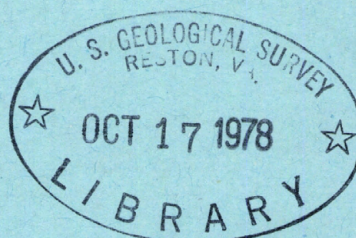


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Water Resources Data for Arizona

Water Year 1977



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-77-1

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

CALENDAR FOR WATER YEAR 1977

1976

OCTOBER

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Water Resources Data for Arizona Water Year 1977



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT AZ-77-1

**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

1978

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.

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

VII

[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 1977

INTRODUCTION

Water resources data for the 1977 water year for Arizona consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and measurements of ground-water levels. 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 1970 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, 604 South Pickett Street, Alexandria, Virginia 22304.

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 as an official Survey report 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-77-1." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

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 Department of Transportation—Highways Division, W. N. Price, assistant director and State engineer.
Arizona Game and Fish Department, R. A. Jantzen, director.
Salt River Valley Water Users' Association, K. F. Abel, president, and Richard Juetten, 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.
City of Nogales, M. T. Montano, city engineer.
City of Safford, R. D. Self, city manager.
City of Tucson, Lewis Murphy, mayor, and D. K. Massingill, 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 12 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 1977 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 42 to 85 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.

Deficient streamflows occurred at three index stations in December and February, but, for the most part, were only slightly deficient. Excessive streamflows occurred only randomly at the index stations.

The yearly mean discharge for the 1977 water year and the relation to the median of yearly mean discharges for the period 1941-70 for 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....	69,570	42
Virgin River at Littlefield.....	81,440	64
Gila River at head of Safford Valley, near Solomon.....	128,200	72
San Pedro River at Charleston.....	25,330	85
Salt River near Roosevelt.....	193,800	53
Verde River below Tangle Creek, above Horseshoe Dam.....	161,000	56

The discharge of the Colorado River near Grand Canyon was 8,537,000 acre-feet ($10,500 \text{ hm}^3$); 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 only 5,320 acre-feet (6.56 hm^3) for the 1977 water year, which is slightly less than 53 percent of the median flow for the period of record, 1906-77. The Santa Cruz River is an intermittent stream subject to large variances 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, whereas for 1966 and 1968 the flow was 372 and 351 percent of median, respectively.

Storage increased in some major reservoirs during the 1977 water year, and decreased in some reservoirs. Change in contents during the year and percent of average contents on September 30 for the period of record for several reservoirs are shown below.

<u>Reservoir</u>	<u>Change in contents, 1976-77 (acre-feet)</u>	<u>Percent of average contents on September 30</u>
Lake Powell.....	-3,497,000	--
Lakes Mead-Mohave.....	-73,000	110
San Carlos Reservoir.....	+11,600	11
Salt-Verde system.....	-499,770	71
Lake Pleasant.....	-30,890	9

Diversions of streamflow for irrigation of Arizona lands during the 1977 water year totaled 2,580,000 acre-feet (3,181 hm³), slightly less than in 1976. About 1,696,000 acre-feet (2,091 hm³) was diverted from the Colorado River for use by the Colorado River Indian Reservation, the Gila Project, and the Yuma Project. About 700,000 acre-feet (863 hm³) of the water diverted from the Colorado River was returned to the river or discharged across the Arizona-Sonora international boundary. About 884,000 acre-feet (1,090 hm³) of streamflow was diverted from the Gila River basin, for use in Safford Valley, on the San Carlos Project, and on the Salt River Project.

Figure 1 shows the discharge for the 1977 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 U.S. customary 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.

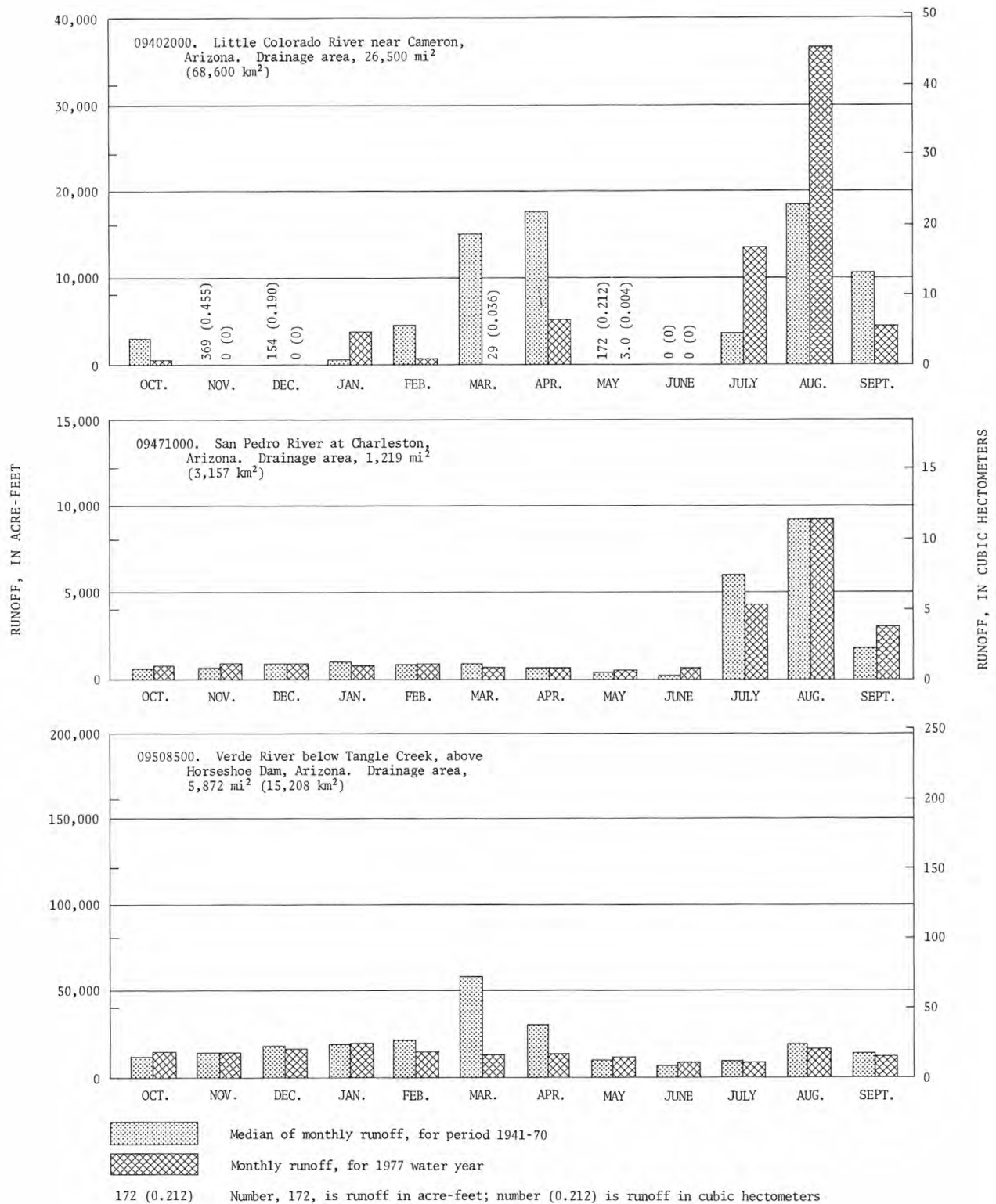


FIGURE 1.--RUNOFF DURING 1977 WATER YEAR COMPARED WITH MEDIAN RUNOFF FOR PERIOD 1941-70 FOR THREE REPRESENTATIVE GAGING STATIONS.

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°C $\pm$ 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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°C $\pm$ 0.2°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°C $\pm$ 1.0°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 the amount of substance present in true chemical solution. In practice, however, the term includes all forms of the substance that will pass through a 0.45-micrometer membrane filter, and thus may include some very small (colloidal) suspended particles. Analyses are performed on filtered samples.

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 (UG/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.

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 rotifers.

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.

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 (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45-micrometer filter.

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 Hexageria
Species ... Hexageria 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.

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 figure 2 below. In addition to the well number based on latitude and longitude, a local well number is given (see fig. 3).

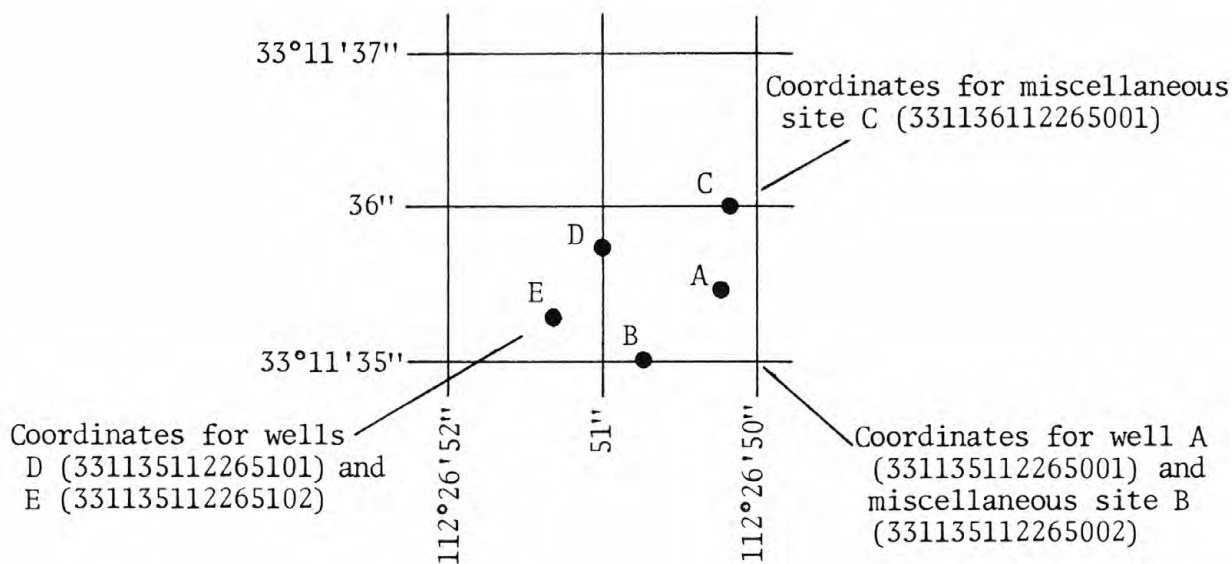
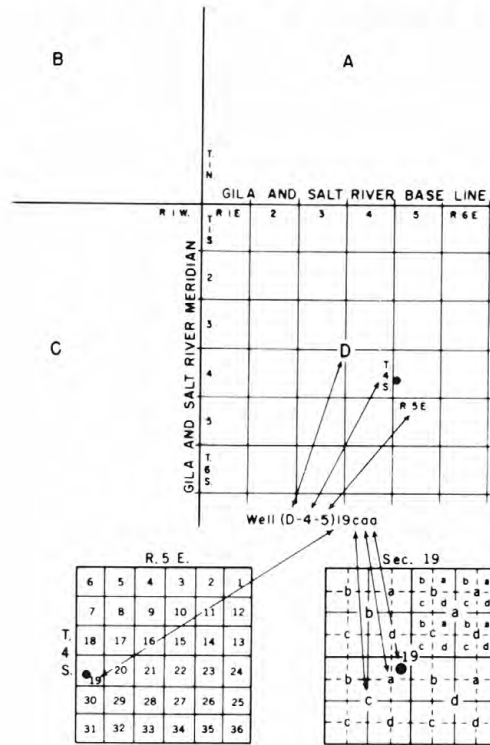


Figure 2.--System for numbering wells and miscellaneous sites (latitude and longitude).



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; and 09522000, Colorado River at northerly international boundary above Morelos Dam, near Andrade, CA.

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 above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "National Geodetic Vertical Datum of 1929 (NGVD)" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

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 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. 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 diel 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 either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; 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 above mean sea level is given in the well description. The height of the measuring point (mp) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

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 January 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. \$0.65.
- 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. \$0.35.
- 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.

*These publications are available ONLY from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. They are in looseleaf format and are subscription items. Additional supplements will be issued to subscribers at no extra cost. Checks should be made payable to Superintendent of Documents. Requester should emphasize to Superintendent of Documents that this is a subscription item.

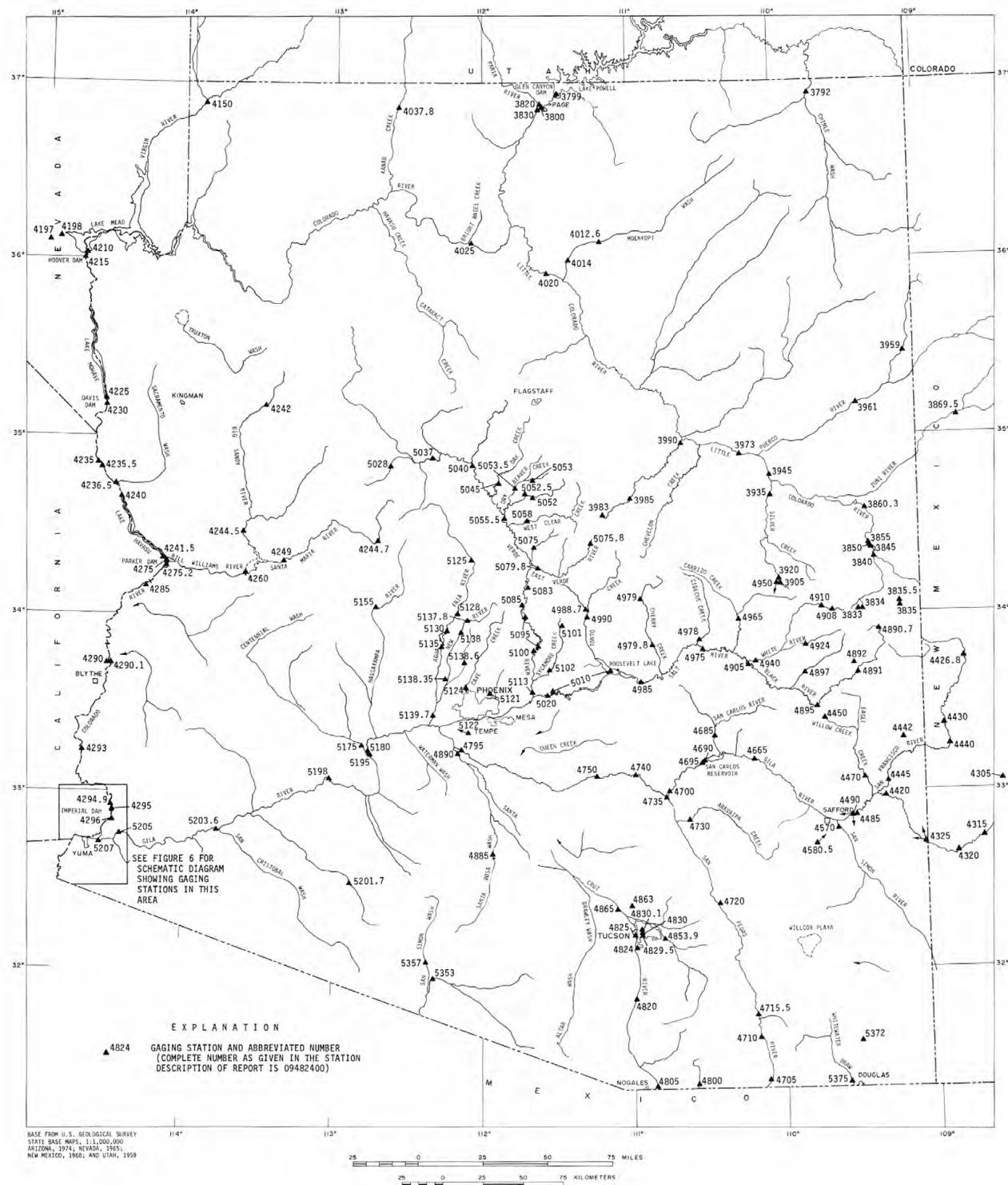
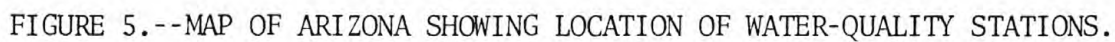


FIGURE 4.--MAP OF ARIZONA SHOWING LOCATION OF GAGING STATIONS.



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) above mean sea level.

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 km³). The reservoir provides off-channel storage for irrigation of about 1,600 acres (6.48 km²).

AVERAGE DISCHARGE.--13 years, 18.5 ft³/s (0.524 m³/s), 13,400 acre-ft/yr (16.5 km³/yr); median of yearly mean discharges, 15 ft³/s (0.42 m³/s), 10,900 acre-ft/yr (13 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft³/s (280 m³/s) Sept. 7, 1970 (gage height, 7.55 ft or 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 (*), (from rating curve extended above 850 ft³/s or 24 m³/s on basis of slope-area measurement of peak flow) 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)
Aug. 12	1200	2,760 78.2	6.75 2.06	Aug. 19	1430	*7,120 202	8.3 2.53
Aug. 17	0030	3,050 86.4	6.9 2.10				

No flow for many days.

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	18	5.0	4.0	4.0	4.0	2.0	2.0	2.0	.00	.00	2.0	2.6
2	15	4.0	4.0	4.0	4.0	2.0	2.0	2.0	.00	.00	1.0	1.6
3	15	2.2	4.0	4.0	4.0	2.0	2.0	2.0	.00	.00	1.0	3.0
4	15	4.5	4.0	4.0	4.0	2.0	2.0	2.0	.00	.10	1.0	85
5	15	5.5	4.0	4.0	4.0	2.0	2.0	2.0	.00	1.2	1.0	87
6	14	4.5	4.0	4.0	4.0	2.0	2.0	2.0	.00	1.0	1.0	27
7	5.2	4.0	4.0	4.0	4.0	2.0	2.0	2.0	.00	.70	1.0	12
8	4.6	4.0	4.0	4.0	4.0	2.0	2.0	2.0	.00	.70	1.0	4.8
9	8.4	4.0	4.0	4.0	4.0	2.0	2.0	1.0	.00	.40	1.0	3.5
10	5.9	4.0	4.0	4.0	4.0	2.0	2.0	1.0	.00	.10	1.0	3.5
11	5.6	4.0	4.0	4.0	3.0	2.0	2.0	1.0	.00	.00	7.3	1.5
12	4.0	4.0	4.0	4.0	3.0	2.0	2.0	1.0	.00	.00	602	24
13	4.5	4.0	4.0	4.0	3.0	2.0	2.0	.90	.00	.00	105	92
14	4.0	4.0	4.0	4.0	3.0	2.0	2.0	.90	.00	.00	21	23
15	4.0	4.0	4.0	4.0	3.0	2.0	2.0	.80	.00	.00	178	4.1
16	3.3	4.0	9.6	4.0	3.0	2.0	2.0	.70	.00	.00	432	3.3
17	3.7	4.0	7.7	4.0	3.0	2.0	2.0	.70	.00	.00	1830	.70
18	3.5	4.0	4.0	4.0	3.0	2.0	2.0	.70	.00	.00	1050	.40
19	3.7	4.0	4.0	4.0	3.0	2.0	1.6	.60	.00	5.3	2900	5.2
20	3.7	4.0	4.0	4.0	3.0	2.0	1.6	.60	.00	46	200	2.1
21	4.5	4.0	4.0	4.0	3.0	2.0	1.8	.50	.00	140	20	.90
22	4.5	4.0	4.0	4.0	3.0	2.0	1.8	.50	.00	68	5.0	.80
23	5.2	4.0	4.0	4.0	3.0	2.0	1.8	.50	.00	130	10	.60
24	5.0	4.0	4.0	4.0	3.0	2.0	1.8	.40	.00	174	20	.40
25	5.0	4.0	4.0	4.0	3.0	2.0	2.0	.40	.00	61	58	.40
26	5.0	4.0	4.0	10	3.0	2.0	2.0	.40	.00	49	20	.40
27	5.0	4.0	4.0	9.0	3.0	2.0	2.0	.50	.00	42	8.8	.40
28	5.0	4.0	4.0	8.0	3.0	2.0	2.0	.30	.00	55	3.7	.40
29	4.0	4.0	4.0	7.0	---	2.0	2.0	.30	.00	11	2.1	.40
30	5.5	4.0	4.0	6.0	---	2.0	2.0	.20	.00	4.0	1.8	.40
31	5.5	---	4.0	5.0	---	2.0	---	.00	---	2.0	1.8	---
TOTAL	210.3	121.7	133.3	145.0	94.0	62.0	58.4	29.70	.00	791.50	7487.5	421.40
MEAN	6.78	4.06	4.30	4.68	3.36	2.00	1.95	.96	.000	25.5	242	14.0
MAX	18	5.5	9.6	10	4.0	2.0	2.0	2.0	.00	174	2900	92
MIN	3.3	2.2	4.0	4.0	3.0	2.0	1.6	.00	.00	.00	1.0	.40
AC-FT	417	241	264	288	186	123	116	59	.00	1570	14850	836
CAL YR 1976 TOTAL	3459.40											
WTR YR 1977 TOTAL	9554.80											
MEAN	9.45											
MAX	400											
MTN	.00											
AC-FT	6860											
MTN	.00											
AC-FT	18950											

NOTE.--No gage-height record Nov. 7 to Dec. 15, Dec. 18 to Jan. 25, Jan. 27 to Apr. 18, and May 18 to June 29.

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 at mean sea level. 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 or 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 or 1,063.984 m).

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 19,624,000 acre-ft (24,200 hm³) Oct. 1, elevation, 3,663.88 ft (1,116.748 m); minimum, 16,143,000 acre-ft (19,900 hm³) Sept. 30, elevation, 3,636.70 ft (1,108.466 m).

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

3,635	15,942,000	3,655	18,436,000
3,640	16,542,000	3,660	19,099,000
3,645	17,157,000	3,665	19,779,000
3,650	17,789,000		

CONTENTS, IN THOUSANDS OF ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19624	19250	18798	18475	18005	17968	17948	18127	18342	18261	17666	16820
2	19617	19231	18774	18487	18001	17940	17956	18127	18356	18244	17630	16790
3	19617	19212	18754	18470	17999	17914	17963	18116	18347	18223	17591	16770
4	19608	19195	18731	18457	17998	17905	17970	18125	18347	18227	17558	16759
5	19602	19183	18718	18445	18001	17903	17981	18123	18368	18210	17536	16739
6	19590	19171	18702	18427	18015	17903	17993	18127	18363	18187	17514	16709
7	19567	19159	18694	18410	18012	17891	18002	18139	18372	18164	17502	16674
8	19556	19145	18685	18385	18011	17890	18007	18154	18386	18140	17460	16638
9	19547	19133	18678	18372	18006	17876	18003	18165	18382	18117	17418	16601
10	19546	19116	18673	18358	17998	17886	18014	18169	18401	18097	17384	16582
11	19541	19102	18666	18333	17988	17877	18024	18163	18422	18072	17352	16575
12	19524	19085	18670	18305	17985	17884	18042	18191	18444	18055	17321	16545
13	19513	19063	18668	18284	17992	17891	18078	18199	18454	18029	17290	16515
14	19504	19056	18658	18262	17985	17885	18048	18199	18458	18008	17264	16498
15	19496	19040	18658	18236	17980	17885	18048	18212	18458	17986	17234	16471
16	19486	19030	18652	18222	17984	17864	18055	18222	18453	17956	17200	16448
17	19475	19018	18640	18197	17986	17871	18057	18213	18448	17940	17184	16437
18	19468	19006	18631	18170	17992	17881	18061	18222	18452	17909	17150	16432
19	19451	18994	18631	18145	17999	17882	18054	18228	18444	17878	17129	16409
20	19436	18979	18614	18130	18005	17893	18056	18238	18441	17863	17116	16385
21	19418	18971	18603	18125	17999	17902	18068	18251	18433	17843	17098	16373
22	19402	18957	18586	18116	17993	17918	18077	18264	18423	17813	17067	16345
23	19386	18937	18578	18122	18001	17922	18085	18277	18399	17823	17044	16324
24	19375	18923	18577	18114	17995	17935	18091	18279	18381	17822	17017	16298
25	19356	18916	18582	18099	17990	17952	18099	18291	18354	17807	16986	16277
26	19348	18913	18586	18083	17994	17956	18104	18299	18347	17795	16953	16246
27	19327	18881	18563	18069	17990	17968	18105	18307	18313	17785	16932	16220
28	19310	18863	18544	18051	17984	17959	18112	18314	18294	17770	16918	16191
29	19289	18837	18517	18033	---	17945	18119	18324	18271	17748	16895	16162
30	19276	18816	18495	18028	---	17939	18126	18337	18258	17740	16869	16143
31	19265	---	18475	18016	---	17941	---	18339	---	17706	16844	---
MAX	19624	19250	18798	18487	18015	17968	18126	18339	18458	18261	17666	16820
MIN	19265	18816	18475	18016	17980	17864	17948	18116	18258	17706	16844	16143
(+)	3661.24	3657.89	3655.31	3651.78	3651.53	3651.20	3652.63	3654.27	3653.65	3649.36	3542.48	3636.70
(±)	-375,000	-449,000	-341,000	-459,000	-32,000	-43,000	+185,000	+213,000	-81,000	-552,000	-862,000	-701,000

CAL YR 1976 ‡ -1,701,000

WTR YR 1977 ‡ -3,497,000

‡ 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) above mean sea level. 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 (1911-62), 17,850 ft³/s (505.5 m³/s), 12,923,000 acre-ft/yr (15,900 hm³/yr); 13 years (1964-77), 12,170 ft³/s (344.7 m³/s), 8,817,000 acre-ft/yr (10,870 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 or 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 or 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, 29,000 ft³/s (821 m³/s) Sept 6, 7, 8, gage height, 11.88 ft (3.621 m); minimum daily, 869 ft³/s (24.6 m³/s) May 22.

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	15600	15200	15900	7140	14000	9530	2640	1170	3350	6560	24600	18300
2	13200	16900	16800	4280	12500	20000	3100	7670	5280	8440	23100	20500
3	7020	16800	16200	16600	10300	19300	1960	7700	6380	11100	22700	15200
4	9500	17000	15800	15800	8490	12800	4130	5800	3230	8360	19300	12500
5	10000	16600	14500	18400	6020	8070	1760	4600	3700	8680	15800	12600
6	14100	13400	16200	18800	3810	8910	1910	5410	6230	11900	14200	19700
7	16100	12000	14500	17300	8590	11800	1260	1490	6560	16900	16900	22100
8	13700	15300	13500	18300	11000	7320	5360	906	8150	16500	21100	21500
9	10300	14700	12900	13400	10200	8140	6700	2240	4290	14700	20800	20500
10	6770	15200	12300	18000	10800	7980	2140	2380	2200	13300	19700	15400
11	11000	16100	14600	21000	12200	12200	1600	3000	1840	14300	18400	11400
12	14700	17400	7040	19400	8930	3830	1710	2840	984	13600	18300	17900
13	13100	16600	11500	16200	4230	3330	1950	3930	4920	13600	20500	18000
14	11200	12700	12300	18800	11400	7850	2450	5640	7710	13000	18100	16700
15	12300	15300	11100	18000	8870	11700	2410	2180	7770	14700	19100	17100
16	10900	14600	12900	13400	7390	9790	1690	4460	8880	16100	22800	15800
17	8890	14400	11600	19300	6270	8310	1590	6990	7480	13400	23300	11000
18	13900	12700	13500	19500	3420	4530	6160	7090	6550	15600	23600	9080
19	14400	13500	7230	20200	3230	3290	6080	4020	6300	15400	22600	15000
20	13900	14200	13400	19000	3400	1880	3570	2060	7140	15200	20200	14800
21	14600	11800	13200	14000	10300	3840	2370	998	8400	14700	15600	14900
22	14700	15600	14000	11900	8120	1490	1320	869	9960	17500	19500	15100
23	14000	16400	11800	8560	7980	1510	1200	2130	14500	15300	18400	16500
24	9220	15200	6460	16300	8660	1340	986	2940	13800	12500	19900	16800
25	14700	8990	4580	18400	9790	1250	3430	3390	13400	15500	20500	14400
26	14800	12000	4530	18000	6540	2220	2940	2510	9870	15200	21700	18500
27	15600	18700	15400	18300	9120	2640	2590	2830	16100	16500	14900	18100
28	16600	16700	18900	18500	11900	10500	4450	982	15500	14000	10800	18600
29	16400	19100	18600	19000	---	13000	2090	883	14600	15100	14900	18700
30	14800	17400	22400	12200	---	8580	986	886	9770	17100	16100	17900
31	13200	---	14900	13200	---	4190	---	3640	---	12500	16400	---
TOTAL	399200	452490	408540	501180	237460	231120	82532	103634	234844	427240	593800	492580
MEAN	12880	15080	13180	16170	8481	7455	2751	3343	7828	13780	19150	16420
MAX	16600	19100	22400	21000	14000	20000	6700	7700	16100	17500	24600	22100
MIN	6770	8990	4530	4280	3230	1250	986	869	984	6560	10800	9080
AC-FT	791800	897500	810300	994100	471000	458400	163700	205600	465800	847400	1178000	977000
CAL YR 1976	TOTAL	4738990	MEAN	12950	MAX	22400	MIN	2910	AC-FT	9400000		
WTR YR 1977	TOTAL	4164620	MEAN	11410	MAX	24600	MIN	869	AC-FT	8261000		

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, 1,000 micromhos Mar. 15; minimum daily, 760 micromhos Nov. 16.

WATER TEMPERATURES: Maximum, 17.5°C May 1; minimum, 8.0°C on several days during January and February.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	FECAL STREPT- TOCOCCT (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NUN- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)
OCT												
14...	1530	14800	770	8.0	10.0	1	<1	<1	270	140	69	23
NOV												
16...	1600	15400	770	7.9	9.0	1	--	--	250	130	64	22
DEC												
14...	1500	15200	790	8.1	10.0	2	<1	<1	250	140	64	23
JAN												
04...	1500	17600	815	8.0	8.0	1	<1	<1	270	140	67	25
FEB												
05...	1500	15100	820	8.3	9.0	1	<1	<1	280	140	69	25
MAR												
03...	1400	22500	880	7.5	9.0	1	<1	<1	300	160	75	27
APR												
04...	1400	10000	940	8.0	11.0	0	--	--	300	160	74	29
MAY												
05...	1100	6040	940	8.0	12.0	0	<1	82	310	170	79	28
JUN												
01...	1700	2580	945	8.0	11.0	1	<1	35	300	160	74	27
JUL												
05...	1400	10800	890	7.9	11.0	2	<1	82	290	160	74	26
AUG												
09...	1600	23000	950	7.9	10.0	1	--	85	300	160	74	29
SEP												
07...	1200	18400	905	7.9	10.0	0	86	85	290	150	73	25

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

COLORADO RIVER MAIN STEM

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09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVFD SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVFD PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVFD SULFATE (SO4) (MG/L)	DTS- SOLVFD CHLOR- IDE (CL) (MG/L)	DTS- SOLVFD FLUOR- IDE (F) (MG/L)	DTS- SOLVFD SILICA (SiO2) (MG/L)	DTS- SOLVFD RESI- DUAL (MG/L)	DTS- SOLVFD SUM OF CONSTIT- UENTS (MG/L)	DTS- SOLVFD SOLIDS PER AC-FT
OCT 14...	66	1.8	3.5	158	0	210	44	.4	7.4	535	504	.73
NOV 16...	66	1.8	3.3	147	0	220	43	.2	6.6	526	500	.72
DEC 14...	66	1.8	3.4	145	0	210	47	.3	7.4	518	494	.70
JAN 04...	72	1.9	3.5	160	0	230	53	.3	7.4	548	540	.75
FEB 03...	71	1.9	3.7	160	0	210	58	.3	7.6	541	526	.74
MAR 03...	81	2.0	3.6	168	0	230	63	.3	8.0	623	575	.85
APR 04...	89	2.2	3.9	170	0	250	62	.3	7.3	635	602	.86
MAY 03...	86	2.1	4.0	170	0	260	62	.3	8.1	633	614	.86
JUN 01...	82	2.1	4.0	170	0	250	62	.2	6.6	613	592	.83
JUL 05...	82	2.1	3.6	160	0	250	60	.3	8.0	602	583	.82
AUG 09...	88	2.2	3.6	170	0	250	61	.3	8.2	614	601	.84
SEP 07...	72	1.9	3.6	160	0	240	47	.4	8.3	575	548	.78

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DTS- SOLVFD NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DTS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DTS- SOLVFD ORTHO. PHOS- PHORUS (P) (MG/L)
OCT 14...	.57	.27	--	--	.00	.57	.00	--	.02
NOV 16...	.56	.59	--	--	.07	.63	.00	--	.00
DEC 14...	.42	.42	--	--	.42	.84	.03	--	.00
JAN 04...	.42	.55	--	--	.32	.74	.00	--	.00
FEB 03...	.46	.46	--	--	.27	.73	.04	--	.01
MAR 03...	.63	.61	--	--	.25	.88	.01	--	.01
APR 04...	.54	.53	--	--	.46	1.0	.00	--	.00
MAY 03...	.58	.58	--	--	.35	.93	.00	--	.00
JUN 01...	.57	.55	--	--	.94	1.5	.02	--	.01
JUL 05...	.54	--	--	--	.29	.83	.02	--	--
AUG 09...	.57	.65	--	--	.41	.98	.01	--	.00
SEP 07...	.76	--	.01	.99	1.0	1.8	.00	.00	--

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CU) (UG/L)	DIS- SOLVED COBALT (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)
NOV 16...	1	1	150	90	<10	0	0	0	<50	0	<10	2
FEB 03...	3	3	340	90	<10	5	0	0	<50	1	<10	4
MAY 03...	1	1	120	90	<10	4	0	0	<50	0	<10	4
AUG 09...	2	1	150	100	10	0	0	0	<50	0	<10	3

DATE	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
NOV 16...	30	10	<100	4	0	10	.0	.0	3	3	10	10
FEB 03...	850	10	<100	51	0	0	1.1	.0	3	3	20	20
MAY 03...	30	10	<100	18	0	0	.0	.0	3	3	20	20
AUG 09...	0	30	<100	0	0	0	.0	.0	7	5	20	4

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ATRA- ZINE (UG/L)	ATRA- ZINE IN BOTTOM MAFERT- AL (UG/ KG DRY SOLIDS)	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)
NOV 16...	1600	3.3	ND	--	ND	--	ND	--	ND
FEB 03...	1500	3.2	ND	--	ND	--	ND	--	ND
MAY 03...	1100	3.7	ND	ND	--	ND	ND	ND	ND
AUG 09...	1600	3.8	ND	--	ND	--	ND	--	ND

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DIE- LDORIN (UG/L)
NOV 16...	--	.03	--	--	--	ND	--	ND
FEB 03...	--	ND	--	ND	--	ND	--	ND
MAY 03...	ND	ND	ND	ND	ND	ND	ND	ND
AUG 09...	--	ND	--	ND	--	ND	--	ND

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

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

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PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DI-ELDRIN IN BOTTOM MA- TERTAL (UG/KG)	TOTAL ENDRTN (UG/L)	ENDRIN IN BOTTOM MA- TERTAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERTAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERTAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERTAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERTAL (UG/KG)
NOV 16...	1600	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB 03...	1500	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	1100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 09...	1600	--	ND	--	ND	--	ND	--	ND	--	ND	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERTAL (UG/KG)	TOTAL METH- OXY- CHLOR (UG/L)	METHOX- YCHLOR IN BOT- TOM MA- TERTAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERTAL (UG/KG)	TOTAL METHYL THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERTAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERTAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)
NOV 16...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
FEB 03...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--
AUG 09...	ND	--	ND	--	ND	--	ND	--	ND	--	ND

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	SIMA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERTAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERTAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MA- TERTAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MA- TERTAL (UG/KG)	TOTAL STLVEX (UG/L)	SILVEX IN BOTTOM MA- TERTAL (UG/KG)
NOV 16...	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB 03...	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 09...	--	ND	--	ND	--	ND	--	ND	--	ND	--

ND Material specifically analyzed for but not detected.

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS- CHARGE (CFS)	SUS- PENDE- SEDIM- ENT (MG/L)	SUS- PENDE- MENT DTS- CHARGE (T/DAY)	SUS. SED. STEEVE DIAM. % FINER THAN .062 MM
OCT					
01...	1230	15600	3	126	--
14...	1530	11200	1	30	--
NOV					
02...	1330	16900	20	913	--
DEC					
02...	1500	16800	10	454	23
14...	1500	12300	6	199	65
JAN					
04...	1500	1580	7	30	63
18...	1400	19500	19	1000	30
FEB					
03...	1500	10300	2	56	73
17...	1700	6270	4	68	--
MAR					
03...	1400	19300	16	834	27
16...	1545	9790	5	132	--
APR					
20...	1400	3570	4	39	--
MAY					
03...	1100	7700	46	956	45
20...	1400	2060	5	28	--
JUN					
01...	1700	3350	11	99	61
15...	1640	7770	11	231	--
JUL					
05...	1400	8680	8	187	73
20...	1230	15200	22	903	--
AUG					
09...	1600	20800	119	6680	51
SEP					
07...	1200	22100	30	1790	34
12...	1800	17900	16	773	--

COLORADO RIVER MAIN STEM

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09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1				---	---	---	10.5	9.5	10.0	17.5	13.0	15.0
2				---	---	---	10.0	9.0	9.5	15.0	11.0	13.5
3				---	---	---	10.5	9.0	10.0	12.0	10.5	11.0
4				---	---	---	11.0	10.0	10.5	12.0	11.0	11.5
5				---	---	---	12.5	10.5	11.5	12.5	11.5	12.0
6				---	---	---						
7				---	---	---	12.5	11.5	12.0	12.0	11.0	11.5
8				---	---	---	13.5	12.0	12.5	13.0	11.0	11.5
9				---	---	---	13.0	11.5	12.5	14.5	12.0	13.0
10				10.0	10.0	10.0	12.0	10.5	11.0	15.0	12.0	13.5
				10.0	9.0	9.0	14.0	11.0	12.0	14.0	12.0	13.0
11				10.0	8.5	9.0	13.5	11.5	12.0	13.0	11.5	12.0
12				10.0	9.0	9.5	13.5	12.5	13.0	13.5	11.0	12.0
13				10.5	9.0	10.0	13.5	12.5	13.0	12.0	10.0	11.0
14				10.0	9.5	9.5	14.0	12.5	13.0	10.5	10.0	10.0
15				10.0	9.0	9.5	13.0	12.0	12.5	12.0	9.5	10.5
16				10.0	9.0	9.5	13.0	11.0	12.0	13.0	10.5	11.5
17				10.0	9.0	9.5	15.5	12.0	13.5	10.5	9.5	10.0
18				10.0	9.0	9.5	14.5	11.5	13.5	10.0	9.0	9.5
19				10.0	9.5	9.5	12.0	11.0	11.5	10.5	9.0	9.5
20				11.0	9.5	10.0	12.5	11.0	12.0	11.5	10.0	10.5
21				10.5	9.5	10.0	12.5	12.0	12.5	14.0	10.5	11.5
22				11.5	9.5	10.5	14.0	12.0	12.5	16.5	11.0	13.5
23				12.0	10.5	11.0	15.0	13.5	14.0	14.5	12.5	13.5
24				12.0	10.5	11.5	17.0	13.5	15.0	12.5	10.0	11.0
25				12.0	10.5	11.5	17.0	13.0	14.5	11.0	9.5	10.5
26				11.0	10.5	11.0	14.5	12.0	13.0	13.5	10.0	11.0
27				12.0	10.0	11.0	15.0	12.5	13.0	12.5	10.0	11.0
28				11.0	9.5	10.0	14.0	12.5	13.0	14.0	10.5	12.0
29				10.0	9.0	9.5	13.5	11.5	12.0	16.5	11.5	14.0
30				10.5	9.0	10.0	15.5	13.0	14.0	17.0	12.5	14.5
31				10.5	10.0	10.0	---	---	---	17.0	11.5	14.5
MONTH				12.0	8.5	10.0	17.0	9.0	12.5	17.5	9.0	12.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.5	9.5	10.5	10.5	9.0	10.0	10.0	9.0	10.0	---	---	---
2	13.0	9.5	11.0	11.0	9.5	10.0	10.5	9.0	9.5	---	---	---
3	11.0	9.0	10.0	10.0	9.0	9.5	10.0	9.0	9.5	---	---	---
4	12.0	9.5	11.0	11.0	9.0	9.5	10.0	9.0	9.5	---	---	---
5	11.5	10.0	10.5	10.5	9.0	10.0	11.0	9.0	9.5	---	---	---
6	12.0	9.5	11.0	11.0	9.0	9.5	11.0	9.0	9.5	---	---	---
7	11.0	9.5	10.0	10.5	9.0	9.5	10.5	9.0	9.5	17.0	9.5	10.0
8	10.5	9.0	9.5	10.5	9.0	9.5	10.0	9.0	9.5	10.5	9.5	10.0
9	11.5	9.0	10.5	10.5	9.0	9.5	17.0	9.5	---	10.5	9.5	10.0
10	12.5	10.5	11.5	11.0	9.0	9.5	---	---	---	10.5	10.0	10.0
11	15.0	11.0	12.0	11.0	9.0	9.5	---	---	---	10.5	10.0	10.0
12	16.0	11.5	13.5	10.5	9.0	9.5	---	---	---	10.5	10.0	10.0
13	14.0	10.5	12.5	10.0	9.0	9.5	---	---	---	11.0	9.5	10.0
14	11.0	9.0	10.0	11.0	9.0	9.5	---	---	---	11.0	9.5	10.0
15	11.0	9.0	10.0	11.0	9.0	9.5	---	---	---	11.0	9.5	10.0
16	11.0	9.0	9.5	10.5	9.0	9.5	---	---	---	10.5	9.5	10.0
17	11.0	8.5	9.5	10.5	9.0	9.5	---	---	---	11.0	9.5	10.0
18	10.5	9.0	10.0	10.0	9.0	9.5	---	---	---	11.0	9.5	10.0
19	11.0	9.5	10.0	9.5	9.0	9.5	---	---	---	11.0	10.0	10.5
20	11.0	9.0	10.0	10.5	9.0	9.5	---	---	---	11.0	10.0	10.5
21	11.0	9.0	10.0	10.5	9.0	9.5	---	---	---	10.5	9.5	10.0
22	10.5	8.5	9.5	10.5	9.5	9.5	---	---	---	11.0	9.5	10.0
23	10.5	9.0	9.5	10.5	9.0	9.5	---	---	---	11.0	10.0	10.0
24	11.0	9.0	9.5	11.0	9.0	10.0	---	---	---	10.5	9.5	10.0
25	10.0	8.5	9.0	11.0	9.0	9.5	---	---	---	11.0	10.0	10.5
26	10.5	8.5	9.5	11.0	9.0	9.5	---	---	---	11.0	10.0	10.5
27	10.5	9.0	9.5	10.5	9.0	9.5	---	---	---	10.5	10.0	10.0
28	10.5	8.5	9.5	10.5	9.0	9.5	---	---	---	10.5	10.0	10.5
29	10.0	9.0	9.5	10.5	9.0	9.5	---	---	---	10.5	10.0	10.0
30	10.5	8.5	9.5	10.5	9.5	10.0	---	---	---	11.0	10.0	10.5
31	---	---	---	10.5	9.0	9.5	---	---	---	---	---	---
MONTH	16.0	8.5	10.5	11.0	9.0	9.5	17.0	9.0	9.5	17.0	9.5	10.0
YEAR	17.5	8.5	10.5									

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHUS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	800	800	820	830	850	---						
2	800	800	820	810	---	---						
3	800	800	810	820	850	---						
4	800	800	800	860	820	---						
5	810	800	780	850	850	---						
6	800	800	790	830	860	940						
7	800	840	810	820	860	---						
8	800	790	810	810	860	940						
9	800	820	800	830	860	---						
10	810	810	800	810	860	---						
11	800	800	800	820	880	---						
12	800	810	790	820	880	---						
13	800	820	780	810	850	---						
14	780	800	780	820	880	---						
15	790	790	800	800	880	---						
16	790	760	800	800	880	---						
17	800	800	810	800	880	---						
18	810	790	810	810	880	---						
19	800	790	830	830	880	---						
20	800	790	810	810	880	---						
21	800	---	810	830	900	---						
22	800	800	810	820	900	---						
23	780	800	810	810	910	---						
24	800	790	810	800	900	---						
25	790	800	810	830	960	---						
26	790	800	820	820	910	---						
27	800	800	810	840	920	---						
28	800	810	820	840	950	---						
29	800	810	820	850	---	---						
30	800	800	810	830	---	---						
31	790	---	820	850	---	---						
MAX	810	840	830	860	960	---						
MIN	780	760	780	800	820	---						
WTR YR 1977	MAX	960	MIN	760								

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.0	9.0	9.0	10.0	9.0	---						
2	10.0	10.0	10.0	10.0	---	---						
3	10.0	9.0	10.0	9.0	9.0	---						
4	10.0	10.0	9.0	8.0	9.0	---						
5	10.0	10.0	10.0	9.0	9.0	---						
6	10.0	10.0	10.0	9.0	9.0	8.0						
7	9.0	9.0	10.0	9.0	9.0	---						
8	10.0	10.0	10.0	9.0	9.0	8.0						
9	10.0	10.0	9.0	9.0	8.0	---						
10	10.0	10.0	9.0	9.0	9.0	---						
11	10.0	10.0	9.0	9.0	9.0	---						
12	10.0	9.0	10.0	9.0	9.0	---						
13	9.0	10.0	10.0	8.0	9.0	---						
14	10.0	9.0	10.0	8.0	9.0	---						
15	10.0	10.0	9.0	9.0	9.0	---						
16	10.0	10.0	10.0	9.0	9.0	---						
17	10.0	10.0	9.0	9.0	9.0	---						
18	10.0	10.0	9.0	9.0	9.0	---						
19	9.0	10.0	10.0	9.0	8.0	---						
20	10.0	10.0	9.0	9.0	8.0	---						
21	10.0	9.0	9.0	9.0	---	---						
22	10.0	9.0	10.0	9.0	8.0	---						
23	10.0	10.0	10.0	10.0	8.0	---						
24	10.0	10.0	9.0	10.0	8.0	---						
25	10.0	10.0	9.0	10.0	8.0	---						
26	10.0	9.0	9.0	9.0	8.0	---						
27	9.0	9.0	10.0	9.0	8.0	---						
28	10.0	9.0	10.0	9.0	8.0	---						
29	9.0	9.0	10.0	9.0	---	---						
30	10.0	9.5	10.0	10.0	---	---						
31	10.0	---	10.0	9.0	---	---						
MAX	10.0	10.0	10.0	10.0	9.0	---						
MIN	9.0	9.0	9.0	8.0	8.0	---						
WTR YR 1977	MAX	10.0	MIN	8.0								

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1				---	---	---	943	908	930	945	911	928
2				---	---	---	957	930	944	949	899	928
3				---	---	---	932	878	904	961	926	944
4				---	---	---	945	876	912	955	909	938
5				---	---	---	926	903	915	941	899	923
6				---	---	---	915	892	906	969	915	939
7				---	---	---	934	899	916	975	955	965
8				---	---	---	926	892	912	976	907	957
9				898	886	894	942	899	918	962	866	928
10				950	874	907	934	903	922	941	864	917
11				941	907	930	938	922	931	958	866	912
12				913	886	902	922	907	915	975	867	917
13				923	880	903	926	907	919	980	903	959
14				955	898	929	942	915	929	943	889	916
15				1000	873	958	919	876	907	948	902	930
16				963	871	909	957	922	941	981	912	954
17				985	923	959	938	896	916	990	917	956
18				991	956	980	957	892	927	945	880	915
19				962	924	945	945	884	914	989	905	951
20				949	903	932	953	919	941	991	956	980
21				947	893	928	965	903	937	994	929	975
22				945	914	928	968	930	952	983	933	967
23				905	874	888	942	903	925	964	925	942
24				907	873	894	930	869	909	937	917	927
25				921	898	907	903	869	886	936	910	922
26				950	892	926	938	892	917	956	917	937
27				940	913	928	934	884	914	932	879	908
28				981	881	924	953	919	935	944	902	922
29				941	868	897	930	896	914	944	898	925
30				958	897	933	938	899	921	940	878	913
31				945	910	926	---	---	---	913	875	895
MONTH				1000	868	923	968	869	921	994	864	935

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	909	874	896	900	850	876	936	868	907	---	---	---
2	930	886	907	885	846	864	920	877	895	---	---	---
3	934	904	915	901	870	885	925	909	919	---	---	---
4	919	881	899	901	859	886	928	891	915	---	---	---
5	924	878	909	905	863	879	955	899	924	---	---	---
6	936	889	908	913	859	893	936	893	911	---	---	---
7	944	913	927	889	955	861	935	904	919	911	884	896
8	948	906	933	892	961	877	939	911	926	900	869	889
9	944	925	931	897	869	879	---	---	---	908	862	888
10	941	899	925	897	863	879	---	---	---	886	855	867
11	922	876	904	911	849	884	---	---	---	890	859	870
12	927	857	902	908	868	881	---	---	---	895	860	874
13	923	869	905	904	870	886	---	---	---	884	864	873
14	931	885	908	906	859	888	---	---	---	892	865	879
15	932	882	903	903	872	891	---	---	---	916	866	893
16	944	886	911	918	875	894	---	---	---	893	862	881
17	944	902	921	923	880	899	---	---	---	898	863	877
18	925	898	908	914	883	899	---	---	---	879	848	864
19	922	864	887	904	888	894	---	---	---	872	837	854
20	937	903	916	913	878	901	---	---	---	888	842	866
21	919	865	891	912	880	896	---	---	---	912	877	895
22	931	881	904	906	866	886	---	---	---	920	866	888
23	916	862	890	901	879	885	---	---	---	878	838	863
24	920	847	883	895	849	879	---	---	---	898	860	878
25	936	890	915	897	869	884	---	---	---	876	853	865
26	905	871	886	906	875	890	---	---	---	896	838	874
27	906	852	883	914	889	902	---	---	---	908	858	886
28	910	868	886	917	884	898	---	---	---	897	855	883
29	903	868	885	913	876	894	---	---	---	905	851	875
30	896	857	880	905	854	887	---	---	---	890	875	884
31	---	---	---	931	899	915	---	---	---	---	---	---
MONTH	948	847	904	931	846	887	955	868	915	920	837	878
YEAR	1000	837	909									

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 14, 76 1500	NOV 16, 76 1600	DEC 14, 76 1500	JAN 4, 77 1500	FEB 3, 77 1500					
TOTAL CELLS/ML	320	1100	99	300	35					
DIVERSITY: OTTSTON	0.8	0.4	1.6	1.0	1.0					
..CLASS	0.8	0.4	1.6	1.0	1.0					
..ORDER	0.9	0.4	1.8	1.4	1.4					
...FAMILY	1.1	0.5	2.4	1.5	2.4					
....GENUS	1.1	0.6	2.6	1.5	2.7					
ORGANISM	CFLLS /ML	PER- CENT	CFLLS /ML	PER- CENT	CFLLS /ML	PER- CENT	CFLLS /ML	PER- CENT	CFLLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOPUCOCCEAE										
....OCYSTACEAE										
....ANKISTRODESMIUS	--	-	--	-	--	-	--	-	--	-
....CHODATFLLA	--	-	--	-	--	-	--	-	4	11
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-
....SCENEDESMACEAE										
....SCENEDISMUS	--	-	--	-	--	-	12	4	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERTA	5	2	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	3	3	6	2	--	-
...PHACOTACEAE										
....PHACOTIUS	--	-	--	-	3	3	--	-	--	-
...ZYGNEMATALES										
...DESMIDIACEAE										
....CLOSTERIUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...ANAILACEAE										
....TERPSINOE	--	-	--	-	--	-	--	-	--	-
...COSCINODISCACEAE										
....CYCLOTFLLA	15	5	--	-	3	3	--	-	4	11
....MELUSIRA	--	-	*	0	--	-	--	-	--	-
...PENNALS										
....ACHNANTHACEAE										
....ACHNANTHUS	--	-	17	1	--	-	--	-	--	-
....COCCONEIS	15	5	*	0	9	9	3	1	--	-
....RHODICUSPHENIA	10	3	17	1	3	3	--	-	--	-
...CYMBELLACEAE										
....AMPHORA	--	-	7	1	3	3	--	-	4	11
....CYMBELLA	5	2	*	0	3	3	--	-	8#	22
....EPITHEMIA	--	-	--	-	--	-	3	1	--	-
...DIATOMACEAE										
....DIATOMA	10	3	23	2	--	-	12	4	8#	22
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
...SYNEDRA										
....NAVICULACEAE										
....MASTOGLUIA	--	-	*	0	--	-	--	-	--	-
....NAVICULA	--	-	7	1	3	3	3	1	--	-
....NETIDIUM	--	-	--	-	--	-	--	-	--	-
...STAUROPNETS										
....NITZSCHIA	--	-	7	1	3	3	--	-	4	11
...SIRIRIACEAE										
....CYMATOPLURA	--	-	--	-	3	3	--	-	--	-
CHRYSOPHYCEAE										
...CHRYSDOMONADALES										
...UCHROMONADACEAE										
...DINORRYON	--	-	--	-	--	-	--	-	--	-
...UCHROMONAS	--	-	--	-	--	-	3	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCCOCCEAE										
....CHROCCOCCEAE										
....ANACYSTIS	--	-	--	-	--	-	15	5	--	-
...HORMOGONALS										
...NOSTOCACEAE										
....APHANIZOMENON	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	260#	82	1000#	93	54#	55	230#	77	--	-
...HORMOGONALS	--	-	--	-	--	-	--	-	--	-

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

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

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE TIME	OCT 14,76 1500		NOV 16,76 1600		DEC 14,76 1500		JAN 4,77 1500		FEB 3,77 1500	
ORGANISM	CELLS /ML	PERC- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
FUGLENOPHYTA (FUGLENODIDS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPIDOCHEYSTACEAE										
....CHROMONAS	--	-	--	-	--	-	3	1	--	-
...CRYPTOMONADACEAE										
....CRYPTOMUNAS	--	-	--	-	6	6	3	1	--	-
.EUGLENOPHYCEAE										
..FUIGLENALES										
...EUGLENACEAE										
....FUIGLENA	--	-	--	-	--	-	--	-	--	-
....TRACHELUMONAS	--	-	--	-	--	-	3	1	--	-
PYRRHUPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES										
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	3	3	--	-	4	11
...PERIDINTIACEAE										
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

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

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

COLORADO RIVER MAIN STEM

09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 7,77 1100	JUN 1,77 1700	JUL 5,77 1400	AUG 9,77 1600	SEP 7,77 0000					
TOTAL CELLS/ML	550	280	520	200	180					
DIVERSITY: DIVISION	1.0	1.3	1.2	1.8	1.1					
..CLASS	1.0	1.3	1.2	2.1	1.1					
...ORDER	1.1	1.3	1.2	2.4	1.4					
...FAMILY	2.3	1.7	0.0	2.7	2.8					
...GENUS	2.4	1.7	0.0	2.7	3.0					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...DUCYSTACEAE										
...ANKISTRUPESMUS	--	-	--	-	--	-	--	-	4	2
...CHOUATFLA	--	-	--	-	--	-	--	-	--	-
...CLOSTERIOPSIS	--	-	--	-	--	-	--	-	4	2
...SCENEDESMACEAF										
...SCENEDESMUS	--	-	20	7	--	-	64#	32	--	-
...VOLVOCALES										
...CHLAMYDOMONADACFAE										
...CARTERTA	--	-	--	-	--	-	--	-	--	-
...CHLAMYDOMUNAS	--	-	--	-	4	1	6	3	--	-
...PHACOTACEAE										
...PHACOLIUS	--	-	--	-	--	-	--	-	--	-
...ZYGNEMATALES										
...DESMIDIACFAE										
...CLOSTERIUM	--	-	--	-	--	-	6	3	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...ANAILACEAE										
...TERPSINOF	--	-	--	-	--	-	--	-	15	8
...COSCINODISCACFAE										
...CYCLOTELLA	6	1	--	-	--	-	--	-	--	-
...MELUSIRA	6	1	--	-	--	-	--	-	--	-
...PENNALFS										
...ACHNANTHACEAE										
...ACHNANTHES	3	1	--	-	100#	20	--	-	11	6
...COCCONFIS	21	4	10	4	12	2	--	-	4	2
...RHODICUSPHENIA	39	7	*	0	16	3	--	-	--	-
...CYMBELLACFAE										
...AMPHORA	--	-	*	0	4	1	--	-	4	2
...CYMBELLA	36	7	*	0	4	1	6	3	11	6
...EPITHEMIA	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE										
...DIATOMA	150#	27	*	0	16	3	23	12	22	12
...FRAGILARIACFAE										
...FRAGILARIA	--	-	39	14	--	-	--	-	--	-
...SYNEDRA	6	1	--	-	31	6	--	-	18	10
...NAVICULACEAE										
...MASTOGLUIA	--	-	--	-	--	-	--	-	--	-
...NAVICULA	54	10	--	-	4	1	--	-	37#	20
...NETOTUM	--	-	--	-	--	-	--	-	4	2
...STAURONETS	3	1	--	-	--	-	--	-	--	-
...NITZSCHITACEAE										
...MITZSCHIA	6	1	49#	18	--	-	--	-	--	-
...SIIRTELLACEAE										
...CYMATOPLFURA	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
...DINORRYON	--	-	--	-	--	-	17	9	--	-
...OCHROMONAS	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
...ANACYSTIS	--	-	--	-	--	-	--	-	--	-
...HORMOGONALS										
...NOSTOCACEAE										
...APHANIZOMENON	--	-	--	-	--	-	46#	24	--	-
...OSCILLATORIACEAE										
...OSCILLATORIA	220#	40	160#	57	160#	31	17	9	52#	28
...HORMOGONALS	--	-	--	-	150#	28	--	-	--	-

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

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

COLORADO RIVER MAIN STEM

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09380000 COLORADO RIVER AT LEES FERRY, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 3, 77 1100		JUN 1, 77 1700		JUL 5, 77 1400		AUG 9, 77 1600		SEP 7, 77 0000	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONADALES										
....CRYPTOCHRYSIDACEAE										
....CHROMONAS	--	-	--	-	--	-	6	3	--	-
....CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	*	0	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
....EUGLENACEAE										
....EUGLENA	--	-	--	-	16	3	--	-	--	-
....TRACHELUMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
....GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-
....PERTENTACEAE										
....PERIDINIUM	--	-	--	-	--	-	6	3	--	-

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

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

PARIA RIVER BASIN

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) above mean sea level. 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.--54 years, 29.1 ft³/s (0.824 m³/s), 21,080 acre-ft/yr (26.0 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 or 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, 2,070 ft³/s (58.6 m³/s) Aug. 17, gage height, 11.00 ft (3.353 m), base discharge, 1,400 ft³/s (39.6 m³/s); minimum daily, 3.2 ft³/s (0.091 m³/s) June 15, 17, 18, 20.

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	7.4	9.8	6.2	12	24	13	10	4.5	5.0	6.0	5.0	4.0
2	7.4	8.6	18	12	24	14	12	4.8	4.5	5.0	5.0	4.0
3	55	8.2	17	18	18	13	13	5.0	4.8	4.0	5.0	4.0
4	10	9.0	13	15	20	12	12	5.0	4.5	4.0	5.0	11
5	9.0	9.4	11	16	18	11	12	4.5	4.5	20	5.0	28
6	7.0	8.6	16	14	20	10	9.8	4.8	4.4	22	5.0	11
7	6.5	8.6	5.0	11	20	13	6.5	4.8	4.2	14	5.0	9.4
8	6.0	9.0	15	10	19	13	6.0	4.5	4.4	10	5.0	7.6
9	5.5	10	11	7.0	21	13	6.0	4.4	4.5	7.5	5.0	6.0
10	5.5	11	8.5	4.4	20	12	6.0	4.5	4.4	7.5	5.2	5.5
11	5.5	11	9.0	5.1	20	7.8	5.5	4.5	3.9	5.0	4.5	5.5
12	5.5	11	8.0	7.0	18	7.0	5.5	4.4	3.9	5.0	21	10
13	5.5	11	11	7.0	18	11	5.5	4.5	3.6	5.0	10	35
14	5.5	13	13	7.9	19	11	5.5	5.0	3.4	5.0	7.0	15
15	5.5	19	11	7.7	20	10	6.0	5.0	3.2	5.0	5.0	12
16	5.8	19	10	6.8	18	9.4	5.5	4.8	3.3	5.0	5.0	7.6
17	5.8	16	9.5	8.2	17	8.6	5.0	4.8	3.2	5.0	231	6.5
18	5.5	18	10	8.5	16	12	4.5	5.2	3.2	26	197	5.5
19	5.5	19	12	10	16	9.8	4.5	4.8	3.3	66	22	5.0
20	6.2	19	9.1	14	16	7.8	4.8	4.5	3.2	39	8.2	6.0
21	6.5	18	8.0	18	15	7.8	5.0	4.4	3.3	92	6.0	6.0
22	6.8	19	8.8	25	13	8.2	5.0	4.2	3.3	10	4.5	6.0
23	6.8	18	9.8	24	13	6.5	5.0	4.2	3.3	8.5	5.0	6.0
24	6.8	18	10	32	14	4.2	5.0	4.4	3.3	6.0	50	6.0
25	7.4	18	9.0	26	15	4.2	5.0	5.6	3.4	5.0	20	6.0
26	7.8	18	8.9	25	13	4.0	5.2	4.4	6.0	5.0	7.0	6.0
27	8.2	16	10	24	12	5.2	5.2	25	22	5.0	5.0	5.0
28	8.2	10	8.4	21	13	5.5	5.5	20	28	5.0	4.5	5.5
29	8.6	7.5	8.4	20	---	4.2	5.0	15	15	5.0	4.0	5.5
30	9.0	7.0	12	20	---	5.2	4.8	10	10	5.0	4.0	5.0
31	9.4	---	12	21	---	8.2	---	5.0	---	5.0	4.0	---
TOTAL	261.1	397.7	328.6	457.6	490	281.6	196.3	236.1	177.0	417.5	674.9	255.6
MEAN	8.42	13.3	10.6	14.8	17.5	9.08	6.54	7.62	5.90	13.5	21.8	8.52
MAX	55	19	18	32	24	14	13	4.4	28	92	231	35
MIN	5.5	7.0	5.0	4.4	12	4.0	4.5	4.2	3.2	4.0	4.0	4.0
AC-FT	518	789	652	908	972	559	389	468	351	828	1340	507

CAL YR 1976 TOTAL 5573.6 MEAN 15.2 MAX 420 MIN 2.9 AC-FT 11060
WTR YR 1977 TOTAL 4174.0 MEAN 11.4 MAX 231 MIN 3.2 AC-FT 8280

COLORADO RIVER MAIN STEM

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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); 13 years (water years 1965-77), 12,190 ft³/s (345 m³/s), 8,832,000 acre-ft/yr (10,900 hm³/yr).

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Mean	Runoff in acre-feet
October	12,890	792,300
November	15,090	898,300
December	13,190	811,000
CAL YEAR 1976	12,979	9,411,000
January	16,180	995,000
February	8,498	472,000
March	7,464	459,000
April	2,758	164,100
May	3,351	206,100
June	7,834	466,200
July	13,790	848,200
August	19,170	1,179,000
September	16,430	977,500
WTR YR 1977	11,420	8,269,000

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

LOCATION.--Lat 34°00'58", long 109°27'26", in NE¼SE¼ sec.11, T.7 N., R.27 E., Apache County, Hydrologic Unit 15020001, in Apache National Forest, on left bank at Greer, 0.1 mi (0.2 km) downstream from point of diversion.

GAGE.--Water-stage recorder. Altitude of gage is 8,300 ft (2,530 m), from topographic map.

REMARKS.--Records poor. Diversion is to supply Greer Lakes, used for recreation and storage for irrigation.

AVERAGE DISCHARGE.--16 years, 2.32 ft³/s (0.066 m³/s), 1,680 acre-ft/yr (2.07 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 19 ft³/s (0.54 m³/s) Oct. 7, 1974; no flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

[illegible]

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), above mean sea level. 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. (See preceding page.)

AVERAGE DISCHARGE.--17 years, 15.0 ft³/s (0.425 m³/s), 10,870 acre-ft/yr (13.4 hm³/yr); median of yearly mean discharges, 13 ft³/s (0.37 m³/s), 9,400 acre-ft/yr (11.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 615 ft³/s (17.4 m³/s) Oct. 20, 1972 (gage height, 5.65 ft or 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, 0.8 ft³/s (0.023 m³/s) Oct. 11-14, 1962, Oct. 22-29, Nov. 4, 9, 14, 20, 25, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 174 ft³/s (4.93 m³/s) Apr. 9, gage height, 2.88 ft (0.878 m), base discharge, 60 ft³/s (1.7 m³/s); minimum daily, 1.1 ft³/s (0.031 m³/s) Dec. 13, 1967.

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	2.0	1.8	1.5	3.0	6.0	5.5	7.9	15	9.0	5.7	7.1	9.7
2	2.0	1.8	1.5	3.0	6.5	5.0	7.1	15	10	6.0	6.5	11
3	1.5	1.6	1.5	3.0	6.0	5.0	6.5	15	9.7	5.7	6.5	14
4	1.5	1.6	1.5	3.5	6.0	5.0	8.0	14	9.3	5.7	6.2	11
5	1.6	1.8	1.3	3.5	6.0	5.0	9.0	14	9.7	6.8	6.0	10
6	1.6	1.8	1.3	4.0	7.0	5.0	9.0	14	10	5.7	6.0	9.7
7	1.6	1.8	1.3	4.0	7.0	5.5	14	14	11	5.4	7.1	9.3
8	1.6	1.8	1.3	4.0	6.0	5.5	47	14	11	5.1	9.4	9.3
9	1.6	1.6	1.5	4.0	6.5	5.5	68	13	10	5.1	8.2	9.3
10	1.6	1.5	1.3	4.0	6.0	5.5	36	13	9.7	5.7	8.2	9.0
11	1.3	1.5	1.5	4.0	6.5	5.5	18	13	9.0	6.5	10	10
12	1.3	1.5	1.3	4.0	6.5	5.5	16	13	8.6	6.0	14	9.7
13	1.3	1.5	1.1	4.0	6.5	6.0	14	12	8.2	6.0	12	9.0
14	1.5	1.5	1.3	4.0	6.5	6.0	12	12	7.9	5.7	14	8.6
15	1.5	1.5	1.3	4.0	6.5	6.0	12	12	7.9	6.0	12	5.8
16	1.5	1.5	1.1	4.0	6.5	6.5	12	11	7.5	7.1	13	4.6
17	1.5	1.5	1.5	4.0	6.5	6.0	14	11	7.5	6.5	12	6.5
18	1.5	1.5	1.5	4.0	6.5	6.5	15	10	7.1	10	13	7.9
19	1.5	1.5	1.3	4.0	6.0	6.5	15	10	6.8	7.5	15	6.9
20	1.5	1.5	1.6	4.0	6.0	7.0	13	10	6.5	6.5	22	5.0
21	1.5	1.5	1.6	5.0	6.5	7.0	12	9.7	6.5	6.8	21	4.8
22	1.6	1.5	1.3	5.0	6.8	17	12	9.7	6.5	7.5	21	6.5
23	1.6	1.5	1.6	5.0	6.5	17	12	9.7	6.5	7.9	14	5.2
24	1.6	1.5	1.8	5.0	6.5	15	13	9.3	6.5	11	13	3.1
25	1.5	1.5	1.8	6.0	6.0	12	12	9.7	7.1	8.6	12	5.4
26	1.3	1.5	2.2	6.0	5.5	8.5	12	9.3	6.8	8.6	12	4.5
27	1.3	1.5	2.0	6.5	5.5	7.9	13	9.3	5.7	8.6	11	3.9
28	1.3	1.5	2.0	6.5	5.5	7.5	14	9.0	5.7	7.9	10	3.3
29	1.6	1.5	2.0	6.5	---	7.0	14	8.6	6.0	7.5	10	2.9
30	1.6	1.5	2.5	6.5	---	8.0	14	9.0	5.7	7.1	9.7	2.6
31	1.5	---	2.5	6.0	---	9.0	---	9.0	---	7.5	9.7	---
TOTAL	47.4	47.1	48.8	140.0	175.8	229.9	481.5	357.3	239.4	213.7	351.6	218.5
MEAN	1.53	1.57	1.57	4.52	6.28	7.42	16.1	11.5	7.98	6.89	11.3	7.28
MAX	2.0	1.8	2.5	6.5	7.0	17	68	15	11	11	22	14
MIN	1.3	1.5	1.1	3.0	5.5	5.0	6.5	8.6	5.7	5.1	6.0	2.6
AC-FT	94	93	97	278	349	456	955	709	475	424	697	433

CAL YR 1976 TOTAL 5012.3 MFAN 13.7 MAX 57 MIN 1.1 AC-FT 9940
WTR YR 1977 TOTAL 2551.0 MFAN 6.99 MAX 68 MIN 1.1 AC-FT 5060

LITTLE COLORADO RIVER BASIN

09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	BIOCHEMICAL OXYGEN DEMAND 5 DAY (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
OCT 05...	1300	10	90	7.8	14.0	3	8.0	--	--
NOV 10...	0730	12	90	8.4	.5	4	10.4	--	--
DEC 08...	1045	15	85	7.2	2.0	4	10.2	--	--
JAN 06...	1400	7.0	60	6.8	.0	15	10.2	--	--
FEB 08...	1430	10	63	7.2	5.0	6	9.8	--	--
MAR 08...	1030	10	65	8.6	4.0	2	10.8	--	--
APR 11...	1800	15	50	7.3	7.0	6	8.8	--	--
MAY 11...	1030	10	60	6.8	6.0	2	8.6	--	--
JUN 08...	0930	22	58	8.3	13.0	3	8.0	--	--
JUL 13...	1730	5.0	82	7.8	16.0	2	6.8	--	--
AUG 10...	1200	20	75	8.2	17.0	3	7.4	--	--
24...	1240	13	78	7.6	16.0	3	7.7	.3	160
SEP 06...	1030	19	70	--	14.0	2	--	--	--
14...	1100	8.7	85	7.7	13.0	--	8.0	.4	--
28...	1045	1.4	105	7.7	13.0	--	7.8	.4	120

DATE	FECAL COLIFORM 70MM-MF (COL./ 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG/L)	NON- CARBONATE HARD- NESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POSSIBILITIES (K) (MG/L)
OCT 05...	2	--	34	0	8.8	2.9	4.5	.3	2.0
NOV 10...	100	--	38	0	10	3.2	4.7	.3	1.8
DEC 08...	1	--	37	0	9.5	3.2	4.8	.3	1.9
JAN 06...	0	--	30	0	7.5	2.8	4.6	.4	1.8
FEB 08...	2	--	29	0	7.3	2.5	4.4	.4	1.8
MAR 08...	0	--	32	0	8.0	2.9	4.8	.4	1.8
APR 11...	5	--	21	0	5.0	2.1	2.7	.3	1.7
MAY 11...	2	--	22	0	5.7	1.9	3.1	.3	1.6
JUN 08...	41	--	27	1	6.6	2.5	3.8	.3	1.6
JUL 13...	150	--	30	0	7.7	2.6	4.4	.3	1.9
AUG 10...	170	--	31	0	8.4	2.4	4.2	.3	1.9
24...	69	320	28	0	7.2	2.4	3.4	.3	1.8
SEP 06...	30	--	29	0	7.8	2.4	3.7	.3	1.9
14...	38	57	--	--	--	--	--	--	--
28...	43	260	--	--	--	--	--	--	--

LITTLE COLORADO RIVER BASIN

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09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
OCT 05...	50	0	3.3	1.1	.1	25	73	73	.10
NOV 10...	59	0	4.6	1.2	.1	24	85	79	.12
DEC 08...	56	0	2.7	1.1	.1	30	86	82	.12
JAN 06...	46	0	2.7	.8	.1	29	80	73	.11
FEB 08...	45	0	5.6	1.4	.1	29	66	76	.09
MAR 08...	48	0	2.6	4.9	.2	28	79	77	.11
APR 11...	28	0	6.8	1.4	.3	16	40	51	.05
MAY 11...	27	0	6.5	1.1	.1	23	52	57	.07
JUN 08...	31	0	5.5	.8	.1	21	55	58	.07
JUL 13...	42	0	3.4	.9	.1	26	67	68	.09
AUG 10...	42	0	3.5	1.2	.1	26	60	69	.08
24...	36	0	4.5	.9	.1	22	54	60	.07
SEP 06...	41	--	3.1	.9	.1	25	66	66	.09
14...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--

DATE	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	TOTAL NITRATE PLUS NITRITE (N) (MG/L)	DIS-SOLVED NITRATE PLUS NITRITE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS-SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
OCT 05...	--	--	.01	.01	.11	.12	.06	.01
NOV 10...	--	--	.03	.01	.01	.04	.05	.00
DEC 08...	--	--	.10	.07	.16	.26	.03	.03
JAN 06...	.05	.01	.06	.06	.36	.42	.02	.02
FEB 08...	--	--	.14	.14	.21	.35	.06	.06
MAR 08...	--	--	.11	.03	--	--	.05	.04
APR 11...	--	--	.10	.08	.54	.64	.05	.03
MAY 11...	--	--	.06	.01	.19	.25	.33	.04
JUN 08...	--	--	.01	.01	.13	.14	.08	.03
JUL 13...	--	--	.01	--	.19	.20	.05	--
AUG 10...	--	--	.03	--	.19	.22	.08	--
24...	--	--	.01	.01	.23	.24	.08	.03
SEP 06...	--	--	.03	--	.23	.26	.05	--
28...	--	--	.02	.01	.54	.56	.09	.03

LITTLE COLORADO RIVER BASIN

09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FF) (UG/L)
OCT 05...	1	0	50	10	<10	<10	870	70
NOV 10...	0	0	70	7	<10	<10	920	590
DEC 08...	1	0	60	9	<10	<10	340	340
JAN 06...	1	0	60	4	<10	<10	770	240
FEB 08...	1	0	230	9	<10	20	760	570
MAR 08...	0	0	60	7	<10	<10	360	150
APR 11...	0	0	40	20	<10	<10	960	370
MAY 11...	0	0	70	10	<10	30	540	290
JUN 08...	1	100	70	20	<10	<10	770	360
JUL 13...	0	0	100	7	<10	<10	640	340
AUG 10...	0	0	110	10	<10	10	750	400
24...	0	0	80	20	<10	<10	440	220
SEP 06...	0	100	70	10	10	<10	560	360

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DTS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT 05...	<100	50	20	.0	0	<10	10
NOV 10...	<100	100	100	--	0	<10	10
DEC 08...	<100	80	70	.2	0	<10	10
JAN 06...	<100	90	50	.0	0	<10	20
FEB 08...	<100	50	30	.0	0	<10	10
MAR 08...	<100	40	30	.0	0	<10	20
APR 11...	<100	50	20	.0	0	<10	10
MAY 11...	<100	40	30	.0	0	<10	20
JUN 08...	<100	80	30	.0	0	<10	30
JUL 13...	<100	30	20	.0	0	<10	20
AUG 10...	<100	30	20	.0	0	<10	30
24...	<100	30	0	.0	0	<10	60
SEP 06...	<100	30	20	.0	0	<10	110

< 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

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
OCT				
05...	1700	2.0	.01	2
NOV				
10...	0730	1.3	.01	2
DEC				
08...	1045	1.4	.00	2
JAN				
06...	1400	2.6	.00	0
FEB				
08...	1430	2.2	.00	0
MAR				
08...	1030	.9	.00	4
APR				
11...	1800	3.4	.00	8
MAY				
11...	1030	3.0	.00	4
JUN				
08...	0930	3.2	.00	4
JUL				
13...	1730	2.4	.00	5
AUG				
10...	1200	2.4	.00	6
24...	1240	3.0	.00	2
SEPT				
06...	1030	1.8	.00	4

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOASS CHLORO- PHYLL RATIO PFRY- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CELLS PFR MI)
MAY			
11...	1030	102000	130

LITTLE COLORADO RIVER BASIN

09383400 LITTLE COLORADO RIVER AT GREER, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY 11, 77
TIME	1030
TOTAL CELLS/ML	130
DIVERSITY: DIVISION	0.9
..CLASS	0.9
...ORDER	0.9
....FAMILY	3.0
.....GENUS	3.2

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
....DCCYSTACEAE		
.....TETRAEDRON	3	2
...ZYGNEMATALES		
....DESMIDIACEAE		
.....CLOSTERIUM	3	2
CHRYSOPHYTA		
..BACTILLARIOPHYCEAE		
...PENNACEAE		
....ACHNANTHACEAE		
.....ACHNANTHES	8	6
....CUCCONFIS	11	8
...CYMBELLACEAE		
....CYMBELLA	8	6
....EPITHEMIA	3	2
...DIATOMACEAE		
....DIATOMA	8	6
...FRAGILARIACEAE		
....FRAGILARIA	5	4
...GOMPHONEMACEAE		
....GOMPHONEMA	13	10
...NAVTICULACEAE		
....NAVICULA	8	6
...NITZSCHACEAE		
....NITZSCHIA	42#	33
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONIALES		
....NOSTOCACEAE		
.....ANABAENA	13	10
EUGLENOPHYTA (EUGLENIIDS)		
..EUGLENOPHYCEAE		
...EUGLENALFS		
....EUGLENACEAE		
.....EUGLENA	3	2

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

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

LITTLE COLORADO RIVER BASIN

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09383500 NUTRIOSO 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 winter periods, which are poor.

AVERAGE DISCHARGE.--10 years, 5.46 ft³/s (0.155 m³/s), 3,960 acre-ft/yr (4.88 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 or 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)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Apr. 18	2230	50 1.42	7.35 2.240	Aug. 22	2030	46 1.30	8.17 2.490
Aug. 12	1530	58 1.64	8.29 2.527	Sept. 3	1930	*90 2.55	8.54 2.603

No flow for many days.

