	242	72	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	732	50	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	1290	41	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	887	313	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	3185.00	22355	2350.60	4074.60	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	103	721	84.0	131	.000	.000	.000	.000	.000	.000
MAX	.00	.00	1290	1350	460	1750	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	41	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	6320	44340	4660	8080	.00	.00	.00	.00	.00	.00

WTR YR 1978 TOTAL 31965.20 MEAN 87.6 MAX 1750 MIN .00 AC-FT 63400

WATER-QUALITY RECORDS

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1962-68 available from district office in Tucson, Ariz. No flow for many days of most months.

[illegible][illegible]

Diversions at and below Imperial Dam, AZ-CA

Diversions for irrigation in the Gila Project in Arizona are made at Imperial Dam by the Gila Gravity Main Canal. Diversions for irrigation in the Yuma Project in Arizona and California are made at Imperial Dam by the All-American Canal. Between Imperial Dam and the international boundary secondary diversions from these principal canals are made to divisions of the Gila and Yuma Projects.

Return surface flows from irrigated areas enter the Colorado and Gila Rivers through many drains and wasteways in Arizona and California, or are delivered across the international boundary into Mexico. See p. 504 for records of return surface flows below Imperial Dam.

See figure 6 on p. 474 for a schematic diagram showing location of diversions and return flows.

09522500. GILA GRAVITY MAIN CANAL AT IMPERIAL DAM.--See daily table elsewhere in this report.

09522600. NORTH GILA MAIN CANAL.

LOCATION.--Water-stage recorder and sharp-crested weir in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.23, T.7 S., R.22 W., Hydrologic Unit 15030107, about 700 ft (200 m) downstream from turnout from Gila Gravity Main Canal and 1.2 mi (1.9 km) south of Laguna Dam.

PERIOD OF RECORD.--Monthly discharge October 1965 to current year.

REMARKS.--Record shows water available for irrigation of 5,956 acres (24.1 km²) in 1977, in North Gila Valley.

09522650. NORTH GILA MAIN CANAL NO. 2.

LOCATION.--Water-stage recorder in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.11, T.8 S., R.22 W., Hydrologic Unit 15070201, at turnout from Gila Gravity Main Canal and 3.5 mi (5.6 km) downstream from turnout to North Gila Main Canal.

PERIOD OF RECORD.--Monthly discharge June 1969 to current year.

REMARKS.--Record shows water available for irrigation of land in North Gila Valley. Diversion began June 11, 1969.

09522700. WELLTON-MOHAWK CANAL.

LOCATION.--Two water-stage recorders, one above and one below gates, to record head on gates and recorders on both gates to record gate openings since June 1, 1974, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.17, T.8 S., R.21 W., Hydrologic Unit 15070201, at turnout from Gila Gravity Main Canal.

PERIOD OF RECORD.--Monthly discharge October 1965 to current year.

REMARKS.--Record shows water available for irrigation of 60,622 acres (245 km²) in 1977, in the Dome, Wellton, and Mohawk areas of the lower Gila Valley.

COOPERATION.--Supplementary record of gate openings furnished by Bureau of Reclamation.

09522800. SOUTH GILA MAIN CANAL.

LOCATION.--Vane meter and water-stage recorder in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.36, T.8 S., R.22 W., Hydrologic Unit 15070201, about 200 ft (61 m) downstream from turnout from Gila Gravity Main Canal. Also, Sparling flowmeter 150 ft (46 m) upstream.

PERIOD OF RECORD.--Monthly discharge October 1965 to current year.

REMARKS.--Record shows water available for irrigation of a portion of the 9,858 acres (39.9 km²) in 1977, in South Gila Valley; additional diversions are made from Gila Gravity Main Canal to supply other portions of this same acreage.

COOPERATION.--Records furnished by Bureau of Reclamation prior to June 4, 1974.

09522850. GILA GRAVITY MAIN CANAL AT PUMPING PLANT.

LOCATION.--Intake consisting of 4 pumps in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.1, T.9 S., R.22 W., Hydrologic Unit 15070201, at end of Gila Gravity Main Canal and head of Yuma Mesa canals.

PERIOD OF RECORD.--Monthly discharge October 1965 to current year.

REMARKS.--Record shows water available for irrigation of 21,098 acres (85.4 km²) in 1977, of which 17,797 acres (72.0 km²) is on Yuma Mesa and remainder in Yuma Auxiliary Division of Yuma Valley listed under sta 09522900 below. Flow measured by rated pumps.

COOPERATION.--Records furnished by Bureau of Reclamation and Yuma Mesa Irrigation and Drainage District.

09522900. UNIT B MAIN CANAL.

LOCATION.--Two Sparling flowmeters in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.9 S., R.23 W., Hydrologic Unit 15030108, 5 mi (8 km) northeast of Somerton.

PERIOD OF RECORD.--Monthly discharge October 1965 to current year.

REMARKS.--Record shows water available for irrigation of 3,301 acres (13.4 km²) in 1977, in Yuma Auxiliary Division of the Yuma Project. Sparling meters checked by occasional discharge measurements.

COOPERATION.--Records furnished by Bureau of Reclamation and Unit B Irrigation and Drainage District.

09523000. ALL-AMERICAN CANAL NEAR IMPERIAL DAM.--See daily table elsewhere in this report.

Diversions at and below Imperial Dam, AZ-CA--Continued

09523200. RESERVATION MAIN CANAL.

LOCATION.--Water-stage recorder and, since Sept. 5, 1975, gate-opening recorder, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.35, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, at turnout from All-American Canal and 5.8 mi (9.3 km) downstream from Imperial Dam.

PERIOD OF RECORD.--Monthly discharge August 1950 to current year. Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record computed from rated gate on turnout from All-American Canal and shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

COOPERATION.--Record of gate openings furnished by Bureau of Reclamation; these are used for comparison to recorder and for determining missing record on gate recorder.

09523400. TITSINK CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.27, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 0.6 mi (1.0 km) downstream from turnout from All-American Canal and 7.2 mi (11.6 km) downstream from Imperial Dam.

PERIOD OF RECORD.--Monthly discharge August 1950 to current year. Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523600. YAQUI CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.31, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 700 ft (200 m) downstream from turnout from All-American Canal and 11.1 mi (17.9 km) downstream from Imperial Dam.

PERIOD OF RECORD.--Monthly discharge June 1950 to current year. Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523800. PONTIAC CANAL.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian 500 ft (150 m) downstream from turnout from All-American Canal and 13.1 mi (21.1 km) downstream from Imperial Dam.

PERIOD OF RECORD.--Monthly discharge August 1950 to current year. Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 09524000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09523900. WALAPAI CANAL.

LOCATION.--Water-stage recorder and sharp-crested weir in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 100 ft (30 m) downstream from siphon-drop powerplant forebay and 4 mi (6 km) north of Yuma.

PERIOD OF RECORD.--Monthly discharge October 1946 to current year. Prior to October 1965 included in total diversions from All-American Canal and Yuma Main Canal above siphon-drop powerplant and published as part of sta 0924000.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California.

09524000. YUMA MAIN CANAL AT SIPHON-DROP POWERPLANT.--See daily table elsewhere in this report.

09524500. DIVERSIONS FROM YUMA MAIN CANAL BETWEEN SIPHON-DROP POWERPLANT AND YUMA MAIN CANAL WASTEWAY.

LOCATION.--Turnouts for several canals diverting from Yuma Main Canal between siphon-drop powerplant, 4 mi (6 km) north of Yuma, and Yuma Main Canal wasteway, 1,600 ft (500 m) upstream from Colorado River siphon.

PERIOD OF RECORD.--Monthly discharge October 1940 to current year. Prior to October 1947 published in WSP 1313. October 1947 to September 1965 published as supplemental table with records for Yuma Main Canal at siphon-drop powerplant.

REMARKS.--Record shows water available for irrigation in parts of Reservation Division of Yuma Project in California. Records estimated on basis of discharge measurements by Clausen-Pierce weir rule and occasional current-meter measurements.

COOPERATION.--Record furnished by Bureau of Reclamation.

09525500. YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON.--See daily table elsewhere in this report.

09526000. DIVERSION FROM YUMA MAIN CANAL FOR MUNICIPAL SUPPLY FOR YUMA.

LOCATION.--Sparling flowmeters, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.35, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, on pipeline about 1,000 ft (300 m) downstream from intake, which is at outlet of Colorado River siphon of Yuma Main Canal, on Arizona side of Colorado River at Yuma.

PERIOD OF RECORD.--Monthly discharge June 1945 to current year. Prior to October 1973 published as a supplemental table with records for Yuma Main Canal below Colorado River siphon.

REMARKS.--Record shows water for Yuma municipal supply; prior to 1962 was supplement only to total Yuma municipal supply. Figures shown in table herewith are also included in record for Yuma Main Canal below Colorado River siphon (sta 09525500). Capacity of pump used prior to August 1960 was about 12 ft³/s (0.34 m³/s); combined capacity of three pumps used August 1960 to January 1975 is about 25 ft³/s (0.71 m³/s); combined capacity of four pumps used since February 1975 is about 38 ft³/s (1.10 m³/s). Two emergency pumps with combined capacity of about 27 ft³/s (0.76 m³/s) can pump directly from the Colorado River. Emergency pumps last used Oct. 25, 1975. Relocated October 1977.

COOPERATION.--Records furnished by Yuma County Water Users' Association (prior to April 1955, by Arizona Public Service Co., and April 1955 to September 1965, by Arizona Water Co.).

09527500. ALL-AMERICAN CANAL BELOW PILOT KNOB WASTEWAY.--See daily table elsewhere in this report.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Diversions at and below Imperial Dam, AZ-CA--Continued

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	North Gila Main Canal 09522600	North Gila Main Canal No. 2 09522650	Wellton-Mohawk Canal 09522700	South Gila Main Canal 09522800	Gila Gravity Main Canal at pumping plant 09522850
October	2,330	332	24,530	1,950	17,260
November	2,460	398	23,730	2,210	14,420
December	2,150	267	15,160	1,150	9,000
CAL YR 1977	42,570	5,680	424,800	34,530	233,100
January	509	123	5,910	511	1,460
February	3,330	433	21,630	2,810	9,120
March	3,740	634	36,490	3,160	13,940
April	4,680	633	46,030	3,720	18,100
May	4,110	699	47,260	3,400	27,610
June	3,670	889	58,510	3,080	31,040
July	3,940	949	57,940	3,790	32,470
August	4,170	896	52,640	3,870	32,530
September	4,030	475	42,240	2,820	24,350
WTR YR 1978	39,130	6,730	432,100	32,470	231,300

Month	Unit B Main Canal 09522900	Reservation Main Canal 09523200	Titsink Canal 09523400	Yaqui Canal 09523600	Pontiac Canal 09523800
October	2,670	2,550	0	444	224
November	2,500	2,170	0	344	533
December	1,400	1,740	17	345	164
CAL YR 1977	34,500	47,170	203	8,500	6,160
January	114	480	0.1	66	99
February	1,600	3,110	20	288	418
March	2,010	5,140	48	968	633
April	3,000	3,670	24	716	934
May	4,120	5,230	0	1,050	653
June	4,620	8,220	0	1,440	823
July	4,780	8,390	23	1,300	974
August	5,120	5,060	52	902	645
September	3,340	2,650	6.2	598	453
WTR YR 1978	35,270	48,400	190	8,470	6,550

Month	Walapai Canal 09523900	Diversions from Yuma Main Canal 09524500	Diversions from Yuma Main Canal for Yuma supply 09526000
October	317	2.4	1,092
November	224	13	913
December	267	174	772
CAL YR 1977	10,730	4,670	13,748
January	120	84	686
February	607	562	601
March	1,400	811	838
April	1,120	534	1,069
May	1,050	254	1,384
June	2,490	892	1,441
July	1,910	937	1,839
August	838	639	1,757
September	682	808	1,552
WTR YR 1978.....	11,030	5,710	13,944

Note.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

495

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, AZ-CA

LOCATION.--Lat 32°52'34", long 114°27'18", in SE¼SW¼ sec.30, T.6 S., R.21 W., Gila and Salt River meridian, Yuma County, Hydrologic Unit 15030107, on right bank 3,200 ft (975 m) downstream from intake at east end of Imperial Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 160.00 ft (48.768 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent except those below 100 ft³/s (2.8 m³/s), which are fair. Gila Gravity Main Canal diverts water from Colorado River at left end of Imperial Dam for irrigation of lands in the Gila Project area in Arizona. Diversions to this canal began Aug. 17, 1943. Diversions to North Gila Valley from this canal began Dec. 16, 1954. During the 1977 calendar year, water was used for irrigation of 97,534 acres (395 km²) divided as follows: North and South Gila Valleys, 15,814 acres (64.0 km²); Mesa Unit, 17,797 acres (72.0 km²); Wellton-Mohawk Division, 60,622 acres (245 km²); Yuma Mesa Auxiliary Division, 3,301 acres (13.4 km²).

AVERAGE DISCHARGE.--19 years (water years 1960-78), 1,205 ft³/s (34.13 m³/s), 873,000 acre-ft/yr (1,080 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,240 ft³/s (63.4 m³/s) May 25, 1965; no flow at canal intake at times in several years when intake gates were closed.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	676	804	.00	17	420	664	1170	1570	1790	1480	1900	1570
2	721	711	189	185	433	641	757	1630	1690	1080	1880	1360
3	1080	837	886	273	323	358	1430	1660	1430	1790	1930	1090
4	1130	871	415	179	216	234	1200	1420	1010	1750	1880	1310
5	1340	665	573	200	232	335	1260	1400	1630	1860	1830	1640
6	983	523	556	259	994	719	1230	972	1610	2020	1480	1620
7	865	858	635	310	860	811	1220	834	1720	1940	1710	1580
8	410	943	567	200	892	1000	721	1370	1710	1980	1880	1460
9	274	977	499	464	868	928	535	1640	1840	1640	1900	1140
10	1010	785	388	352	872	1170	1320	1600	1870	1640	1930	1030
11	844	593	546	50	548	799	1310	1680	1470	1870	1890	1580
12	922	727	1030	13	339	668	1510	1450	1660	1860	1550	1610
13	930	690	1020	37	798	1140	1580	1360	1930	1840	1300	1620
14	949	1000	917	59	908	1270	1620	945	1910	1870	1820	1410
15	773	944	882	45	933	1500	1160	1490	1830	1570	1840	1460
16	634	1140	668	41	859	1180	1060	1520	1680	1350	1840	1130
17	937	1260	601	89	619	1140	1410	1440	1330	1890	1850	961
18	1070	1060	510	132	399	860	1650	1290	1340	2010	1700	1350
19	1060	871	788	141	344	627	1920	1510	1690	2060	1390	1370
20	989	771	1060	177	998	1530	1700	1440	1880	2110	891	1460
21	798	1430	1200	109	1060	1630	1570	1050	1930	2010	1400	1530
22	574	1660	760	183	1300	1680	986	1570	2040	1890	1550	1440
23	414	1330	434	199	1390	1520	658	1850	1980	1640	1570	1170
24	1000	1050	60	297	1210	910	1270	1690	1910	1880	1370	711
25	1020	806	33	291	925	520	1390	1630	1390	1930	1570	1080
26	875	39	152	129	668	384	1840	1700	2070	1870	1190	1290
27	945	4.8	325	181	1180	1310	1470	1180	2170	1620	683	1320
28	717	.00	314	113	1120	1440	1610	875	2030	1730	1540	1200
29	606	.00	312	193	---	1540	1090	1500	2000	1430	1700	1340
30	465	.00	152	414	---	1610	872	1740	1800	1180	1680	990
31	746	---	34	177	---	1400	---	1920	---	1790	1580	---
TOTAL	25757	23349.80	16506.00	5509	21708	31518	38519	44926	52340	54580	50224	39822
MEAN	831	778	532	178	775	1017	1284	1449	1745	1761	1620	1327
MAX	1340	1660	1200	464	1390	1680	1920	1920	2170	2110	1930	1640
MIN	274	.00	.00	13	216	234	535	834	1010	1080	683	711
AC-FT	51090	46310	32740	10930	43060	62520	76400	89110	103800	108300	99620	78990
CAL YR 1977	TOTAL	406283.80	MEAN	1113	MAX	2130	MIN	.00	AC-FT	805900		
WTR YR 1978	TOTAL	404758.80	MEAN	1109	MAX	2170	MIN	.00	AC-FT	802800		

09522500 GILA GRAVITY MAIN CANAL AT IMPERIAL DAM, AZ-CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1956 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: January 1956 to current year

INSTRUMENTATION.--Water temperature recorder since January 1956.

REMARKS.--Temperature probe above water surface Nov. 26 to Dec. 2. Unpublished chemical analyses (partial record) for water years 1965-67 available from district office in Tucson, Ariz. No flow Nov. 27 thru Dec. 1.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 33.0°C Aug. 29-31, 1970; minimum, 7.0°C Jan. 13-17, 1964, Jan. 4-7, 1971.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 30.0°C Sept. 3, 4, 5; minimum, 10.5°C Dec. 21, 22, 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
OCT 26...	1120	828	1310	8.0	22.5	370	220	92	34	140	3.2
JAN 18...	1040	82	1530	8.0	14.0	400	250	100	37	180	3.9
MAY 10...	1030	1600	1240	8.0	23.0	370	220	92	34	130	2.9
JUL 12...	1040	1830	1250	7.9	27.5	350	220	89	32	130	3.0

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT 26...	5.3	180	0	340	130	.5	10	865	841	1.18	.06
JAN 18...	5.5	190	0	380	170	.6	13	1020	981	1.39	.28
MAY 10...	5.3	180	0	310	120	.4	9.1	823	790	1.12	.13
JUL 12...	5.1	160	0	330	130	.4	9.6	806	806	1.10	.09

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09523000 ALL-AMERICAN CANAL NEAR IMPERIAL DAM, AZ-CA

LOCATION.--Lat 32°52'17", long 114°28'47", in SE¼NW¼ sec.17, T.15 S., R.24 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on left bank 6,000 ft (1,829 m) downstream from intake at west end of Imperial Dam and 13.7 mi (22.0 km) upstream from turnout to Yuma Main Canal.

PERIOD OF RECORD.--October 1938 to current year. Prior to October 1939 monthly discharge only, published in WSP 1313.

GAGE.--Water-stage recorder. Datum of gage is 150.00 ft (45.720 m) National Geodetic Vertical Datum of 1929 (subject to undetermined changes caused by earthquake of May 18, 1940). Since Aug. 21, 1952, auxiliary water-stage recorder 18.5 mi (29.8 km) downstream from base gage.

REMARKS.--Records excellent. All-American Canal diverts water from Colorado River at Imperial Dam. Water is used for power development and for irrigation in Yuma, Coachella, and Imperial Valleys. Water can be released back to the river through Pilot Knob powerplant and wasteway for power, regulatory purposes, or for downstream use in Mexico. First diversion to All-American Canal began October 1938, but prior to October 1940 was used only for priming canal.

COOPERATION.--Daily discharge figures furnished by Imperial Irrigation District (discharge figures reviewed in accordance with Geological Survey standard practice).

AVERAGE DISCHARGE.--37 years (water years 1942-78), 6,902 ft³/s (195.5 m³/s), 5,000,000 acre-ft/yr (6,160 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 13,500 ft³/s (382 m³/s), Apr. 16, 1958; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4710	3960	3720	1710	1670	4460	10100	8460	7320	8930	9240	6670
2	4770	3960	3880	1120	1890	3740	9660	8240	7710	8750	9490	6490
3	4730	3750	4080	1300	2220	3580	9620	7580	7270	8730	9330	6220
4	4770	3800	4160	1260	2200	3550	9790	7350	6400	8860	9360	5880
5	5020	3610	4510	1120	1970	3700	10200	6780	6510	9270	9310	5720
6	4940	3310	4670	1260	2410	3820	10200	6330	6760	9670	9310	5980
7	3930	3340	4820	1330	2830	4180	9930	5710	6990	9710	9570	6120
8	3890	3580	4690	1230	2950	4910	9690	6320	7600	9480	9760	6370
9	3660	3880	4760	1260	3840	5720	9270	6710	7410	9080	9900	6420
10	3670	4080	4560	1000	4200	6260	9720	7150	7170	9280	9740	6420
11	3880	3790	4370	796	3570	6900	10100	7110	6770	9810	9690	6750
12	3710	3300	4460	728	3850	6760	10300	6590	7100	9980	9700	6790
13	3690	3210	4660	849	4360	6840	10100	6380	7530	9910	9360	6930
14	3530	3480	4680	997	5170	7680	10100	6380	7690	9610	9120	6820
15	3580	3830	4890	1130	5530	8110	9970	6640	7710	9370	9260	6260
16	3410	3820	4860	930	5580	8600	9770	7240	7670	9210	9150	6400
17	3690	3780	4830	1110	6110	8920	10100	7420	7760	9410	9250	5890
18	4220	3440	4750	975	6540	9200	10300	7840	7440	9510	8960	5690
19	4510	3320	5030	1110	6360	9070	10800	7800	7730	9780	8690	5910
20	4340	2970	5130	1110	7140	9330	11000	7670	8160	9530	8240	6020
21	4270	3460	5170	1140	7390	9500	11100	7420	8740	9190	8310	6270
22	4520	3760	5170	1110	7440	9600	10600	7650	9200	9770	8250	6220
23	4450	3700	4390	1110	7920	9760	10100	7710	9060	9630	8380	6290
24	4150	3310	3360	1460	7620	9500	10400	7200	8720	9480	8240	5880
25	4330	3130	3330	1700	7490	8970	10600	6610	8280	9490	7950	5770
26	4520	3270	3420	2020	6900	8080	10500	6210	8160	9640	7870	6120
27	4540	3180	3080	2290	7270	7830	10200	5880	8510	9100	7730	6350
28	4110	3590	2870	2620	6290	9260	9670	5830	8920	8990	7530	6670
29	4290	3450	2530	2360	---	9780	9220	6310	8660	9250	7650	6400
30	4000	3590	1950	2680	---	9800	8840	6710	8720	8830	7660	6180
31	3940	---	1920	1990	---	10100	---	7090	---	8960	7550	---
TOTAL	129770	106650	128700	42805	138710	227510	301950	216320	233670	290210	273550	187900
MEAN	4186	3555	4152	1381	4954	7339	10070	6978	7789	9362	8824	6263
MAX	5020	4080	5170	2680	7920	10100	11100	8460	9200	9980	9900	6930
MIN	3410	2970	1920	728	1670	3550	8840	5710	6400	8730	7530	5690
AC-FT	257400	211500	255300	84900	275100	451300	598900	429100	463500	575600	542600	372700
CAL YR 1977 TOTAL	2285700			MEAN 6262	MAX 10800	MIN 1920	AC-FT 4534000					
WTR YR 1978 TOTAL	2277745			MEAN 6240	MAX 11100	MIN 728	AC-FT 4518000					

LOCATION.--Lat 32°46'36", long 114°38'05", in SE¼SE¼ sec.10, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on right bank at downstream end of powerplant, 500 ft (150 m) from turnout from All-American Canal to Yuma Main Canal, 4.0 mi (6.4 km) north of Yuma, and 14.9 mi (24.0 km) downstream from intake of All-American Canal at Imperial Dam.

GAGE.--Water-stage recorder on forebay to determine head on rated bypass gates since Sept. 15, 1952. Recorders on gates to record gate opening since Nov. 8, 1973. Normal operating level of forebay of powerplant is 151.0 ft (46.02 m) National Geodetic Vertical Datum of 1929, or 150.3 ft (45.81 m) Yuma Project datum. Prior to Oct. 30, 1938, floating nonrecording gages on forebay and tailrace. Oct. 30, 1938, to Mar. 1, 1945, floating nonrecording gage on forebay and water-stage recorder on tailrace. Mar. 2, 1945, to Jan. 11, 1951, water-stage recorders on forebay and tailrace. Jan. 12, 1951, to Dec. 7, 1972, differential recorder to record head between forebay and tailrace prior to discontinuing powerplant operation.

COOPERATION.--Supplementary record of gate openings furnished by Yuma County Water Users' Association.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	399	638	910	44	129	161	494	480	1230	599	696	1080
2	457	662	1070	227	208	117	188	536	1310	443	737	963
3	463	376	212	255	452	148	163	1040	1220	616	623	929
4	445	318	124	158	381	136	257	857	959	695	590	750
5	527	184	149	84	269	88	329	754	1130	734	507	541
6	532	26	151	137	367	91	567	523	1130	825	404	679
7	460	26	182	140	442	118	531	472	1150	828	520	753
8	388	26	353	136	699	224	426	662	866	785	753	839
9	502	195	286	132	1130	634	328	841	929	616	801	785
10	296	590	164	84	1230	701	377	733	876	729	712	631
11	385	571	128	37	1150	664	609	709	792	859	688	682
12	452	437	138	72	978	489	748	687	759	840	561	732
13	373	334	252	80	277	414	769	879	791	820	268	775
14	344	406	318	64	335	510	676	782	852	767	253	828
15	410	558	397	44	500	625	466	979	810	654	280	746
16	387	579	344	46	582	631	134	1180	752	521	328	693
17	525	562	168	70	523	618	157	1090	659	601	613	624
18	669	376	71	54	430	591	318	962	329	698	613	588
19	623	194	120	72	209	270	456	830	400	808	479	682
20	625	188	164	55	309	249	729	827	512	860	249	660
21	576	440	248	24	412	337	669	781	584	829	235	697
22	571	657	406	24	478	345	524	911	825	722	249	697
23	560	618	257	75	687	523	416	992	822	640	305	887
24	558	459	138	87	726	554	532	1060	824	739	516	782
25	669	445	50	104	644	470	761	968	708	822	606	693
26	745	445	71	164	580	329	767	889	674	855	538	732
27	828	328	120	292	506	406	625	877	741	822	461	799
28	701	600	93	256	425	558	482	775	774	834	372	714
29	647	683	53	215	---	756	411	925	738	801	416	667
30	641	729	28	418	---	815	335	1080	706	590	458	689
31	568	---	31	321	---	758	---	1240	---	656	464	---
TOTAL	16126	12650	7198	3951	15058	13330	14244	26321	24852	22608	15295	22317
MEAN	520	422	232	127	536	430	475	849	828	729	493	744
MAX	828	729	1070	418	1230	815	769	1240	1310	860	801	1080
MIN	296	26	28	24	129	88	134	472	329	443	235	541
AC-FT	31990	25090	14280	7840	29870	26440	28250	52210	49290	44840	30340	44270
CAL YR 1977	TOTAL	195278	MEAN	535	MAX	1500	MIN	26	AC-FT	387300		
WTR YR 1978	TOTAL	193950	MEAN	531	MAX	1310	MIN	24	AC-FT	384700		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09525000 YUMA MAIN CANAL WASTEWAY AT YUMA, AZ

LOCATION.--Lat 32°44'00", long 114°37'20", in SW¼SE¼ sec.26, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, 45 ft (14 m) downstream from wasteway gates from Yuma Main Canal which are 1,645 ft (501 m) upstream from intake of Colorado River siphon on Yuma Main Canal, 0.5 mi (0.8 km) north of Yuma, and 3.2 mi (5.1 km) downstream from siphon-drop powerplant on Yuma Main Canal.

PERIOD OF RECORD.--April 1913 to current year. Monthly discharge only for some periods, published in WSP 1313.

GAGE.--Water-stage recorder for low flows only, with supplementary recorder on wasteway gate. Datum of gage is 122.51 ft (37.341 m) National Geodetic Vertical Datum of 1929. Prior to Apr. 1, 1968, gate-opening record used for low flows only.

REMARKS.--Records good except those below 150 ft³/s (4.2 m³/s), which are fair. The wasteway discharges into Colorado River in SW¼ sec.26, T.16 S., R.22 E., 1,000 ft (300 m) upstream from station on Colorado River below Yuma Main Canal wasteway at Yuma. Discharges above 100 ft³/s (2.8 m³/s) are generally computed as difference between discharge of Yuma Main Canal at siphon-drop powerplant and Yuma Main Canal below Colorado River siphon, with deductions for small irrigation diversions from canal between these stations. Discharges below 100 ft³/s (2.8 m³/s) are generally computed from stage-discharge relation. Records do not include flow of Reservation Main Drain No. 4.

EXTREMES.--1930 to current year: Maximum daily discharge, 2,020 ft³/s (57.2 m³/s) Dec. 24, 25, 1948; no flow for several days in 1937-39, 1945, 1950, 1971.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	284	640	38	15	20	14	16	445	13	15	680
2	177	282	806	159	16	20	14	50	606	14	15	550
3	169	46	14	155	119	24	13	493	637	14	15	584
4	95	25	14	90	110	19	13	325	665	14	15	433
5	112	26	14	21	116	19	13	303	849	14	15	183
6	99	70	14	19	233	19	13	235	845	14	15	177
7	106	5.8	14	19	289	19	12	261	743	14	15	198
8	137	2.9	14	20	407	19	13	282	7.4	14	15	323
9	131	4.9	15	19	569	20	14	278	8.5	14	15	318
10	134	96	15	24	713	20	13	174	9.8	14	15	195
11	127	205	15	19	724	21	13	184	12	15	15	219
12	188	199	16	20	618	26	14	243	13	14	15	253
13	169	190	16	24	26	19	19	479	16	15	15	246
14	191	262	17	22	18	19	16	460	15	14	15	235
15	206	313	17	22	16	18	16	515	13	15	15	175
16	149	291	17	23	17	18	16	547	11	15	15	189
17	153	324	18	24	19	18	16	458	11	15	15	195
18	211	246	18	28	20	18	16	401	11	15	15	205
19	208	70	18	26	19	18	16	366	10	15	14	227
20	233	99	21	24	19	18	16	383	10	15	14	159
21	235	305	17	24	19	18	16	385	11	14	15	184
22	268	386	16	24	19	17	15	367	11	15	15	199
23	296	386	16	24	19	18	14	380	13	15	16	318
24	354	363	16	25	19	16	15	386	13	15	15	342
25	381	369	16	23	19	16	15	290	13	15	15	279
26	361	278	16	23	19	16	15	339	13	15	15	227
27	413	157	16	96	19	16	15	436	13	15	15	225
28	383	362	17	84	19	15	15	402	14	14	15	226
29	359	390	17	103	---	15	15	422	14	14	15	250
30	365	421	21	231	---	14	15	438	13	15	14	279
31	286	---	21	168	---	14	---	432	---	15	47	---
TOTAL	6824	6458.6	1922	1621	4237	567	440	10750	5065.7	449	495	8273
MEAN	220	215	62.0	52.3	151	18.3	14.7	347	169	14.5	16.0	276
MAX	413	421	806	231	724	26	19	547	849	15	47	680
MIN	95	2.9	14	19	15	14	12	16	7.4	13	14	159
AC-FT	13540	12810	3810	3220	8400	1120	873	21320	10050	891	982	16410
CAL YR 1977	TOTAL	49294.6	MEAN 135	MAX 806	MIN 2.9	AC-FT 97780						
WTR YR 1978	TOTAL	47102.3	MEAN 129	MAX 849	MIN 2.9	AC-FT 93430						

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

501

09525500 YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON, AT YUMA, AZ

LOCATION.--Two gages, one at each end of canal siphon passing under Colorado River. At intake, lat 32°43'49", long 114°37'09", in NE¼NE¼ sec.35, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, on left bank 1,645 ft (501 m) downstream from center of Yuma Main Canal wasteway gates and 3.5 mi (5.6 km) downstream from siphon-drop power-plant. At outlet, in NW¼NE¼ sec.35, T.16 S., R.22 E., San Bernardino meridian, in Arizona, Yuma County, on right bank. Siphon crossing is 1,500 ft (457 m) downstream from upper highway bridge over Colorado River at Yuma.

PERIOD OF RECORD.--January 1924 to current year. Prior to October 1938, monthly discharge only published in WSP 1313. Diversion from Yuma Main Canal for municipal supply for Yuma (sta 09526000), published with this record prior to October 1973, is listed separately in this report.

REVISED RECORDS.--WSP 1713: 1958, 1959 (Yuma municipal supply).

GAGE.--Water-stage recorder at each end of siphon. Datum of each gage is 100.62 ft (30.669 m) National Geodetic Vertical Datum of 1929, or 100.08 ft (30.504 m) Yuma Project datum. Prior to Oct. 1, 1963, at datum 0.05 ft (0.015 m) lower. Elevation of sill of inlet is 125.5 ft (38.25 m) NGVD. Prior to Oct. 29, 1938, nonrecording gages at approximately same sites, read simultaneously.

REMARKS.--Records excellent except those between 100 and 300 ft³/s (2.8 and 8.5 m³/s), which are good, and those below 100 ft³/s (2.8 m³/s), which are poor. Daily discharge computed from relation between discharge and head on siphon, which is the difference between intake and outlet gages. Records show quantity of water delivered through Colorado River siphon for irrigation of 45,700 acres (185 km²) in 1977, in the Valley Division of the Yuma Project and for supplementary municipal supply for city of Yuma (see sta 09526000).

AVERAGE DISCHARGE.--54 years, 465 ft³/s (13.17 m³/s), 336,900 acre-ft/yr (415 hm³/yr).

EXTREMES.--1930 to current year: Maximum daily discharge, 948 ft³/s (26.8 m³/s) Aug. 16, 1962; no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	354	270	41	108	172	471	461	765	581	665	400
2	280	380	264	68	196	114	172	478	698	424	680	411
3	293	332	258	80	313	134	159	547	582	578	572	338
4	350	293	134	68	264	130	233	532	292	643	538	307
5	415	203	134	68	153	76	307	451	270	708	468	351
6	433	69	134	112	134	71	510	288	270	815	363	497
7	354	20	180	112	153	114	468	211	392	809	458	550
8	251	20	327	112	292	210	388	375	827	747	690	504
9	171	27	282	112	561	595	307	553	898	596	737	445
10	162	494	153	92	517	640	365	547	841	701	670	411
11	258	363	114	56	426	583	556	520	752	811	650	438
12	264	238	124	56	358	437	655	444	718	773	541	452
13	204	144	244	56	282	384	683	400	745	764	280	494
14	153	144	308	56	341	481	630	322	808	713	240	559
15	204	245	384	68	498	591	449	464	763	606	250	547
16	238	288	298	58	564	596	123	625	698	499	310	484
17	372	238	143	41	511	583	135	625	612	563	660	411
18	458	130	56	56	433	553	298	561	312	674	655	372
19	415	124	112	56	225	288	411	444	351	771	495	445
20	392	89	138	56	313	238	652	444	478	842	245	491
21	341	134	199	68	396	298	608	392	561	813	232	504
22	303	270	335	56	454	303	475	544	783	701	245	491
23	264	232	220	56	650	498	376	612	801	629	308	553
24	204	96	112	72	687	529	471	670	794	695	526	431
25	288	76	56	92	617	458	688	678	673	758	620	407
26	384	166	80	141	526	322	705	550	657	800	570	494
27	415	171	103	196	461	396	582	433	725	762	475	564
28	318	238	80	162	400	538	452	363	738	744	384	478
29	288	293	68	112	---	721	380	488	711	706	430	407
30	276	308	56	184	---	781	307	622	683	510	471	400
31	282	---	56	138	---	744	---	788	---	566	396	---
TOTAL	9301	6179	5422	2701	10833	12578	13016	15432	19198	21302	14824	13636
MEAN	300	206	175	87.1	387	406	434	498	640	687	478	455
MAX	458	494	384	196	687	781	705	788	898	842	737	564
MIN	153	20	56	41	108	71	123	211	270	424	232	307
AC-FT	18450	12260	10750	5360	21490	24950	25820	30610	38080	42250	29400	27050
CAL YR 1977	TOTAL	144024	MEAN 395	MAX 883	MIN 20	AC-FT 285700						
WTR YR 1978	TOTAL	144422	MEAN 396	MAX 898	MIN 20	AC-FT 286500						

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09527000 PILOT KNOB POWERPLANT AND WASTEWAY NEAR PILOT KNOB, CA

LOCATION.--Lat 32°44'15", long 114°42'56", in NW¼SW¼ sec.25, T.16 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, 2 mi (3 km) east of summit of Pilot Knob, 6 mi (10 km) west of Yuma, Ariz., and 20.8 mi (33.5 km) downstream from intake of All-American Canal at Imperial Dam.

PERIOD OF RECORD.--February 1939 to current year. Prior to October 1943 monthly discharge only, published in WSP 1313. Prior to October 1956, published as Pilot Knob wasteway near Pilot Knob.

GAGE.--Totalizing flowmeter on each turbine. In addition, water-stage recorder in forebay on right bank of All-American Canal (also used as auxiliary gage for sta 09527500); tailrace gage with remote recorder logged hourly in control house; calibrated wicket gates for turbine flow and calibrated bypass gates for wasteway flow which are logged for each change. Datum of forebay staff gage is 150.00 ft (45.720 m); that of tailrace staff gage is 0.00 ft (0.000 m); elevation of sill of bypass gates is 147.88 ft (45.074 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent above 1,200 ft³/s (34.0 m³/s) and good below. Daily discharge computed from flowmeter equipment or from head and gate openings on wicket gates. Records show water released through Pilot Knob powerplant and wasteway from All-American Canal and returned to Colorado River through Rockwood gates. Pilot Knob wasteway completed in summer of 1938 and first flow occurred Feb. 5, 1939. Pilot Knob powerplant was completed in January 1957 and first flow occurred Jan. 14, 1957. See table below for monthly return flow by Pilot Knob wasteway only.

COOPERATION.--Midnight readings of flowmeter, recorder graph of forebay, and record of tailrace elevation and gate openings furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8,350 ft³/s (236 m³/s) Jan. 26, 1958; no flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	963	.00	1850	2600	1460	.00	1350	2320	.00
2	.00	.00	39	.00	.00	1950	2630	1100	.00	1870	2380	.00
3	.00	.00	1060	.00	.00	1750	2830	.00	.00	2050	2590	.00
4	.00	.00	1310	.00	.00	1590	2640	.00	.00	2080	2680	.00
5	.00	.00	1350	.00	.00	1750	2920	.00	.00	2090	2670	.00
6	.00	.00	1420	.00	.00	1600	3000	.00	.00	2260	2660	.00
7	.00	.00	1380	.00	.00	1420	2970	.00	.00	2310	2580	.00
8	.00	.00	1400	.00	.00	1420	3120	.00	1030	2190	2490	.00
9	.00	.00	1480	.00	.00	1540	3110	.00	1140	1940	2500	.00
10	.00	.00	1480	.00	.00	1650	3240	.00	1110	2010	2520	.00
11	.00	.00	1630	.00	.00	1950	3280	.00	1060	2230	2510	33
12	.00	.00	1580	.00	43	1880	3010	.00	1100	2280	2490	.00
13	.00	.00	1500	.00	1030	2000	3040	.00	1140	2340	2500	.00
14	.00	.00	1470	.00	1390	2040	3130	.00	1270	2300	2230	.00
15	.00	.00	1560	.00	1490	1960	3240	.00	1240	2350	2280	.00
16	.00	.00	1620	.00	1520	1870	3240	.00	1220	2280	2240	.00
17	.00	.00	1580	.00	1660	1890	3260	.00	1330	2310	2160	.00
18	.00	.00	1650	.00	1760	1900	3220	.00	1320	2320	2100	.00
19	.00	.00	1680	.00	1750	1940	3220	.00	1410	2250	2000	.00
20	.00	.00	1670	.00	1880	2210	3180	.00	1400	2310	1930	.00
21	.00	.00	1640	.00	1870	2180	3220	.00	1380	2350	1930	.00
22	.00	.00	1650	.00	1860	2170	3240	.00	1460	2380	1740	.00
23	.00	.00	1600	.00	1890	2370	3290	.00	1480	2320	1590	.00
24	.00	.00	1590	.00	1700	2430	3260	.00	1490	2350	1500	.00
25	.00	.00	1480	.00	1760	2510	3060	.00	1550	2350	1450	.00
26	.00	.00	1490	.00	1810	2560	2810	.00	1560	2310	1370	.00
27	.00	.00	1500	.00	1910	1830	2600	.00	1700	2390	1360	.00
28	.00	.00	1500	.00	1870	2420	2290	.00	1720	2420	1400	.00
29	.00	.00	1300	.00	---	2550	1940	.00	1650	2390	1380	.00
30	.00	.00	1070	.00	---	2360	1660	.00	1530	2350	1300	.00
31	.00	.00	1150	.00	---	2410	---	.00	---	2040	1010	---
TOTAL	.00	.00	42809.00	963.00	27193.00	61930	88450	2560.00	31290.00	68770	63860	33.00
MEAN	.000	.000	1381	31.1	971	1998	2948	82.6	1043	2218	2060	1.10
MAX	.00	.00	1680	963	1910	2560	3290	1460	1720	2420	2680	33
MIN	.00	.00	.00	.00	.00	1420	1660	.00	.00	1350	1010	.00
AC-FT	.00	.00	84910	1910	53940	122800	175400	5080	62060	136400	126700	65
(*)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	24

CAL YR 1976

WTR YR 1977

CAL YR 1977

WTR YR 1978

TOTAL

TOTAL

MEAN

MEAN

1045

1063

MAX

MAX

7780

3290

MIN

MIN

.00

.00

AC-FT

AC-FT

756800

769300

* 61†

*371†

*371

* 24

* Return flow in acre-feet, by Pilot Knob Wasteway (included in daily discharge table).

† Not previously published.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09527500 ALL-AMERICAN CANAL BELOW PILOT KNOB WASTEWAY, CA

LOCATION.--Lat 32°44'07", long 114°43'23", in NW¼SE¼ sec.26, T.16 S., R.21 E., San Bernardino meridian, Imperial County, Hydrologic Unit 15030107, on left bank 0.4 mi (0.6 km) downstream from Pilot Knob wasteway, 6 mi (10 km) west of Yuma, Ariz., 15 mi (24 km) upstream from turnout to Coachella Canal, and 21.2 mi (34.1 km) downstream from intake at Imperial Dam.

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

GAGE.--Water-stage recorder. Datum of gage is 150.00 ft (45.720 m) National Geodetic Vertical Datum of 1929. Auxiliary water-stage recorder on right bank 0.4 mi (0.6 km) upstream used to determine head on Pilot Knob check gates (also used as forebay gage for sta 09527000, Pilot Knob powerplant and wasteway). Datum of auxiliary gage is 150.00 ft (45.720 m) NGVD.

REMARKS.--Records excellent. Water is used for power development at three sites below station, and for irrigation in Coachella and Imperial Valleys.

COOPERATION.--Gage-height record and log of gate operation furnished by Imperial Irrigation District.

AVERAGE DISCHARGE.--17 years, 4,697 ft³/s (133.0 m³/s), 3,403,000 acre-ft/yr (4,200 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,610 ft³/s (216 m³/s) April 27, 28, 1976; no flow Jan. 4, 1977

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4090	3250	2730	709	1400	2180	6660	6440	5770	6530	5940	5330
2	4090	3210	2730	789	1510	1420	6400	6560	5970	6130	6040	5230
3	4040	3240	2580	996	1730	1380	6330	6460	5780	5960	5860	5010
4	4090	3270	2550	1010	1810	1560	6320	6380	5500	5980	5920	4890
5	4230	3120	2760	1010	1620	1550	6590	5900	5320	6260	5940	4830
6	4240	2910	2810	1020	1860	1810	6420	5660	5480	6370	6010	4980
7	3430	3080	2970	1140	2190	2370	6120	5140	5530	6400	6170	5050
8	3420	3320	2680	1060	2120	3000	5920	5390	5390	6360	6260	5200
9	3210	3450	2710	1070	2510	3320	5600	5600	5100	6380	6390	5320
10	3190	3350	2620	986	2660	3680	5780	6050	4900	6340	6290	5450
11	3290	3100	2340	794	2230	4070	5960	6070	4620	6500	6240	5700
12	3100	2740	2470	647	2600	4140	6260	5650	4980	6560	6360	5770
13	3120	2740	2660	753	2680	4290	6120	5280	5350	6490	6280	5810
14	2960	2900	2670	897	3160	4920	6050	5300	5230	6270	6360	5660
15	2940	3130	2690	872	3330	5320	6040	5370	5310	6130	6460	5290
16	2810	3140	2700	846	3270	5900	6040	5720	5370	6170	6360	5430
17	2920	3080	2830	872	3680	6180	6440	5970	5420	6270	6240	5030
18	3250	2890	2750	875	4070	6440	6530	6440	5440	6280	6070	4940
19	3500	2740	2960	980	4070	6580	6900	6560	5600	6480	6050	4980
20	3380	2600	3010	990	4580	6600	6890	6520	5830	6150	5930	5120
21	3460	2900	3020	1090	4780	6690	6980	6370	6260	5800	5950	5300
22	3720	3010	2920	1070	4770	6800	6700	6420	6460	6350	6030	5270
23	3710	3000	2270	1010	4990	6710	6300	6410	6340	6400	6270	5140
24	3490	2770	1430	1230	4980	6390	6530	5900	6100	6160	6080	4880
25	3580	2640	1570	1440	4820	5900	6700	5490	5740	6140	5610	4880
26	3690	2770	1740	1710	4340	5150	6730	5190	5620	6250	5880	5100
27	3590	2780	1330	1900	4720	5330	6730	4890	5750	5750	5840	5290
28	3330	2930	1070	2310	4080	5920	6780	4910	6040	5700	5700	5680
29	3470	2730	987	2080	---	6150	6780	5210	5990	5940	5740	5510
30	3310	2800	738	2260	---	6330	6710	5420	6130	5730	5810	5280
31	3300	---	675	1570	---	6560	---	5620	---	5980	5840	---
TOTAL	107950	89590	71970	35986	90560	144640	192310	180290	168120	192210	188120	157350
MEAN	3482	2986	2322	1161	3234	4666	6410	5816	5604	6200	6068	5245
MAX	4240	3450	3020	2310	4990	6800	6980	6560	6460	6560	6460	5810
MIN	2810	2600	675	647	1400	1380	5600	4890	4620	5700	5700	4830
AC-FT	214100	177700	142800	71380	179600	286900	381400	357600	333500	381200	373100	312100

CAL YR 1977 TOTAL 1622023 MEAN 4444 MAX 7360 MIN 675 AC-FT 3217000
WTR YR 1978 TOTAL 1619096 MEAN 4436 MAX 6980 MIN 647 AC-FT 3211000

Return surface flows below Imperial Dam, AZ-CA

Between Imperial Dam and the international boundary return surface flows from irrigated areas enter the Colorado River through many drains and wasteways in Arizona and California. Other return flows enter the Gila River below the gaging station near Dome (09520500). In addition, return flows collected by the Main Drain and East Main Canal are delivered across the international boundary for use in Mexico.

Diversions for irrigation in the Gila Project in Arizona are made at Imperial Dam by the Gila Gravity Main Canal. (See sta 09522500.) Diversions for the Yuma Project in Arizona and California are made at Imperial Dam by the All-American Canal (see sta 09523000) and by the Yuma Main Canal. (See stas 09524000 and 09525500.) See p. 492 for records of diversions.

See figure 6 on p. 474 for the schematic diagram showing location of diversions and return flows.

09525000. YUMA MAIN CANAL WASTEWAY.--See daily table elsewhere in this report.

09527000. PILOT KNOB POWERPLANT AND WASTEWAY.--See daily table elsewhere in this report.

09527900. MITTRY LAKE OUTLET CHANNEL.

LOCATION.--Water-stage recorder and sharp-crested weir, in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.14, T.7 S., R.22 W., Hydrologic Unit 15030107, 1,000 ft (300 m) upstream from outlet to Colorado River and Laguna Dam.

PERIOD OF RECORD.--Monthly discharge October 1974 to current year.

REMARKS.--Record shows return flow to Colorado River from Mittry Lake. Prior to Nov. 6, 1974, records furnished by Bureau of Reclamation.

09528600. LAGUNA CANAL WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 14, T.7 S., R.22 W., Hydrologic Unit 15030107, 1,000 ft (300 m) downstream from Laguna Dam and 0.7 mi (1.1 km) upstream from outlet to Colorado River.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Colorado River. Flow record computed from standard weir rating.

09528800. LEVEE CANAL WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.4, T.8 S., R.22 W., Hydrologic Unit 15030107, 1,000 ft (300 m) upstream from outlet to Colorado River.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Colorado River.

09529000. NORTH GILA DRAIN NO. 1.

LOCATION.--Water-stage recorder, in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.4, T.8 S., R.22 W., Hydrologic Unit 15030107, 0.25 mi (0.40 km) upstream from outlet to Colorado River and 5.5 mi (8.8 km) downstream from Laguna Dam. No gage prior to Oct. 16, 1974.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Colorado River. Prior to Oct. 16, 1974, flow records were computed by interpolation between discharge measurements made monthly.

09529050. NORTH GILA DRAIN NO. 3.

LOCATION.--Drain enters wasteway to Gila River in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.18, T.8 S., R.21 W., Hydrologic Unit 15070201, 1,000 ft (300 m) upstream from Gila River.

PERIOD OF RECORD.--Monthly discharge April 1962 to current year.

REMARKS.--Record shows seepage from Gila Gravity Main Canal. There is no gage; records are computed by interpolation between discharge measurements made monthly.

09529100. FORTUNA WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in NE $\frac{1}{4}$ sec.30, T.8 S., R.21 W., Hydrologic Unit 15070201, 1.3 mi (2.1 km) upstream from Gila River.

PERIOD OF RECORD.--Monthly discharge October 1960 to September 1963, October 1964 to current year.

REMARKS.--Record shows waste water spilled from Gila Gravity Main Canal; flow rarely reaches Gila River.

09529150. NORTH GILA MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.22, T.8 S., R.22 W., Hydrologic Unit 15070201, 1,000 ft (300 m) upstream from outlet to Gila River. Prior to July 1966 water-stage recorder and sharp-crested weir, 1 mi (1.6 km) upstream from outlet to Gila River.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows waste water from North Gila Valley Irrigation District. Prior to July 1966 record shows waste water less flow diverted for irrigation between gage and Gila River.

09529160. SOUTH GILA PUMP OUTLET CHANNEL NO. 3.

LOCATION.--Water-stage recorder in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.5 mi (0.8 km) upstream from outlet to Gila River. Prior to Aug. 1, 1965, record obtained by Badger total-flow meter about 500 ft (150 m) downstream.

PERIOD OF RECORD.--Monthly discharge January 1965 to current year.

REMARKS.--Record shows water pumped from wells in South Gila Valley Unit.

Return surface flows below Imperial Dam, AZ-CA--Continued

09529200. BRUCE CHURCH DRAIN.

LOCATION.--At culvert in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.2 mi (0.3 km) upstream from outlet to Gila River.

PERIOD OF RECORD.--Monthly discharge April 1962 to current year.

REMARKS.--Record shows seepage water from parts of secs. 15, 16, and 21 (Bruce Church Ranch). Flow computed by interpolation between discharge measurements; prior to Nov. 30, 1970, flow determined from pump rating.

09529240. SOUTH GILA PUMP OUTLET CHANNEL NO. 2.

LOCATION.--Water-stage recorder in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.6 mi (1.0 km) upstream from outlet to Gila River; prior to Oct. 18, 1965, outlet was to Wellton-Mohawk Main Outlet Drain. Prior to Aug. 1, 1965, Sparling meter at outlet to Wellton-Mohawk Main Outlet Drain.

PERIOD OF RECORD.--Monthly discharge January 1962 to current year.

REMARKS.--Record shows water pumped from wells in South Gila Valley Unit and conveyed by concrete channel to the Gila River.

09529250. BRUCE CHURCH WASTEWAY.

LOCATION.--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.20, T.8 S., R.22 E., Hydrologic Unit 15070201, 500 ft (150 m) upstream from outlet to Gila River.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows waste water from North Gila Valley Irrigation District returned to Gila River.

09529300. WELLTON-MOHAWK MAIN OUTLET DRAIN (CONVEYANCE CHANNEL).

LOCATION.--Water-stage recorder and Parshall flume in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.17, T.8 S., R.21 W., Hydrologic Unit 15070201, 7.8 mi (12.6 km) upstream from outlet to Gila River (M.O.D.E. 1), which is 0.6 mi (1.0 km) upstream from mouth of Gila River. Prior to Feb. 20, 1962, gage heights measured from reference point on measuring bridge. Prior to Oct. 1, 1974, gage located 1,000 ft (300 m) upstream without Parshall flume.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows water pumped from numerous wells in Wellton-Mohawk Irrigation and Drainage District to lower the water table. Flow can be discharged to the Gila River or Colorado River by any one of or combination of three outlets. These outlets are known as: M.O.D.E. 1 (release to Gila River about 8.0 mi (13 km) below station); M.O.D.E. 2 (see sta 09531800), release to Colorado River above Morelos Dam; and M.O.D.E. 3 (see sta 09531900), release to Colorado River below Morelos Dam. Since June 1977 discharge of drain has been released to Wellton-Mohawk Bypass Drain and measured at Arizona-Sonora boundary (see sta 09533300). For water year 1978, no water was released to Gila River through M.O.D.E. 1.

09529360. SOUTH GILA PUMP OUTLET CHANNEL NO. 1.

LOCATION.--Water-stage recorder in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.30, T.8 S., R.22 W., Hydrologic Unit 15070201, 0.2 mi (0.3 km) upstream from outlet to Gila River, which is 0.6 mi (1.0 km) upstream from mouth of Gila River. Prior to Aug. 1, 1965, Sparling flowmeter 300 feet (90 m) upstream.

PERIOD OF RECORD.--Monthly discharge August 1961 to current year.

REMARKS.--Record shows water pumped from wells in South Gila Valley Unit and conveyed by concrete channel to Gila River.

09529400. SOUTH GILA DRAIN NO. 2.

LOCATION.--Near center of sec.24, T.8 S., R.23 W., Hydrologic Unit 15030107, at outlet to Colorado River. Prior to Oct. 1, 1969, Sparling flowmeter at same site.

PERIOD OF RECORD.--Monthly discharge October 1960 to current year.

REMARKS.--Record shows ground-water drainage and occasional waste water from South Gila Valley Unit returned to Colorado River. There is no gage; flow record computed by interpolation between discharge measurements made bimonthly.

09529420. SOUTH GILA TERMINAL WASTEWAY.

LOCATION.--Water-stage recorder and Parshall flume in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.8 S., R.23 W., Hydrologic Unit 15030107, 2.0 mi (3.2 km) upstream from outlet to Colorado River. Prior to Aug. 1, 1965, total-flow meter at same site.

PERIOD OF RECORD.--Monthly discharge March 1965 to current year.

REMARKS.--Record shows waste water from South Gila Canal of South Gila Valley Unit returned to Colorado River.

09529440. SOUTH GILA PUMP OUTLET CHANNEL NO. 4.

LOCATION.--Water-stage recorder and broad-crested weir, in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.26, T.8 S., R.23 W., Hydrologic Unit 15030107, 1.5 mi (2.4 km) upstream from outlet to Colorado River.

PERIOD OF RECORD.--Monthly discharge July 1965 to current year.

REMARKS.--Records shows water pumped from wells in South Gila Valley Unit and conveyed by concrete-lined channel to Colorado River.

09529600.--RESERVATION DRAIN NO. 7.

LOCATION.--At downstream end of culvert on State Road 24 (formerly Avenue C), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.33, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 0.5 mi (0.8 km) upstream from outlet to Reservation Main Drain. Prior to Oct. 1, 1969, nonrecording gage at same site.

PERIOD OF RECORD.--Monthly discharge March 1966 to current year.

REMARKS.--Record shows drainage water from sec.34, T.15 S., R.23 E., and is used with sta 09529700 to determine seepage from All-American Canal. There is no gage; flow record computed by interpolation between discharge measurements made monthly. Beginning June 20, 1967, Imperial Irrigation District makes discharge measurements weekly; however, Imperial Irrigation District made no measurements during 1978 WY.

Return surface flows below Imperial Dam, AZ-CA--Continued

09529700. RESERVATION MAIN DRAIN NO. 6.

LOCATION.--Nonrecording gage on upstream right piling of Stallnacker Road Bridge (formerly 9th Street Bridge), in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.32, T.15 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian.

PERIOD OF RECORD.--Monthly discharge March 1966 to current year.

REMARKS.--Record shows waste and drainage water from the Reservation Division, and is used with sta 09529600 to determine seepage from All-American Canal, which parallels drain for 4 mi (6.4 km). Flow record computed by interpolation between discharge measurements made monthly. The Imperial Irrigation District makes discharge measurements weekly.

09529800. RESERVATION DRAIN NO. 2.

LOCATION.--At upstream side of bridge on White Road (formerly 8th Street), in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.6, T.16 S., R.23 E., Hydrologic Unit 15030107, San Bernardino meridian, 0.9 mi (1.4 km) upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--Monthly discharge March 1966 to current year.

REMARKS.--Record used to compute seepage from All-American Canal in sec.31, T.15 S., R.22 E. There is no gage; flow record computed by interpolation between discharge measurements made monthly. The Imperial Irrigation District makes discharge measurements weekly.

09529900. RESERVATION DRAIN NO. 3.

LOCATION.--At Jackson Road Bridge (formerly 5th Street Bridge), in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.10, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 1.0 mi (1.6 km) upstream from outlet to Reservation Main Drain.

PERIOD OF RECORD.--Monthly discharge March 1966 to current year.

REMARKS.--Record used to compute seepage from All-American Canal upstream from Yuma Main Canal. There is no gage; flow record computed by interpolation between discharge measurements made monthly. Imperial Irrigation District makes discharge measurements weekly.

09530000. RESERVATION MAIN DRAIN NO. 4.

LOCATION.--Water-stage recorder in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.26, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 500 ft (150 m) upstream from railroad culvert. Prior to January 1937, no gage. January 1937 to Apr. 16, 1941, nonrecording gages at culvert 500 ft (150 m) downstream at different datums. April 16, 1941, to Dec. 16, 1971, water-stage recorder at culvert 500 ft (150 m) downstream. May 29, 1974, to Feb. 2, 1976, water-stage recorder with vane meter at present site. Flow enters Yuma Main Canal wasteway channel 200 ft (60 m) downstream from spillway structure. Prior to May 1955 it entered 500 ft (150 m) upstream from outlet of Yuma Main Canal wasteway in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.26, T.16 S., R.22 E., San Bernardino meridian.

PERIOD OF RECORD.--Monthly discharge January 1913 to April 1920, October 1921 to March 1925, January 1934 to current year (calendar year discharge only 1934-36). Prior to October 1955, published as California drainage canal.

REMARKS.--Record shows waste and drainage water from area east of Yuma Main Canal on Reservation Division. Since 1939, seepage from All-American Canal has caused large increase. Flow is not included in the record of Yuma Main Canal wasteway.

09530200. YUMA MESA OUTLET DRAIN.

LOCATION.--Venturi meter with recorder in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, in Arizona, Yuma County, 0.3 mi (0.5 km) from outlet to Colorado River.

PERIOD OF RECORD.--Monthly discharge July 1970 to current year.

REMARKS.--Record shows water pumped from wells on the Yuma Mesa and conveyed by underground conduit to Colorado River.

COOPERATION.--Records furnished by Bureau of Reclamation prior to July 21, 1972.

09530400. RESERVATION DRAIN NO. 11.

LOCATION.--At outlet to Drain 8-B (Araz Drain), in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.19, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian.

PERIOD OF RECORD.--Monthly discharge March 1966 to current year.

REMARKS.--Record shows drainage from sec.20, T.16 S., R.22 E. Flow at this station, with that at sta 09530500, is used to determine seepage from All-American Canal. There is no gage; flow record computed by interpolation between discharge measurements made monthly. Beginning June 20, 1967, Imperial Irrigation District makes discharge measurements weekly.

09530500. DRAIN 8-B.

LOCATION.--Enters Colorado River in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.30, T.16 S., R.22 E., Hydrologic Unit 15030107, San Bernardino meridian, 4 mi (6.4 km) downstream from outlet of Yuma Main Canal wasteway.

PERIOD OF RECORD.--Monthly discharge March 1948 to current year. Prior to October 1955, published as Araz Drain.

REMARKS.--Record shows seepage from All-American Canal, and waste and drainage water west of Yuma Main Canal on the Reservation Division. Flow at this station, with that at sta 09530400, is used to determine seepage from All-American Canal. There is no gage, but due to fairly constant drainage, flow record is computed by interpolation between discharge measurements made monthly. Imperial Irrigation District makes discharge measurements weekly at site 1,000 ft (300 m) upstream.

09531800. MAIN OUTLET DRAIN EXTENSION ABOVE MORELOS DAM (M.O.D.E. 2).

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.36, T.16 S., R.21 E., Hydrologic Unit 15030107, San Bernardino meridian, at outlet to Colorado River, 1.7 mi (2.7 km) upstream from Morelos Dam.

PERIOD OF RECORD.--Monthly discharge November 1965 to current year.

REMARKS.--Record shows water conveyed to Colorado River 1.7 mi (2.7 km) above Morelos Dam, from numerous drainage wells in Wellton-Mohawk Irrigation and Drainage District. No flow since July 24, 1973. (See also stas 09529300 and 09531900.)

Return surface flows below Imperial Dam, AZ-CA--Continued

09531850. COOPER WASTEWAY.

LOCATION.--Water-stage recorder and weir, in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.28, T.8 S., R.24 W., Hydrologic Unit 15030108, 0.6 mi (1.0 km) upstream from Morelos Dam. Prior to July 14, 1971, at site 1 mi (1.6 km) downstream.

PERIOD OF RECORD.--Monthly discharge January 1934 to current year.

REMARKS.--Record shows waste water from Valley Division returned to Colorado River.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09531900. MAIN OUTLET DRAIN EXTENSION BELOW MORELOS DAM (M.O.D.E. 3).

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.28, T.8 S., R.24 W., Hydrologic Unit 15030108, at outlet to Colorado River just downstream from Morelos Dam.

PERIOD OF RECORD.--Monthly discharge November 1965 to current year.

REMARKS.--Record shows water conveyed to Colorado River below Morelos Dam, from numerous drainage wells in Wellton-Mohawk Irrigation and Drainage District. (See also stas 09529300, 09531800.)

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09532500. ELEVEN MILE WASTEWAY.

LOCATION.--Water-stage recorder and regulating gate in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.8, T.9 S., R.24 W., Hydrologic Unit 15030108, 3.2 mi (5.1 km) downstream from Morelos Dam.

PERIOD OF RECORD.--Monthly discharge January 1924 to current year.

REMARKS.--Record shows waste water from Valley Division returned to Colorado River.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09533000. TWENTY-ONE MILE WASTEWAY.

LOCATION.--Water-stage recorder and weir in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.35, T.10 S., R.25 W., Hydrologic Unit 15030108, 0.6 mi (1.0 km) upstream from outlet to Colorado River, which is 2.4 mi (3.9 km) upstream from southerly international boundary and 2.6 mi (4.2 km) northwest of San Luis, Ariz. Prior to May 1, 1971, water-stage recorder and Parshall flume at site 200 ft (60 m) upstream.

PERIOD OF RECORD.--Monthly discharge March 1939 to current year.

REMARKS.--Record shows waste water from Valley Division returned to Colorado River.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09533300. WELLTON-MOHAWK BYPASS DRAIN AT ARIZONA-SONORA BOUNDARY.

LOCATION.--Water-stage recorder and Parshall flume in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.10, T.11 S., R.25 W., Hydrologic Unit 15030108, on right bank 80 ft (24 m) upstream from the Arizona boundary, 550 ft (168 m) east of the thalweg of Colorado River, and 1.8 mi (2.9 km) west of San Luis, Ariz.

PERIOD OF RECORD.--Monthly discharge June 1977 to current year.

REMARKS.--Record shows water conveyed to the Santa Clara Slough, from numerous drainage wells in Wellton-Mohawk Irrigation and Drainage District. (See also stas 09529300, 09531800, 09531900.)

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09534000. MAIN DRAIN.

LOCATION.--Flowmeters in discharge pipes at pumping plant in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.11 S., R.25 W., Hydrologic Unit 15030108, 0.4 mi (0.6 km) west of San Luis, Ariz. Prior to Apr. 1, 1969, rated pumps with forebay and afterbay gages to measure head.

PERIOD OF RECORD.--Monthly discharge January 1919 to current year.

REMARKS.--Record shows flow which consists mostly of drainage water from the Valley Division which is pumped across the Arizona-Sonora boundary for use in Mexico. Flowmeters checked by discharge measurements made by International Boundary and Water Commission (U.S. Section).

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09534300. WEST MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder and weir, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.11 S., R.25 W., Hydrologic Unit 15030108, 0.3 mi (0.5 km) upstream from outlet to Main drain, and 0.4 mi (0.6 km) west of San Luis, Ariz. Prior to Aug. 1, 1975, at site 150 ft (46 m) upstream from outlet to Main drain.

PERIOD OF RECORD.--Monthly discharge February 1971 to current year.

REMARKS.--Record shows waste water from Valley Division which is discharged across the Arizona-Sonora boundary for use in Mexico.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

09534500. EAST MAIN CANAL WASTEWAY.

LOCATION.--Water-stage recorder and weir, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.12, T.11 S., R.25 W., Hydrologic Unit 15030108, 0.3 mi (0.5 km) upstream from outlet to Main drain, and 0.2 mi (0.3 km) west of San Luis, Ariz.

PERIOD OF RECORD.--Monthly discharge January 1924 to June 1928, January 1932 to December 1933, April 1935 to current year. Calendar year estimates 1934 and 1935, published in WSP 1313.

REMARKS.--Record shows amount of unused water at the extreme end of the Valley Division which is discharged across the Arizona-Sonora boundary for use in Mexico.

COOPERATION.--Record furnished by International Boundary and Water Commission (U.S. Section).

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Return surface flows below Imperial Dam, AZ-CA--Continued

MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Mittry Lake Outlet Channel 09527900	Laguna Canal wasteway 09528600	Levee Canal wasteway 09528800	North Gila Drain No. 1 09529000	North Gila Drain No. 3 09529050	Fortuna wasteway 09529100
October	550	0.8	143	429	0	23
November	549	16	127	258	0	6.0
December	586	4.4	107	145	0	53
CAL YR 1977	7,420	51	1,840	3,990	0	641
January	817	0	22	157	0	32
February	641	0	215	123	0	13
March	718	0	137	179	0	15
April	402	0	168	247	0	32
May	177	0	172	242	0	30
June	443	0	139	274	0	22
July	787	0	151	241	0	32
August	801	0	242	291	0	8.0
September	484	0	119	361	0	6.3
WTR YR 1978	6,960	21	1,740	2,950	0	271

Month	North Gila Main Canal wasteway 09529150	South Gila Pump Outlet Channel No. 3 09529160	Bruce Church Drain 09529200	South Gila Pump Outlet Channel No. 2 09529240	Bruce Church wasteway 09529250
October	88	2.2	1.4	199	4.6
November	187	5.0	6.0	510	5.9
December	72	3.5	0.2	1,510	0.3
CAL YR 1977	1,210	7,150	203	16,960	59
January	64	3.8	0	392	3.6
February	44	678	2.2	1,460	3.7
March	80	1,520	6.1	1,550	9.7
April	43	1,690	6.0	1,690	5.4
May	87	23	0	1,710	0.04
June	123	178	0	1,280	0.3
July	150	1,940	0	1,160	0.5
August	126	1,370	0	1,660	0
September	177	232	0	1,620	7.6
WTR YR 1978	1,240	7,660	22	14,740	41

Month	Wellton-Mohawk Main Outlet Drain 09529300	South Gila Pump Outlet Channel No. 1 09529360	South Gila Drain No. 2 09529400	South Gila Terminal wasteway 09529420	South Gila Pump Outlet Channel No. 4 09529440
October	18,300	2,360	0	62	0
November	16,710	2,210	14	68	22
December	18,110	2,680	25	79	710
CAL YR 1977	204,200	28,690	352	618	2,760
January	17,600	2,380	15	39	30
February	15,380	2,080	11	52	627
March	17,300	2,520	18	33	529
April	16,930	2,460	24	55	1,020
May	16,630	2,520	31	56	158
June	15,860	2,370	42	48	229
July	14,210	2,440	56	30	258
August	14,890	2,100	57	68	536
September	13,610	1,730	42	46	2.5
WTR YR 1978	195,500	27,850	335	637	4,120

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

Return surface flows below Imperial Dam, AZ-CA--Continued

MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

Month	Reservation Drain No. 7 09529600	Reservation Main Drain No. 6 09529700	Reservation Drain No. 2 09529800	Reservation Drain No. 3 09529900	Reservation Main Drain No. 4 09530000	Yuma Mesa Outlet Drain 09530200
October.....	59	1,010	6.1	221	2,610	2,840
November	40	930	6.0	195	2,570	2,900
December	33	843	6.1	206	2,670	2,430
CAL YR 1977	907	11,230	69	2,720	35,410	40,890
January	25	756	6.1	184	2,290	619
February	22	698	5.6	164	2,080	2,430
March	29	912	6.1	219	2,910	2,190
April	32	893	6.0	258	2,930	2,750
May	36	906	6.1	241	2,960	3,290
June	70	859	6.0	241	2,800	3,070
July	91	964	8.3	284	3,150	3,140
August	83	1,050	6.7	270	3,360	3,210
September	77	954	6.0	239	3,490	3,190
WTR YR 1978	597	10,780	75	2,720	33,820	32,060

Month	Reservation Drain No. 11 09530400	Drain 8-B 09530500	M.O.D.E. 2 (above Morelos Dam) 09531800	Cooper wasteway 09531850	M.O.D.E. 3 (below Morelos Dam) 09531900	Eleven Mile wasteway 09532500
October	6.1	102	0	18	68	15
November	6.0	66	0	78	23	250
December	9.9	53	0	14	3.0	279
CAL YR 1977	118	1,220	0	770	98,800	1,500
January	12	49	0	35	1.4	31
February	11	40	0	38	1,630	114
March	13	63	0	36	0	235
April	18	68	0	48	0	159
May	18	58	0	98	0	10
June	14	73	0	41	0	133
July	23	88	0	82	0.8	13
August	21	85	0	58	30	98
September	18	74	0	41	0	10
WTR YR 1978	170	819	0	587	1,760	1,350

Month	Twenty-one Mile wasteway 09533000	Wellton-Mohawk Bypass Drain 09533300	Main Drain 09534000	West Main Canal wasteway 09534300	East Main Canal wasteway 09534500
October	0	18,540	7,080	133	443
November	0	16,980	6,250	175	254
December	0	18,260	5,730	314	247
CAL YR 1977	0	108,000	82,850	3,910	5,000
January	0	17,540	5,470	232	90
February	0	13,640	5,280	252	231
March	0	17,430	6,390	290	258
April	0	16,710	6,360	164	295
May	0	16,200	6,500	170	228
June	6.1	15,040	6,170	150	247
July	0	13,990	6,570	93	286
August	0	14,740	6,540	237	297
September	0	13,430	6,380	300	354
WTR YR 1978	6	192,500	74,720	2,510	3,230

NOTE.--Yearly totals given above have been computed from total cfs-days and may differ slightly from the summation of monthly total acre-feet on occasion.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09527900 MITTRY LAKE OUTLET CHANNEL NEAR YUMA, AZ

LOCATION.--Lat 32°48'09", long 114°28'05", in NW¼SE¼ sec.14, T.7 S., R.22 W., Yuma County, Hydrologic Unit 15030107, at water-stage recorder and sharp-crested weir, 1,000 ft (305 m) upstream from outlet into Colorado River above Laguna Dam, and 12 mi (19 km) northeast of Yuma.

PERIOD OF RECORD.--September 1974 to current year.

REMARKS.--No flow May 5-13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	SIREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARU- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DISE- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DISE- SOLVED (MG/L AS Mg)	SODIUM, DISE- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM DISE- SOLVE (MG/L AS K)
UCT												
03...	0230	11	1760	8.3	25.5	360	230	85	37	250	5.7	7.
NOV												
07...	0330	12	1730	8.0	18.0	370	230	84	40	250	5.6	7.
DEC												
05...	0400	6.6	1750	8.1	19.5	400	250	89	42	210	4.6	7.
JAN												
02...	0215	12	1670	7.9	18.0	400	230	93	40	220	4.8	7.
FEB												
06...	0135	10	1740	8.1	18.0	410	220	96	41	230	5.0	8.
MAR												
06...	0210	13	1690	8.1	18.5	450	240	110	42	260	5.3	9.
APR												
03...	0215	9.1	1970	8.1	18.5	460	250	110	45	260	5.3	8.
MAY												
01...	0200	2.4	1980	7.9	19.0	450	230	110	42	270	5.6	9.
JUN												
05...	0235	5.1	1980	7.9	23.5	440	260	100	45	300	6.3	8.
JUL												
03...	0715	11	1930	8.0	25.5	410	270	92	45	270	5.8	8.
AUG												
07...	0245	15	1850	8.0	29.5	410	180	91	44	260	5.6	8.
SEP												
04...	0145	11	1840	8.0	28.0	400	240	91	41	230	5.0	8.

DATE	BICAR- BONATE (MG/L AS HCO3)	LAK- BONATE (MG/L AS CO3)	SULFATE DISE- SOLVED (MG/L AS SO4)	CHLO- RIDE, DISE- SOLVED (MG/L AS CL)	FLUO- RIDE, DISE- SOLVED (MG/L AS F)	SILICA, DISE- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 100 DEG. C DISE- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISE- SOLVED (MG/L)	SOLIDS, DISE- SOLVED (IONS PER AC-FT)	NITRO- GEN, NO2+NO3 DISE- SOLVED (MG/L AS N)	BURUN, DISE- SOLVED (UG/L AS B)	IRON, DISE- SOLVE (UG/L AS FE)
UCT												
03...	170	0	450	200	1.9	25	1130	1140	1.54	--	340	2
NOV												
07...	180	0	440	190	1.7	22	1120	1120	1.52	--	340	1
DEC												
05...	180	0	450	200	1.7	18	1160	1110	1.58	--	350	2
JAN												
02...	200	0	420	190	1.5	16	1070	1090	1.46	--	320	2
FEB												
06...	230	0	420	200	1.5	16	1120	1150	1.52	--	320	1
MAR												
06...	250	0	440	240	1.5	15	1220	1240	1.66	--	350	
APR												
03...	260	0	460	250	1.6	14	1290	1280	1.75	--	370	1
MAY												
01...	260	0	470	240	1.6	15	1270	1290	1.73	--	380	1
JUN												
05...	210	0	480	250	1.7	16	1270	1310	1.73	--	390	2
JUL												
03...	--	--	480	240	1.6	16	1270	1240	1.73	--	410	1
AUG												
07...	280	0	450	230	1.7	19	1210	1240	1.65	.02	370	2
SEP												
04...	190	0	460	210	1.8	23	1190	1160	1.62	.01	390	2

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

511

09529000 NORTH GILA DRAIN NO. 1 NEAR YUMA, AZ

LOCATION.--Lat 32°45'29", long 114°27'18", in NE 1/4 sec.9, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15030107, 0.1 mi (0.2 km) upstream from outlet to Colorado River, and 6 mi (10 km) northeast of Yuma.

PERIOD OF RECORD.--October 1968 to September 1973 (partial-record station), October 1973 to current year.