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	.13	.13	.20	.20	.10	.20	.97	.30	.00	.00	.00	.25
2	.13	.13	.20	.20	.10	.30	.60	.30	.04	.00	.00	.37
3	.08	.13	.20	.20	.10	.30	.77	.30	.18	.00	.00	1.0
4	.04	.13	.20	.20	.20	.30	.56	.30	.18	.00	.00	7.9
5	.04	.13	.20	.20	.20	.30	.84	.30	.13	.11	.00	2.8
6	.00	.13	.20	.20	.20	.30	.71	.35	.13	.11	.00	1.6
7	.00	.13	.20	.20	.20	.20	1.3	.31	.13	.05	.00	1.0
8	.00	.13	.20	.20	.20	.31	6.8	.31	.15	.02	.00	.78
9	.00	.13	.20	.20	.20	.31	19	.27	.18	.00	.00	.66
10	.00	.13	.20	.20	.20	.30	16	.23	.00	.00	.00	.66
11	.00	.13	.20	.20	.20	.30	6.2	.27	.00	.01	.00	.78
12	.00	.13	.20	.20	.20	.30	5.8	.23	.00	.00	5.9	1.7
13	.00	.18	.20	.20	.20	.30	2.7	.23	.00	.09	1.7	1.6
14	.00	.20	.20	.20	.20	.20	1.6	.27	.00	.08	2.4	1.3
15	.04	.27	.20	.20	.20	.08	.60	.27	.00	.03	1.8	1.0
16	.04	.31	.20	.20	.20	.32	.29	.23	.00	.02	1.9	.72
17	.04	.20	.20	.20	.20	.35	.27	.13	.00	.02	.43	.60
18	.00	.30	.20	.20	.20	.48	.18	.08	.00	.01	.14	.40
19	.00	.30	.20	.20	.20	.44	.23	.08	.00	.01	.14	.40
20	.00	.30	.20	.20	.20	.44	.21	.13	.00	.01	.54	.31
21	.18	.30	.20	.20	.20	.48	.21	.23	.00	.04	.19	.25
22	.25	.20	.20	.10	.27	2.4	.23	.18	.00	.09	9.1	.19
23	.29	.20	.20	.10	.20	4.0	.18	.13	.00	.25	15	.25
24	.25	.30	.20	.10	.20	1.9	.23	.08	.00	.17	8.7	.49
25	.13	.30	.20	.10	.20	.57	.21	.04	.06	.16	4.6	.31
26	.08	.20	.20	.10	.20	.71	.29	.08	.09	.16	2.4	.25
27	.08	.20	.20	.10	.20	1.2	.44	.08	.05	.16	1.3	.43
28	.13	.20	.20	.10	.20	1.1	.52	.04	.00	.08	.72	.49
29	.18	.20	.20	.10	---	.84	.29	.04	.00	.04	.49	.31
30	.13	.20	.20	.10	---	.56	.29	.04	.00	.03	.21	.17
31	.13	---	.20	.10	---	.84	---	.04	---	.01	.25	---
TOTAL	2.67	5.92	6.20	5.20	6.67	20.63	69.22	6.32	1.32	1.80	58.01	78.15
MEAN	.086	.20	.20	.17	.24	.67	2.21	.20	.044	.058	1.87	1.27
MAX	.29	.31	.20	.20	.20	.40	.19	.30	.18	.25	.15	.10
MTN	.00	.13	.20	.10	.10	.08	.18	.04	.00	.00	.00	.17
AC-FT	5.3	12	12	10	13	41	137	13	2.6	3.6	115	76

CAL YR 1976 TOTAL 686.60 MEAN 1.88 MAY 27 MTN .00 AC-FT 1370
WTR YR 1977 TOTAL 222.11 MEAN .61 MAY 19 MTN .00 AC-FT 441

LITTLE COLORADO RIVER BASIN

09383550 NUTRIOSO CREEK BELOW NELSON RESERVOIR, NEAR SPRINGVILLE, AZ

LOCATION.--Lat 34°03'36", Long 109°11'40", in SE¼ 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.--10 years, 5.12 ft³/s (0.145 m³/s), 3,710 acre-ft/yr (4.57 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 or 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, 8.5 ft³/s (0.24 m³/s) July 9, gage height, 5.08 ft (1.548 m); minimum daily, 0.08 ft³/s (0.002 m³/s).

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	.10	.10	.09	.08	.12	.12	.11	.12	.14	.09	.10	.11
2	.10	.09	.10	.08	.12	.12	.11	.14	.12	.09	.10	.11
3	.10	.09	.08	.08	.12	.12	.12	.20	.12	.09	.09	.10
4	.10	.08	.08	.08	.14	.12	.11	.20	.12	.11	.10	.10
5	.10	.08	.08	.08	.14	.12	.10	.14	.12	.10	.10	.10
6	.09	.08	.08	.08	.14	.11	.10	2.6	.11	.10	.10	.10
7	.08	.08	.09	.08	.14	.11	.10	5.6	.12	.10	.10	.10
8	.08	.08	.09	.08	.12	.11	.11	7.3	.12	.08	.10	.10
9	.08	.08	.09	.08	.14	.11	.10	7.1	.12	3.1	.09	.10
10	.08	.08	.09	.08	.14	.10	.10	5.5	.11	8.2	.10	.10
11	.08	.08	.08	.08	.14	.10	.10	3.4	.11	8.0	.11	.10
12	.08	.08	.08	.09	.14	.10	.10	.12	.11	7.8	.11	.10
13	.09	.08	.08	.10	.14	.10	.14	.12	.12	7.8	.11	.10
14	.09	.08	.09	.10	.14	.10	.14	.12	.11	6.7	.12	.10
15	.09	.08	.09	.11	.14	.10	.39	.12	.11	6.2	.16	.11
16	.09	.08	.08	.11	.14	.10	.39	.12	.11	6.2	.10	.11
17	.09	.08	.08	.11	.14	.10	.27	.12	.11	4.9	.10	.10
18	.10	.08	.08	.12	.12	.10	.30	.12	.09	6.2	.10	.10
19	.10	.08	.08	.14	.12	.10	.27	.12	.09	6.2	.10	.10
20	.10	.08	.08	.14	.12	.10	.12	.14	.10	5.2	.10	.10
21	.10	.08	.08	.14	.12	.10	.11	.14	.09	.11	.11	.10
22	.10	.08	.08	.12	.12	.11	.11	.16	.09	.10	.13	.12
23	.10	.08	.08	.10	.12	.11	.18	.18	.09	.10	.11	.12
24	.10	.08	.08	.10	.12	.11	.18	.16	.09	.11	.10	.12
25	.10	.08	.08	.11	.11	.11	.16	.16	.09	.11	.10	.11
26	.10	.10	.08	.11	.12	.11	.14	.16	.09	.12	.10	.12
27	.10	.10	.08	.12	.11	.12	.11	.16	.09	.11	.10	.11
28	.10	.10	.08	.12	.11	.14	.14	.16	.09	.11	.10	.10
29	.10	.09	.08	.12	---	.14	.11	.14	.09	.11	.10	.10
30	.10	.09	.08	.11	---	.14	.12	.16	.09	.10	.11	.10
31	.10	---	.08	.12	---	.14	---	.16	---	.11	.12	---
TOTAL	2.92	2.52	2.57	3.17	3.59	3.47	4.64	35.14	3.16	78.45	3.27	3.14
MEAN	.094	.084	.083	.10	.13	.11	.15	1.13	.11	2.53	.11	.10
MAX	.10	.10	.10	.14	.14	.14	.39	7.3	.14	8.2	.16	.12
MIN	.08	.08	.08	.08	.11	.10	.10	.12	.09	.08	.09	.10
AC-FT	5.8	5.0	5.1	6.3	7.1	6.9	9.2	70	6.3	156	6.5	6.2

CAL YR 1976 TOTAL 437.94 MEAN 1.20 MAX 14 MIN .08 AC-FT 869
WTR YR 1977 TOTAL 146.04 MEAN .40 MAX 8.2 MIN .08 AC-FT 290

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

LOCATION.--Lat 34°19'50", long 109°21'18", in NE¼SE¼ sec.27, T.11 N., R.28 E., Apache County, Hydrologic Unit 15020001, on right bank 1.9 mi (3.1 km) downstream from Coyote Creek, 5 mi (8 km) upstream from Lyman Dam, and 12 mi (19 km) south of St. Johns.

DRAINAGE AREA.--747 mi² (1,935 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1940 to current year. Prior to October 1975 published as "above Lyman Reservoir."

GAGE.--Water-stage recorder. Datum of gage is 5,988.8 ft (1,825.39 m) above mean sea level. Prior to July 25, 1940, water-stage recorder at site 600 ft (180 m) upstream at datum 1.70 ft (0.518 m) higher. Aug. 2 to Oct. 27, 1940, nonrecording gage at site within 1 mi (1.6 km) upstream at different datum.

REMARKS.--Records fair. Flow regulated by many small reservoirs—combined capacity, about 15,500 acre-ft (19.1 hm³). Diversions for irrigation of about 6,700 acres (27.1 km²) above station.

AVERAGE DISCHARGE.--37 years, 20.8 ft³/s (0.589 m³/s), 15,070 acre-ft/yr (18.6 hm³/yr); median of yearly mean discharges, 15 ft³/s (0.42 m³/s), 10,900 acre-ft/yr (13 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s (453 m³/s) July 25, 1940 (gage height, 17.1 ft or 5.21 m, present datum, 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 (from graph recorded to 18.4 ft or 5.61 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 389 ft³/s (11.0 m³/s) Aug. 21, gage height, 4.42 ft (1.347 m), no peak above base of 400 ft³/s (11 m³/s); minimum daily, 0.50 ft³/s (0.014 m³/s) July 18, 19.

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	20	18	3.0	7.0	6.9	8.0	3.9	4.4	1.8	.60	4.0	10
2	20	18	3.0	5.5	6.9	8.0	4.0	2.9	1.8	.60	3.0	11
3	18	16	3.5	7.0	6.0	8.0	5.1	3.2	2.1	.60	2.0	33
4	18	16	4.0	5.5	6.0	8.0	4.5	3.6	2.5	.60	2.0	48
5	20	16	5.0	5.5	6.0	8.0	4.4	3.4	2.3	.60	2.9	40
6	20	16	6.0	6.0	6.0	8.0	4.7	3.7	2.1	.60	2.5	17
7	21	16	6.5	7.0	6.5	8.0	4.7	3.2	2.2	.60	1.7	15
8	22	15	6.5	7.0	6.5	8.0	22	2.9	2.3	.60	1.1	12
9	22	14	6.0	7.0	6.5	8.0	71	2.6	2.4	.60	.70	11
10	12	13	6.0	8.0	6.9	7.8	98	4.5	2.7	.60	1.0	9.0
11	12	12	5.5	8.0	7.3	7.3	42	5.6	2.3	.60	2.3	28
12	16	12	5.5	8.0	7.6	13	25	5.3	1.9	.60	1.0	22
13	16	12	5.5	7.0	7.3	8.3	23	5.3	1.8	.60	60	11
14	20	10	5.5	7.0	6.9	7.8	22	3.7	1.5	.70	20	10
15	19	9.6	5.5	7.0	6.9	7.1	20	3.0	1.4	.70	15	11
16	19	8.8	5.5	8.0	6.9	7.1	12	3.2	1.3	.70	10	11
17	19	8.0	5.0	9.0	6.9	8.3	9.3	2.9	1.3	.60	15	10
18	21	6.8	5.0	9.0	6.9	8.8	11	2.7	1.2	.50	35	6.7
19	22	6.0	5.0	9.0	7.1	11	9.6	2.5	1.2	.50	22	5.8
20	20	5.5	5.0	9.0	7.1	11	8.8	2.5	1.0	51	25	5.3
21	19	5.0	5.0	10	7.1	9.6	8.8	2.5	1.0	16	37	5.4
22	20	5.0	5.0	10	6.5	15	8.0	2.5	1.2	14	47	6.5
23	22	5.0	5.0	11	8.5	27	6.7	2.1	1.2	12	40	5.1
24	21	4.0	5.0	9.3	9.0	20	5.8	2.0	1.0	9.8	112	3.7
25	20	4.0	5.0	8.8	10	14	4.9	2.0	1.0	23	29	3.6
26	20	4.0	5.0	8.5	15	11	4.0	1.9	1.0	14	16	3.5
27	18	4.0	6.0	8.5	10	9.6	3.2	2.2	.80	24	12	3.0
28	19	4.0	6.0	7.8	8.0	8.0	2.9	2.1	.60	15	12	3.0
29	20	3.0	6.0	7.8	---	7.6	3.3	2.0	.60	10	12	3.7
30	20	3.0	7.0	7.8	---	7.1	2.9	1.9	.60	5.0	11	3.3
31	19	---	7.0	7.6	---	4.9	---	1.7	---	5.0	10	---
TOTAL	595	289.7	164.5	243.6	209.2	303.3	455.5	94.0	46.10	210.30	564.20	367.6
MEAN	19.2	9.66	5.31	7.86	7.47	9.78	15.2	3.03	1.54	6.78	18.2	12.3
MAX	22	18	7.0	11	15	27	98	5.6	2.7	51	112	48
MIN	12	3.0	3.0	5.5	6.0	4.9	2.9	1.7	.60	.50	.70	3.0
AC-FT	1180	575	326	483	415	602	903	186	91	417	1120	729
CAL YR 1976	TOTAL	6133.60	MEAN	16.8	MAX	150	MIN	.60	AC-FT	12170		
WTR YR 1977	TOTAL	3543.00	MEAN	9.71	MAX	112	MIN	.50	AC-FT	7030		

LITTLE COLORADO RIVER BASIN

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

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DTS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)
OCT 05...	1700	3.0	640	8.4	17.0	7	7.3	140	240	0	52	27
NOV 10...	1030	5.0	580	6.8	9.0	8	8.5	7	250	0	52	29
DEC 08...	1300	--	615	8.4	9.0	25	9.4	14	230	0	52	25
JAN 06...	1600	5.0	500	8.2	2.0	55	10.6	2	190	0	45	20
FEB 09...	0650	9.0	680	6.9	-1.0	7	7.2	24	210	0	47	22
MAR 08...	1200	7.7	545	8.7	11.0	15	10.0	17	200	0	47	21
APR 11...	1600	40.	200	8.3	16.0	85	7.8	340	82	0	20	7.9
MAY 11...	1400	5.0	575	--	24.0	10	6.8	32	220	0	52	23
JUN 08...	1230	1.0	705	8.2	23.0	10	7.3	1300	270	0	54	32
JUL 14...	0900	.50	700	8.2	21.0	7	7.8	1100	270	0	54	33
AUG 10...	0930	5.0	640	8.4	22.0	6	7.2	490	240	0	56	25
SEP 06...	1245	12	443	--	26.0	320	--	1600	180	0	45	16
DATE	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DTS- SOLVED SOLIDS PER AC-FT)
OCT 05...	52	1.5	3.8	379	5	23	20	.4	21	390	391	.53
NOV 10...	52	1.4	3.3	380	0	23	18	.4	19	381	384	.52
DEC 08...	47	1.3	3.1	352	0	18	14	.4	23	353	357	.48
JAN 06...	38	1.2	2.5	299	0	18	11	.4	19	310	302	.42
FEB 09...	41	1.2	2.4	321	0	19	18	.4	19	308	328	.42
MAR 08...	43	1.3	2.7	323	-1	19	17	.4	20	318	329	.43
APR 11...	12	.6	2.0	120	0	9.4	4.4	.2	15	117	131	.16
MAY 11...	45	1.3	3.7	330	--	14	24	.4	21	333	346	.45
JUN 08...	59	1.6	4.1	380	0	37	20	.5	22	391	416	.53
JUL 14...	65	1.7	4.8	400	0	38	18	.6	24	407	435	.55
AUG 10...	52	1.5	3.8	380	8	25	15	.5	25	383	398	.52
SEP 06...	30	1.0	3.9	260	--	14	10	.4	24	280	272	.38

LITTLE COLORADO RIVER BASIN

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DTS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DTS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT 05...	--	--	.01	.00	.43	--	.44	.10	.05
NOV 10...	--	--	.01	.01	.05	--	.06	.08	.00
DEC 08...	--	--	.14	.12	.30	--	.44	.20	.16
JAN 06...	.00	.00	.00	.00	.39	--	.39	.18	.13
FEB 09...	--	--	.00	.00	.41	--	.41	.18	.12
MAR 08...	--	--	.00	.00	.69	--	.69	.21	.16
APR 11...	--	--	.28	.16	.80	--	1.1	.31	.05
MAY 11...	--	--	.03	.00	.31	133	.30	.14	.08
JUN 08...	--	--	.01	.01	.34	--	.34	.06	.03
JUL 14...	--	--	.01	--	.34	--	.35	.08	--
AUG 10...	--	--	.02	--	.24	--	.26	.12	--
SEP 06...	--	--	.17	--	1.3	--	1.5	.29	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (R) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 05...	2	--	100	--	110	90	<10	--
NOV 10...	1	--	0	--	110	80	<10	--
DEC 08...	2	--	0	--	150	70	<10	--
JAN 06...	2	--	0	--	100	60	<10	--
FEB 09...	1	--	0	--	100	60	<10	--
MAR 08...	1	--	100	--	110	60	<10	--
APR 11...	4	--	300	--	60	40	<10	--
MAY 11...	2	2	0	30	320	70	<10	<1
JUN 08...	2	--	200	--	160	100	<10	--
JUL 14...	2	--	200	--	200	100	10	--
AUG 10...	2	--	200	--	170	90	<10	--
SEP 06...	3	--	500	--	120	80	10	--

< 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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MA- TERTAL (UG/G)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SELF- NIUM IN BOTTOM MA- TERTAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA- TERTAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA- TERTAL (UG/G)
OCT 05...	.0	--	0	--	<10	--	0	--
NOV 10...	--	--	0	--	<10	--	10	--
DEC 08...	.1	--	0	--	<10	--	10	--
JAN 06...	.0	--	0	--	<10	--	10	--
FEB 09...	.5	--	0	--	<10	--	10	--
MAR 08...	.1	--	0	--	<10	--	40	--
APR 11...	.0	--	0	--	<10	--	40	--
MAY 11...	.0	.0	0	0	<10	<1	20	6
JUN 08...	.0	--	0	--	<10	--	30	--
JUL 14...	.0	--	0	--	<10	--	40	--
AUG 10...	.0	--	0	--	<10	--	40	--
SEP 06...	.1	--	0	--	<10	--	60	--

DATE	TOTAL CHROM- IUM IN BOTTOM MA- TERTAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERTAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA- TERTAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT 05...	--	<10	--	560	60	<100	--	60	20
NOV 10...	--	<10	--	660	90	<100	--	60	40
DEC 08...	--	<10	--	1700	40	<100	--	110	20
JAN 06...	--	<10	--	1100	70	<100	--	80	20
FEB 09...	--	<10	--	440	20	<100	--	50	0
MAR 08...	--	<10	--	950	40	<100	--	70	20
APR 11...	--	10	--	10000	110	100	--	460	0
MAY 11...	1	30	3	750	50	<100	<10	80	10
JUN 08...	--	<10	--	370	40	<100	--	40	20
JUL 14...	--	<10	--	320	50	<100	--	110	50
AUG 10...	--	10	--	1200	50	<100	--	80	20
SEP 06...	--	<10	--	13000	60	<100	--	590	10

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

LITTLE COLORADO RIVER BASIN

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

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)
OCT 05...	1700	14	.01	--	2
NOV 10...	1030	3.1	.00	--	2
DEC 08...	1300	3.7	.00	--	3
JAN 06...	1600	2.2	.00	--	0
FEB 09...	0650	3.3	.00	--	0
MAR 08...	1200	3.9	.00	--	2
APR 11...	1600	11	.00	--	2
MAY 11...	1400	4.1	.00	0	6
JUN 08...	1230	3.6	.00	--	2
JUL 14...	0900	3.1	.00	--	4
AUG 10...	0930	3.1	.00	--	8
SEP 06...	1245	16	.00	--	3

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
MAY 11...	1400	--	960
JUN 08...	1230	8811	--

LITTLE COLORADO RIVER BASIN

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

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY 11, 77
TIME	1400
TOTAL CELLS/ML	960
DIVERSITY: DIVISION	1.4
..CLASS	1.4
...ORDER	1.7
...FAMILY	3.1
....GENUS	3.1

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...MICRACINTACEAE		
....MICRACINTIUM	36	4
...DUCYSTACEAE		
....ANKISTRODESMIUS	18	2
....CHODATELLA	*	0
....SELENASTRUM	*	0
...SCENEDESMACEAE		
...SCENEDESMUS	*	0
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
...CHARTERIA	22	2
...PHACOTACEAE		
....PHACOTUS	*	0
CHRYSTOPHYTA		
..BACTILLAPIOPHYCEAE		
...CENTRALES		
...COSCINUDISCACEAE		
...CYCLOTELLA	27	3
..PENNALES		
...ACHNANTHACEAE		
...COCCONEIS	9	1
...CYMBELLACEAE		
...EPITHEMIA	9	1
...DIATOMACEAE		
...DIATOMA	40	4
...GOMPHONEMACEAE		
...GOMPHONEMA	31	3
...NAVICULACEAE		
...CALONETS	*	0
...NAVICULA	27	3
...NITZSCHACEAE		
...NITZSCHIA	230#	24
...SURIARELLACEAE		
...CYMATOPLURA	*	0
...SURIARELLA	58	6
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCOCCALES		
...CHROCOCCOCCAEAE		
...AGMENELLUM	18	2
...HORMOGONALS		
...NOSTOCACEAE		
....ANABAENA	200#	25
...OSCILLATORIACEAE		
....OSCILLATORIA	180#	19
EUGLENOPHYTA (EUGLENOIDS)		
..CRYPTOPHYCEAE		
...CRYPTOMONIDAE		
...CRYPTOMONADACEAE		
....CRYPTOMONAS	*	0

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

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

LITTLE COLORADO RIVER BASIN

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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 current year (daily gage heights). 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) above mean sea level.

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 or 17.657 m); no storage at times in recent years.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 45.17 ft (13.768 m) Apr. 18-20; minimum, 31.82 ft (9.699 m) Sept. 26.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.32	43.96	43.74	43.93	44.36	44.58	44.72	44.71	41.80	38.59	35.47	33.00
2	44.32	43.95	43.75	43.94	44.37	44.58	44.71	44.66	41.70	38.46	35.36	32.90
3	44.30	43.94	43.75	43.97	44.38	44.58	44.71	44.62	41.60	38.33	35.20	32.90
4	44.30	43.93	43.75	43.99	44.38	44.59	44.70	44.52	41.50	38.21	35.01	32.98
5	44.28	43.91	43.77	44.00	44.39	44.59	44.70	44.34	41.40	38.09	34.87	32.98
6	44.27	43.90	43.79	44.01	44.39	44.60	44.71	44.25	41.30	37.96	34.72	32.88
7	44.26	43.90	43.79	44.01	44.41	44.60	44.71	44.17	41.30	37.81	34.65	32.77
8	44.23	43.89	43.80	44.02	44.43	44.60	44.71	44.15	41.20	37.68	34.49	32.64
9	44.20	43.88	43.80	44.02	44.43	44.63	44.82	44.10	41.12	37.58	34.37	32.52
10	44.19	43.88	43.81	44.03	44.44	44.60	44.98	44.00	40.93	37.43	34.22	32.38
11	44.17	43.88	43.80	44.04	44.45	44.59	45.04	43.90	40.84	37.30	34.12	32.28
12	44.15	43.87	43.80	44.05	44.47	44.59	45.07	43.80	40.74	37.20	33.99	32.30
13	44.14	43.86	43.80	44.03	44.47	44.60	45.09	43.70	40.67	37.08	33.91	32.20
14	44.15	43.86	43.81	44.01	44.47	44.60	45.11	43.60	40.58	36.93	33.85	32.08
15	44.10	43.84	43.81	43.99	44.48	44.60	45.13	43.50	40.48	36.80	33.90	31.95
16	44.08	43.84	43.82	43.98	44.48	44.60	45.16	43.40	40.38	36.68	33.86	31.92
17	44.08	43.84	43.82	43.97	44.49	44.60	45.16	43.30	40.29	36.56	33.85	31.92
18	44.06	43.83	43.82	43.97	44.50	44.59	45.17	43.20	40.17	36.38	33.77	31.92
19	44.05	43.82	43.83	44.13	44.50	44.59	45.17	43.10	40.07	36.26	33.72	31.90
20	44.03	43.81	43.84	44.14	44.50	44.60	45.17	43.00	39.93	36.16	33.67	31.89
21	44.01	43.80	43.84	44.17	44.51	44.60	45.16	42.90	39.88	36.11	33.59	31.89
22	44.01	43.79	43.84	44.21	44.52	44.60	45.16	42.80	39.67	36.03	33.67	31.87
23	44.05	43.78	43.84	44.24	44.50	44.60	45.15	42.70	39.55	35.98	33.72	31.87
24	44.03	43.76	43.85	44.24	44.52	44.64	45.14	42.60	39.43	35.88	33.77	31.85
25	44.03	43.75	43.86	44.17	44.54	44.64	45.14	42.50	39.31	35.80	33.72	31.83
26	44.00	43.74	43.87	44.30	44.56	44.65	45.11	42.40	39.17	35.74	33.64	31.82
27	43.99	43.74	43.87	44.33	44.56	44.70	45.03	42.30	39.05	35.68	33.57	31.92
28	43.98	43.75	43.88	44.33	44.58	44.70	44.96	42.20	38.94	35.65	33.51	31.94
29	43.98	43.75	43.89	44.34	---	44.72	44.89	42.10	38.82	35.65	33.39	31.92
30	43.97	43.74	43.92	44.35	---	44.73	44.79	42.00	38.69	35.62	33.20	31.92
31	43.97	---	43.92	44.35	---	44.73	---	41.90	---	35.60	33.13	---
TOTAL	1367.70	1315.19	1358.48	1367.26	1245.08	1383.22	1349.27	1344.42	1210.51	1141.23	1055.91	967.14
MEAN	44.12	43.84	43.82	44.11	44.47	44.62	44.98	43.37	40.35	36.81	34.06	32.24
MAX	44.32	43.96	43.92	44.35	44.58	44.73	45.17	44.71	41.80	38.59	35.47	33.00
MIN	43.97	43.74	43.74	43.93	44.36	44.58	44.70	41.90	38.69	35.60	33.13	31.82
CAL YR 1976	TOTAL	17467.13	MEAN	47.72	MAX	52.50	MIN	43.74				
WTR YR 1977	TOTAL	15105.41	MEAN	41.38	MAX	45.17	MIN	31.82				

LITTLE COLORADO RIVER BASIN

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) above mean sea level.

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.--25 years (1950-53, 1955-77), 11.6 ft³/s (0.329 m³/s), 8,400 acre-ft/yr (10.4 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	24	28	37	20	32
2	.00	.00	.00	.00	.00	.00	.00	24	28	37	28	32
3	.00	.00	.00	.00	.00	.00	.00	24	28	37	31	33
4	.00	.00	.00	.00	.00	.00	.00	24	28	37	32	33
5	.00	.00	.00	.00	.00	.00	.00	24	28	37	33	34
6	.00	.00	.00	.00	.00	.00	.00	27	28	37	33	35
7	.00	.00	.00	.00	.00	.00	.00	28	22	37	32	34
8	.00	.00	.00	.00	.00	.00	.00	28	22	37	32	35
9	.00	.00	.00	.00	.00	.00	.00	28	24	37	31	35
10	.00	.00	.00	.00	.00	.00	.00	28	26	36	31	35
11	.00	.00	.00	.00	.00	.00	.00	29	28	36	31	36
12	.00	.00	.00	.00	.00	.00	.00	29	27	36	31	36
13	.00	.00	.00	.00	.00	.00	.00	29	27	36	30	36
14	.00	.00	.00	.00	.00	.00	.00	29	26	36	30	36
15	.00	.00	.00	.00	.00	.00	.00	28	25	36	30	36
16	.00	.00	.00	.00	.00	.00	.00	28	25	36	30	.40
17	.00	.00	.00	.00	.00	.00	.00	28	30	36	30	.00
18	.00	.00	.00	.00	.00	.00	.00	28	34	34	30	.00
19	.00	.00	.00	.00	.00	.00	.00	28	35	33	30	.00
20	.00	.00	.00	.00	.00	.00	.00	28	38	32	31	.00
21	.00	.00	.00	.00	.00	.00	.00	28	38	32	32	.00
22	.00	.00	.00	.00	.00	.00	.00	28	38	32	32	.00
23	.00	.00	.00	.00	.00	.00	.00	28	38	32	32	.00
24	.00	.00	.00	.00	.00	.00	.00	29	38	32	32	.00
25	.00	.00	.00	.00	.00	.00	.00	29	38	23	32	.00
26	.00	.00	.00	.00	.00	.00	15	28	38	21	32	.00
27	.00	.00	.00	.00	.00	.00	21	28	37	21	32	.00
28	.00	.00	.00	.00	.00	.00	20	28	36	5.2	32	.00
29	.00	.00	.00	.00	---	.00	20	28	34	.00	32	.00
30	.00	.00	.00	.00	---	.00	23	29	34	.00	32	.00
31	.00	---	.00	.00	---	.00	---	29	---	.00	32	---
TOTAL	.00	.00	.00	.00	.00	.00	99.00	855	926	918.20	958	518.40
MEAN	.000	.000	.000	.000	.000	.000	3.30	27.6	30.9	29.6	30.9	17.3
MAX	.00	.00	.00	.00	.00	.00	23	29	38	37	33	36
MIN	.00	.00	.00	.00	.00	.00	.00	24	22	.00	20	.00
AC-FT	.00	.00	.00	.00	.00	.00	196	1700	1840	1820	1900	1030
CAL YR 1976	TOTAL	5268.30	MEAN 14.4	MAX 47	MIN .00	AC-FT 10450						
WTR YR 1977	TOTAL	4274.60	MEAN 11.7	MAX 38	MIN .00	AC-FT 8480						

LITTLE COLORADO RIVER BASIN

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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) above mean sea level. 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.--34 years (1941-53, 1955-77), 3.22 ft³/s (0.091 m³/s), 2,330 acre-ft/yr (2.87 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, 6.4 ft³/s (0.18 m³/s) July 11, 12; minimum daily, 0.12 ft³/s (0.003 m³/s) Sept. 30.

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	1.7	1.5	1.1	.68	.78	.59	.51	2.8	4.5	5.7	4.8	1.8
2	1.7	1.5	1.1	.78	.78	.59	.59	3.0	4.5	5.7	4.8	1.5
3	1.7	1.5	1.1	.78	.78	.59	.59	4.2	4.5	5.4	4.8	1.7
4	1.7	1.5	1.1	.78	.78	.59	.59	4.8	4.5	5.7	4.8	1.7
5	1.7	1.5	1.1	.78	.78	.59	.59	5.1	4.5	5.1	4.8	1.5
6	1.7	1.5	1.1	.78	.78	.59	.59	5.4	4.5	4.8	4.8	1.5
7	1.5	1.5	1.1	.78	.78	.59	.59	5.7	5.0	4.8	4.8	1.5
8	1.2	1.5	1.1	.78	.78	.59	.59	5.4	5.1	5.1	4.8	1.7
9	1.2	1.5	.89	.78	.78	.59	.51	5.4	4.8	5.1	4.8	1.8
10	1.2	1.5	.59	.78	.78	.59	.44	6.0	4.5	6.0	4.8	1.7
11	1.2	1.5	.59	.68	.78	.59	.44	6.0	4.5	6.4	4.8	1.5
12	1.2	1.5	.59	.68	.78	.59	.37	5.7	4.2	6.4	5.1	1.4
13	1.2	1.5	.59	.68	.78	.59	.31	5.7	4.2	6.0	5.1	1.4
14	1.5	1.5	.51	.68	.78	.59	.26	6.0	3.9	6.0	5.4	1.4
15	1.5	1.5	.51	.68	.78	.59	.26	5.7	3.7	6.0	5.4	1.4
16	1.5	1.5	.59	.68	.78	.59	.26	5.4	3.7	5.7	5.4	.31
17	1.5	1.5	.59	.68	.78	.59	.22	5.4	3.2	5.7	4.8	.18
18	1.5	1.4	.59	.68	.78	.59	.22	5.1	4.2	5.4	4.5	.22
19	1.5	1.4	.59	.68	.78	.59	.22	5.4	3.9	5.1	5.1	.18
20	1.5	1.4	.59	.68	.78	.59	.26	5.4	4.8	5.7	3.4	.18
21	1.5	1.4	.59	.68	.78	.59	.26	5.4	5.1	5.7	2.8	.18
22	1.7	1.4	.59	.68	.68	.51	.26	5.7	5.1	5.7	2.6	.18
23	1.5	1.4	.59	.78	.68	.51	.37	5.7	5.4	5.7	2.6	.18
24	1.5	1.4	.51	.78	.68	.51	.44	4.8	5.4	6.0	2.0	.18
25	1.7	1.4	.51	.78	.59	.51	.51	4.5	5.4	5.7	1.4	.15
26	1.7	1.4	.59	.78	.59	.59	1.7	4.5	5.7	5.7	1.7	.15
27	1.7	1.2	.59	.78	.59	.59	2.8	4.5	5.7	5.7	1.7	.15
28	1.8	1.1	.59	.78	.59	.51	3.0	4.5	5.7	3.4	1.7	.15
29	1.8	1.1	.59	.78	---	.51	3.0	4.5	5.4	2.8	1.8	.18
30	1.5	1.1	.59	.78	---	.59	2.8	4.5	5.7	2.2	1.8	.12
31	1.5	---	.59	.78	---	.59	---	4.5	---	2.2	1.8	---
TOTAL	47.3	42.6	22.35	22.88	20.78	17.81	23.55	156.7	141.3	162.6	118.9	26.19
MEAN	1.53	1.42	.72	.74	.74	.57	.79	5.05	4.71	5.25	3.84	.87
MAX	1.8	1.5	1.1	.78	.78	.59	3.0	6.0	5.7	6.4	5.4	1.8
MIN	1.2	1.1	.51	.68	.59	.51	.22	2.8	3.2	2.2	1.4	.12
AC-FT	94	84	44	45	41	35	47	311	280	323	236	52

CAL YR 1976 TOTAL 968.78 MEAN 2.65 MAX 7.8 MIN .51 AC-FT 1920
WTR YR 1977 TOTAL 802.96 MEAN 2.20 MAX 6.4 MIN .12 AC-FT 1590

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 except those for December and January, which are poor. 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 km³), the largest of which is Lyman Lake (see sta 09384500).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92 ft³/s (2.61 m³/s) Aug. 4, 1976 (gage height, 2.50 ft or 0.762 m), from rating curve extended above 13 ft³/s (0.4 m³/s) by logarithmic plotting; minimum daily, 0.09 ft³/s (0.003 m³/s) June 16, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) from rating curve extended above 13 ft³/s (0.4 m³/s) by logarithmic plotting and peak discharges above base of 40 ft³/s (1.133 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)
July 25	2200	43	1.22	2.01	0.613	Sept. 4	1700	44	1.25	2.02	0.616
Aug. 14	0545	*68	1.93	2.26	0.689	Sept. 28	0845	46	1.30	2.06	0.628

Minimum daily, 0.09 ft³/s (0.003 m³/s) June 16.

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	5.0	9.0	8.5	12	9.2	8.4	10	5.1	1.0	1.5	2.1	1.0
2	4.0	9.1	7.5	13	8.8	8.6	9.2	4.8	1.1	.62	.58	1.0
3	3.0	8.9	7.0	13	8.5	9.0	10	4.5	1.3	1.0	.95	.25
4	3.0	8.9	7.0	12	8.7	9.5	12	3.4	.62	1.8	7.3	18
5	5.2	9.0	7.0	11	8.9	9.6	11	2.9	1.0	2.4	1.7	6.3
6	6.7	10	6.5	10	9.3	8.7	11	2.2	1.5	2.0	1.2	2.5
7	6.2	9.2	6.5	8.0	9.6	6.6	10	1.8	1.2	1.3	.86	1.8
8	6.1	9.5	6.5	7.0	9.2	6.1	10	1.6	.74	.42	.82	1.9
9	6.3	9.6	6.5	3.5	6.9	6.0	9.6	1.5	.87	.55	1.2	.50
10	6.7	9.6	6.5	1.5	7.5	6.3	9.6	1.6	.74	1.5	.73	.59
11	5.4	9.4	7.0	2.0	8.2	5.5	9.2	2.0	.62	1.7	1.6	1.6
12	2.5	9.8	7.0	3.5	4.5	6.8	8.4	1.8	.62	1.6	3.3	2.6
13	.82	10	8.0	4.0	1.5	8.2	8.4	1.6	.61	1.1	4.0	4.6
14	1.5	10	10	4.5	3.6	7.6	8.4	1.8	.32	.85	30	5.2
15	1.5	10	10	4.5	3.8	8.0	7.2	1.8	.10	.47	9.4	3.7
16	1.2	9.9	8.0	5.0	3.4	8.0	7.2	1.8	.09	1.7	13	2.8
17	2.4	9.4	8.0	5.0	3.4	6.8	7.6	1.8	.10	1.1	7.4	2.5
18	2.8	9.5	8.0	6.0	3.5	7.6	3.1	1.5	.12	.80	5.7	1.9
19	2.8	10	9.2	8.0	5.4	7.2	1.0	1.1	.12	1.3	4.6	2.4
20	3.2	10	9.6	10	5.8	6.1	6.8	.87	.32	1.4	4.0	1.1
21	3.9	10	8.0	12	5.1	7.6	5.4	1.1	.41	.54	4.3	1.3
22	8.4	10	10	14	4.6	8.0	4.5	1.5	1.1	1.5	4.5	1.3
23	10	9.9	10	18	4.3	8.0	4.5	1.8	1.3	5.7	3.0	.70
24	9.8	10	8.0	14	5.6	8.0	4.8	1.6	1.6	8.5	2.5	1.2
25	9.1	10	8.0	10	9.4	8.0	6.8	1.5	2.4	15	2.0	.83
26	8.8	9.6	7.0	10	9.6	8.0	9.2	1.5	3.1	19	2.0	.24
27	8.8	8.8	6.0	10	8.8	10	8.0	1.3	2.9	5.3	2.0	.32
28	9.0	9.5	6.0	9.6	8.2	11	3.4	1.0	3.4	3.2	2.0	32
29	9.3	10	6.0	9.6	---	12	6.8	.87	3.1	3.0	2.0	8.0
30	9.1	12	8.5	9.6	---	13	8.0	.87	2.4	2.2	1.5	3.1
31	9.2	---	12	9.6	---	13	---	1.0	---	1.6	1.5	---
TOTAL	171.72	290.6	243.8	269.9	185.3	257.2	231.1	59.51	34.80	90.65	127.74	111.23
MEAN	5.54	9.69	7.86	8.71	6.62	8.30	7.70	1.92	1.16	2.92	4.12	3.71
MAX	10	12	12	18	9.6	13	12	5.1	3.4	19	30	32
MIN	.82	8.8	6.0	1.5	1.5	5.5	1.0	.87	.09	.42	.58	.24
AC-FT	341	576	484	535	368	510	458	118	69	180	253	221

CAL YR 1976 TOTAL 2126.01 MEAN 5.81 MAX 48 MIN .10 AC-FT 4220
WTR YR 1977 TOTAL 2073.55 MEAN 5.68 MAX 32 MIN .09 AC-FT 4110

LITTLE COLORADO RIVER BASIN

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

AVERAGE DISCHARGE.--8 years, 8.70 ft³/s (0.246 m³/s), 6,300 acre-ft/yr (7.77 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 ft (1.234 m), 3.94 ft (1.201 m), 5.16 ft (1.573 m), and 6.61 ft (2.015 m); no flow for many days.

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)
July 19	2330	*2,320 65.7	5.56 1.695	Aug. 17	1900	382 10.8	4.37 1.332
Aug. 11	1930	2,200 62.3	5.50 1.676				

No flow for many days.

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	.00	.00	.00	.10	.20	.90	1.8	.60	.00	.00	.49	.02
2	.00	.00	.00	.08	.20	.90	1.0	.78	.00	.00	.00	3.8
3	.02	.00	.00	.00	.40	1.0	2.4	.58	.00	.00	.00	6.0
4	.00	.00	.00	.12	.50	1.0	2.1	.58	.00	.00	.00	.59
5	.00	.00	.00	.10	.60	1.2	2.0	.40	.00	18	.00	.36
6	.00	.00	.00	.12	.70	1.2	2.7	.52	.00	4.6	.00	.15
7	.00	.00	.00	.11	1.0	1.4	1.5	.67	.00	.45	.00	.11
8	.00	.00	.00	.11	1.1	1.4	1.0	.90	.00	.01	.00	.07
9	.00	.00	.00	.08	1.0	1.5	1.1	1.0	.00	.00	.00	.05
10	.00	.00	.00	.10	.90	1.5	1.0	1.1	.00	.00	.00	.05
11	.00	.00	.04	.12	.92	1.2	1.3	1.4	.00	.00	213	11
12	.00	.00	.60	.10	.95	1.5	1.2	1.1	.00	.00	42	4.7
13	.00	.00	.46	.12	.95	1.4	.98	.92	.00	.00	8.2	5.4
14	.00	.00	.50	.10	.95	2.7	.87	.17	.00	.00	2.7	1.1
15	.00	.00	.58	.08	1.0	1.9	.77	.75	.00	.00	15	.55
16	.00	.00	.44	.10	1.0	2.2	.87	.30	.00	.00	90	.32
17	.00	.00	.46	.10	1.1	1.9	.84	.10	.00	.00	132	.27
18	.00	.00	.47	.11	1.1	2.9	.68	.00	.00	.75	56	.22
19	.00	.00	.54	.12	1.1	2.2	.54	.00	.00	197	72	.22
20	.00	.00	.50	.15	1.2	3.2	.65	.00	.00	369	78	.22
21	.00	.00	.46	.12	1.1	2.2	.66	.00	.00	60	11	.24
22	.00	.00	.45	.11	1.0	2.3	.52	.00	.00	7.1	4.7	.26
23	.00	.00	.34	.10	.95	1.8	.50	.00	.00	2.0	2.2	.38
24	.00	.00	.32	.10	.95	3.5	.52	.00	.00	3.4	.93	.52
25	.00	.00	.31	.10	1.0	2.0	.58	.00	.00	86	.26	.40
26	.00	.00	.31	.10	.95	2.4	.63	.00	.00	7.1	.12	.24
27	.00	.00	.43	.12	.92	2.9	.58	.00	.00	.84	.08	.50
28	.00	.00	.24	.11	.90	2.5	.56	.00	.00	1.2	.07	6.9
29	.00	.00	.40	.12	---	2.8	.56	.00	.00	1.8	.06	1.4
30	.00	.00	.30	.11	---	5.1	.49	.00	.00	1.1	.05	.42
31	.00	---	.20	.10	---	2.5	---	.00	---	.45	.04	---
TOTAL	.02	.00	8.25	3.36	24.74	63.10	32.70	12.07	.00	795.05	731.90	46.50
MEAN	.001	.000	.27	.11	.88	2.04	1.12	.30	.000	25.6	23.6	1.55
MAX	.02	.00	.60	.15	1.2	5.1	3.4	1.4	.00	769	213	11
MIN	.00	.00	.00	.08	.20	.90	.44	.00	.00	.00	.00	.02
AC-FT	.04	.00	17	6.7	49	125	67	24	.00	1580	1450	92
DAY	YR 1976	TOTAL	1184.48	MEAN	3.24	MAY	270	MIN	.00	AC-FT	2350	
WTR	YR 1977	TOTAL	1718.79	MEAN	4.71	MAY	360	MIN	.00	AC-FT	3410	

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ

LOCATION.--Lat 34°10'46", long 109°59'14", in SW¼ 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 Jacques 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 fair except those for December and January 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). Divisions for irrigation of about 250 acres (1.01 km²) above station.

AVERAGE DISCHARGE.--24 years, 10.8 ft³/s (0.306 m³/s), 7,820 acre-ft/yr (9.64 hm³/yr); median of yearly mean discharges, 7.3 ft³/s (0.21 m³/s), 5,300 acre-ft/yr (6.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,450 ft³/s (154 m³/s) Dec. 26, 1971 (gage height, 9.53 ft or 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, 35 ft³/s (0.99 m³/s) Apr. 8, gage height, 2.64 ft (0.805 m), base discharge, 100 ft³/s (2.8 m³/s); minimum daily, 0.20 ft³/s (0.006 m³/s) Aug. 18-25.

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	.98	1.0	1.0	5.0	1.1	3.4	6.0	.77	6.6	8.2	1.4	2.5
2	1.4	.89	1.0	6.0	.84	3.6	6.0	.64	8.9	6.8	1.8	3.5
3	1.2	.90	1.0	6.0	.63	3.3	6.0	.56	9.2	6.6	3.3	4.7
4	.91	.90	1.0	6.0	.58	3.1	7.0	5.4	7.6	6.9	4.1	3.9
5	.86	.80	1.0	6.0	.55	3.1	9.8	4.4	9.7	7.2	3.8	3.4
6	.83	.85	1.0	6.0	.87	3.0	17	4.5	11	7.0	3.7	3.3
7	.80	.90	1.0	6.5	.94	3.1	17	4.0	10	7.0	4.0	3.3
8	.80	.90	1.0	6.6	.97	3.3	28	3.8	8.2	6.9	2.6	3.3
9	.70	.84	1.0	6.8	.97	3.4	24	3.8	7.9	7.0	2.4	2.8
10	.70	.60	1.0	6.4	1.2	3.7	16	3.8	8.3	7.1	2.9	3.0
11	.80	.49	1.0	6.8	1.2	3.4	10	4.1	8.8	7.8	4.0	3.5
12	.70	.40	1.0	6.8	1.0	3.2	7.4	4.1	8.1	7.0	4.0	3.8
13	.50	.33	1.0	7.1	1.0	3.1	5.9	4.2	7.9	7.5	4.0	3.4
14	.50	.29	1.0	7.0	1.0	3.2	4.4	4.1	8.0	7.1	4.0	3.5
15	.50	.27	1.0	7.0	1.1	3.4	3.3	4.4	8.4	6.4	4.0	3.4
16	.50	.28	1.0	7.1	1.1	3.4	3.1	4.7	7.9	6.1	4.0	3.6
17	.60	.30	1.0	6.9	1.1	3.5	2.8	6.2	8.0	5.9	2.0	3.4
18	.80	.30	1.0	6.8	1.1	3.5	2.3	6.6	7.8	4.8	.20	3.4
19	.80	.31	1.0	6.6	1.1	3.5	2.0	6.8	7.8	6.6	.20	3.9
20	.80	.40	1.0	6.6	.87	3.5	1.6	5.9	7.8	6.4	.20	3.9
21	.90	.44	1.0	6.5	.84	3.5	1.3	6.1	7.6	7.4	.20	3.8
22	1.1	.49	1.0	6.4	.90	3.7	1.1	6.2	7.9	5.3	.20	3.9
23	1.1	.55	1.0	6.3	.90	3.5	1.0	7.2	7.8	3.2	.20	4.0
24	1.2	.55	1.0	5.7	1.1	3.4	1.0	9.0	7.7	1.8	.20	3.7
25	1.1	.56	1.0	4.9	2.4	3.4	1.1	9.1	7.8	.79	.20	3.5
26	1.0	.58	1.0	4.5	2.8	3.5	1.3	9.1	7.9	1.6	2.0	3.4
27	.90	.85	1.0	4.0	3.0	4.0	1.3	9.2	7.9	1.6	3.0	5.8
28	1.0	1.0	1.0	3.3	3.0	4.2	1.0	11	8.0	1.6	3.0	3.4
29	1.0	1.0	1.0	3.0	---	4.3	.93	9.7	7.8	.49	3.0	1.2
30	1.0	1.0	1.0	1.5	---	4.5	.89	8.9	8.3	.87	3.0	.77
31	1.0	---	1.0	1.1	---	6.2	---	8.4	---	1.5	3.0	---
TOTAL	26.98	18.97	31.0	177.2	34.16	110.9	190.52	176.67	246.6	162.45	74.60	102.97
MEAN	.87	.63	1.00	5.72	1.22	3.58	6.35	5.70	8.22	5.24	2.41	3.43
MAX	1.4	1.0	1.0	7.1	3.0	6.2	28	11	11	8.2	4.1	5.8
MIN	.50	.27	1.0	1.1	.55	3.0	.89	.56	6.6	.49	.20	.77
AC=FT	54	38	61	351	68	220	378	350	489	322	148	204
CAL YR 1976	TOTAL	3470.54	MEAN	9.48	MAX	300	MIN	.27	AC=FT	6880		
WTR YR 1977	TOTAL	1353.02	MEAN	3.71	MAX	28	MIN	.20	AC=FT	2680		

LITTLE COLORADO RIVER BASIN

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09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHMS)	PH	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	
DATE	TIME	(CFS)		(UNITS)									
OCT 05...	0900	.86	240	8.5	12.5	4	8.2	4	110	0	22	13	
NOV 09...	1530	.84	185	8.1	9.0	2	8.6	2	95	0	20	11	
DEC 08...	1615	1.1	260	8.2	1.0	6	11.0	1	110	0	23	13	
JAN 06...	0900	.97	250	8.2	-2.0	5	11.6	0	120	0	23	14	
FEB 08...	1300	.84	215	8.5	14.0	3	9.2	0	100	0	21	12	
MAR 07...	1730	1.9	290	8.4	7.0	2	9.5	0	120	0	24	14	
APR 12...	0900	7.6	170	8.3	9.0	9	9.2	8	81	0	17	9.3	
MAY 11...	0600	4.0	160	7.3	6.0	10	7.6	5	81	0	17	9.3	
JUN 08...	1500	7.8	148	8.6	18.0	7	8.1	20	70	3	15	8.0	
JUL 12...	1500	7.8	170	8.2	22.0	15	6.3	73	80	0	16	9.7	
AUG 09...	1600	1.2	250	8.2	22.0	32	6.0	45	110	0	21	14	
SEP 05...	1445	3.1	230	--	23.5	15	--	130	110	0	23	13	
		DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AN- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 05...	9.1	.4	2.2	139	0	5.2	6.8	.1	11	136	138	.19	
NOV 09...	7.3	.3	1.5	125	0	1.4	4.7	.1	12	129	120	.18	
DEC 08...	11	.5	1.6	139	0	8.1	6.4	.1	15	147	148	.20	
JAN 06...	8.9	.4	1.9	151	0	4.5	5.8	.1	6.0	147	139	.20	
FEB 08...	7.8	.3	1.6	126	0	9.1	6.2	.1	11	136	131	.19	
MAR 07...	9.9	.4	1.9	148	0	6.2	6.1	.1	8.3	150	144	.20	
APR 12...	6.3	.3	1.7	99	0	7.1	3.4	.1	11	92	105	.13	
MAY 11...	6.9	.3	1.8	100	0	6.6	3.3	.1	8.8	106	103	.14	
JUN 08...	5.8	.3	1.7	82	0	7.3	2.3	.1	9.5	87	90	.12	
JUL 12...	6.9	.3	1.8	98	0	3.9	3.9	.1	9.6	106	100	.14	
AUG 09...	10	.4	2.2	150	0	3.6	6.5	.1	9.2	130	141	.18	
SEP 05...	8.4	.3	1.9	140	--	2.8	5.3	.1	11	133	135	.18	

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
OCT 05...	--	--	.01	.00	.43	--	.44	.04	.00
NOV 09...	.01	.00	.03	.01	.36	--	.39	.03	.00
DEC 08...	--	--	.17	.17	.29	--	.46	.02	.02
JAN 06...	.00	.00	.11	.00	.15	--	.26	.06	.01
FEB 08...	--	--	.00	.00	.28	--	.28	.04	.01
MAR 07...	--	--	.01	.01	.54	--	.55	.03	.01
APR 12...	--	--	.10	.09	.35	--	.45	.01	.00
MAY 11...	--	--	.02	.01	.50	2900	.52	.06	.02
JUN 08...	--	--	.01	.01	.30	--	.31	.05	.01
JUL 12...	--	--	.04	--	.61	--	.65	.08	--
AUG 09...	--	--	.19	--	.75	--	.94	.09	--
SEP 05...	--	--	.07	--	.81	--	.88	.06	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 05...	2	--	0	--	50	30	<10	--
NOV 09...	0	--	0	--	70	20	<10	--
DEC 08...	1	--	0	--	90	20	<10	--
JAN 06...	1	--	0	--	60	10	<10	--
FEB 08...	1	--	0	--	100	20	<10	--
MAR 07...	1	--	0	--	200	20	<10	--
APR 12...	1	--	0	--	60	20	<10	--
MAY 11...	2	5	0	170	80	20	<10	<1
JUN 08...	1	--	100	--	70	20	<10	--
JUL 12...	0	--	0	--	150	20	<10	--
AUG 09...	4	--	0	--	120	30	<10	--
SEP 05...	3	--	0	--	80	30	20	--

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

LITTLE COLORADO RIVER BASIN

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09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHROMIUM IN BOTTOM MATERIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MATERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FF) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MATERIAL (UG/G)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT 05...	--	<10	--	360	70	<100	--	20	10
NOV 09...	--	<10	--	400	70	<100	--	10	10
DEC 08...	--	<10	--	290	110	<100	--	20	20
JAN 06...	--	10	--	170	150	<100	--	10	0
FEB 08...	--	<10	--	320	90	<100	--	20	10
MAR 07...	--	<10	--	200	90	<100	--	30	0
APR 12...	--	<10	--	620	100	<100	--	30	10
MAY 11...	25	10	24	730	230	<100	40	50	30
JUN 08...	--	<10	--	370	140	<100	--	20	0
JUL 12...	--	<10	--	980	40	<100	--	120	20
AUG 09...	--	10	--	1900	90	<100	--	190	20
SEP 05...	--	<10	--	950	40	<100	--	70	10

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MATERIAL (UG/G)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SELENIUM IN BOTTOM MATERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MATERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MATERIAL (UG/G)
OCT 05...	.0	--	0	--	<10	--	0	--
NOV 09...	--	--	0	--	<10	--	10	--
DEC 08...	.1	--	0	--	<10	--	20	--
JAN 06...	.0	--	0	--	<10	--	20	--
FEB 08...	.0	--	0	--	<10	--	10	--
MAR 07...	.0	--	1	--	<10	--	0	--
APR 12...	.0	--	0	--	<10	--	160	--
MAY 11...	.0	.0	0	0	<10	<1	30	63
JUN 08...	.0	--	0	--	<10	--	10	--
JUL 12...	.1	--	0	--	<10	--	30	--
AUG 09...	.0	--	0	--	<10	--	30	--
SEP 05...	.1	--	0	--	<10	--	40	--

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

LITTLE COLORADO RIVER BASIN

09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

PFTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)
OCT					
05...	0900	5.1	.01	--	2
NOV					
09...	1530	1.9	.00	--	2
DEC					
08...	1615	2.0	.00	--	2
JAN					
06...	0900	3.7	.00	--	1
FEB					
08...	1300	3.0	.00	--	1
MAR					
07...	1730	3.3	.00	--	5
APR					
12...	0900	3.9	.00	--	6
MAY					
11...	0600	4.6	.00	0	4
JUN					
08...	1500	4.4	.00	--	2
JUL					
12...	1500	5.1	.00	--	4
AUG					
09...	1600	5.9	.00	--	6
SEP					
05...	1445	5.5	.00	--	2

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CFLLS PER ML)
MAY			
11...	0600	1154	590

LITTLE COLORADO RIVER BASIN

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09390500 SHOW LOW CREEK NEAR LAKESIDE, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY 11, 77
TIME	0600
TOTAL CELLS/ML	590
DIVERSITY: DIVISION	1.0
..CLASS	1.0
...ORDER	1.5
...FAMILY	2.7
...GENUS	2.9

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCALLES		
...DCCYSTACEAE		
....ANKISTRUMESMUS	10	2
...SCENEDESMACEAE		
...SCENEDESMUS	10	2
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	5	1
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISACEAE		
....CYCLOTELLA	50	8
...MELOSIPIA	5	1
..PENNALLES		
...ACHNANTHACEAE		
....ACHNANTHES	15	3
...CUCURBITACEAE	94#	16
...CYMBELLACEAE		
....EPITHEMIA	5	1
...GOMPHONEMACEAE		
....GOMPHONEMA	35	6
...NAVICULACEAE		
....NAVICULA	45	8
...PINNULARIA	5	1
...NITZSCHACEAE		
....NITZSCHIA	180#	31
...SURIRELLACEAE		
....SURIRELLA	5	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	110#	19
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....TRACHELIDMONAS	5	1

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 1513. 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.--24 years (1953-77), 5.83 ft³/s (0.165 m³/s), 4,220 acre-ft/yr (5.20 km³/yr); median of yearly mean discharges, 3.1 ft³/s (0.09 m³/s), 2,200 acre-ft/yr (2.7 km³/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. 1953-77: 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, 7.3 ft³/s (0.21 m³/s) May 7-11, July 19, 20, lake elevation, about 6,540 ft (1,993 m); no flow Sept. 21-30.

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 km³) dead storage below elevation 6,535.0 ft (1,991.87 m), sill of outlet structure, and 5,106 acre-ft (6.30 km³) 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. 1, 1976	6,538.9	1,460	Apr. 4, 1977	6,541.0	1,680
Nov. 1	6,538.8	1,450	May 2	6,538.0	1,360
Dec. 1	6,538.8	1,450	May 31	6,537.8	1,340
Jan. 3, 1977	6,539.0	1,470	July 1	6,538.2	1,380
Feb. 1	6,542.2	1,820	Aug. 1	6,539.5	1,500
Mar. 1	6,542.7	1,880	Sept. 2	6,539.0	1,470

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	1.1	.79	.69	.60	.24	.19	.19	3.7	7.1	6.9	7.2	6.4
2	.94	.79	.69	.60	.19	.19	.19	3.6	7.1	6.9	7.1	6.4
3	.94	.79	.69	.56	.19	.19	.19	4.8	7.1	6.9	7.1	5.8
4	.94	.79	.69	.52	.19	.19	.19	7.1	7.1	6.3	7.1	5.2
5	.80	.79	.69	.52	.19	.19	.19	7.1	7.1	5.2	7.1	5.9
6	.79	.79	.69	.52	.19	.19	.19	7.2	7.1	5.1	7.1	6.6
7	.79	.79	.69	.52	.19	.19	.19	7.3	7.1	5.3	7.1	6.6
8	.79	.79	.69	.52	.19	.19	.19	7.3	7.1	6.8	7.1	6.6
9	.79	.70	.69	.52	.19	.19	.19	7.3	6.4	6.6	7.1	6.6
10	.79	.50	.69	.52	.19	.19	.19	7.3	6.0	6.6	3.7	6.6
11	.79	.50	.69	.52	.19	.19	.19	7.3	6.4	6.6	2.0	6.6
12	.80	.50	.69	.52	.19	.19	.19	7.2	6.9	5.0	1.4	6.6
13	.80	.50	.69	.52	.19	.19	.19	7.1	6.9	.19	.89	6.0
14	.80	.50	.69	.52	.19	.19	.19	7.1	6.9	.19	.89	5.2
15	.80	.50	.69	.52	.19	.19	.19	7.1	6.9	.17	.89	5.8
16	.80	.50	.69	.52	.19	.19	.19	7.1	6.9	.17	.89	6.4
17	.80	.50	.69	.54	.19	.19	.92	7.1	6.9	1.6	.52	6.4
18	.80	.50	.69	.60	.19	.19	4.5	7.1	6.9	6.6	.19	6.4
19	.80	.50	.69	.60	.19	.19	3.8	7.1	6.9	7.3	.20	6.4
20	.80	.50	.69	.60	.19	.19	3.7	7.1	6.9	7.3	.20	2.3
21	.80	.50	.69	.60	.19	.19	3.7	7.1	6.9	5.1	.20	.00
22	.80	.50	.69	.60	.19	.19	3.7	7.1	6.9	.78	.20	.00
23	.80	.50	.69	.60	.19	.19	3.7	7.1	6.9	.69	.20	.00
24	.80	.50	.69	.60	.19	.19	3.7	7.1	6.9	.56	.20	.00
25	.80	.50	.69	.49	.19	.19	3.7	7.1	6.9	.48	.20	.00
26	.80	.50	.69	.37	.19	.19	3.7	7.1	6.9	.51	4.0	.00
27	.80	.50	.69	.37	.19	.19	3.7	7.1	6.9	.55	6.4	.00
28	.80	.50	.69	.37	.19	.19	3.7	7.1	6.9	1.0	6.4	.00
29	.80	.50	.69	.34	---	.19	3.7	7.1	6.9	4.8	6.4	.00
30	.80	.50	.66	.30	---	.19	3.7	7.1	6.9	6.3	6.4	.00
31	.80	---	.60	.30	---	.19	---	7.1	---	7.2	6.4	---
TOTAL	25.46	17.52	21.27	15.80	5.37	5.89	52.96	212.1	206.7	125.69	112.77	120.80
MEAN	.82	.58	.69	.51	.19	.19	1.77	6.84	6.89	4.05	3.64	4.03
MAX	1.1	.79	.69	.60	.24	.19	4.5	7.3	7.1	7.3	7.2	6.6
MIN	.79	.50	.60	.30	.19	.19	.19	3.6	6.0	.17	.19	.00
AC-FT	50	35	42	31	11	12	105	421	410	249	224	240

CAL YR 1976 TOTAL 994.72 MEAN 2.72 MAX 6.6 MIN .24 AC-FT 1970
WTR YR 1977 TOTAL 922.33 MEAN 2.53 MAX 7.3 MIN .00 AC-FT 1830

LITTLE COLORADO RIVER BASIN

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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) above mean sea level.

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.--27 years, 16.4 ft³/s (0.464 m³/s), 11,880 acre-ft/yr (14.6 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, 10,100 ft³/s (286 m³/s) Jan. 19, 1952 (gage height, 18.0 ft or 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, 1974-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,840 ft³/s (52.1 m³/s) Aug. 4, gage height, 7.60 ft (2.316 m), base discharge, 1,000 ft³/s (28 m³/s); no flow Mar. 22-25.

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	3.2	2.9	1.0	4.5	6.8	.26	.74	1.6	.50	3.0	4.5	2.5
2	4.7	2.5	1.5	3.4	7.0	.19	1.4	2.9	2.7	2.7	5.5	171
3	5.7	3.0	2.0	3.4	7.0	.10	2.0	1.5	1.5	.83	38	310
4	6.0	3.2	2.0	5.2	7.0	.07	1.4	.74	1.9	1.4	300	30
5	5.7	3.6	2.0	5.5	6.5	1.4	1.3	.36	1.5	7.6	15	12
6	5.5	3.8	2.5	4.8	6.0	2.9	3.0	2.5	1.1	3.6	6.8	6.4
7	5.5	4.5	2.5	4.5	5.7	1.3	2.5	2.0	1.4	1.3	3.4	6.6
8	1.3	3.4	3.0	4.5	5.5	.74	1.9	1.6	2.3	.83	2.2	4.7
9	1.8	2.9	3.0	4.0	6.0	.43	.83	.58	2.9	.16	2.8	2.8
10	3.0	2.3	3.0	4.0	4.0	.50	.43	.22	2.9	7.9	4.9	1.9
11	2.0	3.4	3.0	4.0	2.7	.83	.66	.26	1.8	39	5.9	2.2
12	1.9	2.0	3.0	4.0	1.4	.66	.74	.58	1.5	6.2	7.6	49
13	2.9	4.5	3.6	4.0	.83	.50	.66	.36	1.3	15	7.6	27
14	3.4	5.5	3.4	4.0	.43	.30	.43	4.0	1.0	5.8	5.2	12
15	4.7	5.0	3.2	4.0	.30	.19	.22	4.3	.22	4.5	2.5	5.8
16	2.9	5.2	2.9	4.5	.16	.16	.13	1.6	.13	5.2	3.0	5.5
17	1.8	4.7	2.9	4.5	.07	.26	.13	.50	2.2	46	7.0	4.5
18	.83	4.3	3.8	4.5	.02	.19	.36	.13	3.2	18	17	3.0
19	.83	5.5	4.1	5.0	.22	.13	.36	3.8	3.6	30	35	3.0
20	1.4	4.0	3.4	6.0	.30	.07	.58	4.3	1.6	37	9.7	3.6
21	2.5	4.0	4.1	7.0	1.9	.02	.43	3.2	.83	7.0	7.3	4.5
22	1.6	3.2	3.6	7.0	1.0	.00	.26	2.5	.10	8.8	7.0	9.1
23	3.6	5.0	2.9	6.5	.93	.00	.16	1.8	.37	20	.84	9.1
24	2.9	5.0	3.0	6.0	.93	.00	.07	1.1	1.4	7.9	78	8.5
25	2.5	5.2	1.2	6.3	1.4	.00	.26	.83	3.0	5.8	7.3	6.5
26	1.3	4.7	1.4	6.3	1.3	.08	.22	.83	3.2	6.5	4.3	6.5
27	1.1	3.0	1.0	6.8	.74	.19	.16	1.8	1.3	41	1.6	137
28	3.4	2.0	.84	6.3	.36	.52	.10	1.8	1.1	20	2.5	97
29	4.0	1.0	1.2	7.0	---	.47	2.9	4.0	2.0	8.8	2.0	19
30	4.3	1.0	1.9	6.8	---	.30	3.8	1.8	2.7	7.9	2.6	9.7
31	4.0	---	3.4	6.3	---	.30	---	1.0	---	7.0	3.6	---
TOTAL	96.26	110.3	80.34	160.6	76.49	13.06	28.13	54.40	51.25	376.72	600.64	970.4
MEAN	3.11	3.68	2.59	5.18	2.73	.42	.94	1.76	1.71	12.2	19.4	32.3
MAX	6.0	5.5	4.1	7.0	7.0	2.9	3.8	4.3	3.0	46	300	310
MIN	.83	1.0	.84	3.4	.02	.00	.07	.13	1.6	.16	.84	1.9
AC-FT	191	219	159	319	152	26	56	108	102	747	1190	1920
CAL YR 1976	TOTAL	3881.70	MEAN	10.6	MAX	782	MTN	.00	AC-FT	7700		
WTR YR 1977	TOTAL	2618.68	MEAN	7.17	MAX	310	MTN	.00	AC-FT	5190		

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 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) above mean sea level. 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 km³), excluding Lone Pine Reservoir.

AVERAGE DISCHARGE.--48 years (1905-6, 1916-17, 1929-33, 1935-77), 51.1 ft³/s (1.447 m³/s), 37,020 acre-ft/yr (45.6 km³/yr); median of yearly mean discharges, 44 ft³/s (1.25 m³/s), 31,900 acre-ft/yr (39 km³/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, 1,220 ft³/s (34.6 m³/s) Aug. 4, gage height, 9.63 ft (2.935 m), no peak above base of 1,900 ft³/s (54 m³/s); minimum daily, 0.50 ft³/s (0.014 m³/s) June 2.

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	6.0	6.9	7.5	8.5	16	4.0	3.4	5.7	1.4	5.2	5.6	4.8
2	6.9	6.4	8.5	9.5	16	3.6	4.3	4.3	5.0	2.8	5.2	6.1
3	7.5	6.9	8.0	12	14	4.0	13	3.0	3.1	2.2	5.2	454
4	7.4	6.4	8.0	13	12	3.2	12	2.2	2.7	4.1	275	63
5	7.1	6.9	8.5	32	11	3.2	38	3.5	4.8	4.1	22	24
6	6.9	6.9	9.5	25	10	4.3	41	3.5	3.0	11	12	15
7	6.5	7.4	9.5	19	11	5.1	29	2.9	3.5	6.3	11	9.5
8	5.1	7.4	8.0	18	10	4.3	17	4.2	4.0	3.5	10	10
9	5.5	6.4	8.5	18	10	4.0	11	4.0	6.1	1.5	14	7.5
10	5.5	6.0	8.0	15	12	3.2	8.5	3.4	5.0	1.7	12	3.2
11	5.5	6.4	8.5	15	10	3.6	7.0	3.0	2.9	44	17	17
12	5.5	6.9	7.4	13	9.5	3.6	6.0	2.7	2.5	13	13	94
13	5.5	6.4	6.9	13	9.5	3.6	6.0	2.9	4.2	25	4.8	44
14	5.5	7.4	6.4	12	10	3.6	5.5	2.2	3.8	9.5	36	23
15	6.0	8.5	6.0	12	5.6	3.2	5.5	2.2	3.6	5.6	35	11
16	6.4	7.4	6.9	12	4.4	3.2	5.0	5.2	1.8	35	164	4.5
17	6.0	8.0	12	12	4.0	2.9	5.0	3.8	1.80	102	145	2.9
18	6.0	6.9	8.5	12	3.2	3.2	5.0	2.7	1.4	39	68	4.5
19	5.5	7.4	8.5	12	2.4	2.9	5.0	2.3	1.7	92	75	3.5
20	5.5	8.0	8.5	12	2.0	2.9	5.0	4.5	2.0	15	25	2.9
21	5.5	7.4	9.4	13	2.4	2.9	4.5	3.5	4.0	20	20	3.5
22	6.0	6.9	9.9	15	4.0	2.9	4.5	4.7	2.8	30	25	4.3
23	6.0	6.4	12	200	4.0	3.2	4.5	4.3	2.5	100	25	7.2
24	6.9	8.5	10	100	4.4	3.2	4.5	3.7	2.3	78	209	6.6
25	6.0	8.5	10	61	5.2	3.2	4.0	3.0	1.9	16	81	5.7
26	6.0	9.4	10	51	5.2	3.2	3.7	3.1	3.8	4.8	15	4.3
27	5.5	9.4	14	42	9.5	3.6	4.0	2.1	5.4	24	6.0	109
28	5.1	8.0	8.9	32	4.2	3.6	4.0	1.4	3.8	28	5.0	321
29	6.4	7.0	11	26	---	3.6	3.8	2.7	1.5	10	4.0	58
30	6.9	7.0	5.5	26	---	3.6	2.5	3.6	2.6	11	4.8	24
31	6.9	---	6.0	23	---	3.2	---	2.3	---	10	4.4	---
TOTAL	189.0	219.4	270.3	884.0	221.5	107.8	272.2	106.5	89.40	754.3	1354.0	1402.9
MEAN	6.10	7.11	8.72	28.5	7.11	3.48	9.07	3.44	2.98	24.3	43.7	46.8
MAX	7.5	9.4	14	200	16	5.1	41	5.7	6.1	102	275	454
MIN	5.1	6.0	5.5	8.5	2.0	2.9	2.5	1.4	1.50	1.5	4.0	2.9
AC-FT	375	435	536	1750	439	214	540	211	177	1500	2690	2780

CAL YR 1976 TOTAL 6980.10 MEAN 19.1 MAX 1360 MIN .00 AC-FT 13850
WTR YR 1977 TOTAL 5871.30 MEAN 16.1 MAX 454 MIN .50 AC-FT 11650

LITTLE COLORADO RIVER BASIN

77

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.--11 years, 7.70 ft³/s (0.218 m³/s), 5,580 acre-ft/yr (6.88 hm³/yr); median of yearly mean discharges, 6.9 ft³/s (0.20 m³/s), 5,000 acre-ft/yr (6.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,160 ft³/s (203 m³/s) Aug. 17, 1977 (gage height, 9.35 ft or 2.850 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 (*) from rating curve extended above 90 ft³/s (2.55 m³/s) on basis of slope-area measurement of peak flow, and peak discharges above base of 1,500 ft³/s (42 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 19	0200	3,050 86.4	7.50 2.286	Aug. 17	2300	*7,160 203	9.35 2.850
Aug. 14-16	unknown	4,830 137	8.44 2.573				

No flow for many days.

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	.00	.00	.10	.00	.10	.50	.20	.00	.10	.00	.20	.50
2	.00	.00	.10	.00	.10	.50	.40	.00	.10	.00	.20	.20
3	.00	.00	.10	.00	.10	.50	.30	.00	.10	.00	.20	9.2
4	.00	.00	.10	.00	.10	.50	.30	.00	.10	5.0	.10	34
5	.00	.00	.10	.00	.10	.40	.20	.00	.10	8.0	.10	8.1
6	.00	.00	.10	.00	.10	.40	.20	.00	.10	5.0	.10	2.0
7	.00	.00	.10	.00	.10	.40	.10	.00	.10	3.0	.10	1.0
8	.00	.00	.10	.00	.10	.30	.10	.00	.10	2.0	.10	.50
9	.00	.00	.10	.00	.10	.30	.10	.00	.10	1.0	.10	.20
10	.00	.00	.10	.00	.10	.30	.00	.00	.10	1.0	.10	.10
11	.00	.00	.10	.00	.10	.30	.00	.00	.10	.50	.10	.10
12	.00	.00	.10	.00	.10	.20	.10	.00	.10	.30	20	.10
13	.00	.00	.10	.00	.10	.20	.00	.00	.10	.10	30	.10
14	.00	.00	.10	.00	.10	.10	.00	.20	.10	.00	15	.10
15	.00	.00	.10	.00	.10	.10	.00	.20	.10	.00	20	.10
16	.00	.00	.10	.00	.10	.20	.00	.00	.10	.00	500	.10
17	.00	.00	.10	.00	.10	.20	.00	.00	.10	.10	700	.10
18	.00	.00	.10	.00	.20	.20	.00	.00	.10	3.0	400	.10
19	.00	.00	.10	28	.20	.20	.00	.00	.10	330	15	.10
20	.00	.00	.10	25	.20	.20	.00	.10	.10	10	10	.10
21	.00	.00	.10	10	.20	.20	.00	.10	.10	5.0	5.0	.10
22	.00	.00	.10	5.0	.20	.10	.00	.10	.10	15	3.0	.10
23	.20	.00	.10	2.0	.20	.10	.00	.10	.10	5.0	5.0	1.4
24	.50	.00	.10	1.0	.20	.10	.00	.10	.10	5.0	6.3	.50
25	.20	.00	.10	.50	.50	.30	.00	.20	.10	5.0	4.4	.50
26	.00	.10	.10	.20	.50	.20	.10	.10	.20	44	2.8	.20
27	.00	.10	.10	.10	.50	.40	.00	.10	.10	10	1.8	.10
28	.00	.10	.10	.10	.50	.40	.00	.10	.10	5.0	1.6	1.0
29	.00	.10	.00	.10	---	.30	.00	.10	.10	1.0	1.6	.50
30	.00	.10	.00	.10	---	.20	.00	.10	.10	.50	1.2	.20
31	.00	---	.00	.10	---	.20	---	.10	---	.20	.80	---
TOTAL	.90	.50	2.80	72.20	5.10	8.50	2.10	1.70	3.10	464.70	1744.90	61.40
MEAN	.029	.017	.090	2.33	.18	.27	.070	.055	.10	15.0	56.3	2.05
MAX	.50	.10	.10	28	.50	.50	.40	.20	.20	330	700	34
MIN	.00	.00	.00	.00	.10	.10	.00	.00	.10	.00	.10	.10
AC-FT	1.8	1.0	5.6	143	10	17	4.2	3.4	6.1	922	3460	122

CAL YR 1976 TOTAL 259.10 MEAN .71 MAX 84 MIN .00 AC-FT 514
WTR YR 1977 TOTAL 2367.90 MEAN 6.49 MAX 700 MIN .00 AC-FT 4700

LITTLE COLORADO RIVER BASIN

09396100 PUERCO RIVER NEAR CHAMBERS, AZ

LOCATION.--Lat 35°10'42", long 109°27'15", in SW¼NW¼ 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.

DRAINAGE AREA.--2,160 mi² (5,600 km²), approximately.

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).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5,705 ft (1,738.9 m), from topographic map.

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 km³), but capacity may have been reduced by silting.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s (504 m³/s) Sept. 30, 1971 (gage height, 9.65 ft or 2.941 m); no flow observed on many days each year.

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)
July 18	0100	5,260 149	3.97 1.210	Aug. 16	0345	*13,200 374	*7.73 2.356
July 19	0915	3,350 95	2.91 0.887	Aug. 16	2315	9,640 273	6.11 1.862
July 26	0030	5,700 161	4.20 1.280	Aug. 17	2245	6,360 180	4.53 1.381
July 27	0730	6,240 177	4.47 1.362	Aug. 18	0630	8,610 244	5.63 1.716
Aug. 12	0030	8,550 242	5.60 1.707				

No flow observed on several days.

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					---					---	---	
2					550					---	---	
3					560					---	---	
4					610					---	---	
5					---					---	---	
6					---					---	---	
7					---					---	---	
8					---					---	---	
9					---					---	---	
10					---					---	---	
11					---					---	680	
12					---					---	1600	
13					---					---	---	
14					---					---	---	
15					---					---	---	
16					---					---	5720	
17					---					---	7090	
18					---					---	2800	
19					---					---	---	
20					---					---	---	
21					---					---	---	
22					---					---	---	
23					---					---	---	
24					---					---	---	
25					---					---	---	
26					---					1220	---	
27					---					1840	---	
28					---					---	---	
29					---					---	---	
30					---					---	---	
31					---					---	---	
TOTAL					---					---	---	
MEAN					---					---	---	
MAX					---					---	---	
MIN					---					---	---	
AC=FT					---					---	---	

LITTLE COLORADO RIVER BASIN

79

09397300 LITTLE COLORADO RIVER NEAR JOSEPH CITY, AZ

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.

DRAINAGE AREA.--12,200 mi² (31,600 km²), approximately.

PERIOD OF RECORD.--July 1973 to current year (daily discharge only for those days on which instantaneous discharge exceeds 500 ft³/s or 14 m³/s).

GAGE.--Water-stage recorder and concrete diversion dam. Datum of gage is 5,031.10 ft (1,533.479 m) above mean sea level (Corps of Engineers bench mark).

REMARKS.--Records poor. Published record includes only those days when instantaneous discharge over the crest of the dam exceeds 500 ft³/s (14 m³/s). Diversions above station for irrigation of about 23,000 acres (93 km²), diversions at dam on right bank of most low flows for irrigation of about 1,500 acres (6.07 km²) in vicinity of Joseph City. Some regulation by reservoirs; combined capacity of principal reservoirs, about 83,000 acre-ft (100 km³).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s (583 m³/s) Oct. 29, 1974 (gage height, 6.90 ft or 2.103 m), from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of slope-area measurement at gage height 6.82 ft (2.079 m). A discharge of 60,000 ft³/s (1,700 m³/s) was determined for peak of Sept. 19, 1923, at Holbrook (see prior records for sta 09397000, Little Colorado River at Holbrook, for this peak and other peaks 1905-6, 1949-73).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 5,000 ft³/s (142 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 27	1830	8,050 228	4.63 1.411	Aug. 16	1600	10,900 309	4.20 1.585
Aug. 12	1100	8,400 238	4.70 1.433	Aug. 18	1700	*12,000 340	unknown --

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				---						---	---	---
2				---						---	---	---
3				170						---	---	500
4				---						---	---	360
5				---						---	---	460
6				---						---	---	---
7				---						---	---	---
8				---						---	---	---
9				---						---	---	---
10				---						---	---	---
11				---						---	150	---
12				---						---	2760	---
13				---						---	---	---
14				---						---	---	---
15				---						---	---	---
16				---						---	3300	---
17				---						---	2000	---
18				---						187	4300	---
19				---						162	1600	---
20				---						295	700	---
21				---						376	---	---
22				850						---	---	---
23				1550						108	350	---
24				350						410	400	---
25				---						---	150	---
26				---						532	---	---
27				---						1380	---	90
28				---						100	---	1270
29				---						---	---	---
30				---						---	---	---
31				---						---	---	---

LITTLE COLORADO RIVER BASIN

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) above mean sea level; gage readings have been reduced to elevations above mean sea level. Prior to Apr. 2, 1965, nonrecording-gage readings (at intervals of 3 to 8 days) at datum of mean sea level.