REMARKS.--Unpublished chemical analyses (partial record) for water years 1962-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CALCO3)	HAR- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM SOLVED (MG/L AS Ca)	MAGNE- SIUM, SOLVED (MG/L AS Mg)	SODIUM, SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCT												
25...	1330	6.1	1780	8.1	24.0	410	230	100	39	240	5.2	4.6
NOV												
28...	1000	2.4	1850	7.7	--	500	300	120	49	240	4.7	5.1
DEC												
27...	1245	2.8	1720	8.0	18.0	410	230	100	40	220	4.7	5.6
JAN												
23...	1215	1.9	1730	7.8	16.0	420	230	100	41	220	4.7	4.6
FEB												
21...	1310	2.3	1810	8.1	12.0	430	230	100	43	230	4.8	4.7
MAR												
20...	1400	3.5	1670	8.3	22.0	410	240	100	39	210	4.5	4.9
APR												
24...	1215	3.8	1660	8.1	25.5	410	210	100	38	210	4.5	4.7
MAY												
22...	1115	3.7	1750	8.1	27.0	450	250	110	42	230	4.7	4.8
JUN												
19...	1100	4.6	1760	8.0	24.5	420	230	100	42	230	4.9	4.9
JUL												
24...	1515	3.0	1600	8.1	33.0	390	250	95	38	210	4.6	4.5
AUG												
28...	1150	5.5	1630	8.1	28.5	380	210	97	34	210	4.7	4.6
SEP												
25...	1400	6.0	1800	8.0	24.0	470	270	120	41	220	4.4	5.1

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (IONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS Fe)
UCT												
25...	220	0	430	210	.7	21	1170	1160	1.59	.25	280	20
NOV												
28...	250	0	460	210	.6	19	1240	1230	1.69	.36	310	30
DEC												
27...	220	0	400	200	.6	22	1150	1100	1.56	.12	270	10
JAN												
23...	230	0	440	190	.7	21	1150	1130	1.56	.25	280	10
FEB												
21...	240	0	440	200	.7	21	1210	1160	1.65	.31	290	10
MAR												
20...	210	0	400	180	.7	16	1090	1050	1.48	.03	280	10
APR												
24...	240	0	410	190	.6	19	1090	1090	1.48	.03	260	20
MAY												
22...	240	0	420	190	.6	21	1140	1140	1.55	.11	310	30
JUN												
19...	230	--	430	200	.7	21	1100	1140	1.50	.13	300	10
JUL												
24...	170	0	390	190	.6	25	1040	1040	1.41	.02	260	90
AUG												
28...	210	0	400	180	.6	20	1080	1050	1.47	.18	260	20
SEP												
25...	240	0	480	190	.7	21	1200	1200	1.63	.56	290	40

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529050 NORTH GILA DRAIN NO. 3 NEAR YUMA, AZ

LOCATION.--Lat 32°44'28", long 114°26'39", in NE¼NE¼ sec.18, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, 0.2 mi (0.3 km) upstream from outlet to Gila River, and 10 mi (16 km) east of Yuma.

PERIOD OF RECORD.--October 1968 to September 1973 (partial-record station), October 1973 to current year.

REMARKS.--No flow for entire year. Unpublished chemical analyses (partial record) for water years 1965-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)
OCT		
24...	1530	.00
NOV		
28...	1145	.00
DEC		
27...	1445	.00
JAN		
23...	1240	.00
FEB		
21...	0845	.00
MAR		
20...	1500	.00
APR		
24...	1340	.00
MAY		
22...	1315	.00
JUN		
19...	1300	.00
JUL		
24...	1600	.00
AUG		
28...	0955	.00
SEP		
25...	1410	.00

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09529160 SOUTH GILA PUMP OUTLET CHANNEL NO. 3 NEAR YUMA, AZ

LOCATION.--Lat 32°43'04", long 114°30'12", in NW¼SE¼ sec.22, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at gaging station 0.5 mi (0.8 km) upstream from outlet to Gila River, and 6 mi (10 km) east of Yuma.

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--No flow for many days of most months. Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
FEB											
20...	0610	25	5030	7.6	22.0	1110	794	266	109	670	8.7
27...	0335	27	4960	7.7	20.5	1100	790	262	109	655	8.6
MAR											
06...	0430	27	4870	7.5	22.0	1080	778	256	107	640	8.5
13...	0700	25	4860	7.5	21.0	1070	775	256	105	640	8.5
20...	0340	26	4830	7.8	20.5	1060	756	254	104	640	8.5
27...	0300	25	4860	7.6	20.5	1070	772	258	104	640	8.5
APR											
03...	0345	25	4850	7.8	20.5	1060	762	250	106	640	8.6
10...	0335	32	4760	7.7	20.5	990	649	232	100	655	9.1
17...	0250	32	4830	7.7	23.0	1020	676	232	107	660	9.0
24...	0320	32	4840	7.6	20.5	1020	676	236	105	660	9.0
JUL											
03...	0345	31	4840	7.5	21.5	1010	667	234	104	665	9.1
10...	0530	33	4830	7.6	29.0	1010	667	234	104	665	9.1
17...	0330	34	4920	7.5	21.5	1080	764	256	107	675	8.9
24...	0250	32	4990	7.6	27.0	1100	784	260	110	680	8.9
31...	0330	31	5010	7.5	30.0	1100	778	258	111	680	8.9
AUG											
07...	0420	18	5660	7.6	22.0	1190	872	276	122	790	10
14...	0115	19	5660	7.6	27.0	1190	870	278	121	790	10
21...	0330	19	5660	7.5	28.0	1190	872	280	120	790	10
28...	0320	19	5690	7.5	22.0	1200	880	270	128	795	10
	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
FEB											
20...	9.4	386	0	490	1240	.8	22	3280	3000	4.46	.41
27...	9.4	378	0	485	1230	.5	23	3290	2960	4.47	.23
MAR											
06...	9.4	368	0	460	1200	.9	26	3070	2880	4.18	.27
13...	8.8	360	0	460	1200	.6	22	3050	2870	4.15	.45
20...	9.1	370	0	455	1190	.7	23	3150	2860	4.28	.41
27...	9.3	364	0	460	1200	.8	21	3060	2870	4.16	.41
APR											
03...	9.0	364	0	460	1190	.5	22	3000	2860	4.08	.29
10...	9.0	416	0	525	1090	.6	25	3100	2850	4.22	2.0
17...	8.8	420	0	535	1110	.6	22	3060	2890	4.16	.88
24...	8.9	420	0	540	1110	.6	24	3050	2900	4.15	.81
JUL											
03...	9.1	418	0	540	1110	.4	26	2910	2900	3.96	1.4
10...	8.9	418	0	540	1110	.6	20	3230	2890	4.39	.77
17...	9.1	386	0	510	1200	.7	20	3340	2970	4.54	.36
24...	9.3	386	0	515	1220	.6	22	3390	3010	4.61	.54
31...	9.3	392	0	520	1220	.6	18	3350	3010	4.56	.36
AUG											
07...	9.9	388	0	590	1420	.8	26	3520	3430	4.79	.41
14...	9.9	390	0	585	1425	.6	24	3900	3430	5.30	.41
21...	10	388	0	590	1420	.6	22	3830	3430	5.21	.38
28...	9.5	390	0	595	1430	.7	23	3850	3440	5.24	.32

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529200 BRUCE CHURCH DRAIN NEAR YUMA, AZ

LOCATION.--Lat 32°43'26", long 114°31'07", in NW¼NE¼ sec.21, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, 0.2 mi (0.3 km) upstream from outlet to Gila River, and 5 mi (8 km) east of Yuma.

PERIOD OF RECORD.--October 1968 to September 1973 (partial-record station), October 1973 to current year.

REMARKS.--No flow many days of most months. Unpublished chemical analyses (partial record) for water years 1965-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO ₃)	HARD- NESS, NONCAR- BONATE (MG/L CaCO ₃)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TIUM RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
25...	1150	E.50	2420	7.8	18.0	630	310	140	67	300	5.2	7.7
NOV												
28...	1200	E.05	2360	7.8	--	670	380	150	72	300	5.0	10
DEC												
27...	1415	.03	1970	7.9	18.0	520	270	120	54	250	4.8	11
JAN												
23...	1410	.00	--	--	--	--	--	--	--	--	--	--
FEB												
21...	1340	E.06	2230	7.9	18.5	590	290	150	64	280	5.0	7.4
MAR												
20...	1245	.05	2640	7.8	19.0	720	420	180	78	330	5.4	11
APR												
24...	1305	E.05	2610	7.8	24.5	750	410	170	75	350	5.6	9.5
MAY												
22...	0940	E.00	2240	7.9	21.0	570	300	120	65	300	5.5	8.8
JUN												
19...	1250	.00	--	--	--	--	--	--	--	--	--	--
JUL												
24...	1400	.00	--	--	--	--	--	--	--	--	--	--
AUG												
28...	1250	.00	--	--	--	--	--	--	--	--	--	--
SEP												
25...	1425	.00	--	--	--	--	--	--	--	--	--	--

E Estimated.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

[illegible]

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, AZ

LOCATION.--Lat 32°42'31", long 114°31'45", in NW¼SW¼ sec.28, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at gaging station 0.6 mi (1.0 km) upstream from outlet to Gila River, and 4 mi (6 km) east of Yuma.

PERIOD OF RECORD.--October 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO
OCT											
03...	0310	4.2	2100	8.0	23.0	310	82	78	28	335	8.3
10...	0340	5.3	2100	7.8	25.5	310	76	76	29	335	8.3
17...	0500	5.0	2110	7.8	21.0	310	74	76	29	335	8.3
24...	0425	5.8	2100	7.8	21.0	310	77	76	29	335	8.3
31...	0330	3.8	2110	7.8	--	310	76	77	29	340	8.4
NOV											
07...	0535	3.2	2100	7.8	21.0	310	76	75	30	335	8.3
14...	0220	11	3570	7.7	20.0	560	296	129	58	550	10
21...	0410	10	3510	7.7	19.5	550	291	125	58	540	10
26...	0325	9.6	3480	7.6	20.0	550	289	124	58	540	10
DEC											
05...	0150	28	3010	7.7	21.5	530	296	129	51	450	8.5
12...	0340	31	3080	7.7	20.0	535	300	129	52	455	8.6
19...	0430	29	3080	7.7	20.0	535	299	127	53	455	8.6
26...	0120	28	3080	7.7	22.0	530	296	126	52	460	8.7
JAN											
02...	0305	11	3540	7.7	21.0	555	299	128	57	550	10
09...	0340	10	3470	7.6	21.0	540	284	124	56	535	10
16...	0205	4.0	2090	7.8	19.5	310	76	75	30	335	8.3
23...	0345	4.3	2090	7.8	21.0	310	76	75	30	335	8.3
30...	0045	4.3	2100	7.8	21.0	310	74	76	29	340	8.4
FEB											
06...	0305	11	2790	8.0	21.5	450	206	106	45	435	8.9
13...	0315	24	3030	7.8	21.5	495	249	119	48	465	9.1
20...	0525	35	2910	7.7	23.5	505	276	119	51	440	8.5
27...	0400	35	2920	7.8	21.0	505	272	119	51	440	8.5
MAR											
06...	0415	36	2920	7.7	22.0	505	274	120	50	440	8.5
13...	0710	34	2940	7.7	23.0	505	276	126	46	445	8.6
20...	0405	16	3340	7.9	20.5	525	274	121	54	515	9.8
27...	0315	15	3340	7.8	26.0	525	276	121	54	515	9.8
APR											
03...	0430	24	3050	7.8	22.0	495	250	122	46	470	9.2
10...	0400	25	3040	7.8	20.5	495	254	119	48	465	9.1
17...	0350	25	3050	7.8	24.0	495	252	118	49	470	9.2
24...	0050	36	2930	7.7	21.5	505	276	119	51	440	8.5
MAY											
01...	0340	27	3070	7.7	21.0	495	257	116	50	470	9.2
08...	0400	25	3050	7.7	26.5	495	248	116	50	465	9.1
15...	0350	35	2930	7.7	23.0	505	277	120	50	440	8.5
22...	0330	27	3070	7.7	22.0	525	294	126	51	455	8.6
29...	0055	40	3080	7.6	26.5	525	294	126	51	455	8.6
JUN											
05...	0350	28	3070	7.7	22.0	525	292	124	52	455	8.7
12...	0210	28	3080	7.6	25.5	525	292	126	51	455	8.6
19...	0335	19	3300	7.8	26.0	520	276	120	54	510	9.7
26...	0400	17	3270	7.7	23.5	510	266	119	52	505	9.7
JUL											
03...	0405	17	3270	7.6	22.0	515	272	119	53	505	9.7
10...	0450	18	3270	7.7	28.5	510	268	116	54	510	9.8
17...	0345	19	2970	7.7	23.0	460	219	104	49	460	9.3
24...	0310	20	2970	7.7	27.0	460	220	105	48	460	9.3
31...	0550	20	2950	7.7	28.5	460	220	101	51	455	9.2
AUG											
07...	0440	12	3530	7.7	23.0	550	299	125	58	545	10
14...	0100	27	2990	7.8	27.0	485	242	120	45	460	9.1
21...	0340	36	2810	7.7	28.0	450	217	106	45	430	8.8
28...	0340	25	2970	7.8	23.0	480	247	114	48	455	9.0
SEP											
04...	0230	33	2810	7.7	25.0	450	217	107	45	430	8.8
11...	0415	34	2810	7.7	26.5	450	216	106	45	430	8.8
18...	0225	34	2820	7.7	22.0	450	217	109	43	430	8.6
25...	0200	11	2140	7.8	25.0	325	94	83	29	335	8.1

09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, AZ--Continued

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1965-68 available from district office in Tucson, Ariz.

COOPERATION.--Daily specific conductance record furnished by Bureau of Reclamation.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,750 micromhos Nov. 12; minimum daily, 2,090 micromhos Dec. 28, Jan. 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE AS (MG/L HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT											
03...	5.5	278	0	425	255	1.5	22	1310	1310	1.78	4.3
10...	5.3	284	0	425	250	1.5	21	1310	1300	1.78	4.3
17...	5.3	288	0	425	250	1.5	24	1310	1310	1.78	5.0
24...	5.0	284	0	425	255	1.0	22	1300	1300	1.77	3.8
31...	5.0	286	0	425	255	1.2	22	1310	1310	1.78	4.3
NOV											
07...	5.0	286	0	425	252	1.0	22	1300	1300	1.77	4.3
14...	6.8	322	0	390	780	1.0	24	2120	2100	2.88	1.4
21...	6.6	316	0	385	765	.8	22	2100	2060	2.86	1.2
28...	6.6	318	0	385	760	1.0	22	2100	2060	2.86	1.4
DEC											
05...	6.4	286	0	410	605	1.0	19	1840	1820	2.50	.79
12...	6.3	286	0	385	630	.9	21	1870	1820	2.54	.79
19...	6.4	288	0	390	630	.9	22	1860	1830	2.56	.56
26...	6.7	286	0	390	630	.9	20	1880	1830	2.56	.79
JAN											
02...	6.6	312	0	385	780	1.0	21	2110	2090	2.87	1.1
09...	6.8	312	0	385	750	.8	22	2060	2040	2.80	1.1
16...	5.1	286	0	425	252	1.3	20	1300	1300	1.77	4.5
23...	5.4	286	0	420	255	1.0	22	1300	1300	1.77	4.5
30...	5.1	288	0	425	255	1.0	22	1310	1320	1.78	4.7
FEB											
06...	6.0	298	0	425	500	.8	20	1710	1690	2.33	1.7
13...	6.0	300	0	400	605	1.0	19	1830	1810	2.49	.56
20...	5.8	280	0	390	585	1.2	23	1760	1760	2.39	.56
27...	6.8	284	0	390	585	.8	22	1790	1760	2.43	.34
MAR											
06...	5.9	282	0	390	585	1.0	22	1770	1760	2.41	.50
13...	6.3	280	0	395	590	.9	22	1770	1770	2.41	.72
20...	6.8	306	0	390	705	.9	23	2000	1970	2.72	1.0
27...	7.0	304	0	390	705	.9	22	2010	1970	2.73	1.0
APR											
03...	6.3	298	0	400	605	.7	22	1830	1820	2.49	.56
10...	6.2	294	0	400	605	.9	20	1830	1810	2.49	.90
17...	6.3	296	0	400	605	.8	20	1850	1820	2.52	.63
24...	6.2	280	0	395	585	.8	22	1780	1760	2.42	.56
MAY											
01...	6.3	290	0	410	605	1.0	22	1850	1830	2.52	1.0
08...	6.4	302	0	400	605	.8	22	1830	1820	2.49	.79
15...	6.2	278	0	395	585	1.0	20	1760	1760	2.39	.50
22...	6.4	282	0	390	630	1.0	22	1850	1820	2.52	.90
29...	6.0	282	0	390	630	1.0	21	1860	1820	2.53	.68
JUN											
05...	6.6	284	0	390	630	1.0	21	1830	1820	2.49	1.1
12...	6.4	284	0	390	630	1.0	22	1850	1830	2.52	.90
19...	6.5	298	0	395	690	1.1	20	1980	1950	2.69	.45
26...	6.5	298	0	390	680	1.0	22	1980	1930	2.69	.95
JUL											
03...	6.8	296	0	395	680	.8	22	1950	1930	2.65	.72
10...	6.5	296	0	395	680	1.0	21	1940	1930	2.64	1.0
17...	6.1	294	0	415	555	1.0	22	1780	1770	2.42	2.0
24...	6.1	292	0	415	560	.8	22	1780	1770	2.42	2.3
31...	6.4	292	0	415	555	1.1	18	1770	1760	2.41	2.2
AUG											
07...	6.4	306	0	385	770	.9	23	2070	2070	2.82	1.2
14...	6.4	296	0	415	575	1.0	20	1790	1790	2.43	.86
21...	6.1	284	0	415	510	.8	18	1720	1680	2.34	2.1
28...	6.2	284	0	410	575	.9	20	1790	1770	2.43	.45
SEP											
04...	6.2	284	0	415	510	1.0	19	1720	1680	2.34	1.5
11...	6.0	286	0	415	510	1.0	19	1730	1680	2.35	1.5
18...	6.2	284	0	415	515	1.1	20	1700	1690	2.31	1.4
25...	6.2	282	0	430	260	1.1	23	1330	1320	1.81	3.6

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2130	2130	3530	2110	2770	2940	3070	3100	3100	3290	2980	2830
2	2110	2130	3540	3600	2780	2940	3060	3080	3090	3290	2990	2840
3	2110	2120	2990	3500	2790	2940	3070	3070	3090	3290	2980	2850
4	2130	2120	3100	3440	2810	2940	3060	3080	3100	3280	3570	2830
5	2100	2120	3100	3500	2810	2940	3070	3070	3100	3310	3570	2830
6	2130	2280	3090	3510	2810	2940	3060	3070	3100	3300	3560	2830
7	2110	2120	3120	3510	2810	2950	2920	3070	3100	3280	3560	2830
8	2100	2140	3100	3510	2810	2940	3080	3070	3090	3290	2960	2830
9	2100	2110	3100	3520	3100	2940	3050	3070	3090	3290	2950	2830
10	2100	2610	3110	2110	3040	2940	3060	2940	3110	3290	2790	2830
11	2110	2600	3110	2110	3050	2950	3070	2930	3100	2960	2790	2830
12	2120	3750	3120	2110	3050	2940	3060	2950	3100	2970	2990	2820
13	2110	3620	3130	2110	3040	2940	3070	2930	3100	2970	3000	2830
14	2120	3580	3120	2110	2910	2960	3070	2940	3330	2980	3000	2820
15	2120	3590	3120	2090	2910	2950	3100	2950	3330	2990	2820	2830
16	2120	3580	3130	2110	2910	3380	3090	3110	3330	2990	2820	2830
17	2120	3580	3120	2120	2930	3370	3080	3110	3330	2990	2820	2830
18	2120	3450	3130	2110	2930	3370	3070	3110	3330	3000	2820	2830
19	2110	3560	3130	2110	2940	3370	3070	3110	3320	2970	2830	2840
20	2120	3550	3130	2110	2930	3360	2930	3120	3320	2980	2820	2840
21	2120	3560	3140	2110	2940	3360	2940	3100	3300	2970	2830	2840
22	2120	3580	3130	2100	2920	3350	2950	3100	3310	2970	2830	2850
23	2120	3570	3130	2100	2920	3360	2950	3100	3310	2970	2840	2840
24	2120	3540	3130	2110	2920	3360	2940	3110	3310	2980	2830	2160
25	2120	3550	3130	2110	2940	3370	2960	3110	3310	2970	2820	2160
26	2130	3550	3120	2110	2920	3370	2950	3100	3310	2980	3000	2150
27	2120	3550	3120	2100	2930	3360	2950	3110	3310	2970	3010	2160
28	2130	3540	2090	2690	2940	3360	2940	3110	3310	2980	2980	2990
29	2140	3530	2100	2690	---	3370	2960	3110	3330	2970	3050	2970
30	2130	3520	2120	2110	---	3370	2960	3110	---	2970	3040	2970
31	2130	---	2110	2750	---	3360	---	3100	---	2970	2820	---
MEAN	2120	3070	3010	2530	2910	3160	3020	3070	3220	3080	2990	2760
WTR YR 1978	MEAN	2910	MAX	3750	MIN	2090						

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DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ

LOCATION (Revised).--Lat 32°44'33", long 114°26'10", in NE¼NW¼ sec.17, T.8 S., R.21 W., Yuma County, Hydrologic Unit 15070201, at gaging station, 7.8 mi (12.6 km) upstream from outlet to Gila River, and 11 mi (18 km) east of Yuma.

PERIOD OF RECORD.--October 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO
OCT											
03...	0240	274	5240	8.1	25.0	880	528	206	89	860	13
10...	0400	292	5240	8.1	24.5	870	518	208	85	860	13
17...	0300	298	5210	7.9	23.5	860	509	210	82	855	13
24...	0400	306	5220	7.8	22.0	880	526	208	88	855	13
30...	0240	274	5240	8.1	25.0	880	528	206	89	860	13
31...	0520	298	5310	7.8	--	890	534	220	83	870	13
NOV											
07...	0445	303	5350	7.8	20.0	890	531	222	82	875	13
14...	0430	302	5390	7.9	20.0	910	552	216	90	875	13
21...	0255	297	5390	7.8	18.5	910	558	210	94	875	13
28...	0300	236	5070	7.8	19.0	860	519	206	84	830	12
DEC											
05...	0300	298	5260	7.9	20.0	900	541	214	89	860	12
12...	0305	297	5250	7.8	20.0	890	531	218	84	860	13
19...	0410	248	5280	7.8	19.0	900	544	222	84	860	12
26...	0145	292	5250	7.8	21.5	890	536	216	85	860	13
JAN											
02...	0240	290	5270	7.9	20.5	900	538	214	89	860	12
09...	0115	291	5370	7.8	20.0	900	538	216	88	875	13
16...	0600	292	5190	7.8	--	880	521	208	88	850	12
23...	0255	280	5260	7.8	20.0	910	548	220	88	860	12
30...	0130	288	5460	7.8	21.5	920	561	222	89	895	13
FEB											
06...	0150	276	5490	8.0	21.0	940	576	234	87	895	13
13...	0035	280	5540	8.0	20.0	960	592	232	93	900	13
20...	0045	279	5540	7.9	21.0	960	596	230	94	900	13
27...	0205	279	5510	7.9	21.0	930	566	222	91	900	13
MAR											
06...	0225	285	5500	7.9	20.5	930	568	234	84	900	13
13...	0330	292	5550	7.8	21.0	960	601	238	89	900	13
20...	0220	284	5460	7.8	21.0	940	584	226	91	895	13
27...	0230	276	5470	7.9	25.5	940	582	226	91	895	13
APR											
03...	0300	286	5480	8.1	21.5	940	576	230	89	895	13
10...	0210	288	5520	8.1	21.0	950	582	228	93	900	13
17...	0225	284	5610	8.0	21.5	940	582	234	87	920	13
24...	0340	278	5700	7.8	23.0	970	618	238	91	920	13
MAY											
01...	0220	291	5570	7.9	21.5	940	592	228	90	900	13
08...	0240	268	5560	7.9	25.0	950	586	228	93	900	13
15...	0315	266	5560	7.8	25.5	950	591	224	95	900	13
22...	0200	264	5590	7.9	23.5	950	589	230	91	915	13
29...	0130	261	5670	7.8	27.0	970	606	232	95	920	13
JUN											
05...	0310	274	5520	7.8	24.0	950	592	234	89	900	13
12...	0140	266	5520	7.8	26.0	940	582	240	83	900	13
19...	0305	272	5490	7.9	26.5	930	571	228	88	895	13
26...	0240	254	5470	7.8	24.5	930	582	228	88	895	13
JUL											
03...	0320	262	5500	7.9	25.0	930	576	226	89	900	13
10...	0300	246	5210	7.9	28.0	880	528	202	91	860	13
17...	0245	240	5340	7.9	26.5	880	536	210	87	870	13
24...	0220	291	5270	8.0	27.0	880	546	206	89	865	13
31...	0310	234	5160	7.9	29.5	860	516	196	90	850	13
AUG											
07...	0400	225	5390	8.0	26.5	880	532	204	90	880	13
14...	0130	250	5250	7.9	27.0	870	536	198	91	865	13
21...	0305	248	5240	7.8	26.5	860	522	196	90	865	13
28...	0305	243	5290	7.8	25.0	880	544	194	96	865	13
SEP											
04...	0600	236	5260	7.9	26.0	870	529	202	89	865	13
11...	0330	233	5460	7.9	25.0	930	590	212	98	895	13
18...	0210	233	5330	7.9	24.5	890	536	212	88	870	13
25...	0125	239	5330	7.9	26.0	890	542	210	89	870	13

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ--Continued

REMARKS.--No flow Mar. 22-30. Unpublished chemical analyses (continuing record) for water years 1961-68 available from district office in Tucson, Ariz. Prior to Dec. 1, 1974, samples collected at gage site 1,000 ft (304.8 m) upstream.

COOPERATION.--Daily specific conductance record furnished by Bureau of Reclamation.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,840 micromhos Apr. 22; minimum daily, 4,900 micromhos Aug. 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT											
03...	8.6	430	0	930	1000	2.5	23	3450	3340	4.69	2.7
10...	8.4	430	0	930	1000	2.6	24	3440	3340	4.68	2.7
17...	8.1	428	0	920	990	2.0	24	3420	3320	4.65	2.9
24...	8.5	432	0	925	1000	2.4	22	3470	3330	4.72	2.7
30...	8.6	430	0	930	1000	2.5	23	3450	3340	4.69	2.7
31...	8.2	434	0	935	1030	2.5	24	3510	3400	4.77	2.7
NOV											
07...	8.7	438	0	935	1030	2.6	25	3520	3410	4.79	2.3
14...	8.4	436	0	940	1050	2.4	26	3560	3430	4.84	2.5
21...	8.7	430	0	940	1050	2.0	24	3520	3430	4.79	2.5
28...	8.4	416	0	895	990	2.6	24	3370	3260	4.58	2.7
DEC											
05...	8.7	438	0	925	1020	2.6	23	3490	3370	4.75	2.7
12...	8.6	438	0	920	1020	2.4	23	3430	3360	4.66	2.9
19...	8.6	434	0	925	1020	2.5	26	3540	3370	4.81	2.5
26...	8.7	430	0	920	1020	2.6	24	3520	3360	4.79	2.5
JAN											
02...	8.5	442	0	925	1020	2.5	25	3470	3370	4.72	2.5
09...	8.7	442	0	930	1050	2.2	24	3530	3420	4.80	2.5
16...	8.7	438	0	915	1000	2.4	25	3430	3320	4.66	2.5
23...	8.7	442	0	920	1020	2.4	25	3510	3370	4.77	2.3
30...	8.8	438	0	920	1090	2.2	26	3620	3480	4.92	2.5
FEB											
06...	9.1	444	0	920	1110	2.0	26	3650	3510	4.96	2.5
13...	9.1	448	0	925	1120	2.2	25	3690	3540	5.02	2.5
20...	8.7	444	0	925	1120	2.6	24	3650	3540	4.96	2.7
27...	9.2	444	0	920	1110	2.3	25	3640	3510	4.95	1.8
MAR											
06...	9.1	442	0	920	1110	2.5	26	3610	3510	4.91	2.3
13...	8.6	438	0	925	1120	1.8	25	3620	3540	4.92	2.9
20...	8.9	434	0	920	1100	2.3	25	3580	3490	4.87	2.5
27...	9.1	436	0	920	1100	2.5	24	3590	3490	4.88	2.5
APR											
03...	8.6	444	0	920	1100	2.0	25	3570	3500	4.86	2.3
10...	9.0	448	0	920	1110	2.4	26	3600	3520	4.90	2.7
17...	8.7	436	0	930	1140	2.2	24	3680	3570	5.00	2.3
24...	8.9	430	0	940	1170	2.2	26	3760	3620	5.11	2.5
MAY											
01...	8.7	424	0	930	1130	2.4	25	3690	3540	5.02	2.7
08...	8.8	444	0	930	1130	2.1	24	3680	3540	5.00	2.3
15...	8.7	438	0	930	1120	2.5	26	3670	3530	4.99	2.3
22...	8.5	440	0	940	1130	2.5	26	3650	3570	4.96	3.2
29...	9.2	444	0	950	1160	2.5	24	3740	3620	5.09	2.7
JUN											
05...	9.0	436	0	925	1120	2.6	24	3590	3530	4.88	2.9
12...	8.5	436	0	925	1120	2.4	25	3650	3530	4.96	2.7
19...	8.5	438	0	925	1110	2.5	24	3610	3510	4.91	2.0
26...	8.5	424	0	925	1110	2.6	26	3600	3500	4.90	2.3
JUL											
03...	8.9	432	0	925	1120	2.0	26	3660	3520	4.98	2.7
10...	8.3	430	0	920	1010	2.0	26	3420	3340	4.65	2.5
17...	8.3	420	0	920	1050	2.4	26	3480	3390	4.73	2.3
24...	8.3	408	0	920	1040	2.2	25	3490	3370	4.75	2.7
31...	8.3	420	0	910	1010	2.6	22	3390	3310	4.61	2.1
AUG											
07...	8.4	424	0	940	1050	2.4	26	3700	3420	5.03	2.9
14...	8.2	408	0	920	1030	2.6	25	3450	3350	4.69	2.5
21...	8.0	412	0	920	1030	2.3	25	3490	3350	4.75	2.3
28...	7.8	410	0	930	1040	2.3	25	3510	3370	4.77	2.3
SEP											
04...	8.0	416	0	945	1020	2.3	25	3490	3370	4.75	2.5
11...	8.2	414	0	955	1100	2.6	26	3630	3510	4.94	2.0
18...	8.7	432	0	940	1040	2.2	26	3520	3410	4.79	1.8
25...	8.7	424	0	940	1040	1.8	25	3540	3400	4.81	1.9

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5290	5390	5460	5340	5300	5470	5480	5590	5680	5470	5150	5370
2	5300	5400	5430	5350	5530	5380	5540	5620	5640	5470	4900	5460
3	5330	5370	5440	5350	5520	5520	5530	5640	5610	5570	5160	5410
4	5450	5400	5360	5360	5510	5560	5520	5650	5610	5580	5390	5320
5	5360	5310	5360	5390	5520	5550	5540	5560	5600	5550	5500	5440
6	5460	5370	5360	5350	5540	5550	5490	5620	5600	5580	5520	5410
7	5250	5410	5450	5440	5540	5550	5510	5620	5550	5650	5460	5500
8	5420	5450	5450	5440	5560	5540	5560	5600	5530	5580	5360	5480
9	5410	5530	5430	5450	5590	5620	5590	5580	5530	5300	5270	5490
10	5370	5510	5410	5410	5600	5550	5560	5610	5580	5250	5260	5550
11	5350	5450	5360	5250	5630	5490	5550	5620	5590	5360	5200	5550
12	5300	5480	5320	5250	5610	5540	5570	5600	5590	5590	5240	5460
13	5290	5440	5410	5250	5570	5590	5680	5640	5510	5470	5270	5500
14	5290	5440	5370	5290	5560	5580	5590	5600	5570	5510	5300	5490
15	5280	5460	5350	5250	5540	5570	5590	5640	5600	5300	5270	5530
16	5280	5390	5410	5270	5560	5570	5640	5630	5600	5470	5290	5480
17	5250	5340	5380	5290	5610	5580	5650	5650	5570	5390	5300	5320
18	5400	5390	5380	5300	5580	5550	5620	5600	5480	5400	5280	5410
19	5420	5420	5380	5340	5580	5560	5610	5560	5530	5450	5290	5320
20	5400	5440	5360	5370	5570	5500	5690	5650	5590	5420	5290	5420
21	5410	5400	5380	5390	5600	5560	5730	5640	5630	5460	5300	5400
22	5280	5410	5260	5350	5540	5560	5840	5650	5570	5450	5370	5440
23	5290	5360	5340	5320	5540	5560	5760	5660	5580	5430	5360	5450
24	5260	5260	5340	5370	5530	5520	5750	5720	5510	5340	5400	5340
25	5290	5280	5370	5370	5570	5500	5720	5670	5490	5320	5330	5390
26	5310	5170	5330	5360	5550	5450	5700	5690	5540	5280	5410	5400
27	5270	5140	5330	5370	5550	5490	5650	5730	5500	5190	5440	5460
28	5370	5150	5330	5520	5580	5490	5660	5680	5530	5300	5340	5470
29	5330	5220	5310	5510	---	5550	5640	5740	5600	5230	5430	5580
30	5340	5470	5350	5500	---	5550	5640	5740	5560	5170	5390	5590
31	5340	---	5350	5460	---	5500	---	5700	---	5200	5380	---
MEAN	5350	5360	5370	5360	5560	5550	5620	5640	5570	5410	5320	5450
WTR YR 1978	MEAN	5460		MAX	5840		MIN	4900				

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09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, AZ--Continued

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.