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 or 2,022.860 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,120 acre-ft (7.55 hm³) Oct. 1 (elevation, 6,676.72 ft or 2,035.064 m); minimum, 2,050 acre-ft (2.53 hm³) Aug. 8 (elevation, 6,639.17 ft or 2,023.619 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	6,660	3,920
6,640	2,120	6,680	6,580

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6120	4320	2800	2210	2230	2460	2810	4740	2830	2130	2070	2330
2	6060	4250	2750	2210	2230	2470	2830	4680	2780	2130	2070	2310
3	6000	4190	2700	2220	2230	2470	2850	4630	2720	2130	2070	2280
4	5950	4130	2660	2220	2240	2470	2870	4570	2660	2130	2070	2240
5	5900	4080	2610	2220	2240	2470	2910	4500	2610	2120	2060	2200
6	5840	4020	2560	2220	2240	2470	3080	4440	2550	2120	2060	2190
7	5790	3960	2510	2220	2240	2480	3350	4390	2490	2120	2060	2170
8	5730	3910	2460	2220	2240	2480	3640	4330	2440	2110	2050	2160
9	5680	3880	2420	2230	2240	2480	3890	4260	2370	2110	2070	2160
10	5630	3840	2360	2230	2240	2490	4120	4200	2320	2110	2070	2160
11	5570	3790	2310	2230	2250	2500	4270	4130	2280	2100	2070	2160
12	5510	3740	2260	2220	2250	2510	4380	4060	2230	2110	2080	2160
13	5440	3690	2210	2230	2250	2520	4480	3990	2200	2100	2080	2160
14	5380	3640	2190	2230	2250	2530	4570	3930	2180	2100	2080	2160
15	5310	3590	2190	2230	2260	2540	4640	3870	2180	2100	2090	2160
16	5250	3540	2190	2230	2260	2550	4700	3810	2180	2100	2090	2150
17	5190	3500	2190	2230	2270	2560	4750	3750	2170	2100	2090	2150
18	5120	3450	2190	2230	2290	2570	4810	3690	2170	2090	2100	2150
19	5050	3400	2200	2230	2310	2570	4860	3630	2160	2090	2110	2140
20	4980	3350	2200	2230	2330	2580	4900	3570	2160	2090	2150	2140
21	4920	3300	2200	2230	2350	2590	4920	3510	2160	2090	2150	2140
22	4870	3240	2200	2230	2380	2600	4940	3450	2160	2090	2150	2130
23	4800	3190	2200	2230	2400	2620	4950	3390	2150	2080	2150	2130
24	4740	3140	2200	2230	2430	2640	4960	3330	2150	2080	2150	2130
25	4680	3090	2210	2230	2440	2670	4970	3270	2150	2080	2150	2130
26	4620	3040	2200	2230	2440	2690	4980	3210	2150	2080	2150	2120
27	4560	2980	2200	2230	2450	2710	4960	3140	2140	2080	2150	2160
28	4510	---	2210	2230	2460	2740	4910	3080	2140	2080	2150	2250
29	4460	---	2210	2230	---	2760	4850	3010	2140	2070	2150	2280
30	4400	2840	2210	2230	---	2780	4790	2940	2140	2070	2150	2280
31	4350	---	2210	2230	---	2800	---	2880	---	2070	2150	---
MAX	6120	---	2800	2230	2460	2800	4980	4740	2830	2130	2090	2330
MIN	4350	---	2190	2210	2230	2460	2810	2880	2140	2070	2050	2120
(†)	6663.35	6648.99	6641.11	6641.40	6644.23	6648.47	6667.22	6649.57	6640.22	6639.39	6642.64	6642.06
(‡)	-1830	-1510	-630	+20	+230	+340	+1990	-1910	-740	-70	+260	-50

CAL YR 1976 ‡ +10

WTR YR 1977 ‡ -3,900

† 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.

LITTLE COLORADO RIVER BASIN

81

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 km³) 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).--30 years, 75.9 ft³/s (2.150 m³/s), 54,990 acre-ft/yr (67.8 km³/yr); median of yearly mean discharges, 54 ft³/s (1.53 m³/s), 39,100 acre-ft/yr (48 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft³/s (464 m³/s) Jan. 18, 1952 (gage height, 21.5 ft or 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, 353 ft³/s (10.0 m³/s), Apr. 9, gage height, 6.21 ft (1.893 m), no peak above base of 500 ft³/s (14 m³/s); no flow for most of year.

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	.00	.00	.00	.00	.00	1.7	26	12	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	1.7	31	8.9	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	1.9	31	6.8	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	1.8	24	5.0	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	1.6	28	3.6	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	1.5	48	2.5	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	1.0	166	1.6	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.92	265	.93	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	1.3	294	.53	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	1.5	295	.27	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	1.8	231	.14	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	3.8	179	.06	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	6.5	148	.02	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	5.5	139	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	5.9	130	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	6.9	110	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	7.1	90	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	8.8	89	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	9.2	88	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	8.4	78	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	7.8	62	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	11	48	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	17	39	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	32	34	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	43	30	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	50	29	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	40	30	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.21	30	24	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	39	19	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	34	15	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	27	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.21	409.62	2820	42.35	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.008	13.2	94.0	1.37	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.21	50	295	12	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.92	15	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.4	812	5590	84	.00	.00	.00	.00
CAL YR 1976	TOTAL	36324.90	MEAN	99.2	MAX	1860	MIN	.00	AC-FT	72050		
WTR YR 1977	TOTAL	3272.18	MEAN	8.46	MAX	295	MIN	.00	AC-FT	6490		

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) above mean sea level. See WSP 1713, 1733, or 1926 for history of changes prior to July 10, 1931.

REMARKS.--Records fair except for those below 10 ft³/s (0.28 m³/s), which are poor. 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.--46 years (water years 1930-33, 1936-77), 75.7 ft³/s (2.144 m³/s), 54,840 acre-ft/yr (67.6 hm³/yr); median of yearly mean discharges, 56 ft³/s (1.59 m³/s), 40,600 acre-ft/yr (50 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 or 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, 372 ft³/s (10.54 m³/s) Apr. 10, gage height, 6.38 ft (1.945 m), no peak above base of 500 ft³/s (14 m³/s); no flow for many days.

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	.00	.51	3.3	3.8	3.0	1.8	1.6	7.0	.00	.00	.00	.00
2	.00	.79	3.2	3.2	3.2	1.7	1.7	6.0	.00	.00	.00	.00
3	.00	.99	3.3	3.0	3.1	1.7	2.0	5.0	.00	.00	.00	.00
4	.00	1.2	3.3	2.7	3.0	1.7	1.9	4.0	.00	.00	.00	.00
5	.00	1.4	3.5	2.7	3.0	1.7	1.7	3.0	.00	.00	.00	.00
6	.00	1.6	3.5	2.5	3.0	1.4	1.6	3.0	.00	.00	.00	.00
7	.00	1.6	3.3	2.5	2.9	1.7	1.6	2.0	.00	.00	.00	.00
8	.00	1.7	3.3	2.5	2.2	1.7	1.5	2.0	.00	.00	.00	.00
9	.00	1.9	3.5	2.0	1.9	1.6	1.5	1.0	.00	.00	.00	.00
10	.00	2.0	3.5	2.0	1.8	1.4	259	1.0	.00	.00	.00	.00
11	.00	2.0	3.2	2.0	1.7	1.6	316	.00	.00	.00	.00	.00
12	.00	2.1	3.2	2.0	1.6	1.7	259	.00	.00	.00	.00	.00
13	.00	2.3	3.0	2.0	1.6	1.8	203	.00	.00	.00	.00	.00
14	.00	2.1	3.0	1.8	1.6	1.6	153	.00	.00	.00	.00	.00
15	.00	2.1	3.0	1.8	1.6	1.6	127	.00	.00	.00	.00	.00
16	.00	2.1	3.0	1.8	1.6	1.6	124	.00	.00	.00	.00	.00
17	.00	2.1	3.0	1.8	1.6	1.6	102	.00	.00	.00	.00	.00
18	.00	2.2	3.0	1.8	1.6	1.7	85	.00	.00	.00	.00	.00
19	.00	2.4	3.0	1.9	1.6	1.7	70	.00	.00	.00	.00	.00
20	.00	2.7	3.0	1.9	1.6	1.8	56	.00	.00	.00	.00	.00
21	.00	2.5	3.0	2.1	1.6	1.7	48	.00	.00	.00	.00	.00
22	.00	2.5	3.0	2.3	1.5	1.8	40	.00	.00	.00	.00	.00
23	.00	2.5	3.2	2.4	1.7	1.8	32	.00	.00	.00	.00	.00
24	.00	2.5	3.0	2.5	2.1	1.8	26	.00	.00	.00	.00	.00
25	.00	2.6	2.7	2.5	3.3	1.8	22	.00	.00	.00	.00	.00
26	.00	2.6	2.7	2.5	2.4	1.6	18	.00	.00	.00	.00	.00
27	.00	3.3	2.7	2.5	2.0	1.7	15	.00	.00	.00	.00	.43
28	.00	3.6	3.0	2.5	1.9	1.8	12	.00	.00	.00	.00	1.2
29	.00	3.4	3.0	2.6	---	1.4	10	.00	.00	.00	.00	.31
30	.01	3.3	3.0	2.7	---	1.6	8.0	.00	.00	.00	.00	.00
31	.19	---	3.2	2.7	---	1.6	---	.00	.00	.00	.00	---
TOTAL	.20	64.59	96.6	73.0	59.7	51.7	2000.1	34.00	.00	.00	.00	1.94
MEAN	.006	2.15	3.12	2.35	2.13	1.67	66.7	1.10	.000	.000	.000	.065
MAX	.19	3.6	3.5	3.8	3.3	1.8	316	7.0	.00	.00	.00	1.2
MIN	.00	.51	2.7	1.8	1.5	1.4	1.5	.00	.00	.00	.00	.00
AC-FT	.4	128	192	145	118	103	3970	67	.00	.00	.00	3.8
CAL YR 1976	TOTAL	31274.03	MEAN	85.4	MAX	1490	MIN	.00	AC-FT	62030		
WTR YR 1977	TOTAL	2381.83	MEAN	6.53	MAX	316	MIN	.00	AC-FT	4720		

LITTLE COLORADO RIVER BASIN

83

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	FECAL COLIFORMS (COL./100 ML)	FECAL STREPTOCOCCI (COL./100 ML)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)
FFB 04...	1430	E28	1420	8.4	5.0	B400	28000	98	0	30	5.7	270
APR 13...	1330	E380	1260	8.2	18.0	B1200	2200	100	0	31	5.9	210
JUL 27...	1400	E140	990	8.0	28.5	B9000	B12000	78	0	24	4.4	180
AUG 10...	1500	E70	1050	7.6	25.0	B3000	7330	360	280	120	15	98
SEP 06...	1300	E310	540	7.9	25.5	B5700	B8700	100	0	31	5.5	74
DATE		SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED NITRATE AT 180 C (NO3) (MG/L)	DISSOLVED NITRATES (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SULFATES (TONS PER AC-FT)
FFB 04...	12	3.4	225	0	100	280	.6	0.1	817	813	1.11	
APR 13...	9.1	4.0	150	0	54	270	.5	8.1	677	660	.92	
JUL 27...	8.9	3.6	290	0	160	68	1.2	13	547	597	.74	
AUG 10...	2.2	7.0	100	0	420	30	.8	12	769	759	1.05	
SEP 06...	3.2	4.6	140	0	100	31	1.0	13	345	329	.47	

B Based on non-ideal colony count.

E Estimated.

LITTLE COLORADO RIVER BASIN

09401200 LITTLE COLORADO RIVER AT CAMERON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DTS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DTS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DTS- SOLVED URTHO- PHOS- PHORUS (P) (MG/L)
FEB 04...	.83	.56	--	--	.20	1.0	9.0	--	.07
APR 13...	.45	.44	--	--	8.0	8.5	.58	--	.04
JUL 27...	1.9	--	--	--	3.3	5.2	12	--	--
AUG 10...	1.7	1.6	--	--	16	18	5.0	--	.02
SEP 06...	1.9	--	.17	.83	1.0	2.9	13	.05	--

DATE	TOTAL ARSENIC (AS) (UG/L)	DTS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CU) (UG/L)	DTS- SOLVED CAD- MIUM (CU) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DTS- SOLVED CHRO- MIUM (CR) (UG/L)
FEB 04...	3	5	510	230	10	0	130	0
AUG 10...	130	1	270	130	20	6	90	0

DATE	TOTAL COBALT (CO) (UG/L)	DTS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DTS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)
FEB 04...	150	0	120	14	110000	30	300	3	4800
AUG 10...	150	0	180	10	79000	30	300	67	8200

DATE	DTS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DTS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
FEB 04...	0	.9	.0	1	1	400	30	48
AUG 10...	0	.7	.0	3	3	510	6	126

LITTLE COLORADO RIVER BASIN

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09401200 LITTLE COLORADO RIVER AT CAMERON, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ALDRIN (UG/L)	TOTAL ATRA- ZINE (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)
FEB 04...	1430	48	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	1500	126	ND	ND	ND	ND	ND	ND	ND	ND

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METH- OXY- CHLOR (UG/L)	TOTAL METHYL PARA- THION (UG/L)
FEB 04...	1430	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	1500	ND	ND	ND	ND	.02	ND	ND	ND

DATE	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL STLVEK (UG/L)
FEB 04...	ND	ND	ND	ND	ND	ND	ND	ND
AUG 10...	ND	ND	ND	ND	ND	ND	ND	ND

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDI- MENT (MG/L)	SUS. SED. STEVE DIAM. % FINER THAN .062 MM
APR 13...	1330	E380	21400	93
JUL 27...	1400	E140	93800	97
AUG 10...	1500	E70	25400	100
SEP 06...	1300	F310	57400	97

ND Material specifically analyzed for but not detected.
E Estimated.

LITTLE COLORADO RIVER BASIN

09401200 LITTLE COLORADO RIVER AT CAMERON, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	FER 4,77 1430	JUL 27,77 1400	AUG 10,77 1500	SEP 7,77 1300				
TOTAL CELLS/ML	0	43000	290	1700				
DIVERSITY: DIVISION	0.0	0.6	0.0	0.7				
..CLASS	0.0	0.6	0.0	0.7				
...ORDER	0.0	1.0	1.0	0.7				
...FAMILY	0.0	1.0	1.0	1.4				
....GENUS	0.0	1.0	1.0	1.4				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	2800	7	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	350#	20
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	710	2	140#	50	--	-
..PENNALES								
...NAVICULACEAE								
....GYROSTIGMA	--	-	--	-	--	-	350#	20
...NAVICULA	--	-	1400	3	140#	50	--	-
...NITZSCHACEAE								
....NITZSCHIA	--	-	--	-	--	-	1000#	60
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCCOCCALES								
...CHROCCOCCAEAE								
....ANACYSTIS	--	-	2100	5	--	-	--	-
...HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	35000#	83	--	-	--	-

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

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

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 or 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 (*), (from rating curve extended above 140 ft³/s or 3.96 m³/s on basis of slope-area measurement of peak flow) and peak discharges above base of 1,200 ft³/s (34 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 21	0330	*4,120 117	8.85 2.697	Aug. 12	1400	2,530 71.6	7.60 2.316
July 23	0030	unknown †	unknown †	Sept. 2	2000	4,100 116	8.83 2.691

No flow for many days.

† No record of peak. Gage height of 7.4 ft (2.26 m) observed at 0730 on July 23; discharge, 2,300 ft³/s (65.1 m³/s).

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	1.8	1.5	2.0	5.0	2.1	2.8	2.0	1.0	.40	.00	.30	.50
2	2.1	1.5	2.0	5.0	2.1	2.1	2.0	1.0	.30	.00	.00	500
3	1.8	1.5	2.0	4.0	2.1	2.1	3.0	1.3	.30	.00	.00	1100
4	1.8	1.5	2.0	4.0	1.8	2.4	2.0	1.5	.20	.00	.00	100
5	2.1	1.5	2.0	3.0	2.4	1.5	2.0	1.1	.20	.00	.00	8.0
6	2.1	1.8	2.0	3.0	2.8	2.8	2.0	.80	.20	.00	.00	5.0
7	1.8	1.8	2.0	4.0	2.1	2.8	2.0	.80	.30	.00	.00	3.0
8	1.5	1.8	2.0	3.0	2.1	2.1	2.0	1.1	.40	.00	.70	1.0
9	1.5	2.1	2.0	3.0	1.8	2.8	2.0	1.1	.40	.00	.20	.70
10	1.5	2.1	2.4	3.0	2.1	2.8	2.0	1.1	.40	.00	.00	.60
11	1.3	2.4	2.1	3.0	2.4	2.8	1.0	1.0	.40	.00	.00	10
12	1.3	2.1	2.8	2.0	2.1	1.5	2.0	1.0	.40	13	185	12
13	1.3	2.1	2.8	2.0	2.1	2.8	2.0	1.0	.40	4.0	30	22
14	1.3	1.8	1.8	2.0	2.1	3.0	2.0	2.0	.40	.80	6.0	5.4
15	1.5	1.5	2.4	2.0	2.4	1.5	2.0	2.0	.00	.30	40	4.4
16	1.5	2.0	2.8	2.0	2.4	2.1	2.0	2.0	.00	2.3	9.0	1.8
17	1.8	2.0	2.8	2.0	2.4	2.4	2.0	1.0	.00	13	4.0	.70
18	1.8	2.0	3.6	3.0	2.4	2.1	2.0	.70	.00	30	60	.50
19	1.8	2.0	2.8	3.0	2.1	2.1	2.0	.70	.00	40	23	.50
20	1.8	2.0	2.8	3.6	2.1	2.1	2.0	.70	.00	60	4.4	.50
21	2.1	2.0	2.4	3.6	2.1	2.4	2.0	.70	.00	430	2.4	.50
22	2.1	2.0	2.8	3.6	2.8	2.0	2.0	1.0	.00	18	1.8	.50
23	2.1	2.0	2.8	4.4	2.4	2.0	2.0	.70	.00	1900	.80	.50
24	2.1	2.0	2.8	5.4	2.1	2.0	2.0	.70	.00	300	.60	.50
25	1.8	2.0	2.8	2.8	2.1	2.0	2.0	.70	.00	20	14	.50
26	1.5	2.0	2.8	3.6	2.8	3.0	2.0	1.0	.00	3.0	6.5	.40
27	1.5	2.0	2.8	2.4	3.2	2.0	2.0	.70	.00	1.8	2.1	.40
28	1.3	2.0	3.0	2.4	3.2	2.0	1.0	.50	.00	.70	1.1	.50
29	1.3	2.0	2.0	2.4	---	2.0	2.0	.80	.00	.70	.50	.50
30	1.5	2.0	3.0	2.4	---	2.0	1.0	.70	.00	.50	.30	.60
31	1.5	---	3.0	2.1	---	2.0	---	.50	---	.50	.40	---
TOTAL	52.2	57.0	77.3	96.7	64.6	70.0	58.0	30.90	4.70	2838.60	393.10	1781.50
MEAN	1.68	1.90	2.49	3.12	2.31	2.26	1.93	1.00	.16	91.6	12.7	59.4
MAX	2.1	2.4	3.6	5.4	3.2	3.0	3.0	2.0	.40	1900	185	1100
MIN	1.3	1.5	1.8	2.0	1.8	1.5	1.0	.50	.00	.00	.00	.40
AC-FT	104	113	153	192	128	139	115	61	9.3	5630	780	3530

WTR YR 1977 TOTAL 5524.60 MEAN 15.1 MAX 1900 MTN .00 AC-FT 10960

NOTE.--No gage-height record Mar. 22 to May 3, May 11 to July 13.

LITTLE COLORADO RIVER BASIN

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, 3,110 micromhos July 19; minimum observed, 564 micromhos Dec. 28.

WATER TEMPERATURES: Maximum observed, 30.0°C Aug. 22; minimum observed, 1.0°C Dec. 11, 18, Jan. 7, 15, 16, 19, 31, Feb. 2.

SEDIMENT CONCENTRATIONS: Maximum daily, 207,000 mg/L July 21; minimum daily, no flow on many days.

SEDIMENT LOADS: Maximum daily, 840,000 tons (762,000 tonnes) July 23; minimum daily, 0 ton (0 tonne) on many days.

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1440	978	1210	729	868	985	920	1000	1060	---	2070	---
2	1480	962	1150	752	870	965	866	1040	1090	---	---	---
3	1470	952	1140	726	872	966	865	1050	1090	---	---	2120
4	1440	955	1030	786	872	936	872	1010	1100	---	---	2040
5	1410	944	1020	842	881	946	894	1010	1120	---	---	2050
6	1380	935	962	848	868	939	906	1050	1110	---	---	1410
7	1370	935	953	909	893	970	900	1150	1120	---	---	1790
8	1340	934	935	914	880	962	922	1150	1120	---	---	1870
9	1300	1030	855	909	891	970	931	1150	1120	---	---	1870
10	1290	989	935	1010	891	954	964	1180	1140	---	---	1900
11	1280	995	827	1040	866	1020	979	1130	---	---	---	1780
12	1240	913	---	1010	864	1000	975	1180	---	1910	1700	1770
13	1230	912	848	1020	869	1000	1000	1120	---	1730	2100	2260
14	1200	955	861	1010	871	1000	995	1160	---	2000	2000	1880
15	1180	927	873	999	860	930	976	1160	---	2150	1720	1970
16	1160	1030	---	951	886	886	962	1110	---	2140	1450	2140
17	1140	911	---	904	898	884	970	1100	---	1570	1910	2190
18	1120	915	857	880	886	895	971	1090	---	2080	1900	2130
19	1120	912	899	820	883	865	991	1030	---	3110	1900	1970
20	1110	894	869	796	902	870	954	1040	---	1510	1800	1880
21	1090	900	915	758	905	861	955	1040	---	1720	1790	1790
22	1060	906	886	784	936	857	929	989	---	1280	1820	1660
23	1050	894	907	803	959	859	946	977	---	1230	1900	1420
24	1030	901	915	739	922	954	927	993	---	1310	1900	1400
25	1010	912	910	776	938	885	936	988	---	1540	1980	1410
26	1020	900	884	883	961	902	958	986	---	1800	1930	1330
27	1020	917	923	907	973	881	969	959	---	1820	1560	1360
28	1020	962	564	884	983	875	971	968	---	1880	1570	1320
29	976	988	883	883	---	894	991	1040	---	1890	---	1250
30	971	1020	728	880	---	900	1000	1030	---	1910	---	1260
31	975	---	731	879	---	917	---	1050	---	---	---	---
MEAN	1190	943	910	872	898	927	947	1060	1110	1820	1830	1760
WTR YR 1977	MEAN	1150	MAX	3110	MIN	564						

09401260 MOENKOPI WASH AT MOENKOPI, AZ--Continued

SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)		MEAN CONCEN- TRATION (MG/L)	
	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	LOADS (T/DAY)	
OCTOBER												
1	106	.52	134	.54	121	.65	133	1.8	157	.89	702	5.2
2	128	.73	103	.42	106	.57	279	3.8	158	.90	326	2.4
3	114	.55	108	.44	129	.70	592	6.4	197	1.1	361	1.8
4	112	.54	109	.44	196	1.1	221	2.4	172	.84	141	1.0
5	109	.62	97	.39	206	1.1	349	2.8	203	1.3	177	.72
6	82	.46	89	.43	173	.93	339	2.7	177	1.3	104	.79
7	117	.57	84	.41	211	1.1	219	2.4	284	1.6	104	.82
8	81	.33	87	.42	188	1.0	228	1.8	162	.92	108	.61
9	65	.26	209	1.2	188	1.0	221	1.8	192	.93	124	.94
10	59	.24	199	1.1	150	.97	117	.95	204	1.2	116	.88
11	63	.22	162	1.0	235	1.3	132	1.1	174	1.1	160	1.2
12	62	.22	145	.82	252	1.9	127	.69	128	.73	112	.45
13	73	.26	150	.85	219	1.7	130	.70	136	.77	100	.76
14	73	.26	147	.71	215	1.0	86	.46	152	.86	97	.79
15	73	.30	98	.40	188	1.2	111	.60	146	.95	190	.77
16	78	.32	556	3.0	237	1.8	87	.50	138	.89	150	.85
17	72	.35	124	.67	139	1.1	71	.38	133	.86	169	1.1
18	89	.43	121	.65	227	2.2	74	.60	214	1.4	142	.81
19	97	.47	122	.66	219	1.7	118	.94	121	.69	124	.70
20	86	.42	131	.71	248	1.9	124	1.2	123	.70	181	1.0
21	111	.63	131	.71	210	1.4	100	.97	120	.68	102	.66
22	104	.59	108	.58	197	1.5	114	1.1	442	3.3	126	.68
23	142	.81	131	.71	194	1.5	133	1.6	166	1.1	115	.62
24	112	.64	127	.69	173	1.3	300	4.4	163	.92	113	.61
25	100	.49	110	.59	157	1.2	340	2.6	174	.99	101	.55
26	109	.44	137	.74	208	1.6	333	3.2	116	.88	100	.81
27	102	.41	173	.93	198	1.5	276	1.8	108	1.2	106	.57
28	90	.32	158	.85	154	1.2	277	1.8	631	4.4	134	.72
29	142	.50	143	.77	119	.64	317	2.1	---	---	113	.61
30	147	.60	136	.73	126	1.0	254	1.6	---	---	100	.54
31	135	.55	---	---	126	1.0	150	.85	---	---	113	.61
TOTAL	---	14.05	---	22.56	---	38.76	---	56.06	---	33.40	---	30.57
APRIL												
1	256	1.4	29	.08	72	.08	0	.00	52	.04	100	.14
2	127	.69	43	.12	70	.06	0	.00	0	.00	40000	54000
3	135	1.1	20	.07	69	.06	0	.00	0	.00	93000	276000.0
4	102	.55	126	.51	74	.04	0	.00	0	.00	62000	16700
5	88	.48	82	.24	71	.04	0	.00	0	.00	51000	1100
6	48	.26	74	.16	61	.03	0	.00	0	.00	29000	392
7	53	.29	121	.26	77	.06	0	.00	0	.00	4100	33
8	32	.17	102	.30	54	.06	0	.00	100	.19	292	.79
9	31	.17	72	.21	69	.07	0	.00	50	.03	103	.19
10	36	.19	47	.10	91	.10	0	.00	0	.00	254	.41
11	34	.09	76	.21	80	.08	0	.00	0	.00	44000	1190
12	30	.16	70	.19	60	.06	118000	4140	131000	84200	83900	2920
13	27	.15	92	.25	40	.04	79000	853	91500	7410	79200	6040
14	41	.22	91	.49	20	.02	4610	10	54000	875	50500	736
15	32	.17	99	.53	0	.00	97	.08	69800	9100	60500	719
16	45	.24	95	.51	0	.00	9840	853	51500	1250	38000	185
17	45	.24	62	.17	0	.00	54500	2590	52800	570	2200	4.2
18	48	.26	76	.14	0	.00	10400	30200	90000	14600	130	.18
19	56	.30	67	.13	0	.00	166000	24800	72600	4510	237	.32
20	31	.17	91	.17	0	.00	163000	38700	55000	653	115	.15
21	34	.18	171	.32	0	.00	207000	373000.0	12000	78	98	.13
22	22	.12	50	.14	0	.00	93000	4520	355	1.7	64	.09
23	32	.17	94	.18	0	.00	147000	840000.0	145	.31	62	.08
24	61	.33	72	.14	0	.00	86000	69700	55	.09	28	.04
25	80	.43	60	.11	0	.00	43000	2320	65900	4260	56	.08
26	28	.15	55	.15	0	.00	38000	308	51000	895	36	.04
27	49	.26	70	.13	0	.00	11300	55	7500	43	412	.44
28	40	.11	68	.09	0	.00	172	.33	250	.74	94	.13
29	29	.16	71	.15	0	.00	164	.31	150	.20	45	.06
30	36	.10	54	.10	0	.00	42	.06	100	.08	72	.12
31	---	---	68	.09	---	---	50	.07	60	.06	---	---
TOTAL	---	9.31	---	6.44	---	0.80	---	1392049.85	---	128447.44	---	360022.59

SUSPENDED LOAD FOR YEAR: 1880731.83 TONS.

LITTLE COLORADO RIVER BASIN

09401260 MOENKOPI WASH AT MOENKOPI, AZ--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
UNCF-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	8.0	3.0	5.0	2.0	6.0	8.0	18.0	22.0	---	18.0	---
2	15.0	5.0	3.0	2.0	1.0	4.0	10.0	16.0	24.0	---	---	---
3	16.0	6.0	3.0	2.0	4.0	4.0	13.0	18.0	22.0	---	---	20.0
4	18.0	6.0	4.0	2.0	4.0	5.0	16.0	20.0	18.0	---	---	---
5	16.0	6.0	3.0	2.0	3.0	6.0	20.0	15.0	24.0	---	---	20.0
6	15.0	5.0	2.0	2.0	5.0	8.0	20.0	18.0	20.0	---	---	19.0
7	16.0	6.0	3.0	1.0	4.0	6.0	22.0	16.0	18.0	---	---	20.0
8	12.0	5.0	3.0	2.0	5.0	6.0	22.0	14.0	20.0	---	---	27.5
9	12.0	6.0	3.0	2.0	5.0	5.0	21.0	12.0	18.0	---	---	19.0
10	13.0	5.0	2.0	2.0	7.0	7.0	22.0	12.0	19.0	---	---	27.0
11	11.0	8.0	1.0	3.0	5.0	10.0	17.0	16.0	---	---	---	22.0
12	11.0	6.0	3.0	2.0	5.0	12.0	22.0	15.0	---	---	19.0	27.0
13	10.0	6.0	3.0	2.0	7.0	12.0	22.0	18.0	---	24.0	21.0	17.0
14	11.0	5.0	4.0	4.0	5.0	8.0	20.0	14.0	---	20.0	16.0	24.0
15	12.0	8.0	2.0	1.0	6.0	8.5	16.0	16.0	---	26.0	21.5	16.0
16	10.0	6.0	2.0	1.0	7.0	12.0	22.0	14.0	---	20.0	14.0	15.0
17	12.0	4.0	3.0	2.0	8.0	10.0	23.0	15.0	---	24.0	16.0	11.0
18	10.0	5.0	1.0	4.0	9.0	11.0	20.0	12.0	---	22.0	21.5	10.0
19	6.0	10.0	3.0	1.0	9.0	12.0	19.0	16.0	---	20.0	24.5	24.0
20	---	4.0	3.0	2.0	8.0	12.0	20.0	22.0	---	20.0	23.0	13.0
21	3.0	4.0	2.0	2.0	5.0	10.0	21.0	24.0	---	20.0	24.5	11.0
22	11.0	3.0	3.0	4.0	6.0	16.0	22.0	24.0	---	17.0	30.0	12.0
23	18.0	2.0	4.0	3.0	7.0	10.0	21.0	19.0	---	18.0	28.0	11.0
24	10.0	2.0	4.0	5.0	5.0	12.0	21.0	16.0	---	22.0	18.0	26.0
25	10.0	3.0	6.0	4.0	3.0	10.0	24.0	18.0	---	21.0	20.0	13.0
26	8.0	3.0	4.0	2.0	5.0	14.0	26.0	22.0	---	17.0	---	15.0
27	5.0	2.0	4.0	3.0	7.0	16.0	18.0	24.0	---	26.0	17.0	20.0
28	4.0	4.0	4.0	4.0	---	12.0	22.0	26.0	---	---	15.0	18.0
29	6.0	5.0	2.0	4.0	---	9.0	24.0	28.0	---	29.5	---	15.0
30	6.0	4.0	4.0	8.0	---	12.0	20.0	29.0	---	24.0	---	15.0
31	8.0	---	2.0	1.0	---	11.0	---	26.0	---	18.0	---	---
MEAN	11.0	5.0	3.0	2.5	5.5	9.5	20.0	18.5	20.5	21.5	20.5	18.0
WTR YR 1977	MEAN	12.0		MAX	30.0	MIN	1.0					

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 current year. 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) above mean sea level. 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) above mean sea level (State Highway Department bench mark).

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

AVERAGE DISCHARGE.--24 years (water years 1942-53, 1966-77), 15.2 ft³/s (0.430 m³/s), 11,010 acre-ft/yr (13.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s (343 m³/s) Oct. 19, 1972 (gage height, 16.98 ft or 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 (*) and peak discharges above base of 1,400 ft³/s (40 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
July 23	0900	*3,360 95.2	12.52 3.816
Aug. 12	1630	1,680 47.6	10.14 3.091

No flow for many days.

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	15	3.0	2.5	3.5	3.8	4.1	.00	.00	.00	.00	.00	.00
2	10	3.0	3.0	4.0	3.8	4.1	.00	.00	.00	.00	.00	.00
3	8.0	2.7	3.0	4.0	3.8	4.1	.00	.00	.00	.00	.00	1000
4	5.0	2.7	3.0	4.5	4.1	4.1	.00	.00	.00	.00	.00	500
5	4.0	2.7	3.0	4.5	4.5	4.5	.00	.00	.00	.00	.00	100
6	3.0	3.0	3.0	4.0	4.8	3.8	.00	.00	.00	.00	.00	10
7	3.0	3.0	3.0	4.0	4.8	3.2	.00	.00	.00	.00	.00	5.0
8	3.0	2.7	3.0	3.5	4.5	3.2	.00	.00	.00	.00	.00	3.2
9	3.0	2.5	3.5	3.5	4.5	3.0	.00	.00	.00	.00	.00	3.0
10	3.0	2.5	3.5	3.0	4.8	3.0	.00	.00	.00	.00	.00	2.5
11	3.0	2.7	3.5	3.0	4.5	3.0	.00	.00	.00	.00	11	7.0
12	3.0	2.7	3.2	3.0	4.1	2.5	.00	.00	.00	5.0	200	5.0
13	3.0	3.0	3.0	2.5	3.8	2.5	.00	.00	.00	1.8	80	10
14	3.0	3.0	3.2	2.5	3.5	2.0	.00	1.0	.00	1.0	10	5.0
15	3.0	2.7	3.8	3.0	3.2	2.0	.00	.50	.00	1.5	50	5.0
16	2.7	2.7	3.8	2.5	3.2	1.8	.00	.30	.00	1.5	20	2.0
17	2.5	2.5	3.5	2.5	3.2	1.6	.00	.00	.00	18	150	1.0
18	2.3	2.5	3.5	2.5	3.2	1.0	.00	.00	.00	11	86	1.0
19	2.3	2.7	3.5	2.5	3.2	.00	.00	.00	.00	13	33	1.0
20	2.5	2.5	3.5	3.5	3.2	.00	.00	.00	.00	18	10	1.0
21	2.7	2.5	3.5	3.8	3.5	.00	.00	.00	.00	300	4.0	1.0
22	3.2	2.3	3.5	3.0	3.6	.00	.00	.00	.00	100	3.0	.50
23	3.2	2.5	3.5	3.5	4.5	.00	.00	.00	.00	1500	2.0	.00
24	3.2	2.5	3.5	5.6	4.8	.00	.00	.00	.00	400	1.0	.00
25	3.2	2.5	3.5	5.6	4.8	.00	.00	.00	.00	50	10	.00
26	3.0	2.5	3.5	4.1	4.5	.00	.00	.00	.00	10	5.0	.00
27	3.0	2.5	3.5	3.8	3.8	.00	.00	.00	.00	7.0	1.0	.00
28	3.0	2.5	3.5	3.2	4.1	.00	.00	.00	.00	5.0	1.0	.00
29	2.7	2.5	3.5	2.7	---	.00	.00	.00	.00	3.0	.00	.00
30	2.7	2.5	3.5	3.0	---	.00	.00	.00	.00	2.0	.00	.00
31	3.0	---	3.5	3.0	---	.00	---	.00	---	1.0	.00	---
TOTAL	117.2	79.6	103.5	107.3	112.3	53.50	.00	1.80	.00	2448.80	677.00	1663.20
MEAN	3.78	2.65	3.34	3.46	4.01	1.73	.000	.058	.000	79.0	21.8	55.4
MAX	15	3.0	3.8	5.6	4.8	4.5	.00	1.0	.00	1500	200	1000
MIN	2.3	2.3	2.5	2.5	3.2	.00	.00	.00	.00	.00	.00	.00
AC-FT	232	158	205	213	223	106	.00	3.6	.00	4860	1340	3300
CAL YR 1976	TOTAL	2832.90	MEAN	7.74	MAX	907	MTN	.00	AC-FT	5620		
WTR YR 1977	TOTAL	5364.20	MEAN	14.7	MAX	1500	MTN	.00	AC-FT	10640		

NOTE.--No gage-height record July 18 to Aug. 3.

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) above mean sea level.

REMARKS.--Records fair 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.--30 years, 219 ft³/s (6.202 m³/s), 158,700 acre-ft/yr (196 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s (705 m³/s) Jan. 21, 1952 (gage height, 20.7 ft or 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, 3,300 ft³/s (93.5 m³/s) Aug. 20, gage height, 7.80 ft (2.377 m), no peak above base of 4,000 ft³/s (113 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	.00	.00	.00	41	1.6	.00	1.0	.00	.00	89	34
2	53	.00	.00	.00	38	1.4	.00	.50	.00	.00	75	4.7
3	35	.40	.00	2.0	34	1.6	.00	.00	.00	.60	89	521
4	21	.70	.00	2.2	27	1.6	.00	.00	.00	.00	50	178
5	16	.70	.00	3.1	24	1.2	.00	.00	.00	.00	20	96
6	11	.70	.00	1.8	20	1.2	.00	.00	.00	5.7	10	131
7	8.6	.80	.00	1.1	15	1.6	.00	.00	.00	7.0	28	238
8	6.6	1.0	.00	.50	10	1.4	2.4	.00	.00	.50	30	216
9	4.7	1.1	.00	.00	9.2	1.2	84	.00	.00	.00	201	100
10	3.4	1.2	.00	.00	7.4	1.2	58	.00	.00	.00	100	50
11	2.4	1.4	.00	.00	6.6	.50	258	.00	.00	17	50	265
12	1.6	1.4	.00	.00	5.7	.00	380	.00	.00	19	105	100
13	1.0	1.8	.00	.00	5.0	.00	385	.00	.00	.00	567	175
14	.50	1.8	.00	.00	5.0	.00	274	.00	.00	.00	1370	150
15	.30	1.8	.00	.00	4.7	.00	202	.00	.00	.00	1130	70
16	.20	2.0	.00	.00	4.4	.00	152	.00	.00	.00	800	35
17	.10	2.0	.00	.00	4.0	.00	128	.00	.00	.00	600	10
18	.10	2.0	.00	.00	3.0	.00	114	.00	.00	9.5	2340	2.0
19	.00	2.0	.00	.00	3.0	.00	99	.00	.00	34	2880	1.0
20	.00	2.0	.00	.00	2.0	.00	89	.00	.00	65	2980	.00
21	.00	2.0	.00	.00	2.0	.00	75	.00	.00	346	2000	.00
22	.00	2.0	.00	4.1	2.0	.00	64	.00	.00	690	1000	.00
23	.00	2.0	.00	7.4	2.0	.00	46	.00	.00	1460	500	.00
24	.00	2.0	.00	5.7	2.0	.00	41	.00	.00	1830	500	.00
25	.00	1.8	.00	648	2.0	.00	30	.00	.00	897	300	.00
26	.00	1.8	.00	488	.70	.00	20	.00	.00	830	100	.00
27	.00	1.6	.00	199	1.0	.00	8.0	.00	.00	203	90	.00
28	.00	.70	.00	112	1.6	.00	4.0	.00	.00	430	80	.00
29	.00	.10	.00	82	---	.00	3.0	.00	.00	910	64	539
30	.00	.00	.00	70	---	.00	2.0	.00	.00	380	37	848
31	.00	---	.00	53	---	.00	---	.00	---	154	47	---
TOTAL	256.50	38.80	.00	1679.90	282.30	14.50	2518.40	1.50	.00	8288.30	18232	3763.70
MEAN	8.27	1.29	.000	54.2	10.1	.47	83.9	.048	.000	267	588	125
MAX	91	2.0	.00	648	41	1.6	385	1.0	.00	1830	2980	848
MIN	.00	.00	.00	.00	.70	.00	.00	.00	.00	.00	10	.00
AC-FT	509	77	.00	3330	560	29	5000	3.0	.00	16440	36160	7470
CAL YR 1976	TOTAL	53988.60	MEAN	148	MAX	1920	MIN	.00	AC-FT	107100		
WTR YR 1977	TOTAL	35075.90	MEAN	96.1	MAX	2980	MIN	.00	AC-FT	69570		

COLORADO RIVER MAIN STEM

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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 1908-13, 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) above mean sea level.

REMARKS.--Records excellent. 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); 13 years (water years 1965-77) 12,720 ft³/s (360.2 m³/s), 9,216,000 acre-ft/yr (11,400 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 or 8.915 m); minimum, 700 ft³/s (19.8 m³/s) Dec. 28, 1924 (gage height, -0.70 ft or -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, 32,100 ft³/s (909.1 m³/s) Aug. 19, gage height, 16.53 ft (5.038 m); minimum daily, 1,380 ft³/s (39.08 m³/s) May 24.

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	18200	13000	17500	13700	13400	11900	4620	1810	2400	9550	20100	16700
2	15500	16300	16600	6630	14200	10600	3460	1470	3650	6990	25000	19200
3	12800	17000	17300	5550	12400	21600	2850	6770	5330	9100	23500	20600
4	8210	17200	16200	17900	10100	18700	2810	7630	6600	11400	22400	15400
5	10200	17400	15800	15500	8960	12000	3740	5970	3710	8620	19400	12500
6	10400	16300	14400	20100	6280	8540	2690	4860	4040	9240	15500	13200
7	15200	13700	16500	18500	4530	8690	2080	5790	6240	12600	14600	20200
8	16000	11900	14400	18100	8840	12300	1970	2830	6840	18200	18100	22300
9	13500	15500	13500	18800	11300	8160	4380	1660	8290	16400	21600	21400
10	10400	14900	12600	12800	10300	8020	6630	1750	4880	14900	21400	19000
11	6970	15400	17500	20200	11100	9060	3440	2380	2800	13900	20000	15400
12	11800	16700	17700	20800	12200	11700	1720	3420	3090	14500	18400	11500
13	15000	17700	7020	19300	8890	4480	2320	2980	1600	14400	19700	17900
14	13100	16400	12100	16700	4890	3830	2320	4080	3930	13600	22800	17200
15	11300	12400	12000	19100	11600	9210	2630	5690	7870	13300	18500	17000
16	12600	16000	11300	18100	9050	11000	2970	3560	7990	16100	21000	16900
17	11000	14600	13200	13300	7710	10400	2320	3600	9150	16100	24700	15500
18	9080	14000	12300	19900	6470	8270	2250	7160	7760	13500	27000	11000
19	14500	13300	13300	20500	4150	4740	5460	7260	6880	16500	27100	9100
20	14600	14100	6840	20800	3620	3940	5960	4490	6590	16200	25400	13300
21	14000	14300	13700	17700	3920	2720	3980	3080	7430	15800	22900	15000
22	14900	11400	13900	13800	10300	3480	3390	2000	8760	15900	16500	14600
23	15100	16300	14000	12200	8410	2700	1970	1430	10300	20000	20300	15000
24	13700	16600	11200	8600	8080	1560	1810	1380	15200	16500	19700	16600
25	9420	15100	6470	17400	9070	1970	1530	3060	14100	14200	21600	16800
26	15500	8370	5030	19400	9720	1660	2300	3450	14400	16900	22800	14500
27	14800	13700	5560	18700	6830	2220	3150	3220	9650	16400	19800	18600
28	16400	19600	16600	18600	9300	2400	3190	2990	18100	17300	14500	17300
29	16700	16900	19100	19400	---	10500	4170	2390	15200	14400	10200	18800
30	16500	19100	20500	19300	---	12900	3270	1440	15200	16700	13400	19400
31	15400	---	21700	11800	---	8490	---	1390	---	18400	19800	---
TOTAL	412780	455170	417820	513180	245530	247940	95380	110990	237980	447600	627700	491900
MEAN	13320	15170	13480	16550	8749	7998	3179	3580	7933	14440	20250	16400
MAX	18200	19600	21700	20800	14200	21600	6630	7630	18100	20000	27100	22300
MIN	6970	8370	5030	5550	3620	1560	1530	1380	1600	6990	10200	9100
AC-FT	818700	902800	828700	1018000	487000	491800	189200	220100	472000	887800	1245000	975700
CAL YR 1976	TOTAL	4876100	MEAN	13320	MAX	22200	MIN	1380	AC-FT	9672000		
WTR YR 1977	TOTAL	4303970	MEAN	11790	MAX	27100	MIN	1380	AC-FT	8537000		

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)
NOV 02...	1000	18700	790	7.8	8.5	280	150	73
DEC 02...	1400	20700	810	7.9	6.5	270	150	68
JAN 02...	1000	6000	905	8.1	8.0	270	140	66
FEB 01...	1400	17700	880	7.5	8.0	280	140	68
28...	1450	9340	1000	8.2	7.0	310	170	78
APR 14...	1130	2360	1500	8.1	15.0	330	140	89
MAY 01...	0930	1960	1100	8.1	15.5	320	180	82
JUN 03...	--	3100	1220	8.2	18.5	340	210	85
JUL 01...	1000	13900	910	8.1	11.5	280	140	73
AUG 04...	0800	27800	970	8.0	10.0	300	160	79
SEP 05...	1000	10700	1000	7.8	15.0	300	150	78

COLORADO RIVER MAIN STEM

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09402500 COLORADO RIVER NEAR GRAND CANYON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PH- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)
NOV									
02...	24	80	2.1	3.7	163	0	220	65	.3
DEC									
02...	25	77	2.0	3.7	154	0	210	70	.3
JAN									
02...	25	85	2.3	3.7	155	0	210	75	.3
FEB									
01...	26	83	2.2	3.7	166	0	210	72	.3
28...	29	100	2.5	4.0	179	0	250	100	.2
APR									
14...	27	200	4.8	6.2	240	0	240	210	.5
MAY									
01...	29	120	2.9	4.4	180	0	270	111	.3
JUN									
03...	32	140	3.3	5.2	160	0	260	160	.3
JUL									
01...	23	93	2.4	3.8	170	0	240	76	.3
AUG									
04...	25	98	2.5	3.8	170	0	240	88	.3
SEP									
05...	26	89	2.2	4.1	180	0	240	73	.0

DATE	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
NOV								
02...	7.0	558	556	.76	.52	.00	90	10
DEC								
02...	6.9	558	539	.76	.45	.01	80	10
JAN								
02...	7.1	593	551	.81	.35	.02	100	890
FEB								
01...	7.4	582	554	.79	.43	.01	100	30
28...	7.5	685	659	.93	.46	.00	110	10
APR								
14...	9.2	924	903	1.26	.59	.00	180	390
MAY								
01...	7.1	724	714	.98	.46	.00	110	30
JUN								
03...	7.1	797	769	1.08	--	--	230	10
JUL								
01...	8.3	633	601	.86	--	--	100	60
AUG								
04...	8.0	656	626	.89	--	--	110	20
SEP								
05...	17	617	616	.84	--	--	110	20

KANAB CREEK BASIN

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 fair except for the period Dec. 13 to Jan. 17, 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.--14 years, 5.12 ft³/s (0.145 m³/s), 3,710 acre-ft/yr (4.57 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,630 ft³/s (131 m³/s) Aug. 18, 1970 (gage height, 9.11 ft or 2.777 m, inside, 9.7 ft or 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, 435 ft³/s (12.3 m³/s) July 23, gage height, 2.95 ft (0.899 m), base discharge, 300 ft³/s (8.5 m³/s); no flow for most of year.

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	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00
2	14	.00	.00	4.0	.00	.00	.00	.00	.00	.00	.00	.00
3	14	.00	.00	5.0	.00	.00	.00	.00	.00	.00	.00	.00
4	2.0	.00	.00	4.0	.00	.00	.00	.00	.00	.00	.00	.00
5	.30	.00	.00	4.0	.00	.00	.00	.00	.00	26	.00	.00
6	.10	.00	.00	3.0	.00	.00	.00	.00	.00	3.1	.00	.00
7	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.45	.00	.00
8	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	1.5
12	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	8.8	29
13	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	4.8	.00
14	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.15	3.5
15	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00	.00	.87
16	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00	8.4	.00
17	.00	.00	.00	4.0	.00	.00	.00	.00	.00	.00	31	.00
18	.00	.00	.00	3.5	.00	.00	.00	.00	.00	.00	5.9	.00
19	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.59	.00
20	.00	.00	.00	2.0	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.35	.00	.00	.00	.00	.00	7.9	.00	.00
23	.00	.00	.00	.16	.00	.00	.00	.00	.00	63	.00	.00
24	.00	.00	.00	.08	.00	.00	.00	.04	.00	71	2.4	.00
25	.00	.00	.00	.00	.00	.00	.00	.16	.00	5.5	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.16	.00	.59	.00	.00
27	.00	.00	1.0	.00	.00	.00	.00	.15	.27	.11	.00	.00
28	.00	.00	2.0	.00	.00	.00	.00	.14	.42	.09	.00	.00
29	.00	.00	3.0	.00	---	.00	.00	.12	.00	.00	.00	.00
30	.00	.00	3.0	.00	---	.00	.00	.09	.00	.00	.00	.00
31	.00	---	3.0	.00	---	.00	---	.04	---	.00	.00	---
TOTAL	30.40	.00	12.00	68.75	.00	.00	.00	.90	.69	177.74	62.04	34.47
MEAN	.98	.000	.39	2.22	.000	.000	.000	.029	.023	5.73	2.00	1.15
MAX	14	.00	3.0	5.0	.00	.00	.00	.16	.42	71	31	29
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	60	.00	24	136	.00	.00	.00	1.8	1.4	353	123	68

CAL YR 1976 TOTAL 433.25 MEAN 1.18 MAX 72 MIN .00 AC-FT 859
WTR YR 1977 TOTAL 386.99 MEAN 1.06 MAX 71 MIN .00 AC-FT 768

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) above mean sea level.

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) above mean sea level, 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 good. Diversion above station for irrigation of about 23,200 acres (93.9 km²).

AVERAGE DISCHARGE.--48 years, 220 ft³/s (6.230 m³/s), 159,400 acre-ft/yr (197 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.--Peak discharges above base of 3,000 ft³/s (85 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Oct. 2	1800	*7,140 202	10.97 3.344
July 24	0200	5,090 144	9.82 2.993
Aug. 24	0130	6,120 173	10.42 3.176

Minimum daily discharge, 51 ft³/s (1.44 m³/s) Sept. 22.

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	70	107	154	128	139	96	77	59	56	71	60	61
2	1940	115	136	128	136	94	83	58	56	71	60	59
3	1240	107	125	145	131	94	87	54	58	71	60	61
4	425	100	115	154	131	89	73	56	58	70	59	59
5	236	98	120	136	128	89	66	56	58	70	58	63
6	186	91	128	117	128	85	64	53	58	94	59	58
7	142	87	131	120	128	85	63	54	58	70	60	59
8	107	105	110	115	125	89	61	54	56	68	62	61
9	105	100	105	110	125	98	61	58	285	64	61	59
10	100	98	103	103	122	79	63	56	827	62	63	61
11	103	100	103	122	125	91	63	54	163	59	63	70
12	87	100	110	160	115	107	64	53	83	56	61	79
13	87	107	110	157	115	96	63	53	71	58	63	105
14	85	103	107	157	115	81	64	56	70	60	64	178
15	73	110	107	157	112	83	63	107	70	60	64	160
16	75	139	112	157	112	75	63	83	69	60	68	68
17	73	133	105	154	115	77	66	66	69	60	71	59
18	73	128	110	154	117	75	68	64	68	60	299	63
19	77	125	103	151	112	75	68	61	68	60	94	58
20	77	115	100	151	112	77	66	56	67	63	68	54
21	87	120	96	154	110	68	66	53	67	61	59	54
22	96	120	96	170	110	68	66	52	66	60	58	51
23	107	107	105	166	117	68	68	52	66	60	58	53
24	105	107	125	154	110	68	66	54	64	1590	910	53
25	110	115	122	148	110	77	64	644	66	166	307	56
26	98	115	120	142	112	128	64	535	68	71	125	54
27	98	133	122	142	105	110	75	183	68	63	85	56
28	103	133	128	140	103	91	63	107	71	60	75	59
29	105	145	117	140	---	79	64	75	73	60	73	58
30	112	148	117	140	---	75	61	64	71	60	66	58
31	110	---	131	142	---	79	---	61	---	60	63	---
TOTAL	6492	3411	3573	4414	3320	2646	2003	3091	3048	3618	3396	2047
MEAN	209	114	115	142	119	85.4	66.8	99.7	102	117	110	68.2
MAX	1940	148	154	170	139	128	87	644	827	1590	910	178
MIN	70	87	96	103	103	68	61	52	56	56	58	51
AC-FT	12880	6770	7090	8760	6590	5250	3970	6130	6050	7180	6740	4060
CAL YR 1976	TOTAL	48995	MEAN 134	MAX 1940	MIN 44	AC-FT 97180						
WTR YR 1977	TOTAL	41059	MEAN 112	MAX 1940	MIN 51	AC-FT 81440						

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.

SUSPENDED-SEDIMENT DISCHARGE: October 1947 to September 1968, once-daily.

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, 3,580 micromhos July 7; minimum, 2,100 micromhos Oct. 3.

WATER TEMPERATURES: Maximum, 32.0°C July 15, 31; minimum, 6.5°C Nov. 27.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DYSOLVED OXYGEN (MG/L)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)	DYSOLVED CALCIUM (CA) (MG/L)	DYSOLVED MAGNESIUM (MG) (MG/L)	DYSOLVED SODIUM (NA) (MG/L)
OCT												
27...	1030	130	3290	7.8	18.5	--	--	1300	1100	350	100	310
NOV												
24...	1030	98	3410	8.0	15.5	--	--	1300	1000	350	99	280
DEC												
30...	1200	100	3130	8.0	10.5	--	--	1100	820	300	93	260
JAN												
26...	1130	154	2800	8.0	12.5	--	--	1000	760	280	82	260
FEB												
23...	1215	123	2980	8.5	15.0	--	--	1100	840	290	92	280
MAR												
30...	1200	79	3380	8.0	19.0	--	--	1300	1100	350	110	280
APR												
27...	1400	66	3370	8.0	26.0	--	--	1400	1200	380	120	270
MAY												
23...	1230	1060	2580	7.7	17.0	--	--	1100	970	360	60	170
JUN												
10...	1215	297	3050	7.7	21.5	--	--	--	--	--	--	140
23...	1100	66	3450	7.8	28.0	--	--	1500	1200	400	110	290
JUL												
28...	1200	79	3530	7.6	29.5	--	--	1500	1200	400	120	280
AUG												
24...	0830	E788	3480	7.4	24.0	--	--	1800	1600	620	70	170
SEPT												
15...	1300	--	3440	--	--	--	--	--	--	--	--	--
20...	1430	57	3350	7.8	26.0	70	7.6	1400	1200	360	130	240
28...	0930	64	3420	7.9	23.0	--	--	1500	1200	390	120	280

E Estimated.

VIRGIN RIVER BASIN

99

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	SODIUM AD- SURP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED SOLIDS (RST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 27...	3.8	33	288	0	1100	430	--	19	--	2490	3.39
NOV 24...	3.4	29	325	0	980	390	--	18	--	2310	3.14
DEC 30...	3.4	26	376	0	910	370	--	20	--	2160	2.94
JAN 26...	3.5	22	334	0	810	360	--	19	--	2000	2.72
FEB 23...	3.7	26	323	0	870	390	--	18	--	2130	2.90
MAR 30...	3.3	30	327	0	1100	400	--	19	--	2450	3.33
APR 27...	3.1	32	310	0	1200	380	--	19	--	2560	3.48
MAY 23...	2.2	21	220	0	1000	210	--	9.4	--	1940	2.64
JUN 10...	--	--	--	--	1700	120	--	--	--	--	--
JUN 23...	3.3	30	300	0	1200	400	--	20	--	2600	3.54
JUL 28...	3.2	31	320	0	1200	400	--	19	--	2610	3.55
AUG 24...	1.7	23	320	0	1600	230	--	16	--	2890	3.93
SEP 15...	--	--	--	--	--	--	--	--	--	--	--
SEP 20...	2.8	33	230	0	1200	400	1.0	20	2690	2500	3.66
SEP 28...	3.2	33	300	0	1200	400	--	20	--	2590	3.52

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJFL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)
OCT 27...	.64	.01	--	.65	--	--	--	.01
JAN 26...	.52	.01	--	.53	--	--	--	.01
APR 27...	.25	.03	--	.28	--	--	--	.04
JUL 28...	.28	.01	--	.29	--	--	--	.00
SEP 20...	--	--	.27	--	.35	.62	.20	--

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
SEP 20...	9	5	400	1100	10	0	10	<50	0	10	0	1500

DATE	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS- SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELF- NIUM (SF) (UG/L)	DIS- SOLVED SELF- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
SEP 20...	10	100	0	90	30	.0	.0	0	1	20	10

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

VIRGIN RIVER BASIN

09415000 VIRGIN RIVER AT LITTLEFIELD, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
UNCF-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3240	3330	3020	2830	2830	3160	3300	3220	3340	3320	3330	3390
2	3120	3340	3070	2830	2850	3200	3340	3240	3310	3370	3330	3380
3	2100	3350	3120	2760	2790	3090	3270	3400	3330	3290	3340	3390
4	3280	3400	2980	2770	2810	3260	3230	3310	3310	3270	3320	3380
5	3360	3390	3110	3030	2810	3270	3320	3440	3270	3350	3320	3380
6	3330	3360	2960	2910	2770	3290	3340	3440	3310	3490	3340	3270
7	3290	3380	2950	2950	2850	3330	3330	3340	3260	3360	3320	3380
8	3390	3250	3040	2990	2820	3290	3350	3390	3300	3390	3290	3340
9	3390	3220	3090	3070	2820	3230	3370	3180	3300	3320	3320	3340
10	3440	3230	3070	3050	2830	3320	3340	3260	3250	3390	3330	3330
11	3390	3180	3120	2830	2880	3390	3340	3280	3360	3330	3240	3350
12	3470	3190	3120	2870	2920	3200	3310	3340	3360	3340	3360	3440
13	3470	3220	3140	2770	2920	3220	3350	3300	3220	3420	3340	3270
14	3410	3170	3170	2770	2900	3360	3330	3280	3370	3370	3370	2980
15	3360	2310	3160	2590	2940	3420	3290	2830	3250	3380	3270	3090
16	3380	2960	3220	2770	2900	3420	3350	3170	3350	3320	3230	3450
17	3390	2950	3220	2760	2900	3290	3370	3400	3370	3390	3250	3370
18	3470	2960	3180	2810	2890	3380	3300	3410	3370	3370	2890	3400
19	3410	3040	3210	2810	2970	3390	3330	3370	3370	3320	3030	3300
20	3470	3090	3150	2760	2900	3370	3330	3350	3370	3380	3330	3390
21	3390	3050	3240	2740	2990	3320	3330	3400	3370	3320	3260	3380
22	3530	3070	3250	2630	3030	3330	3320	3370	3360	3320	3230	3340
23	3560	3100	3270	2640	2970	3380	3330	3310	3370	3320	3330	3390
24	3490	3120	3090	2760	2980	3330	3330	3260	3380	3170	3230	3400
25	3470	3100	3090	2730	3070	3320	3330	2120	3380	3440	3030	3330
26	3470	3210	3060	2730	3010	3000	3360	2110	3370	3470	3330	3360
27	3450	3080	3010	2830	3040	2990	3380	2410	3370	3390	3380	3340
28	3390	3040	3010	2820	3150	3190	3360	3220	3360	3390	3330	3340
29	3440	3070	3050	2820	---	3280	3330	3220	3370	3430	3340	3350
30	3410	3090	3110	2840	---	3360	3380	3320	3380	3430	3390	3370
31	3380	---	3000	2800	---	3380	---	3310	---	3390	3390	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
UNCF-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	19.0	12.0	13.0	14.5	17.0	18.0	23.0	27.5	29.0	31.5	29.0
2	19.0	19.0	14.0	13.0	15.5	16.0	20.0	26.0	28.0	26.0	31.5	27.5
3	17.0	19.5	13.5	13.0	15.5	17.0	20.5	23.5	28.5	26.5	30.0	29.0
4	19.0	19.0	12.5	11.5	14.0	16.0	23.0	26.0	30.0	27.0	31.0	30.0
5	20.5	19.0	12.5	13.5	15.5	20.0	25.0	26.0	27.5	27.5	28.5	29.5
6	21.0	20.0	13.0	13.0	16.0	20.0	24.5	24.0	28.0	28.0	28.5	28.5
7	20.5	19.0	12.0	12.5	15.5	19.5	25.0	25.5	26.5	28.5	29.0	28.0
8	21.5	18.5	15.0	12.0	15.0	21.0	24.0	26.0	23.5	27.5	31.0	27.5
9	21.5	18.5	15.0	11.0	15.5	18.0	23.0	18.0	22.5	27.5	31.0	28.0
10	22.5	18.5	15.0	10.0	15.5	16.5	25.5	24.5	26.0	27.5	31.0	28.0
11	24.5	17.5	14.0	10.0	17.0	19.0	24.5	26.0	27.5	29.5	28.5	26.5
12	24.5	17.0	14.5	10.0	17.0	17.5	25.5	22.5	28.0	29.5	30.5	28.0
13	23.0	18.0	15.0	10.0	18.0	17.5	23.0	22.0	27.5	29.5	30.0	27.0
14	23.0	17.0	15.0	12.0	17.5	18.0	23.5	25.0	26.5	31.5	31.0	24.0
15	23.5	16.0	15.0	12.0	18.0	18.0	23.0	22.0	28.0	32.0	28.0	26.0
16	23.5	16.0	14.5	11.5	18.0	18.0	25.0	21.0	28.5	30.5	27.5	23.5
17	23.0	16.5	14.5	12.0	18.0	20.0	24.0	21.0	26.0	30.5	29.0	26.5
18	21.0	15.5	14.0	14.0	18.0	21.5	23.0	25.0	26.0	31.0	29.0	25.5
19	20.5	17.0	14.0	14.0	18.5	20.0	22.5	25.5	26.0	29.0	30.5	24.0
20	19.0	16.5	14.0	14.0	19.0	22.5	24.5	26.0	27.5	29.0	30.0	25.0
21	20.5	16.5	13.0	13.0	18.0	23.5	25.0	23.0	27.5	29.5	29.5	25.0
22	20.0	16.0	14.0	14.5	16.5	23.5	27.0	23.0	28.5	28.0	29.0	22.5
23	20.5	16.0	14.0	15.5	16.0	18.0	27.5	21.0	29.5	25.0	29.5	24.5
24	21.0	16.5	10.5	13.5	15.5	18.0	26.5	20.0	28.5	27.5	27.5	25.0
25	20.5	16.5	11.0	13.5	15.0	19.0	28.0	20.0	30.0	30.0	27.0	25.0
26	18.0	13.0	11.0	14.0	16.0	20.0	23.0	22.5	30.0	30.5	26.0	24.5
27	19.0	6.5	10.5	14.0	18.5	19.0	23.0	24.5	29.5	31.0	27.5	27.5
28	18.5	9.0	11.5	14.5	17.0	20.5	26.5	27.0	30.5	31.0	28.0	27.5
29	19.0	9.0	11.5	14.0	---	19.5	24.5	27.0	29.5	29.5	29.5	25.0
30	19.0	11.0	11.0	14.5	---	22.0	23.0	29.5	31.0	31.0	28.0	25.0
31	19.0	---	10.0	14.5	---	22.0	---	29.0	---	32.0	27.5	---

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	SFP 20,77
TIME	1430
TOTAL CELLS/ML	100
DIVERSITY: DIVISION	0.0
.CLASS	0.0
..ORDER	0.0
...FAMILY	0.0
....GENUS	0.0

ORGANISM	CELLS /ML	PER-CENT
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..PENNACEAE		
...NAVICULACEAE		
....NAVICULA	100	100

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 SE¼SW¼ 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) above mean sea level.

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.--20 years, 33.5 ft³/s (1.005 m³/s), 25,720 acre-ft/yr (31.7 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, 1,280 ft³/s (36.2 m³/s) Aug. 17, gage height, 8.49 ft (2.588 m); minimum, 32 ft³/s (0.91 m³/s) Aug. 8, 10.

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	102	66	72	78	72	70	62	59	58	50	58	60
2	356	68	72	74	70	62	61	63	58	52	57	61
3	320	66	73	77	70	64	64	60	59	57	59	63
4	93	69	68	77	72	66	64	55	60	61	55	62
5	77	68	69	70	71	69	65	56	65	57	55	61
6	70	60	72	70	72	70	66	55	67	54	52	64
7	66	64	73	73	71	66	65	60	66	57	47	57
8	68	64	71	73	64	68	58	63	59	59	45	58
9	69	68	67	73	63	70	60	66	59	52	46	56
10	71	70	66	71	64	70	63	72	64	48	45	54
11	70	68	69	69	62	67	61	62	56	51	45	65
12	68	72	72	70	66	64	66	62	58	51	46	65
13	64	67	72	70	67	68	63	68	58	53	49	62
14	68	63	65	71	67	72	64	75	58	53	51	65
15	66	66	62	71	64	74	61	68	55	52	52	67
16	55	66	63	71	60	75	61	64	55	51	56	68
17	55	68	63	71	64	74	63	63	56	55	316	67
18	58	69	61	73	65	74	62	62	56	53	520	65
19	60	66	65	69	70	69	61	59	60	56	99	65
20	65	66	69	67	72	67	65	55	62	59	78	67
21	67	68	70	70	70	65	66	57	62	61	72	69
22	65	68	68	73	70	65	62	62	61	63	68	69
23	68	61	69	75	61	65	60	67	65	66	73	69
24	68	62	69	74	64	63	60	85	64	66	83	71
25	67	62	70	73	61	68	60	76	64	68	76	73
26	65	68	67	72	66	87	56	68	65	62	71	72
27	66	64	70	70	72	74	56	65	70	63	71	70
28	68	71	74	69	75	73	54	64	64	61	67	69
29	69	72	75	70	---	69	57	59	60	57	63	68
30	65	72	74	73	---	65	58	58	54	56	63	65
31	68	---	74	72	---	65	---	60	---	58	62	---
TOTAL	2657	2002	2144	2229	1885	2138	1844	1968	1818	1762	2600	1947
MEAN	85.7	66.7	69.2	71.9	67.3	69.0	61.5	63.5	60.6	56.8	83.9	64.9
MAX	356	72	75	78	75	87	66	85	70	68	520	73
MIN	55	60	61	67	60	62	54	55	54	48	45	54
AC-FT	5270	3970	4250	4420	3740	4240	3660	3900	3610	3490	5160	3860
CAL YR 1976	TOTAL	24481	MEAN 66.9	MAX 586	MIN 44	AC-FT 48560						
WTR YR 1977	TOTAL	24994	MEAN 68.5	MAX 520	MIN 45	AC-FT 49580						

WATER-QUALITY RECORDS

SUSPENDED-SEDIMENT CONCENTRATIONS: Maximum, 73 mg/L Apr. 11, 1977; minimum, 9 mg/L July 12, 1977.

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DTS- SOLVED SODIUM (NA) (MG/L)
OCT 12...	1100	74	2640	7.4	17.5	750	520	170	80	280
NOV 15...	1100	65	2780	--	14.0	--	--	--	--	--
DEC 13...	1200	37	2620	--	8.5	--	--	--	--	--
JAN 09...	1200	--	--	--	--	700	560	130	92	--
10...	1100	67	2710	--	7.5	750	550	170	79	290
31...	1000	77	--	--	8.0	--	--	--	--	--
FEB 14...	1100	70	2770	--	12.5	--	--	--	--	--
MAR 14...	1000	74	2740	--	12.5	--	--	--	--	--
APR 11...	1330	53	2950	--	20.0	840	600	190	88	300
MAY 16...	1015	64	2540	--	16.0	--	--	--	--	--
JUN 14...	1000	65	--	--	20.0	--	--	--	--	--
JUL 12...	1100	60	2550	7.6	21.5	780	590	180	79	300
AUG 15...	1100	56	2620	--	24.5	--	--	--	--	--
15...	1115	56	--	--	--	--	--	--	--	--
SEP 12...	1030	72	2160	--	22.5	--	--	--	--	--

[illegible]

LAS VEGAS VALLEY

09419700 LAS VEGAS WASH NEAR HENDERSON, NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)
OCT									
12...	1.4	.36	1.8	11	5.0	16	18	5.0	5.0
NOV									
15...	12	1.5	13	3.6	--	--	--	5.1	--
DEC									
13...	2.0	.50	2.5	12	--	--	--	5.3	--
JAN									
09...	1.6	--	--	--	4.0	--	18	4.4	--
10...	2.4	.38	2.8	16	.00	16	19	5.3	5.0
FEB									
14...	2.0	.48	2.5	14	--	--	--	5.7	--
MAR									
14...	2.1	.47	2.6	13	--	--	--	5.1	--
APR									
11...	4.8	.17	5.0	11	2.0	13	18	6.3	4.2
MAY									
16...	1.1	.56	1.7	16	--	--	--	6.5	--
JUN									
14...	3.3	.39	3.7	13	--	--	--	6.3	--
JUL									
12...	.85	.65	1.5	10	.00	9.1	11	3.0	3.0
AUG									
15...	.66	.44	.11	12	--	--	--	--	--
SEP									
12...	.74	.36	1.1	12	--	--	--	6.5	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDIM- ENT DIS- CHARGE (MG/L)	SUS- PENDE SEDIM- ENT DIS- CHARGE (T/DAY)
JAN				
31...	1000	77	23	4.8
FEB				
14...	1100	70	60	11
MAR				
14...	1000	74	22	4.4
APR				
11...	1330	53	73	10
MAY				
16...	1015	64	31	5.4
JUL				
12...	1100	60	9	1.5
AUG				
15...	1100	56	14	2.1
SEP				
12...	1030	72	19	3.7

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV

LOCATION.--Lat 36°07'20", long 114°54'15", in NE¼SE¼ 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) above mean sea level, 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. 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.--8 years, 65.5 ft³/s (1.855 m³/s), 47,450 acre-ft (58.5 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, 814 ft³/s (23.1 m³/s) Aug. 18, gage height, 6.98 ft (2.128 m); minimum daily, 55 ft³/s (1.56 m³/s) Aug. 10, 14.

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	150	89	93	99	99	91	79	66	70	59	65	81
2	277	89	91	99	97	86	77	70	70	58	65	74
3	561	84	99	97	97	77	76	70	70	58	66	82
4	187	84	86	101	97	76	77	62	70	62	66	84
5	138	86	88	93	95	82	77	62	74	64	66	82
6	111	82	90	89	95	89	79	62	81	60	62	84
7	98	79	91	89	93	84	77	65	81	62	60	76
8	101	79	89	97	89	84	74	70	76	64	58	74
9	101	82	84	97	86	86	68	76	72	64	56	76
10	104	86	82	93	88	89	74	86	76	58	55	76
11	103	84	88	91	86	89	71	81	68	58	58	82
12	111	89	91	89	86	88	76	70	65	58	58	84
13	105	89	89	89	91	82	76	74	64	59	56	84
14	100	84	86	89	88	88	74	88	65	62	55	84
15	97	84	79	91	86	93	71	79	65	62	56	84
16	81	84	79	91	82	93	71	74	60	64	62	89
17	81	86	81	88	82	93	71	71	59	64	103	91
18	82	89	79	93	84	95	71	71	59	59	529	43
19	86	89	79	91	88	95	68	72	59	60	310	88
20	93	89	82	86	93	88	71	66	65	66	190	84
21	99	89	89	88	91	84	74	64	68	72	175	88
22	97	89	89	97	91	82	72	70	68	76	140	88
23	93	86	86	101	91	81	70	76	68	81	130	88
24	97	81	86	97	86	79	68	95	72	82	120	88
25	91	81	88	99	88	86	66	105	71	79	111	88
26	91	84	88	99	86	103	65	88	70	74	100	88
27	86	84	89	97	93	105	65	82	74	74	90	88
28	89	84	97	95	95	91	60	84	76	74	85	84
29	93	91	101	95	---	91	60	79	68	66	82	82
30	88	89	101	95	---	86	66	74	65	64	84	88
31	90	---	99	95	---	84	---	72	---	64	82	---
TOTAL	3781	2565	2739	2910	2523	2720	2144	2324	2069	2027	3295	2522
MEAN	122	85.5	88.4	93.9	90.1	87.7	71.5	75.0	69.0	65.4	106	84.1
MAX	561	91	101	101	99	105	79	105	81	82	529	93
MIN	81	79	79	86	82	76	60	62	59	58	55	74
AC-FT	7500	5090	5430	5770	5000	5400	4250	4610	4100	4020	6540	5000

CAL YR 1976 TOTAL 31453 MEAN 85.9 MAX 622 MIN 49 AC-FT 62390
WTR YR 1977 TOTAL 31619 MEAN 86.6 MAX 561 MIN 55 AC-FT 62720

LAS VEGAS VALLEY

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 current year, 4 times per hour (incomplete record due to recorder malfunctions) and twice-monthly.

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 since June 1975.

REMARKS.--Discharge includes sewage effluent and waste water from industrial plants. Specific-conductance recorder reinstalled in November 1976 after vandalism in April. Recorder malfunctioned from Jan. 31 to March 15, March 27 to April 11, May 2 to 31, June 14 to 27, and Aug. 1 to 15, 25 to 30.

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.

REVISIONS.--Re-evaluation of specific-conductance data for Sept. 9, 1975, indicates that the reported minimum value (which also would be a minimum for the entire period of record) is incorrect.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	DISSOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)
OCT										
12...	1200	107	4050	8.0	18.0	200	F10.0	24	1500	1300
24...	1000	98	3820	--	14.5	50	--	38	--	--
NOV										
15...	1030	60	4060	--	13.5	45	--	73	--	--
DEC										
02...	0900	86	3690	--	8.5	55	--	55	--	--
13...	1100	90	3740	--	8.0	55	--	18	--	--
27...	1100	84	3700	--	6.0	40	--	14	--	--
JAN										
10...	1100	86	3710	7.9	5.5	55	F14.0	49	1300	1100
31...	1015	90	3520	--	8.0	40	--	10	--	--
FEB										
14...	1200	98	3660	--	11.0	65	--	23	--	--
28...	0945	107	3730	--	8.0	55	--	26	--	--
MAR										
14...	1100	89	3650	--	11.0	55	--	40	--	--
28...	1030	84	3710	--	11.0	50	--	50	--	--
APR										
11...	1030	73	3810	8.2	16.0	33	F10.0	33	1300	1100
25...	1130	74	3720	--	17.5	75	--	33	--	--
MAY										
16...	1100	71	3520	--	16.0	50	--	47	--	--
31...	1000	71	3810	--	18.0	70	--	74	--	--
JUN										
14...	0830	60	3810	--	18.0	37	--	49	--	--
27...	0915	77	3690	--	22.0	55	--	33	--	--
JUL										
12...	0900	56	3850	8.0	19.0	20	F12.0	34	1400	1200
28...	0800	65	3600	--	21.0	130	--	23	--	--
AUG										
15...	1000	56	3770	--	23.0	90	--	40	--	--
29...	1000	82	3150	--	21.5	310	--	39	--	--
SEP										
12...	0930	76	3630	--	21.5	380	--	42	--	--
30...	1000	74	3390	--	18.5	190	--	36	--	--

E Estimated on basis on semi-quantitative field determination.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

[illegible]

LAS VEGAS VALLEY

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJFL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)
OCT									
12...	5.9	.14	6.0	.26	.84	1.1	7.1	3.3	2.9
26...	6.7	.04	6.7	.34	1.1	1.4	8.1	4.0	--
NOV									
15...	9.1	.02	9.1	.01	.88	.89	10	3.1	--
DEC									
02...	9.9	.14	10	.71	1.1	1.8	12	3.7	--
13...	9.1	.27	9.4	1.1	1.0	2.1	12	3.0	--
27...	11	.15	11	.44	.76	1.2	12	3.1	--
JAN									
10...	9.3	.21	9.5	2.7	.70	3.4	13	4.0	4.0
31...	8.7	.19	8.9	1.8	.50	2.3	11	2.8	--
FEB									
14...	--	.05	--	.01	.71	.72	--	3.7	--
28...	4.4	.22	4.6	.86	.84	1.7	6.3	4.3	--
MAR									
14...	8.4	.11	8.5	.37	.33	.70	9.2	3.6	--
28...	5.8	.23	6.0	.65	.85	1.5	7.5	3.7	--
APR									
11...	4.8	.12	4.9	.55	.95	1.5	6.4	4.2	4.1
25...	3.7	.05	3.7	.01	.97	.98	4.7	3.7	--
MAY									
16...	3.8	.06	3.9	.06	1.3	1.4	5.3	4.2	--
31...	3.8	.19	4.0	.36	1.5	1.9	5.9	3.9	--
JUN									
14...	3.9	.21	4.1	.26	.84	1.1	5.2	3.0	--
27...	4.5	.67	5.2	.44	1.1	1.5	6.7	2.6	--
JUL									
12...	3.2	.01	3.2	.03	.86	.89	4.1	2.1	2.1
28...	3.3	.47	3.8	.69	1.0	1.7	5.5	3.6	--
AUG									
15...	3.0	.13	3.1	1.1	1.2	1.3	4.4	4.2	--
29...	--	--	3.9	2.0	.80	2.8	6.7	--	--
SEP									
12...	3.3	.52	3.8	.81	.99	1.8	5.6	4.8	--
30...	3.6	.46	4.1	.82	1.8	1.0	5.1	11	--

LAS VEGAS VALLEY

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09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT											
12...	58	300	0	10	7100	40	690	.5	3	0	80
NOV											
15...	44	100	<10	20	4300	100	420	.2	2	<10	30
DEC											
02...	--	--	--	--	4200	--	--	--	--	--	--
13...	40	0	20	<10	1700	100	220	--	2	20	20
27...	--	--	--	--	2000	--	--	--	--	--	--
JAN											
10...	36	200	<10	10	2800	<100	250	.5	2	<10	30
31...	--	--	--	--	2400	--	--	--	--	--	--
FEB											
14...	25	0	<10	10	1400	100	360	.2	2	<10	30
28...	--	--	--	--	3200	--	--	--	--	--	--
MAR											
14...	30	0	<10	20	3900	<100	530	.0	3	10	30
28...	--	--	--	--	1900	--	--	--	--	--	--
APR											
11...	35	0	10	10	1600	100	390	.1	2	<10	50
25...	--	--	--	--	3500	--	--	--	--	--	--
MAY											
16...	34	0	10	10	3600	100	400	.1	3	10	20
31...	--	--	--	--	7700	--	--	--	--	--	--
JUN											
14...	42	100	10	10	2100	100	1400	.0	0	10	20
27...	--	--	--	--	4000	--	--	--	--	--	--
JUL											
12...	26	100	10	10	1800	<100	170	.2	2	<10	20
28...	--	--	--	--	4900	--	--	--	--	--	--
AUG											
15...	35	700	10	20	2100	100	910	.1	0	10	40
29...	--	--	--	--	10000	--	--	--	--	--	--
SEPT											
12...	39	800	10	20	13000	100	1300	.0	2	10	80
30...	--	--	--	--	8900	--	--	--	--	--	--

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

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL PCR (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDO (UG/L)	TOTAL DDF (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- FLORIN (UG/L)
OCT										
12...	1200	6.2	.0	.00	.0	.00	.00	.00	.00	.00
26...	1000	7.7	--	--	--	--	--	--	--	--
NOV										
15...	1030	5.9	--	--	--	--	--	--	--	--
DEC										
02...	0900	7.4	--	--	--	--	--	--	--	--
13...	1100	5.6	--	--	--	--	--	--	--	--
27...	1100	6.7	--	--	--	--	--	--	--	--
JAN										
10...	1100	7.0	.0	.00	.0	.00	.00	.00	.10	.00
31...	1015	7.6	--	--	--	--	--	--	--	--
FEB										
14...	1200	5.8	--	--	--	--	--	--	--	--
28...	0945	7.7	--	--	--	--	--	--	--	--
MAR										
14...	1100	8.2	--	--	--	--	--	--	--	--
28...	1030	8.0	--	--	--	--	--	--	--	--
APR										
11...	1030	7.3	2.7	.00	.0	.00	.00	.00	.06	.00
25...	1130	6.9	--	--	--	--	--	--	--	--
MAY										
16...	1100	9.3	--	--	--	--	--	--	--	--
31...	1000	10	--	--	--	--	--	--	--	--
JUN										
14...	0830	6.3	--	--	--	--	--	--	--	--
27...	0915	5.5	--	--	--	--	--	--	--	--
JUL										
12...	0900	5.6	--	--	--	--	--	--	--	--
28...	0800	9.1	--	--	--	--	--	--	--	--
AUG										
15...	1000	5.8	.0	.00	.0	.00	.00	.00	.08	.00
29...	1000	9.0	--	--	--	--	--	--	--	--
SEP										
12...	0930	9.1	--	--	--	--	--	--	--	--
30...	1000	4.8	--	--	--	--	--	--	--	--

DATE	TIME	TOTAL ENDRIN (UG/L)	TOTAL FTHION (UG/L)	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)
OCT								
12...	1200	.00	.00	.00	.00	.07	.00	.00
JAN								
10...	1100	.00	.00	.00	.00	.06	.00	.00
APR								
11...	1030	.00	.00	.00	.00	.04	.00	.00
AUG								
15...	1000	.00	.00	.00	.00	.06	.00	.00

DATE	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVFX (UG/L)
OCT							
12...	.00	.00	0	.00	.00	.00	.00
JAN							
10...	.00	.00	0	.00	.00	.00	.00
APR							
11...	.00	.00	0	.00	.11	.00	.01
AUG							
15...	.00	.00	0	.00	.01	.01	.00

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	3300		---	---	3650	3800	4330	3500	3770
2			---	3270		---	---	---	3790	4220	---	3900
3			---	3260		---	---	---	3740	4120	---	3840
4			---	3230		---	---	---	3730	3980	---	3770
5			---	3530		---	---	---	3660	3850	---	3710
6			---	3540		---	---	---	3510	3990	---	3660
7			---	3520		---	---	---	3580	3940	---	3640
8			---	3490		---	---	---	3650	3830	---	3710
9			---	3510		---	---	---	3730	3820	---	3720
10			---	3570		---	---	---	3730	3910	---	3740
11			---	3600		---	---	---	3770	3950	---	3830
12			---	3570		---	3860	---	3750	3950	---	3720
13			---	3570		---	3830	---	3750	3950	---	3670
14			---	3540		---	3860	---	---	3920	---	3590
15			---	3550		3680	3900	---	---	3930	---	3550
16			3710	3600		3590	3890	---	---	4110	3610	3520
17			3580	3650		3650	3880	---	---	4010	3940	3490
18			3710	3630		3690	3860	---	---	4070	4300	3410
19			3790	3610		3780	3850	---	---	4110	3750	3430
20			3740	3660		3820	3790	---	---	4180	3910	3440
21			3720	3670		3810	3710	---	---	3940	3750	3400
22			3680	3700		3810	3600	---	---	3810	4000	3400
23			3710	3710		3830	3620	---	---	3900	4220	3400
24			3730	3640		3840	3680	---	---	3870	4000	3400
25			3710	3570		3780	3720	---	---	3710	---	3370
26			3700	3490		3810	3720	---	---	3660	---	3310
27			3730	3520		---	3710	---	---	3520	---	3270
28			3690	3640		---	3680	---	3970	3490	---	3330
29			3610	3640		---	3710	---	4430	3530	---	3360
30			3370	3610		---	3690	---	4130	3660	---	3400
31			3330	---		---	---	---	---	3600	3760	---

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MINIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	3200		---	---	3580	3710	4040	3490	3310
2			---	3210		---	---	---	3730	4100	---	3830
3			---	3190		---	---	---	3670	4040	---	3530
4			---	3140		---	---	---	3660	3750	---	3630
5			---	3480		---	---	---	3590	3730	---	3620
6			---	3510		---	---	---	3240	3920	---	3590
7			---	3470		---	---	---	3490	3820	---	3360
8			---	3450		---	---	---	2880	3740	---	3670
9			---	3460		---	---	---	3620	3760	---	3670
10			---	3510		---	---	---	3610	3800	---	3690
11			---	3550		---	---	---	3690	3870	---	3710
12			---	3540		---	3800	---	3660	3870	---	3590
13			---	3540		---	3790	---	3700	3870	---	3590
14			---	3500		---	3820	---	---	3870	---	3490
15			---	3540		3580	3850	---	---	3860	---	3430
16			3490	3500		3430	3850	---	---	3890	3510	3430
17			3490	3600		3540	3830	---	---	3900	2960	3450
18			3560	3590		3650	3820	---	---	3950	3700	3160
19			3610	3580		3710	3810	---	---	3960	3460	3150
20			3690	3610		3780	3670	---	---	3920	3390	3380
21			3670	3590		3780	3570	---	---	---	---	---
22			3660	3640		3770	3550	---	---	3840	3420	3340
23			3670	3650		3780	3580	---	---	3700	3450	3360
24			3700	3560		3780	3620	---	---	3680	4050	3350
25			3690	3440		3700	3590	---	---	3730	3940	3360
26			3680	3270		3720	3690	---	---	3590	---	3130
27			3690	3310		---	3670	---	---	3550	---	3210
28			3660	3510		---	3620	---	---	3440	---	3240
29			3310	3590		---	3680	---	3780	3430	---	3290
30			3290	3540		---	3640	---	4130	3480	---	3300
31			3270	---		---	---	---	4020	3530	---	3370
						---	---	---	---	3530	3680	---

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

LAS VEGAS VALLEY

09419800 LAS VEGAS WASH NEAR BOULDER CITY, NV--Continued

SPECIFIC CONDUCTANCE (MICROHM/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	3490		---	---	3720	3990	4440	3660	3940
2			---	3400		---	---	---	3830	4310	---	3980
3			---	3470		---	---	---	3830	4180	---	4030
4			---	3580		---	---	---	3790	4110	---	4010
5			---	3540		---	---	---	3750	3960	---	3810
6			---	3570		---	---	---	3600	4050	---	3730
7			---	3550		---	---	---	3660	4010	---	3840
8			---	3540		---	---	---	3770	3960	---	3790
9			---	3550		---	---	---	3790	3860	---	3820
10			---	3660		---	---	---	3800	4010	---	3770
11			---	3630		---	---	---	3840	4020	---	4020
12			---	3630		---	3930	---	3840	4060	---	3810
13			---	3630		---	3860	---	3850	4020	---	3740
14			---	3570		---	3920	---	---	3980	---	3670
15			---	3570		3720	3920	---	---	3990	---	3600
16			3810	3630		3690	3940	---	---	4380	3710	3640
17			3700	3640		3710	3930	---	---	4100	4940	3720
18			3770	3670		3730	3950	---	---	4330	5210	3520
19			3940	3630		3850	3900	---	---	4310	4040	3620
20			3790	3670		3880	3860	---	---	4370	4120	3550
21			3740	3720		3840	3870	---	---	4170	4070	3450
22			3680	3730		3860	3660	---	---	3950	4390	3450
23			3720	3770		3880	3640	---	---	4180	4410	3450
24			3750	3690		3900	3840	---	---	4090	4080	3450
25			3740	3620		3830	3770	---	---	3790	---	3450
26			3710	3570		3840	3760	---	---	3850	---	3450
27			3790	3600		---	3760	---	---	3570	---	3330
28			3730	3680		---	3710	---	4240	3570	---	3400
29			3660	3730		---	3760	---	4590	3620	---	3400
30			3550	3700		---	3740	---	4260	3910	---	3500
31			3500	---		---	---	---	---	3670	3850	---

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DTS- CHARGE (CFS)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT					
12...	1200	107	1010	292	--
JAN					
10...	1100	86	503	117	52
31...	1015	90	313	76	--
FEB					
14...	1200	98	363	96	84
28...	0945	107	268	77	--
APR					
11...	1030	73	324	64	--
25...	1130	74	301	60	--
MAY					
16...	1100	71	501	96	--
JUN					
14...	0830	60	322	52	--
27...	0915	77	740	154	--
JUL					
12...	0900	56	160	24	--
28...	0800	65	1580	277	--

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV

LOCATION.--Lat 36°00'58", long 114°44'13", in NE&SW¼ 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 0.40 ft (0.122 m) above mean sea level, used locally as at mean sea level, powerhouse datum.

REMARKS.--Reservoir is formed by concrete arch-gravity dam; storage began Feb. 1, 1935; dam completed Mar. 1, 1936. Total capacity (based on 1963-64 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 (32,300 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 elevations 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 or 371.993 m); minimum (since 1940), 10,695,000 acre-ft (13,200 hm³) Apr. 26, 1956 (gage height, 1,083.21 ft or 330.162 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 21,957,000 acre-ft (27,100 hm³) Feb. 6, gage height, 1,193.29 ft (363.715 m); minimum, 19,528,000 acre-ft (24,100 hm³) July 30, gage height, 1,175.31 ft (358.234 m).

CONTENTS, IN THOUSANDS OF ACRE-Feet, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20053	20447	20958	21240	21924	21751	21354	20544	19966	19628	19531	19790
2	20094	20459	20976	21261	21931	21741	21348	20514	19934	19637	19533	19800
3	20121	20481	20995	21262	21935	21729	21349	20471	19907	19641	19544	19815
4	20140	20504	21018	21262	21942	21736	21327	20441	19891	19642	19548	19844
5	20153	20525	21042	21265	21950	21752	21306	20410	19888	19638	19551	19860
6	20164	20552	21058	21279	21957	21765	21284	20390	19875	19623	19555	19857
7	20165	20579	21070	21291	21942	21750	21263	20379	19888	19604	19568	19852
8	20177	20594	21082	21323	21925	21733	21237	20367	19885	19589	19567	19865
9	20202	20603	21090	21349	21912	21708	21217	20360	19811	19599	19559	19895
10	20226	20612	21103	21378	21911	21695	21211	20331	19797	19614	19559	19925
11	20230	20623	21112	21397	21915	21678	21189	20310	19798	19614	19570	19959
12	20229	20630	21130	21424	21922	21674	21170	20280	19796	19602	19573	19975
13	20222	20649	21142	21457	21938	21688	21141	20263	19779	19589	19581	19982
14	20229	20668	21145	21482	21922	21673	21111	20261	19754	19571	19595	19997
15	20231	20692	21145	21476	21900	21648	21079	20259	19730	19557	19601	20017
16	20242	20703	21148	21531	21876	21614	21060	20227	19707	19557	19602	20036
17	20253	20709	21144	21557	21876	21603	21044	20206	19691	19568	19615	20057
18	20250	20723	21151	21577	21870	21586	21017	20188	19688	19562	19616	20082
19	20241	20742	21160	21607	21870	21586	20971	20168	19689	19555	19617	20090
20	20242	20761	21169	21638	21876	21585	20925	20153	19680	19549	19636	20087
21	20243	20783	21167	21675	21853	21565	20884	20148	19664	19544	19668	20094
22	20246	20801	21162	21708	21832	21535	20852	20140	19647	19532	19684	20104
23	20266	20816	21167	21730	21808	21500	20820	20121	19629	19535	19702	20116
24	20290	20834	21181	21748	21797	21479	20797	20103	19612	19554	19712	20132
25	20310	20859	21189	21765	21782	21460	20757	20088	19625	19553	19717	20156
26	20323	20884	21191	21787	21786	21454	20709	20059	19633	19544	19725	20166
27	20336	20888	21182	21815	21790	21454	20669	20038	19641	19541	19757	20173
28	20351	20897	21164	21838	21773	21420	20625	20028	19637	19539	19785	20184
29	20378	20920	21159	21866	---	21389	20583	20020	19636	19531	19790	20190
30	20402	20939	21178	21893	---	21366	20555	20011	19638	19528	19793	20205
31	20429	---	21203	21918	---	21360	---	19987	---	19532	19796	---
MAX	20429	20939	21203	21918	21957	21765	21354	20544	19966	19642	19796	20205
MIN	20053	20447	20958	21240	21773	21360	20555	19987	19612	19528	19531	19790
(*)	1182.16	1185.94	1187.87	1193.01	1191.98	1189.01	1183.10	1178.83	1176.16	1175.34	1177.37	1180.48
(†)	+407000	+510000	+264000	+715000	-145000	-413000	-805000	-568000	-349000	-106000	+264000	+409000
(‡)	6820	5810	5020	4750	5150	6560	7620	7700	9960	11510	10680	8630
(**)	7.5	6.0	6.0	4.1	3.4	5.7	4.4	6.1	6.0	9.4	9.6	9.7
(††)	82900	67500	68600	47500	39800	66200	50100	67500	65200	101400	103800	106300

CAL YR 1976 † 1111000 ‡ 89840 ** 79.1 †† 87620
WTR YR 1977 † 183000 ‡ 90210 ** 77.9 †† 86680

* Gage height, in feet, at end of month.

† Change in contents, in acre-feet.

‡ Diversions, in acre-feet.

** Gross evaporation, in inches, from Lake Mead.

†† Gross evaporation, in acre-feet, from Lake Mead.

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SAMPLE DEPTH (FT)	ELEV- VATION ABOVE MEAN SEA LEVEL (FT)	SPE- CTIFIC CON- DUCT- ANCE (MICRO- MUS)	PH	TEMPER- ATURE (DEG C)	DTS- SOLVED OXYGEN (MG/L)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)
NOV												
04...	1000	.0	1183.00	1080	8.3	21.5	7.0	320				
04...	1010	10	1173.00	1080	8.3	20.5	7.0	--				
04...	1020	25	1158.00	1080	8.4	20.5	6.9	--				
04...	1030	75	1108.00	1080	8.4	20.5	5.7	330				
04...	1040	125	1058.00	1080	8.0	19.0	3.6	340				
04...	1050	175	1008.00	1060	8.1	14.5	5.6	330				
04...	1100	225	958.00	1050	8.1	13.5	5.9	--				
04...	1110	275	908.00	1050	8.1	13.0	6.4	330				
04...	1120	325	858.00	1050	8.1	13.0	6.4	--				
04...	1130	375	808.00	1050	8.1	12.0	5.8	--				
04...	1140	425	758.00	1060	7.9	12.0	4.2	330				
04...	1150	463	720.00	1050	7.8	12.0	2.7	--				
DEC												
21...	0830	.0	1188.00	1080	8.0	13.5	7.6	330				
21...	0840	10	1178.00	1080	8.2	15.0	7.3	--				
21...	0855	25	1163.00	1080	8.3	15.0	7.3	--				
21...	0925	75	1113.00	1080	8.3	15.0	7.0	--				
21...	0950	125	1063.00	1080	8.3	15.0	7.3	330				
21...	1000	175	1013.00	1070	8.0	14.5	4.8	330				
21...	1005	225	963.00	1050	8.1	14.0	6.0	--				
21...	1015	275	913.00	1040	8.1	13.5	6.0	330				
21...	1035	375	813.00	1040	8.1	13.0	6.0	--				
21...	1045	425	763.00	1050	8.0	13.0	5.5	330				
21...	1050	470	718.00	1090	8.3	13.0	7.2	--				
JAN												
26...	0845	.0	1193.00	1070	8.0	13.0	7.8	330				
26...	0855	10	1183.00	1070	8.1	13.0	7.7	--				
26...	0910	25	1168.00	1070	8.0	13.0	7.9	--				
26...	0940	75	1118.00	1070	8.1	13.0	7.8	330				
26...	1000	125	1068.00	1070	8.0	13.0	7.4	--				
26...	1010	175	1018.00	1060	8.0	13.0	6.8	330				
26...	1020	225	968.00	1060	7.9	13.0	6.8	--				
26...	1040	275	918.00	1040	7.9	13.0	6.0	330				
26...	1045	282	911.00	1040	7.8	13.0	5.8	--				
26...	1055	325	868.00	1040	7.6	13.0	5.0	--				
26...	1105	375	818.00	1040	7.7	13.0	4.0	--				
26...	1115	425	768.00	1040	7.6	13.0	3.6	330				
26...	1125	478	719.00	1070	7.8	13.0	4.6	--				
FEB												
22...	0915	.0	1193.00	1080	8.1	14.5	9.7	330				
22...	0920	10	1183.00	1080	8.3	13.5	9.7	--				
22...	0925	25	1168.00	1080	8.4	13.5	9.5	--				
22...	0950	75	1118.00	1080	8.0	13.5	--	--	--	--	--	--
22...	1000	125	1068.00	1080	8.4	13.5	9.1	--	--	--	--	--
22...	1005	175	1018.00	1080	8.3	13.5	8.4	330	200	83	30	99
22...	1010	225	968.00	1070	8.2	13.0	7.6	--	--	--	--	--
22...	1015	275	918.00	995	8.2	12.0	8.5	--	--	--	--	--
22...	1020	282	911.00	995	8.3	12.0	8.4	310	180	77	28	92
22...	1040	325	868.00	995	8.1	12.0	8.6	--	--	--	--	--
22...	1100	375	818.00	995	8.2	12.0	8.6	--	--	--	--	--
22...	1115	425	768.00	995	8.2	12.0	1.4	310	180	78	28	91
22...	1130	474	719.00	1000	8.2	12.0	8.4	--	--	--	--	--
MAR												
30...	0900	.0	1190.00	1050	8.1	13.5	9.6	330	200	83	30	100
30...	0905	10	1180.00	1050	8.2	13.5	9.6	--	--	--	--	--
30...	0910	25	1165.00	1050	8.3	13.0	9.6	--	--	--	--	--
30...	0925	75	1115.00	1050	8.3	13.0	9.6	--	--	--	--	--
30...	0935	125	1065.00	1050	8.2	12.5	9.3	--	--	--	--	--
30...	0940	175	1015.00	1050	8.2	12.0	9.2	330	200	84	30	100
30...	0945	225	965.00	1050	8.2	12.0	9.0	--	--	--	--	--
30...	0950	275	915.00	1000	8.2	11.5	8.2	--	--	--	--	--
30...	0955	280	910.00	1000	8.2	11.5	8.2	320	190	81	28	96
30...	1000	325	865.00	1000	8.2	11.5	8.4	--	--	--	--	--
30...	1005	375	815.00	1000	8.1	11.5	8.4	--	--	--	--	--
30...	1010	425	765.00	990	8.2	11.5	8.4	320	180	80	28	94
30...	1015	471	719.00	990	8.2	11.5	8.0	--	--	--	--	--

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 1976 TO SEPTEMBER 1977

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CaCO ₃ (MG/L)	CARBON DIOXIDE (CO ₂) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SULFIDE (IONS PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)
NOV												
04...	42	2.7	4.7	0	113	1.1	300	91	7.6	690	.94	.05
04...	--	--	--	0	114	1.1	--	90	--	--	--	--
04...	--	--	--	0	114	.9	--	90	--	--	--	--
04...	39	2.4	4.6	0	116	.9	300	90	8.0	685	.93	.09
04...	39	2.4	4.5	0	130	2.5	300	88	7.4	695	.95	.18
04...	39	2.4	4.4	0	131	2.0	290	86	6.2	662	.93	.23
04...	--	--	--	0	132	2.0	--	86	--	--	--	--
04...	34	2.3	4.3	0	133	2.1	280	86	6.2	670	.91	.18
04...	--	--	--	0	133	2.1	--	84	--	--	--	--
04...	--	--	--	0	133	2.1	--	84	--	--	--	--
04...	39	2.4	4.3	0	134	3.3	280	84	9.3	671	.91	.16
04...	--	--	--	0	136	4.2	--	84	--	--	--	--
DEC												
21...	39	2.4	5.4	0	123	2.4	300	90	8.8	693	.94	.18
21...	--	--	--	0	123	1.5	--	90	--	--	--	--
21...	--	--	--	0	123	1.2	--	90	--	--	--	--
21...	--	--	--	0	123	1.2	--	90	--	--	--	--
21...	39	2.4	4.7	0	123	1.2	300	90	9.7	693	.94	.18
21...	39	2.4	4.9	0	130	2.5	290	86	9.3	684	.93	.23
21...	--	--	--	0	132	2.0	--	82	--	--	--	--
21...	39	2.4	4.4	0	133	2.1	280	82	10	667	.91	.25
21...	--	--	--	0	133	2.1	--	82	--	--	--	--
21...	39	2.4	4.4	0	134	2.6	280	82	11	670	.91	.25
21...	--	--	--	0	135	1.3	--	90	--	--	--	--
JAN												
26...	39	2.4	4.6	0	128	2.5	290	87	9.4	683	.93	.19
26...	--	--	--	0	127	2.0	--	86	--	--	--	--
26...	--	--	--	0	129	2.5	--	85	--	--	--	--
26...	39	2.4	4.5	0	128	2.0	290	86	9.7	682	.93	.19
26...	--	--	--	0	129	2.5	--	84	--	--	--	--
26...	40	2.4	4.4	0	130	2.5	290	85	10	682	.93	.19
26...	--	--	--	0	131	3.2	--	83	--	--	--	--
26...	39	2.3	4.3	0	134	3.3	280	81	11	667	.91	.23
26...	--	--	--	0	134	4.1	--	80	--	--	--	--
26...	--	--	--	0	134	6.6	--	81	--	--	--	--
26...	--	--	--	0	135	5.3	--	81	--	--	--	--
26...	39	2.3	4.3	0	135	6.6	270	80	11	657	.89	.25
26...	--	--	--	0	134	4.1	--	84	--	--	--	--
FEB												
22...	39	2.4	4.6	0	129	2.0	290	87	9.7	681	.93	.18
22...	--	--	--	0	129	1.3	--	87	--	--	--	--
22...	--	--	--	0	129	1.0	--	87	--	--	--	--
22...	--	--	--	0	129	2.5	--	87	--	--	--	--
22...	--	--	--	0	129	1.0	--	87	--	--	--	--
22...	39	2.4	4.5	0	128	1.3	290	87	9.4	681	.93	.18
22...	--	--	--	0	129	1.6	--	86	--	--	--	--
22...	--	--	--	0	133	1.6	--	79	--	--	--	--
22...	39	2.3	4.0	0	133	1.3	260	79	9.3	630	.86	.20
22...	--	--	--	0	134	2.1	--	78	--	--	--	--
22...	--	--	--	0	134	1.6	--	79	--	--	--	--
22...	39	2.2	4.0	0	134	1.6	260	78	10	630	.86	.25
22...	--	--	--	0	134	1.6	--	78	--	--	--	--
MAR												
30...	39	2.4	5.1	0	129	2.0	290	87	9.4	682	.93	.14
30...	--	--	--	0	131	1.6	--	87	--	--	--	--
30...	--	--	--	0	130	1.3	--	87	--	--	--	--
30...	--	--	--	0	131	1.3	--	87	--	--	--	--
30...	--	--	--	0	130	1.6	--	87	--	--	--	--
30...	39	2.4	4.7	0	130	1.6	290	86	9.3	683	.93	.11
30...	--	--	--	0	130	1.6	--	86	--	--	--	--
30...	--	--	--	0	131	1.6	--	82	--	--	--	--
30...	39	2.3	4.3	0	133	1.6	280	82	9.4	661	.90	.16
30...	--	--	--	0	133	1.6	--	81	--	--	--	--
30...	--	--	--	0	132	2.0	--	80	--	--	--	--
30...	39	2.3	4.2	0	132	1.6	260	80	9.4	636	.86	.16
30...	--	--	--	0	134	1.6	--	80	--	--	--	--

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SAMP- LING DEPTH (FT)	ELE- VATION ABOVE SEA LEVEL (FT)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DTS- SOLVED OXYGEN (MG/L)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)
MAY												
05...	0900	.0	1183.00	1060	8.2	18.0	10.0	330	200	83	30	100
05...	0905	10	1173.00	1060	8.4	16.0	10.0	--	--	--	--	--
05...	0910	25	1158.00	1060	8.4	14.5	9.6	--	--	--	--	--
05...	0920	75	1108.00	1060	8.3	14.0	9.1	--	--	--	--	--
05...	0930	125	1058.00	1060	8.3	13.0	8.8	330	200	83	30	99
05...	0935	175	1008.00	1060	8.5	12.0	8.7	--	--	--	--	--
05...	0940	225	958.00	1030	8.2	12.0	8.0	330	200	81	30	96
05...	0950	275	908.00	1020	8.2	11.5	7.8	320	190	81	28	95
05...	0955	325	858.00	1020	8.3	11.5	7.6	--	--	--	--	--
05...	1000	375	808.00	1010	8.3	11.5	7.8	--	--	--	--	--
05...	1005	425	758.00	1010	8.3	11.5	7.6	320	190	81	28	95
05...	1010	465	718.00	1020	8.2	11.5	7.8	--	--	--	--	--
JUN												
01...	0920	.0	1179.00	1050	7.1	24.5	9.5	330	210	81	32	100
01...	0925	10	1169.00	1050	7.2	23.0	9.5	--	--	--	--	--
01...	0930	25	1154.00	1050	7.1	22.0	9.8	--	--	--	--	--
01...	0940	75	1104.00	1050	6.8	17.0	8.1	--	--	--	--	--
01...	0950	125	1054.00	1050	6.7	14.0	8.0	330	200	83	30	100
01...	0955	175	1004.00	1040	6.6	13.5	8.1	--	--	--	--	--
01...	1000	225	954.00	1040	6.6	13.0	7.8	--	--	--	--	--
01...	1005	269	910.00	1020	6.6	13.0	7.6	320	190	80	30	98
01...	1010	275	904.00	1020	6.5	12.0	7.4	--	--	--	--	--
01...	1025	375	804.00	1020	6.6	12.0	7.2	--	--	--	--	--
01...	1030	425	754.00	1010	6.5	12.0	7.0	320	190	80	29	96
01...	1045	462	717.00	1010	6.5	12.0	6.0	--	--	--	--	--
JUL												
28...	0900	.0	1176.00	1040	8.4	30.0	8.3	320	210	77	31	110
28...	0905	10	1166.00	1050	8.6	28.5	8.6	--	--	--	--	--
28...	0910	25	1151.00	1050	8.6	28.0	8.6	--	--	--	--	--
28...	0940	75	1101.00	1050	8.2	17.5	5.7	--	--	--	--	--
28...	0950	125	1051.00	1050	8.0	14.0	6.6	--	--	--	--	--
28...	0955	175	1001.00	1050	8.0	13.5	7.3	330	210	84	30	100
28...	1000	225	951.00	1040	8.0	13.0	7.4	--	--	--	--	--
28...	1005	267	909.00	1030	7.9	12.0	7.1	330	200	82	30	98
28...	1010	275	901.00	1030	8.0	12.0	7.1	--	--	--	--	--
28...	1015	325	851.00	1020	7.9	12.0	7.1	--	--	--	--	--
28...	1020	375	801.00	1020	7.8	12.0	6.5	--	--	--	--	--
28...	1025	425	751.00	1020	7.8	12.0	6.0	330	190	81	30	96
28...	1030	460	716.00	1020	7.8	12.0	5.0	--	--	--	--	--
AUG												
30...	0900	.0	1178.00	1060	8.5	28.5	7.9	320	210	76	31	110
30...	0910	10	1168.00	1060	8.6	28.5	7.6	--	--	--	--	--
30...	0915	25	1153.00	1060	8.1	27.5	7.2	--	--	--	--	--
30...	0925	75	1103.00	1050	7.9	18.5	4.0	330	200	82	30	100
30...	0935	125	1053.00	1050	7.9	15.0	5.7	--	--	--	--	--
30...	0940	175	1003.00	1050	8.0	13.5	6.8	--	--	--	--	--
30...	0945	225	953.00	1030	7.9	12.5	7.1	--	--	--	--	--
30...	0955	267	911.00	1020	8.0	12.0	6.9	320	190	81	29	97
30...	1000	275	903.00	1020	8.1	12.0	6.8	--	--	--	--	--
30...	1010	325	853.00	1020	8.0	12.0	6.9	--	--	--	--	--
30...	1015	375	803.00	1020	7.9	12.0	6.9	--	--	--	--	--
30...	1020	425	753.00	1020	7.9	12.0	5.6	320	190	81	28	97
30...	1025	459	719.00	1020	7.8	12.0	4.0	--	--	--	--	--
SEP												
29...	0900	.0	1180.00	1080	8.0	23.5	6.8	320	210	78	31	100
29...	0905	10	1170.00	1080	8.0	23.5	6.8	--	--	--	--	--
29...	0910	25	1155.00	1080	8.5	23.0	6.7	--	--	--	--	--
29...	0925	75	1105.00	1070	7.8	18.5	2.8	330	200	82	30	100
29...	0935	125	1055.00	1050	7.8	14.5	5.4	--	--	--	--	--
29...	0945	175	1005.00	1040	7.7	13.0	6.0	330	200	83	30	98
29...	1000	225	955.00	1030	7.7	12.5	7.0	--	--	--	--	--
29...	1005	267	913.00	1020	7.9	12.0	6.6	320	190	82	29	96
29...	1015	275	905.00	1020	7.7	12.0	6.3	--	--	--	--	--
29...	1025	325	855.00	1020	8.0	12.0	6.4	--	--	--	--	--
29...	1040	375	805.00	1020	8.1	12.0	5.9	--	--	--	--	--
29...	1100	425	755.00	1020	8.1	12.0	5.4	320	190	82	29	95
29...	1125	461	719.00	1020	8.1	12.0	4.1	--	--	--	--	--

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	ALKA- LINITY AS CACO ₃ (MG/L)	CARBON DIOXIDE (CO ₂) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED (SUM OF CUMSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)
MAY												
05...	39	2.4	4.8	0	128	1.6	290	86	7.1	678	.92	.11
05...	--	--	--	0	128	1.0	--	87	--	--	--	--
05...	--	--	--	0	129	1.0	--	86	--	--	--	--
05...	--	--	--	0	130	1.3	--	86	--	--	--	--
05...	39	2.4	4.6	0	129	1.3	290	86	8.9	680	.92	.18
05...	--	--	--	0	130	.8	--	85	--	--	--	--
05...	39	2.3	4.7	0	131	1.6	280	83	9.7	664	.90	.16
05...	39	2.3	4.5	0	132	1.6	270	82	9.2	650	.88	.18
05...	--	--	--	0	133	1.3	--	82	--	--	--	--
05...	--	--	--	0	133	1.3	--	81	--	--	--	--
05...	39	2.3	4.5	0	132	1.3	270	81	9.6	649	.88	.16
05...	--	--	--	0	133	1.6	--	80	--	--	--	--
JUN												
01...	39	2.4	4.8	1	127	20	300	85	6.8	686	.93	.02
01...	--	--	--	0	127	16	--	86	--	--	--	--
01...	--	--	--	0	127	20	--	86	--	--	--	--
01...	--	--	--	0	129	40	--	85	--	--	--	--
01...	39	2.4	4.6	0	131	51	290	87	8.6	683	.93	.14
01...	--	--	--	0	131	64	--	84	--	--	--	--
01...	--	--	--	0	132	65	--	84	--	--	--	--
01...	39	2.4	4.5	0	132	65	280	83	8.7	664	.90	.07
01...	--	--	--	0	133	82	--	82	--	--	--	--
01...	--	--	--	0	132	65	--	82	--	--	--	--
01...	39	2.3	4.4	0	133	82	270	82	8.6	651	.89	.14
01...	--	--	--	0	134	82	--	83	--	--	--	--
JUL												
28...	42	2.7	4.8	4	108	.8	300	93	7.5	688	.94	.02
28...	--	--	--	4	108	.5	--	92	--	--	--	--
28...	--	--	--	2	108	.5	--	93	--	--	--	--
28...	--	--	--	0	125	1.5	--	89	--	--	--	--
28...	--	--	--	0	128	2.5	--	89	--	--	--	--
28...	39	2.4	4.6	0	128	2.5	290	89	8.9	684	.93	.09
28...	--	--	--	0	129	2.5	--	88	--	--	--	--
28...	39	2.4	4.5	0	130	3.2	270	88	8.9	660	.90	.02
28...	--	--	--	0	130	2.5	--	88	--	--	--	--
28...	--	--	--	0	130	3.2	--	86	--	--	--	--
28...	--	--	--	0	131	4.1	--	85	--	--	--	--
28...	39	2.3	4.3	0	132	4.1	270	84	8.9	654	.89	.14
28...	--	--	--	0	132	4.1	--	84	--	--	--	--
AUG												
30...	43	2.7	4.7	0	103	.6	300	97	8.2	689	.94	.00
30...	--	--	--	--	--	--	--	96	--	--	--	--
30...	--	--	--	--	--	--	--	96	--	--	--	--
30...	39	2.4	4.5	0	126	3.1	280	91	7.5	671	.91	.09
30...	--	--	--	--	--	--	--	90	--	--	--	--
30...	--	--	--	--	--	--	--	88	--	--	--	--
30...	--	--	--	--	--	--	--	87	--	--	--	--
30...	39	2.4	4.1	0	132	2.6	270	86	9.1	656	.89	.14
30...	--	--	--	--	--	--	--	86	--	--	--	--
30...	--	--	--	--	--	--	--	86	--	--	--	--
30...	--	--	--	--	--	--	--	87	--	--	--	--
30...	40	2.4	4.1	0	133	3.3	270	87	9.5	657	.89	.12
30...	--	--	--	--	--	--	--	87	--	--	--	--
SEP												
29...	40	2.4	4.9	0	111	2.2	300	94	7.8	682	.93	.02
29...	--	--	--	0	110	2.1	--	94	--	--	--	--
29...	--	--	--	0	110	.7	--	94	--	--	--	--
29...	39	2.4	4.4	0	126	3.9	280	86	7.8	666	.91	.09
29...	--	--	--	0	129	4.0	--	86	--	--	--	--
29...	39	2.3	4.3	0	131	5.1	280	85	8.5	668	.91	.16
29...	--	--	--	0	132	5.1	--	83	--	--	--	--
29...	39	2.3	4.2	0	132	3.2	270	83	8.8	653	.89	.18
29...	--	--	--	0	132	5.1	--	83	--	--	--	--
29...	--	--	--	0	132	2.6	--	83	--	--	--	--
29...	--	--	--	0	132	2.0	--	82	--	--	--	--
29...	39	2.3	4.2	0	132	2.0	280	82	9.9	662	.90	.20
29...	--	--	--	0	134	2.1	--	82	--	--	--	--

COLORADO RIVER MAIN STEM

09421000 LAKE MEAD AT HOOVER DAM, AZ-NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

			CELL- VATION ABOVE	SAMP- LING DEPTH	MEAN SEA LEVEL	TOTAL NITRATE (N)	DTS- SOLVED NITRATE (N)	TOTAL NITRITE (N)	TOTAL NITRITE PLUS NITRATE (N)	TOTAL AMMONIA NITRO- GEN (N)	TOTAL ORGANIC NITRO- GEN (N)	TOTAL KJEL- DAHL NITRO- GEN (N)	TOTAL NITRO- GEN (N)	TOTAL PHOS- PHORUS (P)
DATE	TIME			(FT)	(FT)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)
NOV														
04...	1000	.0	1183.00	--	.05	--	--	--	--	--	--	--	--	--
04...	1010	10	1173.00	--	--	--	--	--	--	--	--	--	--	--
04...	1020	25	1158.00	--	--	--	--	--	--	--	--	--	--	--
04...	1030	75	1108.00	--	.09	--	--	--	--	--	--	--	--	--
04...	1040	125	1058.00	--	.18	--	--	--	--	--	--	--	--	--
04...	1050	175	1008.00	--	.23	--	--	--	--	--	--	--	--	--
04...	1100	225	958.00	--	--	--	--	--	--	--	--	--	--	--
04...	1110	275	908.00	--	.18	--	--	--	--	--	--	--	--	--
04...	1120	325	858.00	--	--	--	--	--	--	--	--	--	--	--
04...	1130	375	808.00	--	--	--	--	--	--	--	--	--	--	--
04...	1140	425	758.00	--	.16	--	--	--	--	--	--	--	--	--
04...	1150	463	720.00	--	--	--	--	--	--	--	--	--	--	--
DEC														
21...	0830	.0	1188.00	--	.18	--	--	--	--	--	--	--	--	--
21...	0840	10	1178.00	--	--	--	--	--	--	--	--	--	--	--
21...	0855	25	1163.00	--	--	--	--	--	--	--	--	--	--	--
21...	0925	75	1113.00	--	--	--	--	--	--	--	--	--	--	--
21...	0950	125	1063.00	--	.18	--	--	--	--	--	--	--	--	--
21...	1000	175	1013.00	--	.23	--	--	--	--	--	--	--	--	--
21...	1005	225	963.00	--	--	--	--	--	--	--	--	--	--	--
21...	1015	275	913.00	--	.25	--	--	--	--	--	--	--	--	--
21...	1035	375	813.00	--	--	--	--	--	--	--	--	--	--	--
21...	1045	425	763.00	--	.25	--	--	--	--	--	--	--	--	--
21...	1050	470	718.00	--	--	--	--	--	--	--	--	--	--	--
JAN														
26...	0845	.0	1193.00	--	.19	--	--	--	--	--	--	--	--	--
26...	0855	10	1183.00	--	--	--	--	--	--	--	--	--	--	--
26...	0910	25	1168.00	--	--	--	--	--	--	--	--	--	--	--
26...	0940	75	1118.00	--	.19	--	--	--	--	--	--	--	--	--
26...	1000	125	1068.00	--	--	--	--	--	--	--	--	--	--	--
26...	1010	175	1018.00	--	.19	--	--	--	--	--	--	--	--	--
26...	1020	225	968.00	--	--	--	--	--	--	--	--	--	--	--
26...	1040	275	918.00	--	.23	--	--	--	--	--	--	--	--	--
26...	1045	282	911.00	--	--	--	--	--	--	--	--	--	--	--
26...	1055	325	868.00	--	--	--	--	--	--	--	--	--	--	--
26...	1105	375	818.00	--	--	--	--	--	--	--	--	--	--	--
26...	1115	425	768.00	--	.25	--	--	--	--	--	--	--	--	--
26...	1125	474	719.00	--	--	--	--	--	--	--	--	--	--	--
FEB														
22...	0915	.0	1193.00	--	.18	--	--	--	--	--	--	--	--	--
22...	0920	10	1183.00	.26	--	.00	--	.26	.05	.30	.35	.61	.02	--</

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		ELE- VATION ABOVE SEA LEVEL		TOTAL NITRATE (N) (MG/L)	DTS- SOLVED NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KIEI- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)
DATE	TIME	SAMP- LING DEPTH (FT)	MEAN LEVEL (FT)									
MAY												
05...	0900	.0	1183.00	--	.11				--		--	
05...	0905	10	1173.00	--	--				--		--	
05...	0910	25	1158.00	--	--				--		--	
05...	0920	75	1108.00	--	--				--		--	
05...	0930	125	1058.00	--	.18				--		--	
05...	0935	175	1008.00	--	--				--		--	
05...	0940	225	958.00	--	.16				--		--	
05...	0950	275	908.00	--	.18				--		--	
05...	0955	325	858.00	--	--				--		--	
05...	1000	375	808.00	--	--				--		--	
05...	1005	425	758.00	--	.16				--		--	
05...	1010	465	718.00	--	--				--		--	
31...	1240	--	--	.08	--				.23		.35	
JUN												
01...	0920	.0	1179.00	--	.02				--		--	
01...	0925	10	1169.00	--	--				--		--	
01...	0930	25	1154.00	--	--				--		--	
01...	0940	75	1104.00	--	--	--	--	--	--	--	--	
01...	0950	125	1054.00	--	.14	--	--	--	--	--	--	
01...	0955	175	1004.00	--	--	--	--	--	--	--	--	
01...	1000	225	954.00	--	--	--	--	--	--	--	--	
01...	1005	269	910.00	--	.07	--	--	--	--	--	--	
01...	1010	275	904.00	--	--	--	--	--	--	--	--	
01...	1025	375	804.00	--	--	--	--	--	--	--	--	
01...	1030	425	754.00	--	.14	--	--	--	--	--	--	
01...	1045	462	717.00	--	--	--	--	--	--	--	--	
JUL												
28...	0900	.0	1176.00	--	.02	--	--	--	--	--	--	
28...	0905	10	1166.00	--	--	--	--	--	--	--	--	
28...	0910	25	1151.00	--	--	--	--	--	--	--	--	
28...	0940	75	1101.00	--	--	--	--	--	--	--	--	
28...	0950	125	1051.00	--	--	--	--	--	--	--	--	
28...	0955	175	1001.00	--	.09	--	--	--	--	--	--	
28...	1000	225	951.00	--	--	--	--	--	--	--	--	
28...	1005	267	909.00	--	.02	--	--	--	--	--	--	
28...	1010	275	901.00	--	--	--	--	--	--	--	--	
28...	1015	325	851.00	--	--	--	--	--	--	--	--	
28...	1020	375	801.00	--	--	--	--	--	--	--	--	
28...	1025	425	751.00	--	.14	--	--	--	--	--	--	
28...	1030	460	716.00	--	--	--	--	--	--	--	--	
AUG												
29...	--	10	--	.00	--	.00	.00	.04	.14	.18	.18	.00
30...	0900	.0	1178.00	--	.00	--	--	--	--	--	--	
30...	0910	10	1168.00	--	--	--	--	--	--	--	--	
30...	0915	25	1153.00	--	--	--	--	--	--	--	--	
30...	0925	75	1103.00	--	.09	--	--	--	--	--	--	
30...	0935	125	1053.00	--	--	--	--	--	--	--	--	
30...	0940	175	1003.00	--	--	--	--	--	--	--	--	
30...	0945	225	953.00	--	--	--	--	--	--	--	--	
30...	0955	267	911.00	--	.14	--	--	--	--	--	--	
30...	1000	275	903.00	--	--	--	--	--	--	--	--	
30...	1010	325	853.00	--	--	--	--	--	--	--	--	
30...	1015	375	803.00	--	--	--	--	--	--	--	--	
30...	1020	425	753.00	--	.12	--	--	--	--	--	--	
30...	1025	459	719.00	--	--	--	--	--	--	--	--	
SEP												
29...	0900	.0	1180.00	--	.02	--	--	--	--	--	--	
29...	0905	10	1170.00	--	--	--	--	--	--	--	--	
29...	0910	25	1155.00	--	--	--	--	--	--	--	--	
29...	0925	75	1105.00	.09	--							
29...	0935	125	1055.00	--	--							
29...	0945	175	1005.00	.16	--							
29...	1000	225	955.00	--	--							
29...	1005	267	913.00	.18	--							
29...	1015	275	905.00	--	--							
29...	1025	325	855.00	--	--							
29...	1040	375	805.00	--	--							
29...	1100	425	755.00	.20	--							
29...	1125	461	719.00	--	--							

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) above mean sea level. 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) above mean sea level.

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.--43 years (water years 1935-77), 13,270 ft³/s (375.8 m³/s), 9,614,000 acre-ft/yr (11,900 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, 25,000 ft³/s (708 m³/s) Apr. 25; minimum daily, 1,390 ft³/s (39.4 m³/s) Jan. 22.

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	4910	4080	8040	3760	7890	17300	15400	7470	12100	17700	15200	10800
2	1940	6660	6800	4550	9820	15800	6560	19400	16800	6130	17400	10800
3	2150	2530	4390	7360	10400	15500	4060	19400	15000	4120	19000	8610
4	2100	4250	3830	7630	10100	16100	14800	18200	10500	4010	18900	4630
5	2540	3620	2560	11900	4660	8130	13400	20000	5160	11700	19600	6210
6	3070	2580	5860	7350	4460	6240	12700	16100	15700	18500	12500	16000
7	5290	2360	7800	5100	16300	15900	14100	11000	15900	15800	6590	12900
8	5940	6050	9120	2250	14400	17900	16600	8780	14400	17700	17800	13800
9	2720	7420	9380	2380	12700	17100	9480	17400	13500	6760	17800	9680
10	2710	8650	7120	3300	11700	18500	4790	13300	12200	6130	17200	5500
11	7900	8480	4600	3130	10300	16200	16400	14100	6430	15100	16900	5090
12	7610	10600	3870	2980	5600	6860	16200	12700	6010	17600	15500	7680
13	11500	4270	7470	4070	3820	5260	17600	9950	11700	18500	10500	7930
14	10700	3960	7570	4440	16500	15900	17100	4550	13600	22500	11200	6060
15	11000	8470	9740	4630	17500	16300	16800	2970	13000	21100	17400	4660
16	5620	7400	10500	4920	19600	17800	10300	16200	14200	11300	16900	4080
17	4420	10900	11500	4490	10300	18100	8840	16800	14600	8920	14300	3150
18	13400	6100	8270	2960	10100	16600	20100	13200	8480	16500	22800	2960
19	12000	3400	5250	2750	4850	9860	23100	13100	5880	17900	23700	7570
20	12300	2060	8460	1490	3780	7320	24400	13900	12900	17500	15400	8340
21	12400	2040	10400	1900	10600	13600	24900	9560	14600	18900	7420	7130
22	9850	2740	13100	1390	15200	17200	23400	6280	13800	18600	12300	6690
23	2060	4890	9610	1610	17200	16300	19800	13400	18000	12400	11200	7190
24	2190	5060	6730	1890	16500	16100	14800	11500	16900	7210	13100	3400
25	2680	2520	6300	1840	13900	15200	25000	11700	6270	17700	13200	2840
26	2800	2800	7190	4050	6450	7010	23700	13500	6060	18400	12300	9320
27	3990	3540	10800	4200	5870	6620	21400	12900	9750	16800	5640	8860
28	3820	2760	13500	4570	16200	15500	23800	8350	13100	16700	5360	11400
29	2860	6400	13200	3840	---	15500	22700	6390	13500	21000	13000	12300
30	2200	6870	8730	3120	---	13700	15900	7550	13000	14900	11100	11000
31	2400	---	3820	6400	---	15200	---	13800	---	11900	10400	---
TOTAL	177070	153460	245510	126250	306700	430600	498130	383450	363040	449980	441610	236580
MEAN	5712	5115	7920	4073	10950	13890	16600	12370	12100	14520	14250	7886
MAX	13400	10900	13500	11900	19600	18500	25000	20000	18000	22500	23700	16000
MIN	1940	2040	2560	1390	3780	5260	4060	2970	5160	4010	5360	2840
AC-FT	351200	304400	487000	250400	608300	854100	988000	760600	720100	892500	875900	469300
CAL YR 1976	TOTAL	3996260	MEAN	10920	MAX	22900	MIN	1940	AC-FT	7927000		
WTR YR 1977	TOTAL	3812380	MEAN	10440	MAX	25000	MIN	1390	AC-FT	7562000		

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DTS- CHARGE (CFS)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)
OCT									
05...	0800	--	2920	1070	7.9	13.0	1	--	--
05...	1155	--	3100	--	--	13.0	--	--	--
06...	0800	--	400	--	--	13.0	--	--	150
NOV									
09...	0830	--	4110	1060	7.9	12.5	1	--	--
09...	1255	--	11300	--	--	12.5	--	--	--
10...	0730	--	4280	--	--	12.5	--	--	B2
DEC									
07...	0815	--	7900	1060	7.9	12.5	1	--	--
07...	1230	--	5820	--	--	12.5	--	--	--
08...	0800	--	7310	--	--	--	--	--	B1
JAN									
11...	0800	--	5320	1070	7.7	12.5	3	--	--
11...	1330	--	2550	--	--	12.5	--	--	--
13...	0800	--	308	--	--	13.0	--	--	B4
FEB									
08...	0815	--	15420	1100	7.6	12.5	1	--	--
08...	1235	--	16200	--	--	12.5	--	--	--
09...	0800	--	12110	--	--	12.0	--	--	B2
MAR									
08...	0800	--	27570	1040	7.7	11.5	1	--	--
08...	1210	--	25000	--	--	12.0	--	--	--
09...	0800	--	25420	--	--	11.5	--	--	B1
APR									
12...	0800	--	27850	1050	7.9	11.5	1	--	--
12...	1225	--	32000	--	--	12.0	--	--	--
13...	0800	--	30400	--	--	11.5	--	--	B1
MAY									
03...	0800	--	21800	1050	8.1	11.5	0	--	--
03...	1500	--	31700	--	--	12.0	--	--	--
04...	0800	--	19100	--	--	11.5	--	--	B1
JUN									
07...	0740	--	18200	1060	7.7	12.0	1	--	--
07...	1210	--	23900	--	--	12.5	--	--	--
08...	0800	--	19600	--	--	12.5	--	--	B1
JUL									
12...	0800	--	16190	1060	7.4	12.0	10	--	--
12...	1135	--	27000	--	--	12.0	--	--	--
13...	0800	--	13460	--	--	12.0	--	--	B1
AUG									
09...	0800	--	13690	1070	7.3	12.5	0	--	--
09...	1235	--	32700	--	--	13.0	--	--	--
10...	0800	--	17640	--	--	13.0	--	--	B1
SEP									
13...	0745	--	9350	1060	7.7	12.5	1	--	--
13...	1135	13300	14400	--	--	13.5	--	--	--
14...	0800	--	4370	--	--	13.5	--	8.4	B1

B Results based on non-ideal colony count.

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
OCT									
05...	--	330	190	87	27	100	2.4	4.9	165
05...	--	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--	--
NOV									
09...	--	330	170	86	27	96	2.3	4.6	189
09...	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--
DEC									
07...	--	320	190	83	28	98	2.4	4.6	167
07...	--	--	--	--	--	--	--	--	--
08...	81	--	--	--	--	--	--	--	--
JAN									
11...	--	290	170	80	23	120	3.0	4.7	152
11...	--	--	--	--	--	--	--	--	--
13...	83	--	--	--	--	--	--	--	--
FEB									
08...	--	320	190	81	29	100	2.4	4.6	159
08...	--	--	--	--	--	--	--	--	--
09...	84	--	--	--	--	--	--	--	--
MAR									
08...	--	320	190	81	29	97	2.4	4.5	159
08...	--	--	--	--	--	--	--	--	--
09...	45	--	--	--	--	--	--	--	--
APR									
12...	--	320	190	80	29	97	2.4	4.5	160
12...	--	--	--	--	--	--	--	--	--
13...	81	--	--	--	--	--	--	--	--
MAY									
03...	--	330	200	85	29	98	2.3	4.7	160
03...	--	--	--	--	--	--	--	--	--
04...	81	--	--	--	--	--	--	--	--
JUN									
07...	--	320	190	81	29	100	2.4	5.0	160
07...	--	--	--	--	--	--	--	--	--
08...	81	--	--	--	--	--	--	--	--
JUL									
12...	--	330	210	83	30	100	2.4	4.4	150
12...	--	--	--	--	--	--	--	--	--
13...	81	--	--	--	--	--	--	--	--
AUG									
09...	--	350	220	88	31	100	2.3	4.6	160
09...	--	--	--	--	--	--	--	--	--
10...	82	--	--	--	--	--	--	--	--
SEP									
13...	--	310	180	80	27	96	2.4	4.8	160
13...	--	--	--	--	--	--	--	--	--
14...	82	--	--	--	--	--	--	--	--

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RINE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT								
05...	0	290	85	.6	8.9	691	687	.94
05...	--	--	--	--	--	--	--	--
06...	--	--	--	--	--	--	--	--
NOV								
09...	0	270	80	.4	8.3	689	668	.94
09...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
DEC								
07...	0	290	80	.4	8.3	692	677	.94
07...	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--
JAN								
11...	0	300	97	1.0	12	729	714	.99
11...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
FEB								
08...	0	290	86	.5	9.1	714	681	.97
08...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
MAR								
08...	0	280	90	.3	7.6	685	670	.93
08...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
APR								
12...	0	270	81	.4	8.5	684	651	.93
12...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
MAY								
03...	0	270	79	.4	8.7	692	655	.94
03...	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--
JUN								
07...	0	280	80	.3	8.4	697	664	.95
07...	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--
JUL								
12...	0	280	87	.3	8.4	705	669	.96
12...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
AUG								
09...	0	290	81	.3	8.9	707	683	.96
09...	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--
SEP								
13...	0	280	83	.4	9.8	692	660	.94
13...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
OCT								
05...	.54	.01	.47	.55	2.4	2.9	.01	.01
NOV								
09...	--	--	.50	.45	.11	.61	.01	.02
DEC								
07...	--	--	.51	.47	.28	.79	.01	.00
JAN								
11...	--	--	.38	.38	.48	.86	.01	.02
FEB								
08...	--	--	.39	.47	.25	.64	.01	.01
MAR								
08...	--	--	.35	.43	.44	.79	.00	.01
APR								
12...	--	--	.38	.37	.50	.88	.00	.02
MAY								
03...	--	--	.41	.37	.57	.98	.01	.02
JUN								
07...	--	--	.31	.40	1.2	1.5	.03	.01
JUL								
12...	--	--	.34	.43	.07	.41	.03	.01
AUG								
09...	--	--	.65	--	.59	1.2	.00	--
SEP								
13...	--	--	.37	--	.00	.37	.01	--

COLORADO RIVER MAIN STEM

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DTS-SOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DTS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS-SOLVED MERCURY (HG) (UG/L)	TOTAL SILICON (SI) (UG/L)	DTS-SOLVED SILICON (SI) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS-SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
NOV 09...	10	<100	0	0	10	1.3	.0	3	2	10	10	2.2
FEB 08...	20	<100	11	10	0	.2	.0	3	3	10	0	2.6
MAY 03...	10	<100	0	10	10	.0	.0	3	3	10	0	2.2
AUG 09...	0	<100	15	8	0	.0	.2	6	6	50	10	3.8

DATE	TOTAL ARSENIC (AS) (UG/L)	DTS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DTS- SOLVED CAD- MIUM (CD) (UG/L)	DTS- SOLVD CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DTS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DTS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
NOV 09...	3	1	180	130	<10	1	0	<50	0	<10	1	20
FEB 08...	6	6	400	140	<10	1	0	<50	0	<10	4	160
MAY 03...	4	3	150	130	10	1	0	<50	0	<10	1	50
AUG 09...	2	3	200	140	<10	3	0	<50	0	<10	2	120

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLOROPHYLL RATIO PERI-PHYTON (UNITS)	CHLOR-A PERT-PHYTON CHROMO-SPECT- METRIC (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-SPECT- METRIC (MG/M2)	TOTAL PHYTO-PLANKTON (CELLS PER ML)
OCT 05...	0800	--	--	--	200
NOV 09...	0830	453	5.94	1.13	870
DEC 07...	0815	--	--	--	480
JAN 11...	0800	--	--	--	42
FEB 08...	0815	--	--	--	30
MAY 03...	0800	--	--	--	1300
JUN 07...	0740	--	--	--	10
JUL 12...	0800	--	--	--	13
AUG 09...	0800	3048	--	--	5
SEP 13...	0745	--	--	--	36

DATE	TIME	DIS-CHARGE (CFS)	INSTANTANEOUS DIS-CHARGE (CFS)	SUS-PENDED SEDIMENT (MG/L)	SUS-PENDED SEDIMENT CHARGE (T/DAY)	SUS-SEDIMENT % FINER THAN .062 MM
OCT 05...	1155	--	3100	2	17	66
NOV 09...	1255	--	11300	0	.00	--
DEC 07...	1230	--	5820	1	16	55
JAN 11...	1330	--	2550	1	6.9	62
FEB 08...	1235	--	16200	1	44	84
MAR 08...	1210	--	25000	1	67	47
APR 12...	1225	--	32000	1	86	81
MAY 03...	1500	--	31700	1	86	46
JUN 07...	1210	--	23900	2	129	53
JUL 12...	1135	--	27000	1	73	62
AUG 09...	1235	--	32700	1	88	53
SEP 13...	1135	13300	14400	1	36	72

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON										
DATE TIME	OCT 5,76 0800	NOV 9,76 0830	DEC 7,76 0815	JAN 11,77 0800	FEB 8,77 0815					
TOTAL CELLS/ML	200	870	480	42	30					
DIVERSITY: DIVISION	1.1	0.2	0.5	1.3	1.0					
..CLASS	1.1	0.2	0.5	1.3	1.0					
..ORDER	1.2	0.6	0.5	1.5	1.0					
...FAMILY	2.0	0.7	0.5	2.1	1.8					
....GENUS	2.0	0.7	0.8	2.4	2.1					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
....COELASTRACEAE										
...COELASTRUM	--	-	--	-	30	6	--	-	--	-
...MICTRACINTACEAE										
...MICTRACINTIUM	--	-	--	-	--	-	--	-	--	-
...DIOCYSTACEAE										
...ANKISTRUMESMUS	--	-	--	-	--	-	--	-	--	-
...DIOCYSTIS	--	-	--	-	--	-	12#	29	--	-
...SELENASTRUM	--	-	--	-	--	-	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-	3	7	--	-
...SCENEDESMACEAE										
...SCENEDESMUS	17	8	--	-	--	-	12#	29	12#	40
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	4	2	--	-	--	-	--	-	--	-
...PHACOTACEAE										
...PHACOTIS	--	-	--	-	--	-	--	-	--	-
...ZYGNEMATALES										
...DESMIDIACEAE										
...SPONDYLUSIUM	*	0	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCAEAE										
...CYCLOTELLA	4	2	--	-	--	-	6	14	--	-
...MELUSIPA	--	-	--	-	--	-	--	-	--	-
..PENNALES										
...CYMBELLACEAE										
...CYMBELLA	--	-	--	-	--	-	3	7	--	-
...DIATOMACEAE										
...DIATOMA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
...ASTERIONELLA	--	-	--	-	--	-	--	-	--	-
...FRAGILARTA	--	-	--	-	--	-	--	-	--	-
...SYNEKRA	--	-	--	-	4	1	--	-	6#	20
...NAVICULACEAE										
...NAVICULA	21	10	20	2	*	0	--	-	6#	20
...STAUROMETS	--	-	--	-	--	-	--	-	3	10
...NITZSCHACEAE										
...NITZSCHIA	4	2	10	1	6	1	--	-	3	10
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
...AGMENELLUM	--	-	79	9	--	-	--	-	--	-
...ANACYSTIS	--	-	--	-	--	-	--	-	--	-
...HORMOGONALFS										
...NOSTOCACEAE										
...CYLINDROSPERMUM	68#	33	--	-	--	-	--	-	--	-
...USCILLATORIACEAE										
...LYNGRYA	--	-	760#	88	28	6	--	-	--	-
...OSCILLATORIA	85#	42	--	-	410#	86	--	-	--	-
...RIVULARIACEAE										
...RAPHTOTOPSIS	*	0	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONADALES										
...CRYPTOCHRYSTACEAE										
...CHROMONAS	--	-	--	-	--	-	6	14	--	-
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%

09421500 COLORADO RIVER BELOW HOOVER DAM, AZ-NV--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 3,77 0800	JUN 7,77 0740	JUL 12,77 0800	AUG 9,77 0800	SEP 13,77 0745					
TOTAL CELLS/ML	1300	10	13	5	36					
DIVERSITY: DIVISION	0.5	0.0	0.0	0.0	1.4					
..CLASS	0.5	0.0	0.0	0.0	1.4					
...ORDER	0.6	0.9	0.0	0.0	1.4					
...FAMILY	0.6	0.9	0.9	0.0	2.1					
....GENUS	0.7	0.9	0.9	0.0	2.1					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...COELASTRACEAE										
...COELASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACINTACEAE										
...MICRACINIUM	11	1	--	-	--	-	--	-	--	-
...ODCYSTACEAE										
...ANKISTRODESMIIS	*	0	--	-	--	-	--	-	--	-
...ODCYSTIS	19	1	--	-	--	-	--	-	--	-
...SELENASTRUM	8	1	--	-	--	-	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...SCENEFOSMUS	21	2	--	-	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CHLAMYDOMONAS	--	-	--	-	--	-	--	-	4	10
...PHACOTACEAE										
...PHACOTUS	--	-	--	-	--	-	--	-	4	10
...ZYGNEMATALES										
...DESMIDIACEAE										
...SPONDYLIUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCAEAE										
...CYCLOTELLA	--	-	--	-	--	-	--	-	--	-
...MELUSIRA	23	2	6#	67	--	-	--	-	--	-
...PENNALIS										
...CYMBELLACEAE										
...CYMBELLA	*	0	3#	33	--	-	--	-	--	-
...DIATUMACEAE										
...DIATOMA	--	-	--	-	4#	33	--	-	--	-
...FRAGILARIACEAE										
...ASTERIONELLA	8	1	--	-	--	-	--	-	--	-
...FRAGILARTA	*	0	--	-	--	-	--	-	--	-
...SYNEDRA	*	0	--	-	--	-	--	-	--	-
...NAVICULACEAE										
...NAVICULA	--	-	--	-	8#	67	5#	100	7#	20
...STAUROMETS	--	-	--	-	--	-	--	-	--	-
...NITZSCHIAEAE										
...NITZSCHIA	*	0	--	-	--	-	--	-	14#	40
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCALES										
...CHROCOCCACEAE										
...AGMENELLUM	--	-	--	-	--	-	--	-	--	-
...ANACYSTIS	--	-	--	-	--	-	--	-	7#	20
...HOPMONGONALIS										
...NOSTOCACEAE										
...CYLINDROSPPERMUM	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIAEAE										
...LYNGRYA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIA	1200#	91	--	-	--	-	--	-	--	-
...RTVILARTACEAE										
...RAPHTIDIOPSIS	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
...CRYPTOCHRYSIDACEAE										
...CHROMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALIS										
...GLENODINIACEAE										
...GLENODINTUM	*	0	--	-	--	-	--	-	--	-

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 at mean sea level.

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 or 189.631 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,796,000 acre-ft (2,210 hm³) May 19 (elevation, 646.50 ft or 197.053 m); minimum contents, 1,377,000 acre-ft (1,700 hm³) Aug. 15 (elevation 630.75 ft or 192.253 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 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1729000	1661000	1678000	1717000	1672000	1684000	1706000	1746000	1743000	1590000	1429000	1525000
2	1731000	1664000	1674000	1712000	1673000	1693000	1690000	1757000	1748000	1565000	1428000	1521000
3	1732000	1659000	1661000	1718000	1672000	1704000	1678000	1765000	1748000	1543000	1433000	1520000
4	1718000	1656000	1653000	1724000	1671000	1715000	1677000	1770000	1739000	1514000	1435000	1511000
5	1705000	1653000	1649000	1741000	1661000	1709000	1674000	1777000	1722000	1498000	1440000	1492000
6	1696000	1647000	1642000	1750000	1656000	1701000	1666000	1776000	1720000	1497000	1429000	1499000
7	1687000	1642000	1640000	1754000	1663000	1710000	1664000	1768000	1723000	1496000	1414000	1508000
8	1681000	1640000	1642000	1753000	1666000	1723000	1660000	1763000	1722000	1494000	1410000	1518000
9	1668000	1641000	1645000	1754000	1669000	1734000	1647000	1772000	1722000	1472000	1412000	1522000
10	1656000	1647000	1644000	1757000	1673000	1740000	1634000	1774000	1715000	1460000	1416000	1519000
11	1653000	1653000	1638000	1755000	1671000	1740000	1631000	1775000	1701000	1453000	1416000	1511000
12	1652000	1659000	1633000	1757000	1661000	1720000	1630000	1776000	1690000	1453000	1408000	1515000
13	1658000	1658000	1630000	1760000	1654000	1712000	1630000	1779000	1684000	1458000	1393000	1518000
14	1663000	1660000	1627000	1764000	1662000	1713000	1630000	1770000	1685000	1472000	1389000	1518000
15	1671000	1667000	1629000	1768000	1674000	1715000	1630000	1756000	1684000	1476000	1385000	1517000
16	1668000	1670000	1637000	1771000	1692000	1718000	1616000	1772000	1686000	1467000	1409000	1512000
17	1663000	1682000	1645000	1773000	1694000	1724000	1609000	1787000	1688000	1458000	1434000	1505000
18	1676000	1684000	1648000	1768000	1692000	1725000	1618000	1793000	1677000	1452000	1474000	1494000
19	1682000	1683000	1648000	1765000	1677000	1714000	1628000	1793000	1666000	1452000	1516000	1485000
20	1690000	1681000	1653000	1757000	1667000	1710000	1638000	1789000	1660000	1458000	1537000	1478000
21	1699000	1679000	1665000	1745000	1663000	1708000	1654000	1780000	1655000	1465000	1546000	1470000
22	1707000	1679000	1675000	1736000	1671000	1712000	1667000	1770000	1653000	1467000	1550000	1465000
23	1704000	1683000	1682000	1727000	1682000	1714000	1671000	1767000	1658000	1458000	1557000	1455000
24	1702000	1686000	1682000	1717000	1690000	1718000	1678000	1769000	1659000	1448000	1570000	1453000
25	1699000	1684000	1681000	1702000	1689000	1716000	1696000	1774000	1637000	1444000	1585000	1449000
26	1692000	1691000	1685000	1698000	1674000	1702000	1710000	1781000	1624000	1443000	1588000	1450000
27	1683000	1687000	1693000	1696000	1666000	1696000	1720000	1782000	1610000	1440000	1580000	1448000
28	1678000	1683000	1706000	1690000	1671000	1696000	1738000	1768000	1600000	1440000	1570000	1453000
29	1674000	1683000	1717000	1684000	---	1702000	1754000	1758000	1593000	1447000	1562000	1459000
30	1669000	1682000	1721000	1678000	---	1704000	1755000	1746000	1589000	1442000	1548000	1465000
31	1663000	---	1716000	1675000	---	1707000	---	1747000	---	1441000	1538000	---
MAX	1732000	1691000	1721000	1773000	1694000	1740000	1755000	1793000	1748000	1590000	1588000	1525000
MIN	1652000	1640000	1627000	1675000	1654000	1684000	1609000	1746000	1589000	1440000	1385000	1448000
(†)	641.70	642.40	643.63	642.12	641.97	643.30	645.04	644.75	638.93	633.25	637.00	634.20
(‡)	-58,000	+19,000	+34,000	-41,000	-4,000	+36,000	+48,000	-8,000	-158,000	-148,000	+97,000	-73,000
CAL YR 1976	MAX	1794000	MIN	1540000	‡	+174,000						
WTR YR 1977	MAX	1793000	MIN	1385000	‡	-256,000						

† Elevation, in feet at end of month.

‡ Change, in contents, in acre-ft.

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) above mean sea level; gage readings have been reduced to elevations above mean sea level. 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.--28 years (1949-77), 12,500 ft³/s (354.0 m³/s), 9,056,000 acre-ft/yr (11,200 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.

1949-77: Maximum discharge, 31,200 ft³/s (884 m³/s) Apr. 22, 1952 (elevation, 513.91 ft or 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, 28,100 ft³/s (796 m³/s) Mar. 4 (elevation, 506.16 ft or 154.278 m); minimum daily discharge, 2,010 ft³/s (56.9 m³/s) Oct. 2.

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	2230	5880	9750	4280	9490	11200	16300	11700	14400	19800	20000	16400
2	2010	5230	9370	6120	9750	11300	16400	14900	14400	19900	18900	13000
3	2030	5260	10800	4600	11100	10300	10000	15600	15700	15800	17400	9060
4	8650	5250	8540	4450	10700	11100	15400	15600	15900	20300	17300	9110
5	9100	5210	5390	3430	10400	11100	16100	16700	15300	20600	18100	15700
6	8550	6020	8820	3400	7740	10200	17300	16800	16400	20200	18900	12400
7	8440	4900	8820	2770	12100	11100	16200	14900	15600	16900	13900	8490
8	8490	7020	8330	2250	12300	11400	18800	11700	15300	18900	20400	8760
9	9040	6920	8380	2190	11300	12700	17700	13600	14700	19800	17600	7200
10	9670	5370	8520	2450	9900	15600	12000	12500	15800	12100	15800	8560
11	9810	5740	7900	3170	11100	15600	17800	12900	14700	19900	17600	8060
12	8150	6880	6320	2360	11600	16400	18200	11900	11700	18300	19400	6100
13	7780	4880	9180	2970	8310	10200	17400	8740	14300	16800	19000	6560
14	7870	4070	10200	2160	12300	15600	18100	9760	13900	16400	13800	5890
15	7300	4530	8430	2200	11000	15500	17400	9880	13900	18500	18300	5410
16	7420	5580	6720	3640	11500	15600	18300	9560	12700	18100	6810	6400
17	6980	4740	7210	4340	10300	15600	12400	9130	14400	13200	3510	7410
18	7460	4820	7130	4990	11600	17000	17100	9780	15100	20100	2580	8380
19	7610	4170	5340	4520	12700	16500	17600	13600	12000	19100	2280	11700
20	7060	3590	6220	6400	9290	10400	18700	16000	16100	15800	5010	12300
21	7420	3390	4180	8360	12400	15500	17100	15200	17000	15400	2250	11500
22	5730	3370	6970	6530	11300	14300	17400	11700	15600	18000	10400	9430
23	3770	2800	6160	6630	12200	15600	17900	15500	15800	18200	8000	11800
24	4110	2860	7240	7970	12800	14400	11600	11100	17100	13300	5940	5280
25	4490	3050	7060	9680	14300	17400	15400	9870	19200	20200	5160	5300
26	7110	3190	5160	6590	15100	16000	16800	9780	13000	20400	9840	9030
27	6840	3120	6530	5210	10100	10400	17200	13000	17700	18700	8880	10500
28	6050	3580	7630	7970	13200	15300	14600	16400	19900	16900	9610	9070
29	5440	5960	6610	8010	---	12600	14700	11900	17900	16600	16200	9410
30	5260	7520	6570	6280	---	13300	16000	14300	15500	18600	18800	8350
31	5100	---	6260	7450	---	14200	---	14300	---	13900	15500	---
TOTAL	206970	144900	231740	153370	315880	423400	487900	398300	461000	550700	397170	276560
MEAN	6676	4830	7475	4947	11280	13660	16260	12850	15370	17760	12810	9219
MAX	9810	7520	10800	9680	15100	17400	18800	16800	19900	20600	20400	16400
MIN	2010	2800	4180	2160	7740	10200	10000	8740	11700	12100	2250	5280
AC-FT	410500	287400	459700	304200	626500	839800	967700	790000	914400	1092000	787800	548600
CAL YR 1976	TOTAL	3926880	MEAN	10730	MAX	20300	MIN	2010	AC-FT	7789000		
WTR YR 1977	TOTAL	4047890	MEAN	11090	MAX	20600	MIN	2010	AC-FT	8029000		

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.

CHEMICAL ANALYSES, WATER YEAR OCTUREP 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICKO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SURP- TATION RATIO	DIS- SOLVED PU- TAS- SIUM (K) (MG/L)
OCT												
01...	0915	2720	1070	7.8	19.0	340	210	86	30	100	2.4	4.9
NOV												
01...	0900	9400	1070	8.1	17.5	330	200	80	31	100	2.4	4.8
DEC												
01...	0900	13190	1080	8.0	14.0	320	200	78	31	100	2.4	5.1
JAN												
03...	1130	4820	1090	8.2	11.0	310	190	76	29	100	2.5	5.0
FEB												
01...	1030	13800	1080	8.2	10.5	320	190	82	28	100	2.4	4.7
MAR												
01...	1230	14300	1080	8.2	12.5	330	190	81	30	100	2.4	4.9
APR												
01...	1000	23600	1080	8.4	14.0	330	200	82	31	100	2.4	4.7
MAY												
02...	1320	21100	1060	8.2	14.5	330	200	83	30	100	2.4	4.6
JUN												
01...	0930	17200	1060	8.3	17.5	330	200	83	29	100	2.4	4.7
JUL												
01...	0740	23000	1060	7.5	19.0	320	200	81	29	100	2.4	4.5
AUG												
01...	0845	26480	1060	7.7	21.0	310	190	78	28	100	2.5	4.6
SEP												
01...	0800	17640	1070	7.7	19.0	320	190	82	29	100	2.4	4.6

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DTS- SOLVED FLUOR- IDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (REST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRIF PLHS NITRATE (N) (MG/L)	DTS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT												
01...	151	0	300	84	.4	8.2	704	690	.96	.48	130	20
NOV												
01...	153	0	300	85	.3	8.3	713	686	.97	.26	130	10
DEC												
01...	144	0	310	89	.3	9.3	710	696	.97	.50	140	0
JAN												
03...	147	0	290	91	.3	8.7	727	674	.99	.20	130	10
FEB												
01...	159	0	280	91	.3	7.9	714	673	.97	.15	130	0
MAR												
01...	161	0	300	94	.5	8.1	709	699	.96	.20	130	0
APR												
01...	160	2	280	87	.5	8.2	711	675	.97	.19	130	10
MAY												
02...	160	0	280	82	.4	7.9	694	668	.94	.28	120	20
JUN												
01...	160	0	280	84	.4	7.6	690	669	.94	.22	130	10
JUL												
01...	150	0	290	85	.3	8.5	692	672	.94	--	130	0
AUG												
01...	150	0	280	91	.4	8.8	699	665	.95	--	130	20
SEP												
01...	160	0	280	88	.3	9.2	687	672	.93	--	140	10

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) above mean sea level. 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, 470.53 ft (143.418 m) Sept. 23, 24; minimum, 458.66 ft (139.800 m) Jan. 15.

MEAN ELEVATION, IN FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	465.44	461.28	460.59	461.02	462.71	464.46	466.14	465.23	465.56	464.59	466.78	466.43
2	459.48	461.16	463.15	460.59	463.17	464.06	466.50	465.10	465.49	467.23	467.67	465.75
3	459.30	461.08	463.53	460.66	463.74	464.01	465.15	466.20	465.62	466.51	467.00	464.15
4	460.55	461.04	463.74	460.79	463.73	464.24	464.87	466.19	466.41	466.69	466.74	463.15
5	462.73	461.02	461.94	459.93	463.71	463.09	466.05	466.22	466.03	467.53	466.99	464.57
6	463.26	461.32	462.06	459.64	463.03	464.02	466.95	466.76	465.94	468.26	467.23	465.55
7	462.98	461.10	462.98	459.63	463.08	463.47	466.60	466.07	466.14	467.18	465.79	464.20
8	462.88	461.29	462.47	---	464.66	463.96	467.40	465.14	465.86	466.59	467.27	462.95
9	463.96	462.41	462.81	---	464.42	463.91	467.32	465.05	465.46	468.44	466.99	462.05
10	463.42	461.41	462.58	---	463.88	465.40	465.74	464.98	465.96	465.54	466.12	462.48
11	462.81	461.26	462.76	---	463.54	466.09	466.21	464.94	465.58	466.56	466.65	462.43
12	463.17	461.59	461.82	---	464.52	466.46	467.26	464.77	464.93	467.04	467.30	462.17
13	463.16	461.25	462.22	---	463.60	465.28	467.21	463.41	464.87	466.80	467.59	461.41
14	462.41	460.89	463.12	---	462.84	464.90	467.56	463.43	465.35	466.33	466.11	461.46
15	462.91	460.46	463.41	458.68	464.25	466.16	467.47	463.08	465.17	466.82	466.13	461.11
16	461.93	461.03	462.33	458.87	464.11	466.20	467.06	463.79	464.95	467.02	465.18	460.93
17	462.36	---	461.60	460.16	464.01	466.16	465.93	462.85	464.90	466.14	461.22	461.36
18	462.22	---	462.07	460.16	463.85	466.84	466.16	462.69	465.45	466.73	459.60	462.04
19	462.47	---	461.73	460.56	464.54	466.31	466.87	463.99	464.93	467.70	459.26	463.32
20	462.40	---	460.96	460.51	464.15	465.07	467.40	465.89	465.14	466.56	459.36	464.17
21	462.28	---	461.08	461.85	463.60	464.94	467.17	466.13	466.35	466.05	460.40	464.38
22	462.31	---	460.98	461.91	464.37	465.73	467.01	---	466.00	466.64	460.81	463.73
23	461.21	---	461.66	461.78	464.19	465.99	467.19	---	466.09	467.21	463.08	463.41
24	460.36	---	461.68	461.57	464.84	465.83	465.57	---	466.41	466.17	461.71	463.31
25	460.37	---	461.96	463.03	464.94	466.34	465.40	---	467.30	466.54	460.89	460.86
26	460.96	---	461.24	462.42	466.14	466.59	466.61	---	465.36	468.19	461.72	461.64
27	462.12	---	461.30	461.46	464.82	465.10	466.71	463.97	466.33	467.55	463.25	462.88
28	461.89	---	461.77	461.46	464.31	464.57	466.53	466.02	467.54	467.27	463.10	463.48
29	461.48	---	462.08	462.04	---	465.44	465.39	465.25	466.84	466.86	465.09	462.97
30	461.06	---	461.57	462.13	---	464.91	466.29	464.98	465.81	466.95	467.61	462.77
31	460.99	---	461.50	461.49	---	465.22	---	465.43	---	466.13	466.40	---
MEAN	462.09	---	462.09	---	464.03	465.19	466.52	---	465.79	466.83	464.55	463.04
MAX	465.44	---	463.74	---	466.14	466.84	467.56	---	467.54	468.44	467.67	466.43
MIN	459.30	---	460.59	---	462.71	463.09	464.87	---	464.87	464.59	459.26	460.86

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

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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) above mean sea level.

REMARKS.--Records poor except those for June, July, and August, which are fair. Topock Marsh inlet diverts water from the Colorado River into Topock Marsh, an area of about 4,000 acres (16.2 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 gates to the same opening as the recording gate.

AVERAGE DISCHARGE.--10 years, 64.3 ft³/s (1.821 m³/s), 46,590 acre-ft/yr (57.4 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	15	76	.00	.00	.00	51	75	39	75	72	159
2	.40	33	83	.00	.00	.00	50	74	39	77	73	148
3	.00	21	76	.00	.00	.00	49	78	43	72	70	120
4	25	15	84	.00	.00	.00	19	76	38	72	80	96
5	85	16	40	.00	.00	.00	.00	78	43	77	97	126
6	99	21	26	.00	.00	.00	.00	75	36	79	98	142
7	94	34	65	.00	.00	56	.00	66	61	73	88	117
8	84	19	51	.00	.00	116	.00	66	69	69	100	88
9	120	59	64	.00	.00	111	.00	58	61	79	113	66
10	100	32	56	.00	.00	131	.00	64	64	64	137	77
11	80	18	61	.00	.00	130	.00	37	68	66	143	77
12	90	28	31	.00	.00	133	.00	.00	70	65	150	66
13	90	29	39	.00	.00	115	.00	.00	61	64	153	51
14	60	2.3	71	.00	.00	120	.00	.00	65	62	134	56
15	77	2.0	78	.00	.00	174	.00	.00	95	64	120	44
16	47	1.1	49	.00	.00	215	.00	.00	108	65	89	33
17	57	9.0	34	.00	.00	208	.00	.00	105	61	34	51
18	46	.98	39	.00	.00	225	.00	.00	112	63	37	74
19	55	.98	33	.00	.00	214	.00	.00	108	68	45	115
20	49	.00	3.2	.00	.00	182	.00	.00	109	63	33	122
21	49	.98	23	.00	.00	184	.00	.00	125	60	26	120
22	52	5.3	6.0	.00	.00	199	.00	.00	121	63	33	104
23	29	.00	29	.00	.00	203	.00	21	121	65	65	99
24	2.4	.00	18	.00	.00	198	.00	38	124	60	38	96
25	6.9	.00	41	.00	.00	213	.00	36	134	62	26	48
26	12	.00	29	.00	.00	220	40	32	112	70	35	56
27	55	.80	7.8	.00	.00	171	72	28	123	67	65	88
28	51	1.3	30	.00	.00	105	73	33	137	66	62	102
29	37	6.0	46	.00	---	67	67	39	106	63	109	117
30	8.8	36	10	.00	---	60	72	29	68	64	180	85
31	14	---	.00	.00	---	60	---	33	---	60	159	---
TOTAL	1590.50	406.74	1299.00	.00	.00	3810.00	493.00	1036.00	2565	2078	2664	2743
MEAN	51.3	13.6	41.9	.000	.000	123	16.4	33.4	85.5	67.0	85.9	91.4
MAX	120	59	84	.00	.00	225	73	78	137	79	180	159
MIN	.00	.00	.00	.00	.00	.00	.00	.00	36	60	26	33
AC-FT	3150	807	2580	.00	.00	7560	978	2050	5090	4120	5280	5440
CAL YR 1976	TOTAL	21176.24	MEAN 57.9	MAX 249	MIN .00	AC-FT 42000						
WTR YR 1977	TOTAL	18685.24	MEAN 51.2	MAX 225	MIN .00	AC-FT 37060						

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.