COOPERATION.--Daily specific conductance record furnished by Bureau of Reclamation.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,330 micromhos Aug. 4; minimum daily, 2,830 micromhos Sept. 28, 29, 30.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT											
03...	6.8	298	0	470	610	1.1	21	1940	1920	2.64	1.0
10...	6.6	300	0	470	610	1.0	20	1950	1910	2.65	.79
17...	6.5	302	0	470	610	1.2	21	1950	1920	2.65	.68
24...	6.5	300	0	470	610	1.0	21	1950	1910	2.65	.50
31...	6.5	300	0	470	610	1.2	21	1950	1920	2.65	.86
NOV											
07...	6.5	304	0	470	610	1.0	20	1940	1920	2.64	.56
14...	6.2	290	0	480	510	1.0	22	1800	1770	2.45	.79
21...	6.2	288	0	480	510	1.0	20	1810	1770	2.46	.79
28...	6.0	290	0	475	510	.9	18	1820	1760	2.48	.79
DEC											
05...	6.6	302	0	465	610	1.0	17	1950	1910	2.65	.79
12...	6.5	300	0	465	610	1.0	18	1950	1910	2.65	.72
19...	6.4	302	0	465	605	1.0	18	1960	1900	2.67	.56
26...	6.8	302	0	465	605	1.2	20	1960	1900	2.67	.68
JAN											
02...	6.4	296	0	465	605	.9	20	1930	1900	2.62	.56
09...	6.6	300	0	465	605	1.3	20	1940	1900	2.64	.56
16...	6.3	292	0	470	510	1.1	19	1790	1750	2.43	.79
23...	6.4	292	0	470	510	.8	20	1780	1760	2.42	.90
30...	6.2	290	0	470	510	1.0	20	1770	1760	2.41	.68
FEB											
06...	6.4	294	0	470	510	.8	20	1770	1760	2.41	.79
13...	6.4	304	0	465	605	.9	20	1980	1910	2.69	.90
20...	6.0	312	0	435	630	1.2	19	1970	1920	2.68	2.1
27...	7.0	304	0	465	605	.8	20	1960	1910	2.67	.86
MAR											
06...	6.2	302	0	465	605	1.0	22	1940	1910	2.64	.95
13...	6.4	300	0	465	605	.9	22	1940	1920	2.64	1.3
20...	6.8	302	0	465	605	.9	22	1940	1910	2.64	.79
27...	6.8	304	0	465	605	1.0	20	1940	1910	2.64	.79
APR											
03...	6.6	300	0	465	605	.8	18	1930	1900	2.62	.56
10...	6.3	298	0	465	605	.9	20	1940	1910	2.64	1.0
17...	6.5	300	0	465	600	.8	20	1950	1900	2.65	1.0
24...	6.5	300	0	465	600	.9	20	1930	1890	2.62	.56
MAY											
01...	6.6	296	0	465	605	1.0	20	1920	1910	2.61	.79
08...	6.6	308	0	465	605	.8	22	1920	1910	2.61	.56
15...	6.4	298	0	465	600	1.0	20	1940	1890	2.64	.50
22...	6.5	300	0	465	600	1.0	22	1940	1900	2.64	1.0
29...	6.2	300	0	465	600	1.0	20	1940	1900	2.64	.90
JUN											
05...	6.7	300	0	465	600	1.0	20	1900	1900	2.58	.45
12...	6.4	306	0	475	605	1.0	24	1960	1930	2.67	1.4
19...	6.2	298	0	480	590	1.1	22	1940	1910	2.64	.45
26...	6.2	296	0	475	585	1.1	18	1950	1890	2.65	.90
JUL											
03...	6.6	294	0	480	585	.8	22	1960	1900	2.67	.79
10...	6.4	298	0	475	590	1.0	21	1940	1900	2.64	.45
17...	6.3	298	0	470	585	1.2	17	1910	1880	2.60	.56
24...	6.4	300	0	475	590	.8	20	1940	1900	2.64	2.1
31...	6.8	300	0	475	595	1.1	18	1930	1900	2.62	.72
AUG											
07...	6.3	302	0	470	595	1.0	20	1900	1900	2.58	1.1
14...	6.7	298	0	470	585	.7	18	1940	1880	2.64	.86
21...	6.5	298	0	470	585	.9	20	1940	1880	2.64	.90
28...	6.5	300	0	470	585	1.0	20	1940	1880	2.64	.68
SEP											
04...	6.6	298	0	470	585	1.0	20	1950	1880	2.65	1.0
11...	6.4	296	0	470	585	1.0	19	1920	1880	2.61	.90
18...	6.4	300	0	490	590	1.1	22	1960	1930	2.67	1.1
25...	6.4	298	0	485	585	1.1	22	1970	1910	2.68	1.1

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
UNCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3230	3200	3230	3100	2080	3150	3140	3160	3140	3160	3160	3060
2	3190	3160	3210	3160	2080	3150	3150	3140	3130	3150	3160	3150
3	3180	3200	3200	3100	2080	3140	3140	3140	3100	3160	3160	3140
4	3180	3140	3180	3150	2080	3150	3200	3140	3140	3150	3330	3150
5	3180	3210	3190	3170	2090	3150	3170	3150	3140	3170	3160	3140
6	3120	3140	3200	3100	2080	3160	3180	3150	3140	3160	3160	3150
7	3170	3140	3180	3100	2080	3150	3150	3140	3220	3150	3160	3150
8	3170	3200	3200	3120	2070	3140	3160	3140	3160	3150	3150	3150
9	3180	3140	3170	3150	3170	3150	3140	3160	3160	3140	3160	3140
10	3170	2920	3170	2840	3170	3150	3160	3160	3120	3140	3140	3140
11	3170	2900	3170	2840	3170	3150	3170	3140	3190	3160	3140	3140
12	3200	2910	3170	2840	3160	3140	3150	3150	3190	3140	3130	3140
13	3180	2910	3180	2840	3160	3150	3160	3120	3190	3150	3130	---
14	3190	2910	3170	2900	3170	3200	3160	3150	3150	3150	3130	---
15	3180	2950	3180	2840	3160	3150	3170	3140	3170	3150	3140	---
16	3180	2920	3170	2840	3230	3140	3180	3140	3160	3150	3080	3190
17	3180	2920	3170	2900	3230	3150	3170	3140	3170	3150	3140	3200
18	3180	2920	3160	2840	3240	3150	3310	3140	3160	3150	3130	3190
19	3190	2920	3170	2840	3230	3150	3150	3150	3170	3140	3130	3170
20	3180	2920	3170	2840	3240	3150	3130	3150	3200	3160	3130	3160
21	3180	2920	3170	2840	3240	3140	3130	3140	3160	3160	3130	3170
22	3190	2950	3170	2840	3140	3150	3140	3150	3160	3160	3140	3170
23	3190	2950	3170	2840	3140	3140	3140	3140	3160	3150	3140	3170
24	3190	2950	3170	2840	3140	3140	3140	3140	3160	3160	3140	3160
25	3200	2920	3170	2840	3160	3140	3140	3090	3160	3150	3130	3170
26	3190	2950	3170	2800	3160	3150	3140	3150	3160	3160	3130	3150
27	3190	2940	3160	2910	3160	3140	3140	3150	3160	3120	3140	3150
28	3190	2920	3160	2900	3160	3140	3140	3140	3170	3130	3130	2830
29	3190	2920	3170	2840	---	3140	3140	3150	3230	3170	3140	2850
30	3190	2920	3160	2840	---	3140	3150	3140	2440	3150	3130	2850
31	3190	---	3170	2800	---	3140	---	3150	---	3150	3140	---
MEAN	3180	3000	3180	2970	3100	3150	3160	3140	3160	3150	3150	3120
WTR YR 1978	MEAN	3120		MAX	3350	MIN	2850					

09529440 SOUTH GILA PUMP OUTLET CHANNEL NO. 4 NEAR YUMA, AZ

LOCATION.--Lat 32°42'46", long 114°35'50", in NW¼NW¼ sec.26, T.8 S., R.23 W., Yuma County, Hydrologic Unit 15030107, at gaging station, 1.5 mi (2.4 km) upstream from outlet to Colorado River, and 1.5 mi (2.4 km) east of Yuma.

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--No flow for most of each year. Unpublished miscellaneous chemical analyses for water years 1966-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CALO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	
DEC												
05...	1015	7.8	6390	7.5	--	1320	992	306	135	900	11	
12...	0405	8.8	6060	7.5	21.0	1390	1120	332	137	800	9.3	
19...	0455	13	6670	7.5	21.0	1480	1175	336	156	935	11	
26...	0050	13	6670	7.6	22.0	1480	1175	336	156	930	11	
FEB												
20...	0430	21	6440	7.6	24.5	1380	1070	334	133	900	11	
27...	0425	20	6440	7.5	20.5	1380	1070	328	137	900	11	
MAR												
13...	0755	12	5490	7.5	23.0	1110	810	272	105	775	10	
20...	0445	8.5	7810	7.4	20.0	1770	1440	420	176	1050	11	
27...	0335	8.5	7820	7.5	26.5	1770	1430	420	176	1050	11	
APR												
03...	0445	16	6890	7.7	23.5	1480	1150	352	146	970	11	
10...	0425	15	6880	7.7	21.0	1460	1120	346	145	970	11	
17...	0330	18	6400	7.5	23.5	1370	1060	328	134	895	11	
24...	0020	18	6430	7.4	22.0	1360	1070	328	137	900	11	
MAY												
29...	0025	7.8	7710	7.3	26.0	1740	1390	412	173	1040	11	
JUN												
05...	0510	7.8	7700	7.4	23.5	1740	1390	412	173	1040	11	
12...	0235	7.8	7630	7.4	25.5	1730	1380	404	176	1030	11	
JUL												
03...	0450	4.4	4360	7.6	25.0	930	704	234	84	620	8.8	
10...	0430	3.8	4460	7.7	29.0	940	702	240	83	635	9.0	
17...	0420	3.8	4530	7.6	25.0	960	716	248	83	660	9.3	
24...	0355	3.8	4550	7.6	28.0	960	714	252	81	665	9.3	
31...	0505	3.8	4560	7.6	29.5	960	712	236	90	670	9.4	
AUG												
07...	0515	10	5460	7.5	24.5	1120	820	278	104	785	10	
14...	0035	13	6060	7.5	26.5	1320	1016	318	128	845	10	
21...	0410	13	6030	7.6	28.5	1320	1016	314	130	840	10	
DATE		POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
DEC												
05...	10	400	0	565	1670	.8	20	4070	3800	5.54	.11	
12...	9.9	328	0	775	1475	.7	20	4020	3710	5.47	.18	
19...	9.5	372	0	750	1710	.7	20	4400	4100	5.98	.14	
26...	9.8	372	0	750	1710	.5	22	4440	4100	6.04	.20	
FEB												
20...	9.4	382	0	650	1675	.9	22	4220	3910	5.74	.09	
27...	9.7	382	0	650	1675	.8	20	4260	3910	5.79	.14	
MAR												
13...	8.2	366	0	640	1310	.5	22	3560	3310	4.84	.25	
20...	10	408	0	660	2150	.5	23	4880	4690	6.64	.23	
27...	11	420	0	660	2150	.9	22	4920	4700	6.69	.23	
APR												
03...	9.5	408	0	610	1850	.4	24	4490	4160	6.11	.25	
10...	9.8	412	0	590	1850	.4	25	4240	4140	5.77	.23	
17...	9.3	380	0	645	1650	.4	19	4040	3870	5.49	.16	
24...	9.3	378	0	650	1660	.5	22	4040	3890	5.49	.23	
MAY												
29...	11	424	0	665	2125	.8	22	5030	4660	6.84	.27	
JUN												
05...	10	424	0	665	2125	.5	22	5120	4660	6.96	.25	
12...	10	424	0	660	2100	.4	24	5290	4610	7.19	.32	
JUL												
03...	7.6	276	0	840	850	.6	22	3200	2800	4.35	.41	
10...	7.5	290	0	835	870	.5	20	3000	2840	4.08	.41	
17...	7.5	298	0	855	900	.7	20	3000	2920	4.08	.41	
24...	7.5	300	0	855	910	.6	18	3030	2940	4.12	.86	
31...	7.6	302	0	855	910	.8	19	3020	2940	4.11	.45	
AUG												
07...	8.3	366	0	650	1330	.4	26	3560	3360	4.84	.32	
14...	8.5	370	0	640	1550	.5	20	4050	3690	5.51	.23	
21...	8.6	370	0	640	1540	.5	24	4060	3680	5.52	.29	

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09530000 RESERVATION MAIN DRAIN NO. 4 AT YUMA, AZ

LOCATION.--Lat 32°44'09", long 114°37'16", in NW¼SE¼ sec.26, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, at gaging station, at railroad culvert, 0.2 mi (0.3 km) upstream from crossing of U.S. Highway 80, and 0.7 mi (1.1 km) north of Yuma.

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished miscellaneous chemical analyses for water years 1962-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO ₃)	HAR- NESS, NONCAR- BONATE (MG/L CaCO ₃)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TIUM RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
12...	0800	--	2150	--	21.0	--	--	--	--	--	--	--
26...	1405	42	2000	7.8	23.5	570	350	150	46	210	3.8	5.6
NOV												
28...	1125	43	1990	7.7	19.5	620	390	160	54	210	3.7	5.3
DEC												
07...	0800	--	1950	--	15.0	--	--	--	--	--	--	5.8
27...	1050	40	1990	7.7	19.0	610	380	160	50	220	3.9	6.5
JAN												
23...	1135	33	2000	7.7	17.0	580	360	150	49	240	4.4	5.6
FEB												
01...	0800	--	2000	--	16.0	--	--	--	--	--	--	--
21...	1035	41	1990	7.7	17.0	550	330	140	49	220	4.1	5.5
MAR												
20...	1130	43	2020	7.8	22.0	610	390	160	51	230	4.1	5.8
APR												
24...	1100	46	2020	7.7	22.0	580	350	150	49	240	4.4	5.6
MAY												
03...	0800	--	2200	--	22.0	--	--	--	--	--	--	7.7
22...	1005	52	1990	7.7	23.0	610	380	160	50	220	3.9	5.6
JUN												
19...	0935	46	2040	7.7	25.0	620	--	160	54	220	3.8	6.3
28...	0800	--	2100	--	24.0	--	--	--	--	--	--	5.9
JUL												
24...	0930	49	2050	7.6	27.0	610	390	160	52	240	4.2	5.7
AUG												
28...	1020	54	2040	7.7	25.0	590	420	160	46	230	4.1	5.8
SEP												
25...	1015	66	2220	7.6	24.0	590	360	170	41	260	4.6	5.8

DATE	TIME	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ATHA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DUD, TOTAL (UG/L)	UDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)
DEC 07...	0800	.0	.00	.00	.00	.0	.00	.00	.00
MAY 03...	0800	.0	.00	.00	.00	.0	.00	.00	.00
JUN 28...	0800	.0	.00	.00	.00	.0	.00	.00	.00

[illegible]

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

531

09530000 RESERVATION MAIN DRAIN NO. 4 AT YUMA, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	TUX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
DEC 07...	.00	.00	.00	0	.00	.07	.00	.00
MAY 03...	.00	.00	.00	0	.00	.03	.00	.00
JUN 28...	.00	.00	.01	0	.00	.02	.00	.00

LOCATION.--Lat 32°43'48", long 114°39'27", in SE¼SW¼ sec.28, T.16 S., R.22 E., San Bernardino meridian, in Arizona, Yuma County, Hydrologic Unit 15050107, at gaging station, 0.3 mi (0.5 km) from outlet to Colorado River, and 0.5 mi (0.8 km) west of Joe Henry Memorial Park in Yuma, Ariz.

		SPECIFIC CONDUCTANCE (MICROHMS)		PH	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)
DATE	TIME	INSTANTANEOUS (CFS)										
UCI												
05...	0800	48	2230	7.7	26.0	360	170	96	30	330	7.5	4.9
11...	0800	54	2230	--	--	--	--	--	--	--	--	--
17...	0755	48	2230	--	--	--	--	--	--	--	--	--
25...	0800	48	2230	--	--	--	--	--	--	--	--	--
31...	0755	48	2230	--	--	--	--	--	--	--	--	--
NOV												
08...	0930	47	2230	7.5	26.0	370	170	94	33	340	7.7	5.4
14...	0750	53	2190	--	--	--	--	--	--	--	--	--
21...	0800	48	2190	--	--	--	--	--	--	--	--	--
28...	0800	48	2190	--	--	--	--	--	--	--	--	--
DEC												
05...	0750	48	2180	7.5	26.0	390	200	100	33	310	6.9	4.8
JAN												
03...	0815	.00	--	--	--	--	--	--	--	--	--	--
09...	0820	.00	--	--	--	--	--	--	--	--	--	--
16...	0825	.00	--	--	--	--	--	--	--	--	--	--
25...	0850	.00	--	--	--	--	--	--	--	--	--	--
27...	0825	51	2130	7.4	26.0	410	210	110	33	340	7.3	5.2
30...	0750	51	2160	--	--	--	--	--	--	--	--	--
FEB												
08...	0755	47	2160	7.7	26.0	380	190	98	34	330	7.3	5.2
13...	0800	48	2170	--	--	--	--	--	--	--	--	--
21...	0755	45	2160	--	--	--	--	--	--	--	--	--
27...	0800	47	2160	--	--	--	--	--	--	--	--	--
MAR												
07...	0755	41	2160	7.6	25.0	370	170	98	31	330	7.4	5.5
15...	0800	46	2160	--	25.5	--	--	--	--	--	--	--
20...	0800	47	2160	--	--	--	--	--	--	--	--	--
27...	0900	.00	--	--	--	--	--	--	--	--	--	--
28...	0800	47	2150	--	--	--	--	--	--	--	--	--
APR												
05...	0755	46	2160	7.7	25.5	380	180	100	32	330	7.4	4.9
10...	0800	47	2150	--	--	--	--	--	--	--	--	--
17...	0800	46	2160	--	--	--	--	--	--	--	--	--
24...	0800	46	2160	--	--	--	--	--	--	--	--	--
MAY												
01...	0800	51	2160	7.6	26.0	380	180	100	32	310	6.9	5.2
08...	0800	54	2170	--	--	--	--	--	--	--	--	--
15...	0800	54	2170	--	27.5	--	--	--	--	--	--	--
22...	0800	54	2170	--	--	--	--	--	--	--	--	--
30...	0755	54	2170	--	26.0	--	--	--	--	--	--	--
JUN												
05...	0800	54	2170	7.5	26.5	390	190	100	33	340	7.5	5.2
12...	0800	47	2180	--	--	--	--	--	--	--	--	--
19...	0750	54	2170	--	--	--	--	--	--	--	--	--
26...	0750	53	2170	--	--	--	--	--	--	--	--	--
JUL												

PERIOD OF RECORD.--July 1972 to current year.

REMARKS.--No flow Dec. 28 thru Jan. 24; Feb. 1, 2, Mar. 1 thru 5, 27.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 100 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (IONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)
UCT												
03...	240	0	440	330	.9	26	1340	1380	1.82		500	10
11...	--	--	--	--	--	--	--	--	--		--	--
17...	--	--	--	--	--	--	--	--	--		--	--
25...	--	--	--	--	--	--	--	--	--		--	--
31...	--	--	--	--	--	--	--	--	--		--	--
NOV												
08...	250	0	430	330	.8	26	1400	1380	1.90		540	70
14...	--	--	--	--	--	--	--	--	--		--	--
21...	--	--	--	--	--	--	--	--	--		--	--
28...	--	--	--	--	--	--	--	--	--		--	--
DEC												
05...	230	0	430	330	.8	25	1360	1350	1.85		510	20
JAN												
03...	--	--	--	--	--	--	--	--	--		--	--
09...	--	--	--	--	--	--	--	--	--		--	--
16...	--	--	--	--	--	--	--	--	--		--	--
23...	--	--	--	--	--	--	--	--	--		--	--
27...	250	0	460	310	.9	25	1330	1410	1.81		480	0
30...	--	--	--	--	--	--	--	--	--		--	--
FEB												
06...	240	0	410	320	.8	27	1340	1340	1.82		480	10
13...	--	--	--	--	--	--	--	--	--		--	--
21...	--	--	--	--	--	--	--	--	--		--	--
27...	--	--	--	--	--	--	--	--	--		--	--
MAR												
07...	250	0	440	300	.9	25	1340	1350	1.82		490	0
13...	--	--	--	--	--	--	--	--	--		--	--
20...	--	--	--	--	--	--	--	--	--		--	--
27...	--	--	--	--	--	--	--	--	--		--	--
28...	--	--	--	--	--	--	--	--	--		--	--
APR												
03...	250	0	420	310	.8	24	1350	1340	1.84		480	10
10...	--	--	--	--	--	--	--	--	--		--	--
17...	--	--	--	--	--	--	--	--	--		--	--
24...	--	--	--	--	--	--	--	--	--		--	--
MAY												
01...	250	0	410	320	.8	24	1340	1330	1.82		490	10
08...	--	--	--	--	--	--	--	--	--		--	--
15...	--	--	--	--	--	--	--	--	--		--	--
22...	--	--	--	--	--	--	--	--	--		--	--
30...	--	--	--	--	--	--	--	--	--		--	--
JUN												
03...	240	0	420	330	.8	23	1370	1370	1.86	--	500	10
12...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
03...	--	--	430	350	.7	18	1360	1360	1.85	--	490	10
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
07...	170	0	380	350	.7	25	1320	1300	1.80	1.3	440	20
14...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
03...	250	0	400	350	.8	24	1320	1350	1.80	1.1	500	20
11...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--

09530500 DRAIN 8-B NEAR YUMA, AZ

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (MG/L AS AL+FE)	NITROGEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT 25...	210	0	390	150	.5	22	987	990	1.34	.19	180	10
NOV 28...	200	0	370	150	.4	21	988	951	1.34	.13	190	20
DEC 27...	210	0	420	170	.5	23	1110	1060	1.51	.10	220	10
JAN 23...	210	0	410	150	.4	23	1040	1020	1.41	.14	190	20
FEB 21...	220	0	400	150	.4	23	1040	1010	1.41	.09	200	20
MAR 20...	220	0	450	170	.5	22	1100	1120	1.50	.14	230	0
APR 24...	220	0	410	160	.4	22	1040	1040	1.41	.08	200	20
MAY 22...	160	3	420	160	.4	22	1010	1030	1.37	.06	240	0
JUN 19...	--	--	410	170	.5	24	1080	1060	1.47	.04	260	10
JUL 24...	200	0	400	170	.5	29	1040	1040	1.41	.11	230	50
AUG 28...	200	0	420	140	.4	21	1010	1010	1.37	.32	250	20
SEP 25...	210	0	420	150	.5	22	1030	1030	1.40	.13	200	50

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09534000 MAIN DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ

LOCATION---Lat 32°29'17", long 114°47'16", in SE¼NE¼ sec.11, T.11 S., R.25 W., Yuma County, Hydrologic Unit 15030108, at gaging station at pumping plant, 0.1 mi (0.2 km) upstream from international boundary, and 0.4 mi (0.6 km) west of San Luis.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	CULI- FURN, FECAL, 0.7 UM-MF (CULS./ 100 ML)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)
OCT											
04...	1210	140	2470	7.8	25.5	40	--	8.1	440	540	310
18...	0915	134	2400	7.8	24.0	--	--	--	--	550	330
NOV											
08...	1130	82	2360	7.9	19.5	20	--	9.2	220	550	330
22...	0915	138	2480	7.8	15.5	--	--	--	--	570	370
DEC											
06...	1100	81	2290	7.9	18.0	15	--	--	240	560	380
20...	1020	81	2450	7.9	14.5	--	--	--	--	560	330
JAN											
10...	1145	78	2310	7.8	16.0	30	--	--	500	530	340
24...	0935	85	2460	7.9	14.0	--	--	--	--	560	350
FEB											
07...	1325	80	2310	7.9	19.5	30	--	9.3	370	500	300
21...	1040	136	2380	8.0	18.0	--	--	--	--	520	310
MAR											
07...	1100	78	2500	7.8	20.5	35	--	8.0	420	580	360
24...	1140	130	2510	7.9	18.5	--	--	--	--	600	370
APR											
11...	1100	81	2360	7.6	24.0	35	--	6.4	460	560	340
25...	1200	78	2550	7.8	25.5	--	--	--	--	560	320
MAY											
09...	1320	81	2490	7.8	26.5	30	--	9.0	300	650	420
23...	1000	78	2430	7.8	24.0	--	--	--	--	560	340
JUN											
13...	1045	139	2550	7.7	28.0	35	--	7.0	K3000	600	360
27...	1155	78	2420	7.7	26.5	--	--	--	--	590	380
JUL											
11...	1125	78	2470	7.8	29.0	--	42	6.9	1000	590	360
25...	1020	78	2490	7.8	29.0	--	--	--	--	620	400
AUG											
08...	1130	81	2510	7.9	30.0	60	--	6.8	K14000	630	390
22...	1020	78	2470	7.8	28.5	--	--	--	--	580	360
SEP											
12...	1210	136	2330	8.0	26.5	15	--	8.4	520	540	340
26...	1005	81	2270	7.8	26.0	--	--	--	--	510	300

K Based on non-ideal colony count.

09534000 MAIN DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ--Continued

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished chemical analyses (continuing record) from October 1961 to September 1968 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT										
04...	140	46	320	6.0	5.6	280	0	490	380	.9
18...	140	49	320	5.9	5.8	270	0	480	370	.6
NOV										
08...	140	49	320	5.9	5.6	270	0	490	350	.6
22...	150	48	330	6.0	5.9	250	0	490	390	.6
DEC										
06...	140	50	300	5.5	5.3	220	0	480	350	.6
20...	140	50	330	6.1	6.9	270	0	490	390	.6
JAN										
10...	130	50	320	6.0	6.9	230	0	460	370	.4
24...	140	50	330	6.1	6.1	250	0	490	410	.6
FEB										
07...	120	49	310	6.0	6.1	250	0	440	370	.6
21...	130	48	310	5.9	6.1	260	0	470	380	.7
MAR										
07...	140	50	330	6.1	6.9	270	0	460	420	.6
24...	150	54	330	5.9	6.9	280	0	490	390	.5
APR										
11...	140	51	320	5.9	6.7	270	0	460	370	.5
25...	140	51	340	6.3	6.5	290	0	510	400	.6
MAY										
09...	170	54	320	5.5	7.5	280	0	490	400	.5
23...	140	52	350	6.4	6.3	270	0	480	380	.6
JUN										
13...	150	55	330	5.9	6.4	290	0	460	390	.6
27...	150	52	320	5.7	6.9	280	--	480	380	.6
JUL										
11...	150	53	320	5.7	6.4	290	0	490	390	.6
25...	150	59	310	5.4	6.2	270	0	510	380	.6
AUG										
08...	160	55	320	5.6	6.5	290	0	480	400	.6
22...	150	50	340	6.1	6.3	270	0	470	390	.6
SEP										
12...	140	47	280	5.2	6.0	250	0	460	370	.5
26...	130	45	300	5.8	5.1	260	0	480	340	.6

09534000 MAIN DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT										
04...	24	1620	1550	2.20	.44	--	.30	.74	.12	--
18...	22	1560	1520	2.12	--	--	--	--	--	--
NOV										
08...	21	1540	1510	2.09	.34	--	.18	.52	.05	--
22...	23	1610	1560	2.19	--	--	--	--	--	--
DEC										
06...	20	1500	1450	2.04	--	--	--	--	--	--
20...	24	1590	1570	2.16	--	--	--	--	--	--
JAN										
10...	19	1510	1470	2.05	--	.48	--	1.2	--	.02
24...	23	1580	1570	2.15	--	--	--	--	--	--
FEB										
07...	20	1500	1440	2.04	.29	.37	.40	.69	.08	.01
21...	22	1560	1500	2.12	--	--	--	--	--	--
MAR										
07...	21	1590	1560	2.16	.39	.45	.44	.83	.10	.09
24...	21	1570	1580	2.14	--	--	--	--	--	--
APR										
11...	20	1510	1500	2.05	.35	.41	.76	1.1	.09	.03
25...	22	1650	1610	2.24	--	--	--	--	--	--
MAY										
09...	22	1600	1600	2.18	.40	.47	.66	1.1	.09	.00
23...	20	1520	1560	2.07	--	--	--	--	--	--
JUN										
13...	21	1680	1560	2.28	.47	--	.68	1.2	.09	--
27...	22	1550	1550	2.11	--	--	--	--	--	--
JUL										
11...	23	1640	1580	2.23	.84	.78	.89	1.7	.12	.03
25...	23	1590	1570	2.16	--	.62	--	--	--	--
AUG										
08...	24	1560	1590	2.12	.02	.58	.69	.71	.13	--
22...	22	1590	1560	2.16	--	.55	--	--	--	--
SEP										
12...	21	1550	1450	2.11	.47	.50	1.7	2.2	.05	.01
26...	20	1510	1450	2.05	--	.18	--	--	--	--

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ARSENIC TOTAL (UG/L AS AS)
OCT								
04...	10	<100	300	20	.0	0	40	4
18...	30	--	--	--	--	--	--	--
NOV								
08...	10	<100	100	20	.0	1	20	3
22...	0	--	--	--	--	--	--	--
DEC								
06...	30	--	--	10	--	--	--	--
20...	20	--	--	--	--	--	--	--
JAN								
10...	10	--	--	20	--	--	--	--
24...	10	--	--	--	--	--	--	--
FEB								
07...	0	7	160	20	.1	2	20	2
21...	0	--	--	--	--	--	--	--
MAR								
07...	0	40	170	20	.0	1	40	3
24...	10	--	--	--	--	--	--	--
APR								
11...	50	5	100	40	.0	1	10	3
25...	30	--	--	--	--	--	--	--
MAY								
09...	10	10	220	40	.0	0	20	2
23...	0	--	--	--	--	--	--	--
JUN								
13...	10	53	180	10	.1	1	50	6
27...	80	--	--	--	--	--	--	--
JUL								
11...	40	5	320	10	.1	1	20	3
25...	20	--	--	--	--	--	--	--
AUG								
08...	40	7	490	20	.0	1	30	4
22...	10	--	--	--	--	--	--	--
SEP								
12...	60	0	140	20	.0	1	20	2
26...	20	--	--	--	--	--	--	--

< Actual value is known to be less than value shown.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09534300 WEST MAIN CANAL WASTEWAY AT ARIZONA-SONORA BOUNDARY

LOCATION.--Lat 32°29'29", long 114°47'39", in SE¼NE¼ sec.11, T.11 S., R.25 W., Yuma County, Hydrologic Unit 15030108, at gaging station, 150 ft (50 m) upstream from outlet into Main drain, 300 ft (100 m) north of international boundary, 0.2 mi (0.3 km) west of San Luis, Ariz., and 19 mi (30 km) south of Yuma.

PERIOD OF RECORD.--March 1971 to current year.

REMARKS.--No flow Oct. 27; Mar. 22, 27; Apr. 6, 9-11, 15, 18; May 1, 16; Jun. 30; Jul. 19, 20, 30.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HAR- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AU- SURP- TIUM RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
OCT												
05...	1130	2.1	1300	8.5	34.0	340	210	82	34	140	3.3	5.1
21...	0930	7.7	1420	7.9	22.0	370	230	90	36	160	3.6	5.2
NOV												
08...	0925	2.8	1280	8.1	14.0	350	210	84	33	130	3.0	4.9
22...	0900	2.7	1390	8.1	11.0	370	230	89	36	150	3.4	5.3
DEC												
06...	0940	3.3	1450	8.1	13.0	390	250	94	38	160	3.5	5.0
20...	1130	5.2	1310	8.0	11.0	370	230	92	35	140	3.2	5.7
JAN												
12...	1315	4.5	1590	8.1	16.0	420	270	100	41	190	4.0	5.7
24...	0920	1.1	1520	8.0	7.0	400	270	97	38	160	3.9	5.6
FEB												
10...	1020	21	1420	8.1	16.0	390	240	96	37	160	3.5	5.3
21...	0930	15	1190	8.1	14.0	330	200	81	32	120	2.9	4.7
MAR												
07...	0940	1.6	1160	8.3	15.5	320	220	74	32	130	3.2	5.0
24...	0930	.00	--	--	--	--	--	--	--	--	--	--
APR												
14...	0920	2.9	1210	8.2	19.5	370	220	92	33	120	2.7	5.3
25...	1030	1.8	1190	8.2	24.0	340	210	83	33	120	2.8	5.0
MAY												
12...	1015	.50	1240	8.0	23.0	360	230	90	34	130	3.0	5.3
23...	0930	4.7	1200	8.1	24.5	340	220	81	33	130	3.1	5.3
JUN												
13...	1000	1.0	1270	8.2	29.0	360	240	97	34	140	3.1	5.7
27...	1000	.20	1240	8.0	28.0	350	240	85	33	140	3.3	5.4
JUL												
14...	1110	2.7	1270	8.1	31.5	360	230	90	34	130	3.0	5.2
25...	1015	1.0	1230	8.2	31.0	370	250	89	36	120	2.7	5.2
AUG												
08...	0930	5.9	1210	8.2	30.0	340	200	82	34	130	3.0	5.3
22...	1015	4.3	1230	8.1	29.0	320	220	77	32	140	3.4	5.5
SEP												
12...	0935	7.1	1270	8.2	26.0	370	230	92	33	130	3.0	5.2
26...	0955	1.7	1310	8.0	26.0	360	230	90	34	130	3.4	4.6

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

541

09534300 WEST MAIN CANAL WASTEWAY AT ARIZONA-SONORA BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (IONS PER AC-FT)	NITROGEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
OCT												
05...	160	0	350	130	.4	10	830	831	1.13	--	180	0
21...	170	0	370	150	.5	11	912	907	1.24	--	200	20
NOV												
06...	160	0	340	120	.4	8.8	822	800	1.12	--	180	10
22...	170	0	360	140	.5	9.4	892	874	1.21	--	200	10
DEC												
06...	170	0	370	160	.5	9.6	934	921	1.27	--	220	0
20...	170	0	340	130	.5	9.0	836	836	1.14	--	200	10
JAN												
12...	180	0	390	190	.6	9.9	1030	1020	1.40	--	250	40
24...	160	0	410	170	.6	7.4	972	968	1.32	--	240	10
FEB												
10...	190	0	350	150	.6	11	930	904	1.26	--	210	10
21...	160	0	310	110	.5	8.4	760	746	1.03	--	170	10
MAR												
07...	120	0	310	120	.4	2.9	738	734	1.00	--	170	0
24...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
14...	180	0	300	110	.4	9.2	782	759	1.06	--	170	40
25...	160	0	330	110	.4	8.7	762	769	1.04	--	170	10
MAY												
12...	160	0	320	120	.4	8.6	798	787	1.09	--	170	10
23...	140	0	320	110	.4	8.7	770	758	1.05	--	170	40
JUN												
13...	170	0	340	120	.4	9.8	808	831	1.10	--	160	0
27...	150	0	350	130	.4	9.8	782	828	1.06	--	190	--
JUL												
14...	--	--	320	130	.5	11	806	799	1.10	--	190	70
25...	150	0	320	120	.4	10	780	775	1.06	.02	210	20
AUG												
08...	--	--	310	120	.4	10	792	776	1.08	--	170	20
22...	130	0	330	130	.4	10	796	769	1.08	.00	180	20
SEP												
12...	160	0	330	130	.4	10	818	810	1.11	.01	200	20
26...	160	0	360	130	.5	10	866	860	1.18	.35	160	50

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09534500 EAST MAIN CANAL WASTEWAY AT ARIZONA-SONORA BOUNDARY

LOCATION.--Lat 32°29'13", long 114°47'01", in NW¼SW¼, sec.12, T.11 S., R.25 W., Yuma County, Hydrologic Unit 15030108, at gaging station, 0.2 mi (0.3 km) east of Main drain pumping plant, and 0.2 mi (0.3 km) west of San Luis.

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--No flow for many days during year. Unpublished miscellaneous chemical analyses for water years 1962-65, and continuing-record analyses for water years 1966-68 available from district office in Tucson, Ariz.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO ₃)	HAR- NESS, NONCAR- BONATE (MG/L CaCO ₃)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCI												
04...	1000	5.8	1510	8.6	24.5	360	250	85	35	180	4.2	4.9
18...	0930	2.4	1700	7.7	21.5	360	290	77	41	210	4.8	4.9
NOV												
08...	0935	1.9	1470	8.1	14.0	360	260	81	38	170	3.9	4.7
22...	0925	1.3	1570	8.1	9.5	360	260	88	39	190	4.2	5.4
DEC												
06...	1000	4.1	1640	8.0	15.0	210	280	100	41	210	4.5	5.2
20...	1005	3.9	1500	8.0	9.5	400	280	97	39	170	3.7	5.9
JAN												
10...	1005	7.4	1860	7.6	11.5	440	340	100	46	230	4.8	6.6
FEB												
10...	1030	2.9	1650	8.3	16.5	400	260	95	40	210	4.6	5.6
21...	1100	2.7	1190	8.1	14.5	310	210	73	32	130	3.2	4.8
MAR												
07...	0950	.00	--	--	--	--	--	--	--	--	--	--
24...	1005	8.4	1730	7.8	18.0	360	200	86	35	250	5.7	6.3
APR												
11...	1100	4.0	1320	8.3	21.0	360	260	84	37	150	3.4	6.0
25...	1050	2.4	1430	7.9	24.5	390	250	100	35	150	3.3	6.2
MAY												
12...	1030	3.5	1410	8.0	25.5	380	240	92	37	160	3.6	5.4
23...	1020	3.8	1440	8.2	24.0	350	210	78	36	190	4.4	5.7
JUN												
13...	1015	3.6	1410	8.1	30.0	380	260	91	37	160	3.6	6.1
27...	1020	3.5	--	7.9	25.0	350	210	82	36	160	3.7	5.6
JUL												
13...	0935	6.8	1280	8.0	28.5	370	250	87	36	130	3.0	5.3
23...	1030	1.3	1300	8.1	32.0	370	260	88	37	140	3.2	5.3
AUG												
08...	0950	7.7	1360	8.0	29.5	380	260	92	37	150	3.3	5.5
22...	1025	2.5	1670	8.2	28.5	410	330	96	42	190	4.1	5.0
SEP												
12...	1000	1.0	1420	7.9	26.0	360	250	85	36	150	3.4	5.5
29...	0955	9.9	1400	7.9	27.0	360	240	88	34	160	3.7	4.7

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

543

09534500 EAST MAIN CANAL WASTEWAY AT APZONA-SONORA BOUNDARY--Continued

WATER QUALITY DATA, WATER YEAR FROM JULY 1977 TO SEPTEMBER 1978

DATE	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLORIDE, DIS- SOLVED (MG/L AS CL)	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
UCT												
04...	120	6	370	190	1.1	12	960	943	1.31	--	220	10
18...	91	0	430	240	.6	9.3	1080	1060	1.47	--	270	10
NOV												
08...	120	0	360	180	.4	6.3	936	900	1.22	--	210	10
22...	150	0	390	190	.5	5.7	996	963	1.35	--	240	20
DEC												
06...	170	0	380	210	.5	8.0	1070	1040	1.46	--	260	20
20...	150	0	350	190	.5	4.7	952	931	1.29	--	220	20
JAN												
10...	120	0	400	300	.5	1.2	1150	1140	1.56	--	290	10
FEB												
10...	170	0	380	210	.6	8.9	1050	1050	1.43	--	250	20
21...	130	0	320	120	.6	4.9	760	750	1.03	--	170	10
MAR												
07...	--	--	--	--	--	--	--	--	--	--	--	--
24...	190	0	470	170	.9	12	1110	1120	1.51	--	390	10
APR												
11...	130	0	350	150	.4	4.5	844	846	1.15	--	190	20
25...	170	0	370	160	.5	7.9	912	914	1.24	--	200	10
MAY												
12...	170	0	360	150	.5	9.0	910	898	1.24	--	210	0
23...	170	0	360	170	.5	7.1	922	933	1.25	--	240	20
JUN												
13...	150	0	360	160	.4	11	904	900	1.23	--	220	0
27...	170	0	360	160	.5	12	866	900	1.16	--	220	20
JUL												
13...	--	--	330	130	1.4	11	826	803	1.13	--	180	40
25...	140	0	340	140	.5	11	822	831	1.12	.02	170	20
AUG												
08...	--	--	340	150	.5	11	880	858	1.20	--	190	20
22...	100	0	380	250	.4	9.6	1060	1020	1.44	.01	240	20
SEP												
12...	130	0	360	170	.4	11	900	862	1.22	.01	210	50
29...	150	0	370	150	.5	10	926	892	1.26	.02	210	60

RIO SONOYTA BASIN

545

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ

LOCATION.--Lat 31°57'04", long 112°20'50", in NW¼ sec.14, T.17 S., R.1 W (unsurveyed), Pima County, Hydrologic Unit 15080101, in Papago Indian Reservation, on right bank 200 ft (61 m) downstream from road crossing, 0.6 mi (1.0 km) south of Kom Vo and 5 mi (8 km) upstream from mouth.

DRAINAGE AREA.--1,250 mi² (3,240 km²), approximately, of which about 250 mi² (650 km²) is in Mexico.

PERIOD OF RECORD.--February 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,770 ft (539 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, Jan. 27 to Mar. 4, which are poor.

AVERAGE DISCHARGE.--6 years, 9.19 ft³/s (0.260 m³/s), 6,660 acre-ft/yr (8.21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft³/s (53.2 m³/s) Oct. 20, 1972, gage height, 9.44 ft (2.877 m), from rating curve extended above 630 ft³/s (18 m³/s); no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 500 ft³/s (14 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 9	2400	581 16.45	7.30 2.225	Feb. 13	Unknown	742 21.01	8.01 2.441
Jan. 12	0430	634 17.95	7.52 2.292	Aug. 13	0430	*808 22.88	8.21 2.502

No flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	98	21
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	19	115
3	.00	.00	.00	.00	.00	200	.00	.00	.00	.00	21	4.5
4	.00	.00	.00	.00	.00	44	.00	.00	.00	.00	28	1.3
5	.00	.00	.00	.00	.00	3.2	.00	.00	.00	.00	13	27
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	34	2.8
7	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	22	72
8	35	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.3	24
9	308	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	16
10	210	.00	.00	2.1	.00	39	.00	.00	.00	.00	.00	.41
11	48	.00	.00	136	.00	.70	.00	.00	.00	.00	.00	.00
12	10	.00	.00	528	100	17	.00	.00	.00	.00	69	.00
13	.00	.00	.00	149	600	19	.00	.00	.00	.00	401	.00
14	.00	.00	.00	16	200	23	.00	.00	.00	.00	7.8	.00
15	.00	.00	.00	4.2	10	61	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	108	.00	.47	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	201	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	40	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	16	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	4.8	.00	.00	.00	.00	.00	.00	.70	.00
21	.00	.00	.00	16	.00	.00	.00	.00	.00	.00	4.0	.00
22	.00	.00	.00	30	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	24	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	2.0	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	111	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	.00
28	.00	.00	48	.00	.00	.00	.00	.00	.00	12	.00	.00
29	.00	.00	30	.00	---	.00	.00	.00	.00	.57	.00	.00
30	.00	.00	51	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	14	.00	---	.00	---	.00	---	10	.00	---
TOTAL	611.00	.00	143.00	1277.10	910.00	408.57	.00	.00	.00	135.47	723.80	284.01
MEAN	19.7	.000	4.61	41.2	32.5	13.2	.000	.000	.000	4.37	23.3	9.47
MAX	308	.00	51	528	600	200	.00	.00	.00	111	401	115
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1210	.00	284	2530	1800	810	.00	.00	.00	269	1440	563
CAL YR 1977	TOTAL	1084.40	MEAN	2.97	MAX	308	MIN	.00	AC-FT	2150		
WTR YR 1978	TOTAL	4492.95	MEAN	12.3	MAX	600	MIN	.00	AC-FT	8910		

NOTE.--No gage-height record Jan. 27 to Mar. 4.

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1978 to current year.

REMARKS.--No flow observed on Feb. 14, Apr. 5, May 5, June 5, July 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	OXYGEN, DTS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
JAN 02...	1200	440	150	8.0	14.0	1600	9.6	--
MAR 14...	1230	13	93	7.6	15.0	--	--	6500
AUG 08...	1000	21	--	--	26.0	--	--	--

DATE	STREP- TUCUCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NONCAR- BONATE (MG/L CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)
JAN 02...	--	59	0	18	3.4	9.1	.5	7.3	92
MAR 14...	34000	65	7	21	3.0	4.0	.2	4.4	--
AUG 08...	--	120	1	38	5.0	7.8	.3	11	140

DATE	CARBONATE (MG/L AS CO ₃)	SULFATE DIS-SOLVED (MG/L AS SO ₄)	CHLORIDE DIS-SOLVED (MG/L AS CL)	FLUORIDE DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)
JAN 02...	0	9.1	2.4	.2	8.8	101	104	.14
MAR 14...	--	8.2	4.8	.1	6.0	69	86	.09
AUG 08...	--	8.9	5.8	.4	14	--	167	.23

[illegible]

RIO SONOYTA BASIN

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KOM VO, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
JAN 02...	11	3	500	0	--	8	3	60	20
AUG 08...	--	--	--	--	60	--	--	--	--

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CU)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
JAN 02...	30	0	90	10	52000	30	67	4	1200
AUG 08...	--	--	--	--	--	100	--	--	--

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
JAN 02...	0	.0	.0	1	0	1	0	180	20
AUG 08...	130	--	--	--	--	--	--	--	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C)	PHYTO- PLANK- TON, TOTAL (CELLS PER ML)	SFDT- MINT, SUS- PENDED (MG/L)	SEDIM- MENT DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. STEV- E DIRM. % FINE THAN .062 MM
JAN 02...	--	4100	3820	4540	100
MAR 14...	12	820	1700	46	87
SEP 05...	--	--	1810	222	92

RIO SONOYTA BASIN

SAN SIMON WASH BASIN

09535300 VAMORI WASH AT KQM VO, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR JANUARY 1978 TO SEPTEMBER 1978

PHYTOPLANKTON

DATE TIME	JAN 2, 78 1200		MAR 14, 78 1230	
TOTAL CELLS/ML	4100		820	
DIVERSITY: DIVISION	0.1		0.0	
..CLASS	0.1		0.0	
..ORDER	0.3		0.0	
...FAMILY	0.3		1.6	
....GENUS	0.3		1.6	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHRYSTOPHYTA				
..BACILLARIOPHYCEAE				
...PENNALES				
...FRAGILARIACEAE				
....SYNEDRA	--	-	270#	33
...NAVICULACEAE				
....NAVICULA	--	-	270#	33
...NITZSCHIAEAE				
....NITZSCHIA	35	1	270#	33
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...CHROCOCCALES				
...CHROCOCCAEAE				
....ANACYSTIS	140	3	--	-
..HORMOGONALES				
...OSCILLATORIACEAE				
....USCILLATORIJA	3900#	96	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

SULPHUR SPRING VALLEY

WHITEWATER DRAW BASIN

09537500 WHITEWATER DRAW NEAR DOUGLAS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1978 to current year.

REMARKS.--No flow observed Apr. 20, May 24, June 26, July 5. Sept. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACU3)	HARD- NESS, NUNCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
MAR 03...	1300	.05	2200	8.0	15.0	10.2	55	140	520	290	120
DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
MAR 03...	53	320	6.1	12	520	290	.5	6.4	1490	1460	2.03
DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	PHOS- PHURUS, TOTAL (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)		
MAR 03...	.14	.01	.54	.55	.08	.47	.69	.00	.01		

SULPHUR SPRING VALLEY

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WHITEWATER DRAW BASIN

09537500 WHITEWATER DRAW NEAR DOUGLAS, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CK)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)
MAR 03...	3	3	200	200	2	0	0	0	0

DATE	COBALT, DIS- SOLVED (UG/L AS CU)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR 03...	0	90	27	470	10	9	0	90	5

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)
MAR 03...	.0	.1	2	2	0	0	40	20

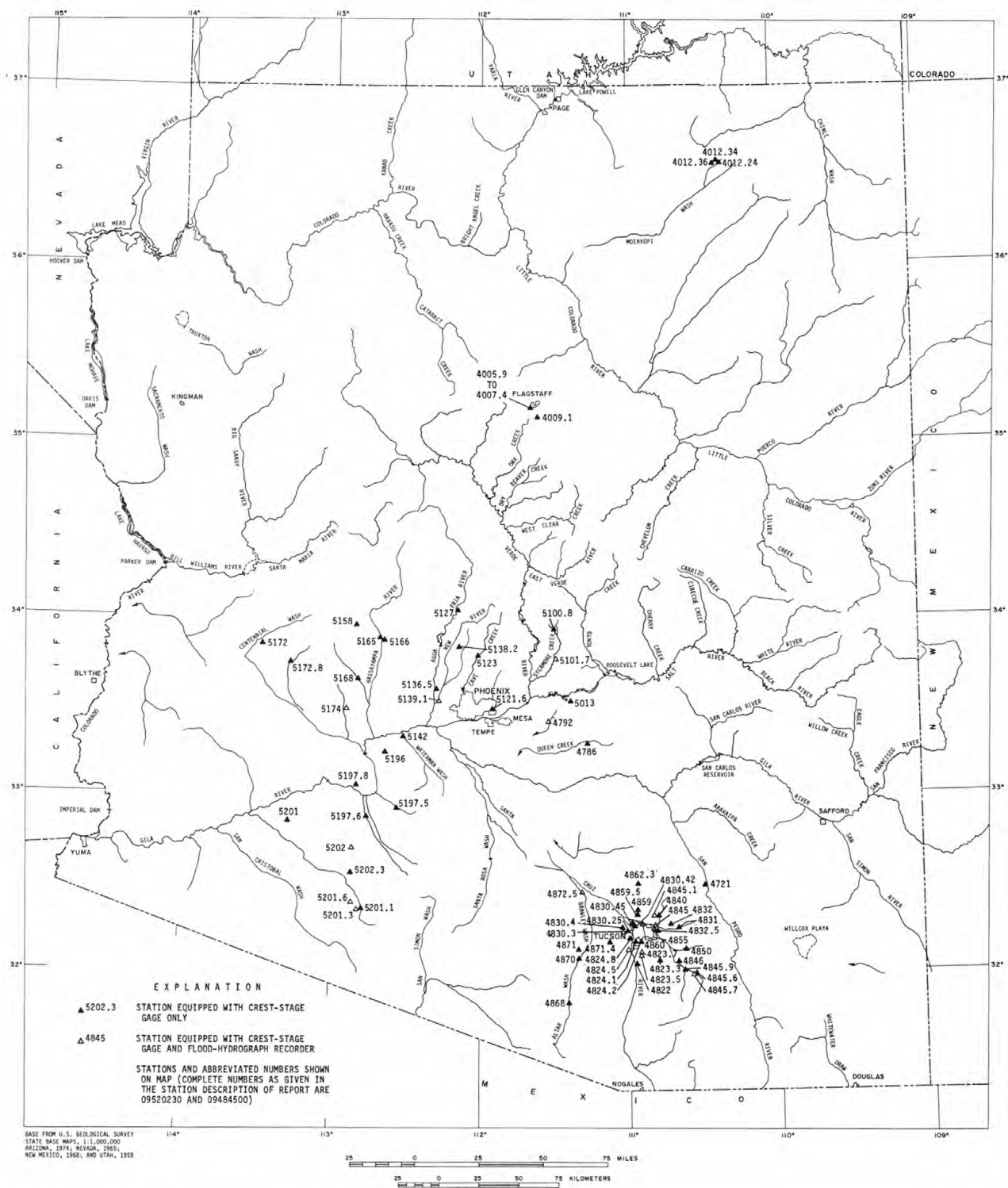


FIGURE 7.--MAP OF ARIZONA SHOWING LOCATION OF PARTIAL-RECORD GAGING STATIONS.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1978

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Little Colorado River basin							
09400590	Rio de Flag at Hidden Hollow Road, at Flagstaff, AZ	Lat 35°14'31", long 111°41'02", in SW¼SW¼ sec.32, T.22 N., R.7 E., Coconino County, at Hidden Hollow Road, 1.4 mi northwest of the Museum of Northern Arizona, and 3.4 mi northwest of downtown Flagstaff.	31.6	1970-78	4- -78	2.79	144
09400595	Schultz Canyon at Flagstaff, AZ	Lat 35°13'37", long 111°39'29", in SE¼SW¼ sec.4, T.21 N., R.7 E., Coconino County, at U.S. Highway 180, 0.6 mi south of the Museum of Northern Arizona in Flagstaff.	6.09	1970-78	4- -78	2.70	29
09400600	Rio de Flag at Flagstaff, AZ	Lat 35°13'18", long 111°39'24", in NW¼NE¼ sec.9, T.21 N., R.7 E., Coconino County, at west side of Crescent Drive in Flagstaff.	51.0	1970-78	4- -78	7.48	128
09400650	Sinclair Wash at Flagstaff, AZ	Lat 35°09'50", long 111°40'48", in NW¼NW¼ sec.32, T.21 N., R.7 E., Coconino County, at Holmes Avenue in the community of Palmerville at Flagstaff.	8.16	1970-78	2-28-78 or 3- 1-78	5.40	37
09400655	Rio de Flag at Interstate 40 at Flagstaff, AZ	Lat 35°11'04", long 111°37'56", in SE¼SE¼ sec.22, T.21 N., R.7 E., in Coconino County on left bank 80 ft upstream from bridge for eastbound lanes of Interstate 40, in Flagstaff.	68.0	1973, 1976-78	2-28-78 or 3- 1-78	7.93	153
09400660	Bow and Arrow Wash at Flagstaff, AZ	Lat 35°09'58", long 111°39'10", in NW¼NE¼ sec.33, T.21 N., R.7 E., Coconino County, at Zuni Road in Flagstaff.	2.14	1969-78	10- 6-77	5.15	20
09400680	Switzer Canyon at Flagstaff, AZ	Lat 35°12'44", long 111°38'21", in SW¼SE¼ sec.10, T.21 N., R.7 E., Coconino County at Turquoise and Oak Streets in Flagstaff.	1.87	1969-78	2-28-78	5.29	90
09400700	Switzer Canyon tributary at Flagstaff, AZ	Lat 35°12'03", long 111°36'46", in NE¼SE¼ sec.14, T.21 N., R.7 E., Coconino County, at gravel road 500 ft upstream from Interstate 40 and 0.25 mi downstream from U.S. Highway 66 in Flagstaff.	a7.31	1968-78	7-15-78 or 7-26-78	4.35	76
09400730	Lockett-Fanning diversion at Flagstaff, AZ	Lat 35°13'19", long 111°35'58", in NW¼NE¼ sec.12, T.21 N., R.7 E., Coconino County, at Linda Vista Drive in Flagstaff.	1.05	1969-78	7-26-78	5.06	54
09400740	Harenburg Wash at Flagstaff, AZ	Lat 35°13'09", long 111°35'16", in SE¼NW¼ sec.7, T.21 N., R.8 E., Coconino County, at AT&SF railroad tracks at the east edge of Flagstaff.	2.41	1969-78	2-28-78 or 3- 1-78	4.19	29
09401224	Coal Mine Wash near Kayenta, AZ	Lat 36°32'52", long 110°22'11", on the Navajo Indian Reservation 14 mi southwest of Kayenta in Navajo County.	34.1	1974-78	7-24-78	-----	b4.0
09401234	Yellow Water Canyon near Kayenta, AZ	Lat 36°34'39", long 110°22'49", on the Navajo Indian Reservation 11 mi southwest of Kayenta in Navajo County.	18.6	1974-78	7-24-78	-----	b2.0
09401236	Yellow Water Canyon near Shonto, AZ	Lat 36°30'33", long 110°26'20", on the Navajo Indian Reservation 1.9 mi above mouth, 13 mi southeast of Shonto, and 18 mi southwest of Kayenta in Navajo County.	49	1975-78	7-24-78	-----	b15

See footnotes at end of the table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Gila River basin--Continued							
09483045	Flowing Wells Wash at Tucson, AZ	Lat 32°15'55", long 110°59'40", in SW¼SW¼ sec.26, T.13 S., R.13 E., at intersection of Ft. Lowell Road and Flowing Wells Road in Tucson city limits.	3.53	1971-78	7-30-78	3.38	185
09483100	Tanque Verde Creek near Tucson, AZ	Lat 32°14'48", long 110°40'46", in NE¼NW¼ sec.2, T.14 S., R.16 E., Pima County, 4.4 mi east of Tanque Verde School, 7.4 mi upstream from Agua Caliente Wash, and 17.5 mi east of Tucson city hall.	43.0	1959-74½, 1975-78	7-25-78	3.73	1,280
09483200	Agua Caliente Wash tributary near Tucson, AZ	Lat 32°16'07", long 110°44'15", in SW¼SW¼ sec.29, T.13 S., R.16 E., Pima County, at Soldier Trail, 1.4 mi north of Tanque Verde Road, and 5 mi northeast of Tucson city limits.	2.04	1965-78	10- 6-77	5.13	70
09483250	Rob Wash at Tucson, AZ	Lat 32°14'08", long 110°48'58", in NE¼NW¼ sec.9, T.14 S., R.15 E., at Speedway Blvd., 0.4 mi west of Pantano Road, and 1 mi north of East Broadway in Tucson city limits.	2.08	1971-78	12-28-77	1.2	b50
09484000	Sabino Creek near Tucson, AZ	Lat 32°19'01", long 110°48'36", in SE¼NE¼ sec.9, T.13 S., R.15 E., Pima County, 0.5 mi north of Coronado National Forest boundary, and 12 mi northeast of Tucson city hall.	35.5	1932-74½, 1975-78	3- 2-78	8.20	3,160
09484500	Tanque Verde Creek at Tucson, AZ	Lat 32°15'57", long 110°50'27", in SE¼SE¼ sec.30, T.13 S., R.15 E., Pima County, at Sabino Canyon Road, 1 mi downstream from Sabino Creek, and 1.25 mi northeast of Tucson city limits.	219	1940-45½, 1966-78	3- 2-78	5.45	3,880
09484510	Ventana Canyon Wash near Tucson, AZ	Lat 32°18'35", long 110°50'20", in SW¼SW¼ sec.8, T.13 S., R.15 E., Pima County, at Sunrise Drive (Sabino Canyon West Road), 0.5 mi above Esperero Wash, and 4 mi northeast of Tucson city limits.	6.46	1965-78	7-25-78	13.18	185
09484560	Cienega Creek near Pantano, AZ	Lat 31°59'08", long 110°33'57", in NW¼ sec.1, T.17 S., R.17 E., Pima County, on downstream end of first pier from right abutment of bridge on Interstate 10, and 1.2 mi southeast of Pantano.	289	1968-75½, 1976-78	10- 6-77	4.87	900
09484570	Mescal Arroyo near Pantano, AZ	Lat 31°59'23", long 110°33'52", in NE¼NW¼ sec.1, T.17 S., R.17 E., Pima County, at county road, 0.25 mi above mouth, and 1.1 mi southeast of Pantano.	38.4	1965-78	10- 6-77	6.29	2,100
09484590	Davidson Canyon Wash near Vail, AZ	Lat 31°59'37", long 110°38'40", in SW¼SE¼ sec.31, T.16 S., R.17 E., Pima County, on right bank 0.3 mi upstream from Interstate 10, 2.0 mi upstream from mouth, and 5.5 mi southeast of Vail.	50.5	1968-75½, 1976-78	10- 6-77	5.18	3,040
09484600	Pantano Wash near Vail, AZ	Lat 32°02'09", long 110°40'37", in SW¼SE¼ sec.14, T.16 S., R.16 E., Pima County, 60 ft upstream from dam, 2.2 mi southeast of Vail, and 20 mi southeast of Tucson city hall.	457	1959-74½, 1975-78	9- 2-75 7-25-76 9-10-77 10- 6-77	6.70 10.86 7.31 6.71	g1,200 g5,200 g1,600 1,300
09485000	Rincon Creek near Tucson, AZ	Lat 32°07'46", long 110°37'32", in NW¼NE¼ sec.17, T.15 S., R.17 E., Pima County, 9 mi upstream from mouth, and 22 mi southeast of Tucson city hall.	44.8	1952-74½, 1975-78	1-15-78	6.71	2,440
09485500	Pantano Wash at Tucson, AZ	Lat 32°14'57", long 110°50'53", in NW¼NE¼ sec.6, T.14 S., R.15 E., Pima County, at Tanque Verde Road, 0.7 mi northeast of Tucson city limits, and 1.75 mi above mouth.	602	1940½, 1958, 1965-76	(h)		
09485900	Pima Wash near Tucson, AZ	Lat 32°20'15", long 110°57'35", in SW¼SW¼ sec.31, T.12 S., R.14 E., Pima County, at Ina Road, and 4 mi north of Tucson city limits.	4.93	1964-78	7-26-78	12.93	300
09485950	Geronimo Wash near Tucson, AZ	Lat 32°19'56", long 110°56'37", in SE¼NE¼ sec.6, T.13 S., R.14 E., Pima County, at Skyline Drive, 0.4 mi southeast of Ina Road, and 3.5 mi north of Tucson city limits.	2.08	1964-78	7-26-78	7.95	225

See footnotes at end of the table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Gila River basin--Continued							
09486000	Rillito Creek near Tucson, AZ	Lat 32°17'41", long 110°59'00", in SW¼SE¼ sec.14, T.13 S., R.13 E., Pima County, on right bank, 600 ft downstream from Pima Canyon, 1,800 ft downstream from bridge on U.S. Highway 89, 4.8 mi upstream from mouth, and 5.4 mi north of City Hall in Tucson.	918	1915-75†, 1976-78	19-25-76 19- 5-77 3- 2-78	9.27 6.36 8.86	9,400 1,200 7,500
09486230	Big Wash near Catalina, AZ	Lat 32°25'20", long 110°56'46", in NE¼NE¼ sec.6, T.11 S., R.14 E., Pima County, on right bank, 0.8 mi upstream from mouth at Canada del Oro, 0.9 mi downstream from Honey Bee Canyon, and 5.5 mi southwest of Catalina.	109	1976-78	18- 9-77 1-15-78	7.46 7.19	3,750 3,200
09486800	Altar Wash near Three Points, AZ	Lat 31°50'10", long 111°24'11", in SE¼NE¼ sec.27, T.18 S., R.9 E., Pima County, 0.2 mi upstream from bridge on State Highway 286, and 18 mi south of Three Points.	463	1966-75†, 1976-78	10- 6-77	8.83	10,100
09487000	Brawley Wash near Three Points, AZ	Lat 32°04'39", long 111°20'08", in NW¼SW¼ sec.33, T.15 S., R.10 E., Pima County, 1,300 ft downstream from State Highway 86, 1.6 mi west of Three Points (Robles Junction), and 23 mi west of Tucson (revised).	776	1962, 1966-78	10- 6-77	11.02	7,300
09487100	Little Brawley Wash near Three Points, AZ	Lat 32°07'25", long 111°19'45", in SE¼NW¼ sec.16, T.15 S., R.10 E., Pima County, 3.4 mi north of Three Points.	11.9	1968-78	10- 6-77	13.20	2,500
09487140	San Joaquin Wash near Tucson, AZ	Lat 32°10'07", long 111°07'58", in NE¼SE¼ sec.32, T.14 S., R.12 E., Pima County, 1.1 mi north-west of the intersection of San Joaquin Road and the Tucson-Ajo Highway.	.45	1969-78	1-15-78	5.70	127
09487250	Los Robles Wash near Marana, AZ	Lat 32°26'16", long 111°18'13", in SE¼SE¼ sec.27, T.11 S., R.10 E., Pima County, at Trico Road, 0.75 mi downstream from confluence of Brawley Wash and China Draw, 3 mi upstream from Blanco Wash, and 5 mi southwest of Marana.	1,170	1962, 1966-78	10- 6-77	8.10	2,400
09501300	Tortilla Creek at Tortilla Flat, AZ	Lat 33°31'38", long 111°23'13", in NW¼ sec.13, T.2 N., R.9 E. (unsurveyed), Maricopa County, 600 ft upstream from State Highway 88 and Tortilla Flat Store, and 3.7 mi southeast of Mormon Flat Dam.	24.3	1966-78	3- 2-78	8.67	3,000
09510080	West Fork Sycamore Creek near Sunflower, AZ	Lat 33°56'45", long 111°29'05", in SE¼ sec.13, T.7 N., R.8 E. (unsurveyed), Maricopa County, in Tonto National Forest, on right bank 1.2 mi upstream from confluence with East Fork, and 5.7 mi north of Sunflower.	9.8	1961-74†, 1978	3- 2-78	6.60	660
09510170	Camp Creek near Sunflower, AZ	Lat 33°45'35", long 111°29'44", in SW¼ sec.24, T.5 N., R.8 E., Maricopa County, on right bank at upstream side of culvert on State Highway 87, half a mile upstream from mouth and 7 mi south of Sunflower.	2.6	1963-66†, 1967-78	3- 2-78	5.05	402
09512160	Indian Bend Wash (at McDowell Road) at Scottsdale, AZ	Lat 33°27'57", long 111°54'54", in SW¼SE¼ sec.35, T.2 N., R.4 E., on both banks 25 ft upstream of weir at bridge on McDowell Road, 0.6 mi east of Scottsdale Road in Scottsdale.	(j)	1961-66k, 1968-75†, 1976-78	3- 2-78	9.99	b3,400
09512300	Cave Creek near Cave Creek, AZ	Lat 33°47'00", long 112°00'24", in SW¼ sec.12, T.5 N., R.3 E., Maricopa County, on left bank, 200 ft upstream from Prescott-to-Mesa transmission line, 5 mi southwest of town of Cave Creek, and 5.0 mi upstream from Cave Creek Dam.	121	1958-67†, 1968-78	3- 2-78	7.52	7,500
09512700	Agua Fria River tributary No. 2 near Rock Springs, AZ	Lat 34°02'00", long 112°08'42", in SW¼ sec.15, T.8 N., R.2 E., Maricopa County, at State Highway 69, 1 mi south of Rock Springs.	1.11	1963-78	3- 2-78	14.6	920
09513650	Agua Fria River at El Mirage, AZ	Lat 33°36'24", long 112°18'14", in NW¼NW¼ sec.18, T.3 N., R.1 E., Maricopa County, at Grand Avenue, 0.75 mi southeast of El Mirage.	ml,637	1963-78	3- 2-78	7.95	9,870

See footnotes at end of the table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Gila River basin--Continued							
09513820	Deadman Wash near New River, AZ	Lat 33°50'30", long 112°08'40", in NW¼ sec.27, T.6 N., R.2 E., Maricopa County, at State Highway 69, 4.5 mi south of New River.	11.1	1960-78	3- 2-78	5.11	1,400
09513910	New River near Glendale, AZ	Lat 33°32'12", long 112°16'52", in NE¼NW¼ sec.8, T.2 N., R.1 E., Maricopa County, at Glendale Avenue, 2 mi upstream from mouth, and 6 mi west of Glendale.	323	1961-63, 1964-70†, 1971-78	3- 2-78	9.08	12,300
09514200	Waterman Wash near Buckeye, AZ	Lat 33°19'49", long 112°30'33", in SW¼NE¼ sec.24, T.1 S., R.3 W., Maricopa County, 2.4 mi above mouth, 5.2 mi southeast of Buckeye.	403	1964-78	8- 4-78	4.72	1,150
09515800	Hartman Wash near Wickenburg, AZ	Lat 33°57'46", long 112°49'40", in SE¼ sec.12, T.7 N., R.6 W., Maricopa County, at U.S. Highway 60, 5.7 mi west of Wickenburg.	5.57	1964-78	1-17-78	3.34	n60
09516500	Hassayampa River near Morristown, AZ	Lat 33°53'06", long 112°39'41", in SW¼SE¼ sec.3, T.6 N., R.4 W., Maricopa County, 3.0 mi northwest of Morristown, 7 mi southeast of Wickenburg.	774	1939-47†, 1954, 1956, 1964-78	3- 2-78	12.93	24,000
09516600	Ox Wash near Morristown, AZ	Lat 33°53'00", long 112°39'00", in NW¼ sec.11, T.6 N., R.4 W., Maricopa County, at U.S. Highway 60, 2.4 mi northwest of Morristown.	6.31	1963-78	2-22-78	2.55	335
09516800	Jack Rabbit Wash near Tonopah, AZ	Lat 33°39'32", long 112°49'40", in NE¼NW¼ sec.25, T.4 N., R.6 W., Maricopa County, 100 ft upstream from the Wickenburg-Hassayampa Road, 4.5 mi upstream from Star Wash, and 14 mi northeast of Tonopah.	137	1964-78	10- 6-77	8.90	650
09517200	Centennial Wash tributary near Wenden, AZ	Lat 33°50'40", long 113°27'00", in SW¼SW¼ sec.24, T.6 N., R.12 W., Yuma County, at U.S. Highway 60, 5 mi northeast of Wenden.	2.79	1963-78	2-13-78	3.32	260
09517280	Tiger Wash near Aguila, AZ	Lat 33°44'30", long 113°16'43", in SW¼SW¼ sec.26, T.5 N., R.10 W., Maricopa County, 17 mi south of Aguila.	85.2	1963-78	3- 1-78	7.95	1,400
09517400	Winters Wash near Tonopah, AZ	Lat 33°29'22", long 112°55'05", in SW¼NW¼ sec.30, T.2 N., R.6 W., Maricopa County, 0.3 mi downstream from Airline Road, and 1 mi east of Tonopah.	47.8	1962-78	3- 2-78	7.1	1,800
09519600	Rainbow Wash tributary near Buckeye, AZ	Lat 33°14'35", long 112°38'15", in NE¼ sec.23, T.2 S., R.4 W., Maricopa County, at U.S. Highway 80, 9.5 mi southwest of Buckeye.	13.45 (1.02)	1963-78	8- 4-78	4.41	b240
09519750	Bender Wash near Gila Bend, AZ	Lat 32°54'25", long 112°33'05", in NW¼ sec.15, T.6 S., R.3 W., Maricopa County, along side of Interstate 8, 10 mi southeast of Gila Bend. Prior to Oct. 1, 1966, at site 0.65 mi downstream.	68.8	1963-78	(o)	4.46	b110
09519760	Sauceda Wash near Gila Bend, AZ	Lat 32°52'14", long 112°45'30", in SE¼SW¼ sec.27, T.6 S., R.5 W., Maricopa County, at State Highway 85, 5.3 mi south of Gila Bend.	p126	1963-78	8- 8-78	3.40	180
09519780	Windmill Wash near Gila Bend, AZ	Lat 33°02'54", long 112°50'17", in SE¼ sec.25, T.4 S., R.6 W., Maricopa County, at county road, 10.5 mi northwest of Gila Bend.	12.9	1964-78	4-13-78	5.82	b20
09520100	Military Wash near Sentinel, AZ	Lat 32°50'43", long 113°16'44", in SW¼ sec.3, T.7 S., R.10 W., Maricopa County, at U.S. Highway 80, 4.1 mi west of Sentinel.	8.70	1963-78	8- 4-78	4.80	560
09520110	Hot Shot Arroyo near Ajo, AZ	Lat 32°20'49", long 112°48'31", in SW¼ sec.29, T.12 S., R.5 W., Pima County, at State Highway 85, 3 mi southeast of Ajo.	.44	1966-78	10- 6-77	5.65	150

See footnotes at end of the table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1978--Continued

Annual maximum discharge at cross stage partial record stations during water year 1978							
Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (ft)	Dis-charge (ft ³ /s)
Gila River basin--Continued							
09520130	Darby Arroyo near Ajo, AZ	Lat 32°21'19", long 112°49'31", in NW¼ sec.30, T.12 S., R.5 W., Pima County, at State Highway 85, 2 mi southeast of Ajo.	4.72	1966-78	10- 6-77	7.91	1,070
09520160	Gibson Arroyo at Ajo, AZ	Lat 32°22'48", long 112°51'40", in NW¼SW¼ sec.14, T.12 S., R.6 W., Pima County, at 2nd Avenue next to railroad tracks in Ajo.	2.18	1967-78	8-11-78	3.80	380
09520200	Black Gap Wash near Ajo, AZ	Lat 32°42'23", long 112°50'43", in NW¼NE¼ sec.26, T.8 S., R.6 W., Maricopa County, at State Highway 85, 5.7 mi north of Midway, and 23 mi north of Ajo.	12.1	1963-78	1-15-78	5.66	364
09520230	Crater Range Wash near Ajo, AZ	Lat 32°33'44", long 112°52'37", in NW¼NW¼ sec.15, T.10 S., R.6 W., Maricopa County, at State Highway 85, 4.1 mi north of Maricopa-Pima County line, and 13.5 mi north of Ajo.	1.49	1963-78	1-15-78	1.93	b65

‡ Operated as a continuous-record gaging station.

a Peak flows originate in 1.2 square miles of urban area at the downstream end of the basin. Little flow has come from the upper 6.1 square miles since at least 1964.

b Estimate.

c No flow.

d Drainage area revised 1978. Runoff from upper part is lost through extensive sheet and interbasin flow. The noncontributing area is shown in parentheses.

e Drainage area revised.

f Portion of drainage basin is generally noncontributing because of a major stock pond. The noncontributing area is shown in parentheses.

g Previously published figure revised.

h Station temporarily discontinued.

i Data omitted in previous reports.

j Not determined.

k Gage located at McDonald Drive, Indian School and McDonald Roads.

l Gage located at Thomas Road.

m Includes 1,459 square miles above Lake Pleasant that is noncontributing except during occasional periods of spill from Waddell Dam; does not include the area tributary to McMicken Dam from which water is diverted to the Agua Fria River. Diversions from McMicken Dam have negligible effect on peak flows of the Agua Fria River.

n About.

o Peak occurred between Aug. 4 and Sept. 6.

p Includes 20 square miles which also contributes to an adjoining basin.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1978--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Gila River basin--Continued						
Ladron Spring Canyon	Blue River	Lat 33°27'33", long 109°10'47", in SW¼ sec.6, T.1 N., R.31 E., Greenlee County, 0.1 mi above Blue River near Blue.	--	--	6-15-78	0.2E
Blue River	San Francisco River	Lat 33°26'49", long 109°10'49", in NW¼ sec.7, T.1 N., R.31 E., Greenlee County, 0.2 mi above Oak Creek near Blue.	--	--	6-15-78	*0.37
Do-----	-----do-----	Lat 33°24'58", long 109°11'32", in SE¼ sec.24, T.1 N., R.30 E., Greenlee County, at H U Bar Ranch near Blue.	--	--	6-15-78	*1.88
Do-----	-----do-----	Lat 33°20'57", long 109°10'55", in sec.18, T.1 S., R.31 E., Greenlee County, at Horse Canyon near Clifton.	--	--	6-15-78	*3.79
Do-----	-----do-----	Lat 33°17'45", long 109°11'30", in sec.31, T.1 S., R.31 E., Greenlee County, 1 mi below Fritz Canyon near Clifton.	--	--	6-16-78	*5.48
Do-----	-----do-----	Lat 33°16'18", long 109°11'38", in sec.7, T.2 S., R.31 E., Greenlee County, 0.1 mi above Pigeon Creek near Clifton.	--	--	6-16-78	*4.38
Do-----	-----do-----	Lat 33°13'21", long 109°12'07", in NW¼ sec.31, T.2 S., R.31 E., Greenlee County, 0.4 mi above Pat Creek near Clifton.	--	--	6-17-78 7- 7-78	*4.03 *2.44
Do-----	-----do-----	Lat 33°12'32", long 109°11'32", in SE¼ sec.31, T.2 S., R.31 E., Greenlee County, 300 ft above San Francisco River near Clifton.	--	--	7- 7-78	*0.81
San Francisco River	Gila River	Lat 33°14'25", long 109°02'47", in sec.28, T.2 S., R.32 E., Greenlee County, at Arizona-New Mexico State line.	--	--	5-29-78 6-21-78	*60.2 *37.2
Do-----	-----do-----	Lat 33°14'15", long 109°05'23", in sec.30, T.2 S., R.32 E., Greenlee County, 0.1 mi above Coalson Canyon near Clifton.	--	--	6-21-78	*38.2
Do-----	-----do-----	Lat 33°14'03", long 109°06'15", in sec.25, T.2 S., R.31 E., Greenlee County, 0.25 mi below Indian Creek near Clifton.	--	--	5-29-78 6-21-78	*51.5 *35.4
Do-----	-----do-----	Lat 33°11'55", long 109°08'20", in SE¼ sec.3, T.3 S., R.31 E., Greenlee County, 500 ft below Harden Cienega near Clifton.	--	--	5-29-78	*54.5
Dix Creek	San Francisco River	Lat 33°11'15", long 109°09'23", in SE¼ sec.9, T.3 S., R.31 E., Greenlee County, 1.5 mi above San Francisco River near Clifton.	--	--	5-30-78	*0.14
San Francisco River	Gila River	Lat 33°12'35", long 109°11'28", in SE¼ sec.31, T.2 S., R.31 E., Greenlee County, 100 ft above Blue River near Clifton.	--	--	5-30-78	*54.5
Blue River	San Francisco River	Lat 33°12'32", long 109°11'32", in SE¼ sec.31, T.2 S., R.31 E., Greenlee County, 300 ft above San Francisco River near Clifton.	--	--	5-30-78	*7.07
San Francisco River	Gila River	Lat 33°12'22", long 109°11'29", in NE¼ sec.6, T.3 S., R.31 E., Greenlee County, 0.2 mi below Blue River near Clifton.	--	--	5-30-78	*60.5
Do-----	-----do-----	Lat 33°11'14", long 109°13'32", in NE¼ sec.11, T.3 S., R.30 E., Greenlee County, 0.25 mi below Bird Canyon near Clifton.	--	--	5-31-78	*56.7
Do-----	-----do-----	Lat 33°09'54", long 109°15'57", in SW¼ sec.16, T.3 S., R.30 E., Greenlee County, 0.2 mi below Santa Cruz Canyon near Clifton.	--	--	5-31-78	*57.1
Do-----	-----do-----	Lat 33°07'48", long 109°17'10", in NE¼ sec.32, T.3 S., R.30 E., Greenlee County, 0.5 mi below Sycamore Gulch near Clifton.	--	--	5-31-78	*58.4

See footnote at end of the table.