GAGE.--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) above mean sea level (revised).

REMARKS.--Records fair except for those below 100 ft³/s (2.83 m³/s), which are poor. Station measures return flow from Topock Marsh 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.--10 years, 11.4 ft³/s (0.323 m³/s), 8,260 acre-ft/yr (10.2 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	231	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	226	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	226	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	150	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	31	22	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	129	.00	.00	79	.00	.00	.00	.00	.00	.00	.00	.00
29	228	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	233	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	229	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	819.00	1462.00	22.00	79.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	26.4	48.7	.71	2.55	.000	.000	.000	.000	.000	.000	.000	.000
MAX	233	231	22	79	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1620	2900	44	157	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1976	TOTAL	2303.00	MEAN	6.29	MAX	233	MIN	.00	AC-FT	4570		
WTR YR 1977	TOTAL	2382.00	MEAN	6.53	MAX	233	MIN	.00	AC-FT	4720		

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) above mean sea level; gage reading have been reduced to elevations above mean sea level. Prior to Dec. 3, 1922, at site about 1 mi (2 km) upstream at different datum.

REMARKS.--Records good above 10,000 ft³/s (280 m³/s), and fair below. 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); 43 years (water years 1935-77), 12,800 ft³/s (362.5 m³/s), 9,274,000 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.

1934-77: 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.

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, 20,800 ft³/s (589 m³/s) July 27, elevation, 455.99 ft (138.986 m); minimum daily, 2,020 ft³/s (57.2 m³/s) Jan. 10; minimum elevation, 448.45 ft (136.688 m) Jan 16.

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	3760	4980	6960	6030	7130	12300	13900	14800	13000	16100	15300	15200
2	2400	5670	8070	4620	8600	11200	15000	12200	13200	18000	18000	15300
3	2210	5160	8580	5690	9170	11200	14400	14500	13500	17600	17300	12100
4	2350	5210	8670	4760	10000	10800	11000	14900	14600	15900	16600	8880
5	6690	5080	7620	4370	10100	10300	13800	15200	14600	18200	16600	9300
6	7890	5060	5560	3320	9550	11000	15000	16200	14000	19400	17300	13700
7	7430	5570	7950	3300	7830	10200	15800	16100	14600	18300	16400	11600
8	7490	4910	7850	2760	11200	10700	16000	14600	14100	16300	15400	8500
9	8750	6760	7780	2210	11500	10700	17200	12400	13900	18700	17600	8000
10	8280	6480	7480	2020	10700	12100	15700	12900	14000	16900	16100	7160
11	7450	5140	7680	2180	9690	14200	13200	12300	14300	14600	15400	7600
12	8580	5210	6670	3000	11200	15000	16200	12500	13700	17400	17000	7450
13	7800	5930	6290	2300	11000	14900	16800	11100	11800	17100	18200	5950
14	6760	4780	8170	2530	7910	11300	17100	9480	13400	16000	16900	6070
15	7560	3920	9120	2200	11300	14100	17100	9050	13400	16200	14300	5520
16	6400	4150	7870	2130	10800	14500	16200	10000	13400	17100	16000	5100
17	6760	4830	6460	3000	11000	14600	16200	8780	12800	16600	7800	5540
18	6400	4490	6880	4230	10300	15200	13500	8100	13900	15000	4040	6260
19	6720	4550	6620	4450	11300	15200	15600	9050	14100	18200	3120	7560
20	6860	4130	5230	4250	11900	14400	16400	12600	12200	17300	2880	10100
21	6570	3620	5590	5880	9620	11100	17200	14400	14800	15300	4660	11000
22	6820	3500	4380	7280	11500	13800	16300	13500	15300	15400	3640	10500
23	5720	3270	6280	6330	10900	13600	16500	11500	14700	17100	8800	9000
24	3990	2900	6000	6060	11800	14200	15800	14300	15300	16500	7200	10600
25	3910	2880	6660	7530	12200	14000	12700	10900	16700	14400	5690	5520
26	4040	3000	6390	8530	13900	15600	14700	9300	15900	18400	5690	5140
27	6200	2620	5200	6360	13800	14500	15700	9680	13500	18600	9220	7960
28	6220	2690	6060	5440	10900	10700	15800	12700	16800	17900	8980	9600
29	6090	3140	7000	7050	---	13500	14200	14000	17500	16500	10500	8750
30	5250	5120	6200	7220	---	12200	14900	11500	16200	16400	16000	8750
31	5250	---	6180	6180	---	12600	---	13000	---	16500	16500	---
TOTAL	188600	134750	214450	143210	296800	399700	459900	381540	429200	523900	379120	263710
MEAN	6084	4492	6918	4620	10600	12890	15330	12310	14310	16900	12230	8790
MAX	8750	6760	9670	8530	13900	15600	17200	16200	17500	19400	18200	15300
MIN	2210	2620	4380	2020	7130	10200	11000	8100	11800	14400	2880	5100
AC-FT	374100	267300	425400	284100	588700	792800	912200	756800	851300	1039000	752000	523100
CAL YR 1976 TOTAL	3690950			10080		MAX 18600	MIN 1950	AC-FT 7321000				
WTR YR 1977 TOTAL	3814880			MEAN 10450		MAX 19400	MIN 2020	AC-FT 7567000				

NOTE.--Discharge for period Oct. 1 to Nov. 10 computed from record obtained at former supplementary gage 4.5 mi upstream at Topock bridge.

COLORADO RIVER MAIN STEM

09424000 COLORADO RIVER NEAR TOPOCK, AZ--Continued

MEAN ELEVATION, IN FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	450.91	450.59	450.95	452.92	453.58	453.99	454.01	454.44	454.19	454.02
2		---	451.40	450.04	451.60	452.50	454.07	453.28	454.07	455.08	455.10	454.05
3		---	451.61	450.58	451.83	452.52	453.85	454.01	454.13	454.94	454.85	453.18
4		---	452.03	450.20	452.15	452.36	452.63	454.14	454.45	454.37	454.61	452.10
5		---	451.16	450.04	452.17	452.15	453.65	454.24	454.42	455.17	450.62	452.25
6		---	450.18	449.63	451.95	452.45	454.07	454.55	454.24	455.56	454.85	453.65
7		---	451.33	449.61	451.24	452.17	454.33	454.50	454.40	455.19	454.56	452.99
8		---	451.27	449.46	452.55	452.35	454.42	454.13	454.28	454.52	454.22	451.95
9		---	451.26	449.24	452.67	452.32	454.81	453.62	454.18	455.34	454.96	451.75
10		---	451.12	449.25	452.34	452.90	454.30	453.84	454.24	454.71	454.45	451.43
11		450.17	451.37	449.27	451.97	453.65	453.45	453.69	454.28	453.94	454.21	451.62
12		450.24	450.62	449.47	452.53	453.93	454.49	453.87	454.11	454.88	454.76	451.55
13		450.65	450.56	449.18	452.44	453.86	454.70	453.41	453.57	454.79	455.14	450.90
14		450.07	451.43	449.23	451.21	452.59	454.77	452.97	454.02	454.42	454.71	450.99
15		449.63	451.81	448.84	452.53	453.63	454.77	452.85	453.99	454.49	453.83	450.75
16		449.79	451.29	448.58	452.35	453.79	454.49	453.12	453.99	454.78	454.39	450.56
17		450.19	450.64	449.07	452.43	453.81	454.47	452.73	453.81	454.62	451.95	450.76
18		450.01	450.85	449.37	452.18	454.04	453.56	452.49	454.08	454.07	450.86	451.07
19		450.04	450.74	449.60	452.55	454.04	454.28	452.83	454.12	455.15	450.60	451.61
20		449.81	450.04	449.48	452.76	453.74	454.56	453.84	453.57	454.84	450.44	452.46
21		449.51	450.24	450.35	451.92	452.59	454.82	454.26	454.32	454.17	450.80	452.73
22		449.44	449.60	451.03	452.62	453.56	454.53	454.00	454.42	454.20	450.38	452.56
23		449.29	450.60	450.58	452.42	453.53	454.59	453.43	454.25	454.79	452.10	452.04
24		449.04	450.47	450.45	452.75	453.73	454.34	454.22	454.40	454.57	451.59	452.53
25		448.98	450.81	451.15	452.88	453.68	453.27	453.28	454.80	453.87	451.07	450.62
26		449.02	450.66	451.56	453.48	454.24	453.98	452.87	454.53	455.22	450.90	450.43
27		448.61	450.07	450.59	453.43	453.85	454.31	452.99	453.81	455.29	452.05	451.61
28		448.71	450.53	450.12	452.39	452.50	454.36	453.93	454.76	455.06	451.85	452.16
29		448.96	450.99	450.93	---	453.54	453.77	454.30	454.92	454.59	452.45	451.85
30		450.05	450.67	451.00	---	453.08	454.04	453.56	454.49	454.55	454.33	451.83
31		---	450.65	450.50	---	453.22	---	453.96	---	454.57	454.47	---
MEAN	---	---	450.87	449.97	452.30	453.20	454.18	453.64	454.22	454.72	453.20	451.93
MAX	---	---	452.03	451.56	453.48	454.24	454.82	454.55	454.92	455.56	455.14	454.05
MIN	---	---	449.60	448.58	450.95	452.15	452.63	452.49	453.57	453.87	450.38	450.43

NOTE.--Elevations not available for period Oct. 1 to Nov. 10.

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRON- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SURP- TITION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT												
01...	1300	5310	1070	8.0	19.0	330	200	84	29	100	2.4	4.9
NOV												
05...	1200	6540	1080	8.3	18.0	330	220	80	32	100	2.4	5.0
DEC												
01...	1400	6550	1090	8.2	14.0	330	210	81	30	100	2.4	5.0
JAN												
03...	1345	6670	1080	8.2	12.0	320	200	79	30	100	2.4	5.1
FEB												
01...	1410	7350	1090	8.2	11.0	320	200	82	29	100	2.4	4.8
MAR												
01...	1630	10600	1090	8.2	13.0	330	190	81	30	100	2.4	5.0
APR												
01...	1400	11700	1090	8.4	14.0	330	190	82	30	100	2.4	4.7
MAY												
02...	0915	14000	1060	8.3	15.5	330	200	83	30	100	2.4	4.6
JUN												
01...	1330	12600	1060	8.3	18.0	330	200	84	29	100	2.4	4.6
JUL												
01...	1420	14700	1070	7.7	20.0	310	190	77	29	100	2.5	4.5
AUG												
01...	1025	14760	1070	7.7	19.0	320	190	79	29	110	2.7	4.6
SEP												
01...	1300	13450	1070	7.7	19.0	320	190	82	29	96	2.3	4.5

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (RFST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TIONS PER AC-FT)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DTS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT												
01...	154	0	290	89	.3	9.9	656	685	.89	.42	130	10
NOV												
05...	141	0	300	86	.4	7.4	688	681	.94	.15	130	20
DEC												
01...	144	0	310	89	.6	8.8	690	696	.94	.19	130	10
JAN												
03...	147	0	290	90	.3	8.3	686	676	.93	.17	130	10
FEB												
01...	157	0	300	91	.4	7.6	704	693	.96	.15	130	0
MAR												
01...	162	0	290	91	.4	8.5	698	687	.95	.25	130	0
APR												
01...	160	2	290	84	.4	7.8	700	681	.95	.16	130	30
MAY												
02...	160	0	270	82	.4	7.7	--	658	.89	.27	130	10
JUN												
01...	160	0	280	84	.3	7.5	678	669	.92	.20	130	10
JUL												
01...	150	0	290	85	.3	8.5	680	668	.92	--	130	0
AUG												
01...	160	0	290	88	.3	8.1	676	688	.92	--	130	20
SEP												
01...	160	0	290	88	.4	9.4	682	678	.93	--	140	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 14 acre-ft/day (17,300 m³/day) Oct. 1 to Feb. 28 and 10 acre-ft/day (12,300 m³/day) Mar. 1 to Sept. 30 for a yearly total of 4,254 acre-ft (5.25 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; no diversion at times.

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Diversions			
	Maximum	Minimum	Mean	Total
October.....	1,981	1,344	1,695	52,544
November.....	1,431	1,025	1,364	40,925
December.....	1,964	1,312	1,672	51,829
CAL YR 1976.....	3,294	0	2,205	804,876
January.....	3,248	851	1,896	58,773
February.....	3,823	3,222	3,513	98,374
March.....	3,838	3,478	3,724	115,429
April.....	3,874	3,290	3,706	111,187
May.....	3,845	3,709	3,787	117,385
June.....	3,853	3,616	3,794	113,817
July.....	3,854	3,808	3,833	118,822
August.....	3,841	3,075	3,706	114,887
September.....	3,819	0	3,019	90,563
WTR YR 1977.....	3,874	0	2,971	1,084,535

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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.

PERIOD OF RECORD.--January 1959 to August 1963 (fragmentary low flow only published in WSP 1858), February 1964 to current year.

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.

AVERAGE DISCHARGE.--13 years, 4.19 ft³/s (0.119 m³/s), 3,040 acre-ft/yr (3.75 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s (198 m³/s) July 31, 1964 (gage height, 7.36 ft or 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, 1974-77.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,620 ft³/s or 74.2 m³/s (from rating curve extended above 400 ft³/s or 11.3 m³/s as explained above) Sept. 10, gage height, 4.25 ft (1.295 m), base discharge, 700 ft³/s (19.8 m³/s); minimum daily, 0.10 ft³/s (0.003 m³/s) for many days.

DAY	OCT	NOV	DEC	JAN	FFB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.90	1.1	1.8	1.2	1.0	1.2	.40	.20	.10	1.4	.40
2	20	.90	1.1	1.8	1.1	1.0	1.2	.40	.20	.10	.10	.40
3	1.0	.90	1.1	2.3	1.1	.90	1.1	.40	.20	.10	.10	.40
4	1.0	.90	1.1	1.8	1.1	.90	.80	.30	.20	.10	.10	.40
5	1.0	.80	1.1	1.8	.90	.80	.60	.30	.20	.10	.10	.30
6	1.2	.50	1.1	1.7	.80	.90	.50	.30	.20	.10	.10	.30
7	1.2	.50	1.1	1.7	.70	.90	.40	.30	.20	.10	.10	.30
8	1.2	.50	1.1	1.5	.70	.90	.40	.30	.20	.10	.10	.30
9	1.2	.60	1.2	1.5	.70	1.0	.30	.30	.20	.10	.10	.20
10	1.2	.60	1.2	1.5	.70	1.0	.30	.30	.20	.10	.10	160
11	1.2	.60	1.2	1.3	.50	.80	.30	.30	.20	.10	.40	85
12	1.2	.60	1.2	1.5	.50	.70	.30	.30	.20	.10	4.4	5.0
13	1.3	.60	1.2	1.5	.50	.80	.30	.30	.20	.10	.50	1.0
14	1.3	.60	1.3	1.3	.50	.80	.30	.30	.20	.10	.40	.50
15	1.2	.80	1.5	1.3	.50	.80	.30	.30	.10	.10	.40	.20
16	1.2	.80	1.3	1.3	.70	.80	.30	.30	.10	.10	5.0	.20
17	1.2	.80	1.2	1.2	.70	.90	.30	.30	.10	.10	2.0	.20
18	1.3	.60	1.3	1.2	.90	.80	.30	.30	.10	.20	.40	.20
19	1.3	.60	1.3	1.1	1.0	.70	.30	.30	.10	.50	.40	.20
20	1.3	.60	1.3	1.1	1.2	.70	.40	.30	.10	.10	.40	.10
21	1.3	.50	1.5	1.1	1.1	.70	.40	.30	.10	.10	.40	.10
22	3.4	.50	1.7	1.2	1.2	.80	.40	.30	.10	.10	.40	.10
23	1.0	.50	1.5	1.2	1.2	.90	.40	.30	.10	.10	9.0	.10
24	1.0	.40	1.7	1.2	1.3	.90	.40	.30	.10	.10	.40	.10
25	1.0	.50	1.7	1.3	1.2	1.1	.40	.20	.10	.10	.40	.10
26	1.0	.50	1.7	1.3	1.3	1.2	.40	.20	.10	.10	.40	.10
27	1.0	.80	1.7	1.1	1.2	1.1	.40	.20	.10	.10	.40	.10
28	.90	.90	1.7	1.1	1.1	1.1	.40	.20	.10	.10	.40	.10
29	.90	1.0	1.7	1.2	---	1.1	.40	.20	.10	.50	.40	.10
30	.90	1.0	1.7	1.2	---	1.1	.40	.20	.10	.10	.40	.10
31	.90	---	1.8	1.2	---	1.1	---	.20	---	.10	.40	---
TOTAL	55.80	20.30	42.4	43.3	25.60	28.20	13.90	8.90	4.40	4.00	29.60	256.60
MEAN	1.80	.68	1.37	1.40	.91	.91	.46	.29	.15	.13	.95	8.55
MAX	20	1.0	1.8	2.3	1.3	1.2	1.2	.40	.20	.50	9.0	160
MIN	.90	.40	1.1	1.1	.50	.70	.30	.20	.10	.10	.10	.10
AC-FT	111	40	84	86	51	56	28	18	8.7	7.9	59	509
CAL YR 1976	TOTAL	4200.80	MEAN	11.5	MAX	1900	MTN	.10	AC-FT	8330		
WTR YR 1977	TOTAL	533.00	MEAN	1.46	MAX	160	MTN	.10	AC-FT	1060		

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.--11 years, 45.9 ft³/s (1.30 m³/s), 33,250 acre-ft/yr (41.0 hm³/yr); median of yearly mean discharges, 31 ft³/s (0.88 m³/s), 22,500 acre-ft/yr (28 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s (793 m³/s) Dec. 7, 1966 (gage height, 10.82 ft or 3.298 m), from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 1.3 ft³/s (0.037 m³/s) July 13, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,370 ft³/s (95.4 m³/s) Aug. 15, gage height 5.26 ft (1.603 m), base discharge, 1,000 ft³/s (28 m³/s); minimum daily, 1.7 ft³/s (0.048 m³/s) Aug. 6-9.

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	4.8	5.4	5.1	5.7	4.6	4.6	4.8	3.8	3.6	2.6	1.8	2.8
2	4.8	5.6	5.2	5.4	4.6	4.6	4.9	3.8	3.6	2.6	1.8	2.8
3	4.8	5.1	5.1	6.2	4.8	4.8	4.8	3.7	3.5	2.6	1.8	2.7
4	4.6	4.9	5.1	5.4	4.8	4.8	4.6	3.7	3.7	2.6	1.8	2.6
5	4.4	4.9	4.9	5.4	4.8	4.8	4.4	3.8	3.7	2.6	1.8	2.4
6	4.4	4.8	4.8	5.2	4.8	4.9	4.3	3.8	3.6	2.6	1.7	2.4
7	4.6	4.4	4.6	5.2	4.8	4.8	4.1	3.8	3.5	2.7	1.7	2.2
8	4.4	4.6	4.8	5.4	4.8	4.8	4.0	3.8	3.5	2.5	1.7	2.1
9	4.4	4.6	4.6	5.1	4.9	4.8	4.0	4.1	3.2	2.4	1.7	2.1
10	4.6	4.6	4.8	5.1	4.9	4.6	4.0	4.0	3.2	2.4	1.8	3.7
11	4.6	4.3	4.8	4.8	4.9	4.6	4.0	3.8	3.2	2.4	1.8	2.6
12	4.8	4.3	4.8	4.8	5.1	4.4	4.0	3.7	3.1	2.4	1.8	2.5
13	4.4	4.3	4.8	4.8	5.1	4.6	4.0	4.1	3.1	2.3	1.8	6.1
14	4.4	4.1	4.8	4.8	5.2	4.6	4.0	4.0	3.1	2.3	1.9	3.7
15	4.3	3.8	4.9	4.6	5.2	4.6	4.1	3.8	3.0	2.2	102	3.7
16	4.3	4.0	4.8	4.4	5.2	4.6	4.1	3.7	3.0	2.2	25	3.7
17	4.4	4.2	4.9	4.4	5.1	4.4	4.0	3.7	2.9	2.1	4.3	3.7
18	4.4	4.2	4.9	4.4	5.1	4.6	4.0	3.8	2.9	2.2	3.6	3.7
19	4.3	4.5	5.1	4.4	5.1	4.6	4.0	3.8	2.8	2.1	3.4	3.7
20	4.4	4.8	5.1	4.4	5.1	4.6	4.0	3.8	2.9	2.0	3.4	3.7
21	4.4	5.1	4.9	4.4	5.1	4.6	4.0	4.0	2.9	2.0	3.4	3.7
22	4.4	5.1	5.1	4.4	5.1	4.6	4.0	3.8	2.8	1.9	5.8	3.6
23	21	5.1	5.1	4.4	5.1	4.4	4.0	3.8	2.8	2.0	3.5	3.5
24	7.2	5.2	5.1	4.4	5.1	4.6	4.0	4.4	2.8	1.9	20	3.5
25	7.0	5.4	4.9	4.6	4.9	4.6	4.1	4.0	2.7	1.9	3.4	3.1
26	6.4	5.2	5.2	4.8	4.9	4.4	4.0	3.8	2.7	1.8	2.7	3.0
27	6.2	5.2	5.1	4.6	4.9	4.6	4.0	3.7	2.7	1.8	2.6	2.9
28	5.9	5.2	5.1	4.6	4.9	4.6	4.0	3.7	2.6	1.8	2.7	2.8
29	5.7	5.7	5.2	4.6	---	4.7	4.0	3.7	2.6	1.8	2.8	2.9
30	5.4	5.7	5.4	4.6	---	4.8	4.0	3.7	2.6	1.8	2.8	2.8
31	5.4	---	5.7	4.8	---	4.9	---	3.7	---	1.8	2.8	---
TOTAL	169.1	144.3	154.7	150.1	138.9	143.9	124.2	118.8	92.3	68.3	219.1	117.2
MEAN	5.45	4.81	4.99	4.84	4.96	4.64	4.14	3.83	3.08	2.20	7.07	3.91
MAX	21	5.7	5.7	6.2	5.2	4.9	4.9	4.4	3.7	2.7	102	25
MIN	4.3	3.8	4.6	4.4	4.6	4.4	4.0	3.7	2.6	1.8	1.7	2.1
AC-FT	335	286	307	298	276	285	246	236	183	135	435	232
CAL YR 1976	TOTAL	44568.5	MEAN 122	MAX 15400	MIN 2.7	AC-FT 88400						
WTR YR 1977	TOTAL	1640.9	MEAN 4.50	MAX 102	MIN 1.7	AC-FT 3250						

BILL WILLIAMS RIVER BASIN

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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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,710 ft³/s (76.7 m³/s) Feb. 9, 1976 (gage height, 6.97 ft or 2.124 m), from rating curve extended above 1,500 ft³/s (42.5 m³/s); minimum daily, 1.1 ft³/s (0.031 m³/s) Oct. 2 to Nov. 1, 1974.

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)
Oct. 23	1415	*328 9.29	3.47 1.058
Sept. 10	unknown	250 7.08	3.20 0.947

Minimum daily, 1.5 ft³/s (0.042 m³/s) July 1-13, 15, 21, July 23 to Sept. 9.

REVISIONS.--The minimum daily discharge for water year 1976 has been revised to 1.3 ft³/s (0.037 m³/s) July 6-25, 1976; revised daily discharges in ft³/s, for the low-water period in June, July, and August 1976, are given below. These figures supersede those published in WDR AZ 76-1.

June 1, 1976	2.2	June 6	2.1	June 11	2.0	June 16	1.8
2	2.2	7	2.0	12	1.9	17	1.8
3	2.2	8	2.0	13	1.9	18	1.8
4	2.1	9	2.0	14	1.9	19	1.8
5	2.1	10	2.0	15	1.8	20	1.7
June 21	1.7	June 26	1.6	July 1	1.4	July 6	1.3
22	1.7	27	1.6	2	1.4	7	1.3
23	1.6	28	1.5	3	1.4	8	1.3
24	1.6	29	1.5	4	1.4	9	1.3
25	1.6	30	1.5	5	1.4	10	1.3
July 11	1.3	July 17	1.3	July 22	1.3	Aug. 3	2.0
12	1.3	18	1.3	23	1.3	4	2.0
13	1.3	19	1.3	24	1.3	5	2.0
14	1.3	20	1.3	25	1.3	6	2.0
15	1.3	21	1.3	Aug. 2	2.2	7	2.0
16	1.3						

Month	Total	Mean	Maximum	Minimum	Acre-feet
June 1976	55.2	1.84	2.2	1.5	109
July 1976	143.8	4.64	46	1.3	285
Aug. 1976	70.6	2.28	7.0	2.0	140
Water Year 1976	3,200.0	8.74	715	1.3	6,350

BILL WILLIAMS RIVER BASIN

09424470 KIRKLAND CREEK NEAR KIRKLAND, AZ--Continued

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	2.0	2.5	2.8	2.8	2.8	2.8	2.7	2.5	2.0	1.5	1.5	1.5
2	2.0	2.5	2.8	2.8	2.8	2.8	2.7	2.5	2.0	1.5	1.5	1.5
3	2.0	2.4	2.8	2.8	2.9	2.8	2.7	2.4	2.0	1.5	1.5	1.5
4	2.0	2.4	2.8	2.8	2.9	2.8	2.7	2.4	1.9	1.5	1.5	1.5
5	2.3	2.4	2.9	2.8	2.9	2.8	2.7	2.4	1.9	1.5	1.5	1.5
6	2.3	2.4	2.9	2.8	2.9	2.8	2.7	2.4	1.9	1.5	1.5	1.5
7	2.3	2.4	2.9	2.8	2.9	2.7	2.7	2.4	1.9	1.5	1.5	1.5
8	2.3	2.4	2.9	2.8	2.9	2.7	2.7	2.4	1.8	1.5	1.5	1.5
9	2.3	2.4	2.9	2.8	2.9	2.7	2.7	2.4	1.8	1.5	1.5	1.5
10	2.3	2.4	2.9	2.8	2.9	2.7	2.7	2.4	1.8	1.5	1.5	5.0
11	2.4	2.4	2.9	2.8	2.9	2.7	2.7	2.3	1.8	1.5	1.5	7.0
12	2.4	2.4	2.9	2.8	2.9	2.7	2.7	2.3	1.8	1.5	1.5	2.5
13	2.4	2.4	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.5
14	2.4	2.5	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.5
15	2.4	2.5	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
16	2.4	2.5	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
17	2.4	2.5	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
18	2.4	2.5	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
19	2.4	2.6	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
20	2.5	2.6	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
21	2.9	2.6	2.9	2.8	2.9	2.7	2.6	2.3	1.7	1.5	1.5	2.1
22	4.2	2.6	2.9	2.8	2.9	2.7	2.6	2.2	1.7	1.5	1.5	2.1
23	20	2.6	2.9	2.8	2.9	2.7	2.6	2.2	1.7	1.5	1.5	2.1
24	6.3	2.7	2.9	2.8	2.9	2.7	2.6	2.2	1.6	1.5	1.5	2.1
25	3.8	2.7	2.9	2.8	2.9	2.7	2.6	2.2	1.6	1.5	1.5	2.1
26	3.4	2.7	2.9	2.8	2.8	2.7	2.5	2.1	1.6	1.5	1.5	2.2
27	2.7	2.7	2.9	2.8	2.8	2.7	2.5	2.1	1.6	1.5	1.5	2.2
28	2.6	2.7	2.9	2.8	2.8	2.7	2.5	2.1	1.6	1.5	1.5	2.2
29	2.6	2.7	2.9	2.8	---	2.7	2.5	2.1	1.6	1.5	1.5	2.2
30	2.6	2.8	2.8	2.8	---	2.7	2.5	2.0	1.6	1.5	1.5	2.2
31	2.5	---	2.8	2.8	---	2.7	---	2.0	---	1.5	1.5	---
TOTAL	99.5	75.9	89.3	88.8	80.7	80.3	78.7	70.7	52.5	62.5	46.5	67.1
MEAN	3.21	2.53	2.88	2.80	2.88	2.72	2.62	2.28	1.75	2.02	1.50	2.24
MAX	20	2.8	2.9	2.8	2.9	2.8	2.7	2.5	2.0	1.1	1.5	7.0
MIN	2.0	2.4	2.8	2.8	2.8	2.7	2.5	2.0	1.6	1.5	1.5	1.5
AC-FT	197	151	177	172	160	167	156	140	104	124	92	133
CAI YR 1976	TOTAL	3281.9	MEAN	8.91	MAX	715	MTN	1.3	AC-FT	6470		
WTR YR 1977	TOTAL	894.5	MEAN	2.85	MAX	20	MTN	1.5	AC-FT	1770		

BILL WILLIAMS RIVER BASIN

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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.--11 years, 37.5 ft³/s (1.062 m³/s), 27,170 acre-ft/yr (33.5 hm³/yr); median of yearly mean discharges, 16 ft³/s (0.45 m³/s), 11,600 acre-ft/yr (14 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s (382 m³/s) Dec. 7, 1966 (gage height, 5.50 ft or 1.676 m), from rating curve extended above 5,000 ft³/s (140 m³/s) on basis of step-backwater computations and slope-area measurement at gage height 5.50 ft (1.676 m); no flow for most of time.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s (42.5 m³/s) Sept. 11, gage height, 3.20 ft (0.975 m), base discharge, 200 ft³/s (5.7 m³/s); no flow for most of time.

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	.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	270
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	50
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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	320.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	10.7
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	270
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	635
CAL YR 1976	TOTAL	27669.40	MEAN	75.6	MAX	8000	MIN	.00	AC-FT	54880		
WTR YR 1977	TOTAL	320.00	MEAN	.88	MAX	270	MIN	.00	AC-FT	635		

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) above mean sea level.

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 43,970 acre-ft (54.2 hm³) Oct. 1.

AVERAGE DISCHARGE (adjusted for storage in Alamo Lake).--38 years, 83.0 ft³/s (2.351 m³/s), 60,130 acre-ft/yr (74.1 hm³/yr); median of yearly mean discharges, 41 ft³/s (1.16 m³/s), 29,700 acre-ft/yr (37 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 or 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, 60 ft³/s (1.70 m³/s) Dec. 8; minimum daily, 4.5 ft³/s (0.13 m³/s) June 5, 10, 11, 13-18, July 7.

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	49	51	53	51	20	20	22	12	4.7	5.0	16	15
2	49	51	52	50	19	20	22	12	4.7	5.4	16	15
3	50	50	52	51	19	19	22	12	4.7	5.4	16	15
4	50	48	51	50	19	13	22	12	4.7	5.7	15	15
5	50	48	52	50	19	9.2	22	12	4.5	5.4	15	15
6	48	49	58	49	18	9.2	22	11	4.6	4.7	15	14
7	45	49	58	37	21	9.6	22	12	4.7	4.5	15	14
8	45	49	60	20	20	9.6	22	12	4.7	9.4	15	14
9	45	49	51	20	21	9.6	22	11	4.7	12	12	14
10	45	49	53	20	20	9.2	22	11	4.5	12	8.4	14
11	46	49	55	20	21	9.2	22	12	4.5	12	8.4	14
12	47	50	55	20	20	10	22	11	4.7	13	8.8	14
13	48	49	57	21	20	10	22	11	4.5	13	8.4	14
14	49	49	56	22	20	9.6	22	11	4.5	13	8.4	14
15	50	50	55	22	21	9.6	22	12	4.5	13	7.7	14
16	49	50	55	22	20	12	22	11	4.5	13	8.0	14
17	50	50	55	22	19	16	21	11	4.5	13	8.4	13
18	50	50	55	22	19	19	20	11	4.5	13	8.8	13
19	50	50	55	22	19	19	20	11	4.7	14	8.8	13
20	50	50	55	22	18	19	20	11	4.7	14	8.4	13
21	50	51	55	22	18	19	20	11	4.7	14	8.4	13
22	50	50	53	22	18	20	20	11	4.7	14	11	13
23	50	50	53	22	18	20	20	11	4.7	14	15	13
24	50	51	52	22	18	20	20	11	4.7	14	15	13
25	50	52	51	22	18	20	16	7.4	4.7	15	15	13
26	50	52	53	22	20	20	10	5.7	4.7	15	15	13
27	50	51	52	20	20	21	10	5.4	4.7	15	15	14
28	50	51	51	20	20	21	11	5.0	4.7	15	15	13
29	50	51	51	20	---	21	12	4.7	4.7	15	15	13
30	50	52	51	20	---	21	12	4.7	4.7	15	15	13
31	51	---	52	20	---	22	---	4.7	---	15	15	---
TOTAL	1516	1501	1667	845	543	486.8	584	310.6	139.1	361.5	381.9	412
MEAN	48.9	50.0	53.8	27.3	19.4	15.7	19.5	10.0	4.64	11.7	12.3	13.7
MAX	51	52	60	51	21	22	22	12	4.7	15	16	15
MIN	45	48	51	20	18	9.2	10	4.7	4.5	4.5	7.7	13
AC-FT	3010	2980	3310	1680	1080	966	1160	616	276	717	757	817
(†)	41180	38030	35790	35220	34550	33940	33030	31980	31350	30150	29140	28500
CAL YR 1976	TOTAL	33792.87	MEAN 92.3	MAX 418	MIN .20	AC-FT 67030	†+25860					
WTR YR 1977	TOTAL	8747.90	MEAN 24.0	MAX 60	MIN 4.5	AC-FT 17350	†-15470					

† Monthend contents, in acre-feet, in Alamo Lake, furnished by Corps of Engineers.

‡ Change in contents, in acre-feet.

BILL WILLIAMS RIVER BASIN

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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 SE4SW4 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. No flow for many days of most years.

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, 429 micromhos Feb. 25, 1976.

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, 1,110 micromhos Aug. 17; minimum daily, 609 micromhos Sept. 6, 8.

WATER TEMPERATURES: Maximum, 31.0°C Aug. 12; minimum 11.0°C Dec. 28, 29.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)
OCT								
04...	0950	11	940	7.6	21.5	30	--	1600
04...	1105	11	--	--	21.5	--	--	--
NOV								
08...	1020	7.5	946	8.0	17.5	15	--	160
08...	1130	7.5	--	--	17.5	--	--	--
DEC								
06...	1000	8.4	987	7.7	13.5	6	--	840
06...	1005	8.4	--	--	13.5	--	--	--
JAN								
10...	1000	10	1020	8.1	11.5	3	--	820
FEB								
07...	1035	7.8	1030	8.0	13.5	1	--	85
07...	1135	7.8	--	--	13.5	--	--	--
MAR								
07...	1030	10	1030	8.1	16.0	10	--	810
APR								
11...	1130	5.1	1020	7.7	19.5	1	--	811
MAY								
02...	1040	2.7	1030	7.6	20.0	1	--	50
JUN								
06...	1115	3.6	1020	8.3	26.0	1	--	90
JUL								
11...	1100	1.2	1000	7.9	27.5	4	--	80
AUG								
11...	1030	.90	990	7.8	27.5	3	--	590
SEP								
12...	1000	1.2	980	7.8	26.0	10	7.1	1000

B Based on non-ideal colony count.

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	FECAL STREP- TOCOCCT KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)
OCT									
04...	--	240	0	62	20	110	3.1	8.1	291
04...	--	--	--	--	--	--	--	--	--
NOV									
08...	--	230	0	61	18	110	3.2	6.9	296
08...	--	--	--	--	--	--	--	--	--
DEC									
06...	380	250	4	66	21	110	3.0	7.0	301
06...	--	--	--	--	--	--	--	--	--
JAN									
10...	150	250	0	62	22	120	3.3	7.1	310
FEB									
07...	100	250	0	64	21	120	3.3	6.6	309
07...	--	--	--	--	--	--	--	--	--
MAR									
07...	83	240	0	63	21	120	3.3	6.6	304
APR									
11...	110	250	0	65	21	120	3.3	6.5	310
MAY									
02...	250	260	4	69	21	120	3.2	7.5	310
JUN									
06...	520	240	0	65	20	120	3.3	7.7	310
JUL									
11...	3600	250	0	64	22	130	3.6	7.6	310
AUG									
11...	1400	240	0	62	21	130	3.6	7.4	310
SEP									
12...	1000	240	0	60	21	110	3.1	7.1	310

DATE	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT								
04...	0	89	100	1.3	34	572	573	.78
04...	--	--	--	--	--	--	--	--
NOV								
08...	0	76	100	1.3	32	583	556	.79
08...	--	--	--	--	--	--	--	--
DEC								
06...	0	86	110	1.5	30	578	585	.79
06...	--	--	--	--	--	--	--	--
JAN								
10...	0	96	120	1.4	32	622	618	.85
FEB								
07...	0	97	120	1.5	31	609	616	.83
07...	--	--	--	--	--	--	--	--
MAR								
07...	0	96	130	1.3	29	612	618	.83
APR								
11...	0	92	110	1.5	30	602	599	.82
MAY								
02...	0	95	120	1.6	31	612	619	.83
JUN								
06...	0	90	120	1.5	30	602	607	.82
JUL								
11...	0	92	120	1.5	32	603	622	.82
AUG								
11...	0	93	120	1.5	25	592	613	.81
SEP								
12...	0	82	110	1.5	36	578	581	.79

BILL WILLIAMS RIVER BASIN

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09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS-SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS-SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
OCT 04...	.04	1.1	1.1	.78	1.9	.18	.04
NOV 08...	--	1.0	1.1	.53	1.5	.08	.05
DEC 06...	--	1.1	1.1	.16	1.3	.03	.02
JAN 10...	--	.96	.99	.37	1.3	.03	.02
FEB 07...	--	.48	.48	.09	.57	.02	.01
MAR 07...	--	.29	.28	.39	.68	.02	.05
APR 11...	--	.08	.08	--	--	.01	.03
MAY 02...	--	.13	.11	.31	.44	.02	.04
JUN 06...	--	.05	.05	.37	.42	.02	.02
JUL 11...	--	.01	.01	.44	.45	.02	.01
AUG 11...	--	.02	--	.81	.83	.03	--
SEP 12...	--	.27	--	.67	.94	.08	--

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS-SOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	DIS-SOLVED CHROMIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)
OCT 04...	--	--	--	--	260	--	--	--	--	--	--	--
NOV 08...	7	7	--	330	260	<10	0	0	<50	0	10	0
FEB 07...	6	3	--	310	270	10	0	0	50	0	<10	2
MAY 02...	8	6	--	340	290	10	0	0	<50	0	<10	0
AUG 11...	7	4	--	340	280	10	0	0	<50	0	10	2
SEP 12...	--	4	100	--	290	--	--	--	--	--	--	41

DATE	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
OCT 04...	--	10	--	--	--	--	--	--	--	--	--	--
NOV 08...	1100	10	100	1	120	20	.1	.0	1	0	20	10
FEB 07...	40	10	100	3	10	0	.0	.0	1	1	10	0
MAY 02...	80	10	100	0	10	10	.0	.0	0	0	10	10
AUG 11...	180	30	100	1	0	20	.0	.0	0	0	20	0
SEP 12...	--	50	--	64	--	30	--	--	--	0	--	80

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

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ATRA-ZINE (UG/L)	ATRA-ZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL CHLOR-DANE (UG/L)	CHLOR-DANE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDD (UG/L)				
DATE	TIME												
NOV 08...	1020	1.1	ND	ND	ND	ND	ND	ND	ND				
FEB 07...	1035	1.7	ND	--	ND	--	ND	--	ND				
MAY 02...	1040	1.1	ND	ND	ND	ND	ND	ND	ND				
AUG 11...	1030	1.4	ND	--	ND	--	ND	--	ND				
		DDD IN BOTTOM MATERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MATERIAL (UG/KG)	P,P' DDE IN BOTTOM MATERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MATERIAL (UG/KG)	TOTAL DIT-AZINON (UG/L)	DIT-AZINON IN BOTTOM MATERIAL (UG/KG)	TOTAL DIELDRIN (UG/L)			
DATE	TIME												
NOV 08...	ND	ND	ND	--	.0	ND	ND	ND	ND	ND			
FEB 07...	--	ND	ND	--	--	ND	--	ND	--	ND			
MAY 02...	ND	ND	ND	ND	--	ND	ND	ND	ND	ND			
AUG 11...	--	ND	ND	--	--	ND	--	ND	--	ND			
		DI-ELDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MATERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTA-CHLOR (UG/L)	HEPTA-CHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL HEPTA-CHLOR EPOXIDE (UG/L)	HEPTA-CHLOR EPOXIDE IN BOTTOM MATERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MATERIAL (UG/KG)	
DATE	TIME												
NOV 08...	1020	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
FEB 07...	1035	--	ND	--	ND	--	ND	--	ND	--	ND	--	
MAY 02...	1040	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
AUG 11...	1030	--	ND	--	ND	--	ND	--	ND	--	ND	--	
		TOTAL MALATHION (UG/L)	MALATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHOXY-CHLOR (UG/L)	METHOXY-CHLOR IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM MATERIAL (UG/KG)	TOTAL METHYL TRI-THION (UG/L)	METHYL TRI-THION IN BOTTOM MATERIAL (UG/KG)	TOTAL PARA-THION (UG/L)	PARA-THION IN BOTTOM MATERIAL (UG/KG)	TOTAL SIMAZINE (UG/L)	SIMAZINE IN BOTTOM MATERIAL (UG/KG)
DATE	TIME												
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 07...	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 11...	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND
		TOTAL SIMAZINE (UG/L)	SIMAZINE IN BOTTOM MATERIAL (UG/KG DRY SOLIDS)	TOTAL TOXAPHENE (UG/L)	TOXAPHENE IN BOTTOM MATERIAL (UG/KG)	TOTAL TRI-THION (UG/L)	TRI-THION IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MATERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MATERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MATERIAL (UG/KG)
DATE	TIME												
NOV 08...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FEB 07...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 02...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AUG 11...	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--

ND Material specifically analyzed for but not detected.

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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DTS- CHARGE (CFS)	SUS- PENDE DTS- MENT (MG/L)	SUS- PENDE SEDI- MENT DTS- CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT					
04...	1105	11	91	2.7	92
NOV					
08...	1130	7.5	17	.34	89
DEC					
06...	1005	8.4	2	.05	100
JAN					
10...	1000	10	9	.24	41
FEB					
07...	1135	7.8	3	.06	41
MAR					
07...	1030	10	31	.84	53
APR					
11...	1130	5.1	2	.03	65
MAY					
02...	1040	2.7	2	.01	76
JUN					
06...	1115	3.6	4	.04	64
JUL					
11...	1100	1.2	21	.07	67
AUG					
11...	1030	.90	3	.01	97
SEP					
12...	1000	1.2	28	.09	52

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	CHLOR-A PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
OCT					
04...	0950	--	--	--	1100
NOV					
08...	1020	--	--	--	360
DEC					
06...	1000	--	--	--	450
JAN					
10...	1000	3949	.039	.006	84
FEB					
07...	1035	--	--	--	350
MAR					
07...	1030	--	--	--	580
MAY					
02...	1040	--	--	--	810
JUN					
06...	1115	--	--	--	670
JUL					
11...	1100	--	--	--	670
AUG					
11...	1030	44530	--	--	1500
SEP					
12...	1000	--	--	--	200

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	949	946	---	---	1020	1030	1030	1020	1020	1010	905	968
2	955	945	---	---	1020	1020	1030	1030	948	930	871	968
3	945	943	---	---	1010	1030	1030	987	986	1010	998	965
4	940	951	---	---	1010	951	943	898	1000	1000	1000	966
5	930	945	---	---	1020	1020	1030	947	1000	1000	997	964
6	931	950	---	---	1010	1010	1020	1030	1010	1000	997	609
7	929	948	991	---	1010	1010	1030	962	989	1010	998	610
8	916	951	994	---	1010	1020	978	1030	1010	1000	985	609
9	927	947	988	---	1020	1020	1020	1030	960	925	986	965
10	926	945	996	---	1030	1020	1030	---	1010	926	---	965
11	910	951	992	1030	1020	1020	1020	781	1010	---	---	967
12	928	958	997	1030	1010	1010	982	810	1010	996	982	958
13	929	954	988	1020	1030	1020	1020	963	1000	998	969	968
14	931	935	999	1020	1030	1020	1030	1060	1010	999	983	984
15	927	968	988	1020	1030	1040	1030	1050	1010	1000	996	984
16	933	965	994	---	1030	1040	1020	1060	1000	1000	1000	967
17	934	965	1000	1010	1030	1050	1030	1030	1000	936	1110	976
18	931	971	1000	1020	1030	1040	1030	1030	1000	986	1000	965
19	933	967	969	1020	1030	1030	1030	1030	1010	944	1010	972
20	931	960	1000	1020	1020	1050	1000	1030	1000	988	956	974
21	931	---	1020	1010	1020	1040	1030	1020	1010	987	953	981
22	938	---	1010	1020	1020	1050	974	1030	1010	986	957	986
23	946	---	986	1020	1020	1040	1030	1030	1000	981	952	984
24	1050	---	1020	1020	1020	1040	1030	1020	1010	978	978	976
25	952	---	997	1020	1030	1040	1020	1020	1010	988	978	978
26	951	---	1010	1010	1020	1040	1030	1020	1010	992	978	977
27	949	---	981	1010	1020	1050	996	1030	951	991	978	989
28	944	---	1020	1010	1020	1050	1020	1020	991	990	960	984
29	949	---	1020	1020	---	1040	1030	1020	1010	990	962	989
30	944	---	1020	1010	---	1030	1030	1030	932	990	963	996
31	943	---	---	1010	---	1020	---	1020	---	985	963	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

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

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON													
DATE TIME	OCT 4,76 0950	NOV 6,76 1020	DEC 6,76 1000	JAN 10,77 1000	FEB 7,77 1035	MAR 7,77 1030							
TOTAL CELLS/ML	1100	360	450	84	350	580							
DIVERSITY: DIVISION	0.2	0.0	0.4	0.0	1.2	0.0							
..CLASS	0.2	0.0	0.4	0.0	1.3	0.0							
..ORDER	0.7	0.2	0.5	0.0	1.6	0.4							
...FAMILY	1.4	1.7	1.8	1.1	2.5	1.6							
....GENUS	1.6	1.8	1.8	1.1	2.8	2.1							
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML
CHLOROPHYTA (GREEN ALGAE)													
..CHLOROPHYCEAE													
...CHLOROCOCCALES													
...NOCTYSTACEAE													
....ANKISTHODUSMUS	--	--	--	--	--	--	--	--	--	--	--	--	--
....SLENASTRIUM	--	--	--	--	--	--	--	--	--	--	--	--	--
....SCENFUSACEAE													
....ACTINASTRIUM													
....SCENESMUS	--	--	--	--	--	--	--	--	--	--	--	--	--
...ULOTRICHALES													
...ULOTRICHACEAE													
....ULOTRICH	--	--	--	--	--	--	--	--	--	--	--	--	--
....ULOTRICH	--	--	--	--	--	--	--	--	--	--	--	--	--
...VOLVOCEAE													
...CHLAMYDOMONADACEAE													
....CARTERIA	--	--	--	--	--	--	--	--	--	--	--	--	--
....CHLAMYDOMONAS	46	4	--	--	--	--	11	3	--	--	--	--	--
CHRYSPHYTA													
..RACILLARIOPHYCEAE													
...CENTRALES													
...FUSCINODISCACEAE													
...CYCLOTELLA	92	8	19	5	4	1	--	--	5	2	44	8	
...MELOSTRA	--	--	--	--	--	--	--	--	19	5	--	--	--
...PENNIALES													
...ACHNANTHACEAE													
....ACHNANTHES	--	--	28	8	--	--	--	--	16	5	130#	23	
....COCONEIS	--	--	9	3	30	7	18#	21	93#	27	140#	24	
...RHOTICOSPHEA													
...CYMBELLACEAE													
....AMPHORA	--	--	--	--	--	--	--	--	--	--	--	--	--
....CYMBELLA	--	--	--	--	--	--	--	--	3	1	--	--	--
....EPITHEMIA	--	--	--	--	--	--	--	--	--	--	--	--	--
....RHOPALDIA	--	--	--	--	--	--	--	--	--	--	--	--	--
...DIATOMACEAE													
....DIATOMA	--	--	--	--	9	2	--	--	--	--	--	--	--
...FRAGILARIACEAE													
....FRAGILARIA	--	--	--	--	--	--	--	--	--	--	--	--	--
...SYNEORA													
...GOMPHONEMACEAE													
....GOMPHONEMA	--	--	--	--	--	--	--	--	3	1	--	--	--
...NAVICULACEAE													
....CALONEIS	--	--	--	--	--	--	--	--	--	--	--	--	--
....GYRUSTIGMA	46	4	--	--	--	--	--	--	--	--	--	--	--
...NAVICULA	640#	58	180#	50	310#	68	61#	73	82#	23	230#	40	
...MITZSCHIA													
....MITZSCHIA	--	--	--	--	--	--	--	--	8	2	--	--	--
...SURIPELLACEAE	280#	25	110#	32	43	10	5	6	8	2	29	5	
....SURIPELLA	--	--	9	3	--	--	--	--	3	1	--	--	--
..CHRYSPHYCEAE													
...MALLONADACEAE													
....MALLONADACEAE													
...MALLONADACEAE	--	--	--	--	4	1	--	--	--	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)													
..CYANOPHYCEAE													
...CHROCOCCALES													
...CHROCOCCACEAE													
....AGMENELLUM	--	--	--	--	--	--	--	--	--	--	--	--	--
...HORMONALES													
...NOSTOCACEAE													
....ANABAENA	--	--	--	--	21	5	--	--	--	--	--	--	--
...OSCILLATORIACEAE	--	--	--	--	--	--	--	--	--	--	--	--	--
....LYNGBYA	--	--	--	--	--	--	--	--	--	--	--	--	--
...USCILLATORIA	* 0	--	--	--	--	--	--	--	85#	24	--	--	--
....SPIRULINA	--	--	--	--	--	--	--	--	--	--	--	--	--
EUGLENOPHYTA (EUGLENIDS)													
..CRYPTOPHYCEAE													
...CRYPTOMONADACEAE													
....CRYPTOPHYCEAE													
...CRYPTOMONAS	--	--	--	--	--	--	--	--	--	--	--	--	--
...CRYPTOMONADACEAE													
....CRYPTOMONAS	--	--	--	--	--	--	--	--	11	3	--	--	--
...EUGLENACEAE													
....EUGLENA	--	--	--	--	--	--	--	--	3	1	--	--	--
...EUGLENA	--	--	--	--	--	--	--	--	3	1	--	--	--
...TRACHLOMONAS	--	--	--	--	4	1	--	--	--	--	--	--	--

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

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

BILL WILLIAMS RIVER BASIN

09426600 BILL WILLIAMS RIVER BELOW MINERAL WASH NEAR PLANET, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON										
DATE TIME	MAY 2, 77 1000	JUN 6, 77 1115	JUL 11, 77 1100	AUG 11, 77 1030	SEP 12, 77 1000					
TOTAL CELLS/ML	610	670	670	1500	200					
DIVERSITY: OTIVISTON	1.4	0.0	1.1	0.8	0.9					
...CLASS	1.4	0.0	1.1	0.8	0.9					
...ORDER	1.6	0.3	1.4	0.9	1.2					
...FAMILY	2.6	1.9	2.4	1.0	1.8					
...GENUS	0.0	2.3	2.6	1.0	2.1					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
..CHLOROCOCCALES										
...UNCIATACEAE										
...ANKISTRUMESMUS	6	1	--	--	--	--	--	--	--	--
...SELENASTRUM	22	3	--	--	--	--	--	--	--	--
...SCENESMACEAE										
...ACTINASTRUM	--	--	--	--	--	--	--	--	--	--
...SCENESMUS	94	12	* 0	13	2	23	1	69#	35	
...ULOTRICHALES										
...ULOTRICHACEAE										
...ULOTRICH	--	--	--	--	--	90	6	--	--	--
...VOLVOCEAE										
..CHLAMYDOMONADACEAE										
...CAPTARIA	--	--	--	--	--	* 0	--	--	--	--
...CHLAMYDOMONAS	6	1	--	--	--	--	--	--	--	--
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
..CENTRALES										
..COSCINODISCAEAE										
...CYCLOTELLA	17	2	36	5	47	7	11	1	12	6
...MELOSIRA	11	1	--	--	* 0	--	--	--	--	--
..PENNALES										
...ACHNANTHACEAE										
...ACHNANTHES	44	6	43	9	6	1	--	--	--	--
...COCCONEIS	290#	47	310#	45	22	3	74	5	--	--
...RHODICUSPHENIA	11	1	--	--	* 0	--	* 0	--	--	--
...CYMBELLACEAE										
...AMPHORA	--	--	--	--	* 0	--	--	--	--	--
...CYMBELLA	--	--	9	1	6	1	--	--	--	--
...PITHEMIA	--	--	--	--	9	1	--	--	--	--
...RHODALDIA	--	--	--	--	* 0	--	--	--	--	--
...DIATOMACEAE										
...DIATOMA	--	--	--	--	16	2	--	--	--	--
...FRAGILARIACEAE										
...FRAGILARIA	--	--	18	3	13	2	--	--	--	--
...SYNEURA	6	1	* 0	--	16	2	--	--	--	--
...GOMPHONEMACEAE										
...GOMPHONEMA	50	6	110#	16	13	2	--	--	--	--
...NAVICULACEAE										
...CALONEIS	--	--	--	--	--	--	* 0	--	12	6
...GYROSIGMA	--	--	--	--	--	--	--	--	12	6
...NAVICULA	11	1	18	3	38	6	* 0	--	17	9
...NITZSCHACEAE										
...NENTICULA	* 0	--	* 0	--	--	--	--	--	--	--
...NITZSCHIA	83	10	120#	17	82	12	17	1	75#	38
...SIIRIRELLACEAE										
...SIIRIRELLA	6	1	* 0	--	16	2	--	--	--	--
..CHRYSOPHYCEAE										
..CHRYSMONADACEAE										
..MALLONADACEAE										
...MALLONAS	--	--	--	--	--	--	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
..CHROCOCCOCCAEAE										
...AGMENELLUM	* 0	--	--	--	--	--	--	--	--	--
..HORMOGONALES										
...NOSTOCACEAE										
...ANABAENA	--	--	--	--	--	--	--	--	--	--
...OSCILLATORIAEAE	130#	16	--	--	--	--	--	--	--	--
...LYNGRYA	--	--	* 0	--	--	--	--	--	--	--
...OSCILLATORIA	--	--	--	--	360#	54	1300#	85	--	--
...SPIRILLINA	--	--	--	--	* 0	--	--	--	--	--
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
..CRYPTOMONIDAE										
...CRYPTOCHRYSIDACEAE										
...CHROMONAS	6	1	--	--	--	--	--	--	--	--
...CRYPTOMONACEAE										
...CRYPTOMONAS	11	1	--	--	--	--	--	--	--	--
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENAEAE										
...EUGLENA	--	--	--	--	--	--	--	--	--	--
...TRACHELUMONAS	--	--	--	--	--	--	--	--	--	--

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

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

COLORADO RIVER MAIN STEM

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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) above mean sea level. Gage readings have been reduced to elevations above mean sea level.

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 or 125.605 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 623,000 acre-ft (768 hm³) June 17, elevation, 450.74 ft (137.386 m); minimum, 540,400 acre-ft (666 hm³) Feb. 8, elevation, 446.41 ft (136.066 m).

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	585000	572000	541000	578000	544000	558000	571000	599000	613000	599000	584000	574000
2	580000	570000	545000	578000	545000	559000	575000	595000	615000	597000	586000	582000
3	573000	570000	545000	581000	547000	561000	578000	595000	613000	596000	590000	582000
4	562000	570000	550000	581000	548000	562000	572000	599000	613000	593000	591000	574000
5	559000	567000	553000	581000	549000	558000	572000	604000	612000	596000	588000	569000
6	560000	562000	547000	582000	548000	555000	572000	608000	612000	605000	586000	577000
7	558000	559000	548000	583000	545000	551000	578000	612000	613000	612000	587000	582000
8	557000	554000	550000	584000	541000	549000	579000	613000	614000	609000	579000	582000
9	556000	555000	552000	585000	545000	547000	582000	612000	616000	611000	580000	580000
10	555000	557000	552000	585000	549000	547000	581000	614000	616000	610000	582000	574000
11	555000	558000	552000	583000	547000	547000	576000	618000	617000	604000	580000	574000
12	559000	561000	550000	582000	547000	548000	578000	620000	617000	606000	577000	578000
13	561000	566000	548000	579000	547000	552000	582000	622000	615000	607000	580000	578000
14	562000	570000	550000	575000	543000	546000	587000	619000	616000	608000	582000	578000
15	564000	572000	555000	568000	545000	547000	589000	617000	617000	604000	585000	578000
16	563000	571000	561000	561000	547000	550000	588000	617000	620000	603000	605000	573000
17	562000	573000	558000	556000	550000	555000	587000	615000	616000	601000	614000	566000
18	562000	574000	556000	552000	550000	558000	583000	611000	613000	594000	614000	562000
19	562000	574000	554000	551000	550000	562000	582000	607000	611000	596000	613000	559000
20	563000	573000	552000	549000	551000	564000	584000	606000	604000	600000	608000	562000
21	564000	572000	553000	549000	546000	560000	590000	609000	605000	600000	604000	568000
22	571000	570000	556000	552000	546000	561000	590000	609000	609000	595000	595000	574000
23	574000	569000	560000	552000	545000	561000	591000	607000	611000	595000	598000	575000
24	574000	567000	560000	549000	546000	565000	591000	614000	608000	594000	599000	577000
25	574000	565000	560000	550000	547000	567000	587000	617000	607000	589000	597000	569000
26	572000	566000	559000	550000	551000	572000	587000	617000	607000	591000	587000	561000
27	572000	560000	556000	552000	555000	573000	591000	612000	600000	596000	580000	560000
28	574000	553000	557000	548000	554000	572000	599000	612000	601000	600000	571000	565000
29	575000	548000	561000	548000	---	572000	599000	615000	605000	597000	563000	567000
30	575000	545000	565000	549000	---	571000	599000	612000	605000	592000	565000	569000
31	575000	---	571000	547000	---	572000	---	613000	---	589000	570000	---
MAX	585000	574000	571000	585000	555000	573000	599000	622000	620000	612000	614000	582000
MIN	555000	545000	541000	547000	541000	546000	571000	595000	600000	589000	563000	559000
(†)	-9300	-30600	+26000	-23800	+6800	+18100	+27000	+14200	-8000	-16100	-18400	-1500
CAL YR 1976	MAX 621000	MIN 529000	† +24,900									
WTR YR 1977	MAX 622000	MIN 541000	† -15,600									

† Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

09427500 LAKE HAVASU NEAR PARKER DAM, AZ-CA--Continued

ELEVATION, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	448.82	448.11	446.47	448.41	446.61	447.36	448.08	449.53	450.24	449.52	448.76	448.21
2	448.52	448.02	446.64	448.43	446.64	447.45	448.25	449.34	450.34	449.43	448.85	448.64
3	448.18	448.00	446.68	448.59	446.76	447.54	448.42	449.31	450.24	449.37	449.04	448.64
4	447.59	447.99	446.97	448.59	446.84	447.60	448.11	449.52	450.23	449.21	449.13	448.24
5	447.44	447.84	447.10	448.61	446.89	447.37	448.11	449.76	450.19	449.39	448.96	447.98
6	447.47	447.61	446.79	448.66	446.82	447.24	448.12	449.97	450.16	449.81	448.83	448.37
7	447.38	447.44	446.84	448.72	446.45	447.02	448.41	450.16	450.22	450.15	448.72	448.66
8	447.30	447.18	446.94	448.76	446.47	446.86	448.50	450.22	450.28	450.03	448.46	448.66
9	447.25	447.22	447.06	448.78	446.69	446.76	448.64	450.18	450.36	450.12	448.53	448.52
10	447.20	447.34	447.08	448.80	446.86	446.77	448.61	450.29	450.36	450.09	448.64	448.20
11	447.24	447.36	447.04	448.72	446.79	446.77	448.34	450.45	450.44	449.79	448.55	448.24
12	447.45	447.53	446.97	448.62	446.77	446.85	448.45	450.59	450.44	449.87	448.38	448.44
13	447.54	447.78	446.84	448.51	446.79	447.03	448.62	450.65	450.30	449.93	448.56	448.44
14	447.58	448.01	446.94	448.30	446.54	446.74	448.89	450.54	450.35	449.96	448.62	448.44
15	447.68	448.14	447.24	447.93	446.66	446.80	448.99	450.42	450.43	449.75	448.79	448.43
16	447.64	448.06	447.52	447.54	446.76	446.95	448.98	450.43	450.57	449.71	449.81	448.15
17	447.61	448.15	447.36	447.26	446.97	447.20	448.93	450.31	450.35	449.61	450.25	447.82
18	447.58	448.22	447.27	447.08	446.96	447.36	448.68	450.14	450.20	449.27	450.28	447.56
19	447.56	448.22	447.18	446.98	446.93	447.58	448.65	449.94	450.10	449.38	450.22	447.43
20	447.63	448.19	447.04	446.91	446.99	447.72	448.75	449.86	449.78	449.59	449.95	447.59
21	447.72	448.11	447.13	446.88	446.70	447.47	449.04	450.00	449.83	449.56	449.75	447.91
22	448.04	448.02	447.26	447.07	446.73	447.54	449.07	450.04	450.04	449.33	449.32	448.22
23	448.22	447.96	447.48	447.03	446.68	447.55	449.10	449.94	450.13	449.32	449.49	448.25
24	448.22	447.86	447.49	446.88	446.73	447.77	449.11	450.26	449.97	449.26	449.51	448.40
25	448.20	447.77	447.46	446.94	446.79	447.85	448.89	450.41	449.94	449.00	449.43	447.96
26	448.10	447.81	447.44	446.92	447.00	448.14	448.88	450.44	449.90	449.11	448.91	447.54
27	448.12	447.46	447.27	447.06	447.20	448.16	449.12	450.19	449.57	449.37	448.52	447.50
28	448.22	447.12	447.32	446.84	447.14	448.12	449.53	450.15	449.63	449.57	448.04	447.76
29	448.30	446.81	447.51	446.84	---	448.13	449.52	450.30	449.84	449.41	447.63	447.86
30	448.30	446.64	447.74	446.89	---	448.05	449.50	450.19	449.81	449.18	447.77	447.95
31	448.28	---	448.04	446.76	---	448.10	---	450.21	---	449.00	448.03	---
MEAN	447.82	447.73	447.16	447.75	446.79	447.41	448.74	450.12	450.14	449.55	448.96	448.13
MAX	448.82	448.22	448.04	448.80	447.20	448.16	449.53	450.65	450.57	450.15	450.28	448.66
MIN	447.20	446.64	446.47	446.76	446.45	446.74	448.08	449.31	449.57	449.00	447.63	447.43

CAL YR 1976 MEAN 447.99 MAX 450.61 MIN 445.80
WTR YR 1977 MEAN 448.37 MAX 450.65 MIN 446.45

COLORADO RIVER MAIN STEM

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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) above mean sea level. Prior to Oct. 1, 1967, at site 3.8 mi (6.1 km) downstream at datum 346.23 ft (105.531 m) above mean sea level.

REMARKS.--Records excellent except for those below 3,000 ft³/s (85 m³/s), which are good. 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.--43 years, 12,010 ft³/s (340.1 m³/s), 8,701,000 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, 1,220 ft³/s (34.6 m³/s) Jan. 16, 1974.

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, 22,300 ft³/s (632 m³/s) Mar. 3, gage height, 72.64 ft (22.141 m); minimum daily, 1,890 ft³/s (53.5 m³/s) Jan. 9.

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	3590	6420	7520	1950	7140	8850	12100	12900	11700	16600	16100	12100
2	4490	5810	6430	3460	7020	8320	12200	12800	10900	17100	16000	9960
3	4570	4670	7220	3500	6460	8110	12400	12900	13000	16900	14500	11200
4	7190	4530	6470	4010	8170	8650	12400	11800	13300	16200	14500	11400
5	7440	5750	6430	3640	8200	10200	12800	10400	13800	15000	16900	10300
6	7540	6300	6770	2900	9090	10100	13800	12400	13600	13700	17000	8750
7	7590	6430	6630	2420	9530	10400	12100	12200	13100	13500	16800	8020
8	7890	6410	6330	1970	9430	10100	13700	11800	12300	15500	16200	6920
9	8400	5280	5900	1890	8390	10600	14200	11100	11600	15700	15800	8120
10	8300	4480	6840	1930	7790	10400	15000	10500	12300	15700	14300	8280
11	6790	3890	7070	2220	9020	11900	14100	9140	12100	14800	14700	6520
12	6420	3290	6880	2820	9020	12000	14200	9480	12100	14800	17000	5970
13	6470	2550	6540	2480	9840	12600	13700	9260	11300	14700	15700	6400
14	5950	2370	6520	3770	8820	12100	13500	8900	11000	14000	15600	6330
15	6000	2100	5800	4570	8560	12300	15000	8900	10700	16400	11800	5700
16	6480	3750	4750	4750	8360	11600	15100	8930	10000	15800	5090	7690
17	6450	3150	6860	4670	7670	10900	15300	8520	12500	16100	2050	8360
18	6340	3210	6680	4650	8940	12600	14800	8830	12900	16000	2060	7980
19	6310	3570	6730	4230	9840	12000	14700	9810	13200	15800	2030	7800
20	5790	3520	5810	3990	10200	12000	14100	11900	13200	14100	3670	7620
21	5090	3510	4130	4930	10700	12000	13500	12000	12600	13900	4600	6920
22	3790	3360	2350	4670	9580	12000	15000	11700	11700	16000	6430	5960
23	3550	2820	3370	5560	9680	12100	14800	10700	11800	15800	5940	7000
24	3610	2760	5300	6000	9660	11000	14700	9840	14600	16100	5580	7310
25	3610	2680	6070	5520	9810	12400	13500	8120	15100	15600	4900	8230
26	4960	3650	6130	7750	10400	11900	13400	7430	15000	15700	9190	7520
27	5020	3900	6070	4630	10400	12400	12300	10300	15000	14900	11400	6420
28	4720	4400	5130	6740	9600	10800	10900	11300	14900	14800	12300	5670
29	4830	5110	4480	6080	---	11800	13000	11700	13900	16500	12400	5660
30	4850	5840	3480	6110	---	11500	12900	11500	14100	17200	12800	5940
31	4830	---	2930	6080	---	10700	---	11600	---	17200	13100	---
TOTAL	178860	125510	179620	129890	251320	344330	409200	328660	383300	482100	346640	232050
MEAN	5770	4184	5794	4190	8976	11110	13640	10600	12780	15550	11180	7735
MAX	8400	6430	7520	7750	10700	12600	15300	12900	15100	17200	17000	12100
MIN	3550	2100	2350	1890	6460	8110	10900	7430	10000	13500	2030	5660
AC-FT	354800	248900	356300	257600	498500	683000	811600	651900	760300	956200	687600	460300
CAL YR 1976	TOTAL	3376220	MEAN	9225	MAX	15700	MIN	1940	AC-FT	6697000		
WTR YR 1977	TOTAL	3391480	MEAN	9292	MAX	17200	MIN	1890	AC-FT	6727000		

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: February 1954 to August 1970.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM- TUM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)
OCT												
04...	0730	--	1060	--	--	--	--	--	--	--	--	--
07...	1045	9020	1060	7.8	23.5	1	6.6	B1	320	200	79	29
11...	0730	--	1070	--	--	--	--	--	--	--	--	--
18...	0730	--	1060	--	--	--	--	--	--	--	--	--
26...	0730	--	1080	--	--	--	--	--	--	--	--	--
NOV												
01...	0730	--	1060	--	--	--	--	--	--	--	--	--
08...	0730	--	1080	--	--	--	--	--	--	--	--	--
11...	1055	4390	1070	7.7	18.5	2	7.3	B1	330	210	78	32
15...	0730	--	1080	--	--	--	--	--	--	--	--	--
22...	0730	--	1080	--	--	--	--	--	--	--	--	--
29...	0730	--	1090	--	--	--	--	--	--	--	--	--
DEC												
06...	0730	--	1090	--	--	--	--	--	--	--	--	--
09...	1055	8370	1100	8.0	13.5	5	9.1	B1	330	210	81	30
13...	0730	--	1100	--	--	--	--	--	--	--	--	--
20...	0900	--	1100	--	--	--	--	--	--	--	--	--
27...	1230	--	1100	--	--	--	--	--	--	--	--	--
JAN												
03...	0730	--	1100	--	--	--	--	--	--	--	--	--
10...	0730	--	1100	--	--	--	--	--	--	--	--	--
13...	1110	3710	1100	8.1	9.5	7	10.1	B1	320	200	80	30
17...	0730	--	1100	--	--	--	--	--	--	--	--	--
24...	0730	--	1100	--	--	--	--	--	--	--	--	--
31...	0730	--	1100	--	--	--	--	--	--	--	--	--
FEB												
07...	0730	--	1110	--	--	--	--	--	--	--	--	--
10...	1115	8100	1110	8.1	11.0	3	10.3	B1	350	220	90	30
14...	0730	--	1110	--	--	--	--	--	--	--	--	--
22...	0730	--	1110	--	14.0	--	--	--	--	--	--	--
28...	0730	--	1100	--	14.5	--	--	--	--	--	--	--
MAR												
07...	0730	--	1100	--	--	--	--	--	--	--	--	--
10...	1130	19000	1100	8.1	12.5	6	9.8	B3	330	200	84	29
14...	0730	--	1100	--	--	--	--	--	--	--	--	--
21...	0730	--	1100	--	--	--	--	--	--	--	--	--
28...	0730	--	1100	--	14.5	--	--	--	--	--	--	--
APR												
04...	0730	--	1110	--	14.5	--	--	--	--	--	--	--
11...	0830	--	1100	--	15.0	--	--	--	--	--	--	--
14...	1100	18300	1090	8.2	17.0	3	--	B1	330	190	81	30
18...	1305	--	1090	--	--	--	--	--	--	--	--	--
25...	0730	--	1090	--	--	--	--	--	--	--	--	--
MAY												
02...	0730	--	1080	--	20.0	--	--	--	--	--	--	--
05...	1050	14160	1100	8.1	19.0	1	8.4	B1	350	210	84	33
09...	0920	--	1090	--	19.0	--	--	--	--	--	--	--
16...	0730	--	1080	--	20.0	--	--	--	--	--	--	--
23...	0730	--	1080	--	20.0	--	--	--	--	--	--	--
31...	0730	--	1080	--	21.0	--	--	--	--	--	--	--
JUN												
06...	0730	--	1080	--	21.5	--	--	--	--	--	--	--
09...	1045	13900	1070	8.0	23.0	3	7.9	B1	330	200	85	29
13...	0730	--	1070	--	22.0	--	--	--	--	--	--	--
20...	0730	--	1070	--	22.0	--	--	--	--	--	--	--
27...	0730	--	1070	--	23.5	--	--	--	--	--	--	--
JUL												
05...	0730	--	1070	--	23.5	--	--	--	--	--	--	--
11...	0730	--	1070	--	25.0	--	--	--	--	--	--	--
11...	1215	18300	1080	8.3	24.5	2	6.9	B2	320	180	79	29
18...	0730	--	1080	--	23.5	--	--	--	--	--	--	--
25...	0730	--	1070	--	24.5	--	--	--	--	--	--	--
AUG												
01...	0730	--	1070	--	24.5	--	--	--	--	--	--	--
08...	0730	--	1070	--	24.5	--	--	--	--	--	--	--
11...	1150	15800	1070	7.8	25.0	3	6.2	B2	310	180	78	28
15...	0730	--	1070	--	24.5	--	--	--	--	--	--	--
22...	0730	--	1070	--	23.5	--	--	--	--	--	--	--
29...	0730	--	1070	--	24.5	--	--	--	--	--	--	--
SEP												
06...	0730	--	1070	--	25.0	--	--	--	--	--	--	--
12...	0800	--	1080	--	23.5	--	--	--	--	--	--	--
12...	1130	9500	1070	7.7	24.0	1	5.1	B2	330	190	81	30
19...	0715	--	1070	--	23.0	--	--	--	--	--	--	--
26...	0800	--	1080	--	23.0	--	--	--	--	--	--	--

B Based on non-ideal colony count.

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

INSTRUMENTATION.--Water temperature recorder from February 1954 to August 1970.

REMARKS.--Prior to October 1968, published as 09428000.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2P) (MG/L)	DTS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTIT- UENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)
OCT												
04...	--	--	--	--	--	--	--	--	--	674	--	.92
07...	100	2.4	5.3	138	0	300	.88	.5	8.4	686	679	.93
11...	--	--	--	--	--	--	--	--	--	678	--	.92
18...	--	--	--	--	--	--	--	--	--	666	--	.91
26...	--	--	--	--	--	--	--	--	--	686	--	.93
NOV												
01...	--	--	--	--	--	--	--	--	--	674	--	.92
08...	--	--	--	--	--	--	--	--	--	680	--	.92
11...	100	2.4	5.2	142	0	290	.86	.4	8.3	718	671	.98
15...	--	--	--	--	--	--	--	--	--	678	--	.92
22...	--	--	--	--	--	--	--	--	--	678	--	.92
29...	--	--	--	--	--	--	--	--	--	684	--	.93
DEC												
06...	--	--	--	--	--	--	--	--	--	686	--	.93
09...	110	2.7	5.1	147	0	310	.92	.4	7.6	728	709	.99
13...	--	--	--	--	--	--	--	--	--	690	--	.94
20...	--	--	--	--	--	--	--	--	--	698	--	.95
27...	--	--	--	--	--	--	--	--	--	698	--	.95
JAN												
03...	--	--	--	--	--	--	--	--	--	694	--	.94
10...	--	--	--	--	--	--	--	--	--	704	--	.96
13...	100	2.4	4.7	150	0	300	.93	.3	8.7	722	692	.98
17...	--	--	--	--	--	--	--	--	--	702	--	.95
24...	--	--	--	--	--	--	--	--	--	700	--	.95
31...	--	--	--	--	--	--	--	--	--	702	--	.95
FEB												
07...	--	--	--	--	--	--	--	--	--	706	--	.96
10...	100	2.3	4.7	159	0	290	.92	.4	7.9	714	694	.97
14...	--	--	--	--	--	--	--	--	--	706	--	.96
22...	--	--	--	--	--	--	--	--	--	708	--	.96
28...	--	--	--	--	--	--	--	--	--	704	--	.96
MAR												
07...	--	--	--	--	--	--	--	--	--	700	--	.95
10...	110	2.6	5.1	159	0	280	.91	.3	7.9	721	687	.98
14...	--	--	--	--	--	--	--	--	--	696	--	.95
21...	--	--	--	--	--	--	--	--	--	702	--	.95
28...	--	--	--	--	--	--	--	--	--	696	--	.95
APR												
04...	--	--	--	--	--	--	--	--	--	704	--	.96
11...	--	--	--	--	--	--	--	--	--	698	--	.95
14...	100	2.4	4.8	160	0	300	.87	.3	7.3	710	690	.97
18...	--	--	--	--	--	--	--	--	--	692	--	.94
25...	--	--	--	--	--	--	--	--	--	694	--	.94
MAY												
02...	--	--	--	--	--	--	--	--	--	680	--	.92
05...	100	2.3	4.9	160	0	300	.84	.4	6.8	715	693	.97
09...	--	--	--	--	--	--	--	--	--	698	--	.95
16...	--	--	--	--	--	--	--	--	--	688	--	.94
23...	--	--	--	--	--	--	--	--	--	682	--	.93
31...	--	--	--	--	--	--	--	--	--	688	--	.94
JUN												
06...	--	--	--	--	--	--	--	--	--	686	--	.93
09...	100	2.4	4.7	160	0	280	.86	.4	7.9	707	673	.96
13...	--	--	--	--	--	--	--	--	--	684	--	.93
20...	--	--	--	--	--	--	--	--	--	682	--	.93
27...	--	--	--	--	--	--	--	--	--	678	--	.92
JUL												
05...	--	--	--	--	--	--	--	--	--	678	--	.92
11...	--	--	--	--	--	--	--	--	--	686	--	.93
11...	110	2.7	4.6	170	0	290	.87	.3	8.1	698	692	.95
18...	--	--	--	--	--	--	--	--	--	684	--	.93
25...	--	--	--	--	--	--	--	--	--	674	--	.92
AUG												
01...	--	--	--	--	--	--	--	--	--	676	--	.92
08...	--	--	--	--	--	--	--	--	--	676	--	.92
11...	100	2.5	4.7	160	0	240	.88	.3	9.1	--	627	1.14
15...	--	--	--	--	--	--	--	--	--	678	--	.92
22...	--	--	--	--	--	--	--	--	--	678	--	.92
29...	--	--	--	--	--	--	--	--	--	674	--	.92
SEP												
06...	--	--	--	--	--	--	--	--	--	676	--	.92
12...	--	--	--	--	--	--	--	--	--	684	--	.93
12...	100	2.4	4.7	160	0	280	.88	.4	9.3	688	673	.94
19...	--	--	--	--	--	--	--	--	--	682	--	.93
26...	--	--	--	--	--	--	--	--	--	688	--	.94

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (R) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT 07...	2	0	200	130	<10	<10	90	10
NOV 11...	3	100	210	130	<10	10	130	30
DEC 09...	3	0	190	130	<10	10	160	0
JAN 13...	3	0	160	130	<10	<10	170	10
FEB 10...	0	0	180	130	<10	<10	210	10
MAR 10...	5	100	360	140	<10	<10	270	10
APR 14...	2	0	160	130	<10	10	110	30
MAY 05...	2	0	50	120	<10	<10	50	10
JUN 09...	2	200	180	140	<10	20	230	0
JUL 11...	1	200	210	130	<10	<10	550	10
AUG 11...	2	300	180	130	<10	10	130	20
SEP 12...	2	200	190	150	10	<10	40	10

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

COLORADO RIVER MAIN STEM

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09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOP. PHOS- PHORUS (P) (MG/L)
OCT						
07...	.08	.06	.32	.40	.01	.02
NOV						
11...	.00	.11	.55	.55	.01	.00
DEC						
09...	.12	.16	.00	.12	.02	.00
JAN						
13...	.16	.21	.36	.52	.03	.04
FEB						
10...	.14	.16	.39	.53	.01	.00
MAR						
10...	.14	.14	.47	.61	.02	.02
APR						
14...	.13	.08	.34	.47	.01	.01
MAY						
05...	.10	.10	.15	.25	.00	.03
JUN						
09...	.09	.13	.17	.26	.01	.01
JUL						
11...	.08	.09	1.2	1.3	.02	.01
AUG						
11...	.11	--	.54	.65	.02	--
SEP						
12...	.09	.14	.04	.13	.00	.00

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)
OCT							
07...	<100	40	20	.1	2	<10	10
NOV							
11...	<100	20	0	.0	3	<10	10
DEC							
09...	<100	20	0	.0	3	<10	10
JAN							
13...	<100	10	10	.0	3	<10	0
FEB							
10...	100	30	10	.0	4	<10	10
MAR							
10...	<100	20	0	.0	3	<10	10
APR							
14...	<100	10	0	.0	3	<10	20
MAY							
05...	<100	10	10	.1	2	<10	10
JUN							
09...	<100	20	0	.0	5	<10	20
JUL							
11...	<100	30	4	.0	0	<10	30
AUG							
11...	<100	30	8	.0	5	<10	10
SEP							
12...	<100	40	0	.0	3	<10	20

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

COLORADO RIVER MAIN STEM

09427520 COLORADO RIVER BELOW PARKER DAM, AZ-CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
OCT				
07...	1045	14	.00	2
NOV				
11...	1055	3.2	.00	2
DEC				
09...	1055	60	.00	0
JAN				
13...	1110	2.6	.00	1
FEB				
10...	1115	3.0	.00	0
MAR				
10...	1130	3.4	.00	0
APR				
14...	1100	4.2	.00	4
MAY				
05...	1050	3.4	.00	1
JUN				
09...	1045	3.0	.00	1
JUL				
11...	1215	5.0	.00	0
AUG				
11...	1150	2.9	.00	2
SEP				
12...	1130	2.9	.00	0

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

LOCATION.--Two gages, lat 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) above mean sea level, datum in use locally, or 350.51 ft (106.835 m) above mean sea level, 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 1313.