Discharge measurements made at miscellaneous sites during water year 1978--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Gila River basin--Continued						
San Francisco River	Gila River	Lat 33°05'44", long 109°18'22", in SE¼ sec.12, T.4 S., R.29 E., Greenlee County, 0.2 mi above Phelps Dodge Pumping Plant near Clifton.	--	--	5-31-78	*57.1
Do-----	-----do-----	Lat 33°04'50", long 109°18'16", in SW¼ sec.18, T.4 S., R.30 E., Greenlee County, 0.8 mi above Limestone Gulch near Clifton.	--	--	6- 6-78	*40.9
Do-----	-----do-----	Lat 33°04'15", long 109°17'52", in NW¼ sec.19, T.4 S., R.30 E., Greenlee County, at Limestone Gulch near Clifton.	--	--	6- 6-78	*40.4
Do-----	-----do-----	Lat 33°02'43", long 109°17'45", in NE¼ sec.31, T.4 S., R.30 E., Greenlee County, 0.3 mi above Ward Canyon near Clifton.	--	--	6- 1-78	*57.6
Do-----	-----do-----	Lat 33°00'31", long 109°19'40", in SW¼ sec.12, T.5 S., R.29 E., Greenlee County, 0.2 mi above Morenci Gulch near Clifton.	--	--	6- 1-78	*53.4
Do-----	-----do-----	Lat 32°58'58", long 109°21'58", in NE¼ sec.21, T.5 S., R.29 E., Greenlee County, 0.5 mi above Gila River near Clifton.	--	--	6- 1-78	*55.9
Potrero Creek	Santa Cruz River	Lat 31°26'45", long 110°57'43", in NE¼NE¼ sec.12, T.23 S., R.13 E., Santa Cruz County, southeast of Nogales International Clean Water Project near Nogales.	91.4	--	10- 9-77	+9,300
Agua Fria Canyon	-----do-----	Lat 31°28'43", long 111°00'02", in SW¼SE¼ sec.27, T.22 S., R.13 E., Santa Cruz County, at Interstate 19 about 12 mi north of Nogales.	40.2	--	10- 9-77	+12,000
Peck Canyon	-----do-----	Lat 31°30'40", long 111°00'46", in SE¼ sec.16, T.22 S., R.13 E., Santa Cruz County, at Interstate 19 about 14 mi north of Nogales.	47.8	1967	10- 9-77	+2,800
Rose Hill Wash	Pantano Wash	Lat 32°13'49", long 110°50'53", in SW¼NE¼ sec.7, T.14 S., R.15 E., Pima County, at Edgemont Street at Tucson.	1.71	--	9-21-78	+492
Canada del Oro	Santa Cruz River	Lat 32°33'23", long 110°50'53", in SW¼SE¼SE¼ sec.13, T.10 S., R.14 E., Pinal County, 1.0 mi above Golder Dam near Catalina.	--	--	3- 8-78	104
Do-----	-----do-----	Lat 32°32'10", long 110°51'20", in NW¼SE¼NW¼ sec.25, T.10 S., R.14 E., Pinal County, 0.5 mi below Golder Dam near Catalina.	--	--	3- 8-78	124
Deadman Creek	Verde River	Lat 34°01'33", long 111°39'04", in sec.20, T.8 N., R.7 E. (unsurveyed), Yavapai County, in Tonto National Forest, 4.4 mi northeast of Horseshoe Dam.	36.3	--	3- 1-78	+6,620
Davenport Wash	-----do-----	Lat 33°59'54", long 111°38'32", in sec.32, T.8 N., R.7 E. (unsurveyed), Maricopa County, 13.7 mi northwest of Sunflower.	25.5	--	3- 1-78	+5,500
Lime Creek	-----do-----	Lat 33°59'11", long 111°45'03", in sec.4, T.7 N., R.6 E. (unsurveyed), Maricopa County, 2.5 mi west of Horseshoe Dam, near Carefree.	41.9	--	3- 1-78	+5,180
Sheep Creek	-----do-----	Lat 33°55'24", long 111°38'12", in sec.28, T.7 N., R.7 E. (unsurveyed), Maricopa County, 10.6 mi northwest of Sunflower.	34.2	--	3- 1-78	+6,660
Canyon Creek	-----do-----	Lat 33°53'25", 111°36'40", in sec.2, T.6 N., R.7 E. (unsurveyed), Maricopa County, in Tonto National Forest, 0.1 mi upstream from the mouth of Canyon Creek, near Carefree.	9.2	--	3- 1-78	+700E

See footnote at end of the table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1978--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Gila River basin--Continued						
Alder Creek	Verde River	Lat 33°51'50", long 111°34'28", in sec.13, T.6 N., R.7 E. (unsurveyed), Maricopa County, 6.2 mi west of Sunflower.	11.3	--	3- 1-78	+1,430
Camp Creek	-----do-----	Lat 33°46'56", long 111°40'33", in NW¼ sec.18, T.5 N., R.7 E., Maricopa County, 1 mi upstream from the mouth 3.6 mi southwest of Bartlett Dam.	48.3	--	3- 1-78	+1,160
Gila River	Colorado River	Lat 33°01'03", long 113°08'25", in NW¼SW¼SE¼ sec.1, T.5 S., R.9 W., Maricopa County, about 10 mi below Painted Rock Dam at Hansen Ranch crossing.	--	--	3-16-78 6- 5-78 6-29-78 8- 8-78	137 161 216 248
Do-----	-----do-----	Lat 32°57'41", long 113°18'27", in SW¼NE¼SE¼ sec.29, T.5 S., R.10 W., Maricopa County, about 21 mi below Painted Rock Dam, 2.5 mi south of Agua Caliente.	--	--	5-19-78 6- 5-78 6-29-78 8- 8-78	13.8 105 112 218
Do-----	-----do-----	Lat 32°52'28", long 113°30'33", in SE¼NE¼SE¼ sec.25, T.6 S., R.13 W., Yuma County, about 36 mi below Painted Rock Dam, near Dateland.	--	--	5-19-78 6- 6-78 6-30-78 8- 9-78	.47 29.8 17.7 35.0

E Discharge estimated.

GILA RIVER BASIN

Blue River and tributaries low-flow and water-quality investigations

A series of low-flow discharge measurements and chemical-quality samples were collected on the Blue River and tributaries in cooperation with the Arizona Water Commission, during the period June 13-30, 1978. The data collected in this series of measurements will provide a basis for determining the chemical quality of the low flow in various parts of the Blue River basin.

The measurements are listed in order proceeding downstream, and each tributary is inserted in the order in which it enters the mainstream.

STATION NUMBER	STATION NAME	DATE OF SAMPLE	TIME	STREAM-FLUX, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)
334445109121300	CAMPBELL BLUE CREEK AT USFS GAGING STATION	78-06-26	1640	.10	130	--
334416109065000	CAMPBELL BLUE CREEK AT LUCE RANCH NR BLUE AZ	78-06-14	1100	1.0	205	--
334410109040800	TURKEY CREEK ABV CAMPBELL BLUE CREEK NR BLUE AZ	78-06-14	1030	.10	410	--
334313109023800	CAMPBELL BLUE CREEK AT STATE LINE NR BLUE AZ	78-06-13	0910	1.2	243	--
334311109023300	DRY BLUE CREEK AT STATE LINE NR BLUE AZ	78-06-13	1000	1.0	358	--
334136109042100	BLUE RIVER AT UPPER BLUE CAMPGROUND NR BLUE AZ	78-06-13	1255	1.8	248	--
333738109054800	BLUE RIVER AT BEAVERHEAD RD CROSSING NR BLUE AZ	78-06-13	1615	1.4	340	--
333525109082300	BLUE RIVER BLW LANPHIER CANYON NR BLUE AZ	78-06-14	1300	.50	355	--
333258109115200	BLUE RIVER AT THE BOX NR BLUE AZ	78-06-14	1410	2.7	355	--
333154109121700	KP CREEK ABV BLUE RIVER NR BLUE AZ	78-06-14	1500	.23	255	--
332936109123600	BLUE RIVER BLW TORNADO CANYON NR BLUE AZ	78-06-14	1615	1.8	360	--
332902109121700	STRAYHORSE CREEK ABV BLUE RIVER NR BLUE AZ	78-06-15	0700	.20	670	--
332733109104700	LANDRUN SPRING CANYON ABV BLUE R NR BLUE AZ	78-06-15	0900	.20	370	--
332649109104900	BLUE RIVER ABOVE OAK CREEK NR BLUE AZ	78-06-15	0930	.37	550	--
332458109111300	BLUE RIVER AT HU BAK RANCH NR BLUE AZ	78-06-15	1130	1.9	600	--
332057109105500	BLUE RIVER AT MOUTH OF HORSE CANYON NR BLUE AZ	78-06-15	1630	3.8	510	--
331745109113000	BLUE RIVER ABV GAGING STATION NR CLIFTON AZ	78-06-16	0930	5.5	530	--
331613109113800	BLUE RIVER ABV PIGEON CREEK NR CLIFTON AZ	78-06-16	1420	4.4	530	--
331521109120700	BLUE RIVER ABV PAT CREEK NR CLIFTON AZ	78-06-17	1305	4.0	505	--
331232109113201	BLUE R AT MOUTH NR CLIFTON AZ	78-05-30	1000	7.1	503	8.2

DATE OF SAMPLE	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)	FLUORIDE, DIS-SOLVED (MG/L AS F)
78-06-26	21.0	76	11	16	8.8	4.2	.2	.9	80	12	1.7	.1
78-06-14	22.0	100	0	26	8.5	12	.5	1.0	130	8.2	1.9	.2
78-06-14	19.0	160	0	45	11	39	1.4	1.1	250	17	3.4	.4
78-06-13	15.0	150	0	41	11	16	.6	.7	180	14	2.6	.2
78-06-13	17.0	170	0	51	9.6	17	.6	.8	220	12	3.2	.2
78-06-13	16.0	150	0	44	10	11	.4	.7	190	14	2.8	.2
78-06-13	22.0	160	0	46	11	20	.7	.8	210	15	3.1	.2
78-06-14	30.0	160	0	44	15	21	.7	1.2	200	21	3.4	.3
78-06-14	25.0	180	3	47	14	16	.5	1.2	210	20	3.1	.2
78-06-14	--	130	14	30	13	9.0	.3	.9	140	15	2.1	.1
78-06-14	20.0	170	17	46	14	16	.5	1.1	190	22	6.8	.2
78-06-15	--	230	33	59	20	65	1.9	1.6	240	42	86	.2
78-06-15	17.0	190	0	48	16	17	.5	2.6	240	5.8	3.8	.3
78-06-15	--	200	51	53	16	54	1.7	1.9	180	22	97	.2
78-06-15	24.0	210	56	60	15	52	1.6	1.8	190	25	92	.2
78-06-15	18.0	190	34	53	14	41	1.3	2.0	190	31	59	.3
78-06-16	17.0	210	48	60	15	37	1.1	2.2	200	32	57	.3
78-06-16	28.0	200	39	55	16	39	1.2	2.5	200	33	58	.3
78-06-17	26.0	200	34	53	16	35	1.1	3.0	200	31	51	.3
78-05-30	21.0	200	33	54	15	35	1.1	2.7	200	31	46	.3

LOW-FLOW INVESTIGATIONS

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GILA RIVER BASIN

San Francisco River and tributaries low-flow and water-quality investigations

A series of low-flow discharge measurements and chemical-quality samples were collected on the San Francisco River and tributaries in cooperation with the Arizona Water Commission, during the period May 29-June 6, 1978. The data collected in this series of measurements will provide a basis for determining the chemical quality of the low flow in various parts of the San Francisco River basin. The measurements are listed in order proceeding downstream, and each tributary is inserted in the order in which it enters the mainstream.

STATION NUMBER	STATION NAME	DATE OF SAMPLE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)
31425109024701	SAN FRANCISCO R AT STAE LINE NR CLIFTON AZ	78-05-29	1600	52	310	--
31403109061501	SAN FRANCISCO R BLW INDIAN CREEK NR CLIFTON AZ	78-05-29	1450	52	380	--
31155109082001	SAN FRANCISCO R AT HARDEN CIENEGA NR CLIFTON AZ	78-05-29	2000	54	402	--
31110109092300	DIX CREEK ABOVE SAN FRANCISCO R NR CLIFTON AZ	78-05-30	1515	.14	260	--
31235109112801	SAN FRANCISCO R ABV BLUE R NR CLIFTON AZ	78-05-30	1000	54	438	--
31232109113201	BLUE R AT MOUTH NR CLIFTON AZ	78-05-30	1000	7.1	503	8.2
31222109112901	SAN FRANCISCO R BLW BLUE R NR CLIFTON AZ	78-05-30	1200	60	445	--
31114109133201	SAN FRANCISCO R AT KIEHNE RANCH NR CLIFTON AZ	78-05-31	1150	57	340	--
30954109155701	SAN FRANCISCO R BLW SANTA CRUZ CAN NR CLIFTON AZ	78-05-31	1440	57	480	8.3
30748109171001	SAN FRANCISCO R BLW SYCAMORE GULCH NR CLIFTON AZ	78-05-31	1640	58	480	--
30544109182201	SAN FRANCISCO R ABV PUMPING STA NR CLIFTON AZ	78-05-31	1600	57	490	--
30450109181601	SAN FRANCISCO ABV LIMESTONE GULCH NR CLIFTON AZ	78-06-06	1100	40	520	--
30415109175201	SAN FRANCISCO AT LIMESTONE GULCH NR CLIFTON AZ	78-06-06	1225	40	810	--
30243109174501	SAN FRANCISCO R ABV WARDS CANYON AT CLIFTON AZ	78-06-01	1245	58	900	--
30031109194001	SAN FRANCISCO R BLW MORENCI GULCH NR CLIFTON AZ	78-06-01	1615	53	1261	8.3
25858109215801	SAN FRANCISCO R ABV GILA R NR CLIFTON AZ	78-06-01	1840	56	1529	8.4

DATE OF SAMPLE	TEMPERATURE (DEG C)	HARDNESS (MG/L AS CaCO3)	HARDNESS, NONCARBONATE (MG/L AS CaCO3)	CALCIUM SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS CL)	FLUORIDE, DIS-SOLVED (MG/L AS F)
8-05-29	27.0	100	0	31	6.6	45	1.9	3.7	140	23	46	.9
8-05-29	26.0	110	0	33	7.4	46	1.9	4.2	150	23	46	.9
8-05-29	24.0	120	0	35	7.8	46	1.8	3.8	150	23	54	.9
8-05-30	24.0	140	0	32	14	16	.6	3.1	180	6.0	6.1	.4
8-05-30	20.0	120	0	36	7.7	49	1.9	3.9	150	23	57	.9
8-05-30	21.0	200	33	54	15	35	1.1	2.7	200	31	46	.3
8-05-30	24.0	130	0	37	8.3	48	1.9	3.8	160	24	56	.8
8-05-31	24.0	140	5	39	9.5	45	1.7	3.8	160	24	54	.8
8-05-31	25.0	140	4	41	10	45	1.6	3.9	170	25	56	.8
8-05-31	25.0	150	11	42	11	46	1.6	4.0	170	26	56	.8
8-05-31	25.0	150	3	42	11	47	1.7	4.1	180	27	56	.8
8-06-06	20.0	160	12	44	12	47	1.6	4.0	180	28	59	.8
8-06-06	24.0	190	39	55	12	97	3.1	7.4	180	29	160	.9
8-06-01	27.0	240	89	75	12	160	4.5	11	180	29	290	.9
8-06-01	28.0	300	150	99	13	200	5.0	14	180	40	380	1.0
8-06-01	24.0	290	150	91	16	200	5.1	13	180	56	380	.9

LOW-FLOW INVESTIGATIONS

GILA RIVER BASIN

San Francisco River and tributaries low-flow and water-quality investigations--Continued

MULTIPLE STATION LISTING						
DATE OF SAMPLE	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BODON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
78-05-29	37	256	263	.35	50	80
78-05-29	38	265	273	.36	50	110
78-05-29	38	272	283	.37	50	120
78-05-30	60	215	226	.29	20	20
78-05-30	38	289	290	.39	50	70
78-05-30	35	303	318	.41	20	50
78-05-30	38	278	295	.38	40	90
78-05-31	38	286	293	.39	40	40
78-05-31	38	296	304	.40	40	10
78-05-31	38	298	308	.41	40	50
78-05-31	39	300	316	.41	40	20
78-06-06	39	317	323	.43	50	20
78-06-06	40	477	490	.65	70	20
78-06-01	39	746	706	1.01	90	50
78-06-01	39	912	876	1.24	110	50
78-06-01	39	915	885	1.24	110	30

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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LITTLE COLORADO RIVER BASIN

09386030 LITTLE COLORADO RIVER ABOVE ZION RESERVOIR NEAR ST. JOHNS, AZ
(LAT 34°35'01", LONG 109°24'23")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
MAY 11...	1145	1.8	4100	8.5	19.0	980	650	210	110	660	9.2	26
SEP 13...	1720	.10	4500	8.0	23.5	1300	1000	320	110	490	6.0	15

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAY 11...	400	1	1100	610	1.9	15	2930	4.01	.08	1000	40
SEP 13...	260	0	1200	630	1.3	15	2910	4.23	.01	550	20

09398500 CLEAR CREEK BELOW WILLOW CREEK, NEAR WINSLOW, AZ
(LAT 34°40'03", LONG 111°00'25")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
MAR 03...	1600	3700	50	7.2	3.5	32	10	6.9	3.5	.7	.1	.9

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAR 03...	27	0	7.4	1.5	.1	4.3	39	.06	.04	50	120

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

LITTLE COLORADO RIVER BASIN

342453109241000 LITTLE COLORADO RIVER ABOVE SALADO SPRINGS NEAR ST. JOHNS, AZ
(LAT 34°24'53", LONG 109°24'10")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARU- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
MAY 10...	1715	3.7	1650	8.0	19.0	500	210	130	42	190	3.7	12
SEP 13...	1010	3.4	1120	8.0	17.5	330	55	86	29	120	2.9	8.7

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAY 10...	350	0	290	180	1.5	16	1030	1.43	.06	310	30
SEP 13...	340	0	160	96	1.1	18	687	.94	.01	240	50

342600109224000 LITTLE COLORADO RIVER BELOW SALADO SPRINGS NEAR ST. JOHNS, AZ
(LAT 34°26'00", LONG 109°22'40")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARU- NESS, NONCAR- BONATE (MG/L CACU3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
MAY 10...	1830	8.4	2500	8.0	20.0	580	250	140	55	330	6.0	23
SEP 13...	1205	8.3	2400	7.7	19.0	630	270	180	44	270	4.7	22

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SU4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAY 10...	400	0	540	350	2.0	16	1650	2.31	.02	580	0
SEP 13...	440	0	440	280	1.7	18	1470	2.03	.04	490	20

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

GILA RIVER BASIN

09470500 SAN PEDRO RIVER AT PALOMINAS, AZ
(LAT 31°22'48", LONG 110°06'38")

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

		STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	
UCT 10...	1620	1320	670	7.9	21.5	3000	320	230	110	10	17	.4	
		POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLOR- IDE, DIS- SOLVED (MG/L AS CL)	FLUOR- IDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DISS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AL-FI)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
UCT 10...	3.5	110	0	250	3.6	.3	4.8	458	.62	30	60	10	

09471550 SAN PEDRO RIVER NEAR TOMBSTONE, AZ
(LAT 31°45'03", LONG 110°12'02")

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	TIME	STREAM- FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L AS CACO3)
UCT 13...	1400	250	760	8.2	22.0	450	350	260
MAK 05...	1600	65	2100	7.7	14.0	--	1100	1000

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
UCT 13...	120	13	25	.6	3.8	110	0	300	6.5
MAK 05...	410	27	30	.4	4.8	170	0	360	10

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TUNES PER AC-FI)	BORON, DISSOLVED (UG/L AS B)	IRON, TOTAL RECOVERABLE (UG/L AS Fe)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
UCT 13...	.4	14	537	.73	50	--	50	0
MAK 05...	--	--	--	--	70	220000	270	3500

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

GILA RIVER BASIN

09473000 ARAVAIPA CREEK NEAR MAMMOTH, AZ
(LAT 32°50'37", LONG 110°37'07")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
UCI 03...	1250	3.2	470	7.8	3.2	180	0	56	10	32	1.0	4.9
MAR 03...	1545	1100	345	8.0	12.0	150	46	49	7.3	9.8	.3	3.9

DATE	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
UCI 03...	250	0	34	9.6	1.0	35	306	.42	40	40	10
MAR 03...	130	0	54	4.7	--	--	--	--	50	170	20

09502800 WILLIAMSON VALLEY WASH NEAR PAULDEN, AZ
(LAT 34°52'00", LONG 112°36'45")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TION RATIO
MAR 02...	1100	2200	110	7.0	8.0	55	0	16	3.7	3.9	.2

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAR 02...	2.0	71	0	6.0	4.4	.2	11	82	.12	60	50

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

GILA RIVER BASIN

09503700 VERDE RIVER NEAR PAULDEN, AZ
(LAT 34°53'40", LONG 112°20'32")

DATE	TIME	STREAM- FLUW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
MAR 01...	1745	7520	140	7.9	9.0	88	0	27	5.1	5.6	.3

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAR 01...	3.4	110	0	6.1	5.0	.3	.2	105	.14	50	60

09505300 RATTLESNAKE CANYON NEAR RIMROCK, AZ
(LAT 34°46'01", LONG 111°40'23")

DATE	TIME	STREAM- FLUW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CACO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
FEB 28...	1330	525	55	6.8	.5	36	11	9.0	3.2	4.1	.3

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCU3)	CAR- BONATE (MG/L AS CU3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLU- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
FEB 28...	1.1	30	0	3.4	.9	.1	.3	37	.07	30	150

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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GILA RIVER BASIN

09505350 DRY BEAVER CREEK NEAR RIMROCK, AZ
(LAT 34°43'43", LONG 111°46'30")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TIUM RATIO
MAR 02...	1730	5700	50	7.5	7.0	30	0	8.2	2.2	1.1	.1

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
MAR 02...	1.1	37	0	4.1	1.3	.1	5.7	42	.07	40	90

09505550 VERDE RIVER BELOW CAMP VERDE, AZ
(LAT 34°33'02", LONG 111°51'02")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L AS CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SURP- TIUM RATIO
FEB 28...	1630	8310	128	7.9	7.0	71	0	19	5.8	4.1	.2

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
FEB 28...	1.5	98	0	5.6	5.5	.1	10	100	.16	70	110

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

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GILA RIVER BASIN

341420112325300 HASSAYAMPA RIVER AT MOUTH OF MILK CREEK, AZ
(LAT 34°14'20", LONG 112°32'53")

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO
APR 27...	1430	40	480	7.4	25.0	220	32	57	19	23	.7

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)
APR 27...	1.5	230	0	57	14	.4	24	309	.41	150	0

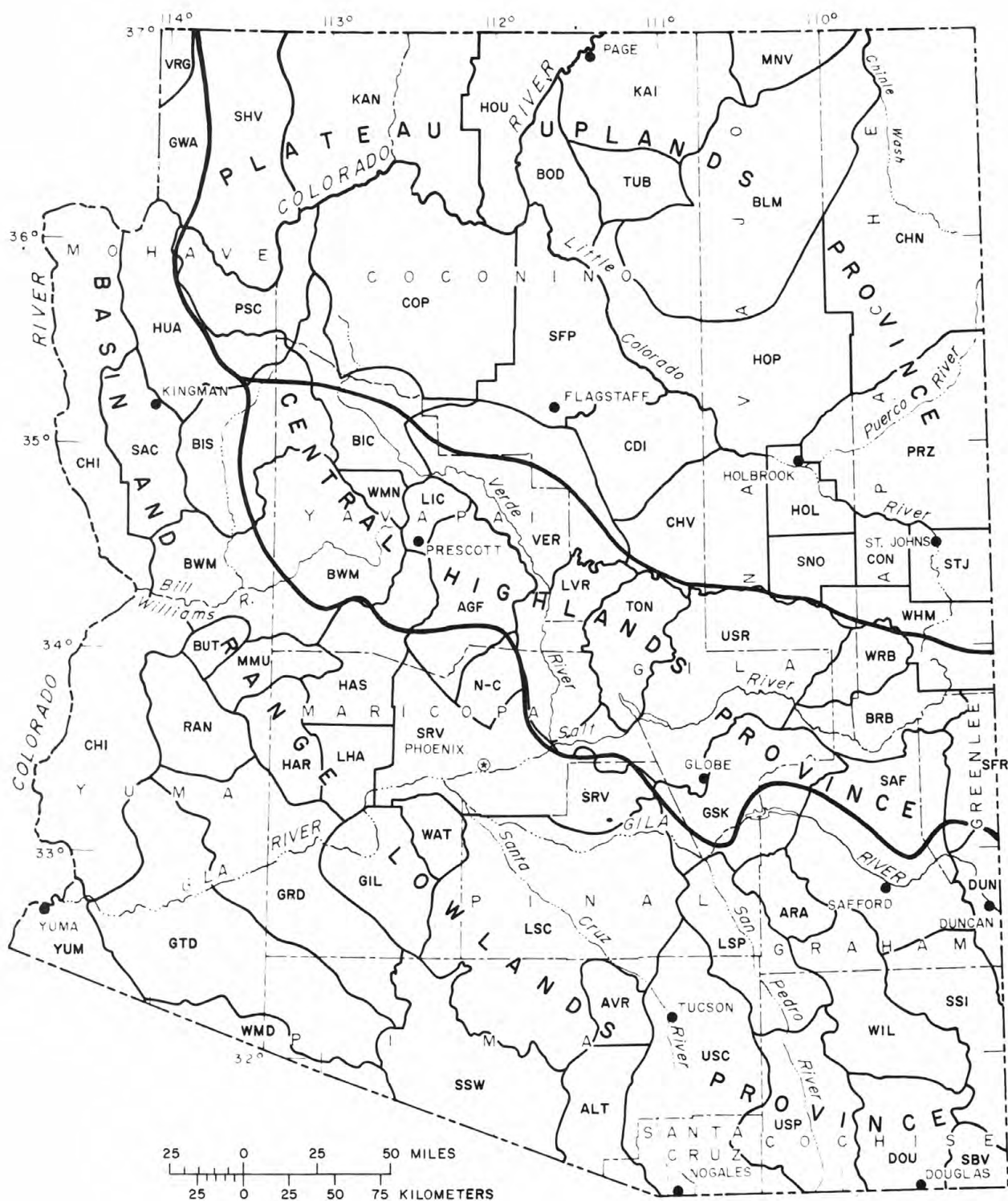


FIGURE 8.--INDEX MAP OF GROUND-WATER AREAS IN ARIZONA.

AREAS AND ABBREVIATIONS

AGF	=	Agua Fria basin	LSC	=	Lower Santa Cruz basin
ALT	=	Altar Valley	LVR	=	Lower Verde River
ARA	=	Aravaipa Valley	MMU	=	McMullen Valley
AVR	=	Avra Valley	MNV	=	Monument Valley
BIC	=	Big Chino Valley	N-C	=	New River-Cave Creek
BIS	=	Big Sandy Valley	PSC	=	Peach Springs Canyon
BWM	=	Bill Williams	PRZ	=	Puerco-Zuni
BLM	=	Black Mesa	RAN	=	Ranegras Plain
BRB	=	Black River basin	SAC	=	Sacramento Valley
BOD	=	Bodaway Mesa	SAF	=	Safford basin
BUT	=	Butler Valley	SRV	=	Salt River Valley
CDI	=	Canyon Diablo	SBV	=	San Bernardino Valley
CHV	=	Chevelon	SFP	=	San Francisco Peaks
CHN	=	Chinle	SFR	=	San Francisco River basin
COP	=	Coconino Plateau	SSI	=	San Simon basin
CHI	=	Colorado River, Hoover Dam to Imperial Dam	SSW	=	San Simon Wash
CON	=	Concho	SHV	=	Shivwits
DOU	=	Douglas basin	SNO	=	Snowflake
DUN	=	Duncan basin	STJ	=	St. Johns
GIL	=	Gila Bend basin	TON	=	Tonto basin
GRD	=	Gila River from Painted Rock Dam to Texas Hill	TUB	=	Tuba City
GSK	=	Gila River from head of San Carlos Reservoir to Kelvin	USR	=	Upper Salt River basin
GTD	=	Gila River from Texas Hill to Dome	USP	=	Upper San Pedro basin
GWA	=	Grand Wash	USC	=	Upper Santa Cruz basin
HAR	=	Harquahala Plains	VER	=	Upper Verde River
HAS	=	Hassayampa basin	VRG	=	Virgin River
HOL	=	Holbrook	WAT	=	Waterman Wash
HOP	=	Hopi	WML	=	Western Mexican drainage
HOU	=	House Rock	WHM	=	White Mountains
HUA	=	Hualapai Valley	WRB	=	White River basin
KAI	=	Kaibito	WIL	=	Willcox basin
KAN	=	Kanab	WMN	=	Williamson Valley
LIC	=	Little Chino Valley	YUM	=	Yuma
LHA	=	Lower Hassayampa			
LSP	=	Lower San Pedro basin			

WATER LEVELS IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD ^{a/})	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1978	Date
AGUA FRIA BASIN											
343157N1121354.1 (15070102)	(A-13-1)2cac	200	4,590	Stock	1973-78	84.8	2- 6-74	89.5	1- 7-76	89.0	3-14
ALTAR VALLEY											
312950N1113346.1 (15080200)	(D-22-8)19dbc	160	3,610	Domestic, Stock	1950-61, 1963-66, 1968-78	91.2	10-18-50	100.2	1- 2-78	100.2	1- 2
ARAVAIPA VALLEY											
324413N1091355.1 (15050203)	(D-8-21)18dad	140	3,880	Irrigation	1955-57, 1959,1962, 1964-69, 1971-78	28.4	4-23-68	43.4	2- 2-77	38.7	2-22
AVRA VALLEY											
320852N1111500.1 (15050304)	(D-15-11)5ccd	728	2,368.0	Unused	1953-57, 1959-60, 1962-78	281.1	3- 6-53	337.6	8-25-75	332.9	1- 2
BIG CHINO VALLEY											
345608N1123323.1 (15060201)	(B-18-3)23bbc	61	4,420	Unused	1952-67, 1969-78	8.9	2-10-66	18.5	5-31-55	16.6	3-14
BIG SANDY VALLEY											
344040N1133510.1 (15030201)	(B-16-13)36cc	15	1,880	Domestic	1945-78	9.7	1-12-45	13.6	10-20-56	11.4	2- 2
BILL WILLIAMS											
341657N1124312.1 (15030203)	(B-11-4)19bcc	47	4,454	Unused	1946, 1948-49, 1951-57, 1959-60, 1962-66, 1968-72, 1974-78	16.5	7- 3-46	32.1	2- 5-65	27.9	2-21
342822N1125312.1 (15030203)	(B-13-6)9dcd	52	2,500	Irrigation	1945-49, 1951-57, 1959-78	14.0	1-17-45	19.9	4-26-61 1-19-77	16.1	2-22
BLACK MESA											
360055N1103040.1 (15020012)	04 075-00.61x16.21 Navajo Indian Res.	1,683	5,854	Unused	1972-78	323.9	2- 1-73	333.8	2-10-78	333.8	2-10
BUTLER VALLEY											
335823N1134715.1 (15030105)	(B-7-15)2dcc	552	1,425	Irrigation	1967-76, 1978	148.3	2-16-72	158.1	2- 6-78	158.1	2- 6
CANYON DIABLO											
345750N1104828.1 (15020008)	(A-18-14)13abd3	293	5,160	Observation	1968-74, 1976-78	269.6	5-28-68	278.2	3- 9-78	278.2	3- 9

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD ⁸² /)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1978	Date
GILA RIVER FROM PAINTED ROCK DAM TO TEXAS HILL											
330607N1131619.1 (15070201)	(C-4-10)10aaa	500	688	Unused	1957-78	198.4	2-14-57	251.9	1-12-78	251.9	1-12
325353N1133211.1 (15070201)	(C-6-12)19bba	1,352	383	Unused	1971-78	29.2	1- 8-75	39.8	1- 2-73	32.0	1-27
GILA RIVER FROM HEAD OF SAN CARLOS RESERVOIR TO KELVIN											
332102N1102802.1 (15040007)	(D-1-18)11dcc	300	2,662	Domestic	1967-78	32.8	3-27-78	38.7	3- 2-67	32.8	3-27
330858N1104951.1 (15050100)	(D-3-15)29aba		2,740	Irrigation	1952-78	81.6	2-25-60	102.2	9-11-57	99.6	1-23
330416N1105533.1 (15050100)	(D-4-14)21bcd		1,790	Unused	1952-55, 1957-64, 1966-78	5.0	1-23-78	8.3	12- 8-53	5.0	1-23
GILA RIVER FROM TEXAS HILL TO DOME											
324625N1135406.1 (15070201)	(C-7-16)33daa	-	278	Observation	1964-78	7.4	1-16-76	21.2	1-29-64	10.8	1-27
HARQUAHALA PLAINS											
334326N1133034.1 (15070104)	(B-4-12)5aaa	730	1,638	Irrigation	1963, 1965-78	364.6	1-17-77	451.9	1- 2-78	451.9	1- 2
HOLBROOK											
345310N1100625.1 (15020002)	(A-17-21)10cha	160	5,140	Unused	1952-58, 1960-78	52.1	4-23-65	53.6	4- 4-66	52.9	1-11
HOPI											
350002N1103555.1 (15020008)	(A-19-16)36dbb	610	4,890	Unused	1976-78	34.0	3-14-78	37.4	2-10-76	34.0	3-14
HOUSE ROCK											
365942N1112925.1 (14070006)	(A-42-8)36cbc	655	3,735	Observation	1968-78	80.0	12-17-75	235.0	4-30-68	105.6	1- 2
HUALAPAI VALLEY											
352740N1133555.1 (15010007)	(B-24-12)18daa	440	4,255	Irrigation	1953-64, 1967-78	142.9	4- 2-76	147.5	6-22-55	144.2	2- 3
KANAB											
365403N1124528.1 (15010003)	(B-40-4)6aac	202	5,140	Irrigation	1975-76, 1978	80.0	7-27-76	81.1	1- 2-78	81.1	1- 2
LITTLE CHINO VALLEY											
344846N1122714.1 (15060201)	(B-17-2)34acc	420	4,500	Unused	1950-78	4.0	3- 8-72	10.6	3-10-75	9.1	3-14

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD ² /)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1978	Date
LOWER HASSAYAMPA											
332934N1125728.1 (15070104)	(B-2-7) 27aab	350	1,146	Irrigation	1953,1956, 1958-78	162.8	12- 3-53	271.9	2-27-78	271.9	2-27
LOWER SAN PEDRO BASIN											
325217N1104255.1 (15050203)	(D-6-16) 33bad	60	2,100	Unused	1949-69, 1971-73, 1975-78	6.7	2-27-67	31.9	1- 2-77	20.7	1-23
323644N1104612.1 (15050203)	(D-9-15) 36bbc	92	4,500	Domestic	1949-78	32.7	2-13-74	82	8-16-54	35.3	1- 6
LOWER SANTA CRUZ BASIN											
330355N1120730.1 (15050303)	(D-4-2) 23acc	800	1,187	Irrigation	1964-73, 1976-78	267.9	1- 9-64	469.2	1-10-78	469.2	1-10
325250N1113106.1 (15050100)	(D-6-8) 21ddc	400	1,470	Irrigation	1952-56, 1960-62, 1964,1966, 1968-73, 1976-78	117.3	2- 5-52	213.0	1- 2-72	172.9	1-23
324918N1113538.1 (15050303)	(D-7-7) 11cdd	460	1,498.2	Irrigation	1942-57, 1959-64, 1967-78	85.9	3-11-42	299.1	3- 6-75	226.6	1-23
324102N1114528.1 (15050303)	(D-8-6) 31add	280	1,518	Unused	1952, 1955-64, 1966-78	128.9	2-14-52	257.9	1- 2-76	215.9	1-25
324312N1113330.1 (15050303)	(D-8-8) 18cddl	600	1,596	Irrigation	1967-74, 1976-78	329.0	1-18-68	397.4	1-14-77	372.4	3-17
323753N1112046.1 (15050303)	(D-9-10) 19aaa	600	1,830	Unused	1953-64, 1966-78	181.1	3-28-55	226.7	1-17-68	214.5	3-16
323942N1110302.1 (15050100)	(D-9-13) 7cbc	275	3,115	Stock	1952-78	43.0	9-23-55	111.5	1- 6-53	53.7	1- 2
McMULLEN VALLEY											
335727N1130451.1 (15070104)	(B-7-8) 15baa	1,812	2,257	Irrigation	1962-65, 1967-78	479.4	1- 2-64	552.2	1- 2-78	552.2	1- 2
PUERCO-ZUNI											
343414N1091420.1 (15020003)	(A-14-29) 35cdc	855	5,762	Stock	1960, 1975-78	Flowing, 100 gal/min	11-26-60	Flowing, 18 gal/ min	9-20-77	Flowing, 30 gal/ min Flowing, 22 gal/ min	5-11 9-13
345620N1091040.1 (15020004)	(A-18-30) 20cdd	420	6,450	Stock	1972-78	359.2	2-22-78	366.8	1-29-76	359.2	2-22
RANERAS PLAIN											
334840N1135141.1 (15030105)	(B-5-15) 6baa1	910	1,156	Irrigation	1957-58, 1963-78	209.9	2-15-63	225.5	2- 6-78	225.5	2- 6
SACRAMENTO VALLEY											
351109N1140300.1 (15030103)	(B-21-17) 24cddl	120	3,310	Domestic	1944-78	101.5	8-14-44	120.0	2-12-63	111.3	2-21

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD ²)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1978	Date
SAFFORD BASIN											
330505N1100228.1 (15040005)	(D-4-22)13acd	100	2,640	Irrigation	1953-78	8.9	3-13-68	29.0	8-31-53	16.9	2- 9
330239N1100311.1 (15040005)	(D-4-22)35ada	75	2,859.5	Stock	1939-44, 1946-78	17.1	2-11-43	39.4	3-29-40	27.4	2- 9
325633N1095438.1 (15040005)	(D-6-24)5aca	64	2,779.6	Irrigation	1940-78	37.7	3-13-68	57.7	6-28-55	43.6	2- 9
325410N1094806.1 (15040005)	(D-6-25)20aaa	46	2,821.6	Irrigation	1939-46, 1948-50, 1952-78	10.8	5-26-41	29.6	10-30-56	14.0	2- 9
325224N1093050.1 (15040005)	(D-6-28)31aab	540	3,150	Unused	1951-78	16.7	4-25-73	44.5	7-28-71	27.3	2-10
324849N1094035.1 (15040005)	(D-7-26)22bab	90	2,950.3	Irrigation	1940-78	20.3	5-25-42	68.2	7- 1-57	41.5	2-10
324501N1094414.1 (15040005)	(D-8-25)12dba	400	3,235	Irrigation	1950-67, 1969-78	55.6	3-13-50	139.2	7-31-67	76.4	2-10
324115N1094148.1 (15040005)	(D-8-26)33ccc	400	3,340	Irrigation	1950-78	17.0	3-13-50	83.5	3-14-75	47.6	2-10
SALT RIVER VALLEY											
332453N1114111.1 (15050100)	(A-1-6)24dab	585	1,408	Unused	1972-78	521.9	1-18-72	557.6	1- 2-78	557.6	1- 2
333642N1115808.1 (15060106)	(A-3-4)17baa	981	1,414	Irrigation	1969-74, 1976-78	318.9	1-22-69	387.9	1-25-78	387.9	1-25
333916N1120557.1 (15070102)	(A-4-2)36aaa	670	1,373	Unused	1948, 1954-55, 1957-61, 1963-64, 1966-71, 1973-78	273.1	12-20-48	558.7	2-16-78	558.7	2-16
332452N1123350.1 (15070101)	(B-1-3)21dbb	425	987	Irrigation	1956-62, 1964-75, 1977-78	137.3	1-10-56	164.9	1- 2-77	156.2	2-20
333043N1113040.1 (15050100)	(D-2-8)27ddd	614	1,556	Unused	1949-54, 1957, 1963-69, 1971-72, 1976-78	231.7	1-19-49	505.6	2- 2-76	496.2	1- 3
SAN BERNARDINO VALLEY											
312341N1091215.1 (15080302)	(D-23-31)29dca1	300	4,000	Stock	1968, 1970-78	157.3	9-18-68	168.8	1- 2-76	167.2	3-28
SAN FRANCISCO PEAKS											
351442N1114100.1 (15020015)	(A-22-7)32cbb	146	7,170	Domestic	1968-78	48.6	4- 9-73	137.4	1-19-76	73.5	3-22
SAN SIMON BASIN											
322112N1093626.1 (15040006)	(D-12-27)32aab	250	3,980	Stock	1952-54, 1956-57, 1959-64, 1967-78	132.5	12-20-56	137.2	12-12-54	132.9	3-21
321200N1090945.1 (15040006)	(D-14-31)22adc	800	3,690	Irrigation	1973-78	92.6	4- 5-78	128.2	2-25-76	92.6	4- 5
314911N1090501.1 (15040006)	(D-18-32)33bca2	227	4,220	Domestic	1969-78	134.7	1-22-70	148.3	1- 2-75	144.8	3-29

See footnote at end of table.