REMARKS.--Records excellent above 700 ft³/s (19.8 m³/s) and good below. 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 70,150 acres (284 km²) during 1976 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	562	409	333	655	968	856	903	1130	1400	1470	1320
2	.00	492	406	277	577	865	800	605	1120	1340	1500	1310
3	.00	443	403	320	664	850	670	1030	1090	1240	1480	1280
4	265	448	404	364	906	916	636	1090	1100	1210	1480	1130
5	352	469	411	404	935	946	724	1140	1110	1210	1570	1010
6	430	477	430	386	905	759	849	1040	1180	1240	1650	1050
7	413	563	541	209	840	903	918	977	1200	1300	1580	1100
8	341	522	516	.00	722	941	993	966	1250	1410	1480	1100
9	329	420	472	.00	775	982	1020	946	1250	1380	1390	1130
10	383	442	475	.00	867	1000	1020	951	1260	1320	1370	1060
11	519	551	513	.00	867	951	1020	1030	1190	1410	1400	961
12	640	533	513	.00	888	922	1060	1050	1150	1440	1390	1040
13	596	421	512	.00	932	924	1140	958	1220	1480	1380	984
14	550	334	473	.00	843	951	1230	897	1240	1530	1290	825
15	466	327	458	.00	799	1040	1130	908	1390	1490	1260	765
16	470	330	457	.00	777	1100	1040	960	1500	1440	1220	722
17	547	331	400	.00	739	1150	931	994	1480	1390	991	631
18	581	315	410	.00	793	1120	839	1020	1440	1370	825	585
19	581	307	439	.00	817	1060	989	1020	1430	1270	817	608
20	581	327	493	.00	824	1080	1070	945	1350	1260	941	791
21	642	335	487	.00	844	1030	1020	882	1310	1290	887	903
22	542	343	374	.00	870	900	986	927	1320	1380	923	914
23	556	350	270	.00	943	964	875	992	1330	1410	960	917
24	534	376	163	.00	967	1040	850	1000	1430	1370	862	876
25	475	312	52	.00	1070	900	947	983	1440	1300	946	776
26	480	298	53	.00	1050	780	1000	926	1330	1400	981	714
27	572	319	277	.00	979	787	1000	942	1310	1420	1000	692
28	574	368	463	.00	973	815	1080	877	1280	1430	999	689
29	500	383	544	140	---	887	1140	890	1380	1420	1060	668
30	471	396	572	432	---	921	1020	913	1460	1360	1180	563
31	494	---	488	537	---	896	---	948	---	1290	1260	---
TOTAL	13946.00	12094	12878	3402.00	23821	29348	28853	29710	38670	42200	37542	27114
MEAN	450	403	415	110	851	947	962	958	1289	1361	1211	904
MAX	642	563	572	537	1070	1150	1230	1140	1500	1530	1650	1320
MIN	.00	298	52	.00	577	759	636	605	1090	1210	817	563
AC-FT	27660	23990	25540	6750	47250	58210	57230	58930	76700	83700	74460	53780
(†)	21590	20010	19130	14870	16950	23070	24950	25480	24340	27560	29090	27660
CAL YR 1976	TOTAL	288711.00	MEAN	789	MAX	1520	MIN	.00	AC-FT	572700	†285700	
WTR YR 1977	TOTAL	299578.00	MEAN	821	MAX	1650	MIN	.00	AC-FT	594200	†274700	

† 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)
OCT												
04...	1300	474	1070	7.8	23.5	320	200	80	28	100	2.5	5.3
12...	1320	--	1070	--	23.0	--	--	--	--	--	--	--
18...	1055	--	1220	--	21.0	--	--	--	--	--	--	--
26...	1300	--	1070	--	18.5	--	--	--	--	--	--	--
NOV												
01...	1020	501	1070	8.0	19.5	310	190	78	29	100	2.5	5.2
08...	1325	--	1080	--	20.0	--	--	--	--	--	--	--
15...	1300	--	1080	--	15.5	--	--	--	--	--	--	--
22...	1020	--	1080	--	16.5	--	--	--	--	--	--	--
29...	1035	--	1110	--	10.5	--	--	--	--	--	--	--
DEC												
06...	0940	403	1110	8.0	14.5	320	190	80	30	110	2.7	5.1
13...	1300	--	1120	--	14.0	--	--	--	--	--	--	--
20...	0930	--	1110	--	12.0	--	--	--	--	--	--	--
27...	1315	--	1120	--	11.5	--	--	--	--	--	--	--
JAN												
03...	1145	415	1210	7.9	12.0	340	210	85	32	130	3.1	4.8
10...	1110	--	1110	--	12.0	--	--	--	--	--	--	--
17...	1315	--	1200	--	13.0	--	--	--	--	--	--	--
24...	1400	--	1130	--	14.0	--	--	--	--	--	--	--
31...	1400	--	1130	--	11.5	--	--	--	--	--	--	--
FEB												
07...	1200	521	1120	8.1	11.0	330	210	84	30	110	2.6	5.1
14...	1230	--	1110	--	12.0	--	--	--	--	--	--	--
22...	1045	--	1140	--	14.0	--	--	--	--	--	--	--
28...	1430	--	1110	--	14.0	--	--	--	--	--	--	--
MAR												
07...	1200	1010	1110	8.1	11.0	330	200	81	31	100	2.4	4.9
14...	1145	--	1110	--	12.0	--	--	--	--	--	--	--
21...	1215	--	1100	--	14.5	--	--	--	--	--	--	--
28...	1140	--	1110	--	14.5	--	--	--	--	--	--	--
APR												
04...	1040	653	1110	8.0	14.5	340	210	85	30	110	2.6	5.0
11...	1130	--	1130	--	15.5	--	--	--	--	--	--	--
18...	1330	--	1100	--	15.0	--	--	--	--	--	--	--
25...	0945	--	1100	--	17.0	--	--	--	--	--	--	--
MAY												
02...	1335	226	1080	7.9	20.5	330	180	84	30	100	2.4	4.7
09...	0945	--	1090	--	19.5	--	--	--	--	--	--	--
16...	0940	--	1090	--	18.0	--	--	--	--	--	--	--
23...	1300	--	1310	--	20.5	--	--	--	--	--	--	--
31...	1330	--	1170	--	21.0	--	--	--	--	--	--	--
JUN												
06...	1320	1180	1080	8.2	20.5	340	200	85	30	100	2.4	4.8
13...	1320	--	1080	--	20.0	--	--	--	--	--	--	--
20...	1020	--	1080	--	24.5	--	--	--	--	--	--	--
27...	0920	--	1070	--	23.0	--	--	--	--	--	--	--
JUL												
05...	1120	1230	1080	7.7	22.0	340	210	81	33	110	2.6	5.1
11...	0950	--	1070	--	24.5	--	--	--	--	--	--	--
18...	1410	--	1070	--	25.0	--	--	--	--	--	--	--
25...	0955	--	1080	--	25.0	--	--	--	--	--	--	--
AUG												
01...	1010	1400	1090	7.7	25.0	310	180	77	29	110	2.7	4.9
08...	1025	--	1080	--	24.5	--	--	--	--	--	--	--
15...	0930	--	1120	--	--	--	--	--	--	--	--	--
22...	0910	--	1070	--	25.5	--	--	--	--	--	--	--
29...	1050	--	1070	--	25.5	--	--	--	--	--	--	--
SEP												
06...	1000	1030	1070	7.5	26.0	320	200	78	31	92	2.2	4.8
12...	0940	--	1100	--	24.5	--	--	--	--	--	--	--
19...	1510	--	1190	--	24.5	--	--	--	--	--	--	--
26...	1345	--	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 Oct. 2, 3; Jan. 8-28.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED FREEST- DUF AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT												
04...	146	0	300	88	.3	9.1	678	684	.92	.31	140	0
12...	--	--	--	--	--	--	674	--	.92	--	--	--
18...	--	--	--	--	--	--	778	--	1.06	--	--	--
26...	--	--	--	--	--	--	676	--	.92	--	--	--
NOV												
01...	149	0	300	84	.3	7.7	672	679	.91	.25	140	0
08...	--	--	--	--	--	--	684	--	.93	--	--	--
15...	--	--	--	--	--	--	678	--	.92	--	--	--
22...	--	--	--	--	--	--	678	--	.92	--	--	--
29...	--	--	--	--	--	--	708	--	.96	--	--	--
DEC												
06...	158	0	300	95	.4	8.8	696	709	.95	.31	130	10
13...	--	--	--	--	--	--	702	--	.95	--	--	--
20...	--	--	--	--	--	--	708	--	.96	--	--	--
27...	--	--	--	--	--	--	706	--	.96	--	--	--
JAN												
03...	159	0	320	120	.4	9.0	762	781	1.04	.33	150	10
10...	--	--	--	--	--	--	710	--	.97	--	--	--
17...	--	--	--	--	--	--	756	--	1.03	--	--	--
24...	--	--	--	--	--	--	714	--	.97	--	--	--
31...	--	--	--	--	--	--	712	--	.97	--	--	--
FEB												
07...	156	0	300	98	.4	7.5	710	713	.97	.28	140	0
14...	--	--	--	--	--	--	706	--	.96	--	--	--
22...	--	--	--	--	--	--	718	--	.98	--	--	--
28...	--	--	--	--	--	--	706	--	.96	--	--	--
MAR												
07...	158	0	300	95	.4	8.4	706	700	.96	.19	140	50
14...	--	--	--	--	--	--	704	--	.96	--	--	--
21...	--	--	--	--	--	--	702	--	.95	--	--	--
28...	--	--	--	--	--	--	702	--	.95	--	--	--
APR												
04...	160	0	300	89	.4	8.8	704	708	.96	.29	130	10
11...	--	--	--	--	--	--	714	--	.97	--	--	--
18...	--	--	--	--	--	--	696	--	.95	--	--	--
25...	--	--	--	--	--	--	702	--	.95	--	--	--
MAY												
02...	190	0	290	89	.4	6.2	680	699	.92	.22	130	10
09...	--	--	--	--	--	--	692	--	.94	--	--	--
16...	--	--	--	--	--	--	694	--	.94	--	--	--
23...	--	--	--	--	--	--	830	--	1.13	--	--	--
31...	--	--	--	--	--	--	744	--	1.01	--	--	--
JUN												
06...	160	0	300	88	.4	8.1	682	696	.93	.19	130	20
13...	--	--	--	--	--	--	686	--	.93	--	--	--
20...	--	--	--	--	--	--	686	--	.93	--	--	--
27...	--	--	--	--	--	--	680	--	.92	--	--	--
JUL												
05...	160	0	290	89	.3	8.2	686	696	.93	.12	130	0
11...	--	--	--	--	--	--	682	--	.93	--	--	--
18...	--	--	--	--	--	--	680	--	.92	--	--	--
25...	--	--	--	--	--	--	684	--	.93	--	--	--
AUG												
01...	160	0	300	91	.3	8.9	696	700	.95	--	140	40
08...	--	--	--	--	--	--	680	--	.92	--	--	--
15...	--	--	--	--	--	--	702	--	.95	--	--	--
22...	--	--	--	--	--	--	682	--	.93	--	--	--
29...	--	--	--	--	--	--	676	--	.92	--	--	--
SEP												
06...	150	0	290	89	.4	9.1	684	668	.93	--	140	0
12...	--	--	--	--	--	--	704	--	.96	--	--	--
19...	--	--	--	--	--	--	760	--	1.03	--	--	--
26...	--	--	--	--	--	--	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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHUS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT												
04...	1145	1990	7.9	21.5	610	360	160	50	220	3.9	5.7	298
12...	1235	1850	--	23.5	--	--	--	--	--	--	--	--
18...	1140	1310	--	20.0	--	--	--	--	--	--	--	--
26...	1145	1840	--	18.5	--	--	--	--	--	--	--	--
NOV												
01...	0940	1520	8.0	18.0	440	260	110	41	160	3.3	5.5	224
08...	1255	1210	--	21.0	--	--	--	--	--	--	--	--
15...	1330	1700	--	13.5	--	--	--	--	--	--	--	--
22...	1100	1380	--	18.0	--	--	--	--	--	--	--	--
29...	1100	1790	--	9.5	--	--	--	--	--	--	--	--
DEC												
06...	1000	1850	8.2	14.0	540	310	140	47	200	3.7	5.5	285
13...	1355	1740	--	13.5	--	--	--	--	--	--	--	--
20...	1100	1750	--	13.5	--	--	--	--	--	--	--	--
27...	1400	1960	--	12.0	--	--	--	--	--	--	--	--
JAN												
03...	1440	1680	7.7	13.5	500	300	130	42	180	3.5	5.8	242
10...	0950	2080	--	12.0	--	--	--	--	--	--	--	--
17...	1150	2150	--	11.5	--	--	--	--	--	--	--	--
24...	1250	2180	--	11.5	--	--	--	--	--	--	--	--
31...	1430	1920	--	12.0	--	--	--	--	--	--	--	--
FEB												
07...	1110	1220	8.3	11.0	360	220	89	33	120	2.8	5.2	167
14...	1135	1280	--	11.5	--	--	--	--	--	--	--	--
22...	0950	1950	--	16.5	--	--	--	--	--	--	--	--
28...	1305	1800	--	16.5	--	--	--	--	--	--	--	--
MAR												
07...	1250	1770	7.9	10.5	500	290	130	43	190	3.7	5.7	264
14...	1010	1810	--	14.5	--	--	--	--	--	--	--	--
21...	1110	1350	--	15.5	--	--	--	--	--	--	--	--
28...	1115	1840	--	15.5	--	--	--	--	--	--	--	--
APR												
04...	0955	1920	7.8	16.5	580	340	150	50	210	3.8	5.6	290
11...	1145	1910	--	20.0	--	--	--	--	--	--	--	--
18...	1240	1920	--	16.0	--	--	--	--	--	--	--	--
25...	0815	1460	--	18.0	--	--	--	--	--	--	--	--
MAY												
02...	1210	1920	7.8	24.0	580	350	150	49	220	4.0	5.5	280
09...	0810	1370	--	19.5	--	--	--	--	--	--	--	--
16...	0840	1640	--	19.5	--	--	--	--	--	--	--	--
23...	1350	1790	--	20.5	--	--	--	--	--	--	--	--
31...	1400	1800	--	21.0	--	--	--	--	--	--	--	--
JUN												
06...	1235	1830	7.9	20.5	540	320	140	46	200	3.8	5.6	270
13...	1335	1820	--	21.0	--	--	--	--	--	--	--	--
20...	0840	1320	--	23.0	--	--	--	--	--	--	--	--
27...	0730	1790	--	23.5	--	--	--	--	--	--	--	--
JUL												
05...	0925	1850	7.6	21.5	560	350	140	52	210	3.8	5.8	260
11...	0915	1890	--	19.0	--	--	--	--	--	--	--	--
18...	1440	1740	--	25.5	--	--	--	--	--	--	--	--
25...	0915	1700	--	25.5	--	--	--	--	--	--	--	--
AUG												
01...	0840	1720	7.6	25.5	510	290	130	46	180	3.5	5.6	270
08...	0900	1510	--	25.0	--	--	--	--	--	--	--	--
15...	0810	1650	--	25.5	--	--	--	--	--	--	--	--
22...	0800	1950	--	25.0	--	--	--	--	--	--	--	--
29...	0950	1970	--	--	--	--	--	--	--	--	--	--
SEP												
06...	0930	1890	7.7	25.5	560	320	140	50	200	3.7	5.2	290
12...	0810	1870	--	24.0	--	--	--	--	--	--	--	--
19...	1345	1880	--	25.0	--	--	--	--	--	--	--	--
26...	1315	1960	--	24.5	--	--	--	--	--	--	--	--

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT											
04...	0	550	210	.6	20	1300	1370	1.77	.49	280	0
12...	--	--	--	--	--	1210	--	1.65	--	--	--
18...	--	--	--	--	--	866	--	1.18	--	--	--
26...	--	--	--	--	--	1260	--	1.71	--	--	--
NOV											
01...	0	410	140	.4	12	1000	991	1.36	.31	200	0
08...	--	--	--	--	--	766	--	1.04	--	--	--
15...	--	--	--	--	--	1100	--	1.50	--	--	--
22...	--	--	--	--	--	898	--	1.22	--	--	--
29...	--	--	--	--	--	1220	--	1.66	--	--	--
DEC											
06...	0	490	180	.6	18	1200	1220	1.63	.42	240	10
13...	--	--	--	--	--	1150	--	1.56	--	--	--
20...	--	--	--	--	--	1160	--	1.58	--	--	--
27...	--	--	--	--	--	1320	--	1.80	--	--	--
JAN											
03...	0	470	170	.6	17	1130	1140	1.54	.62	230	10
10...	--	--	--	--	--	1410	--	1.92	--	--	--
17...	--	--	--	--	--	1460	--	1.99	--	--	--
24...	--	--	--	--	--	1500	--	2.04	--	--	--
31...	--	--	--	--	--	1270	--	1.73	--	--	--
FEB											
07...	0	330	110	.4	8.2	786	779	1.07	.09	150	0
14...	--	--	--	--	--	836	--	1.14	--	--	--
22...	--	--	--	--	--	1340	--	1.82	--	--	--
28...	--	--	--	--	--	1240	--	1.69	--	--	--
MAR											
07...	0	470	170	.7	17	1190	1160	1.62	.47	240	0
14...	--	--	--	--	--	1220	--	1.66	--	--	--
21...	--	--	--	--	--	876	--	1.19	--	--	--
28...	--	--	--	--	--	1240	--	1.69	--	--	--
APR											
04...	0	520	180	.6	19	1310	1280	1.78	.45	250	10
11...	--	--	--	--	--	1220	--	1.66	--	--	--
18...	--	--	--	--	--	1310	--	1.78	--	--	--
25...	--	--	--	--	--	956	--	1.30	--	--	--
MAY											
02...	0	520	180	.7	18	1280	1280	1.74	.34	260	10
09...	--	--	--	--	--	900	--	1.22	--	--	--
16...	--	--	--	--	--	1090	--	1.48	--	--	--
23...	--	--	--	--	--	1210	--	1.65	--	--	--
31...	--	--	--	--	--	1210	--	1.65	--	--	--
JUN											
06...	0	490	170	.6	19	1240	1210	1.69	.37	250	20
13...	--	--	--	--	--	1230	--	1.67	--	--	--
20...	--	--	--	--	--	892	--	1.21	--	--	--
27...	--	--	--	--	--	1210	--	1.65	--	--	--
JUL											
05...	0	510	180	.6	18	1260	1250	1.71	.03	250	0
11...	--	--	--	--	--	1270	--	1.73	--	--	--
18...	--	--	--	--	--	1150	--	1.56	--	--	--
25...	--	--	--	--	--	1150	--	1.56	--	--	--
AUG											
01...	0	460	160	.5	18	1150	1130	1.56	--	230	20
08...	--	--	--	--	--	982	--	1.34	--	--	--
15...	--	--	--	--	--	1100	--	1.50	--	--	--
22...	--	--	--	--	--	1350	--	1.84	--	--	--
29...	--	--	--	--	--	1360	--	1.85	--	--	--
SEP											
06...	0	520	180	.6	20	1290	1260	1.75	--	260	0
12...	--	--	--	--	--	1270	--	1.73	--	--	--
19...	--	--	--	--	--	1270	--	1.73	--	--	--
26...	--	--	--	--	--	1290	--	1.75	--	--	--

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, at mean sea level; tailrace gage, 274.13 ft (83.555 m) above mean sea level. 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 92,215 acres (373 km²) during the 1976 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.--27 years (1950-77), 1,208 ft³/s (34.21 m³/s), 875,200 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.

CORRECTIONS.--WRD Ariz. 1976, Return flow water year total—499,700 acre-feet.

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	372	969	955	396	554	1260	1410	1760	1560	2080	2150	1920
2	509	960	1000	367	962	1260	1370	1800	1640	2180	2150	1860
3	556	992	831	382	993	1390	1240	1710	1790	2150	2100	1850
4	593	966	829	365	1080	1460	1120	1750	1790	2020	2190	1680
5	644	982	783	364	952	1270	1450	1800	1790	1980	2090	1670
6	966	928	754	415	911	1120	1430	1840	1840	2020	2100	1530
7	1090	877	654	401	1030	1070	1480	2040	1900	1980	2070	1580
8	1050	1000	748	354	989	1110	1490	1570	1850	2010	2140	1550
9	907	997	754	323	1010	1060	1470	1510	1860	2040	2040	1570
10	879	1070	691	382	985	1160	1510	1560	1870	2060	2070	1310
11	872	1120	634	430	964	1170	1600	1720	1730	2150	2080	1030
12	952	987	579	462	944	1050	1520	1670	1740	2210	2050	820
13	923	800	699	488	1000	1120	1570	1640	1800	2090	2110	741
14	921	777	688	547	1230	1210	1630	1570	1800	2070	2060	804
15	843	795	722	679	1230	1240	1710	1340	1820	2060	2000	854
16	879	774	813	710	1250	1420	1680	1400	1940	2060	1590	920
17	781	789	806	742	1210	1490	1640	1390	1970	1980	1110	908
18	867	818	727	841	1150	1490	1650	1550	1960	2120	1000	914
19	816	863	541	910	969	1290	1730	1530	1790	2170	872	1000
20	872	753	687	1010	1040	1180	1710	1500	1840	2230	815	1130
21	895	660	609	1050	1190	1140	1740	1530	1860	2110	850	1240
22	785	687	712	995	1190	1250	1650	1400	1910	2170	1040	1160
23	725	718	614	919	1260	1360	1640	1550	2040	1950	976	1010
24	696	751	404	942	1320	1480	1580	1330	2080	1890	840	932
25	716	636	350	909	1200	1390	1720	1340	1950	1980	765	882
26	705	752	364	913	1120	1250	1840	1230	1940	2010	871	928
27	818	744	477	966	1020	1140	1920	1310	1880	2060	1080	886
28	887	753	516	987	1200	1130	1930	1490	1940	2050	1390	890
29	1140	932	767	950	---	1270	2010	1470	1990	2050	1420	1000
30	1130	868	692	737	---	1380	1970	1480	2010	2060	1550	967
31	920	---	543	420	---	1370	---	1680	---	2120	1700	---
TOTAL	25709	25718	20943	20356	29953	38980	48410	48460	55880	64110	49269	35536
MEAN	829	857	676	657	1070	1257	1614	1563	1863	2068	1589	1185
MAX	1140	1120	1000	1050	1320	1490	2010	2040	2080	2230	2190	1920
MIN	372	636	350	323	554	1050	1120	1230	1560	1890	765	741
AC-FT	50990	51010	41540	40380	59410	77320	96020	96120	110800	127200	97730	70490
(†)	43630	40080	39820	35980	30730	37350	40190	46100	43840	45370	51170	45010

CAL YR 1976 TOTAL 450947.00 MEAN 1232 MAX 2070 MIN .00 AC-FT 894500 † 502100
WTR YR 1977 TOTAL 463324.00 MEAN 1269 MAX 2230 MIN 323 AC-FT 919000 † 499300

† Return flows, in acre-feet, to Colorado River.

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

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09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 1970 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
OCT											
04...	1040	593	1110	7.8	23.5	330	210	86	29	110	2.6
12...	1150	--	1080	--	21.5	--	--	--	--	--	--
18...	0845	--	1110	--	20.5	--	--	--	--	--	--
26...	1045	--	1120	--	20.0	--	--	--	--	--	--
NOV											
01...	0840	1030	1130	8.2	18.5	330	200	82	30	110	2.6
08...	0930	--	1090	--	19.0	--	--	--	--	--	--
15...	1420	--	1150	--	14.0	--	--	--	--	--	--
16...	0830	--	--	7.4	15.5	--	--	--	--	--	--
22...	0835	--	1180	--	17.0	--	--	--	--	--	--
29...	0805	--	1160	--	9.0	--	--	--	--	--	--
DEC											
06...	1120	759	1110	8.2	15.0	330	200	81	31	110	2.6
13...	1450	--	1130	--	14.5	--	--	--	--	--	--
20...	1145	--	1210	--	12.0	--	--	--	--	--	--
27...	1150	--	1130	--	12.0	--	--	--	--	--	--
JAN											
03...	1145	422	1170	8.2	13.0	350	220	89	31	120	2.8
10...	0900	--	1200	--	11.5	--	--	--	--	--	--
17...	1100	--	1140	--	10.5	--	--	--	--	--	--
24...	1200	--	1120	--	12.0	--	--	--	--	--	--
25...	0800	973	--	8.3	11.0	--	--	--	--	--	--
31...	1000	--	1120	--	13.5	--	--	--	--	--	--
FEB											
07...	1010	1050	1120	8.3	11.5	340	210	84	31	110	2.6
14...	1000	--	1110	--	12.0	--	--	--	--	--	--
22...	0845	--	1120	--	14.5	--	--	--	--	--	--
28...	1210	--	1120	--	--	--	--	--	--	--	--
MAR											
07...	1340	1110	1140	8.1	12.0	340	220	87	30	110	2.6
08...	0745	--	--	8.2	13.0	--	--	--	--	--	--
14...	0915	--	1120	--	12.0	--	--	--	--	--	--
21...	1020	--	1130	--	13.5	--	--	--	--	--	--
28...	1030	--	1120	--	14.5	--	--	--	--	--	--
APR											
04...	0910	2160	1110	8.1	14.5	340	210	85	31	100	2.4
11...	0820	--	1110	--	15.5	--	--	--	--	--	--
18...	1150	--	1100	--	17.0	--	--	--	--	--	--
25...	0720	--	1100	--	17.0	--	--	--	--	--	--
26...	0645	--	990	8.4	20.0	--	--	--	--	--	--
26...	0646	--	990	8.4	20.0	--	--	--	--	--	--
MAY											
02...	1110	1820	1090	8.0	20.5	330	200	85	29	110	2.6
09...	0715	--	1110	--	19.0	--	--	--	--	--	--
16...	0800	--	1110	--	18.0	--	--	--	--	--	--
23...	0815	--	1100	--	20.0	--	--	--	--	--	--
31...	1100	--	1090	--	20.5	--	--	--	--	--	--
JUN											
06...	1150	1890	1090	7.9	20.5	340	200	85	30	110	2.6
13...	1420	--	1090	--	23.5	--	--	--	--	--	--
20...	0800	--	1100	--	23.5	--	--	--	--	--	--
27...	0745	--	1100	--	23.0	--	--	--	--	--	--
JUL											
05...	1210	2040	1080	8.1	23.5	330	200	80	32	110	2.6
11...	0750	--	1080	--	--	--	--	--	--	--	--
18...	1525	--	1130	--	26.5	--	--	--	--	--	--
19...	0700	--	1080	7.5	24.5	--	--	--	--	--	--
25...	0820	--	1180	--	25.5	--	--	--	--	--	--
AUG											
01...	0735	2090	1080	7.7	25.0	320	180	77	30	100	2.4
08...	0800	--	1090	--	25.5	--	--	--	--	--	--
15...	0720	--	1100	--	--	--	--	--	--	--	--
22...	0715	--	1160	--	27.0	--	--	--	--	--	--
29...	0800	--	1080	--	25.5	--	--	--	--	--	--
SEP											
06...	0720	2100	1080	7.7	26.5	320	200	78	31	110	2.7
12...	0730	--	1120	--	25.5	--	--	--	--	--	--
19...	1615	--	1090	--	23.5	--	--	--	--	--	--
26...	1215	--	1120	--	24.0	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (Cl) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED PLUS NITRATE (N) (MG/L)
OCT											
04...	5.4	148	0	320	88	.3	9.2	698	723	.95	.35
12...	--	--	--	--	--	--	--	678	--	.92	--
18...	--	--	--	--	--	--	--	706	--	.96	--
26...	--	--	--	--	--	--	--	712	--	.97	--
NOV											
01...	5.3	160	0	320	91	.3	8.2	708	727	.96	.25
08...	--	--	--	--	--	--	--	688	--	.94	--
15...	--	--	--	--	--	--	--	728	--	.99	--
16...	5.3	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	750	--	1.02	--
29...	--	--	--	--	--	--	--	736	--	1.00	--
DEC											
06...	5.0	160	0	290	95	.4	8.8	702	701	.95	.27
13...	--	--	--	--	--	--	--	712	--	.97	--
20...	--	--	--	--	--	--	--	768	--	1.04	--
27...	--	--	--	--	--	--	--	718	--	.98	--
JAN											
03...	4.7	156	0	340	110	.4	8.4	746	782	1.01	.28
10...	--	--	--	--	--	--	--	762	--	1.04	--
17...	--	--	--	--	--	--	--	718	--	.98	--
24...	--	--	--	--	--	--	--	710	--	.97	--
25...	4.9	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	710	--	.97	--
FEB											
07...	5.1	157	0	310	99	.4	6.6	708	724	.96	.14
14...	--	--	--	--	--	--	--	708	--	.96	--
22...	--	--	--	--	--	--	--	710	--	.97	--
28...	--	--	--	--	--	--	--	712	--	.97	--
MAR											
07...	4.8	152	0	300	100	.4	8.7	720	717	.98	.22
08...	4.7	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	712	--	.97	--
21...	--	--	--	--	--	--	--	716	--	.97	--
28...	--	--	--	--	--	--	--	714	--	.97	--
APR											
04...	5.0	160	0	310	90	.4	8.7	708	710	.96	.29
11...	--	--	--	--	--	--	--	706	--	.96	--
18...	--	--	--	--	--	--	--	700	--	.95	--
25...	--	--	--	--	--	--	--	700	--	.95	--
26...	5.0	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	4.8	160	0	300	89	.4	5.9	690	704	.94	.16
09...	--	--	--	--	--	--	--	706	--	.96	--
16...	--	--	--	--	--	--	--	704	--	.96	--
23...	--	--	--	--	--	--	--	694	--	.94	--
31...	--	--	--	--	--	--	--	694	--	.94	--
JUN											
06...	5.1	160	0	300	87	.4	7.7	690	706	.94	.35
13...	--	--	--	--	--	--	--	690	--	.94	--
20...	--	--	--	--	--	--	--	700	--	.95	--
27...	--	--	--	--	--	--	--	696	--	.95	--
JUL											
05...	5.0	160	0	290	91	.4	8.4	686	696	.93	.10
11...	--	--	--	--	--	--	--	692	--	.94	--
18...	--	--	--	--	--	--	--	730	--	.99	--
19...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	746	--	1.01	--
AUG											
01...	5.2	160	0	290	88	.4	8.7	690	678	.94	--
08...	--	--	--	--	--	--	--	688	--	.94	--
15...	--	--	--	--	--	--	--	688	--	.95	--
22...	--	--	--	--	--	--	--	742	--	1.01	--
29...	--	--	--	--	--	--	--	680	--	.92	--
SEP											
06...	4.9	150	0	300	98	.4	9.2	684	706	.93	--
12...	--	--	--	--	--	--	--	712	--	.97	--
19...	--	--	--	--	--	--	--	694	--	.94	--
26...	--	--	--	--	--	--	--	714	--	.97	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

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09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED BORON (B) (UG/L)	TOTAL COPPER (CU) (UG/L)	DTS- SOLVED COPPER (CU) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)
OCT							
04...	140	--	--	10	--	--	--
NOV							
01...	140	--	--	0	--	--	--
16...	--	--	11	--	--	--	60
DEC							
06...	130	--	--	10	--	--	--
JAN							
03...	140	--	--	10	--	--	--
25...	--	--	11	--	--	--	60
FEB							
07...	140	--	--	0	--	--	--
MAR							
07...	140	--	--	10	--	--	--
08...	--	--	8	--	--	--	20
APR							
04...	130	--	--	10	--	--	--
26...	--	--	1	--	--	--	10
MAY							
02...	130	--	--	0	--	--	--
JUN							
06...	130	--	--	10	--	--	--
JUL							
05...	130	--	--	0	--	--	--
19...	--	10	--	--	.1	80	--
AUG							
01...	140	--	--	10	--	--	--
SEP							
06...	140	--	--	30	--	--	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	PHENOLS (UG/L)	TOTAL PCB (UG/L)	PCB IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ATRA- ZINE (UG/L)	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)
NOV									
16...	0830	1	.0	--	.00	--	--	.0	--
JAN									
25...	0800	1	.0	--	.00	--	--	.0	--
MAR									
08...	0745	2	.0	--	.00	--	.00	.0	--
APR									
26...	0645	2	.0	--	.00	--	.00	.0	--
JUL									
19...	0700	--	.0	--	.00	--	--	.0	--
SEP									
13...	0700	--	.0	0	.00	.0	--	.0	0
13...	0702	--	--	--	--	--	.00	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PARKER DAM AND PALO VERDE DAM

09429000 PALO VERDE CANAL NEAR BLYTHE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- ELDRIN (UG/L)
DATE									
NOV 16...		.00	--	.00	--	.00	--	.00	--
JAN 25...		.00	--	.00	--	.00	--	.00	--
MAR 08...		.00	--	.00	--	.00	--	.00	--
APR 26...		.00	--	.00	--	.00	--	.01	--
JUL 19...		.00	--	.00	--	.00	--	.00	--
SEP 13...		.00	.0	.00	.2	.00	.0	.00	.00
SEP 13...		--	--	--	--	--	--	--	--

		DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)
DATE	TIME								
NOV 16...	0830	--	.00	--	.00	--	.00	--	.00
JAN 25...	0800	--	.00	--	.00	--	.00	--	.00
MAR 08...	0745	--	.00	--	.00	--	.00	--	.00
APR 26...	0645	--	.00	--	.00	--	.00	--	.00
JUL 19...	0700	--	.00	--	.00	--	.00	--	.00
SEP 13...	0700	.0	.00	.0	.00	.0	.00	.0	.00

		LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)
DATE	TOTAL LINDANE (UG/L)									
NOV 16...	.00	--	.00	--	.00	--	--	--	.00	--
JAN 25...	.00	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	.00	--	.00	--	.00	--	.00	--	.00	--
APR 26...	.00	--	.00	--	.00	--	.00	--	.00	--
JUL 19...	.00	--	.00	--	.00	--	.00	--	.00	--
SEP 13...	.00	.0	.00	.0	.08	.0	.00	.0	.01	.0

		TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MA- TERIAL (UG/KG)
DATE	TOTAL TOX- APHENE (UG/L)									
NOV 16...	0	--	--	--	.00	--	.00	--	.00	--
JAN 25...	0	--	.00	--	.03	--	.04	--	6.8	--
MAR 08...	0	--	.00	--	.00	--	.00	--	.00	--
APR 26...	0	--	.00	--	.00	--	.00	--	.00	--
JUL 19...	0	--	.00	--	.00	--	.00	--	.00	--
SEP 13...	0	0	.00	.0	.00	0	.00	0	.00	0

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 at mean sea level.

REMARKS.--Records good. 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.--8 years, 7,325 ft³/s (207.4 m³/s), 5,307,000 acre-ft/yr (6,540 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, 13,300 ft³/s (377 m³/s) July 31; minimum daily, 1,350 ft³/s (38.2 m³/s) Aug. 20.

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	4060	3710	5130	2350	4640	7240	8470	9540	8840	11800	12300	9120
2	3090	4910	5900	1810	5140	6710	9580	9090	8350	12600	12500	8530
3	4810	4480	5450	2780	5200	6120	9850	9620	7910	13100	11400	6870
4	4340	3630	6080	3100	5400	5880	10200	9260	10200	12500	10700	8060
5	5700	3490	5550	3440	5960	6350	10000	8280	10200	11800	11700	8450
6	6200	4530	5280	3090	6010	7800	10300	7350	10200	11300	13000	7820
7	6710	5130	5610	2500	6870	7980	10400	9000	9760	10000	13000	6030
8	6310	5170	5390	2400	7240	8020	9450	8710	9310	11300	12700	5700
9	6850	5260	5760	2040	7190	7080	10900	8780	8810	11500	12300	4450
10	7230	4180	4920	2000	6130	8240	11800	8540	8740	12000	11400	5630
11	7110	3380	5860	3770	5900	8140	10900	7430	8820	11800	11100	6510
12	5640	3070	6040	3460	6870	9000	11300	5720	8980	11500	12200	4810
13	5170	2530	5840	2840	7130	9900	11000	8210	8800	10800	12900	4620
14	5280	2120	5410	2490	7480	9250	10300	5310	8030	11000	12100	4830
15	4930	1950	5550	3380	6360	9250	10600	6340	7650	11100	11700	4710
16	4360	1740	4170	3920	6270	9270	11800	6250	7200	12300	8660	4380
17	5910	3000	4210	4260	6010	8640	11900	5300	6730	12500	3080	5870
18	4810	2620	5600	3950	5820	8370	12000	5610	8790	11900	1490	6660
19	5190	2530	5760	4070	6860	9660	11600	6190	9420	12500	1440	6580
20	5000	2990	5630	3500	7550	9420	11100	7350	9640	11300	1350	5860
21	4490	3080	4580	3430	7690	9310	10700	9370	9410	10300	3090	5420
22	4060	2940	3310	4030	8010	9530	10600	9230	9140	11400	3120	5020
23	2920	2720	1710	4100	7060	9440	11600	8810	7950	12500	5150	4310
24	2770	2310	3490	4580	7060	8890	11800	8080	8900	12300	4050	5140
25	2790	2300	4930	5280	7310	8780	11500	7530	11500	12100	4000	5640
26	2660	2380	5440	4820	7450	9740	9950	5750	11100	11900	3700	6230
27	3670	2800	5290	3540	8100	9570	9470	5630	11300	11600	6840	5770
28	3680	3320	4590	3850	7780	10000	8390	7980	11400	11200	8850	4730
29	3250	3490	3860	5310	---	8570	7430	8660	10800	12000	9500	4020
30	3340	4270	3320	4990	---	9060	9160	8970	10000	13200	9770	4190
31	3350	---	2740	5160	---	8820	---	8720	---	13300	9390	---
TOTAL	145680	100030	152400	110240	186490	264030	314050	240110	277880	366400	264480	175960
MEAN	4699	3334	4916	3556	6660	8517	10470	7745	9263	11820	8532	5865
MAX	7230	5260	6080	5310	8100	10000	12000	9620	11500	13300	13000	9120
MIN	2660	1740	1710	1810	4640	5880	7430	5300	6730	10000	1350	4020
AC-FT	289000	198400	302300	218700	369900	523700	622900	476300	551200	726800	524600	349000
CAL YR 1976	TOTAL	2640340	MEAN	7214	MAX	12900	MIN	1350	AC-FT	5237000		
WTR YR 1977	TOTAL	2597750	MEAN	7117	MAX	13300	MIN	1350	AC-FT	5153000		

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429030 COLORADO RIVER INDIAN RESERVATION LEVEE 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT												
04...	1055	39	1980	8.0	22.0	610	400	160	51	210	3.7	5.1
12...	1200	--	1840	--	21.0	--	--	--	--	--	--	--
18...	0900	--	1930	--	19.5	--	--	--	--	--	--	--
26...	1100	--	1940	--	17.0	--	--	--	--	--	--	--
NOV												
01...	0855	28	1830	8.2	16.5	550	340	140	49	190	3.5	4.8
08...	1220	--	1770	--	20.0	--	--	--	--	--	--	--
15...	1410	--	1890	--	13.5	--	--	--	--	--	--	--
22...	0845	--	1840	--	19.0	--	--	--	--	--	--	--
29...	0815	--	1910	--	7.0	--	--	--	--	--	--	--
DEC												
06...	1035	30	1860	8.2	14.0	550	340	140	48	200	3.7	4.6
13...	1435	--	1840	--	13.5	--	--	--	--	--	--	--
20...	1135	--	1830	--	13.5	--	--	--	--	--	--	--
27...	1210	--	1720	--	13.0	--	--	--	--	--	--	--
JAN												
03...	1200	32	1770	7.9	14.5	540	340	140	45	190	3.6	4.5
10...	0915	--	1840	--	13.0	--	--	--	--	--	--	--
17...	1125	--	1850	--	11.0	--	--	--	--	--	--	--
24...	1215	--	1840	--	10.5	--	--	--	--	--	--	--
31...	1230	--	1780	--	13.0	--	--	--	--	--	--	--
FEB												
07...	1020	29	1800	8.0	13.0	540	360	140	47	190	3.5	4.9
14...	1020	--	1860	--	13.5	--	--	--	--	--	--	--
22...	0920	--	1920	--	--	--	--	--	--	--	--	--
28...	1240	--	1850	--	15.5	--	--	--	--	--	--	--
MAR												
07...	1330	46	2150	7.8	12.0	560	360	140	52	260	4.8	6.2
14...	0930	--	1980	--	15.5	--	--	--	--	--	--	--
21...	1030	--	2030	--	15.0	--	--	--	--	--	--	--
28...	1045	--	1780	--	15.0	--	--	--	--	--	--	--
APR												
04...	0925	48	2010	7.7	16.0	620	410	160	53	220	3.9	5.0
11...	0830	--	2020	--	16.5	--	--	--	--	--	--	--
18...	1200	--	1990	--	16.5	--	--	--	--	--	--	--
25...	0745	--	1930	--	--	--	--	--	--	--	--	--
MAY												
02...	1150	52	1940	7.9	23.5	600	370	160	48	200	3.6	4.8
09...	0740	--	1990	--	19.5	--	--	--	--	--	--	--
16...	0800	--	2030	--	19.0	--	--	--	--	--	--	--
23...	1215	--	2070	--	21.0	--	--	--	--	--	--	--
31...	1120	--	1920	--	21.0	--	--	--	--	--	--	--
JUN												
06...	1205	49	1910	8.0	21.5	570	370	150	48	210	3.8	5.0
13...	1410	--	1970	--	20.5	--	--	--	--	--	--	--
20...	0810	--	2090	--	22.0	--	--	--	--	--	--	--
27...	0810	--	2000	--	24.5	--	--	--	--	--	--	--
JUL												
05...	1150	51	2030	7.8	21.5	630	420	160	56	230	4.0	5.4
11...	0810	--	2030	--	25.0	--	--	--	--	--	--	--
18...	1515	--	2050	--	26.5	--	--	--	--	--	--	--
25...	0830	--	2010	--	24.5	--	--	--	--	--	--	--
AUG												
01...	0805	52	2080	7.6	25.0	620	400	160	53	230	4.0	5.7
08...	0820	--	1990	--	25.5	--	--	--	--	--	--	--
15...	0740	--	2010	--	25.0	--	--	--	--	--	--	--
22...	0725	--	2170	--	25.5	--	--	--	--	--	--	--
29...	0910	--	1960	--	26.0	--	--	--	--	--	--	--
SEP												
06...	0750	42	1970	7.6	--	590	380	150	52	210	3.8	5.1
12...	0745	--	1980	--	23.5	--	--	--	--	--	--	--
19...	1545	--	1880	--	25.0	--	--	--	--	--	--	--
26...	1245	--	2090	--	25.5	--	--	--	--	--	--	--

09429030 COLORADO RIVER INDIAN RESERVATION LEVEE 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DTS- SOLVED FLUOR- IDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED (FeST- DUE AT 180 C) (MG/L)	DIS- SOLVED (SUM OF CONSTIT- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE PLUS NITRITE (N) (MG/L)	DTS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT												
04...	252	0	530	230	.3	20	1320	1330	1.80	.14	200	0
12...	--	--	--	--	--	--	1240	--	1.69	--	--	--
18...	--	--	--	--	--	--	1290	--	1.75	--	--	--
26...	--	--	--	--	--	--	1310	--	1.78	--	--	--
NOV												
01...	254	0	480	200	.4	18	1230	1210	1.67	.31	190	0
08...	--	--	--	--	--	--	1180	--	1.60	--	--	--
15...	--	--	--	--	--	--	1270	--	1.73	--	--	--
22...	--	--	--	--	--	--	1250	--	1.70	--	--	--
29...	--	--	--	--	--	--	1300	--	1.77	--	--	--
DEC												
06...	257	0	490	200	.4	21	1240	1230	1.69	.39	190	10
13...	--	--	--	--	--	--	1250	--	1.70	--	--	--
20...	--	--	--	--	--	--	1250	--	1.70	--	--	--
27...	--	--	--	--	--	--	1150	--	1.56	--	--	--
JAN												
03...	235	0	490	190	.3	21	1200	1200	1.63	.29	190	10
10...	--	--	--	--	--	--	1250	--	1.70	--	--	--
17...	--	--	--	--	--	--	1270	--	1.73	--	--	--
24...	--	--	--	--	--	--	1240	--	1.69	--	--	--
31...	--	--	--	--	--	--	1190	--	1.62	--	--	--
FEB												
07...	220	0	490	200	.4	17	1210	1200	1.65	.06	200	0
14...	--	--	--	--	--	--	1260	--	1.71	--	--	--
22...	--	--	--	--	--	--	1310	--	1.78	--	--	--
28...	--	--	--	--	--	--	1260	--	1.71	--	--	--
MAR												
07...	248	0	510	280	.6	14	1420	1390	1.93	.40	310	20
14...	--	--	--	--	--	--	1350	--	1.84	--	--	--
21...	--	--	--	--	--	--	1380	--	1.88	--	--	--
28...	--	--	--	--	--	--	1200	--	1.63	--	--	--
APR												
04...	260	0	550	220	.4	21	1390	1360	1.89	.37	210	10
11...	--	--	--	--	--	--	1300	--	1.77	--	--	--
18...	--	--	--	--	--	--	1310	--	1.78	--	--	--
25...	--	--	--	--	--	--	1280	--	1.74	--	--	--
MAY												
02...	280	0	520	200	.4	20	1300	1290	1.77	.35	200	10
09...	--	--	--	--	--	--	1350	--	1.84	--	--	--
16...	--	--	--	--	--	--	1370	--	1.86	--	--	--
23...	--	--	--	--	--	--	1410	--	1.92	--	--	--
31...	--	--	--	--	--	--	1300	--	1.77	--	--	--
JUN												
06...	250	0	510	210	.4	23	1300	1280	1.77	.10	200	40
13...	--	--	--	--	--	--	1350	--	1.84	--	--	--
20...	--	--	--	--	--	--	1420	--	1.93	--	--	--
27...	--	--	--	--	--	--	1350	--	1.84	--	--	--
JUL												
05...	260	0	550	230	.4	19	1390	1380	1.89	.01	210	0
11...	--	--	--	--	--	--	1410	--	1.92	--	--	--
18...	--	--	--	--	--	--	1400	--	1.90	--	--	--
25...	--	--	--	--	--	--	1380	--	1.88	--	--	--
AUG												
01...	270	0	580	220	.4	21	1430	1400	1.94	--	220	20
08...	--	--	--	--	--	--	1350	--	1.84	--	--	--
15...	--	--	--	--	--	--	1370	--	1.86	--	--	--
22...	--	--	--	--	--	--	1480	--	2.01	--	--	--
29...	--	--	--	--	--	--	1330	--	1.81	--	--	--
SEP												
06...	260	0	500	230	.4	18	1340	1290	1.82	--	210	10
12...	--	--	--	--	--	--	1350	--	1.84	--	--	--
19...	--	--	--	--	--	--	1260	--	1.71	--	--	--
26...	--	--	--	--	--	--	1370	--	1.86	--	--	--

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 SW 1/4 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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SURP- TITUM RATIO	DIS- SOLVED PU- TAS- SIUM (K) (MG/L)
OCT												
04...	1110	148	3180	7.9	22.0	830	560	210	73	410	6.2	7.4
12...	1210	--	2420	--	22.0	--	--	--	--	--	--	--
18...	0910	--	2430	--	20.5	--	--	--	--	--	--	--
26...	1110	--	2320	--	--	--	--	--	--	--	--	--
NOV												
01...	0900	152	2690	8.0	18.0	690	450	170	64	340	5.6	6.6
08...	1230	--	2210	--	19.5	--	--	--	--	--	--	--
15...	1400	--	2440	--	13.0	--	--	--	--	--	--	--
22...	0855	--	2530	--	19.5	--	--	--	--	--	--	--
29...	0855	--	2520	--	9.0	--	--	--	--	--	--	--
DEC												
06...	1045	166	2420	8.2	14.5	630	410	160	56	300	5.2	6.2
13...	1425	--	2330	--	14.5	--	--	--	--	--	--	--
20...	1125	--	2490	--	13.5	--	--	--	--	--	--	--
27...	1220	--	2830	--	13.5	--	--	--	--	--	--	--
JAN												
03...	1210	139	2820	7.7	14.0	700	470	180	62	350	5.7	6.4
10...	0925	--	3030	--	12.0	--	--	--	--	--	--	--
17...	1135	--	3400	--	12.0	--	--	--	--	--	--	--
24...	1225	--	3260	--	11.5	--	--	--	--	--	--	--
31...	1240	--	3320	--	12.0	--	--	--	--	--	--	--
FEB												
07...	1030	138	2190	8.1	12.0	560	380	140	52	270	5.0	6.2
14...	1030	--	2040	--	12.0	--	--	--	--	--	--	--
22...	0910	--	3040	--	18.0	--	--	--	--	--	--	--
28...	1230	--	2260	--	15.5	--	--	--	--	--	--	--
MAR												
07...	1320	205	1960	8.0	11.5	570	360	150	47	210	3.8	4.9
14...	0940	--	2360	--	15.5	--	--	--	--	--	--	--
21...	1040	--	2480	--	16.5	--	--	--	--	--	--	--
28...	1050	--	2420	--	15.0	--	--	--	--	--	--	--
APR												
04...	0920	242	2340	7.8	15.0	640	430	160	59	280	4.8	6.2
11...	0835	--	2550	--	16.5	--	--	--	--	--	--	--
18...	1210	--	2640	--	18.0	--	--	--	--	--	--	--
25...	0740	--	2190	--	18.5	--	--	--	--	--	--	--
MAY												
02...	1130	277	2140	7.9	21.5	570	370	150	48	250	4.5	6.0
09...	0735	--	2250	--	20.0	--	--	--	--	--	--	--
16...	0810	--	2520	--	20.0	--	--	--	--	--	--	--
23...	1225	--	2360	--	22.0	--	--	--	--	--	--	--
31...	1130	--	2400	--	21.5	--	--	--	--	--	--	--
JUN												
06...	1215	215	2270	7.9	21.0	590	380	150	53	280	5.0	6.3
13...	1400	--	2480	--	21.0	--	--	--	--	--	--	--
20...	0820	--	1940	--	24.5	--	--	--	--	--	--	--
27...	0800	--	2200	--	24.5	--	--	--	--	--	--	--
JUL												
05...	1200	219	2290	7.7	23.5	610	410	150	58	310	5.4	6.3
11...	0800	--	2430	--	25.5	--	--	--	--	--	--	--
18...	1505	--	2150	--	27.0	--	--	--	--	--	--	--
25...	0840	--	2260	--	26.5	--	--	--	--	--	--	--
AUG												
01...	0810	221	2390	7.7	26.0	640	410	160	59	300	5.2	7.0
08...	0830	--	2250	--	26.0	--	--	--	--	--	--	--
15...	0845	--	2170	--	26.5	--	--	--	--	--	--	--
22...	0730	--	2040	--	--	--	--	--	--	--	--	--
29...	0920	--	2440	--	27.0	--	--	--	--	--	--	--
SEP												
06...	0745	231	1940	7.9	28.0	530	340	130	49	220	4.2	5.5
12...	0740	--	1980	--	26.0	--	--	--	--	--	--	--
19...	1555	--	2260	--	24.5	--	--	--	--	--	--	--
26...	1240	--	2340	--	24.5	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

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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 1976 TO SEPTEMBER 1977

DATE	BICAP- RONATE (HCO ₃) (MG/L)	CAP- BONATE (CO ₃) (MG/L)	DTS- SOLVED SULFATE (SO ₄) (MG/L)	DTS- SOLVED CHLOR- IDE (CL) (MG/L)	DTS- SOLVED FLUOR- IDE (F) (MG/L)	DTS- SOLVED SILICA (SiO ₂) (MG/L)	DTS- SOLVED REST- OF AT (Mg/L)	DTS- SOLVED SUM OF CONSTITUENTS (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED NITRATE PLUS NITRIT (N) (MG/L)	DTS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FF) (UG/L)
OCT												
04...	329	0	720	520	.7	21	2090	2130	2.84	.69	460	0
12...	--	--	--	--	--	--	1620	--	2.20	--	--	--
18...	--	--	--	--	--	--	1570	--	2.14	--	--	--
26...	--	--	--	--	--	--	1490	--	2.03	--	--	--
NOV												
01...	295	0	630	360	.6	17	1790	1740	2.43	.61	390	0
08...	--	--	--	--	--	--	1460	--	1.99	--	--	--
15...	--	--	--	--	--	--	1640	--	2.23	--	--	--
22...	--	--	--	--	--	--	1600	--	2.30	--	--	--
29...	--	--	--	--	--	--	1700	--	2.31	--	--	--
DEC												
06...	271	0	560	340	.6	16	1590	1580	2.16	.60	340	10
13...	--	--	--	--	--	--	1550	--	2.11	--	--	--
20...	--	--	--	--	--	--	1660	--	2.26	--	--	--
27...	--	--	--	--	--	--	1900	--	2.58	--	--	--
JAN												
03...	288	0	670	420	.7	20	1910	1860	2.60	1.2	420	10
10...	--	--	--	--	--	--	2030	--	2.76	--	--	--
17...	--	--	--	--	--	--	2320	--	3.16	--	--	--
24...	--	--	--	--	--	--	2150	--	2.92	--	--	--
31...	--	--	--	--	--	--	2250	--	3.06	--	--	--
FEB												
07...	225	0	520	300	.6	11	1440	1410	1.96	.08	310	20
14...	--	--	--	--	--	--	1350	--	1.84	--	--	--
22...	--	--	--	--	--	--	2050	--	2.79	--	--	--
28...	--	--	--	--	--	--	1510	--	2.05	--	--	--
MAR												
07...	257	0	500	220	.4	21	1320	1280	1.80	.41	200	0
14...	--	--	--	--	--	--	1580	--	2.15	--	--	--
21...	--	--	--	--	--	--	1670	--	2.27	--	--	--
28...	--	--	--	--	--	--	1590	--	2.16	--	--	--
APR												
04...	260	0	550	310	.6	16	1550	1520	2.11	1.0	310	10
11...	--	--	--	--	--	--	1660	--	2.26	--	--	--
18...	--	--	--	--	--	--	1770	--	2.41	--	--	--
25...	--	--	--	--	--	--	1420	--	1.93	--	--	--
MAY												
02...	250	0	500	270	.6	14	1400	1360	1.90	.28	280	10
09...	--	--	--	--	--	--	1480	--	2.01	--	--	--
16...	--	--	--	--	--	--	1700	--	2.31	--	--	--
23...	--	--	--	--	--	--	1570	--	2.14	--	--	--
31...	--	--	--	--	--	--	1590	--	2.16	--	--	--
JUN												
06...	260	0	540	290	.6	16	1500	1470	2.04	.30	310	0
13...	--	--	--	--	--	--	1680	--	2.28	--	--	--
20...	--	--	--	--	--	--	1300	--	1.77	--	--	--
27...	--	--	--	--	--	--	1460	--	1.99	--	--	--
JUL												
05...	250	0	560	320	.6	16	1530	1540	2.08	--	310	10
11...	--	--	--	--	--	--	1680	--	2.28	--	--	--
18...	--	--	--	--	--	--	1440	--	1.96	--	--	--
25...	--	--	--	--	--	--	1530	--	2.08	--	--	--
AUG												
01...	280	0	570	310	.6	18	1600	1560	2.18	--	320	10
08...	--	--	--	--	--	--	1490	--	2.03	--	--	--
15...	--	--	--	--	--	--	1440	--	1.96	--	--	--
22...	--	--	--	--	--	--	1370	--	1.86	--	--	--
29...	--	--	--	--	--	--	1660	--	2.26	--	--	--
SEP												
06...	230	0	480	240	.5	15	1320	1250	1.80	--	260	0
12...	--	--	--	--	--	--	1300	--	1.77	--	--	--
19...	--	--	--	--	--	--	1480	--	2.01	--	--	--
26...	--	--	--	--	--	--	1490	--	2.03	--	--	--

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)
OCT 01...	0830	11	1670	8.0	22.0	560	300	150	44	160	3.0	6.1
NOV 01...	0935	6.0	1670	8.0	16.0	620	360	170	48	160	2.8	6.1
DEC 01...	0900	5.0	1730	8.0	9.0	560	300	150	46	170	3.1	5.9
JAN 05...	1020	4.0	1690	8.1	12.0	550	280	150	42	160	3.0	6.3
FEB 01...	0900	2.0	1670	7.9	14.0	550	280	150	43	150	2.8	6.0
MAR 01...	0830	8.0	1800	7.9	14.0	580	310	150	49	180	3.3	6.3
APR 01...	0740	10	1640	7.8	15.0	530	280	140	44	160	3.0	6.0
MAY 02...	1000	16	1620	7.8	20.0	530	290	140	43	150	2.8	5.9
JUN 01...	0810	15	1640	7.9	22.0	550	310	150	43	160	3.0	6.0
JUL 01...	0620	14	1650	7.5	24.5	530	280	140	43	160	3.0	5.8
AUG 01...	0725	52	1630	7.7	22.5	510	250	140	38	160	3.1	5.9
SEP 01...	0610	14	1660	7.8	23.0	560	300	150	46	150	2.7	5.7

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

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09429130 PALO VERDE IRRIGATION DISTRICT OLIVE LAKE DRAIN NEAR BLYTHE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED SOLIDS (REST-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (MG/L)
OCT												
01...	309	0	460	150	.3	21	1130	1150	1.54	.54	180	10
NOV												
01...	325	0	460	140	.4	19	1070	1170	1.46	.32	180	20
DEC												
01...	322	0	470	150	.3	21	1120	1160	1.52	.89	190	20
JAN												
05...	321	0	440	140	.4	21	1110	1120	1.51	.25	190	10
FEB												
01...	327	0	420	140	.5	18	1100	1090	1.50	.23	190	10
MAR												
01...	328	0	490	170	.4	18	1200	1230	1.63	.29	200	0
APR												
01...	300	0	430	140	.4	17	1110	1090	1.51	.33	180	10
MAY												
02...	290	0	420	140	.4	16	1110	1060	1.51	.41	170	20
JUN												
01...	300	0	410	140	.5	16	1130	1080	1.54	.40	180	10
JUL												
01...	300	0	430	140	.4	17	1000	1080	1.36	--	180	0
AUG												
01...	310	0	420	150	.4	18	1110	1090	1.51	--	180	20
SEP												
01...	320	0	430	140	.5	19	1110	1100	1.51	--	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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)
OCT												
04...	0730	7490	1200	7.9	22.0	350	220	90	31	120	2.8	5.6
12...	0830	--	1140	--	23.0	--	--	--	--	--	--	--
18...	1215	--	1170	--	23.0	--	--	--	--	--	--	--
26...	1010	--	1300	--	18.0	--	--	--	--	--	--	--
NOV												
01...	0820	3800	1200	8.2	11.5	340	200	87	30	120	2.8	5.3
08...	0835	--	1230	--	18.0	--	--	--	--	--	--	--
15...	0845	--	1350	--	12.0	--	--	--	--	--	--	--
22...	0835	--	1260	--	15.0	--	--	--	--	--	--	--
29...	1220	--	1260	--	7.0	--	--	--	--	--	--	--
DEC												
06...	0840	4520	1170	8.1	12.0	340	200	84	32	110	2.6	5.1
13...	0840	--	1180	--	14.0	--	--	--	--	--	--	--
20...	0825	--	1170	--	11.0	--	--	--	--	--	--	--
27...	0850	--	1200	--	11.0	--	--	--	--	--	--	--
JAN												
03...	0900	2050	1360	8.0	12.0	390	230	98	35	140	3.1	5.0
10...	0825	--	1340	--	8.5	--	--	--	--	--	--	--
17...	0830	--	1220	--	10.5	--	--	--	--	--	--	--
24...	0830	--	1210	--	11.0	--	--	--	--	--	--	--
31...	0830	--	1210	--	10.5	--	--	--	--	--	--	--
FEB												
07...	0910	5610	1160	8.2	12.0	350	220	87	32	110	2.6	5.0
14...	1000	--	1160	--	13.5	--	--	--	--	--	--	--
22...	1350	--	1160	--	16.5	--	--	--	--	--	--	--
28...	1050	--	1160	--	14.5	--	--	--	--	--	--	--
MAR												
07...	1410	7410	1160	8.1	11.5	340	220	88	30	110	2.6	4.8
14...	1020	--	1200	--	11.0	--	--	--	--	--	--	--
21...	0920	--	1190	--	15.5	--	--	--	--	--	--	--
28...	0955	--	1180	--	12.0	--	--	--	--	--	--	--
APR												
04...	0915	9150	1170	8.1	13.5	360	220	90	33	110	2.5	5.0
11...	0940	--	1180	--	15.5	--	--	--	--	--	--	--
18...	0835	--	1160	--	15.5	--	--	--	--	--	--	--
25...	0845	--	1160	--	17.0	--	--	--	--	--	--	--
MAY												
02...	0715	9450	1180	8.1	20.0	360	220	92	31	120	2.8	5.1
09...	0840	--	1210	--	19.0	--	--	--	--	--	--	--
16...	1200	--	1190	--	18.5	--	--	--	--	--	--	--
23...	0830	--	1180	--	19.5	--	--	--	--	--	--	--
31...	0730	--	1160	--	20.0	--	--	--	--	--	--	--
JUN												
06...	0830	8670	1150	8.1	20.0	350	210	88	31	110	2.6	5.0
13...	0835	--	1160	--	21.0	--	--	--	--	--	--	--
20...	1350	--	1150	--	25.5	--	--	--	--	--	--	--
27...	0900	--	1160	--	20.5	--	--	--	--	--	--	--
JUL												
05...	1300	13600	1120	7.9	22.0	340	200	85	31	110	2.6	5.0
11...	0750	--	1140	--	26.0	--	--	--	--	--	--	--
18...	0830	--	1140	--	26.5	--	--	--	--	--	--	--
25...	0900	--	1130	--	26.5	--	--	--	--	--	--	--
AUG												
01...	0730	13600	1130	7.5	26.5	330	200	82	30	110	2.6	5.3
08...	0900	--	1130	--	26.0	--	--	--	--	--	--	--
15...	0740	--	1150	--	27.0	--	--	--	--	--	--	--
22...	0900	--	1440	--	27.0	--	--	--	--	--	--	--
29...	0725	--	1140	--	25.5	--	--	--	--	--	--	--
SEP												
06...	--	10600	--	--	--	--	--	--	--	--	--	--
06...	0735	10600	1120	7.9	26.5	330	210	76	33	110	2.7	4.8
12...	0940	--	1200	--	26.0	--	--	--	--	--	--	--
19...	0730	--	1170	--	21.0	--	--	--	--	--	--	--
26...	0830	--	1290	--	23.5	--	--	--	--	--	--	--

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.

REMARKS.--Gaging station operated by Bureau of Reclamation.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DTS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE PLUS NITRITE (N) (MG/L)	DIS- SOLVED IRON (B) (UG/L)	DIS- SOLVED IRON (FF) (UG/L)
OCT												
04...	163	0	330	110	.3	10	758	779	1.03	.42	150	20
12...	--	--	--	--	--	--	720	--	.98	--	--	--
18...	--	--	--	--	--	--	730	--	.99	--	--	--
26...	--	--	--	--	--	--	842	--	1.15	--	--	--
NOV												
01...	167	0	330	110	.5	8.3	766	775	1.04	.22	160	0
08...	--	--	--	--	--	--	792	--	1.08	--	--	--
15...	--	--	--	--	--	--	868	--	1.18	--	--	--
22...	--	--	--	--	--	--	800	--	1.09	--	--	--
29...	--	--	--	--	--	--	800	--	1.09	--	--	--
DEC												
06...	167	0	310	110	.4	9.2	740	744	1.01	.25	140	10
13...	--	--	--	--	--	--	746	--	1.01	--	--	--
20...	--	--	--	--	--	--	734	--	1.00	--	--	--
27...	--	--	--	--	--	--	754	--	1.03	--	--	--
JAN												
03...	191	0	350	130	.4	11	872	865	1.19	.28	170	10
10...	--	--	--	--	--	--	850	--	1.16	--	--	--
17...	--	--	--	--	--	--	776	--	1.06	--	--	--
24...	--	--	--	--	--	--	766	--	1.04	--	--	--
31...	--	--	--	--	--	--	768	--	1.04	--	--	--
FEB												
07...	163	0	310	110	.4	7.4	742	743	1.01	.15	140	0
14...	--	--	--	--	--	--	746	--	1.01	--	--	--
22...	--	--	--	--	--	--	732	--	1.00	--	--	--
28...	--	--	--	--	--	--	736	--	1.00	--	--	--
MAR												
07...	155	0	300	100	.4	8.9	738	720	1.00	.24	140	0
14...	--	--	--	--	--	--	768	--	1.04	--	--	--
21...	--	--	--	--	--	--	756	--	1.03	--	--	--
28...	--	--	--	--	--	--	748	--	1.02	--	--	--
APR												
04...	170	0	320	100	.4	8.6	738	752	1.00	.26	140	10
11...	--	--	--	--	--	--	754	--	1.03	--	--	--
18...	--	--	--	--	--	--	742	--	1.01	--	--	--
25...	--	--	--	--	--	--	738	--	1.00	--	--	--
MAY												
02...	170	0	320	100	.4	5.8	750	759	1.02	.09	150	0
09...	--	--	--	--	--	--	758	--	1.03	--	--	--
16...	--	--	--	--	--	--	752	--	1.02	--	--	--
23...	--	--	--	--	--	--	746	--	1.01	--	--	--
31...	--	--	--	--	--	--	730	--	.99	--	--	--
JUN												
06...	170	0	310	100	.4	8.8	728	738	.99	.22	140	40
13...	--	--	--	--	--	--	752	--	1.02	--	--	--
20...	--	--	--	--	--	--	732	--	1.00	--	--	--
27...	--	--	--	--	--	--	736	--	1.00	--	--	--
JUL												
05...	170	0	290	96	.4	8.8	708	710	.96	--	140	0
11...	--	--	--	--	--	--	722	--	.98	--	--	--
18...	--	--	--	--	--	--	728	--	.99	--	--	--
25...	--	--	--	--	--	--	716	--	.97	--	--	--
AUG												
01...	160	0	310	95	.3	9.1	714	721	.97	--	150	20
08...	--	--	--	--	--	--	718	--	.98	--	--	--
15...	--	--	--	--	--	--	738	--	1.00	--	--	--
22...	--	--	--	--	--	--	952	--	1.29	--	--	--
29...	--	--	--	--	--	--	722	--	.98	--	--	--
SEP												
06...	--	--	--	--	--	--	--	--	--	--	--	--
06...	140	0	300	98	.5	9.0	714	700	.97	--	140	0
12...	--	--	--	--	--	--	758	--	1.03	--	--	--
19...	--	--	--	--	--	--	738	--	1.00	--	--	--
26...	--	--	--	--	--	--	818	--	1.11	--	--	--

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
OCT											
04...	0915	679	2580	7.9	25.5	490	250	130	41	380	7.4
12...	0935	--	2670	--	24.5	--	--	--	--	--	--
18...	0835	--	2650	--	23.5	--	--	--	--	--	--
26...	0830	--	2710	--	20.5	--	--	--	--	--	--
NOV											
01...	1100	703	2500	8.3	13.5	500	260	130	42	360	7.0
08...	1045	--	2690	--	19.5	--	--	--	--	--	--
15...	1030	--	2810	--	13.5	--	--	--	--	--	--
16...	1200	--	--	7.5	20.0	--	--	--	--	--	--
22...	1045	--	2780	--	18.0	--	--	--	--	--	--
29...	1400	--	2740	--	11.5	--	--	--	--	--	--
DEC											
06...	1040	521	2750	8.1	14.0	510	250	130	44	420	8.1
13...	0955	--	2590	--	15.0	--	--	--	--	--	--
20...	1025	--	2640	--	15.0	--	--	--	--	--	--
27...	1020	--	2800	--	13.0	--	--	--	--	--	--
JAN											
03...	1045	473	2750	7.8	14.0	530	280	130	49	400	7.6
10...	1010	--	2900	--	11.5	--	--	--	--	--	--
17...	1025	--	2370	--	12.0	--	--	--	--	--	--
24...	1000	--	2580	--	13.0	--	--	--	--	--	--
25...	1100	--	--	7.9	15.0	--	--	--	--	--	--
31...	0930	--	2340	--	12.0	--	--	--	--	--	--
FEB											
07...	1130	388	2660	8.0	13.0	510	290	130	45	400	7.7
14...	1030	--	2870	--	18.0	--	--	--	--	--	--
22...	1530	--	2970	--	20.0	--	--	--	--	--	--
28...	0900	--	2930	--	15.5	--	--	--	--	--	--
MAR											
07...	1540	473	2710	8.1	13.5	520	270	140	41	400	7.6
08...	1030	--	--	7.8	17.5	--	--	--	--	--	--
14...	1140	--	2650	--	13.5	--	--	--	--	--	--
21...	0940	--	2530	--	18.0	--	--	--	--	--	--
28...	1200	--	2500	--	15.5	--	--	--	--	--	--
APR											
04...	1110	592	2430	8.1	15.5	500	270	130	42	350	6.8
11...	1000	--	2390	--	16.5	--	--	--	--	--	--
18...	0900	--	2650	--	18.0	--	--	--	--	--	--
25...	1030	--	2680	--	19.0	--	--	--	--	--	--
26...	0930	--	2800	7.9	23.0	--	--	--	--	--	--
26...	0931	--	2800	7.9	23.0	--	--	--	--	--	--
MAY											
02...	0940	664	2550	8.2	21.0	500	260	130	43	390	7.6
09...	1020	--	2530	--	20.5	--	--	--	--	--	--
16...	1225	--	2640	--	20.5	--	--	--	--	--	--
23...	1025	--	2790	--	23.0	--	--	--	--	--	--
31...	1010	--	2450	--	23.0	--	--	--	--	--	--
JUN											
06...	0840	666	2610	8.0	23.0	500	260	130	43	390	7.6
13...	0900	--	2540	--	23.0	--	--	--	--	--	--
20...	1215	--	2490	--	25.0	--	--	--	--	--	--
27...	0925	--	2440	--	23.5	--	--	--	--	--	--
JUL											
05...	1330	657	2610	7.8	24.0	510	250	130	44	400	7.7
11...	0830	--	2720	--	26.0	--	--	--	--	--	--
18...	0850	--	2650	--	30.0	--	--	--	--	--	--
19...	0930	--	2870	7.9	25.5	--	--	--	--	--	--
25...	1120	--	2750	--	30.0	--	--	--	--	--	--
AUG											
01...	0825	678	2790	7.8	26.0	530	260	140	44	410	7.7
08...	0925	--	2530	--	29.5	--	--	--	--	--	--
15...	0805	--	2610	--	26.5	--	--	--	--	--	--
22...	0725	--	2780	--	26.0	--	--	--	--	--	--
29...	0755	--	2700	--	25.0	--	--	--	--	--	--
SEP											
06...	0810	640	2630	7.6	26.5	460	240	110	46	420	8.5
12...	0730	--	2400	--	24.5	--	--	--	--	--	--
19...	0755	--	2680	--	22.0	--	--	--	--	--	--
26...	0850	--	2520	--	23.5	--	--	--	--	--	--

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED PO- TAS- STUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLOR- IDE (CL) (MG/L)	DTS- SOLVED FLUOR- IDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)
OCT											
04...	6.6	301	0	550	370	1.1	20	1670	1650	2.27	.61
12...	--	--	--	--	--	--	--	1690	--	2.30	--
18...	--	--	--	--	--	--	--	1670	--	2.27	--
26...	--	--	--	--	--	--	--	1740	--	2.37	--
NOV											
01...	6.3	293	0	540	360	1.0	16	1600	1600	2.18	.52
08...	--	--	--	--	--	--	--	1750	--	2.38	--
15...	--	--	--	--	--	--	--	1830	--	2.49	--
16...	6.4	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	1790	--	2.43	--
29...	--	--	--	--	--	--	--	1780	--	2.42	--
DEC											
06...	6.4	311	0	580	430	1.2	20	1770	1790	2.41	.54
13...	--	--	--	--	--	--	--	1680	--	2.28	--
20...	--	--	--	--	--	--	--	1700	--	2.31	--
27...	--	--	--	--	--	--	--	1790	--	2.43	--
JAN											
03...	6.0	298	0	540	410	1.1	21	1770	1710	2.41	.61
10...	--	--	--	--	--	--	--	1860	--	2.53	--
17...	--	--	--	--	--	--	--	1550	--	2.11	--
24...	--	--	--	--	--	--	--	1650	--	2.24	--
25...	6.1	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	1490	--	2.03	--
FEB											
07...	6.5	268	0	560	400	1.1	16	1700	1690	2.31	.01
14...	--	--	--	--	--	--	--	1840	--	2.50	--
22...	--	--	--	--	--	--	--	1930	--	2.62	--
28...	--	--	--	--	--	--	--	1890	--	2.57	--
MAR											
07...	6.3	309	0	560	390	1.1	20	1750	1710	2.38	.81
08...	6.8	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	1710	--	2.33	--
21...	--	--	--	--	--	--	--	1630	--	2.22	--
28...	--	--	--	--	--	--	--	1600	--	2.18	--
APR											
04...	6.2	280	0	530	340	1.1	16	1550	1560	2.11	.49
11...	--	--	--	--	--	--	--	1510	--	2.05	--
18...	--	--	--	--	--	--	--	1690	--	2.30	--
25...	--	--	--	--	--	--	--	1710	--	2.33	--
26...	6.4	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	6.2	300	0	540	350	1.2	16	1620	1630	2.20	.20
09...	--	--	--	--	--	--	--	1600	--	2.18	--
16...	--	--	--	--	--	--	--	1720	--	2.34	--
23...	--	--	--	--	--	--	--	1790	--	2.43	--
31...	--	--	--	--	--	--	--	1550	--	2.11	--
JUN											
06...	6.3	300	0	550	360	1.2	21	1660	1650	2.26	.44
13...	--	--	--	--	--	--	--	1640	--	2.23	--
20...	--	--	--	--	--	--	--	1620	--	2.20	--
27...	--	--	--	--	--	--	--	1540	--	2.09	--
JUL											
05...	6.4	310	0	570	370	1.2	20	1660	1700	2.26	.28
11...	--	--	--	--	--	--	--	1800	--	2.45	--
18...	--	--	--	--	--	--	--	1710	--	2.33	--
19...	5.7	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	1760	--	2.39	--
AUG											
01...	6.4	330	0	600	390	1.3	22	1790	1780	2.43	--
08...	--	--	--	--	--	--	--	1620	--	2.20	--
15...	--	--	--	--	--	--	--	1670	--	2.27	--
22...	--	--	--	--	--	--	--	1790	--	2.43	--
29...	--	--	--	--	--	--	--	1750	--	2.38	--
SEP											
06...	5.8	270	0	590	380	1.2	18	1720	1700	2.34	--
12...	--	--	--	--	--	--	--	1550	--	2.11	--
19...	--	--	--	--	--	--	--	1730	--	2.35	--
26...	--	--	--	--	--	--	--	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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED BORON (B) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT							
04...	570	--	--	10	--	--	--
NOV							
01...	490	--	--	10	--	--	--
16...	--	--	2	--	--	--	20
DEC							
06...	580	--	--	10	--	--	--
JAN							
03...	560	--	--	10	--	--	--
25...	--	--	4	--	--	--	40
FEB							
07...	560	--	--	0	--	--	--
MAR							
07...	540	--	--	10	--	--	--
08...	--	--	2	--	--	--	20
APR							
04...	460	--	--	10	--	--	--
26...	--	--	1	--	--	--	10
MAY							
02...	500	--	--	10	--	--	--
JUN							
06...	510	--	--	20	--	--	--
JUL							
05...	510	--	--	0	--	--	--
19...	--	<10	10	--	.1	70	70
AUG							
01...	600	--	--	10	--	--	--
SEP							
06...	560	--	--	0	--	--	--

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

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

[illegible]

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)
NOV 16...	1200	--	.00	--	--	--	.00	--	.00	--
JAN 25...	1100	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	1030	--	.00	--	.00	--	.00	--	.00	--
APR 26...	0930	--	.00	--	.00	--	.00	--	.00	--
JUL 19...	0930	--	.00	--	.00	--	.00	--	.00	--
SEP 13...	0900	.1	.00	.0	.00	.0	.00	.0	.00	.0

DATE	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)
NOV 16...	.00	--	--	--	--	--	--	--	--	--
JAN 25...	.00	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	.00	--	.06	--	.00	--	.00	--	.00	--
APR 26...	.00	--	.00	--	.00	--	.00	--	.00	--
JUL 19...	.00	--	.00	--	.00	--	.00	--	.00	--
SEP 13...	.00	.0	.00	.0	.16	.0	.00	.0	.04	.0

DATE	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOT- TOM MA- TERIAL (UG/KG)
NOV 16...	0	--	--	--	--	--	--	--	--	--
JAN 25...	0	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	0	--	.00	--	.02	--	.00	--	.00	--
APR 26...	0	--	.00	--	.04	--	.00	--	.00	--
JUL 19...	0	--	.00	--	.00	--	.00	--	.01	--
SEP 13...	0	13	.00	.0	.00	0	.00	0	.00	0

DIVERSIONS AND RETURN FLOWS BETWEEN PALO VERDE DAM AND IMPERIAL DAM

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09429220 PALO VERDE IRRIGATION DISTRICT OUTFALL DRAIN NEAR PALO VERDE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DT- ELDRIN TN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN TN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION TN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR TN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE TN BOTTOM MA- TERIAL (UG/KG)
NOV 16...	1200	--	.00	--	--	--	.00	--	.00	--
JAN 25...	1100	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	1030	--	.00	--	.00	--	.00	--	.00	--
APR 26...	0930	--	.00	--	.00	--	.00	--	.00	--
JUL 19...	0930	--	.00	--	.00	--	.00	--	.00	--
SEP 13...	0900	.1	.00	.0	.00	.0	.00	.0	.00	.0

DATE	TOTAL LINDANE (UG/L)	LINDANE TN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	MALA- THION TN BOTTOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION TN BOTTOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION TN BOTTOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION TN BOTTOM MA- TERIAL (UG/KG)
NOV 16...	.00	--	--	--	--	--	--	--	--	--
JAN 25...	.00	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	.00	--	.06	--	.00	--	.00	--	.00	--
APR 26...	.00	--	.00	--	.00	--	.00	--	.00	--
JUL 19...	.00	--	.00	--	.00	--	.00	--	.00	--
SEP 13...	.00	.0	.00	.0	.16	.0	.00	.0	.04	.0

DATE	TOTAL TOX- APHENE (UG/L)	TOX- APHENE TN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION TN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D TN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T TN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX TN BOTTOM MA- TERIAL (UG/KG)
NOV 16...	0	--	--	--	--	--	--	--	--	--
JAN 25...	0	--	.00	--	.00	--	.00	--	.00	--
MAR 08...	0	--	.00	--	.02	--	.00	--	.00	--
APR 26...	0	--	.00	--	.04	--	.00	--	.00	--
JUL 19...	0	--	.00	--	.00	--	.00	--	.01	--
SEP 13...	0	13	.00	.0	.00	0	.00	0	.00	0

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHNS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DIS-SOLVED POTASSIUM (K) (MG/L)
OCT 01...	1610	.00	3430	8.6	28.0	500	150	110	55	600	12	17
NOV 01...	1445	1.6	1920	8.0	23.0	410	160	98	40	280	6.0	8.0
DEC 01...	1650	1.2	1530	7.9	15.0	300	130	67	32	190	4.8	13
JAN 03...	1425	1.2	2350	8.1	19.0	290	0	67	30	420	11	6.4
FEB 01...	1345	.42	2460	8.2	18.0	230	0	53	24	480	14	3.7
MAR 01...	1525	.80	2620	8.4	--	220	0	50	24	530	15	4.5
APR 01...	1155	.20	2490	8.4	18.0	220	0	48	24	480	14	3.8
MAY 03...	1110	.80	2440	8.0	25.0	280	0	64	29	450	12	4.9
JUN 01...	1650	.80	2390	8.0	31.0	290	0	67	30	440	11	9.1
JUL 01...	0955	.80	2700	7.9	25.0	150	0	38	14	600	21	3.1
AUG 01...	1340	1.2	2450	8.2	27.5	230	0	53	23	500	14	4.5
SEP 01...	0940	1.2	2570	8.0	25.0	250	0	57	26	490	14	4.1

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DTS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DTS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED NITRATE PLUS NITRITE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT 01...	411	10	620	550	.5	23	2180	2190	2.96	.12	660	70
NOV 01...	309	0	480	180	.8	18	1230	1260	1.67	.20	410	120
DEC 01...	208	0	370	130	2.5	16	944	928	1.28	1.1	270	30
JAN 03...	434	0	530	230	1.2	21	1500	1520	2.04	.06	610	90
FEB 01...	477	0	550	230	1.6	22	1570	1600	2.14	.06	690	30
MAR 01...	488	2	590	260	1.7	21	1690	1730	2.30	.06	770	90
APR 01...	470	4	540	230	1.7	19	1590	1580	2.16	.03	730	90
MAY 03...	470	0	530	220	1.5	22	1570	1560	2.14	.64	670	70
JUN 01...	430	0	500	240	1.3	23	1550	1530	2.11	1.1	640	190
JUL 01...	510	0	580	260	2.1	23	1710	1770	2.33	--	880	400
AUG 01...	470	0	550	250	1.6	24	1560	1640	2.12	--	710	270
SEP 01...	510	0	570	250	1.6	25	1620	1680	2.20	--	800	50

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) above mean sea level.