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet, NGVD ⁸²)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1978	Date
SAN SIMON WASH											
315444N1115503.1 (15080101)	(D-17-4)34abd	201	2,301.4	Irrigation	1968-78	123.4	2-23-72	126.9	3-13-75	124.0	1- 2
SNOWFLAKE											
343009N1100435.1 (15020005)	(A-13-21)24ccb	324	5,618	Irrigation	1952-58, 1960-61, 1963-78	60.2	5-13-57	97.3	3- 5-70	84.2	3- 8
ST. JOHNS											
342548N1092503.1 (15020002)	(A-12-28)19bad	650	5,925	Irrigation	1975-78	19.0	9-19-77	38.8	9- 9-76	22.2 38.1	5-11 9-13
343018N1092353.1 (15020002)	(A-13-28)29bcd	50	5,800	Domestic	1944-58, 1960-72, 1975-78	7.4	3- 1-67	30.9	5- 3-56	11.2	2-23
343439N1092703.1 (15020002)	(A-14-27)35bdc	-	5,635	Stock	1975-78	81.8	5-11-78	101.0	5-12-75	81.8 86.7	5-11 9-14
TONTON BASIN											
334707N1111543.1 (15060105)	(A-5-11)7dda	-	2,149	Stock	1969, 1972-78	1.4	3- 1-73	14.4	1- 2-76	4.3	4- 4
UPPER SALT RIVER BASIN											
332658N1104932.1 (15060103)	(A-1-15)9aad2	-	3,237	Industrial	1970-78	28.0	3-27-78	65.5	1-19-77	28.0	3-27
332055N1104555.1 (15060103)	(D-1-15)13bda	105	3,800	Unused	1946-55, 1957, 1959-78	3.5	5- 5-49	39.5	2-14-61	6.1	3-27
UPPER SAN PEDRO BASIN											
320005N1101709.1 (15050202)	(D-16-20)34acd2	117	3,525	Irrigation	1969-78	76.7	1- 5-78	90.1	1-26-76	76.7	1- 5
315500N1101322.1 (15050202)	(D-17-21)32bab	520	3,705	Domestic, Stock	1944-78	16.9	12- 9-46	47.8	1-22-75	35.7	2-23
315417N1101400.1 (15050202)	(D-18-21)6aaa2	60	3,620	Domestic	1944-58, 1960-78	24.8	2-23-78	39.7	5-28-54	24.8	2-23
312250N1100639.1 (15050202)	(D-23-22)33dcd2	91.5	4,200	Observation	1954-63, 1966-78	11.5	8-24-55	18.5	7-15-61	15.7	3-17
UPPER SANTA CRUZ BASIN											
320824N1105930.1 (15050301)	(D-15-13)11cba	224	2,457	Observation	1968-78	82.0	2-21-68	143.6	1- 2-78	143.6	1- 2
314718N1104139.1 (15050302)	(D-19-16)15aba	300	4,980	Stock	1952-78	203.7	4-10-69	222.4	1-22-70	215.0	1- 2
313225N1104533.1 (15050301)	(D-22-15)12aad	60	4,035	Domestic	1949, 1952-64, 1966-78	10.1	1-25-56	26.0	6- 8-54	18.2	1- 2
312419N1105412.1 (15050301)	(D-23-14)27baa	36	3,575	Unused	1939-57, 1959-61, 1963-78	12.6	1- 6-60	21.8	7-28-48	13.8	1- 2
312119N1103517.1 (15050301)	(D-24-17)11cda	23	4,650	Observation	1949-78	1.8	12-30-55	14.6	7-24-64	5.2	1- 2

See footnote at end of table.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

LOCAL IDENT- IFIER	DATE OF SAMPLE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO ₂)	ALKA- LINIT (MG/L AS CaCO ₃)	BICAR- BONATE (MG/L AS HCO ₃)	CAR- BONATE (MG/L AS CO ₃)	NITRO- GEN, NO ₂ +NO ₃ DTS- SOLVED (MG/L AS N)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO ₄)
AQUA FRIA BASIN										
A-13-02 11AAA	78-04-20	16.5	220	7.5	6.6	110	130	0	.21	.00
A-13-03 01BDC	78-04-19	21.0	420	7.8	4.8	160	190	0	2.6	.03
A-13-04 18ADD	78-04-19	15.5	600	7.4	16	240	290	0	2.3	.00
A-14-02H25CCA	78-04-20	14.0	700	7.6	16	320	390	0	3.9	.06
BIG CHINO VALLEY										
B-21-02 14BCC	78-05-08	26.0	590	7.5	11	170	210	0	2.0	.00
CANYON DIABLO										
A-16-09 13BDD	78-07-17	27.0	365	7.7	7.7	200	240	0	.11	--
A-17-10 19CAD	78-07-18	16.0	130	8.0	1.2	62	75	0	.04	--
A-19-10 18CCA	78-07-26	12.5	425	7.4	13	160	200	0	2.0	.15
A-19-12H13BAU	78-06-22	19.5	950	7.4	12	160	190	0	.26	.03
A-20-09 30ADC	78-07-24	17.0	660	7.5	16	260	320	0	.03	.06
A-20-10S01AAA	78-07-12	--	450	7.4	13	170	210	0	.74	.12
A-20-11 07ADD	78-07-12	20.0	600	7.8	4.3	140	170	0	.49	.09
CHEVELON										
A-14-10 02ACB	78-07-13	--	640	7.4	22	240	350	0	2.5	--
CONCHO										
A-12-26 02BDA	78-05-10	17.0	790	8.1	2.6	180	220	0	4.6	.06
A-12-26 19ABA	78-05-10	16.0	150	7.8	2.5	60	97	0	.46	.15
	78-09-12	15.5	175	8.0	1.5	75	91	0	.43	.25
A-13-24 22BBD	78-05-11	18.0	510	7.6	7.6	160	190	0	.01	.03
	78-09-12	17.5	500	7.5	9.6	160	190	0	.02	.03
A-13-26 12UDA	78-09-14	15.5	3200	7.8	6.6	210	260	0	3.0	.03
A-14-24 29UCC	78-05-11	18.0	575	7.5	9.1	150	180	0	.01	.03
	78-09-12	18.5	560	7.5	6.6	140	170	0	.02	.03
A-14-25 14CCD	78-05-12	17.5	760	7.7	6.4	160	200	0	.23	.03
	78-09-18	18.5	650	7.6	7.6	160	190	0	.01	.03
A-14-26 21BCC	78-05-11	18.0	790	7.5	9.6	160	190	0	.01	.03
DOUGLAS BASIN										
D-19-26 28BBA2	78-04-21	21.5	590	7.7	5.1	130	160	0	--	--
D-21-25 15DBB	78-04-27	24.0	490	7.9	4.0	160	200	0	--	--
GILA RIVER DRAINAGE FROM PAINTED ROCK DAM TO TEXAS HILL										
C-01-17 14CAC UNSURV	78-03-31	20.0	747	7.5	12	190	230	0	2.2	.06
HASSAYAMPA BASIN										
B-04-05 18UCC	78-04-17	25.0	595	7.1	24	160	190	0	--	--
B-05-07 22UBD	78-04-17	25.0	410	6.9	44	180	220	0	--	--
B-06-04 02CCC	78-04-25	26.5	595	8.4	1.0	130	160	0	--	--
B-06-05 31BCC	78-04-25	28.5	480	7.7	8.0	210	250	0	--	--
B-07-04 07CDC3	78-04-25	22.5	2400	7.2	30	250	300	0	--	--
B-07-04 07UCC	78-04-25	22.0	570	7.0	45	230	280	0	--	--
B-07-04 17AAA	78-04-25	27.5	410	7.7	6.4	160	200	0	--	--
B-07-04 18ACA1	78-04-25	23.5	705	7.1	41	260	320	0	--	--
B-07-04 20CAA	78-04-26	21.0	640	6.8	76	250	300	0	--	--
B-07-05 21ABC	78-04-26	26.0	590	6.9	36	150	180	0	--	--
B-08-05 19CBC	78-04-25	27.5	350	7.4	13	160	200	0	--	--
B-09-05 35UBB	78-04-26	24.0	450	7.3	18	190	230	0	--	--
B-09-06 13CAD	78-04-26	25.0	580	7.5	9.6	160	190	0	--	--
B-10-05 28ABB	78-04-19	19.0	678	6.8	46	160	190	0	--	--
HOUSE ROCK										
A-41-08 04UDA	77-10-18	24.0	1150	7.2	30	250	300	0	.90	.00
A-41-08 14UCA	77-10-19	--	1100	7.7	8.9	230	280	0	.65	.00
A-42-08 35UAB2	77-10-18	24.0	2000	7.3	29	300	360	0	.63	.00
A-42-08 35UCD	77-10-18	24.0	1600	7.3	30	300	370	0	.94	.00
A-42-08 36CCC2	77-10-18	21.0	950	7.5	9.6	160	190	0	.64	.00
LOWER SAN PEDRO BASIN										
D-08-15 03ACA	78-09-28	26.0	--	--	--	170	210	--	4.7	--
D-09-16 09BDB	78-08-31	28.0	--	--	--	250	310	--	3.9	--
D-11-17 18ACA	78-08-15	--	--	--	--	170	210	--	1.0	--
D-11-18 14CDU	78-08-16	24.0	--	--	--	250	280	--	7.5	--
LOWER SANTA CRUZ BASIN										
D-04-09 15BAB2	77-12-12	19.0	1020	7.8	4.3	140	170	0	--	--
D-05-09 14CAC	78-02-24	24.0	774	7.6	5.7	76	93	0	--	--
	78-02-24	24.0	862	7.4	8.3	110	130	0	--	--
	78-02-24	22.0	857	7.2	16	130	160	0	--	--
D-05-10 06ACB	77-12-12	19.0	925	7.9	3.8	160	190	0	--	--
NEW RIVER-CAVE CREEK										
A-05-03 04CDC	77-11-04	20.0	420	7.8	5.6	180	220	0	--	--
A-05-04 28BDD	77-11-04	26.0	550	7.4	17	220	270	0	--	--
A-06-04 27BDA1	77-11-04	26.0	725	7.6	13	260	320	0	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LUCAL IDENTI- FIER	DATE OF SAMPLE	HARD- NESS (MG/L AS CaCO3)	HARD- NESS, NONCAR- BONATE (MG/L CaCO3)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	SODIUM PERCENT	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SULFATE DIS- SOLVED (MG/L AS SO4)
AGUA FRIA BASIN										
A-13-02 11AAA	78-04-20	--	--	--	1.0	--	1	39	5.4	8.2
A-13-03 01BDC	78-04-19	150	0	17	22	.8	23	9.9	14	10
A-13-04 18ADD	78-04-14	--	--	--	15	--	7	240	17	160
A-14-02H25CCA	78-04-20	340	14	27	60	1.4	26	20	36	81
BIG CHINO VALLEY										
B-21-02 14BCC	78-05-08	220	45	19	50	1.5	33	1.7	34	92
CANYON DIABLO										
A-16-09 13BDU	78-07-17	140	0	22	7.4	.3	8	3.8	4.7	20
A-17-10 19CAU	78-07-18	58	0	6.9	4.3	.2	14	.7	1.6	3.8
A-19-10 18CCA	78-07-26	200	32	18	14	.6	17	.8	24	19
A-19-12H13BAU	78-06-22	480	520	49	37	.7	14	1.8	37	320
A-20-09 30ADC	78-07-24	340	72	51	14	.3	8	1.1	27	53
A-20-10S01AAA	78-07-12	220	44	27	6.5	.2	6	1.4	7.6	45
A-20-11 07ADU	78-07-12	270	130	51	23	.6	16	<.0	22	120
CHEVELDON										
A-14-10 02ACB	78-07-15	330	45	29	4.1	.1	3	.8	12	7.2
CUNCHU										
A-12-26 02BDA	78-05-10	160	0	22	100	3.4	57	4.3	91	52
A-12-26 19ABA	78-05-10	73	0	8.7	7.6	.4	18	2.9	3.3	5.4
	78-09-12	68	0	7.9	7.0	.4	18	2.7	3.2	5.4
A-13-24 22BRU	78-05-11	250	94	20	15	.4	11	2.8	18	87
	78-09-12	250	76	18	14	.4	12	2.6	15	87
A-13-26 12UDA	78-09-14	740	580	120	530	5.1	47	2.8	680	350
A-14-24 290CC	78-05-11	250	100	24	24	.7	17	3.6	27	120
	78-09-12	220	80	20	16	.5	15	3.1	23	48
A-14-25 14CCU	78-05-12	280	120	26	37	1.0	22	5.3	45	130
	78-09-18	250	90	22	33	.9	22	4.8	41	110
A-14-26 21BCC	78-05-11	160	1	12	100	3.5	57	6.0	120	47
DOUGLAS BASIN										
U-19-26 28BBA2	78-04-21	100	0	3.6	34	1.7	44	2.3	15	25
U-21-25 15URB	78-04-27	120	0	7.2	60	2.4	52	2.7	28	33
GILA RIVER DRAINAGE FROM PAINTED ROCK DAM TO TEXAS HILL										
C-01-17 14CAC UNSURV	78-03-31	240	97	19	34	1.0	23	1.5	90	48
HASSAYAMPA BASIN										
B-04-05 18UCC	78-04-17	49	0	4.1	64	4.3	74	2.1	18	22
B-05-07 22UBU	78-04-17	85	0	6.2	55	2.6	54	12	12	10
B-06-04 02CCC	78-04-25	17	0	.1	84	8.9	91	.5	28	36
B-06-05 51BCC	78-04-25	100	0	10	77	3.3	61	1.6	27	19
B-07-04 07CDC3	78-04-25	780	530	110	220	3.4	38	2.6	280	400
B-07-04 07UCC	78-04-25	210	0	16	53	1.6	35	2.8	28	53
B-07-04 17AAA	78-04-25	140	0	14	35	1.3	35	3.8	23	9.3
B-07-04 18ACA1	78-04-25	280	22	23	47	1.2	26	2.7	32	74
B-07-04 20CAA	78-04-26	260	15	21	46	1.2	27	2.7	28	59
B-07-05 21ABC	78-04-26	140	0	9.2	30	1.1	31	4.5	20	14
B-08-05 19CBC	78-04-25	110	0	12	34	1.6	43	3.4	20	6.5
B-09-05 35UBB	78-04-26	180	0	13	26	.9	25	2.7	14	10
B-09-06 13CAU	78-04-26	210	44	9.8	40	1.2	24	2.9	46	67
B-10-05 28ABB	78-04-19	320	170	27	44	1.1	23	2.6	40	140
HOUSE ROCK										
A-41-08 040DA	77-10-18	340	140	45	110	2.4	37	14	91	250
A-41-08 14BCA	77-10-14	400	170	46	90	2.0	32	9.2	92	250
A-42-08 35UAB2	77-10-18	440	200	47	270	5.3	53	21	140	570
A-42-08 35UCU	77-10-18	550	240	54	150	2.8	36	20	110	450
A-42-08 36CCC2	77-10-18	300	140	51	97	2.5	41	11	54	270
LOWER SAN PEDRO BASIN										
U-08-15 03ACA	78-09-28	150	0	13	38	1.3	35	1.7	25	22
U-09-16 09BDB	78-08-31	220	0	22	36	1.1	26	4.1	21	17
U-11-17 18EACA	78-08-15	200	24	10	9.2	.3	4	3.0	6.2	48
U-11-18 14CDD	78-08-16	330	99	21	74	1.8	33	4.1	31	200
LOWER SANTA CRUZ BASIN										
U-04-09 15BAB2	77-12-12	170	27	12	130	4.4	62	6.3	160	75
U-05-09 14CAC	78-02-24	28	0	.9	150	12	91	2.8	150	62
	78-02-24	45	0	1.9	160	10	87	4.6	160	67
	78-02-24	180	52	9.4	92	3.0	51	5.9	150	54
U-05-10 06ACB	77-12-12	240	80	16	90	2.6	45	5.3	150	62
NEW RIVER-CAVE CREEK										
A-05-03 04CDL	77-11-04	170	0	20	27	.9	26	2.4	22	9.5
A-05-04 28BDD	77-11-04	190	0	17	44	1.4	33	2.1	27	22
A-06-04 27BDA1	77-11-04	250	0	24	60	1.6	34	2.1	48	35

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LOCAL IDENT- IF- FIER	DATE OF SAMPLE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA DIS- SOLVED (MG/L AS SiO ₂)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SOLIDS, SUM OF CONSI- DERED DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
AQUA FRIA BASIN									
A-13-02 11AAA	78-04-20	.1	5.6	--	90	70	30	--	--
A-13-03 01BUC	78-04-19	.2	58	--	20	10	0	251	.34
A-13-04 18AUD	78-04-19	.3	25	--	20	80	40	--	--
A-14-02H25CCA	78-04-20	.4	27	--	50	10	0	552	.75
BIG CHINO VALLEY									
B-21-02 14BCC	78-05-08	.3	15	3	150	10	40	580	.52
CANYON DIABLO									
A-16-09 13BUD	78-07-17	.1	8.5	--	40	100	9	226	.31
A-17-10 19CAD	78-07-18	.0	27	--	20	30	0	94	.13
A-19-10 16CCA	78-07-26	.4	29	--	30	30	0	267	.36
A-19-12H13BAD	78-06-22	.2	10	--	90	10	0	660	.90
A-20-09 30ADC	78-07-24	.2	37	--	70	100	60	404	.55
A-20-10501AAA	78-07-12	.2	13	--	30	300	10	254	.35
A-20-11 07AUD	78-07-12	.2	12	--	4	90	0	352	.48
CHEVELON									
A-14-10 02ACB	78-07-13	.1	9.4	--	10	40	10	331	.45
CUNCHU									
A-12-26 02BUA	78-05-10	1.2	28	--	300	100	10	456	.62
A-12-26 19ABA	78-05-10	.1	28	--	10	0	0	121	.16
	78-09-12	.1	29	--	0	50	--	116	.15
A-13-24 22BBD	78-05-11	.2	12	--	30	130	10	316	.43
	78-09-12	.2	13	--	20	390	0	307	.42
A-13-26 12DUA	78-09-14	1.3	34	--	450	50	20	1780	2.42
A-14-24 29DCC	78-05-11	.3	11	--	50	1000	30	361	.49
	78-09-12	.3	11	--	120	820	10	313	.43
A-14-25 14CCD	78-05-12	.3	9.1	--	70	140	20	423	.58
	78-09-18	.3	11	--	40	10	20	376	.51
A-14-26 21BCC	78-05-11	.7	9.2	--	110	210	40	432	54.0
DOUGLAS BASIN									
D-19-26 26BBA2	78-04-21	2.0	29	--	70	40	0	229	.31
D-21-25 15DBB	78-04-27	1.3	31	--	130	0	0	297	.40
GILA RIVER DRAINAGE FROM PAINTED ROCK DAM TO TEXAS HILL									
C-01-17 14CAL UNSURV	78-03-31	.3	28	--	140	10	20	432	.59
HASSAYAMPA BASIN									
B-04-05 18DCC	78-04-17	1.9	22	--	140	30	0	246	.33
B-05-07 22DBD	78-04-17	1.0	43	--	120	100	10	272	.37
B-06-04 02CCC	78-04-25	.3	21	--	90	0	10	256	.35
B-06-05 31BCC	78-04-25	3.2	23	--	180	10	10	309	.42
B-07-04 07CUC3	78-04-25	1.9	37	--	540	10	20	1330	1.81
B-07-04 07DCC	78-04-25	1.3	31	--	130	10	10	382	.52
B-07-04 17AAA	78-04-25	1.0	43	--	70	0	10	260	.35
B-07-04 18ACA1	78-04-25	.8	29	--	140	0	0	442	.60
B-07-04 20CAA	78-04-26	.8	30	--	140	0	10	406	.55
B-07-05 21ABC	78-04-26	2.1	38	--	90	0	10	247	.34
B-08-05 19CBC	78-04-25	.3	23	--	60	0	30	226	.31
B-09-05 35DBB	78-04-26	.3	28	--	50	50	10	264	.36
B-09-06 13CAD	78-04-26	.2	31	--	50	10	10	357	.49
B-10-05 26ABB	78-04-19	1.1	23	--	50	190	30	307	.69
HOUSE ROCK									
A-41-08 04DUA	77-10-18	.5	13	13	130	60	8	757	1.03
A-41-08 14BCA	77-10-19	.3	13	2	110	40	20	725	.99
A-42-08 35DAB2	77-10-18	.7	17	40	220	170	--	1370	1.85
A-42-08 35DCD	77-10-18	.5	16	30	160	70	20	1120	1.52
A-42-08 36CCC2	77-10-18	.8	14	30	110	180	30	647	.88
LOWER SAN PEDRO BASIN									
D-08-15 03ACA	78-09-28	.7	31	--	120	<10	1	295	.40
D-09-16 09BUB	78-08-31	.9	25	--	100	20	6	348	.47
D-11-17 18EACA	78-08-15	.4	19	--	30	10	3	268	.36
D-11-18 14CUD	78-08-16	1.1	37	--	80	10	5	637	.87
LOWER SANTA CRUZ BASIN									
D-04-09 15BAB2	77-12-12	1.0	26	--	120	10	80	541	.74
D-05-09 14CAC	78-02-24	1.1	16	--	110	20	40	438	.60
	78-02-24	1.0	16	--	110	20	40	490	.67
	78-02-24	.6	31	--	130	20	20	480	.65
D-05-10 06ACB	77-12-12	1.2	27	--	130	10	200	514	.70
NEW RIVER-CAVE CREEK									
A-05-03 04CDC	77-11-04	.3	39	--	50	10	0	263	.36
A-05-04 28BUD	77-11-04	.6	40	--	80	20	0	334	.45
A-06-04 27BDA1	77-11-04	1.0	38	--	200	10	0	448	.61

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	CARBON DIOXIDE UTS- SULFUR (MG/L AS CO2)	ALKAL- INITY (MG/L AS CALCO3)	BLANK- DONATE (MG/L AS HCO3)	BLANK- DONATE (MG/L AS LCO3)	NITRO- GEN, NO2+NO3 UTS- SULFUR (MG/L AS N)	PHOS- PHATE, ORTHOPHOS- PHATE (MG/L AS PO4)
PUERCO-ZUNI										
A-14-26 10CDC	78-05-12	7.0	3400	7.0	96	500	610	0	.01	.00
A-14-29 35CDC	78-05-11	20.0	2000	6.9	124	530	640	0	.01	.00
A-14-29 35CDC	78-09-13	20.5	2000	6.8	162	530	640	0	.01	.03
SACRAMENTO VALLEY										
B-17-17 31BCB	78-05-04	46.0	562	7.4	4.6	120	150	0	2.2	.00
B-17-18 12ABD	78-05-04	53.0	575	7.4	11	140	170	0	2.3	.00
B-17-18 12BCB	78-05-04	48.5	471	7.6	6.4	130	160	0	3.2	.03
B-20-18 048BB	78-04-27	56.5	502	7.7	5.1	130	160	0	3.5	.03
B-21-17 11CCA	78-04-27	23.0	799	7.4	20	260	320	0	10	.09
B-21-17 24CDB	78-04-26	24.0	634	7.4	15	200	240	0	4.5	.03
B-21-17 34ACA	78-05-03	27.0	452	7.5	10	160	200	0	3.7	.09
B-21-17 35CAA	78-05-03	19.5	1290	7.2	41	340	410	0	6.8	2.7
B-21-18 098BA	78-04-26	57.5	657	7.7	4.6	120	150	0	1.7	.03
B-21-18 29ABB	78-04-25	52.0	674	7.8	5.6	120	150	0	3.8	.00
B-21-19 078DB	78-04-26	21.5	424	7.5	14	230	280	0	4.4	.03
B-21-19 088BD	78-04-26	29.5	725	7.3	22	220	270	0	.00	.00
B-22-18 128DC	78-05-02	17.5	1110	7.9	4.8	200	240	0	2.1	.03
B-24-18 34CAB	78-04-27	21.0	414	7.3	34	340	420	0	3.8	.00
SALT RIVER VALLEY										
A-01-07 36DAA2	77-12-13	22.0	1900	7.8	1.6	53	65	0	--	--
SAN FRANCISCO PEAKS										
A-20-06 08CAB	78-06-22	11.0	250	7.0	22	110	140	0	.01	.25
A-21-04 050BC2	78-06-01	15.0	1200	7.2	20	180	220	0	.07	.03
A-21-05 038CC	78-08-02	15.0	190	6.8	25	75	92	0	.81	.18
A-21-05 11ABC	78-08-02	8.5	260	7.3	10	110	130	0	2.6	.28
A-21-05 100DC	78-08-02	26.0	250	8.9	--	99	94	13	.11	.03
A-21-06 35CCB	78-08-10	17.0	190	8.0	--	110	--	--	--	--
A-21-09 050DU	78-09-06	22.0	580	7.3	--	160	--	--	1.5	.03
A-21-09 088CC	78-09-05	18.0	400	8.0	--	180	--	--	.64	.03
A-22-03 22ABC	78-05-22	15.5	520	7.7	4.5	110	140	0	7.1	.03
A-22-03 258BB	78-05-23	14.0	275	7.5	6.1	98	120	0	2.6	.03
A-22-03 260BC	78-05-22	11.0	220	7.0	4.6	49	60	0	.60	.03
A-22-04 268CB	78-05-23	14.0	205	7.4	6.4	62	100	0	1.4	.09
A-22-04 260DA	78-06-01	15.0	650	7.0	37	169	230	0	9.8	.57
A-22-04 260CB	78-05-23	13.0	650	6.9	50	210	250	0	8.9	.06
A-22-04 270AB	78-05-24	10.5	280	7.8	4.5	140	170	0	.67	.03
A-22-04 32ADB	78-06-01	13.0	305	7.5	6.6	139	170	0	1.4	.15
A-22-05 160BB	78-06-02	15.0	195	8.0	1.6	90	110	0	.26	.03
A-22-05 19CCC	78-05-24	9.0	150	6.8	20	63	77	0	.00	.12
A-22-05 36CCD	78-06-06	12.0	480	6.9	40	164	200	0	2.8	.21
A-22-06 128DC	78-08-25	15.0	100	6.6	25	46	56	0	.15	.21
A-22-06 230DC	78-07-20	13.0	125	8.3	.6	66	81	0	1.1	--
A-22-08 160AD	78-09-06	21.0	420	7.4	--	230	--	--	.55	.03
A-22-08 23AAB	78-09-05	18.0	495	7.3	--	260	--	--	.90	.00
A-22-08 27CAA	78-09-05	18.0	470	7.8	--	240	--	--	2.1	.03
A-23-04 09ADA1	78-06-01	14.0	155	6.8	15	47	57	0	.55	.34
A-23-04 22CAD	78-05-24	10.5	150	7.2	5.7	50	37	0	.95	.03
A-23-06 148AA	78-07-25	11.0	110	7.1	5.6	56	44	0	.45	.57
A-23-06 140BD	78-08-22	10.0	140	6.6	30	62	75	0	.04	.15
A-23-06 228BD	78-08-17	14.0	205	6.8	20	66	80	0	.10	--
A-23-06 23CCC	78-08-22	12.0	160	7.2	7.6	62	75	0	.64	.09
A-23-06 268BB	78-08-22	13.0	510	7.5	6.6	110	130	0	.34	.06
A-23-06 35ABD	78-08-18	21.0	90	6.6	22	45	55	0	.05	--
A-23-07 07ACD	78-07-25	14.0	165	7.4	5.0	64	76	0	.25	.25
A-23-07 27CBD	78-08-31	4.5	59	7.0	--	26	--	--	--	--
A-24-05 11CAC	78-07-20	24.0	170	7.8	2.4	78	95	0	.42	.18
A-25-06 208BB	78-08-24	16.0	725	7.4	15	160	200	0	.75	.09
A-25-06 208BD	78-08-24	15.0	400	7.8	4.5	140	170	0	.84	.25
SAN FRANCISCO RIVER										
A-01-29 080AD	78-06-26	10.0	275	--	--	160	190	--	.02	--
A-02-31 11ABU	78-06-27	21.0	285	--	--	140	170	--	.01	--
A-03-29 138BD	78-06-26	12.0	518	--	--	300	370	--	.05	--
A-03-29 28BCB	78-06-26	10.0	85	--	--	51	36	--	.26	--
A-03-31 21CBU	78-06-27	15.0	560	--	--	180	220	--	.02	--
A-03-31 318DB	78-06-27	14.0	595	--	--	200	240	--	.41	--
D-01-31 30ABA	78-06-15	15.0	580	--	--	200	240	--	.25	--
D-02-29 28CCA	78-06-26	10.0	510	--	--	170	210	--	.50	--
D-02-30 04ACB	78-06-16	14.0	592	--	--	210	250	--	.25	--
D-02-30 04ACC	78-06-16	15.0	414	7.7	6.5	210	260	--	.15	--
D-02-31 08CCA	78-06-16	16.0	425	--	--	220	270	--	.67	--
D-03-29 160DA	78-06-26	12.0	595	--	--	340	420	--	.04	--
D-03-31 200AB	78-05-30	21.0	415	7.2	5.8	47	57	--	.01	--
D-04-29 120DA	78-06-22	20.0	540	--	--	160	190	--	.10	--
D-04-30 08ADA	78-06-17	17.0	660	--	--	310	380	--	.16	--
D-04-30 18CCA	78-06-22	71.0	21400	--	--	110	130	--	.01	--

QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO ₂)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-Ft)
PUERCO-ZUNI									
A-14-26 10CDC	78-05-12	2.0	12	--	600	100	110	2520	3.43
A-14-29 35CDC	78-05-11	3.4	11	--	500	1700	40	1280	1.74
A-14-29 35CDC	78-09-13	3.4	11	--	500	1500	40	1270	1.73
SACRAMENTO VALLEY									
B-17-17 31BCB	78-05-04	1.0	39	--	110	20	10	340	.47
B-17-18 12ABD	78-05-04	1.3	32	--	120	10	0	354	.48
B-17-18 12BCB	78-05-04	1.3	31	--	120	10	0	293	.40
B-20-18 04BBB	78-04-27	.6	42	--	110	0	0	330	.45
B-21-17 11CCA	78-04-27	.4	69	--	80	10	0	510	.70
B-21-17 24CDB	78-04-28	.9	56	--	110	10	10	401	.55
B-21-17 34ACA	78-05-03	.5	77	--	80	10	0	328	.45
B-21-17 35CAA	78-05-03	.8	67	--	550	10	0	601	1.09
B-21-18 09BBA	78-04-26	.5	28	--	120	0	0	432	.59
B-21-18 24ABB	78-04-25	.6	23	--	100	110	0	394	.54
B-21-19 07RDB	78-04-26	.6	54	--	320	10	0	607	.83
B-21-19 08BBD	78-04-26	.9	27	--	200	10	110	430	.58
B-22-18 12BDC	78-05-02	.8	42	--	160	10	10	747	1.02
B-24-18 34CAB	78-04-27	.6	13	--	70	20	240	570	.79
SALT RIVER VALLEY									
A-01-07 36DAA2	77-12-13	.8	2.2	--	520	10	70	930	1.26
SAN FRANCISCO PEAKS									
A-20-06 08CAB	78-06-22	.1	32	--	10	50	100	160	.23
A-21-04 05DBC2	78-06-01	.0	19	--	20	10	100	750	1.03
A-21-05 03BCC	78-08-02	.1	24	--	20	<10	<1	125	.17
A-21-05 11ABC	78-08-02	.1	21	--	40	<10	<1	167	.23
A-21-05N10DUC	78-08-02	.1	27	--	40	<10	2	161	.22
A-21-06 35CCB	78-08-10	.1	24	--	8	<10	<1	130	.17
A-21-09 05DUD	78-09-06	.1	14	1	20	20	0	--	.27
A-21-09 08BCC	78-09-05	.1	12	1	30	10	0	--	.30
A-22-03 22ABC	78-05-22	.1	29	--	9	40	10	210	.29
A-22-03 25BBB	78-05-23	.1	31	--	30	20	0	182	.25
A-22-03 26DBC	78-05-22	.1	25	--	20	70	50	134	.19
A-22-04 26BCB	78-05-23	.1	31	--	20	20	0	134	.19
A-22-04 26CUA	78-06-01	.1	40	--	200	10	10	390	.54
A-22-04 26DCB	78-05-23	.1	40	--	310	20	0	393	.53
A-22-04 27DAB	78-05-24	.0	29	--	6	30	0	180	.24
A-22-04 32AUB	78-06-01	.1	30	--	7	0	10	194	.26
A-22-05 16DBB	78-06-02	.1	22	--	40	70	10	123	.17
A-22-05 19CLC	78-05-24	.1	28	--	10	120	0	105	.14
A-22-05 36CCD	78-06-06	.0	19	--	70	0	220	267	.36
A-22-06 12BDC	78-08-23	.1	44	--	40	<10	2	100	.14
A-22-06 23DDC	78-07-20	.1	34	--	8	50	0	114	.16
A-22-08 16DAD	78-09-06	.1	38	1	40	20	0	--	.37
A-22-08 23AAB	78-09-05	.1	17	2	40	20	0	--	.37
A-22-08 27CAA	78-09-05	.1	22	1	20	50	0	--	.37
A-23-04 09ADA1	78-06-01	.1	41	--	30	0	0	124	.17
A-23-04 22CAD	78-05-24	.2	47	--	10	60	0	131	.18
A-23-06 14BAA	78-07-25	.1	32	--	10	100	0	95	.13
A-23-06 14BBD	78-08-22	.1	49	--	20	20	<1	120	.16
A-23-06 22BBD	78-08-17	.1	26	--	10	20	10	134	.19
A-23-06 23CCC	78-08-22	.1	24	--	8	20	20	105	.14
A-23-06 26BBB	78-08-22	.2	30	--	10	20	2	185	.25
A-23-06 35ABD	78-08-18	.1	33	--	8	20	10	87	.12
A-23-07 07ACD	78-07-25	.1	35	--	20	50	10	120	.16
A-23-07 27CBD	78-08-31	.3	41	2	--	30	0	73	.10
A-24-05 11CAC	78-07-20	.1	33	--	80	220	0	126	.17
A-25-06 20BBB	78-08-24	.4	34	--	70	<10	5	451	.61
A-25-06 20BBD	78-08-24	.2	32	--	140	<10	1	242	.33
SAN FRANCISCO RIVER									
A-01-29 08DAD	78-06-26	.1	53	--	6	120	--	200	.27
A-02-31 11ABD	78-06-27	.1	37	--	6	40	--	195	.26
A-03-29 13BBD	78-06-26	.2	69	--	60	140	--	370	.50
A-03-29 26BCB	78-06-26	.0	17	--	6	370	--	58	.08
A-03-31 21CBD	78-06-27	.3	34	--	10	10	--	234	.30
A-03-31 31BDB	78-06-27	.2	34	--	10	20	--	261	.34
D-01-31 30ABA	78-06-15	.2	41	--	10	10	--	257	.34
D-02-29 28CCA	78-06-26	.1	58	--	9	100	--	238	.31
D-02-30 04ACB	78-06-16	.3	53	--	9	80	--	270	.36
D-02-30 04ACC	78-06-16	.3	67	--	10	20	--	295	.38
D-02-31 08CCA	78-06-16	.4	57	--	20	10	--	299	.38
D-03-29 16CDA	78-06-26	.9	35	--	10	90	--	401	.53
D-03-31 20DAB	78-05-30	.2	42	--	20	30	--	286	.42
D-04-29 12DUA	78-06-22	.8	38	--	50	10	--	343	.47
D-04-30 08ADA	78-06-17	.4	90	--	20	90	--	493	.66
D-04-30 18CCA	78-06-22	3.6	110	--	1400	40	--	11700	18.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LUCAL IDENT- IFIER	DATE OF SAMPLE	TEMPER- ATURE (DEG C)	SPE- CIFIC CON- DUCTI- ANCE (MICRO- MHOS)	PH (UNITS)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO ₂)	ALKA- LITY (MG/L AS CaCO ₃)	BICAR- BONATE (MG/L AS HCO ₃)	CAR- BONATE (MG/L AS CO ₃)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	PHOS- PHATE, PO ₄ DIS- SOLVED (MG/L AS PO ₄)
SAN SIMON WASH										
C-18-01 28ABW	78-08-01	30.0	780	7.9	4.0	160	200	0	3.7	--
C-19-02 03ADD	78-09-27	28.0	4900	--	--	330	400	--	4.5	--
D-17-02 33UCA	78-05-18	29.0	430	--	--	160	200	--	1.5	--
D-17-03 08CAU	78-05-08	26.0	420	--	--	150	180	--	1.3	--
D-19-01 05CBA	78-03-24	46.0	640	7.7	7.0	180	220	0	--	--
D-19-01 070BB	78-03-24	44.0	480	8.0	3.5	160	220	0	--	--
D-19-01 08DAA	78-09-11	26.0	460	--	--	170	210	--	1.5	--
D-19-01 19AAA	78-03-24	27.0	580	7.9	4.2	170	210	0	--	--
ST. JOHNS										
A-12-28 19BAD	78-05-11	19.5	3400	6.8	155	500	610	0	.02	.03
A-13-27 13A	78-05-11	29.0	1850	8.5	2.6	430	500	9	.04	.03
	78-09-14	17.0	2000	8.4	4.1	530	600	20	.06	.03
A-14-27 35BDC	78-09-14	17.5	2200	7.1	46	300	360	0	.64	.03
UPPER SAN PEDRO BASIN										
D-20-20 180BC	78-04-19	22.0	580	7.5	11	180	220	--	--	--
D-21-20 05ABD	78-04-19	23.0	310	7.5	9.6	160	190	--	--	--
D-21-20 34DCC	78-04-19	23.0	350	7.5	11	170	210	--	--	--
D-21-21 31BDC	78-04-19	22.0	320	7.6	8.0	160	200	--	--	--
D-22-20 24AAA	78-04-20	--	360	7.4	14	180	220	--	--	--
D-22-21 30AAA	78-04-20	--	353	7.5	12	190	230	--	--	--
D-22-22 08C	78-04-20	--	410	8.3	1.7	170	210	--	--	--
D-23-22 290BD	78-04-20	--	334	7.5	9.6	160	190	--	--	--
UPPER VERDE VALLEY										
A-11-06 10A UNSURV	77-12-14	39.0	4600	6.5	764	1250	1520	0	.00	.06
A-12-05 02C UNSURV	77-12-13	7.5	420	8.1	3.2	210	250	0	1.2	.00
A-12-05 10A UNSURV	77-12-13	11.0	900	7.3	43	430	530	0	.00	.00
A-12-05 24B UNSURV	77-12-13	21.0	690	7.4	25	330	400	0	.41	.06
A-12-06 01B UNSURV	77-12-14	18.0	540	7.2	33	270	330	0	.15	.00
A-12-06 11D UNSURV	77-12-14	4.0	420	7.5	11	180	220	0	.00	.31
A-12-07 14D UNSURV	78-05-24	22.0	700	6.7	153	390	480	0	.14	.03
A-12-07 21D UNSURV	78-05-24	16.0	560	7.3	30	300	370	0	.16	.03
A-12-07 22C UNSURV	78-05-24	19.0	510	8.2	3.3	270	330	0	.10	.03
A-13-05 12CCA	77-11-21	--	1250	7.7	10	260	320	0	.34	.03
A-13-05 17CAA	77-11-21	--	2600	--	--	480	590	--	2.0	.15
A-13-05 18CBB	77-12-13	18.5	675	7.4	20	260	320	0	.77	.00
A-13-06 290BB	78-02-15	25.0	400	7.4	15	200	240	0	1.6	.06
A-14-02H24ADD	78-04-20	13.0	440	7.0	42	210	260	0	.52	.00
A-14-03 04AAA	78-04-18	14.5	660	7.1	44	290	350	0	1.4	.00
A-14-03 170DD1	78-03-16	--	700	7.4	24	300	370	0	2.3	.12
A-14-03 21BAD	78-03-16	16.0	580	6.9	40	160	200	0	16	.06
A-14-05 02BAB1	78-01-24	19.0	650	7.2	40	330	400	0	.23	.06
A-14-05 02CAC	78-02-09	23.0	675	7.1	51	330	400	0	.23	.00
A-14-05 04AAA	78-03-23	18.0	475	7.6	12	250	300	0	.43	.06
A-15-02 02D UNSURV	78-04-20	16.0	365	7.6	10	210	250	--	.91	.12
A-15-03 05BAA	78-02-24	29.0	580	7.2	30	250	300	0	1.4	.03
	78-04-04	29.0	650	7.3	21	250	300	0	1.5	.03
A-15-03 11DAU	78-04-05	--	825	7.4	29	380	460	0	.26	.03
A-15-03 13CDA	77-12-20	20.5	490	7.6	11	220	270	0	.51	.06
A-15-03 15CCD	78-03-23	--	540	7.6	14	300	360	0	.13	.00
A-15-03 20BAB	78-04-05	--	625	7.4	21	270	330	0	.63	.03
A-15-03 23BDD	78-03-23	23.5	440	7.9	5.0	210	250	0	.28	.00
A-15-05 20ABB	78-03-23	19.0	600	7.3	27	280	340	0	1.7	.28
A-15-05 24DCA	78-03-23	19.0	675	7.6	16	320	390	0	2.1	.00
A-15-05 35ACD	78-04-19	22.0	750	--	--	360	440	--	.20	.00
A-15-05 36CCB1	78-02-02	20.0	790	7.3	33	340	410	0	.24	.03
A-15-05 36CCC	78-02-02	16.0	675	7.3	31	320	390	0	.02	.03
A-15-05 360BB	78-01-24	20.5	950	7.3	38	390	470	0	.15	.06
A-15-06 29CAA	78-04-20	21.0	600	--	--	300	370	--	.28	.03
A-15-06 35CAC	78-05-03	21.0	450	7.8	5.3	170	210	0	.26	.03
A-16-02 12CAD2	78-02-08	27.0	650	7.4	20	254	310	0	--	.06
A-16-03 170BC	78-02-08	18.5	520	7.5	15	250	300	0	.21	.03
A-16-03 218BB	78-02-09	19.0	500	7.4	19	250	300	0	.25	.06
A-16-03 310DC1	77-12-20	22.0	625	7.2	28	230	280	0	1.5	.03
A-16-03 33DCD	78-02-24	--	--	--	--	250	300	--	.42	.03
A-16-03 33DDU	78-02-24	--	560	7.8	8.4	270	330	0	.33	.03
A-17-04 15DCD	78-04-03	--	900	7.7	6.6	220	270	0	23	.03
A-18-07 15CCC2	77-10-31	13.0	240	8.2	1.6	130	160	0	.47	.06
A-20-07 28BCC	78-04-18	--	440	7.7	7.7	200	240	0	.52	.00
A-20-07 30BBB	78-04-12	11.5	440	7.8	6.3	210	250	0	1.4	.03
A-20-08 19ABA	77-11-17	10.5	270	7.8	4.6	150	180	0	.34	.03
YUMA										
C-10-24 16BAA2	78-02-07	--	1180	7.8	6.8	221	270	0	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LOCAL IDENT- I- FIELD	DATE OF SAMPLE	HARD- NESS (MG/L AS CaCO ₃)	HARD- NESS, NONCAR- BONATE (MG/L CaCO ₃)	MAGNE- SIUM, DISE- SOLVED (MG/L AS Mg)	SODIUM, DISE- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	SODIUM PERCENT	PHOS- PHORUS, DISE- SOLVED (MG/L AS P)	CALCI- UM, DISE- SOLVED (MG/L AS Ca)	SULFATE DISE- SOLVED (MG/L AS SO ₄)
SAN SIMON WASH										
C-18-01 28ABB	78-08-01	26	0	2.3	150	13	91	3.4	60	03
C-19-02 03ADD	78-09-27	810	480	100	1400	21	79	11	2100	850
U-17-02 330CA	78-05-18	8	0	.0	97	15	96	1.4	14	18
U-17-03 08CAU	78-05-08	25	0	.4	94	8.6	89	1.0	16	35
U-19-01 05CBA	78-03-24	26	0	1.5	110	9.3	89	3.2	31	26
U-19-01 07DBB	78-03-24	25	0	1.2	110	9.5	89	3.2	31	30
U-19-01 08UAA	78-09-11	42	0	2.3	94	6.3	82	3.3	26	22
U-19-01 19AAA	78-03-24	30	0	1.9	110	8.8	86	2.6	33	24
ST. JUHNS										
A-12-28 19BAU	78-05-11	1100	560	69	360	4.8	42	27	420	650
A-13-27 13A	78-05-11	210	0	22	360	11	78	7.8	120	370
	78-09-14	210	0	20	390	12	80	7.8	110	350
A-14-27 35BDC	78-09-14	280	0	31	330	8.5	70	15	220	410
UPPER SAN PEDRO BASIN										
U-20-20 180BC	78-04-19	300	120	21	12	.3	0	2.5	5.0	110
U-21-20 05ABD	78-04-19	140	0	5.9	12	.4	16	1.1	4.0	3.9
U-21-20 340CC	78-04-19	160	0	11	16	.6	16	.9	7.2	9.0
U-21-21 31BDC	78-04-19	130	0	11	22	.8	27	.9	3.3	6.4
U-22-20 24AAA	78-04-20	180	0	10	6.6	.3	10	.7	3.2	7.5
U-22-21 30AAA	78-04-20	180	0	8.1	12	.4	13	.8	4.3	7.8
U-22-22 08C	78-04-20	15	0	1.0	89	10	92	1.3	5.0	28
U-23-22 290BU	78-04-20	140	0	6.3	16	.7	22	1.6	6.6	11
UPPER VERDE VALLEY										
A-11-06 10A UNSURV	77-12-14	450	0	42	1000	21	81	39	570	540
A-12-05 02C UNSURV	77-12-13	240	35	28	19	.5	14	3.2	7.0	24
A-12-05 10A UNSURV	77-12-13	500	67	66	30	.6	11	1.6	13	40
A-12-05 24B UNSURV	77-12-13	320	0	40	38	.9	21	2.4	22	37
A-12-06 01B UNSURV	77-12-14	260	0	27	25	.7	17	2.1	16	11
A-12-06 11D UNSURV	77-12-14	180	2	14	20	.6	19	3.3	14	18
A-12-07 14D UNSURV	78-05-24	410	12	39	12	.3	6	1.8	8.3	27
A-12-07 21D UNSURV	78-05-24	310	9	37	18	.4	11	1.8	13	8.5
A-12-07 22C UNSURV	78-05-24	270	0	33	11	.3	0	3.2	7.1	4.8
A-13-05 12CCA	77-11-21	830	570	110	9.4	.1	2	5.1	5.0	540
A-13-05 17CAA	77-11-21	1200	760	210	240	3.0	30	4.6	290	770
A-13-05 18CBB	77-12-13	320	55	31	26	.7	16	3.0	19	79
A-13-06 290BB	78-02-15	160	0	19	30	1.0	29	4.4	13	7.5
A-14-02H24ADD	78-04-20	200	0	17	25	.8	19	2.3	13	33
A-14-03 04AAA	78-04-18	--	--	--	35	--	2	13	21	63
A-14-03 170DU1	78-03-16	340	41	29	30	.7	16	2.0	23	01
A-14-03 21BAD	78-03-16	250	84	16	27	.7	19	.6	17	62
A-14-05 02BAB1	78-01-24	300	0	31	33	.8	19	4.4	20	11
A-14-05 02CAC	78-02-09	240	0	29	29	.7	17	4.4	23	9.3
A-14-05 04AAA	78-03-23	250	0	28	13	.4	10	2.3	9.1	4.5
A-15-02 02D UNSURV	78-04-20	230	26	27	6.4	.2	6	1.4	5.0	31
A-15-03 05BAA	78-02-24	330	85	35	15	.4	9	1.0	--	--
	78-04-04	320	70	35	13	.3	6	1.0	16	64
A-15-03 110AD	78-04-05	370	0	63	35	.8	17	1.3	16	43
A-15-03 130DA	77-12-20	240	22	39	15	.4	12	1.7	24	11
A-15-03 15CCD	78-03-23	240	0	33	18	.5	12	1.4	13	6.6
A-15-03 20BAB	78-04-05	310	35	36	9.2	.2	6	1.0	6.1	28
A-15-03 23BDD	78-03-23	220	13	33	10	.3	9	1.2	11	7.2
A-15-05 20ABB	78-03-23	240	0	28	30	1.1	25	6.8	16	10
A-15-05 240CA	78-03-23	280	0	35	44	1.1	25	5.6	22	18
A-15-05 35ACD	78-04-19	330	0	32	36	.9	20	3.9	26	9.3
A-15-05 36CCB1	78-02-02	310	0	30	33	.8	16	3.7	26	15
A-15-05 36CCC	78-02-02	290	0	28	32	.8	19	4.7	24	11
A-15-05 36UBB	78-01-24	350	0	34	42	1.0	20	4.2	23	13
A-15-06 29CAA	78-04-20	280	0	31	21	.5	14	6.9	13	9.3
A-15-06 35CAC	78-05-03	170	2	23	6.7	.2	6	2.0	3.9	2.6
A-16-02 12CAD2	78-02-08	310	53	28	26	.6	15	1.6	22	57
A-16-03 170BC	78-02-08	250	7	27	14	.4	11	2.1	19	6.9
A-16-03 21BBB	78-02-09	230	0	26	23	.7	16	2.1	16	10
A-16-03 310DC1	77-12-20	320	90	37	13	.3	6	1.3	21	77
A-16-03 330CD	78-02-24	260	14	37	15	.4	11	2.0	--	--
A-16-03 330DD	78-02-24	300	26	32	16	.4	10	2.1	--	--
A-17-04 15CCD	78-04-03	410	180	41	16	.3	6	1.7	90	12
A-18-07 15CCC2	77-10-31	130	0	17	6.0	.2	9	1.2	1.8	3.1
A-20-07 28BCC	78-04-18	200	1	22	3.6	.1	4	.5	5.3	1.8
A-20-07 30BBB	78-04-12	200	0	22	4.2	.1	4	.7	2.1	3.0
A-20-08 19ABA	77-11-17	160	8	19	2.3	.1	3	.4	1.1	3.6
YUMA										
C-10-24 168AA2	78-02-07	305	84	24	130	3.2	46	4.1	180	115

WATER-QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978--Continued

LOCAL IDENT- IFIER	DATE OF SAMPLE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIU2)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	SOLIDS, SUM OF CONSTIT- UENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TUNS PER AC-FT)
SAN SIMON									
C-18-01 28AB8	78-08-01	2.9	32	--	450	170	4	444	.60
C-19-02 03ADD	78-09-27	1.4	35	--	1400	100	20	4880	6.64
D-17-02 33DCA	78-05-18	2.1	29	--	280	100	0	275	.37
D-17-03 08CAD	78-03-08	1.5	19	--	300	160	0	278	.38
D-19-01 05CBA	78-03-24	9.2	37	--	520	90	10	335	.46
D-19-01 07DBB	78-03-24	11	33	--	320	120	0	356	.48
D-19-01 08DAA	78-09-11	4.3	32	--	240	120	5	327	.44
D-19-01 19AAA	78-03-24	8.4	38	--	220	100	0	331	.45
ST. JUHNS									
A-12-28 19BAD	78-05-11	2.5	11	--	620	6400	50	2160	2.94
A-13-27 13A	78-05-11	2.1	14	--	10	20	30	1200	1.63
	78-09-14	2.4	20	--	1200	30	--	1270	1.73
A-14-27 35BUC	78-09-14	.2	9.7	--	330	20	0	1260	1.71
UPPER SAN PEDRO BASIN									
D-20-20 18DBC	78-04-19	.5	25	--	40	60	30	369	.50
D-21-20 05ABD	78-04-19	.1	26	--	10	70	10	193	.26
D-21-20 34DCC	78-04-19	.2	31	--	10	50	0	223	.30
D-21-21 31BUC	78-04-19	.2	30	--	20	30	0	207	.28
D-22-20 24AAA	78-04-20	.1	26	--	7	50	0	220	.30
D-22-21 30AAA	78-04-20	.2	24	--	7	50	0	230	.31
D-22-22 08C	78-04-20	1.6	19	--	260	40	0	253	.34
D-23-22 29DBD	78-04-20	.3	33	--	20	50	0	216	.29
UPPER VERDE VALLEY									
A-11-06 10A UNSURV	77-12-14	1.5	69	--	9100	670	60	3180	4.32
A-12-05 02C UNSURV	77-12-13	.2	75	--	30	50	10	336	.46
A-12-05 10A UNSURV	77-12-13	.2	46	--	40	40	40	600	.82
A-12-05 24B UNSURV	77-12-13	.4	48	--	130	30	20	448	.61
A-12-06 01B UNSURV	77-12-14	.2	34	--	20	40	30	360	.49
A-12-06 110 UNSURV	77-12-14	.3	82	--	20	40	120	311	.42
A-12-07 140 UNSURV	78-05-24	.1	13	--	60	20	0	437	.59
A-12-07 210 UNSURV	78-05-24	.2	75	--	10	290	660	402	.55
A-12-07 22C UNSURV	78-05-24	.1	50	--	10	20	0	326	.44
A-13-05 12CCA	77-11-21	.5	37	62	0	50	8	1020	1.39
A-13-05 17CAA	77-11-21	.3	36	30	1	40	8	2000	2.72
A-13-05 18CBB	77-12-13	.3	39	--	40	20	10	437	.59
A-13-06 29DBB	78-02-15	.2	40	14	60	20	20	271	.37
A-14-02H24AUD	78-04-20	.3	28	--	20	0	0	323	.44
A-14-03 04AAA	78-04-18	.2	31	--	30	20	0	--	--
A-14-03 17DD1	78-03-16	.3	35	--	410	20	40	464	.63
A-14-03 21BAD	78-03-16	.3	24	0	40	30	30	390	.53
A-14-05 02BAB1	78-01-24	.5	26	49	420	30	0	395	.54
A-14-05 02CAC	78-02-09	.4	25	20	380	30	20	391	.53
A-14-05 04AAA	78-03-23	.2	23	10	140	10	10	283	.38
A-15-02 02D UNSURV	78-04-20	.1	31	6	20	10	0	276	.38
A-15-03 05BAA	78-02-24	--	--	13	--	10	10	--	--
	78-04-04	.1	24	13	20	0	0	379	.52
A-15-03 11DAD	78-04-05	.5	74	6	200	30	10	506	.69
A-15-03 13CUA	77-12-20	.4	67	12	100	10	0	327	.44
A-15-03 15CCD	78-03-23	.5	60	3	40	10	10	361	.49
A-15-03 20BAB	78-04-05	.1	33	3	20	10	0	345	.47
A-15-03 23BUD	78-03-23	.5	37	4	50	0	0	277	.38
A-15-05 20AB8	78-03-23	.3	60	16	150	0	0	385	.52
A-15-05 24DCA	78-03-23	.3	35	2	170	10	0	417	.57
A-15-05 35ACD	78-04-19	.3	22	130	500	20	0	430	.58
A-15-05 36CCB1	78-02-02	.4	24	36	420	20	0	414	.56
A-15-05 36CCC	78-02-02	.5	20	1	350	10	60	384	.52
A-15-05 36DBB	78-01-24	.3	25	10	580	30	0	462	.63
A-15-06 29CAA	78-04-20	.6	12	35	470	50	0	340	.46
A-15-06 35CAC	78-05-03	.1	20	--	10	10	0	195	.27
A-16-02 12CAD2	78-02-08	.1	22	7	150	20	0	396	.54
A-16-03 17DBC	78-02-08	.1	16	8	50	10	10	291	.40
A-16-03 21BB8	78-02-09	.2	21	14	150	10	0	297	.40
A-16-03 31DDC1	77-12-20	.2	22	4	40	10	20	383	.52
A-16-03 33DDC	78-02-24	--	--	13	--	30	10	--	--
A-16-03 33DDU	78-02-24	--	--	14	--	10	0	--	--
A-17-04 15CDC	78-04-03	.1	15	3	40	10	10	506	.69
A-18-07 15CCC2	77-10-31	.1	18	3	9	20	8	151	.21
A-20-07 28BCC	78-04-18	.1	14	6	9	20	0	211	.29
A-20-07 30BB8	78-04-12	.1	12	3	6	10	0	217	.30
A-20-08 19ABA	77-11-17	.1	8.2	5	10	10	4	156	.21
YUMA									
C-10-24 16BAA2	78-02-07	.5	19	--	--	--	--	688	--

CHANGES IN SELECTED WATER-QUALITY PARAMETERS--Continued

PARM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
07053	CALCIUM 45, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07053	CALCIUM 45, SUSPENDED, COUNTING ERROR (PCI/L)
00683	CARBON, ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00683	CARBON, ORGANIC, SUSPENDED (MG/L AS C)
00688	CARBON, INORGANIC, SUSPENDED TOTAL (MG/L AS C)
00688	CARBON, INORGANIC, SUSPENDED (MG/L AS C)
00689	CARBON, ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00689	CARBON, ORGANIC, SUSPENDED (MG/L AS C)
00694	CARBON, INORGANIC PLUS ORGANIC, SUSPENDED TOTAL (MG/L AS C)
00694	CARBON, INORGANIC PLUS ORGANIC, SUSPENDED (MG/L AS C)
01116	CESIUM, SUSPENDED TOTAL (UG/L AS CS)
01116	CESIUM, SUSPENDED (UG/L AS CS)
28404	CESIUM 137, SUSPENDED TOTAL (PCI/L)
28404	CESIUM 137, SUSPENDED (PCI/L)
28405	CESIUM 137, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
28405	CESIUM 137, SUSPENDED, COUNTING ERROR (PCI/L)
28412	CESIUM 134, SUSPENDED TOTAL (PCI/L)
28412	CESIUM 134, SUSPENDED (PCI/L)
28413	CESIUM 134, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
28413	CESIUM 134, SUSPENDED, COUNTING ERROR (PCI/L)
39353	CHLORDANE, SUSPENDED TOTAL (UG/L)
39353	CHLORDANE, SUSPENDED (UG/L)
01029	CHROMIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CR)
01029	CHROMIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS CR)
01031	CHROMIUM, SUSPENDED RECOVERABLE (UG/L AS CR)
01031	CHROMIUM, SUSPENDED (UG/L AS CR)
01034	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)
01034	CHROMIUM, TOTAL (UG/L AS CR)
01036	COBALT, SUSPENDED RECOVERABLE (UG/L AS CU)
01036	COBALT, SUSPENDED (UG/L AS CU)
01037	COBALT, TOTAL RECOVERABLE (UG/L AS CU)
01037	COBALT, TOTAL (UG/L AS CU)
01038	COBALT, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CO)
01038	COBALT, TOTAL IN BOTTOM MATERIAL (UG/G AS CO)
01041	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU)
01041	COPPER, SUSPENDED (UG/L AS CU)
01042	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
01042	COPPER, TOTAL (UG/L AS CU)
01043	COPPER, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS CU)
01043	COPPER, TOTAL IN BOTTOM MATERIAL (UG/G AS CU)
39362	DDD, SUSPENDED TOTAL (UG/L)
39362	DDD, SUSPENDED (UG/L)
39367	DDE, SUSPENDED TOTAL (UG/L)
39367	DDE, SUSPENDED (UG/L)
39372	DDT, SUSPENDED TOTAL (UG/L)
39372	DDT, SUSPENDED (UG/L)
39573	DIAZINON, SUSPENDED TOTAL (UG/L)
39573	DIAZINON, SUSPENDED (UG/L)
39382	DIELDRIN, SUSPENDED TOTAL (UG/L)
39382	DIELDRIN, SUSPENDED (UG/L)
39392	ENDRIN, SUSPENDED TOTAL (UG/L)
39392	ENDRIN, SUSPENDED (UG/L)
01121	GALLIUM, SUSPENDED TOTAL (UG/L AS GA)
01121	GALLIUM, SUSPENDED (UG/L AS GA)
01126	GERMANIUM, SUSPENDED TOTAL (UG/L AS GE)
01126	GERMANIUM, SUSPENDED (UG/L AS GE)

APPENDIX

CHANGES IN SELECTED WATER-QUALITY PARAMETERS--Continued

PARM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
01516	GRUSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS U NATURAL)
01516	GRUSS ALPHA RADIOACTIVITY, SUSPENDED (PCI/L AS U NATURAL)
01517	GRUSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS U NATURAL)
01517	GRUSS ALPHA RADIOACTIVITY, SUSPENDED (PCI/G AS U NATURAL)
01518	GRUSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/G AS U NATURAL)
01518	GRUSS ALPHA RADIOACTIVITY, SUSPENDED (UG/G AS U NATURAL)
80040	GRUSS ALPHA RADIOACTIVITY, SUSPENDED TOTAL (UG/L AS U NATURAL)
80040	GRUSS ALPHA RADIOACTIVITY, SUSPENDED (UG/L AS U NATURAL)
80060	GRUSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS SR/YT-90)
80060	GRUSS BETA RADIOACTIVITY, SUSPENDED (PCI/L AS SR/YT-90)
03516	GRUSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/L AS CS-137)
03516	GRUSS BETA RADIOACTIVITY, SUSPENDED (PCI/L AS CS-137)
03517	GRUSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS SR/YT-90)
03517	GRUSS BETA RADIOACTIVITY, SUSPENDED (PCI/G AS SR/YT-90)
03518	GRUSS BETA RADIOACTIVITY, SUSPENDED TOTAL (PCI/G AS CS-137)
03518	GRUSS BETA RADIOACTIVITY, SUSPENDED (PCI/G AS CS-137)
39412	HEPTACHLOR, SUSPENDED TOTAL (UG/L)
39412	HEPTACHLOR, SUSPENDED (UG/L)
39422	HEPTACHLOR EPOXIDE, SUSPENDED TOTAL (UG/L)
39422	HEPTACHLOR EPOXIDE, SUSPENDED (UG/L)
01044	IRON, SUSPENDED RECOVERABLE (UG/L AS FE)
01044	IRON, SUSPENDED (UG/L AS FE)
01045	IRON, TOTAL RECOVERABLE (UG/L AS FE)
01045	IRON, TOTAL (UG/L AS FE)
01170	IRON, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS FE)
01170	IRON, TOTAL IN BOTTOM MATERIAL (UG/G AS FE)
07062	IRON 59, SUSPENDED TOTAL (PCI/L)
07062	IRON 59, SUSPENDED (PCI/L)
07063	IRON 59, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07063	IRON 59, SUSPENDED, COUNTING ERROR (PCI/L)
39432	ISODRIN, SUSPENDED TOTAL (UG/L)
39432	ISODRIN, SUSPENDED (UG/L)
01050	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB)
01050	LEAD, SUSPENDED (UG/L AS PB)
01051	LEAD, TOTAL RECOVERABLE (UG/L AS PB)
01051	LEAD, TOTAL (UG/L AS PB)
01052	LEAD, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS PB)
01052	LEAD, TOTAL IN BOTTOM MATERIAL (UG/G AS PB)
39342	LINDANE, SUSPENDED TOTAL (UG/L)
39342	LINDANE, SUSPENDED (UG/L)
01131	LITHIUM, SUSPENDED RECOVERABLE (UG/L AS LI)
01131	LITHIUM, SUSPENDED (UG/L AS LI)
01132	LITHIUM, TOTAL RECOVERABLE (UG/L AS LI)
01132	LITHIUM, TOTAL (UG/L AS LI)
00926	MAGNESIUM, SUSPENDED RECOVERABLE (MG/L AS MG)
00926	MAGNESIUM, SUSPENDED (MG/L AS MG)

CHANGES IN SELECTED WATER-QUALITY PARAMETERS--Continued

PARM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
00927	MAGNESIUM, TOTAL RECOVERABLE (MG/L AS MG)
00927	MAGNESIUM, TOTAL (MG/L AS MG)
39533	MALATHION, SUSPENDED TOTAL (UG/L)
39533	MALATHION, SUSPENDED (UG/L)
01053	MANGANESE, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS MN)
01053	MANGANESE, TOTAL IN BOTTOM MATERIAL (UG/G AS MN)
01054	MANGANESE, SUSPENDED RECOVERABLE (UG/L AS MN)
01054	MANGANESE, SUSPENDED (UG/L AS MN)
01055	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
01055	MANGANESE, TOTAL (UG/L AS MN)
71895	MERCURY, SUSPENDED RECOVERABLE (UG/L AS HG)
71895	MERCURY, SUSPENDED (UG/L AS HG)
71900	MERCURY, TOTAL RECOVERABLE (UG/L AS HG)
71900	MERCURY, TOTAL (UG/L AS HG)
71921	MERCURY, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS HG)
71921	MERCURY, TOTAL IN BOTTOM MATERIAL (UG/G AS HG)
39603	METHYL PARATHION, SUSPENDED TOTAL (UG/L)
39603	METHYL PARATHION, SUSPENDED (UG/L)
39757	MIREX, SUSPENDED TOTAL (UG/L)
39757	MIREX, SUSPENDED (UG/L)
01061	MOLYBDENUM, SUSPENDED RECOVERABLE (UG/L AS MU)
01061	MOLYBDENUM, SUSPENDED (UG/L AS MU)
01062	MOLYBDENUM, TOTAL RECOVERABLE (UG/L AS MU)
01062	MOLYBDENUM, TOTAL (UG/L AS MU)
01063	MOLYBDENUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS MU)
01063	MOLYBDENUM, TOTAL IN BOTTOM MATERIAL (UG/G AS MU)
01066	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI)
01066	NICKEL, SUSPENDED (UG/L AS NI)
01067	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)
01067	NICKEL, TOTAL (UG/L AS NI)
01068	NICKEL, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS NI)
01068	NICKEL, TOTAL IN BOTTOM MATERIAL (UG/G AS NI)
00623	NITROGEN, AMMONIA PLUS ORGANIC, DISSOLVED (MG/L AS N)
00623	NITROGEN, KJELDAHL, DISSOLVED (MG/L AS N)
00624	NITROGEN, AMMONIA PLUS ORGANIC, SUSPENDED TOTAL (MG/L AS N)
00624	NITROGEN, KJELDAHL, SUSPENDED (MG/L AS N)
00625	NITROGEN, AMMONIA PLUS ORGANIC, TOTAL (MG/L AS N)
00625	NITROGEN, KJELDAHL, TOTAL (MG/L AS N)
00626	NITROGEN, AMMONIA PLUS ORGANIC, TOTAL IN BOTTOM MATERIAL, DRY WT (MG/KG AS N)
00626	NITROGEN, KJELDAHL, TOTAL IN BOTTOM MATERIAL, DRY WT (MG/KG AS N)
39543	PARATHION, SUSPENDED TOTAL (UG/L)
39543	PARATHION, SUSPENDED (UG/L)
39518	PCB, SUSPENDED TOTAL (UG/L)
39518	PCB, SUSPENDED (UG/L)
09505	RADIUM 226, SUSPENDED TOTAL (PCI/L)
09505	RADIUM 226, SUSPENDED (PCI/L)
07082	RHODAMINE WT, SUSPENDED TOTAL (UG/L)
07082	RHODAMINE WT, SUSPENDED (UG/L)
01136	RUBIDIUM, SUSPENDED TOTAL (UG/L AS RB)
01136	RUBIDIUM, SUSPENDED (UG/L AS RB)
29633	SCANDIUM 46, SUSPENDED TOTAL (PCI/L)
29633	SCANDIUM 46, SUSPENDED (PCI/L)
29634	SCANDIUM 46, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
29634	SCANDIUM 46, SUSPENDED, COUNTING ERROR (PCI/L)
01146	SELENIUM, SUSPENDED TOTAL (UG/L AS SE)
01146	SELENIUM, SUSPENDED (UG/L AS SE)
07102	SELENIUM 75, SUSPENDED TOTAL (PCI/L)
07102	SELENIUM 75, SUSPENDED (PCI/L)

CHANGES IN SELECTED WATER-QUALITY PARAMETERS--Continued

PARM. CODE	NEW TERMINOLOGY -- FIRST LINE OLD TERMINOLOGY -- SECOND LINE
07103	SELENIUM 75, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07103	SELENIUM 75, SUSPENDED, COUNTING ERROR (PCI/L)
01076	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG)
01076	SILVER, SUSPENDED (UG/L AS AG)
01077	SILVER, TOTAL RECOVERABLE (UG/L AS AG)
01077	SILVER, TOTAL (UG/L AS AG)
01078	SILVER, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS AG)
01078	SILVER, TOTAL IN BOTTOM MATERIAL (UG/G AS AG)
07122	SILVER 110, SUSPENDED TOTAL (PCI/L)
07122	SILVER 110, SUSPENDED (PCI/L)
07123	SILVER 110, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07123	SILVER 110, SUSPENDED, COUNTING ERROR (PCI/L)
39763	SILVEX, SUSPENDED TOTAL (UG/L)
39763	SILVEX, SUSPENDED (UG/L)
70299	SOLIUS, RESIDUE AT 110 DEG. C, SUSPENDED TOTAL (MG/L)
70299	SOLIUS, RESIDUE AT 110 DEG. C, SUSPENDED (MG/L)
01081	STRONTIUM, SUSPENDED RECOVERABLE (UG/L AS SR)
01081	STRONTIUM, SUSPENDED (UG/L AS SR)
01082	STRONTIUM, TOTAL RECOVERABLE (UG/L AS SR)
01082	STRONTIUM, TOTAL (UG/L AS SR)
01083	STRONTIUM, RECOVERABLE FROM BOTTOM MATERIAL (UG/G AS SR)
01083	STRONTIUM, TOTAL IN BOTTOM MATERIAL (UG/G AS SR)
13505	STRONTIUM 90, SUSPENDED TOTAL (PCI/L)
13505	STRONTIUM 90, SUSPENDED (PCI/L)
13506	STRONTIUM 90, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
13506	STRONTIUM 90, SUSPENDED, COUNTING ERROR (PCI/L)
07142	SULFUR 35, SUSPENDED TOTAL (PCI/L)
07142	SULFUR 35, SUSPENDED (PCI/L)
07143	SULFUR 35, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07143	SULFUR 35, SUSPENDED, COUNTING ERROR (PCI/L)
01101	TIN, SUSPENDED RECOVERABLE (UG/L AS SN)
01101	TIN, SUSPENDED (UG/L AS SN)
01102	TIN, TOTAL RECOVERABLE (UG/L AS SN)
01102	TIN, TOTAL (UG/L AS SN)
01151	TITANIUM, SUSPENDED TOTAL (UG/L AS TI)
01151	TITANIUM, SUSPENDED (UG/L AS TI)
39402	TOXAPHENE, SUSPENDED TOTAL (UG/L)
39402	TOXAPHENE, SUSPENDED (UG/L)
07010	TRITIUM, SUSPENDED TOTAL (PCI/L)
07010	TRITIUM, SUSPENDED (PCI/L)
07011	TRITIUM, SUSPENDED TOTAL, COUNTING ERROR (PCI/L)
07011	TRITIUM, SUSPENDED, COUNTING ERROR (PCI/L)
07014	TRITIUM, SUSPENDED TOTAL, COUNTING ERROR (TRITIUM UNITS)
07014	TRITIUM, SUSPENDED, COUNTING ERROR (TRITIUM UNITS)
07016	TRITIUM, SUSPENDED TOTAL (TRITIUM UNITS)
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22705	URANIUM, NATURAL, SUSPENDED TOTAL (UG/L AS U NATURAL)
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01086	VANADIUM, SUSPENDED TOTAL (UG/L AS V)
01086	VANADIUM, SUSPENDED (UG/L AS V)
01091	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN)
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39733	2,4-D, SUSPENDED TOTAL (UG/L)
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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1 2.54×10^{-2}	millimeters (mm) meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3 4.047×10^{-1} 4.047×10^{-3}	square meters (m ²) square hectometers (hm ²) square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0 3.785×10^0 3.785×10^{-3}	liters (L) cubic decimeters (dm ³) cubic meters (m ³)
million gallons	3.785×10^3 3.785×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1 2.832×10^{-2}	cubic decimeters (dm ³) cubic meters (m ³)
cfs-days	2.447×10^3 2.447×10^{-3}	cubic meters (m ³) cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3 1.233×10^{-3} 1.233×10^{-6}	cubic meters (m ³) cubic hectometers (hm ³) cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1 2.832×10^1 2.832×10^{-2}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2} 6.309×10^{-2} 6.309×10^{-5}	liters per second (L/s) cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1 4.381×10^{-2}	cubic decimeters per second (dm ³ /s) cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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