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.--21 years, 8,826 ft³/s (250.0 m³/s), 6,394,000 acre-ft/yr (7,880 km³/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, 19,000 ft³/s (538 m³/s) Aug. 15, gage height, 12.16 ft (3.706 m); minimum daily, 3,080 ft³/s (87.2 m³/s) Nov. 27.

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	4610	4350	4740	4070	5720	8740	9750	10200	9310	11100	13800	10100
2	4830	4420	5610	3630	5280	8110	9490	10600	9610	12700	13000	9860
3	4220	5320	6480	3350	5730	7590	10400	10300	9170	13300	13100	9470
4	5410	5060	6200	3760	5820	7260	10800	10600	8970	13800	12300	8110
5	5250	4390	6710	4140	5980	6630	10900	10200	10700	13300	11800	9060
6	6420	4220	6240	4420	6670	7280	10800	9290	11100	12600	12500	9380
7	6770	4980	5930	4050	6820	8760	11300	8740	11000	12000	13400	8830
8	7260	5630	6180	3570	7640	9010	11100	9950	10600	11100	13500	7260
9	7120	5790	6120	3460	8110	8990	10600	9860	10200	12000	13400	7000
10	7570	5850	6330	3300	7930	8110	11700	9820	9840	12100	13000	6100
11	7960	4890	5650	3200	6950	9130	12600	9520	9880	12500	12300	9240
12	7820	4250	6390	4330	6690	9360	12000	8410	9850	12300	12000	7770
13	6540	4060	6780	4220	7500	10100	12100	7060	10100	11900	13100	6370
14	6050	3910	6430	3640	7570	10800	12000	8920	10000	11600	13500	6140
15	6050	3460	6010	3320	8130	10500	11400	6910	9230	11700	14500	6200
16	5800	3270	6100	3980	7310	10400	11500	7420	8750	12000	14900	5970
17	5440	3110	4960	4530	7040	10200	12700	7260	8450	12700	11200	5770
18	6670	3780	4960	4840	6760	9610	12800	6580	8010	13000	5270	7090
19	5870	3680	6120	4540	6780	9520	12800	6600	9720	12700	3860	7640
20	6080	3440	6330	4680	7730	10400	12400	7260	10400	13100	3480	7590
21	5870	3800	6330	4190	8390	10500	12000	8430	10600	12200	3420	7130
22	5440	3880	5340	4100	8640	10200	11700	10000	10400	11400	4280	6480
23	5090	3730	4290	4580	8780	10400	11800	9990	10100	12200	4390	6080
24	4160	3540	3250	4760	8020	10300	12400	9650	9190	13100	6080	5650
25	3950	3320	4320	5220	8020	9750	12600	9040	10000	13000	5370	6350
26	3930	3150	5630	5720	8230	9790	12400	8340	12200	12900	5170	6870
27	3820	3080	6220	5480	8340	10500	11200	6780	12100	12700	5120	7280
28	4340	3480	6160	4370	8950	10500	10500	6800	12200	12400	7790	7020
29	4440	3880	5630	4510	---	10600	9520	8690	12200	12100	9590	6010
30	4170	4160	4980	5830	---	9700	8830	9490	11700	12700	10200	5340
31	4190	---	4440	5720	---	9840	---	9650	---	13700	10100	---
TOTAL	173140	123880	176860	133510	205530	292580	342090	272360	305580	385900	305420	219160
MEAN	5585	4129	5705	4307	7340	9438	11400	8786	10190	12450	9852	7305
MAX	7960	5850	6780	5830	8950	10800	12800	10600	12200	13800	14900	10100
MIN	3820	3080	3250	3200	5280	6630	8830	6580	8010	11100	3420	5340
AC-FT	343400	245700	350800	264800	407700	580300	678500	540200	606100	765400	605800	434700
CAL YR 1976 TOTAL	2981340			MEAN 8146	MAX 13500	MIN 2920	AC-FT 5913000					
WTR YR 1977 TOTAL	2936010			MEAN 8044	MAX 14900	MIN 3080	AC-FT 5824000					

09429300 COLORADO RIVER BELOW CIBOLA VALLEY, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1969 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

			SPF- CIFIC CON- DUCT- ANCE	PH	TEMPER- ATURE	HARD- NESS	NON- CAK- BONATE	DIS- SOLVED CAL- CIUM	DIS- SOLVED MAG- NE- SIUM	DIS- SOLVED SODIUM	SODIUM AD- SORP- TION	DIS- SOLVED PU- TAS- SIUM
DATE	TIME	INSTAN- TANEOUS DIS- CHARGE	(MICRO- MHOS)	(UNITS)	(DEG C)	(CA,MG) (MG/L)	(MG/L)	(CA) (MG/L)	(MG/L)	(NA) (MG/L)	RATIO	(K) (MG/L)
OCT												
04...	0820	5570	1360	8.1	--	380	230	96	34	150	3.4	5.7
12...	0900	--	1230	--	--	--	--	--	--	--	--	--
18...	0930	--	1300	--	--	--	--	--	--	--	--	--
26...	0910	--	1510	--	--	--	--	--	--	--	--	--
NOV												
01...	0945	4900	1380	8.3	--	380	230	94	36	150	3.3	5.4
08...	1000	--	1300	--	18.5	--	--	--	--	--	--	--
15...	0925	--	1560	--	--	--	--	--	--	--	--	--
22...	0950	--	1440	--	--	--	--	--	--	--	--	--
29...	1250	--	1440	--	--	--	--	--	--	--	--	--
DEC												
06...	0950	6970	1290	8.1	--	360	210	88	33	140	3.2	5.1
13...	0930	--	1290	--	--	--	--	--	--	--	--	--
20...	0930	--	1280	--	--	--	--	--	--	--	--	--
27...	0940	--	1320	--	12.0	--	--	--	--	--	--	--
JAN												
03...	0950	3110	1610	8.1	13.5	430	260	110	38	190	4.0	5.0
10...	0925	--	1590	--	--	--	--	--	--	--	--	--
17...	0905	--	1380	--	--	--	--	--	--	--	--	--
24...	0900	--	1360	--	--	--	--	--	--	--	--	--
31...	0900	--	1350	--	--	--	--	--	--	--	--	--
FEB												
07...	1000	5570	1280	8.2	13.0	360	220	90	33	130	3.0	5.2
14...	1130	--	1390	--	--	--	--	--	--	--	--	--
22...	1545	--	1320	--	--	--	--	--	--	--	--	--
28...	0930	--	1280	--	--	--	--	--	--	--	--	--
MAR												
07...	1450	8670	1310	8.2	--	360	220	91	33	140	3.2	5.1
14...	1055	--	1270	--	--	--	--	--	--	--	--	--
21...	1045	--	1320	--	--	--	--	--	--	--	--	--
28...	1040	--	1300	--	13.0	--	--	--	--	--	--	--
APR												
04...	1000	11200	1250	8.2	--	360	220	90	32	130	3.0	5.0
11...	1035	--	1270	--	15.0	--	--	--	--	--	--	--
18...	0930	--	1260	--	--	--	--	--	--	--	--	--
25...	0930	--	1230	--	--	--	--	--	--	--	--	--
MAY												
02...	0800	11100	1250	8.0	--	360	210	91	31	140	3.2	5.0
09...	0925	--	1230	--	--	--	--	--	--	--	--	--
16...	1300	--	1300	--	--	--	--	--	--	--	--	--
23...	0920	--	1210	--	--	--	--	--	--	--	--	--
31...	0800	--	1180	--	--	--	--	--	--	--	--	--
JUN												
06...	0915	11600	1190	8.3	19.5	340	210	84	32	120	2.8	5.0
13...	0940	--	1200	--	--	--	--	--	--	--	--	--
20...	1245	--	1240	--	--	--	--	--	--	--	--	--
27...	1000	--	1230	--	--	--	--	--	--	--	--	--
JUL												
05...	1350	12700	1210	7.9	--	350	210	85	34	130	3.0	5.1
11...	0930	--	1280	--	--	--	--	--	--	--	--	--
18...	0920	--	1260	--	--	--	--	--	--	--	--	--
25...	0950	--	1310	--	--	--	--	--	--	--	--	--
AUG												
01...	1025	13800	1250	7.9	--	330	190	82	31	140	3.3	5.1
08...	1000	--	1260	--	--	--	--	--	--	--	--	--
15...	0900	--	1280	--	--	--	--	--	--	--	--	--
22...	0945	--	1660	--	28.0	--	--	--	--	--	--	--
29...	0900	--	1260	--	26.5	--	--	--	--	--	--	--
SEP												
06...	0910	12600	1330	7.9	28.0	360	210	89	34	140	3.2	4.9
12...	0825	--	1320	--	26.0	--	--	--	--	--	--	--
19...	0855	--	1290	--	23.0	--	--	--	--	--	--	--
26...	0935	--	1330	--	--	--	--	--	--	--	--	--

COLORADO RIVER MAIN STEM

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED SOLIDS (REST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE PLUS NITRITE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FF) (UG/L)
OCT												
04...	180	0	370	140	.4	11	862	898	1.17	.36	190	0
12...	--	--	--	--	--	--	770	--	1.05	--	--	--
18...	--	--	--	--	--	--	822	--	1.12	--	--	--
26...	--	--	--	--	--	--	960	--	1.31	--	--	--
NOV												
01...	185	0	360	140	.4	9.6	880	888	1.20	.28	200	0
08...	--	--	--	--	--	--	824	--	1.12	--	--	--
15...	--	--	--	--	--	--	988	--	1.34	--	--	--
22...	--	--	--	--	--	--	926	--	1.26	--	--	--
29...	--	--	--	--	--	--	912	--	1.24	--	--	--
DEC												
06...	178	0	330	130	.5	9.9	822	826	1.12	.26	180	10
13...	--	--	--	--	--	--	814	--	1.11	--	--	--
20...	--	--	--	--	--	--	814	--	1.11	--	--	--
27...	--	--	--	--	--	--	840	--	1.14	--	--	--
JAN												
03...	206	0	380	190	.5	12	1030	1030	1.40	.29	230	10
10...	--	--	--	--	--	--	1020	--	1.39	--	--	--
17...	--	--	--	--	--	--	872	--	1.19	--	--	--
24...	--	--	--	--	--	--	858	--	1.17	--	--	--
31...	--	--	--	--	--	--	854	--	1.16	--	--	--
FEB												
07...	171	0	320	130	.4	8.5	810	803	1.10	.23	180	0
14...	--	--	--	--	--	--	888	--	1.21	--	--	--
22...	--	--	--	--	--	--	842	--	1.15	--	--	--
28...	--	--	--	--	--	--	816	--	1.11	--	--	--
MAR												
07...	177	0	340	130	.6	9.6	812	838	1.10	.21	180	20
14...	--	--	--	--	--	--	802	--	1.09	--	--	--
21...	--	--	--	--	--	--	834	--	1.13	--	--	--
28...	--	--	--	--	--	--	820	--	1.12	--	--	--
APR												
04...	170	0	320	120	.4	9.6	788	792	1.07	.28	160	20
11...	--	--	--	--	--	--	800	--	1.09	--	--	--
18...	--	--	--	--	--	--	794	--	1.08	--	--	--
25...	--	--	--	--	--	--	772	--	1.05	--	--	--
MAY												
02...	180	0	330	120	.5	7.3	792	814	1.08	.16	170	0
09...	--	--	--	--	--	--	780	--	1.06	--	--	--
16...	--	--	--	--	--	--	826	--	1.12	--	--	--
23...	--	--	--	--	--	--	760	--	1.03	--	--	--
31...	--	--	--	--	--	--	744	--	1.01	--	--	--
JUN												
06...	160	0	320	110	.4	8.9	754	760	1.03	.06	160	10
13...	--	--	--	--	--	--	762	--	1.04	--	--	--
20...	--	--	--	--	--	--	782	--	1.06	--	--	--
27...	--	--	--	--	--	--	782	--	1.06	--	--	--
JUL												
05...	170	0	320	120	.4	9.3	768	788	1.04	.03	160	0
11...	--	--	--	--	--	--	808	--	1.10	--	--	--
18...	--	--	--	--	--	--	802	--	1.09	--	--	--
25...	--	--	--	--	--	--	828	--	1.13	--	--	--
AUG												
01...	170	0	330	120	.5	10	796	803	1.08	--	180	10
08...	--	--	--	--	--	--	798	--	1.09	--	--	--
15...	--	--	--	--	--	--	810	--	1.10	--	--	--
22...	--	--	--	--	--	--	1090	--	1.48	--	--	--
29...	--	--	--	--	--	--	794	--	1.08	--	--	--
SEP												
06...	180	0	330	130	.5	11	848	828	1.15	--	210	70
12...	--	--	--	--	--	--	834	--	1.13	--	--	--
19...	--	--	--	--	--	--	820	--	1.12	--	--	--
26...	--	--	--	--	--	--	848	--	1.15	--	--	--

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) above mean sea level.

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.--43 years (water years 1935-77), 11,040 ft³/s (312.6 m³/s), 7,998,000 acre-ft/yr (9,860 hm³/yr).

EXTREMES FOR PERIOD OF 1934-77.--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.

COLORADO RIVER MAIN STEM

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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 1976 TO SEPTEMBER 1977

Month	Discharge of Colorado River		Diversions to Mittry Lake (acre-feet)* (09522400)	Monthend contents, Senator Wash Reservoir (acre-feet)
	Mean (cubic feet per second)	Runoff (acre-feet)		
October.....	6,007	369,300	596	6,500
November.....	4,315	256,800	577	4,960
December.....	5,778	355,300	619	9,550
CAL YR 1976.....	8,153	5,902,000	7,180	-----
January.....	4,300	264,400	644	7,420
February.....	7,012	389,400	645	10,450
March.....	9,249	568,700	706	10,110
April.....	11,442	680,800	589	6,480
May.....	8,682	533,800	696	6,200
June.....	9,847	585,900	597	1,870
July.....	11,930	733,600	582	6,730
August.....	9,805	602,900	653	4,360
September.....	7,276	432,900	591	7,900
WTR YR 1977.....	7,975	5,774,000	7,500	-----

* 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.

COLORADO RIVER MAIN STEM

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS- CHARGE (CFS)	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	DIS- SOLVED OXYGEN (MG/L)	CHEM- ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)
OCT											
04...	--	6200	--	1300	8.3	--	36	--	--	--	--
06...	0840	--	7020	1400	8.0	22.5	--	7.6	12	8210	--
11...	--	7730	--	1270	8.0	--	15	--	--	--	--
18...	--	5860	--	1350	8.3	--	5.0	--	--	--	--
19...	1000	--	5910	--	--	28.0	--	--	20	--	--
25...	--	4770	--	1390	8.3	--	8.0	--	--	--	--
NOV											
01...	--	4150	--	1460	8.3	--	6.0	--	--	--	--
08...	--	5480	--	1390	8.4	--	5.0	--	--	--	--
10...	0845	--	5790	1290	8.0	18.0	--	8.9	36	873	--
15...	--	3140	--	1470	8.3	--	3.0	--	--	--	--
22...	--	3780	--	1540	8.3	--	3.0	--	--	--	--
22...	1055	--	3880	--	--	17.0	--	--	9	--	--
29...	--	4330	--	1500	8.3	--	3.0	--	--	--	--
DEC											
06...	--	6020	--	1310	8.3	--	7.0	--	--	--	--
08...	0900	--	6260	1320	8.0	11.0	--	10.0	15	36	120
13...	--	6590	--	1330	8.2	--	5.0	--	--	--	--
20...	--	6050	--	1350	8.3	--	5.0	--	--	--	--
20...	1115	--	5950	--	--	12.0	--	--	14	--	--
27...	--	5320	--	1420	8.3	--	4.0	--	--	--	--
JAN											
03...	--	3600	--	1440	8.2	--	3.0	--	--	--	--
10...	--	3440	--	1500	8.2	--	2.0	--	--	--	--
12...	0910	--	3620	1620	8.1	9.0	--	10.3	29	89	48
17...	--	3920	--	1510	8.2	--	2.0	--	--	--	--
24...	--	4390	--	1380	8.2	--	5.0	--	--	--	--
25...	1000	--	4690	--	--	12.5	--	--	21	--	--
31...	--	5770	--	1350	8.2	--	3.0	--	--	--	--
FEB											
07...	--	6350	--	1300	8.2	--	3.0	--	--	--	--
09...	0850	--	7020	1290	8.0	12.0	--	9.8	28	22	42
14...	--	7260	--	1270	8.2	--	6.0	--	--	--	--
21...	--	7510	--	1280	8.3	--	4.0	--	--	--	--
22...	1015	--	10100	--	--	16.0	--	--	2	--	--
28...	--	7950	--	1270	8.2	--	3.0	--	--	--	--
MAR											
07...	--	7800	--	1320	8.2	--	5.0	--	--	--	--
09...	0900	--	8770	1350	7.6	14.0	--	10.1	20	812	45
14...	--	9660	--	1240	8.2	--	6.0	--	--	--	--
21...	--	9150	--	1240	8.3	--	4.0	--	--	--	--
22...	1100	--	9420	--	--	13.0	--	--	28	--	--
28...	--	10100	--	1250	8.3	--	5.0	--	--	--	--
APR											
04...	--	10400	--	1250	8.4	--	5.0	--	--	--	--
11...	--	11300	--	1240	8.4	--	4.0	--	--	--	--
13...	0830	--	12400	1300	8.0	17.0	--	8.6	15	70	120
18...	--	12000	--	1210	8.4	--	3.0	--	--	--	--
25...	--	11900	--	1220	8.4	--	2.0	--	--	--	--
25...	1030	--	11900	--	--	22.0	--	--	13	--	--
MAY											
02...	--	9590	--	1260	8.4	--	4.0	--	--	--	--
04...	0835	--	10200	1280	8.0	20.5	--	8.1	33	40	97
09...	--	9280	--	1270	8.4	--	2.0	--	--	--	--
16...	--	7260	--	1350	8.3	--	2.0	--	--	--	--
23...	--	9370	--	1250	8.2	--	2.0	--	--	--	--
23...	1315	--	9450	--	--	23.0	--	--	10	--	--
30...	--	8070	--	1270	8.2	--	2.0	--	--	--	--

B Based on non-ideal colony count.

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, 1,670 micromhos Aug. 23; minimum daily, 1,140 micromhos Aug. 17.
 WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 20; minimum daily, 10.5°C Dec. 28.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	TOTAL CAL- CIUM (CA) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	TOTAL PO- TAS- SIUM (K) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT											
04...	345	200	--	88	--	31	--	145	3.4	--	6.4
06...	--	--	--	--	--	--	--	--	--	--	--
11...	355	214	--	92	--	31	--	135	3.1	--	5.7
18...	365	216	--	90	--	34	--	150	3.4	--	6.2
19...	--	--	--	--	--	--	--	--	--	--	--
25...	365	214	--	94	--	32	--	160	3.6	--	6.2
NOV											
01...	390	230	--	98	--	35	--	165	3.6	--	5.8
08...	370	219	--	92	--	34	--	160	3.6	--	5.8
10...	--	--	88	--	32	--	140	--	--	4.7	5.5
15...	390	228	--	96	--	37	--	170	3.7	--	5.9
22...	400	232	--	99	--	37	--	180	3.9	--	5.7
22...	--	--	--	--	--	--	--	--	--	--	--
29...	390	228	--	98	--	35	--	175	3.9	--	6.3
DEC											
06...	355	208	--	90	--	32	--	145	3.3	--	5.9
08...	--	--	--	--	--	--	--	--	--	--	--
13...	365	218	--	92	--	33	--	145	3.3	--	5.8
20...	365	214	--	94	--	32	--	150	3.4	--	6.0
20...	--	--	--	--	--	--	--	--	--	--	--
27...	385	228	--	97	--	35	--	160	3.5	--	5.8
JAN											
03...	390	230	--	98	--	35	--	160	3.5	--	5.6
10...	390	228	--	102	--	33	--	175	3.9	--	5.8
12...	--	--	--	--	--	--	--	--	--	--	--
17...	395	230	--	101	--	35	--	175	3.8	--	5.8
24...	375	221	--	94	--	34	--	155	3.5	--	5.7
25...	--	--	--	--	--	--	--	--	--	--	--
31...	370	221	--	91	--	35	--	150	3.4	--	5.3
FEB											
07...	365	222	--	88	--	35	--	140	3.2	--	5.2
09...	--	--	88	--	32	--	130	--	--	4.5	--
14...	360	218	--	89	--	34	--	135	3.1	--	5.7
21...	365	218	--	90	--	34	--	135	3.1	--	5.6
22...	--	--	--	--	--	--	--	--	--	--	--
28...	360	214	--	88	--	34	--	135	3.1	--	5.4
MAR											
07...	365	216	--	91	--	34	--	145	3.3	--	5.5
09...	--	--	--	--	--	--	--	--	--	--	--
14...	355	212	--	89	--	32	--	130	3.0	--	5.4
21...	355	212	--	90	--	32	--	130	3.0	--	5.5
22...	--	--	--	--	--	--	--	--	--	--	--
28...	360	216	--	91	--	32	--	130	3.0	--	5.4
APR											
04...	360	216	--	92	--	32	--	130	3.0	--	5.4
11...	355	214	--	90	--	32	--	130	3.0	--	5.4
13...	--	--	--	--	--	--	--	--	--	--	--
18...	350	209	--	88	--	32	--	125	2.9	--	5.2
25...	350	209	--	90	--	31	--	125	2.9	--	5.2
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	360	214	--	90	--	33	--	135	3.1	--	5.6
04...	--	--	93	--	31	--	110	--	--	5.0	5.1
09...	365	216	--	92	--	33	--	135	3.1	--	5.2
16...	370	212	--	93	--	34	--	150	3.4	--	5.6
23...	360	214	--	90	--	33	--	130	3.0	--	5.2
23...	--	--	--	--	--	--	--	--	--	--	--
30...	360	212	--	91	--	32	--	135	3.1	--	5.2

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS-CHARGE (CFS)	INSTANTANEOUS DIS-CHARGE (CFS)	SPE-CTIFIC CON-DUCT-ANCE (MTCRO-MHUS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	DIS-SOLVED OXYGEN (MG/L)	CHEM-ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L)	FECAL COLI-FORM ,TUM-MF (COL./ 100 ML)	FECAL STREP-TOCOCCI KF AGAR (COL. PER 100 ML)
JUN											
06...	--	9690	--	1230	8.4	--	2.0	--	--	--	--
08...	0830	--	10200	1240	8.1	26.5	--	8.6	7	863	150
13...	--	8710	--	1270	8.4	--	2.0	--	--	--	--
20...	--	9500	--	1260	8.4	--	1.0	--	--	--	--
27...	--	1860	--	1230	8.2	--	1.0	--	--	--	--
27...	1000	--	10800	--	--	27.0	--	--	18	--	--
JUL											
04...	--	11600	--	1210	8.0	--	3.0	--	--	--	--
11...	--	11600	--	1220	8.0	--	2.0	--	--	--	--
13...	0850	--	12400	1230	7.8	27.0	--	7.1	0	29	120
18...	--	12000	--	1210	8.0	--	4.0	--	--	--	--
25...	--	12000	--	1210	7.9	--	2.0	--	--	--	--
25...	1025	--	11900	--	--	29.0	--	--	0	--	--
AUG											
01...	--	12700	--	1200	7.9	--	2.0	--	--	--	--
08...	--	12300	--	1210	8.0	--	2.0	--	--	--	--
10...	0915	--	12810	1230	8.0	29.0	--	5.4	10	32	37
15...	--	11500	--	1210	7.9	--	1.0	--	--	--	--
22...	--	3820	--	1600	8.1	--	8.0	--	--	--	--
23...	1030	--	4660	--	--	29.5	--	--	14	--	--
29...	--	9670	--	1320	8.0	--	3.0	--	--	--	--
SEP											
05...	--	8050	--	1290	7.9	--	3.0	--	--	--	--
12...	--	7320	--	1170	7.9	--	250	--	--	--	--
14...	0900	--	6270	1280	7.8	28.0	--	7.4	220	90	430
19...	--	6880	--	1340	8.0	--	8.0	--	--	--	--
26...	--	6260	--	1350	7.9	--	2.0	--	--	--	--
27...	1100	--	6510	--	--	25.0	--	--	29	--	--

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DTS-SOLVED SULFATE (SO4) (MG/L)	DTS-SOLVED CHLORIDE (CL) (MG/L)	DTS-SOLVED FLUORIDE (F) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SOLIDS (KFST-DUE AT 180 C) (MG/L)	TOTAL FILTRABLE RESIDUUM (MG/L)	DTS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DTS-SOLVED SOLIDS (PER AC-FT)	TOTAL NON-FILTRABLE RESIDUE (MG/L)
OCT											
04...	176	0	330	129	.6	11	876	--	829	1.12	--
06...	--	--	--	--	--	--	--	--	--	--	58
11...	172	0	330	120	.6	9.5	808	--	810	1.10	--
18...	182	0	350	130	--	10	856	--	861	1.16	--
19...	--	--	--	--	--	--	--	--	--	--	29
25...	184	0	355	140	.5	10	888	--	889	1.21	--
NOV											
01...	196	0	370	150	.5	9.8	934	--	932	1.27	--
08...	184	2	355	140	.4	10	890	--	891	1.21	--
10...	--	--	--	--	--	--	--	860	--	--	21
15...	198	0	370	152	.4	10	938	--	940	1.28	--
22...	204	0	385	165	.5	10	986	--	983	1.34	--
22...	--	--	--	--	--	--	--	--	--	--	2
29...	198	0	375	158	.4	11	964	--	958	1.31	--
DEC											
06...	180	0	335	129	.3	8.2	836	--	835	1.14	--
08...	--	--	--	--	--	--	--	--	--	--	32
13...	180	0	345	129	.6	9.2	872	--	851	1.19	--
20...	184	0	350	130	.5	9.5	866	--	864	1.18	--
20...	--	--	--	--	--	--	--	--	--	--	15
27...	192	0	360	145	.4	9.5	910	--	909	1.24	--
JAN											
03...	196	0	365	148	.4	10	916	--	920	1.25	--
10...	198	0	375	158	.4	11	970	--	959	1.32	--
12...	--	--	--	--	--	--	--	--	--	--	15
17...	202	0	375	160	.6	10	960	--	963	1.31	--
24...	188	0	350	138	.5	8.8	884	--	880	1.20	--
25...	--	--	--	--	--	--	--	--	--	--	14
31...	182	0	350	130	.4	8.5	862	--	861	1.17	--
FEB											
07...	174	0	340	124	.3	7.5	828	--	827	1.13	--
09...	--	--	--	--	--	--	--	--	--	--	33
14...	174	0	335	120	.4	7.8	816	--	814	1.11	--
21...	180	0	335	121	.3	7.8	822	--	818	1.12	--
22...	--	--	--	--	--	--	--	--	--	--	25
28...	178	0	335	119	.5	8.5	814	--	814	1.11	--
MAR											
07...	182	0	340	128	.5	8.8	846	--	844	1.15	--
09...	--	--	--	--	--	--	--	--	--	--	41
14...	174	0	330	109	.4	8.2	796	--	791	1.08	--
21...	174	0	330	110	.4	7.8	794	--	792	1.08	--
22...	--	--	--	--	--	--	--	--	--	--	32
28...	176	0	330	112	.5	7.8	798	--	796	1.09	--
APR											
04...	176	2	330	112	.6	8.0	802	--	800	1.09	--
11...	172	2	330	110	.5	7.8	786	--	791	1.07	--
13...	--	--	--	--	--	--	--	--	--	--	41
18...	172	2	325	102	.5	7.0	776	--	772	1.06	--
25...	172	2	325	105	.5	7.8	778	--	777	1.06	--
25...	--	--	--	--	--	--	--	--	--	--	26
MAY											
02...	178	2	330	116	.5	6.8	808	--	807	1.10	--
04...	--	--	--	--	--	--	--	850	--	--	20
09...	182	2	330	118	.5	6.2	816	--	812	1.11	--
16...	192	0	345	130	.6	7.2	866	--	861	1.18	--
23...	178	0	330	112	.5	6.2	800	--	795	1.09	--
23...	--	--	--	--	--	--	--	--	--	--	26
30...	180	0	330	120	.6	6.2	828	--	810	1.13	--
JUN											
06...	176	2	325	108	.5	6.0	786	--	786	1.07	--
08...	--	--	--	--	--	--	--	--	--	--	5
13...	180	2	330	116	.5	7.5	808	--	809	1.10	--
20...	180	2	330	115	.5	7.3	806	--	807	1.10	--
27...	176	0	325	108	.5	7.8	784	--	784	1.07	--
27...	--	--	--	--	--	--	--	--	--	--	31
JUL											
04...	168	0	325	105	.5	7.0	776	--	772	1.06	--
11...	172	0	325	108	.5	7.5	780	--	778	1.06	--
13...	--	--	--	--	--	--	--	--	--	--	26
18...	170	0	325	105	.5	8.1	792	--	773	1.08	--
25...	172	0	325	105	.5	7.8	768	--	773	1.04	--
25...	--	--	--	--	--	--	--	--	--	--	17
AUG											
01...	170	0	325	102	.5	7.5	768	--	767	1.04	--
08...	170	0	325	105	.5	7.8	774	--	771	1.05	--
10...	--	--	--	--	--	--	--	--	--	--	112
15...	170	0	325	105	.6	8.0	766	--	771	1.04	--
22...	224	0	390	170	.6	13	1030	--	1020	1.40	--
23...	--	--	--	--	--	--	--	--	--	--	22
29...	184	0	340	128	.5	9.0	844	--	844	1.15	--
SEP											
05...	178	0	335	122	.4	8.5	818	--	824	1.11	--
12...	176	0	270	115	.6	10	720	--	724	.98	--
14...	--	--	--	--	--	--	--	--	--	--	40
19...	186	0	345	130	.5	9.0	858	--	854	1.17	--
26...	188	0	345	130	.5	9.5	862	--	861	1.17	--
27...	--	--	--	--	--	--	--	--	--	--	1

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRATE (N) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)
OCT							
04...	--	.25	--	--	--	--	--
06...	.25	--	.01	.01	.26	.25	.00
11...	--	.16	--	--	--	--	--
18...	--	.14	--	--	--	--	--
19...	.18	--	.00	--	.18	--	.21
25...	--	.11	--	--	--	--	--
NOV							
01...	--	.23	--	--	--	--	--
08...	--	.14	--	--	--	--	--
10...	.21	--	.01	.00	.22	.20	.00
15...	--	.16	--	--	--	--	--
22...	--	.18	--	--	--	--	--
22...	.03	--	.01	--	.04	--	.02
29...	--	.25	--	--	--	--	--
DEC							
06...	--	.18	--	--	--	--	--
08...	.25	--	.00	.01	.25	.15	.01
13...	--	.59	--	--	--	--	--
20...	--	.16	--	--	--	--	--
20...	.21	--	.00	--	.21	--	.00
27...	--	.25	--	--	--	--	--
JAN							
03...	--	.20	--	--	--	--	--
10...	--	.20	--	--	--	--	--
12...	.20	--	.01	.01	.21	.22	.00
17...	--	.16	--	--	--	--	--
24...	--	.18	--	--	--	--	--
25...	.18	--	.00	--	.18	--	.00
31...	--	.20	--	--	--	--	--
FEB							
07...	--	.20	--	--	--	--	--
09...	.20	--	.00	.00	.20	.20	.02
14...	--	.25	--	--	--	--	--
21...	--	.16	--	--	--	--	--
22...	.20	--	.01	--	.21	--	.01
28...	--	.16	--	--	--	--	--
MAR							
07...	--	.20	--	--	--	--	--
09...	.22	--	.00	.01	.22	.31	.04
14...	--	.23	--	--	--	--	--
21...	--	.16	--	--	--	--	--
22...	.25	.26	.00	.00	.25	.26	.02
28...	--	.16	--	--	--	--	--
APR							
04...	--	.14	--	--	--	--	--
11...	--	.07	--	--	--	--	--
13...	.09	--	.01	.00	.10	.12	.03
18...	--	.09	--	--	--	--	--
25...	--	.07	--	--	--	--	--
25...	.09	--	.00	--	.09	--	.01
MAY							
02...	--	.09	--	--	--	--	--
04...	.15	.12	.01	.00	.16	.12	.05
09...	--	.14	--	--	--	--	--
16...	--	.16	--	--	--	--	--
23...	--	.09	--	--	--	--	--
23...	.14	--	.00	--	.14	--	.00
30...	--	.11	--	--	--	--	--
JUN							
06...	--	.07	--	--	--	--	--
08...	.08	--	.01	.00	.09	.14	.01
13...	--	.09	--	--	--	--	--
20...	--	.09	--	--	--	--	--
27...	--	.07	--	--	--	--	--
27...	.08	--	.00	--	.08	--	.01
JUL							
04...	--	.09	--	--	--	--	--
11...	--	.09	--	--	--	--	--
13...	.08	--	.01	.00	.09	.08	.00
18...	--	.09	--	--	--	--	--
25...	--	.11	--	--	--	--	--
25...	.09	--	.01	--	.10	--	.00
AUG							
01...	--	.07	--	--	--	--	--
08...	--	.07	--	--	--	--	--
10...	.06	--	.01	.00	.07	.10	.02
15...	--	.09	--	--	--	--	--
22...	--	.14	--	--	--	--	--
23...	.04	--	.01	--	.05	--	.03
29...	--	.09	--	--	--	--	--
SEP							
05...	--	.11	--	--	--	--	--
12...	--	.99	--	--	--	--	--
14...	.27	--	.01	.00	.28	.24	.00
19...	--	.14	--	--	--	--	--
26...	--	.09	--	--	--	--	--
27...	.10	--	.01	--	.11	--	.00

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJFL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVFD ORTHO. PHOS- PHORUS (P) (MG/L)
OCT						
04...	--	--	--	--	--	--
06...	.65	.65	.91	.09	--	.01
11...	--	--	--	--	--	--
18...	--	--	--	--	--	--
19...	.36	.57	.75	.04	--	--
25...	--	--	--	--	--	--
NOV						
01...	--	--	--	--	--	--
08...	--	--	--	--	--	--
10...	.43	.43	.65	.03	.00	.00
15...	--	--	--	--	--	--
22...	--	--	--	--	--	--
22...	.40	.42	.46	.03	--	--
29...	--	--	--	--	--	--
DEC						
06...	--	--	--	--	--	--
08...	.17	.18	.47	.05	--	.00
17...	--	--	--	--	--	--
20...	--	--	--	--	--	--
20...	.41	.41	.62	.06	--	--
27...	--	--	--	--	--	--
JAN						
03...	--	--	--	--	--	--
10...	--	--	--	--	--	--
12...	.52	.52	.73	.04	--	.01
17...	--	--	--	--	--	--
24...	--	--	--	--	--	--
25...	.28	.28	.46	.01	--	--
31...	--	--	--	--	--	--
FEB						
07...	--	--	--	--	--	--
09...	.35	.37	.57	.05	.01	.02
14...	--	--	--	--	--	--
21...	--	--	--	--	--	--
22...	.32	.33	.54	.05	--	--
28...	--	--	--	--	--	--
MAR						
07...	--	--	--	--	--	--
09...	.39	.43	.65	.06	--	.00
14...	--	--	--	--	--	--
21...	--	--	--	--	--	--
22...	.77	.79	1.0	.05	--	.01
28...	--	--	--	--	--	--
APR						
04...	--	--	--	--	--	--
11...	--	--	--	--	--	--
13...	.48	.51	.61	.05	--	.01
18...	--	--	--	--	--	--
25...	--	--	--	--	--	--
25...	.28	.29	.38	.01	--	--
MAY						
02...	--	--	--	--	--	--
04...	.04	.09	.25	.05	.00	.04
09...	--	--	--	--	--	--
16...	--	--	--	--	--	--
23...	--	--	--	--	--	--
23...	--	--	--	.02	--	--
30...	--	--	--	--	--	--
JUN						
06...	--	--	--	--	--	--
08...	.35	.36	.45	.04	--	.00
13...	--	--	--	--	--	--
20...	--	--	--	--	--	--
27...	--	--	--	--	--	--
27...	.55	.56	.64	.03	--	--
JUL						
04...	--	--	--	--	--	--
11...	--	--	--	--	--	--
13...	.48	.48	.57	.03	--	.00
18...	--	--	--	--	--	--
25...	--	--	--	--	--	--
25...	.41	.41	.51	.01	--	--
AUG						
01...	--	--	--	--	--	--
08...	--	--	--	--	--	--
10...	.33	.35	.42	.03	.01	.01
15...	--	--	--	--	--	--
22...	--	--	--	--	--	--
23...	.62	.65	.70	.07	--	--
29...	--	--	--	--	--	--
SEP						
05...	--	--	--	--	--	--
12...	--	--	--	--	--	--
14...	.38	.38	.66	.04	--	.00
19...	--	--	--	--	--	--
26...	--	--	--	--	--	--
27...	.02	.02	.13	.03	--	--

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT											
06...	--	--	200	--	--	--	--	--	--	--	1400
19...	--	--	--	--	--	--	--	--	--	--	560
NOV											
10...	3	2	180	<10	0	10	<50	0	<10	0	560
22...	--	--	--	--	--	--	--	--	--	--	280
DEC											
08...	--	--	170	--	--	--	--	--	--	--	750
20...	--	--	180	--	--	--	--	--	--	--	590
JAN											
12...	--	--	220	--	--	--	--	--	--	--	330
25...	--	--	170	--	--	--	--	--	--	--	280
FEB											
09...	2	2	150	<10	0	0	<50	0	<10	1	990
22...	--	--	160	--	--	--	--	--	--	--	680
MAR											
09...	--	--	170	--	--	--	--	--	--	--	4400
22...	--	--	230	--	--	--	--	--	--	--	960
APR											
13...	--	--	170	--	--	--	--	--	--	--	650
25...	--	--	150	--	--	--	--	--	--	--	640
MAY											
04...	3	2	160	<10	0	10	<50	0	<10	0	590
23...	--	--	170	--	--	--	--	--	--	--	390
JUN											
08...	--	--	170	--	--	--	--	--	--	--	580
27...	--	--	160	--	--	--	--	--	--	--	360
JUL											
13...	--	--	160	--	--	--	--	--	--	--	430
25...	--	--	170	--	--	--	--	--	--	--	680
AUG											
10...	2	2	170	10	3	0	<50	0	10	4	410
23...	--	--	280	--	--	--	--	--	--	--	500
SEP											
14...	--	--	170	--	--	--	--	--	--	--	870
27...	--	--	180	--	--	--	--	--	--	--	100

DATE	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
10...	20	100	1	40	20	.0	.2	3	3	10	10
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
08...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
09...	0	<100	2	70	20	.1	.0	3	3	10	0
22...	--	--	--	--	--	--	--	--	--	--	--
MAR											
09...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	10	<100	0	40	0	.0	.0	2	2	10	10
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
08...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
13...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
10...	60	<100	13	50	8	.0	.0	2	3	30	0
23...	--	--	--	--	--	--	--	--	--	--	--
SEP											
14...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--

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

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ENDRIN (UG/L)	TOTAL ETHION (UG/L)	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)
OCT								
06...	0840	.00	.00	.00	.00	.00	.00	.00
NOV								
10...	0845	.00	.00	.00	.00	.00	.00	.00
DEC								
08...	0900	.00	.00	.00	.00	.00	.00	.00
JAN								
12...	0910	.00	.00	.00	.00	.00	.00	.00
FEB								
09...	0850	.00	.00	.00	.00	.00	.00	.00
MAR								
09...	0900	.00	.00	.00	.00	.00	.00	.00
APR								
13...	0830	.00	.00	.00	.00	.00	.00	.00
MAY								
04...	0835	.00	.00	.00	.00	.00	.00	.00
JUN								
08...	0830	.00	.00	.00	.00	.00	.00	.00
JUL								
13...	0850	.00	.00	.00	.00	.00	.00	.00
AUG								
10...	0915	.00	.00	.00	.00	.00	.00	.00
SEP								
14...	0900	.00	.00	.00	.00	.00	.00	.04

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL PCB (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)
OCT										
06...	0840	4.0	.0	.00	.0	.00	.00	.00	.00	.00
19...	1000	3.1	--	--	--	--	--	--	--	--
NOV										
10...	0845	2.7	.0	.00	.0	.00	.00	.00	.00	.00
22...	1055	2.4	--	--	--	--	--	--	--	--
DEC										
08...	0900	2.0	.0	.00	.0	.00	.00	.00	.00	.00
20...	1115	3.1	--	--	--	--	--	--	--	--
JAN										
12...	0910	3.0	.0	.00	.0	.00	.00	.00	.00	.00
25...	1000	3.0	--	--	--	--	--	--	--	--
FEB										
09...	0850	3.2	.0	.00	.0	.00	.00	.00	.01	.00
22...	1015	3.4	--	--	--	--	--	--	--	--
MAR										
09...	0900	2.7	.0	.00	.0	.00	.00	.00	.02	.00
27...	1100	3.6	--	--	--	--	--	--	--	--
APR										
13...	0830	4.2	.0	.00	.0	.00	.00	.00	.01	.00
25...	1030	3.7	--	--	--	--	--	--	--	--
MAY										
04...	0835	3.7	.0	.00	.0	.00	.00	.00	.00	.00
23...	1315	3.7	--	--	--	--	--	--	--	--
JUN										
08...	0830	3.2	.0	.00	.0	.00	.00	.00	.00	.00
27...	1000	3.0	--	--	--	--	--	--	--	--
JUL										
13...	0850	2.9	.0	.00	.0	.00	.00	.00	.00	.00
25...	1025	3.0	--	--	--	--	--	--	--	--
AUG										
10...	0915	4.0	.0	.00	.0	.00	.00	.00	.00	.00
23...	1030	3.8	--	--	--	--	--	--	--	--
SEP										
14...	0900	3.1	.0	.00	.0	.00	.00	.00	.00	.00
27...	1100	2.2	--	--	--	--	--	--	--	--

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
OCT 06...	.00	.00	0	.00	.00	.00	.03
NOV 10...	.00	.00	0	.00	.00	.00	.00
DEC 08...	.00	.00	0	.00	.00	.00	.00
JAN 12...	.00	.00	0	.00	.00	.00	.00
FEB 09...	.00	.00	0	.00	.00	.00	.00
MAR 09...	.00	.00	0	.00	.00	.00	.00
APR 13...	.00	.00	0	.00	.00	.00	.00
MAY 04...	.00	.00	0	.00	.00	.00	.00
JUN 08...	.00	.00	0	.00	.00	.00	.00
JUL 13...	.00	.00	0	.00	.00	.00	.00
AUG 10...	.00	.00	0	.00	.00	.00	.00
SEP 14...	.00	.01	0	.00	.00	.00	.00

RADIOCHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS- SOLVED GROSS ALPHA AS U-NAT. (UG/L)	SUS- PENDED GROSS ALPHA AS U-NAT. (UG/L)	DIS- SOLVED GROSS BETA AS CS-137 (PC/L)	SUS- PENDED GROSS BETA AS CS-137 (PC/L)	DIS- SOLVED GROSS BETA AS SR90 /Y90 (PC/L)	SUS- PENDED GROSS BETA AS SR90 /Y90 (PC/L)	DIS- SOLVED RA-226 (RADON METHOD) (PC/L)	DIS- SOLVED NATURAL URANIUM (U) (UG/L)	TRITIUM IN WATER MOLE- CULES (TU)	TRITIUM MOLE- CULES COUNT ERROR (TU)
OCT 06...	--	--	--	--	--	--	--	--	--	135	7.0
NOV 03...	--	--	--	--	--	--	--	--	--	138	10.0
10...	0845	<14	1.3	5.4	2.2	4.3	1.9	.12	4.8	--	--
DEC 01...	--	--	--	--	--	--	--	--	--	138	11.0
JAN 05...	--	--	--	--	--	--	--	--	--	137	9.0
FEB 02...	--	--	--	--	--	--	--	--	--	135	7.0
MAR 02...	--	--	--	--	--	--	--	--	--	133	7.0
APR 13...	--	--	--	--	--	--	--	--	--	133	9.0
MAY 04...	--	--	--	--	--	--	--	--	--	129	9.0
04...	0835	13	.6	11	1.6	8.8	1.4	.13	4.3	--	--
JUN 02...	--	--	--	--	--	--	--	--	--	142	8.0
JUL 07...	--	--	--	--	--	--	--	--	--	129	7.0
SEP 14...	0900	--	--	--	--	--	--	--	--	121	8.0

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

COLORADO RIVER MAIN STEM

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09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERT- PHYTON BIOMASS ASH WEIGHT G/SQ M	TOTAL PHYTON- PLANK- TON (CELLS PER ML)	CHLORO- PHYLL A (UG/L)	CHLORO- PHYLL B (UG/L)
OCT 06...	0840	--	--	--	16000	48.5	45.0
NOV 10...	0845	--	3.85	1.31	5900	.000	.000
DEC 08...	0900	--	--	--	990	9.88	4.40
JAN 12...	0910	--	--	--	880	.000	.000
FEB 09...	0850	--	--	--	2700	5.39	3.77
APR 13...	0830	--	--	--	24000	--	--
MAY 04...	0835	6955	--	--	5800	--	--
JUN 08...	0830	--	--	--	16000	3.09	.853
JUL 13...	0850	--	--	--	6800	5.83	4.67
AUG 10...	0915	9440	--	--	3900	1.25	.555
SEP 14...	0900	--	--	--	11000	6.19	1.29

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1410	1460	1450	1410	1330	1260	1270	1300	1250	1250	1180	1250
2	1410	1440	1420	1450	1300	1270	1280	1240	1250	1240	1210	1230
3	1330	1430	1370	1480	1330	1290	1270	1240	1240	1200	1240	1250
4	1300	1370	1320	1530	1340	1320	1250	1240	1250	1210	1220	1250
5	1300	1370	1320	1560	1310	1320	1250	1240	1240	1200	1250	1290
6	1310	1400	1310	1510	1310	1320	1270	1260	1200	1230	1240	1260
7	1300	1420	1320	1440	1280	1320	1260	1290	1210	1230	1220	1260
8	1320	1390	1320	1460	1270	1270	1260	1290	1210	1230	1210	1280
9	1300	1360	1340	1500	1260	1260	1250	1280	1230	1230	1210	1330
10	1280	1320	1350	1530	1250	1300	1260	1270	1240	1200	1210	1320
11	1270	1330	1350	1540	1260	1340	1240	1270	1250	1200	1210	1330
12	1260	1370	1350	1580	1280	1320	1240	1300	1240	1190	1230	1120
13	1260	1440	1340	1550	1280	1260	1270	1330	1260	1180	1230	1260
14	1300	1460	1330	1440	1260	1240	1250	1370	1250	1190	1210	1320
15	1320	1470	1310	1460	1270	1240	1250	1320	1240	1190	1210	1360
16	1330	1530	1340	1520	1250	1250	1250	1370	1270	1190	1220	1370
17	1340	1540	1340	1500	1280	1250	1240	1360	1290	1170	1160	1380
18	1350	1540	1380	1420	1280	1250	1210	1360	1290	1170	1170	1410
19	1330	1600	1410	1380	1290	1270	1240	1390	1300	1180	1510	1350
20	1320	1530	1350	1370	1290	1260	1250	1370	1260	1200	1450	1310
21	1350	1550	1330	1360	1260	1240	1260	1350	1250	1180	1580	1310
22	1320	1540	1330	1380	1250	1250	1260	1290	1240	1210	1630	1320
23	1330	1490	1360	1390	1240	1250	1250	1260	1240	1220	1650	1340
24	1380	1480	1410	1360	1260	1250	1230	1270	1260	1180	1510	1360
25	1390	1520	1480	1360	1300	1270	1220	1280	1280	1170	1430	1380
26	1390	1530	1550	1310	1290	1280	1230	1270	1260	1180	1420	1350
27	1410	1510	1370	1300	1270	1260	1230	1300	1220	1180	1430	1320
28	1420	1530	1300	1300	1270	1250	1250	1360	1240	1180	1460	1280
29	1460	1500	1310	1330	---	1260	1270	1360	1230	1190	1330	1300
30	1450	1470	1390	1380	---	1230	1290	1280	1230	1190	1260	1330
31	1450	---	1410	1320	---	1270	---	1260	---	1160	1260	---

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 1230

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	20.0	13.0	11.5	14.0	16.0	17.0	23.5	27.0	29.0	30.0	29.5
2	26.5	20.0	13.0	12.0	13.5	15.0	16.5	23.5	28.0	29.0	31.0	30.0
3	26.5	20.5	13.5	14.0	13.5	15.5	16.0	23.5	27.0	29.5	30.5	30.0
4	26.5	20.5	14.0	13.5	13.5	15.0	16.5	23.5	28.0	29.0	30.5	31.0
5	25.5	20.5	14.0	13.5	13.5	14.5	16.0	23.5	28.5	29.0	30.5	31.0
6	25.5	20.5	14.0	14.0	13.5	14.5	16.5	22.0	29.0	29.0	30.5	31.5
7	26.0	21.0	13.0	13.0	14.0	15.5	19.5	22.0	28.0	29.5	30.5	32.0
8	25.0	21.0	13.0	13.0	14.0	15.5	20.0	23.5	28.0	29.5	31.0	32.0
9	24.0	20.5	13.0	13.0	14.0	16.0	20.5	21.0	28.0	30.0	31.0	32.0
10	24.0	20.5	13.0	12.0	14.0	16.0	21.0	21.0	27.0	30.0	31.0	31.0
11	24.5	20.0	12.0	11.5	14.5	15.5	20.0	22.0	27.0	30.0	31.0	29.5
12	24.5	20.0	12.0	12.0	14.5	15.5	20.5	22.0	27.0	29.5	31.0	29.0
13	24.5	19.0	12.0	11.0	15.5	15.5	20.5	22.0	27.0	29.0	31.0	30.0
14	24.5	19.0	13.0	11.5	15.0	15.5	20.5	21.5	28.0	29.5	31.5	30.0
15	25.0	19.0	13.5	12.0	16.0	15.5	21.0	22.0	28.0	29.5	30.5	29.0
16	25.0	18.5	13.5	12.0	16.0	15.0	21.0	22.0	28.5	30.0	29.5	27.0
17	25.5	18.5	13.5	13.0	16.0	15.5	21.5	22.0	28.5	30.5	28.5	26.0
18	25.5	19.0	14.0	12.0	16.5	15.5	21.5	22.0	28.0	30.5	29.0	26.0
19	24.5	19.0	14.5	13.0	16.5	16.0	22.0	23.0	27.0	30.5	31.0	26.0
20	24.5	19.0	14.0	13.5	16.5	16.5	21.0	23.5	27.0	30.0	33.0	26.0
21	23.5	19.0	14.0	14.5	16.5	16.5	21.0	24.0	27.0	29.5	32.0	26.0
22	23.0	18.5	13.0	15.5	16.5	18.0	21.5	25.0	28.0	30.0	31.5	26.0
23	22.0	19.0	12.0	15.5	16.5	18.5	21.5	25.0	26.5	30.0	31.0	26.0
24	23.5	19.0	12.0	15.5	16.5	18.5	22.0	23.5	28.5	30.0	31.5	26.5
25	23.5	18.0	11.5	14.5	15.5	17.0	23.0	23.0	28.5	30.0	31.5	26.5
26	23.5	18.5	11.0	14.0	15.0	17.0	24.0	23.5	28.5	30.5	30.5	26.5
27	21.5	15.5	11.0	14.5	15.0	16.5	24.5	24.0	28.5	31.0	30.0	26.0
28	21.0	13.5	10.5	14.0	15.0	17.0	23.5	24.0	28.5	31.0	30.0	27.0
29	20.0	13.0	11.0	15.0	---	17.0	23.5	24.5	29.0	31.0	30.0	28.0
30	19.5	13.0	11.5	15.0	---	17.0	23.5	26.0	29.0	31.0	30.0	26.5
31	20.0	---	11.5	14.0	---	17.0	---	26.5	---	30.0	29.5	---

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 6,76 0840	NOV 10,76 0845	DEC 8,76 0900	JAN 12,77 0910	FEB 9,77 0815	FEB 9,77 0900				
TOTAL CELLS/ML	16000	5900	940	880	280	2700				
DIVERSITY: DIVISION	1.3	1.3	1.0	0.9	0.7	0.5				
..CLASS	1.3	1.3	1.0	0.9	0.9	0.5				
...ORDER	1.9	2.0	1.7	1.2	0.9	0.5				
...FAMILY	2.0	2.3	2.6	1.4	2.9	0.7				
....GENUS	2.3	2.4	2.9	1.4	3.3	0.7				
ORGANISM	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...BOTRYOCOCCACEAE										
...BOTRYOCOCCUS	--	-	--	-	--	-	--	-	--	-
...CHARACIACEAE										
...SCHROEDERIA	--	-	--	-	--	-	--	-	--	-
...COELASTRACEAE										
...COELASTRUM	--	-	--	-	--	-	--	-	--	-
...MICRACTINIACEAE										
...MICRACTINIUM	--	-	--	-	--	-	--	-	--	-
...DUCYSTACEAE										
...ANKISTRODESMSUS	230	1	--	-	*	0	33	12	--	-
...CHODATELLA	--	-	--	-	--	-	--	-	--	-
...DICTYOSPHAERIUM	--	-	--	-	100	10	--	-	--	-
...KIRCHNERIFLLA					--	-	--	-	--	-
...DUCYSTIS	120	1	--	-	--	-	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...SCENEDFSMACEAE										
...ACTINASTRUM	--	-	--	-	--	-	--	-	--	-
...SCENEDESMSUS	--	-	210	4	--	-	22	8	33	1
..VOLVOCELES										
...CHLAMYDOMONADACEAE										
...CARTERIA	--	-	--	-	--	-	--	-	--	-
...CHLAMYDOMONAS	1100	7	110	2	27	3	--	-	--	-
...POLYBLEPHARIDACEAE										
...SPERMATOPHYTES	--	-	--	-	--	-	--	-	--	-
...VOLVOCEACEAE										
...GONTUM	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...COSCINODISCEACEAE										
...CYCLOTELLA	2000	12	2700#	45	2000#	20	31	4	--	-
...MELOSIRA	2100	13	210	4	100	10	--	-	--	-
...PENNIALES										
...ACHNANTHACEAE										
...COCCONEIS	--	-	*	0	100	10	--	-	11	4
...RHOICOSPHEMIA	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
...AMPHORA	--	-	--	-	--	-	--	-	--	-
...CYMBELLA	--	-	--	-	--	-	22	8	*	0
...EPITHEMIA	--	-	--	-	34	3	--	-	--	-
...DIATOMACEAE										
...DIATOMA	--	-	--	-	--	-	7	1	--	-
...FRAGILARIACEAE										
...ASTRIONELLA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIA	--	-	--	-	--	-	--	-	11	4
...SYNEDRA	--	-	--	-	--	-	--	-	--	-
...GOMPHONEMACEAE										
...GOMPHONEMA	--	-	--	-	--	-	7	1	11	4
...NAVICULACEAE										
...AMPHIPLEURA	--	-	--	-	--	-	--	-	11	4
...GYROSTIGMA	--	-	--	-	--	-	--	-	--	-
...NAVICULA	230	1	420	7	140	14	38	4	65#	23
...PINNULARIA	--	-	--	-	--	-	--	-	11	4
...NITZSCHIA										
...NITZSCHIA	700	4	960#	16	200#	20	41	5	54#	19
...SURIPELLACEAE										
...CYMATOPEURA	--	-	--	-	--	-	--	-	11	4
..CHRYSOPHYCEAE										
...CHRYSONOMADALES										
...OCHROMONADACEAE										
...DINOBRYON	--	-	--	-	--	-	--	-	--	-
...OCHROMONAS	--	-	--	-	--	-	--	-	11	4

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

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

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 6,76 0840		NOV 10,76 0845		DEC 8,76 0900		JAN 12,77 0910		FER 9,77 0815		FER 9,77 0900	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
..CHROCCOCCALFS												
..CHROCCOCCAEAE												
....AGMENELLUM	*	0	--	-	--	-	--	-	--	-	--	-
....ANACYSTIS	1200	7	850	14	--	-	27	3	--	-	--	-
..HORMOGONALES												
..NOSTOCACEAE												
....APHANIZOMENON	*	0	--	-	--	-	--	-	--	-	--	-
....CYLINDROSPERMUM	--	-	--	-	--	-	--	-	--	-	--	-
..OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
....OSCILLATORIA	8300#	52	--	-	--	-	690#	78	--	-	2400#	90
....SPIRULINA	--	-	--	-	--	-	--	-	--	-	--	-
..RIVULARIACEAE												
....RAPHIDIOPSIS	120	1	*	0	--	-	--	-	--	-	--	-
..CHROCCOCCALES												
..CHROCCOCCAEAF												
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENIDS)												
..CRYPTOPHYCEAE												
..CRYPTOMONIDALES												
..CRYPTOCHRYSIDACEAE												
....CHROMONAS	--	-	420	7	--	-	--	-	--	-	--	-
..CRYPTOMONODACEAE												
....CRYPTOMONAS	--	-	110	2	--	-	*	0	--	-	*	0
..EUGLENOPHYCEAE												
..EUGLENALES												
..EUGLENACEAE												
....EUGLENA	*	0	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	110	11	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAF												
..PERIDINTALES												
..PERIDINIACEAE												
....PERIDINIUM	--	-	--	-	--	-	--	-	--	-	--	-

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	APR 13,77 0830		MAY 4,77 0835		JUN 8,77 0830		JUL 13,77 0850		AUG 10,77 0915		SEP 14,77 0900	
TOTAL CELLS/ML	24000		5800		16000		6800		3900		11000	
DIVERSITY: DIVISION	0.6		1.2		1.2		1.6		1.5		0.7	
..CLASS	0.6		1.2		1.2		1.6		1.5		0.7	
...ORDER	0.8		2.0		1.3		2.3		2.4		1.0	
...FAMILY	0.8		2.2		1.7		3.1		2.9		1.9	
....GENUS	0.9		2.4		1.8		3.5		2.9		1.9	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
....BOTRYOCOCCACEAE												
....BOTRYOCOCCUS	--	-	--	-	1800	2	--	-	--	-	--	-
...CHARACTACEAE												
....SCHROEDERIA	--	-	--	-	--	-	--	-	--	-	*	0
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	460	3	950	14	--	-	--	-
...MICRACITINACEAE												
....MICRACITINUM	--	-	--	-	*	0	--	-	--	-	--	-
...NOCTISTACEAE												
....ANKISTRODESMUS	--	-	*	0	*	0	37	1	56	1	99	1
....CHODATELLA	--	-	*	0	--	-	--	-	--	-	--	-
...DICTYOSPHAERIUM	--	-	--	-	--	-	240	3	--	-	--	-
...KIRCHNERIFLLA	--	-	--	-	--	-	91	1	--	-	--	-
...NOCTISTIS	--	-	--	-	*	0	--	-	56	1	--	-
...TETRAEDRUM	--	-	--	-	*	0	--	-	--	-	--	-
...SCENEDFSMACEAE												
....ACTINASTRUM	--	-	--	-	*	0	--	-	--	-	--	-
....SCENEDESMUS	*	0	280	5	840	5	1200#	18	560	14	590	5
...VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	70	1	*	0	--	-	--	-	--	-
...CHLAMYDOMONAS	*	0	--	-	*	0	160	2	69	2	180	2
...POLYBLEPHARIDACEAE												
....SPERMATOPHYTES	--	-	--	-	*	0	--	-	--	-	--	-
...VOLVOCAEAE												
....GONTIUM	--	-	--	-	--	-	880	13	--	-	--	-
CHRYSOPHYTA												
..BACILLARIOPHYCEAE												
...CENTRALES												
...COSCIINODISCEAE												
...CYCLOTELLA	--	-	510	9	130	1	--	-	220	6	350	3
...MELOSTRA	1100	4	480	8	--	-	--	-	--	-	--	-
...PENNIALES												
...ACHNANTHACEAE												
....COCCONEIS	*	0	--	-	*	0	--	-	*	0	*	0
....RHODOSPHENTIA	--	-	--	-	--	-	--	-	*	0	--	-
...CYMBELLACEAE												
....AMPHURA	--	-	--	-	--	-	--	-	--	-	--	-
....LYMBELLA	*	0	*	0	--	-	--	-	28	1	--	-
...EPITHEMIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	*	0	--	-	*	0	--	-	--	-	--	-
...FRAGILARIACEAE												
....ASTERIONELLA	360	2	56	1	--	-	--	-	--	-	--	-
....FRAGILARIA	1400	6	420	7	170	1	55	1	--	-	--	-
....SYNEDRA	--	-	--	-	*	0	530	8	500	13	130	1
...GOMPHONEMATACEAE												
....GOMPHONEMA	--	-	--	-	--	-	110	2	--	-	--	-
...NAVICULACEAE												
....AMPHIPLEURA	--	-	--	-	--	-	--	-	--	-	--	-
....GYROSTIGMA	--	-	--	-	--	-	*	0	--	-	--	-
....NAVICULA	120	1	56	1	140	1	260	4	69	2	*	0
...PINNULARIA	--	-	--	-	*	0	--	-	--	-	--	-
...NITZSCHACEAE												
....NITZSCHIA	*	0	110	2	610	4	--	-	69	2	99	1
...SURIRELLACEAE												
....CYMATOPLEURA	--	-	--	-	--	-	--	-	--	-	--	-
CHRYSPHYCEAE												
..CHRYSONOMADALES												
...OCHROMONADACEAE												
....DINOBRYON	120	1	--	-	*	0	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-

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

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

COLORADO RIVER MAIN STEM

09429490 COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	APR 13, 77 0830		MAY 4, 77 0835		JUN 8, 77 0830		JUL 13, 77 0850		AUG 10, 77 0915		SEP 14, 77 0900	
ORGANISM	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
..CHROCOCCALES												
...CHROCOCCACEAE												
....ARMENELLUM	--	-	--	-	--	-	290	4	--	-	--	-
....ANACYSTIS	--	-	630	11	11000#	70	--	-	940#	24	260	2
...HORMOGONIALES												
...NUSTOCACEAE												
....APHANTZONEMON	--	-	--	-	--	-	--	-	--	-	--	-
....CYLINDROSPERMIUM	--	-	--	-	--	-	--	-	--	-	5300#	48
...OSCILLATORIA												
....LYNCEA	--	-	--	-	--	-	370	5	--	-	--	-
....OSCILLATORIA	21000#	86	3100#	53	--	-	550	8	1100#	28	3800#	35
....SPIRULINA	--	-	--	-	--	-	--	-	*	0	--	-
...RIVULARIACEAE												
....RAPHIDIOPSIS	--	-	--	-	--	-	--	-	140	4	--	-
..CHROCOCCALES												
...CHROCOCCACEAE												
....GOMPHOSPHERIA	--	-	--	-	--	-	840	12	--	-	--	-
EUGLENOPHYTA (EUGLENIDS)												
..CRYPTOPHYCEAE												
..CRYPTOMONADALS												
...CRYPTOCHRYSIDACEAE												
....CHROMONAS	--	-	42	1	*	0	--	-	42	1	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	--	-	--	-	*	0	240	3	--	-	--	-
..EUGLENOPHYCEAE												
...EUGLENALS												
....EUGLENACEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELONAS	--	-	--	-	--	-	--	-	28	1	--	-
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
..PERTONIALES												
...PERTONIAACEAE												
....PERTONTUM	--	-	--	-	*	0	--	-	--	-	--	-

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

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

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) above mean sea level (Bureau of Reclamation bench mark).

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, 5,300 ft³/s (150 m³/s) Aug. 18; minimum daily, 214 ft³/s (6.06 m³/s) Aug. 22-31.

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	238	644	243	227	625	216	330	334	850	360	334	403
2	238	642	235	227	623	216	331	334	687	437	522	835
3	238	477	226	227	387	216	332	334	542	334	512	864
4	238	265	226	642	402	216	333	477	541	334	324	997
5	238	263	226	697	621	216	334	521	542	614	324	892
6	238	261	226	883	687	216	334	449	544	712	324	900
7	238	484	226	852	1000	216	334	752	596	459	324	852
8	238	548	226	701	733	216	334	829	646	334	324	798
9	238	544	226	701	827	216	334	1130	645	334	324	688
10	238	511	226	701	739	216	334	1080	646	334	502	585
11	238	758	226	693	827	316	334	960	438	334	502	1010
12	516	619	226	691	372	317	334	960	823	334	504	2190
13	441	653	365	693	217	318	334	962	448	334	399	1530
14	248	1010	376	695	217	319	334	958	234	334	314	694
15	248	580	226	695	217	320	616	1600	234	334	1370	585
16	248	582	226	693	217	320	334	750	234	334	2830	633
17	248	305	226	444	217	321	334	812	234	334	5290	657
18	248	225	226	498	217	607	334	475	234	334	5300	802
19	540	225	226	607	217	322	617	234	234	709	4200	804
20	248	225	226	462	217	460	429	234	234	334	1460	1060
21	426	225	226	654	217	540	334	234	234	428	500	977
22	672	225	226	713	504	325	334	234	234	428	214	800
23	716	225	226	647	217	326	334	272	234	334	214	798
24	669	225	226	631	217	326	334	1040	234	334	214	792
25	645	278	226	629	217	327	334	1420	334	428	214	648
26	648	285	226	627	217	328	523	1020	334	334	214	329
27	648	236	302	627	217	329	334	833	334	334	214	647
28	647	227	226	721	217	329	617	629	334	334	214	798
29	676	238	226	627	---	330	334	742	334	334	214	1020
30	696	243	226	625	---	331	334	841	334	334	214	644
31	656	---	226	627	---	332	---	846	---	334	214	---
TOTAL	12702	12228	7397	19157	11602	9603	11142	22296	12526	11923	28623	25232
MEAN	410	408	239	618	414	310	371	719	418	385	923	841
MAX	716	1010	376	883	1000	607	617	1600	850	712	5300	2190
MIN	238	225	226	227	217	216	330	234	234	334	214	329
AC-FT	25190	24250	14670	38000	23010	19050	22100	44220	24850	23650	56770	50050
CAL YR 1976	TOTAL	170614	MEAN	466	MAX	3680	MIN	219	AC-FT	338400		
WTR YR 1977	TOTAL	184431	MEAN	505	MAX	5300	MIN	214	AC-FT	365800		

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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.

WATER-DISCHARGE RECORDS

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 CURRENT YEAR.--Maximum discharge, 5,030 ft³/s (142 m³/s) Aug. 18, gage height, 12.88 ft (3.926 m); minimum daily, 215 ft³/s (6.09 m³/s) Feb. 25.

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	412	682	228	292	698	228	354	598	846	332	354	392
2	376	676	228	290	695	228	351	492	828	496	339	762
3	360	658	233	284	673	230	349	370	720	331	347	877
4	343	527	235	455	486	311	349	320	623	333	326	862
5	324	507	235	704	732	547	346	264	600	334	316	862
6	357	495	235	710	775	512	343	418	597	355	301	872
7	362	452	238	750	788	415	545	728	641	365	323	837
8	354	501	238	759	759	284	658	785	681	350	327	777
9	338	489	238	753	803	277	478	961	676	313	328	777
10	338	495	235	756	813	263	384	1030	678	315	369	734
11	287	507	238	753	806	357	371	1020	563	310	468	715
12	292	536	245	753	518	379	362	992	373	310	532	1720
13	290	545	238	753	298	371	357	962	365	445	516	1650
14	284	847	235	750	290	371	360	972	320	632	357	940
15	279	772	240	750	284	376	338	1390	310	582	560	802
16	269	661	240	747	271	365	332	1130	287	422	2280	753
17	258	640	245	741	248	362	335	900	279	372	4480	721
18	253	586	261	698	248	322	335	889	405	368	5000	754
19	269	368	261	692	248	324	354	716	578	354	4680	775
20	245	287	258	670	248	327	360	399	407	337	2430	796
21	306	287	258	634	251	338	458	325	309	345	1060	805
22	640	287	258	722	269	354	676	306	292	332	480	779
23	791	287	258	713	282	341	501	293	266	313	385	782
24	738	287	371	704	235	306	371	848	257	301	350	784
25	701	282	574	698	215	311	360	831	359	301	320	785
26	704	277	530	698	217	327	343	827	388	306	300	772
27	710	269	351	692	220	349	357	860	378	300	280	757
28	725	238	233	701	222	349	343	848	342	568	260	874
29	763	230	243	719	---	349	330	804	335	647	240	891
30	828	230	263	704	---	349	415	850	335	418	240	562
31	759	---	295	698	---	349	---	851	---	366	230	---
TOTAL	13955	13905	8438	20743	12592	10571	11815	22979	14038	11853	28778	25169
MEAN	450	464	272	669	450	341	394	741	468	382	928	839
MAX	828	847	574	759	813	547	676	1390	846	647	5000	1720
MIN	245	230	228	284	215	228	330	264	257	300	230	392
AC-FT	27680	27580	16740	41140	24980	20970	23440	45580	27840	23510	57080	49920
CAL YR 1976	TOTAL	182052	MEAN	497	MAX	3300	MIN	156	AC-FT	361100		
WTR YR 1977	TOTAL											

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 September 1977.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHMS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
OCT											
04...	0135	340	1500	8.1	25.5	380	218	102	31	175	3.9
11...	0315	262	1500	8.0	24.5	380	221	101	31	175	3.9
18...	0105	218	1430	8.1	24.5	370	216	100	29	165	3.7
25...	0135	725	1380	8.1	23.5	365	214	97	30	155	3.5
NOV											
01...	0340	652	1490	8.1	19.5	380	220	102	31	175	3.9
08...	0115	508	1470	8.2	20.0	375	214	101	30	170	3.8
15...	0130	1170	1470	8.2	19.0	380	222	100	32	170	3.8
22...	0340	300	1720	8.2	19.0	420	241	113	34	210	4.4
29...	0135	268	1620	8.1	13.0	410	236	110	33	195	4.2
DEC											
06...	0120	252	1490	8.0	14.5	380	220	105	29	175	3.9
13...	0315	262	1460	8.0	15.5	375	218	100	31	170	3.8
20...	0135	270	1430	8.1	14.5	370	214	97	31	165	3.7
27...	0125	484	1790	8.0	14.0	415	241	117	30	230	4.9
JAN											
03...	0330	302	1510	8.0	18.0	390	224	106	31	175	3.8
10...	0120	823	1480	8.1	--	385	226	102	32	170	3.8
17...	0120	816	1520	8.1	15.0	395	232	106	32	175	3.8
24...	0330	728	1440	8.1	18.5	375	218	106	27	165	3.7
31...	0115	760	1430	8.1	15.0	375	219	98	32	165	3.7
FEB											
07...	0135	918	1370	8.1	15.0	370	221	98	31	150	3.4
14...	0045	302	1390	8.1	19.5	370	218	98	31	155	3.5
21...	0115	262	1410	8.1	18.5	370	214	102	28	160	3.6
28...	0130	228	1390	8.0	17.0	370	216	105	26	155	3.5
MAR											
07...	0130	517	1660	8.0	16.5	395	231	107	31	205	4.5
14...	0100	385	1420	8.1	16.5	375	221	98	32	160	3.6
21...	0115	334	1340	8.1	18.0	365	212	97	30	145	3.3
28...	0030	358	1330	8.1	17.0	365	212	98	29	145	3.3
APR											
04...	0110	343	1350	8.3	18.5	365	211	98	29	150	3.4
11...	0125	382	1410	8.2	19.0	380	224	102	31	155	3.4
18...	0110	325	1330	8.2	21.0	365	212	95	31	145	3.3
25...	0645	298	1420	8.1	18.5	380	226	102	31	160	3.6
MAY											
02...	0125	557	1400	8.4	24.0	375	221	95	34	155	3.5
09...	0130	520	1320	8.4	--	365	212	94	32	145	3.3
16...	0145	1840	1290	8.3	22.0	365	214	92	33	135	3.1
23...	0135	280	1520	8.3	13.5	395	228	102	34	175	3.8
30...	0105	828	1360	8.2	21.0	375	218	96	33	150	3.4
JUN											
06...	0145	599	1350	8.3	26.5	370	219	98	31	145	3.3
13...	0120	708	1310	8.3	26.0	365	214	94	32	140	3.2
20...	0050	524	1400	8.1	25.5	375	221	98	32	155	3.5
27...	0140	376	1350	8.1	28.0	370	219	99	30	145	3.3
JUL											
04...	0110	327	1340	8.1	28.0	370	219	95	32	145	3.3
11...	0105	529	1320	7.9	28.5	365	212	93	32	145	3.3
18...	0235	602	1330	7.9	30.0	365	214	93	32	145	3.3
25...	0050	240	1340	7.9	30.0	365	211	93	32	145	3.3
AUG											
01...	0330	384	1340	7.9	29.0	365	212	94	32	145	3.3
08...	0310	346	1330	7.9	30.5	360	211	92	32	145	3.3
15...	0220	593	1330	7.8	30.0	360	216	94	31	145	3.3
22...	0115	123	1490	7.8	30.0	395	224	102	34	170	3.7
29...	0130	332	1550	7.9	29.5	395	226	108	31	180	3.9
SEP											
05...	0140	857	1280	7.9	30.0	360	219	90	33	135	3.1
12...	0110	628	1300	7.9	28.5	350	206	90	31	145	3.4
19...	0145	700	1390	8.0	26.0	375	218	98	32	155	3.5
26...	0150	738	1390	8.0	25.0	375	218	99	31	155	3.5

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, 1,870 micromhos Nov. 19; minimum daily, 1,090 micromhos Sept. 13.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PHOS- PHORUS (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED (TDS) PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)
OCT											
04...	7.2	198	0	360	165	.6	12	948	952	1.29	.27
11...	6.4	194	0	360	165	.6	13	952	949	1.29	.25
18...	6.2	188	0	350	152	.5	10	904	906	1.23	.14
25...	6.0	184	0	345	138	.5	9.0	868	872	1.18	.11
NOV											
01...	5.9	196	0	370	155	.6	10	944	948	1.28	.25
08...	6.0	196	0	360	155	.5	11	928	931	1.26	.16
15...	5.9	192	0	360	155	.4	11	928	930	1.26	.20
22...	5.8	218	0	395	210	.6	13	1100	1090	1.50	.14
29...	6.3	212	0	385	185	.6	11	1030	1030	1.40	.23
DEC											
06...	6.0	196	0	360	160	.5	10	986	944	1.34	.23
13...	6.0	192	0	355	155	.6	11	936	925	1.27	.23
20...	6.0	190	0	355	150	.5	10	912	909	1.24	.16
27...	6.4	212	0	400	232	.7	12	1130	1130	1.54	.25
JAN											
03...	5.6	202	0	360	168	.6	12	956	959	1.30	.20
10...	5.8	194	0	365	155	.5	11	944	938	1.28	.23
17...	6.0	198	0	375	162	.5	11	972	966	1.32	.16
24...	5.8	192	0	355	150	.5	8.7	912	914	1.24	.18
31...	5.5	190	0	355	150	.4	9.2	908	910	1.23	.20
FEB											
07...	5.4	182	0	345	138	.5	8.8	864	868	1.18	.20
14...	6.0	186	0	350	142	.5	8.5	886	884	1.20	.20
21...	6.0	190	0	350	145	.4	9.8	898	896	1.22	.11
28...	5.8	188	0	350	140	.5	9.8	882	886	1.20	.14
MAR											
07...	6.2	200	0	370	208	.5	10	1040	1040	1.41	.16
14...	5.6	188	0	350	148	.5	9.2	912	897	1.24	.20
21...	5.6	186	0	340	130	.4	8.8	872	850	1.19	.16
28...	5.6	186	0	335	128	.5	9.2	844	843	1.15	.09
APR											
04...	5.6	188	0	340	132	.6	9.0	850	858	1.16	.09
11...	5.6	190	0	345	148	.5	9.2	880	891	1.20	.09
18...	5.6	186	0	335	128	.5	9.0	844	842	1.15	.09
25...	5.5	188	0	350	150	.5	9.5	904	902	1.23	.11
MAY											
02...	5.8	188	2	345	145	.6	7.5	882	883	1.20	.07
09...	5.6	186	2	335	125	.5	6.8	846	838	1.15	.11
16...	5.2	184	0	330	120	.6	6.5	826	814	1.12	.14
23...	5.5	204	0	360	172	.7	10	962	960	1.31	.11
30...	5.6	192	0	340	135	.6	8.0	876	864	1.19	.09
JUN											
06...	5.4	184	0	340	135	.5	9.0	854	855	1.16	.07
13...	5.6	184	0	330	125	.5	8.2	828	827	1.13	.11
20...	5.7	188	0	345	145	.5	8.5	878	883	1.19	.07
27...	5.4	184	0	340	135	.5	8.2	852	854	1.16	.07
JUL											
04...	5.4	184	0	335	132	.5	9.0	844	845	1.15	.11
11...	5.6	186	0	335	128	.5	8.6	842	840	1.15	.05
18...	5.3	184	0	335	130	.6	8.9	856	841	1.16	.09
25...	5.9	188	0	335	132	.5	9.2	850	846	1.16	.07
AUG											
01...	5.4	186	0	335	132	.5	9.2	842	845	1.15	.07
08...	5.5	182	0	335	130	.5	10	836	840	1.14	.07
15...	5.6	176	0	335	130	.6	9.5	838	838	1.14	.09
22...	6.0	208	0	360	158	.6	12	954	946	1.30	.20
29...	5.8	206	0	365	175	.6	12	980	979	1.33	.09
SEP											
05...	5.2	172	0	335	120	.4	8.8	834	813	1.13	.11
12...	5.8	176	0	330	128	.6	9.2	822	827	1.12	.18
19...	5.4	192	0	345	140	.5	10	886	882	1.20	.14
26...	5.5	192	0	345	140	.5	9.8	888	881	1.21	.09

COLORADO RIVER MAIN STEM

09429600 COLORADO RIVER BELOW LAGUNA DAM, AZ-CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1400	1480	1640	1480	1380	1390	1340	1310	1320	1320	1350	1440
2	1450	1480	1620	1480	1370	1400	1340	1410	1300	1320	1340	1310
3	1480	1480	1590	1500	1350	1400	1340	1430	1310	1320	1300	1280
4	1510	1470	1550	1560	1820	1390	1350	1420	1360	1330	1310	1280
5	1520	1490	1520	1540	1430	1360	1360	1380	1350	1330	1330	1300
6	1520	1510	1490	1580	1360	1450	1360	1350	1360	1300	1350	1280
7	1510	1470	1460	1550	1370	1650	1320	1310	1310	1280	1340	1280
8	1510	1470	1460	1470	1320	1530	1370	1300	1320	1290	1310	1270
9	1540	1460	1460	1480	1310	1530	1580	1320	1310	1330	1330	1300
10	1540	1430	1440	1490	1290	1500	1380	1310	1330	1330	1280	1350
11	1490	1400	1470	1520	1260	1510	1410	1300	1340	1330	1280	1310
12	1490	1370	1460	1540	1300	1440	1410	1280	1410	1330	1280	1310
13	1380	1380	1450	1560	1410	1440	1430	1290	1310	1320	1340	1090
14	1380	1420	1450	1600	1390	1420	1430	1290	1350	1270	1270	1240
15	1380	1460	1440	1500	1410	1390	1420	1370	1370	1300	1220	1290
16	1380	1470	1420	1480	1400	1380	1340	1300	1390	1380	1200	1350
17	1430	1510	1400	1520	1420	1390	1340	1350	1400	1380	1180	1380
18	1430	1540	1400	1630	1390	1400	1330	1360	1400	1340	1200	1400
19	1440	1870	1420	1560	1410	1320	1320	1370	1340	1330	1180	1390
20	1430	1750	1420	1480	1410	1320	1310	1670	1400	1300	1330	1380
21	1430	1750	1470	1660	1410	1330	1320	1550	1450	1280	1410	1300
22	1360	1730	1470	1410	1410	1320	1290	1550	1450	1300	1500	1310
23	1350	1720	1450	1420	1390	1320	1390	1530	1450	1300	1570	1330
24	1350	1700	1430	1430	1380	1320	1410	1490	1430	1340	1610	1340
25	1390	1680	1380	1420	1390	1340	1430	1310	1420	1340	1630	1380
26	1410	1610	1510	1420	1390	1340	1420	1310	1380	1320	1620	1400
27	1450	1600	1770	1390	1400	1340	1320	1290	1370	1310	1560	1490
28	1520	1630	1590	1370	1390	1330	1320	1290	1340	1310	1570	1350
29	1520	1630	1530	1370	---	1360	1330	1340	1340	1290	1550	1310
30	1520	1630	1480	1370	---	1340	1360	1370	1340	1340	1560	1300
31	1500	---	1460	1430	---	1340	---	1320	---	1350	1480	---

COLORADO RIVER MAIN STEM

09429690 COLORADO RIVER ABOVE GILA RIVER, NEAR YUMA, AZ

LOCATION.--Lat 32°43'22", long 114°32'46", in SE¼ 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	SPE- CTIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT												
04...	1500	1700	8.2	25.0	420	230	110	36	200	4.2	7.0	233
12...	1400	1710	8.0	24.0	460	280	120	39	200	4.1	5.9	224
18...	1520	1700	8.1	26.5	460	270	120	38	200	4.1	5.8	224
26...	1400	1510	8.2	21.5	400	230	100	37	170	3.7	5.5	204
NOV												
01...	1115	1580	8.2	18.5	460	290	120	40	180	3.6	5.6	211
08...	1445	1590	8.2	20.0	400	230	100	37	180	3.9	5.7	207
15...	1330	1540	8.3	18.0	400	230	100	37	180	3.9	5.7	208
22...	1345	1860	8.2	18.5	480	280	120	44	230	4.6	5.9	250
29...	1410	1830	8.1	14.0	460	260	120	40	220	4.4	5.6	244
DEC												
08...	1350	1680	8.2	13.5	430	250	110	38	210	4.4	5.5	225
13...	1400	1680	8.0	14.0	430	250	110	38	200	4.2	5.6	227
20...	1350	1640	8.2	14.5	440	250	110	39	180	3.8	5.5	229
27...	1335	1890	8.1	11.0	460	270	120	40	230	4.6	5.8	239
JAN												
05...	1455	1570	8.1	13.5	390	230	100	35	180	3.9	5.7	204
10...	1355	1550	8.1	11.5	390	230	100	35	190	4.2	5.0	202
17...	1020	1590	8.1	11.0	430	260	110	38	180	3.8	5.4	204
24...	1000	1500	8.1	16.0	400	240	100	36	170	3.7	5.5	196
31...	1400	1510	8.2	16.0	400	230	100	36	170	3.7	5.1	206
FEB												
07...	1400	1420	8.1	13.5	370	220	95	33	150	3.4	5.0	192
14...	1130	1590	8.2	17.0	440	260	110	39	180	3.8	5.4	218
22...	1340	1610	8.1	19.0	430	250	110	38	190	4.0	5.5	223
28...	1450	1640	8.1	18.0	430	240	110	38	190	4.0	5.5	228
MAR												
07...	1325	1800	8.0	16.5	430	250	110	38	220	4.6	5.9	226
14...	1420	1560	8.1	17.0	400	230	100	36	180	3.9	5.3	211
21...	1110	1510	8.2	16.5	390	220	100	35	170	3.7	5.1	212
28...	1315	1500	8.3	19.5	430	250	110	37	170	3.6	5.3	213
APR												
04...	1335	1500	8.2	19.0	390	220	100	35	160	3.5	5.5	210
11...	1330	1560	8.2	20.0	420	240	110	35	180	3.8	5.1	220
18...	1435	1460	8.2	23.0	400	230	100	36	160	3.5	5.3	210
25...	1335	1550	8.2	24.5	430	260	110	37	170	3.6	5.4	210
MAY												
02...	1400	1540	8.3	25.0	420	250	110	35	180	3.8	5.5	210
09...	1445	1380	8.2	23.0	390	240	98	36	150	3.3	5.1	190
16...	1400	1330	8.3	21.0	380	220	96	33	150	3.4	4.9	190
23...	1435	1710	8.0	23.5	460	270	120	38	200	4.1	5.7	230
31...	1415	1370	8.4	25.0	380	220	97	34	150	3.3	5.0	190
JUN												
06...	1330	1460	8.3	29.5	400	230	100	36	170	3.7	5.5	200
13...	1325	1460	8.3	26.5	430	260	110	37	160	3.4	5.2	210
20...	0930	1520	8.1	25.0	400	230	100	36	170	3.7	5.5	210
27...	1325	1490	8.0	29.0	400	230	100	36	180	3.9	5.2	210
JUL												
05...	1055	1470	8.2	28.5	400	230	100	36	160	3.5	5.1	210
11...	1140	1480	7.9	29.0	400	230	100	36	170	3.7	5.0	210
18...	0845	1470	7.8	28.5	400	230	100	37	170	3.7	5.5	210
25...	1345	1490	7.9	30.5	400	230	100	36	170	3.7	5.4	210
AUG												
01...	1120	1480	7.9	29.0	390	220	100	35	160	3.5	5.2	210
08...	1350	1470	8.0	31.0	390	220	99	34	170	3.8	5.3	200
15...	1415	1460	7.8	29.0	390	230	100	35	160	3.5	6.0	200
22...	1500	1590	7.8	30.0	430	240	110	37	180	3.8	6.5	230
29...	1335	1740	7.9	29.0	480	260	120	38	200	4.0	5.9	240
SEP												
06...	1200	1370	7.9	30.0	380	220	96	34	150	3.4	5.1	190
12...	1340	1380	8.0	29.0	360	200	89	33	150	3.5	5.5	190
19...	1430	1470	8.0	25.5	400	230	100	36	160	3.5	5.1	200
26...	1330	1480	7.9	26.0	400	280	99	37	150	3.3	5.1	140

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIG2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS PER AC-FT)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT											
04...	0	380	190	.6	15	1110	1060	1.51	.83	240	10
12...	0	410	210	.5	15	1120	1110	1.52	.17	260	0
18...	0	420	180	.5	14	1090	1090	1.48	.19	250	20
26...	0	390	160	.5	12	980	976	1.33	.15	230	20
NOV											
01...	0	420	170	.6	12	1030	1050	1.40	.18	240	10
08...	0	390	180	.5	12	1040	1010	1.41	.16	240	30
15...	0	380	170	.5	12	992	989	1.35	.13	230	10
22...	0	440	220	.6	14	1200	1200	1.63	--	290	0
29...	0	440	210	.5	14	1200	1170	1.63	.20	280	0
DEC											
08...	0	430	180	.6	14	1100	1100	1.50	.18	250	20
13...	0	420	180	.6	14	1090	1080	1.48	.20	250	10
20...	0	390	180	.6	14	1070	1070	1.46	.16	240	10
27...	0	410	250	.9	15	1190	1190	1.62	.15	310	10
JAN											
05...	0	380	170	.5	14	1000	987	1.36	.22	230	10
10...	0	380	180	.5	12	994	1000	1.35	.23	220	10
17...	0	380	180	.5	12	1040	1010	1.41	.20	230	10
24...	0	390	160	.5	11	964	971	1.31	.24	220	20
31...	0	380	160	.5	11	984	965	1.34	.20	220	0
FEB											
07...	0	330	150	.5	10	904	869	1.23	.23	200	20
14...	0	390	170	.4	13	1010	1020	1.37	.17	230	10
22...	0	390	180	.6	13	1060	1040	1.44	.15	240	10
28...	0	400	180	.6	8.8	1080	1050	1.47	.13	240	20
MAR											
07...	0	420	230	1.0	14	1170	1150	1.59	.14	290	0
14...	0	390	180	.6	12	1020	1010	1.39	.24	240	10
21...	0	370	170	.6	13	980	969	1.33	.19	210	0
28...	0	380	160	.6	13	988	982	1.34	.10	220	10
APR											
04...	0	370	150	.6	12	956	937	1.30	.14	220	20
11...	0	380	170	.6	12	992	1000	1.35	.09	220	10
18...	0	350	140	.5	11	934	907	1.27	.21	200	10
25...	0	370	170	.6	11	1020	978	1.39	.14	230	10
MAY											
02...	0	370	170	.7	9.8	998	985	1.36	.08	220	10
09...	0	350	130	.6	8.5	886	873	1.20	.16	190	30
16...	0	330	130	.4	6.2	856	845	1.16	.14	170	0
23...	0	400	190	.6	13	1060	1080	1.44	.02	250	0
31...	0	340	140	.5	9.2	878	870	1.19	.07	180	10
JUN											
06...	0	350	150	.5	11	932	922	1.27	.06	210	10
13...	0	370	150	.6	12	950	949	1.29	.11	200	10
20...	0	380	160	.6	13	980	969	1.33	.02	220	10
27...	0	360	160	.6	12	978	958	1.33	--	220	10
JUL											
05...	0	350	160	.5	12	944	927	1.28	--	210	10
11...	0	360	150	.5	12	960	937	1.31	--	220	10
18...	0	360	160	.5	13	948	950	1.29	.09	210	0
25...	0	370	160	.5	13	966	959	1.31	--	220	30
AUG											
01...	0	370	160	.6	13	946	948	1.29	--	220	20
08...	0	360	160	.6	13	1010	941	1.37	--	200	20
15...	0	370	150	.6	13	934	933	1.27	--	230	10
22...	0	410	170	.5	15	1010	1040	1.41	--	260	20
29...	0	410	200	.7	17	1140	1120	1.55	--	280	10
SEP											
06...	0	350	140	.5	12	864	882	1.18	--	210	20
12...	0	330	140	.6	12	876	854	1.19	--	220	20
19...	0	380	160	.5	13	974	953	1.32	--	220	20
26...	0	380	170	.5	13	958	924	1.30	--	220	30

09430500 GILA RIVER NEAR GILA, NM

LOCATION.--Lat 33°03'40", long 108°32'12", in NE1/4 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) above mean sea level, from 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 except those above 500 ft³/s (14 m³/s), which are fair. Diversions for irrigation of about 500 acres (2.0 km²) above station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--50 years (water years 1928-77), 133 ft³/s (3.767 m³/s) 96,360 acre-ft/yr (119 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.

Other major floods occurred in November 1905, December 1906, and January 1916.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 696 ft³/s (19.7 m³/s) Aug. 20, gage height, 3.35 ft (1.021 m), base discharge, 600 ft³/s (17 m³/s); minimum, 18 ft³/s (0.51 m³/s) June 19, 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	60	63	65	88	69	84	90	84	31	109	141
2	62	60	62	65	86	67	86	90	44	31	114	167
3	62	60	62	62	86	67	90	90	45	37	88	170
4	62	60	62	62	84	67	88	90	47	34	76	170
5	65	60	60	62	80	67	88	97	45	35	65	196
6	72	65	60	64	78	67	90	92	45	30	62	289
7	74	78	59	64	78	65	94	90	44	35	57	360
8	76	78	59	64	78	64	99	88	44	32	55	239
9	78	74	58	64	76	62	111	84	45	24	54	185
10	80	74	59	64	76	62	124	82	41	23	52	160
11	78	72	59	58	76	64	136	78	40	25	55	147
12	74	72	59	58	74	65	136	74	35	37	42	133
13	72	72	59	60	72	64	130	74	31	40	220	120
14	70	69	59	62	72	64	124	74	29	40	167	119
15	69	69	59	62	70	64	119	72	26	70	239	111
16	67	69	59	60	70	64	116	70	24	50	406	100
17	65	67	58	60	69	64	111	69	22	50	467	90
18	65	65	59	60	69	64	106	65	21	47	412	92
19	65	65	58	60	69	64	104	65	20	42	430	88
20	64	64	59	60	70	64	102	64	20	52	545	82
21	64	62	58	64	70	65	104	62	21	58	436	78
22	64	62	57	67	70	65	104	62	22	62	375	74
23	64	62	57	69	70	64	102	60	23	74	310	74
24	64	62	60	69	70	65	99	58	25	84	255	74
25	62	62	60	67	72	65	97	57	31	102	228	70
26	60	62	60	65	74	70	99	57	35	144	170	69
27	60	62	63	64	72	84	99	50	35	204	141	69
28	60	63	65	64	70	84	104	52	37	185	122	70
29	60	63	72	65	---	90	102	49	40	200	109	67
30	67	63	72	84	---	92	99	48	36	154	102	67
31	65	---	68	90	---	86	---	40	---	141	104	---
TOTAL	2074	1980	1884	2004	2089	2130	2147	2241	1017	2191	6192	3894
MEAN	66.9	64.0	60.8	64.6	74.6	68.7	105	72.3	33.9	70.7	200	130
MAX	80	78	72	90	88	92	136	99	47	204	565	360
MIN	60	60	57	58	69	62	84	44	20	23	52	67
AC-FT	4110	3930	3740	3970	4140	4220	6240	4450	2020	4350	12280	7720
CAL YR 1976	TOTAL	40556	MEAN	111	MAX	1780	MIN	30	AC-FT	80840		
WTR YR 1977	TOTAL	30843	MEAN	84.5	MAX	565	MIN	20	AC-FT	61180		

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 heights 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.--Water-discharge records fair. Diversions for irrigation of about 5,000 acres (20 km²) above station. National Weather Service gage height telemeter at station.

AVERAGE DISCHARGE.--61 years (water years 1906, 1909-10, 1913-55, 1963-77), 195 ft³/s (5.522 m³/s), 141,300 acre-ft/yr (174 km³/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, 3,270 ft³/s (92.6 m³/s) Aug. 16, gage height, 11.91 ft (3.630 m), base discharge, 3,000 ft³/s (85 m³/s); minimum, 13 ft³/s (0.37 m³/s) June 19, 20.

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	60	61	61	64	88	67	99	70	34	34	309	234
2	53	61	62	70	90	63	93	69	36	33	194	199
3	51	60	59	70	88	63	96	67	39	24	108	220
4	53	56	63	74	91	60	99	69	37	29	70	220
5	51	57	70	74	90	63	86	69	35	40	51	434
6	63	69	71	74	89	59	83	68	34	32	40	309
7	72	78	61	76	85	55	82	64	34	30	36	396
8	64	93	66	76	87	55	78	58	33	25	38	304
9	64	89	64	76	87	52	79	58	33	19	29	218
10	109	95	66	70	88	88	88	65	33	41	27	164
11	100	87	72	72	84	45	96	62	32	21	79	169
12	91	85	65	73	75	48	91	60	28	22	441	163
13	79	85	62	75	74	48	101	61	26	19	381	149
14	71	81	63	70	79	48	99	64	21	53	249	133
15	61	81	63	73	81	48	86	59	20	27	245	108
16	58	84	63	65	79	48	102	59	18	29	741	87
17	65	84	64	65	78	46	83	60	18	36	548	69
18	63	82	62	64	78	45	72	70	15	31	418	52
19	61	85	61	71	79	50	76	63	14	29	681	51
20	60	73	59	72	78	52	73	62	13	29	783	45
21	58	78	59	72	78	51	73	53	15	37	518	41
22	50	80	57	76	77	47	78	46	16	43	479	39
23	57	75	58	80	81	43	77	42	16	42	419	60
24	70	67	62	80	74	41	65	40	16	53	304	49
25	47	70	58	75	74	43	70	39	22	60	242	48
26	40	81	57	76	77	50	75	37	21	87	191	62
27	45	92	74	78	65	55	77	36	24	114	149	72
28	52	72	81	73	64	58	76	34	28	147	134	57
29	53	65	86	68	---	90	77	33	28	150	114	60
30	57	62	89	79	---	101	71	34	32	206	100	63
31	57	---	87	86	---	103	---	32	---	293	100	---
TOTAL	1935	2288	2045	2271	2258	1745	2501	1704	771	1837	8258	4277
MEAN	62.4	76.3	66.0	73.3	80.6	56.3	83.4	55.0	25.7	59.3	266	143
MAX	109	95	89	86	91	103	102	70	39	293	783	434
MIN	40	56	57	64	64	41	65	32	13	19	27	39
AC-FT	3840	4540	4060	4500	4480	3460	4960	3380	1530	3640	16380	8480

CAL YR 1976 TOTAL 45921.6 MEAN 125 MAY 2730 MIN 9.6 AC-FT 91090
WTR YR 1977 TOTAL 31890.0 MEAN 87.4 MAY 783 MIN 13 AC-FT 63250

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.--50 years (1927-77), 175 ft³/s (4.956 m³/s), 127,000 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 or 7.858 m); minimum, 1 ft³/s (0.028 m³/s) July 14, 1934.

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)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
July 30	1830	2,200 62.3	9.38 2.859	Aug. 13	0600	*4,450 126	11.65 3.551
Aug. 11	2300	3,750 106	10.95 3.338				

Minimum daily, 14 ft³/s (.040 m³/s) June 20, 21.

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	38	88	80	68	99	73	78	76	26	24	322	170
2	39	87	80	69	100	69	82	75	27	26	185	121
3	41	85	80	70	99	69	80	75	27	25	129	129
4	41	83	80	74	99	68	82	75	29	23	88	123
5	41	84	76	76	99	67	82	75	30	28	66	139
6	40	84	74	77	96	68	78	74	29	29	52	295
7	38	78	72	75	96	63	79	70	30	25	48	237
8	35	83	78	77	95	62	76	63	29	25	48	214
9	30	82	80	78	95	59	76	62	27	18	59	172
10	32	79	82	78	94	57	74	64	28	17	43	141
11	30	80	76	76	94	56	80	62	28	15	477	134
12	32	80	73	75	85	55	88	58	27	20	911	121
13	35	92	72	77	80	51	99	56	22	31	1360	110
14	38	92	75	76	80	46	99	60	20	32	398	103
15	36	90	76	76	87	48	87	58	18	32	359	94
16	35	88	77	72	85	50	90	55	17	24	647	83
17	46	88	77	68	83	51	94	54	17	28	695	75
18	51	85	78	67	83	49	79	57	16	28	520	68
19	51	82	78	72	80	47	77	58	15	24	756	64
20	51	80	77	74	84	50	74	53	14	19	795	61
21	52	80	76	76	84	49	75	51	14	26	606	58
22	54	79	75	82	85	49	77	46	19	27	526	56
23	56	80	75	83	86	48	83	39	17	30	440	55
24	58	79	68	85	86	46	76	36	17	32	334	55
25	56	79	65	90	77	48	72	36	16	59	276	54
26	54	76	63	90	85	53	77	35	16	58	224	53
27	65	74	66	90	77	57	80	33	16	100	179	56
28	96	78	66	90	71	59	82	30	17	172	156	55
29	95	78	64	90	---	66	83	26	20	170	138	54
30	91	80	70	90	---	76	78	29	20	357	116	51
31	91	---	71	90	---	78	---	28	---	392	122	---
TOTAL	1548	2473	2300	2431	2464	1787	2437	1669	648	1916	11075	3201
MEAN	49.9	82.4	74.2	78.4	88.0	57.6	81.2	53.8	21.6	61.8	357	107
MAX	96	92	82	90	100	78	99	76	30	392	1360	295
MIN	30	74	63	67	71	46	72	26	14	15	43	51
AC-FT	3070	4910	4560	4820	4890	3540	4830	3310	1290	3800	21970	6350
CAL YR 1976	TOTAL	44500	MEAN 122	MAX 2620	MIN 12	AC-FT 88270						
WTR YR 1977	TOTAL	33949	MEAN 93.0	MAX 1360	MIN 14	AC-FT 67340						

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 1976.

COOPERATION.--Records furnished by Gila Water Commissioner.

ANNUAL DIVERSIONS, IN ACRE-FEET, TO EACH CANAL DURING CALENDAR YEAR 1976 AND WATER YEAR 1977

Canal	Calendar year 1976	Water year 1977
09433000. Sunset	12,540	6,050
09436000. New Model	3,800	2,180
09437500. Valley	2,080	847
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	18,420	9,080

COMBINED MONTHLY DISCHARGE OF CANALS DIVERTING FROM GILA RIVER IN DUNCAN VALLEY, NM-AZ,
DURING WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Discharge, in cubic feet per second			Diversions in acre-feet
	Maximum	Minimum	Mean	
October	36.6	12.6	23.6	1,450
November	26.2	4.5	17.6	1,050
December	26.7	14.8	17.7	1,090
CAL YR 1976	72.8	0	25.4	18,420
January	0	0	0	0
February	23.6	0	14.7	817
March	17.0	0	.94	58
April	32.1	0	10.5	622
May	17.5	0	7.1	438
June	14.8	0	5.8	345
July	11.0	0	4.8	298
August	41.0	1.5	24.4	1,500
September	51.9	2.8	23.7	1,410
WTR YR 1977	51.9	0	12.5	9,080

09442000 GILA RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 32°57'55", long 109°18'25", in NE¼SE¼ sec.25, T.5 S., R.29 E., Greenlee County, Hydrologic Unit 15040002, on right bank 60 ft (18 m) upstream from bridge on county road, 6 mi (10 km) upstream from San Francisco River, and 6 mi (10 km) south of Clifton.

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 3,336.38 ft (1,016.929 m) above mean sea level (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 present site at datum 0.91 ft (0.277 m) lower. June 1948 to Oct. 17, 1967, water-stage recorder at site 0.2 mi (0.3 km) upstream at datum 3.12 ft (0.951 m) higher. Oct. 18, 1967, to June 23, 1974, at site 500 ft (150 m) downstream at datum 0.44 ft (0.134 m) higher.

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.--56 years (water years 1912-17, 1928-77), 183 ft³/s (5.183 m³/s), 132,600 acre-ft/yr (163 km³/yr); median of yearly mean discharges, 137 ft³/s (3.88 m³/s), 99,300 acre-ft/yr (120 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) Oct. 21, 1972 (gage height, 18.7 ft or 5.70 m, from high-water mark in gage well, at site and datum then in use, 20.0 ft or 6.10 m, from profile past gage at present site and datum); minimum daily, 5 ft³/s (0.14 m³/s) Aug. 24, 1962.

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)
Aug. 12	0800	2,710 76.7	7.88 2.402
Aug. 13	1630	*2,820 79.9	8.00 2.438

Minimum daily, 9.3 ft³/s (0.263 m³/s) June 27, 28.

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	25	49	58	64	80	62	32	23	16	9.8	371	104
2	25	57	57	67	84	61	35	22	16	9.8	621	144
3	25	58	59	68	87	57	36	21	15	10	158	116
4	23	58	58	69	87	54	31	19	15	408	100	117
5	23	56	58	70	81	52	31	19	16	33	77	222
6	22	59	59	71	79	50	31	20	15	24	64	246
7	22	62	57	74	76	49	29	20	15	21	54	176
8	22	61	56	76	73	48	26	18	14	19	52	202
9	22	58	59	79	71	45	28	18	14	18	51	136
10	22	51	59	80	71	39	27	18	14	18	50	100
11	22	46	57	80	68	36	27	18	13	17	50	73
12	22	48	55	80	68	38	28	17	13	16	1280	68
13	22	53	54	79	64	35	33	17	13	17	1420	59
14	30	57	53	79	58	34	39	19	13	30	592	53
15	25	64	59	77	56	32	46	18	12	56	272	48
16	23	63	63	76	57	30	45	17	11	32	482	47
17	23	62	63	73	57	30	40	16	12	22	598	36
18	23	59	63	69	56	26	43	17	12	23	495	26
19	22	57	63	68	55	25	39	17	12	23	788	24
20	22	55	63	68	56	25	33	17	12	18	631	20
21	23	53	63	70	56	24	34	17	12	21	210	22
22	24	52	63	76	54	24	33	18	14	236	60	20
23	24	52	64	79	52	24	32	18	13	103	50	20
24	28	50	65	81	57	24	30	17	11	238	50	19
25	29	48	61	81	59	24	31	17	9.8	141	50	18
26	32	51	58	81	56	25	29	17	9.8	119	50	18
27	32	53	59	79	63	25	29	16	9.3	42	50	18
28	30	50	59	76	64	25	29	15	9.3	126	50	19
29	47	52	59	76	---	27	27	15	9.8	82	50	23
30	49	54	58	80	---	26	25	16	10	92	46	20
31	49	---	59	80	---	29	---	16	---	566	40	---
TOTAL	832	1648	1841	2326	1845	1105	978	553	381.0	2590.6	8912	2214
MEAN	26.8	54.9	59.4	75.0	65.9	35.6	32.6	17.8	12.7	83.6	287	73.8
MAX	49	64	65	81	87	62	46	23	16	566	1420	246
MIN	22	46	53	64	52	24	25	15	9.3	9.8	40	18
AC-FT	1650	3270	3650	4610	3660	2190	1940	1100	756	5140	17680	4390
CAL YR 1976	TOTAL	32128.0	MEAN 87.8	MAX 1500	MIN 17	AC-FT 63730						
WTR YR 1977	TOTAL	25225.6	MEAN 69.1	MAX 1420	MIN 9.3	AC-FT 50030						

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)
OCT 13...	1000	21	560	8.4	17.0	6	8.5	56	120	0	34	8.3
NOV 17...	1130	62	558	8.2	11.0	60	9.4	39	140	0	40	9.3
DEC 15...	1030	59	520	7.9	5.0	40	12.6	36	150	0	44	9.8
JAN 13...	1100	80	620	8.4	9.0	60	10.6	41	150	0	44	9.5
FEB 22...	1400	73	630	9.0	16.0	30	9.9	52	150	0	43	9.7
MAR 16...	1300	45	640	8.4	13.0	10	--	16	130	0	38	8.9
APR 16...	1000	40	635	8.8	19.0	4	11.0	60	120	0	35	9.0
MAY 03...	1545	20	645	9.0	21.0	4	9.4	24	110	0	30	7.8
JUN 16...	0900	18	610	7.6	25.0	3	9.8	70	110	0	30	7.8
JUL 18...	1000	15	650	8.2	29.0	280	6.6	320	130	0	38	7.5
AUG 18...	1230	370	290	8.4	28.0	8400	6.1	5400	92	2	29	4.7
SEP 16...	1500	41	540	8.7	27.0	230	6.8	600	130	0	40	7.6

DATE	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AN- ION- RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 13...	91	3.6	4.1	203	0	81	36	2.1	45	397	403	.54
NOV 17...	70	2.6	3.4	222	0	59	31	2.2	35	364	361	.50
DEC 15...	75	2.7	3.2	234	0	71	31	2.0	38	390	391	.53
JAN 13...	64	2.3	2.8	195	11	66	31	2.1	35	360	364	.49
FEB 22...	76	2.7	3.6	230	0	79	35	2.1	36	407	399	.55
MAR 16...	90	3.4	3.8	210	5	89	43	1.9	38	412	423	.56
APR 16...	92	3.6	4.0	210	4	83	38	1.8	41	402	412	.55
MAY 03...	93	3.9	3.8	190	8	81	50	1.9	38	394	408	.54
JUN 16...	94	4.0	3.9	210	0	76	35	2.0	38	385	391	.52
JUL 18...	90	3.5	5.2	210	0	94	37	1.7	40	408	417	.55
AUG 18...	24	1.1	3.5	110	0	29	9.7	1.4	30	186	186	.25
SEP 16...	62	2.4	4.7	220	0	61	25	2.0	40	344	351	.47

GILA RIVER BASIN

09442000 GILA RIVER NEAR CLIFTON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHROMIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA- TERIAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT									
13...	2	10	4	530	50	<100	<10	20	0
NOV									
17...	--	20	--	6200	40	<100	--	180	0
DEC									
15...	--	20	--	3700	30	<100	--	110	10
JAN									
13...	--	10	--	4900	10	<100	--	180	10
FEB									
22...	--	<10	--	2000	70	<100	--	80	10
MAR									
16...	--	<10	--	1200	70	<100	--	50	10
APR									
16...	--	10	--	350	100	<100	--	20	10
MAY									
03...	2	<10	5	330	10	<100	5	50	0
JUN									
16...	--	10	--	240	50	100	--	40	10
JUL									
18...	--	40	--	15000	40	<100	--	490	8
AUG									
18...	--	720	--	260000	80	500	--	16000	4
SEP									
16...	--	110	--	14000	50	<100	--	480	0

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MA- TERIAL (UG/G)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA- TERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA- TERIAL (UG/G)
OCT								
13...	--	.0	1	1	10	<1	0	8
NOV								
17...	--	--	0	--	<10	--	30	--
DEC								
15...	.1	--	1	--	<10	--	20	--
JAN								
13...	.1	--	1	--	<10	--	20	--
FEB								
22...	.2	--	1	--	<10	--	40	--
MAR								
16...	.1	--	1	--	<10	--	40	--
APR								
16...	.0	--	0	--	<10	--	30	--
MAY								
03...	.2	.0	0	0	<10	<1	40	6
JUN								
16...	6.0	--	1	--	<10	--	10	--
JUL								
18...	.0	--	1	--	<10	--	100	--
AUG								
18...	.4	--	0	--	20	--	1100	--
SEP								
16...	.1	--	0	--	<10	--	80	--

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

GILA RIVER BASIN

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09442000 GILA RIVER NEAR CLIFTON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL KJEL. NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT 13...	.26	.23	.02	100	.28	.05	.05
NOV 17...	.34	.23	.40	--	.74	.22	.04
DEC 15...	.34	.32	.32	--	.66	.15	.07
JAN 13...	.39	.39	.38	--	.77	.23	.10
FEB 22...	.25	.25	.15	--	.40	.19	.07
MAR 16...	.37	.36	.65	--	1.0	.03	.03
APR 16...	.71	.10	.39	--	1.1	.01	.00
MAY 03...	.14	.13	.11	110	.25	.01	.04
JUN 16...	.01	.01	.16	--	.17	.04	.04
JUL 18...	.81	--	1.0	--	1.8	.79	--
AUG 18...	.77	--	7.5	--	8.3	6.3	--
SEP 16...	.35	--	1.0	--	1.4	.33	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 13...	5	2	0	20	190	160	10	<1
NOV 17...	2	--	0	--	180	110	<10	--
DEC 15...	6	--	0	--	200	120	<10	--
JAN 13...	6	--	100	--	150	100	<10	--
FEB 22...	6	--	0	--	180	130	10	--
MAR 16...	4	--	100	--	220	150	<10	--
APR 16...	3	--	0	--	190	150	<10	--
MAY 03...	6	2	0	50	210	150	<10	0
JUN 16...	6	--	200	--	210	160	10	--
JUL 18...	8	--	400	--	240	160	10	--
AUG 18...	100	--	2300	--	250	60	20	--
SEP 16...	5	--	200	--	200	110	<10	--

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

09442000 GILA RIVER NEAR CLIFTON, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANTDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)
OCT					
13...	1000	1.1	.01	0	3
NOV					
17...	1130	2.5	.00	--	2
DEC					
15...	1030	3.5	.00	--	2
JAN					
13...	1100	3.2	.00	--	2
FEB					
22...	1400	1.7	.00	--	3
MAR					
16...	1300	.9	.00	--	1
APR					
16...	1000	1.4	.00	--	2
MAY					
03...	1545	.8	.00	0	2
JUN					
16...	0900	1.0	.00	--	6
JUL					
18...	1000	5.4	.00	--	3
AUG					
18...	1230	219	.00	--	0
SEP					
16...	1500	10	.00	--	2

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PFR- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
MAY			
03...	1545	94950	860

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY	3,77
TIME	1545	
TOTAL CELLS/ML	860	
DIVERSITY: DIVISION	0.8	
...CLASS	0.8	
...ORDER	1.1	
...FAMILY	2.3	
...GENUS	2.6	
ORGANISM	CELLS /ML	PER- CENT
CHRYSTOPHYTA		
...BACILLARIOPHYCEAE		
...PENNULACEAE		
...ACHNANTHACEAE		
...ACHNANTHUS	19	2
...COCCONFIS	32	4
...CYMBELLACEAE		
...CYMBELLA	13	1
...DIATOMACEAE		
...DIATOMA	6	1
...GOMPHONEMACEAE		
...GOMPHONEMA	350#	40
...NAVICULACEAE		
...GYROSGMA	6	1
...NAVICULA	26	3
...NITZSCHACEAE		
...DENTICULA	32	4
...NITZSCHIA	160#	19
CYANOPHYTA (BLUE-GREEN ALGAE)		
...CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCACEAE		
...ANACYSTIS	90	10
...HORMOGONALES		
...OSCILLATORIA		
...OSCILLATORIA	130	15

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

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

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LOCATION.--Lat 33°44'12", long 108°46'14", in NE¼NW¼ 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).

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 datum 21.3 ft (6.49 m) higher.

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.--18 years, 23.4 ft³/s (0.663 m³/s), 16,950 acre-ft/yr (20.9 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, 642 ft³/s (18.2 m³/s) Sept. 3, gage height, 5.14 ft (1.567 m), base discharge, 450 ft³/s (13 m³/s); minimum, 1.1 ft³/s (0.031 m³/s) July 9, 10.

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	5.7	5.0	5.5	7.2	5.6	5.0	4.6	4.1	2.3	2.2	4.1	43
2	5.3	5.0	5.5	7.2	5.8	4.7	4.5	3.6	2.5	2.2	3.9	43
3	5.3	5.8	5.7	7.8	5.6	4.5	4.6	3.7	2.7	2.3	3.9	115
4	5.6	5.8	5.4	8.0	5.4	4.7	4.5	4.3	3.0	2.8	3.9	72
5	5.8	6.0	5.4	7.8	5.6	4.6	4.3	4.0	3.5	3.2	3.9	40
6	6.3	7.1	5.3	7.5	5.7	4.5	4.2	3.8	3.6	3.0	3.9	38
7	7.4	8.0	5.0	6.0	6.0	4.2	4.2	3.0	3.5	2.3	4.0	30
8	6.1	7.3	5.2	7.1	5.9	4.5	4.2	3.8	3.5	1.8	4.0	25
9	24	6.6	5.2	6.0	5.9	4.4	4.1	4.2	3.2	1.4	4.0	21
10	8.6	6.2	4.9	6.4	6.6	4.4	4.0	3.6	3.0	1.4	4.2	19
11	11	6.1	4.8	6.7	6.4	4.1	4.0	4.2	2.7	1.5	16	19
12	8.5	6.2	4.8	6.6	6.4	4.1	4.0	4.1	2.6	1.7	9.8	14
13	6.5	6.0	4.8	7.2	6.5	4.3	4.1	4.2	2.2	1.0	14	12
14	5.9	6.2	4.5	6.6	6.4	4.4	4.5	4.4	1.9	1.8	8.8	11
15	5.6	6.2	4.7	6.3	6.6	4.3	4.5	4.1	1.7	2.8	9.8	10
16	5.4	6.2	4.8	5.9	6.5	4.4	4.4	3.9	1.7	2.4	11	9.8
17	5.9	6.1	4.2	6.2	6.4	4.5	4.3	3.7	1.8	2.5	13	0.5
18	6.4	6.1	4.7	6.8	6.4	4.2	4.2	3.7	1.6	2.2	12	0.1
19	6.7	6.0	5.0	6.2	6.2	4.3	4.2	3.5	1.7	2.2	19	8.8
20	6.6	6.0	4.1	6.1	6.0	4.2	4.3	3.2	1.9	2.2	23	8.5
21	6.6	5.9	4.0	6.2	5.8	4.2	4.0	3.4	2.2	2.5	25	8.1
22	6.8	5.8	5.0	6.1	6.0	4.2	3.8	3.0	1.9	7.1	37	8.1
23	6.8	5.6	5.5	5.9	5.7	4.2	4.9	2.8	1.9	10	33	8.0
24	6.7	5.7	5.2	5.8	5.8	4.1	4.6	2.5	2.9	18	33	7.7
25	6.5	5.9	5.1	5.5	5.9	4.1	4.0	2.2	3.1	8.0	29	7.5
26	6.5	6.0	5.1	5.5	5.4	4.3	3.6	2.6	2.7	8.6	27	7.2
27	6.4	6.0	5.7	5.4	5.3	4.8	3.4	2.6	2.6	4.9	27	7.3
28	6.6	6.0	5.7	5.3	5.2	4.9	3.2	2.5	2.3	5.0	28	7.0
29	6.7	5.9	5.9	5.5	---	5.1	2.9	2.1	2.5	4.7	30	6.4
30	6.9	5.7	5.8	5.7	---	4.8	3.7	2.3	2.2	4.5	32	6.1
31	6.3	---	6.0	5.8	---	4.7	---	2.2	---	4.2	34	---
TOTAL	221.4	184.2	158.5	199.3	167.0	137.9	123.8	106.2	74.9	117.3	511.2	640.1
MEAN	7.14	6.14	5.11	6.43	5.96	4.45	4.13	3.43	2.50	3.78	16.5	21.3
MAX	24	8.0	6.0	8.0	6.6	5.1	4.9	4.4	3.6	14	37	115
MTN	5.3	5.6	4.0	5.3	5.2	4.1	2.9	2.1	1.6	1.4	3.9	6.1
AC-FT	439	365	314	395	331	274	246	211	149	233	1010	1270
CAL YR 1976	TOTAL	3609.6	MEAN	9.86	MAX	115	MTN	2.6	AC-FT	7160		
WTR YR 1977	TOTAL	2641.8	MEAN	7.24	MAX	115	MTN	1.4	AC-FT	5240		

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. Datum of gage is 4,841 ft (1,475.5 m) above mean sea level. 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.--13 years (water years 1965-77), 64.6 ft³/s (1.829 m³/s), 46,800 acre-ft/yr (57.7 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)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
June 22	1630	1,010 28.6	4.48 1.366	Sept. 4	0230	1,560 44.2	4.83 1.472
Aug. 13	unknown	*4,940 140	6.74 2.054				

No flow for many days.

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	.00	.00	10	10	9.8	7.6	.50	.18	.00	.00	9.8	12
2	.00	.00	8.7	11	9.8	7.9	.45	.20	.00	.00	.65	12
3	.00	1.8	8.2	10	9.8	7.6	.45	.20	.00	1.6	.00	101
4	.00	6.9	8.2	10	9.8	7.2	.40	.20	.00	2.0	.00	261
5	.00	7.8	8.2	10	9.8	7.2	.40	.20	.00	.00	.00	88
6	.00	29	7.8	11	9.8	7.6	.40	.18	.00	2.9	.00	66
7	.00	30	6.9	11	9.2	6.8	.40	.18	.00	1.7	.00	44
8	.00	24	6.9	10	9.2	6.4	.40	.18	.00	1.0	.00	23
9	35	20	6.9	9.2	9.2	5.7	.40	.18	.00	.47	.00	15
10	140	18	7.4	6.8	9.2	4.9	.36	.18	.00	.00	36	30
11	33	16	7.4	6.8	9.2	5.7	.36	.18	.00	.00	12	70
12	24	15	7.4	7.6	9.2	5.7	.32	.20	.00	.00	76	81
13	21	15	7.4	9.8	8.7	5.7	.38	.24	.00	.00	150	22
14	19	14	6.9	10	8.7	4.9	.34	.24	.00	.00	130	11
15	18	14	6.5	10	8.3	4.9	.34	.24	.00	19	100	8.2
16	18	12	6.9	8.7	8.3	4.9	.30	.18	.00	.06	120	7.4
17	15	12	6.0	8.7	7.9	4.9	.30	.18	.00	.00	275	.00
18	14	11	6.9	9.8	7.9	3.4	.18	.18	.00	.00	190	.00
19	14	11	6.9	9.8	7.6	3.4	.16	.18	.00	.00	152	.00
20	13	9.6	5.6	9.8	7.6	2.4	.16	.18	.00	.96	162	.00
21	13	10	3.8	9.8	7.6	.86	.16	.10	.00	16	128	.00
22	13	10	3.8	9.8	6.8	.70	.14	.11	.00	40	201	.00
23	12	10	7.4	9.8	7.2	.70	.12	.00	.04	59	128	.00
24	8.4	10	6.9	9.8	6.8	.70	.14	.00	.10	104	100	.00
25	.00	10	6.9	9.8	7.6	.62	.16	.05	.00	124	56	.00
26	.00	9.1	6.9	9.8	7.6	.62	.18	.00	.00	47	31	.00
27	.00	9.1	6.9	9.8	7.6	.56	.18	.00	.00	40	20	.00
28	.00	9.1	7.1	10	7.6	.56	.18	.00	.00	29	10	.00
29	.00	9.1	7.8	9.8	---	.62	.18	.00	.00	24	7.4	.00
30	.00	9.6	7.8	11	---	.86	.18	.00	.00	18	6.0	.00
31	.00	---	7.8	10	---	.56	---	.00	---	16	22	---
TOTAL	408.40	363.10	220.2	299.4	237.8	122.16	8.12	4.24	28.04	574.69	2130.85	811.60
MEAN	13.2	12.1	7.10	9.66	8.49	3.94	.27	.14	.80	18.5	68.7	27.1
MAX	140	30	10	11	9.8	7.9	.50	.24	.23	124	275	261
MIN	.00	.00	3.8	6.8	6.8	.56	.12	.00	.00	.00	.00	.00
AC-FT	810	720	437	594	472	242	16	8.4	48	1140	4230	1410

CAL YR 1976 TOTAL 7459.19 MEAN 20.4 MAY 1150 MIN .00 AC-FT 14800
WTR YR 1977 TOTAL 5204.60 MEAN 14.7 MAY 275 MIN .00 AC-FT 10320

LOCATION.--Lat 35°14'48", long 108°52'47", in NE¼ 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).

Date	Time	Discharge		Gage height	
		(ft ³ /s)	(m ³ /s)	(ft)	(m)
Aug. 13	2215	*1,260	35.7	5.39	1.643
Aug. 17	0600	1,210	34.3	5.23	1.594

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	25	27	26	24	22	18	22	17	28	43
2	20	24	26	27	27	24	22	17	22	17	31	29
3	19	24	26	27	27	25	20	16	21	26	26	68
4	22	24	25	28	27	24	22	19	20	26	23	247
5	23	25	24	27	27	23	21	21	22	56	25	100
6	31	31	24	27	27	22	20	23	22	33	25	70
7	27	44	23	27	27	23	19	23	22	23	24	62
8	24	39	23	27	27	24	18	22	24	21	23	44
9	25	36	24	26	27	24	17	23	21	19	22	39
10	178	35	24	24	27	23	14	22	20	19	50	38
11	58	34	23	24	26	23	18	21	20	18	44	79
12	39	33	22	24	26	22	19	21	19	20	62	86
13	36	32	22	25	25	23	20	21	19	21	163	57
14	33	31	22	26	25	23	18	21	19	21	145	41
15	31	32	24	26	24	22	16	22	16	34	102	37
16	31	31	22	26	24	22	16	22	16	24	144	34
17	29	30	20	25	23	22	16	24	16	20	374	29
18	29	30	24	25	25	21	16	25	15	22	194	23
19	27	31	24	26	24	20	16	25	15	22	229	24
20	27	29	23	26	24	20	15	25	15	23	182	25
21	26	29	23	26	25	17	18	24	15	20	140	24
22	24	30	22	27	24	17	16	25	26	48	190	24
23	24	30	23	27	24	19	18	26	30	90	182	25
24	23	29	25	27	23	19	18	23	20	72	109	23
25	23	28	24	27	24	19	18	23	20	195	83	21
26	23	28	23	27	25	21	20	23	19	74	56	22
27	22	28	23	27	24	24	19	24	18	65	41	22
28	22	28	23	26	24	24	18	24	17	57	34	22
29	22	28	24	26	---	26	19	24	22	43	32	23
30	25	26	24	28	---	24	19	23	18	45	26	23
31	25	---	25	27	---	23	---	23	---	42	25	---
TOTAL	995	904	728	815	708	687	548	696	591	1233	2804	1404
MEAN	32.1	30.1	23.5	26.3	25.3	22.2	18.3	22.5	19.7	39.8	90.5	46.8
MAX	178	44	26	28	27	26	22	26	30	195	374	247
MIN	19	24	20	24	23	17	14	17	15	17	22	21
AC-FT	1970	1790	1440	1620	1400	1360	1090	1380	1170	2450	5560	2780
CAL YR 1976	TOTAL	15162	MEAN	41.4	MAX	940	MIN	15	AC-FT	30070		
WTR YR 1977	TOTAL	12113	MEAN	33.2	MAX	374	MIN	14	AC-FT	24030		

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.--9 years (water years 1969-77), 50.8 ft³/s (1.439 m³/s), 36,800 acre-ft/yr (45.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) Oct. 20, 1972 (gage height, 22.56 ft or 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, 1,570 ft³/s (44.5 m³/s) Aug. 19, gage height, 8.45 ft (2.576 m), base discharge, 800 ft³/s (23 m³/s); minimum daily, 3.3 ft³/s (.093 m³/s) Dec. 8-15.

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	8.2	5.8	3.7	5.2	10	11	15	18	4.9	6.0	7.9	7.8
2	8.8	5.3	3.6	4.7	11	11	15	18	4.9	6.3	6.8	8.2
3	7.7	5.1	3.6	5.0	11	11	16	18	4.8	6.5	6.9	7.5
4	7.1	5.0	3.6	4.9	11	11	15	17	5.1	11	7.6	25
5	6.0	5.0	3.6	4.9	11	11	14	16	10	29	6.3	40
6	5.7	4.9	3.5	4.6	11	11	13	16	15	16	6.3	35
7	5.1	5.0	3.5	4.7	11	11	13	14	11	11	5.8	30
8	4.7	5.0	3.3	4.9	11	11	13	13	9.3	8.4	12	28
9	4.9	5.1	3.3	4.9	11	10	13	12	7.9	7.3	10	26
10	4.6	5.2	3.3	4.9	11	11	14	12	6.5	7.2	8.9	25
11	4.2	5.4	3.3	4.9	11	11	16	11	5.8	7.2	33	27
12	4.0	6.1	3.3	5.1	11	11	18	11	5.3	11	47	30
13	4.0	7.9	3.3	5.3	11	11	19	11	5.0	16	156	28
14	4.3	8.0	3.3	5.4	12	11	20	12	4.7	10	46	25
15	4.5	7.4	3.3	5.5	12	10	19	12	4.3	41	65	23
16	4.1	6.4	3.7	5.3	12	9.9	19	11	3.8	11	73	21
17	3.9	6.4	3.8	5.5	11	10	18	9.9	3.6	21	70	20
18	3.9	6.5	3.8	5.0	11	9.8	17	9.3	3.5	19	46	18
19	3.8	6.4	3.8	5.0	11	9.5	17	8.8	3.4	9.0	160	17
20	3.5	6.5	3.9	5.0	11	9.4	18	8.4	3.4	15	103	10
21	3.6	6.5	3.9	5.0	11	9.2	17	8.5	3.6	57	93	8.2
22	3.8	6.5	3.9	5.0	11	9.0	17	7.9	7.1	58	88	8.6
23	4.6	6.5	4.0	5.0	11	9.0	17	7.3	9.0	33	112	9.3
24	5.2	6.5	4.0	5.0	11	9.0	18	7.2	4.6	73	103	8.8
25	4.4	6.6	4.0	5.0	11	8.9	18	7.3	4.0	97	100	6.8
26	4.1	6.6	4.0	5.0	11	10	19	6.7	4.0	64	60	6.5
27	13	7.2	4.0	5.0	11	14	19	6.2	4.1	27	40	7.6
28	15	7.7	3.9	5.0	10	19	19	6.3	5.0	18	30	7.7
29	8.7	5.2	4.0	5.0	---	62	19	5.7	5.0	14	20	7.2
30	7.0	4.0	4.1	10	---	31	18	5.2	5.1	11	9.2	6.5
31	6.3	---	4.2	10	---	18	---	4.9	---	9.5	8.0	---
TOTAL	178.7	181.7	114.5	165.7	309	410.7	503	331.6	173.7	730.4	1540.7	528.7
MEAN	5.76	6.06	3.69	5.35	11.0	13.2	16.8	10.7	5.79	23.6	49.7	17.6
MAX	15	8.0	4.2	10	12	62	20	18	15	97	160	40
MIN	3.5	4.0	3.3	4.6	10	8.9	13	4.9	3.4	6.0	5.8	6.5
AC-FT	354	360	227	329	613	815	998	658	345	1450	3060	1050
CAL YR 1976	TOTAL	10292.1	MEAN 28.1	MAX 975	MIN 3.3	AC-FT 20410						
WTR YR 1977	TOTAL	5168.4	MEAN 14.2	MAX 160	MIN 3.3	AC-FT 10250						

GILA RIVER BASIN

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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) above mean sea level. 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.--53 years (1913-15, 1916-17, 1927-77) 188 ft³/s (5.324 m³/s), 136,200 acre-ft/yr (168 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (107 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 or 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, 2,520 ft³/s (71.4 m³/s) Sept. 5, gage height, 5.76 ft (1.756 m), base discharge, 2,000 ft³/s (57 m³/s); minimum daily, 18 ft³/s (0.510 m³/s) June 19.

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	44	50	47	55	59	53	60	44	30	39	76	63
2	44	50	47	55	58	53	58	44	34	37	63	96
3	42	48	47	55	58	53	59	44	38	36	56	112
4	41	48	47	55	58	52	58	47	39	51	52	128
5	41	47	48	55	58	53	55	48	112	60	40	402
6	37	46	48	56	56	53	52	45	52	73	40	176
7	32	46	50	55	56	52	51	41	51	63	40	142
8	28	46	50	55	56	51	48	39	46	48	39	105
9	27	46	45	55	56	51	46	44	44	40	64	81
10	30	45	44	55	58	50	45	45	42	38	47	69
11	30	45	44	53	58	50	40	46	39	42	130	68
12	31	46	46	53	58	50	40	42	36	45	197	117
13	32	50	47	53	58	50	46	39	35	46	459	110
14	34	51	50	52	56	50	45	42	34	48	382	87
15	40	50	51	52	55	50	47	44	32	51	438	65
16	40	47	51	52	53	50	50	44	31	55	568	59
17	40	46	51	52	53	50	50	41	30	112	545	51
18	39	46	51	52	48	50	50	41	24	118	416	46
19	35	46	52	52	48	48	48	42	18	126	428	44
20	34	46	52	52	48	48	48	42	22	58	457	42
21	35	46	52	53	48	45	48	44	25	87	340	41
22	40	46	51	56	51	40	50	42	24	134	314	42
23	42	46	50	55	51	38	48	40	27	124	350	42
24	46	47	50	53	50	40	51	40	46	227	330	42
25	42	47	50	53	48	41	51	35	44	308	213	41
26	41	46	47	53	52	42	47	30	41	305	149	39
27	53	46	48	53	53	51	48	29	39	139	112	39
28	63	47	50	52	55	58	50	31	37	108	93	40
29	56	47	50	53	---	71	50	31	29	93	81	39
30	51	47	50	62	---	103	44	28	28	78	69	38
31	50	---	51	60	---	71	---	28	---	87	63	---
TOTAL	1240	1410	1517	1677	1516	1617	1483	1242	1129	2876	6651	2466
MEAN	40.0	47.0	48.9	54.1	54.1	52.2	49.4	40.1	37.6	92.8	215	82.2
MAX	63	51	52	62	59	103	60	48	112	308	568	402
MIN	27	45	44	52	48	38	40	28	18	36	39	38
AC-FT	2460	2800	3010	3330	3010	3210	2940	2460	2240	5700	13190	4890
CAL YR 1976	TOTAL	33613	MEAN 91.8	MAX	1660	MIN 27	AC-FT 66670					
WTR YR 1977	TOTAL	24824	MEAN 68.0	MAX	568	MIN 18	AC-FT 49240					

09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ

LOCATION.--Lat 33°01'33", long 109°18'06", in NE¼NW¼ 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DTS-SOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL./100 ML)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DTS-SOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG/L)
OCT 13...	1130	22	2150	8.4	18.5	4	9.3	26	370	200	120	17
NOV 17...	0930	46	1400	8.4	8.0	6	10.0	5	260	82	79	14
DEC 15...	0915	52	1200	7.8	4.0	5	15.2	4	250	83	77	15
JAN 13...	1400	50	1700	8.3	12.0	4	11.1	1	290	130	92	14
FEB 22...	1130	55	1532	8.7	14.0	10	9.7	2	290	110	90	15
MAR 16...	1500	60	1700	8.3	15.0	10	--	1	300	130	95	14
APR 16...	1300	50	1750	8.8	23.0	15	9.0	4	300	130	93	16
MAY 03...	1230	40	1560	8.3	20.0	5	8.8	22	320	150	100	16
JUN 16...	1045	30	2380	7.6	26.0	10	8.8	80	340	170	110	17
JUL 18...	1500	50	1460	8.1	29.0	290	6.5	460	250	110	78	14
AUG 19...	1030	400	440	7.9	25.0	1200	7.0	5200	120	0	36	7.4
SEP 16...	1200	52	1340	8.3	25.0	110	6.7	160	250	65	77	13

DATE	DTS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DTS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DTS-SOLVED SULFATE (SO4) (MG/L)	DTS-SOLVED CHLORIDE (CL) (MG/L)	DTS-SOLVED FLUORIDE (F) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DTS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DTS-SOLVED SOLIDS PER AC-FT
OCT 13...	300	6.8	18	207	0	44	570	1.1	45	1290	1220	1.75
NOV 17...	170	4.6	10	211	0	30	300	1.0	35	788	743	1.07
DEC 15...	170	4.6	9.6	209	0	31	310	.9	38	786	755	1.07
JAN 13...	210	5.4	11	196	0	34	400	.9	37	926	896	1.26
FEB 22...	210	5.4	13	208	3	35	390	.8	35	946	895	1.29
MAR 16...	220	5.6	12	207	0	35	410	1.0	36	958	925	1.30
APR 16...	220	5.5	14	200	3	35	410	.9	37	958	928	1.30
MAY 03...	240	5.9	15	200	0	36	450	1.0	34	1030	991	1.40
JUN 16...	320	7.5	19	210	0	39	610	1.2	42	1390	1260	1.89
JUL 18...	180	4.9	12	180	0	29	340	.9	37	846	780	1.15
AUG 19...	42	1.7	4.7	160	0	21	53	.6	34	265	278	.36
SEP 16...	160	4.4	9.8	220	0	24	290	.9	41	760	724	1.03

GILA RIVER BASIN

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09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL. NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
OCT 13...	--	--	.01	.01	.17	65	.18	.08	.08
NOV 17...	.02	.00	.01	.01	.00	--	.01	.07	.04
DEC 15...	--	--	.02	.01	.03	--	.05	.07	.07
JAN 13...	--	--	.01	.01	.18	--	.19	.06	.06
FEB 22...	--	--	.01	.01	.01	--	.02	.04	.04
MAR 16...	--	--	.05	.00	.45	--	.50	.08	.07
APR 16...	--	--	.01	.01	.29	--	.30	.07	.04
MAY 03...	--	--	.03	.02	.35	360	.38	.05	.04
JUN 16...	--	--	.03	.01	.60	--	.63	.09	.09
JUL 18...	--	--	.25	--	1.7	--	2.0	.84	--
AUG 19...	--	--	.26	--	3.6	--	3.9	4.0	--
SEP 16...	--	--	.21	--	.51	--	.72	.30	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (R) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 13...	4	2	100	20	200	160	<10	<1
NOV 17...	0	--	0	--	150	100	<10	--
DEC 15...	3	--	0	--	180	100	<10	--
JAN 13...	3	--	100	--	150	110	<10	--
FEB 22...	3	--	0	--	190	110	<10	--
MAR 16...	3	--	100	--	200	120	10	--
APR 16...	3	--	0	--	140	110	<10	--
MAY 03...	2	5	0	100	160	110	10	0
JUN 16...	4	--	100	--	210	170	10	--
JUL 18...	7	--	300	--	200	110	10	--
AUG 19...	24	--	500	--	140	60	10	--
SEP 16...	3	--	400	--	190	100	10	--

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

GILA RIVER BASIN

09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHROMIUM IN BOTTOM MATERIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MATERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MATERIAL (UG/G)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT 13...	2	10	76	230	40	<100	<10	160	140
NOV 17...	--	20	--	580	40	<100	--	110	90
DEC 15...	--	<10	--	280	40	<100	--	90	70
JAN 13...	--	10	--	250	10	<100	--	90	60
FEB 22...	--	20	--	590	260	<100	--	120	60
MAR 16...	--	30	--	730	40	100	--	110	50
APR 16...	--	10	--	800	80	<100	--	160	30
MAY 03...	4	20	320	320	50	<100	25	110	40
JUN 16...	--	20	--	790	100	<100	--	230	160
JUL 18...	--	80	--	13000	50	100	--	800	20
AUG 19...	--	920	--	44000	50	100	--	3400	4
SEP 16...	--	40	--	7400	40	<100	--	310	40

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MATERIAL (UG/G)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SELENIUM IN BOTTOM MATERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MATERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MATERIAL (UG/G)
OCT 13...	--	.1	0	1	<10	<1	0	43
NOV 17...	--	--	0	--	<10	--	10	--
DEC 15...	.0	--	0	--	<10	--	10	--
JAN 13...	2.0	--	0	--	<10	--	10	--
FEB 22...	.1	--	0	--	<10	--	80	--
MAR 16...	.4	--	0	--	<10	--	20	--
APR 16...	.0	--	0	--	<10	--	80	--
MAY 03...	.1	.0	0	0	<10	<1	20	26
JUN 16...	.0	--	0	--	<10	--	20	--
JUL 18...	.1	--	0	--	<10	--	120	--
AUG 19...	.2	--	0	--	10	--	390	--
SEP 16...	.1	--	0	--	<10	--	40	--

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

GILA RIVER BASIN

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09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)
OCT 13...	1130	2.1	.01	0	2
NOV 17...	0930	1.3	.01	--	2
DEC 15...	0915	1.1	.00	--	1
JAN 13...	1400	.5	.00	--	6
FEB 22...	1130	1.8	.00	--	5
MAR 16...	1500	1.4	.00	--	0
APR 16...	1300	1.7	.00	--	4
MAY 03...	1230	1.5	.00	0	2
JUN 16...	1045	1.6	.00	--	4
JUL 18...	1500	18	.00	--	4
AUG 19...	1030	87	.00	--	1
SEP 16...	1200	4.3	.00	--	4

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
MAY 03...	1230	9600	380

GILA RIVER BASIN

09444600 SAN FRANCISCO RIVER NEAR CLIFTON, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY 3, 77
TIME	1230
TOTAL CELLS/ML	380
DIVERSITY: DIVISION	1.2
..CLASS	1.2
..ORDER	1.5
..FAMILY	3.0
....GENUS	0.0

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALFS		
...OOCYSTACEAE		
....TETRAEDRON	*	0
...SCENEDESMACEAE		
....SCENEDESMUS	11	3
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	3	1
..ZYGNEMATALES		
...DESMIDIACEAE		
....CUSMARIUM	5	1
CHRYSTOPHYTA		
..BACTILLARIOPHYCEAE		
..PENNALFS		
...ACHNANTHACEAE		
....ACHNANTHES	3	1
...CUCCONEIS	27	7
...CYMBELLACEAE		
....AMPHORA	3	1
....EPITHEMIA	19	5
...DIATOMACEAE		
....DIATOMA	3	1
...FRAGILARIACEAE		
....SYNEDRA	5	1
...GOMPHONEMACEAE		
....GOMPHONEMA	22	6
...NAVICULACEAE		
....CALONETS	3	1
....NAVICULA	46	12
...NITZSCHACEAE		
....NITZSCHIA	81#	22
...SURIRELLACEAE		
....CYMATOPLEURA	3	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...CHROCOCCALES		
...CHROCOCCACEAE		
....AGMENELLUM	22	6
..HORMOGONALES		
...NOSTOCACEAE		
....ANABAENA	11	3
...OSCILLATORACEAE	110#	29

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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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) above mean sea level. 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.--32 years, 10.2 ft³/s (0.289 m³/s), 7,400 acre-ft/yr (9.12 hm³/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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	16	16	11	11	5.4	12	17	17	5.8	6.4	17
2	24	19	15	11	8.2	5.8	15	17	17	5.8	6.4	12
3	25	19	16	11	5.8	5.8	17	17	17	5.8	6.4	14
4	25	19	17	11	5.8	5.8	17	17	17	4.5	6.4	12
5	25	20	17	11	5.8	5.8	17	17	17	2.2	6.4	12
6	25	21	17	11	5.8	5.8	17	17	19	.02	6.2	12
7	24	21	15	11	5.8	5.8	17	17	20	.02	6.2	14
8	24	21	16	11	5.8	5.8	17	17	21	2.8	10	16
9	24	21	17	11	5.8	5.8	16	17	21	5.8	17	17
10	24	21	17	11	5.8	5.8	16	17	21	5.4	17	17
11	25	21	17	11	5.0	5.8	17	20	21	3.7	17	17
12	25	21	17	11	6.0	5.4	17	22	21	5.8	17	17
13	25	21	17	11	6.0	5.8	17	22	21	6.4	17	17
14	24	21	14	11	6.0	5.8	17	22	21	6.4	17	17
15	25	21	11	11	6.0	5.8	17	22	21	6.4	17	17
16	25	21	11	11	6.0	5.8	17	22	18	6.4	14	17
17	25	21	11	11	6.0	5.8	17	19	17	6.4	12	17
18	25	21	11	11	6.0	5.8	17	17	17	6.4	12	17
19	25	21	11	11	6.0	5.8	17	17	17	6.2	15	17
20	24	20	11	11	6.0	5.8	17	17	17	6.4	17	17
21	24	21	11	8.7	6.0	5.8	18	17	17	6.4	17	17
22	24	21	11	11	6.0	5.8	17	17	17	6.4	17	17
23	24	21	11	11	6.0	5.8	17	17	17	6.4	17	17
24	24	21	10	11	6.0	5.8	17	17	17	6.4	17	17
25	24	21	9.5	11	5.0	6.0	17	17	17	5.4	17	17
26	24	21	11	11	6.0	6.0	17	17	17	2.3	17	17
27	15	21	11	11	6.0	9.3	17	17	17	6.4	17	17
28	21	20	11	11	6.0	12	17	17	17	6.4	17	17
29	21	18	11	11	---	5.8	17	17	17	6.4	17	17
30	21	15	11	11	---	10	17	17	8.1	6.4	17	17
31	21	---	11	11	---	12	---	17	---	6.4	17	---
TOTAL	736	607	412.5	338.7	171.6	199.5	502	557	539.1	163.94	430.4	483
MEAN	23.7	20.2	13.3	10.9	6.13	6.44	16.7	18.0	18.0	5.29	13.9	16.1
MAX	25	21	17	11	11	12	18	22	21	6.4	17	17
MIN	15	15	9.5	8.7	5.0	5.4	12	17	8.1	.02	6.2	12
AC-FT	1460	1200	818	672	340	396	996	1100	1070	325	854	958
CAL YR 1976	TOTAL	7310.00	MEAN	20.0	MAX	25	MIN	5.6	AC-FT	14500		
WTR YR 1977	TOTAL	5140.74	MEAN	14.1	MAX	25	MIN	.02	AC-FT	10200		

09447000 EAGLE CREEK ABOVE PUMPING PLANT, NEAR MORENCI, AZ

LOCATION.--Lat 33°04'12", long 109°27'05", in SE¼NE¼ sec.22, T.4 S., R.28 E., Greenlee County, Hydrologic Unit 15040005, on right 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 3,695 ft (1,126 m), unadjusted. Since Nov. 15, 1952, supplementary water-stage recorder 90 ft (27 m) upstream at datum of Parshall flume. Aug. 23, 1950, to Nov. 15, 1952, supplementary water-stage recorder at site 75 ft (23 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 12 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; 93 percent of the pumpage was from Eagle Creek.

AVERAGE DISCHARGE (unadjusted).--33 years, 43.4 ft³/s (1.229 m³/s), 31,440 acre-ft/yr (38.8 hm³/yr); median of yearly mean discharges, 34 ft³/s (0.96 m³/s), 24,600 acre-ft/yr (30 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s (595 m³/s) Dec. 30, 1965 (gage height, 12.8 ft or 3.90 m, at supplementary gage); minimum, 3.2 ft³/s (0.091 m³/s) July 1, 1946.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peaks above base of 800 ft³/s (23 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 12	1800	1,060 30.0	5.10 1.554	Aug. 15	0130	925 26.2	4.95 1.509
July 31	2000	*2,190 62.0	6.20 1.890	Aug. 16	0330	1,250 35.4	5.30 1.615
Aug. 12	0600	916 25.9	4.94 1.506				

Minimum discharge, 18 ft³/s (0.51 m³/s) July 11.

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	43	32	32	36	33	31	37	37	27	29	51	30
2	41	33	32	35	33	31	39	37	27	24	28	30
3	37	28	33	35	34	30	41	37	28	22	23	28
4	34	32	32	35	33	31	42	34	31	102	21	28
5	36	31	33	34	32	31	41	33	32	48	21	30
6	38	33	34	35	32	32	41	32	32	32	21	27
7	40	33	33	34	32	30	41	32	29	27	21	24
8	40	33	33	34	32	30	41	31	30	22	21	22
9	37	33	34	34	32	30	41	32	31	20	24	24
10	36	34	34	31	32	30	42	32	31	19	34	25
11	35	34	34	29	31	30	42	31	31	19	34	27
12	35	34	34	32	30	30	42	30	30	132	137	28
13	35	35	34	33	30	30	42	32	30	30	46	27
14	36	35	34	33	30	30	41	34	30	24	43	28
15	36	35	34	32	30	30	40	34	30	26	153	27
16	35	34	33	32	30	30	40	34	30	26	279	26
17	37	34	32	32	30	32	40	32	30	24	89	26
18	39	34	32	32	30	32	40	32	28	31	57	25
19	38	34	34	32	30	31	39	32	26	24	94	25
20	39	34	34	32	30	32	39	30	26	23	52	25
21	40	33	35	32	30	32	38	30	27	22	41	25
22	41	33	34	35	30	32	38	30	30	22	38	26
23	45	34	33	34	30	32	38	30	40	22	34	28
24	44	34	33	34	30	32	39	29	35	23	32	26
25	42	34	33	33	32	32	40	31	32	40	30	28
26	42	34	30	33	32	36	38	31	32	57	30	30
27	46	36	31	32	31	36	38	30	30	35	28	32
28	41	37	32	32	30	36	37	29	29	29	28	32
29	33	35	34	32	---	45	36	28	30	34	28	32
30	34	34	34	34	---	41	36	28	30	28	28	28
31	34	---	35	34	---	38	---	28	---	160	28	---
TOTAL	1189	1009	1029	1027	871	1005	1189	982	904	1176	1594	819
MEAN	38.4	33.6	33.2	33.1	31.1	32.4	39.6	31.7	30.1	37.9	51.4	27.3
MAX	46	37	35	36	34	45	42	37	40	160	279	32
MIN	33	28	30	29	30	30	36	28	26	19	21	22
AC-FT	2360	2000	2040	2040	1730	1990	2360	1950	1790	2330	3160	1620
(†)	594	340	419	529	680	827	791	433	359	316	324	384
(‡)	1920	2040	1810	1680	1510	1720	1700	1440	1270	539	1010	1240

CAL YR 1976 TOTAL 14007 MEAN 38.3 MAX 184 MIN 23 AC-FT 27780 † 5,160 ‡ 20,730
WTR YR 1977 TOTAL 12794 MEAN 35.1 MAX 279 MIN 19 AC-FT 25380 † 6,000 ‡ 17,880

† 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 SE¼NE¼ 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) above mean sea level. 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.--63 years, 436 ft³/s (12.35 m³/s), 315,900 acre-ft/yr (390 hm³/yr); median of yearly mean discharges, 300 ft³/s (8.5 m³/s), 217,000 acre-ft/yr (268 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 or 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, 2,540 ft³/s (71.9 m³/s) Aug. 13, gage height, 6.95 ft (2.118 m), no peak above base of 4,000 ft³/s (113 m³/s); minimum daily, 26 ft³/s (0.74 m³/s) June 20.

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	80	111	111	129	169	139	104	78	45	46	628	130
2	83	118	110	141	167	136	102	77	50	51	775	228
3	77	113	110	141	169	136	107	77	58	51	241	234
4	69	104	112	146	169	132	104	78	63	455	190	189
5	64	102	115	146	162	132	98	78	70	189	142	661
6	62	98	117	146	154	134	92	75	192	130	109	394
7	65	100	108	149	151	132	86	70	77	135	92	368
8	60	98	113	149	146	132	82	66	73	114	81	290
9	54	94	115	149	146	129	80	65	63	93	80	266
10	51	87	113	149	149	120	82	65	62	85	113	211
11	65	82	111	149	146	115	77	70	56	80	106	180
12	65	82	107	146	141	118	72	70	52	78	1140	182
13	63	92	107	146	136	118	73	66	52	132	1770	244
14	54	100	109	146	127	115	90	63	50	104	1590	205
15	66	107	109	146	120	118	92	70	43	147	1540	166
16	66	112	115	146	118	118	104	70	39	178	1890	162
17	65	107	117	144	115	118	100	68	35	160	1800	145
18	66	104	121	141	113	113	100	66	34	200	1520	142
19	68	104	124	136	107	113	102	66	30	206	1630	120
20	66	107	124	136	104	109	100	65	26	140	1490	110
21	68	104	126	139	104	109	98	62	28	114	1430	110
22	72	101	126	154	100	94	98	62	36	402	1240	110
23	89	100	126	156	100	92	98	62	36	241	1110	100
24	90	98	124	154	113	84	98	60	41	387	1010	100
25	90	98	121	151	118	84	102	60	59	645	763	90
26	88	100	117	154	118	84	104	56	55	1180	565	90
27	104	104	115	154	132	86	96	54	53	276	380	84
28	120	107	119	149	141	92	96	49	52	242	268	84
29	118	109	118	149	---	100	94	50	50	206	177	83
30	120	111	119	167	---	136	88	50	45	229	150	85
31	113	---	116	172	---	136	---	47	---	868	129	---
TOTAL	2381	3054	3595	4580	3735	3574	2819	2015	1625	7564	24149	5563
MEAN	76.8	102	116	148	133	115	94.0	65.0	54.2	244	779	185
MAX	120	118	126	172	169	139	107	78	192	1180	1890	661
MIN	51	82	107	129	100	84	72	47	26	46	80	83
AC=FT	4720	6060	7130	9080	7410	7090	5590	4000	3220	15000	47900	11030
CAL YR 1976	TOTAL	74903	MEAN 205	MAX 2480	MIN 47	AC-FT 148600						
WTR YR 1977	TOTAL	64654	MEAN 177	MAX 1890	MIN 26	AC-FT 128200						

GILA RIVER BASIN

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM .7UM-MF (COL./100 ML)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG)
OCT 12...	1530	45	1390	8.5	22.0	7	7.6	18	260	99	78	16
NOV 16...	1500	111	1000	8.3	14.0	60	9.6	33	200	26	59	13
DEC 14...	1400	104	1000	8.6	10.0	20	14.2	1	210	35	60	15
JAN 17...	1600	150	1050	8.4	13.0	35	10.3	5	220	45	65	13
FEB 16...	1200	140	1160	8.9	12.0	25	--	4	230	50	68	14
MAR 14...	1130	118	1350	8.4	13.0	10	10.2	2	240	63	71	15
APR 14...	1415	80	1150	8.6	22.0	20	8.7	1	240	65	68	16
MAY 06...	1200	70	1320	--	24.0	10	8.4	16	250	85	75	15
JUN 15...	1015	50	1500	8.3	24.5	35	8.0	50	280	110	82	17
JUL 19...	1500	250	890	7.8	32.0	1700	6.2	1500	170	25	51	11
AUG 16...	1100	2080	440	8.5	25.0	1900	6.9	3500	120	0	36	7.5
SEP 14...	1530	180	820	8.4	27.0	1300	7.0	2700	170	18	53	10
DATE		DISSOLVED SODIUM (NA) (MG/L)	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
OCT 12...	170	4.6	10	191	3	69	270	1.6	44	752	756	1.02
NOV 16...	110	3.4	6.5	213	0	57	160	1.5	35	559	548	.76
DEC 14...	120	3.6	6.3	215	0	58	170	1.5	37	562	574	.79
JAN 17...	130	3.9	6.6	208	0	61	190	1.6	35	607	606	.83
FEB 16...	140	4.0	7.5	216	0	63	220	1.5	36	648	657	.88
MAR 14...	160	4.5	8.1	210	2	66	260	1.4	34	738	721	1.00
APR 14...	160	4.5	9.4	200	4	60	250	1.2	37	717	705	.98
MAY 06...	170	4.7	9.3	200	--	62	290	1.3	36	747	757	1.02
JUN 15...	200	5.3	11	200	0	65	340	1.5	41	877	857	1.19
JUL 19...	110	3.6	8.3	180	0	56	160	1.1	34	517	520	.70
AUG 16...	40	1.6	5.0	150	0	27	53	.7	28	260	271	.35
SEP 14...	97	3.2	6.6	190	0	40	140	1.2	36	467	478	.64

GILA RIVER BASIN

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09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL. NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
OCT 12...	.02	.00	.07	--	.09	.07	.10
NOV 16...	.17	.21	.11	--	.28	.19	.04
DEC 14...	.16	.08	.18	--	.34	.10	.08
JAN 17...	.15	.15	.25	--	.40	.13	.10
FEB 16...	.16	.13	.10	--	.26	.13	.06
MAR 14...	.00	.01	.50	--	.50	.05	.07
APR 14...	.01	.04	.39	--	.40	.08	.08
MAY 06...	.02	.01	.03	27	.05	.08	.01
JUN 15...	.01	.02	.85	--	.86	.16	.08
JUL 19...	.61	--	3.8	--	4.4	3.0	--
AUG 16...	.03	--	3.8	--	3.8	3.3	--
SEP 14...	.25	--	13	--	13	4.5	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 12...	5	--	100	--	170	150	<10	--
NOV 16...	3	--	0	--	170	100	<10	--
DEC 14...	6	--	0	--	190	110	<10	--
JAN 17...	4	--	100	--	150	110	<10	--
FEB 16...	2	--	0	--	180	110	10	--
MAR 14...	4	--	0	--	300	120	<10	--
APR 14...	4	--	0	--	150	120	<10	--
MAY 06...	4	2	0	40	230	120	<10	0
JUN 15...	6	--	300	--	200	140	10	--
JUL 19...	46	--	1000	--	220	110	10	--
AUG 16...	32	--	800	--	150	60	10	--
SEP 14...	21	--	600	--	200	90	<10	--

< 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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHROMIUM IN BOTTOM MA-TERTIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA-TERTIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA-TERTIAL (UG/G)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT 12...	--	10	--	570	40	<100	--	30	10
NOV 16...	--	30	--	5800	80	<100	--	210	0
DEC 14...	--	<10	--	1800	50	<100	--	70	10
JAN 17...	--	10	--	2900	20	<100	--	100	0
FEB 16...	--	20	--	2100	60	100	--	120	10
MAR 14...	--	10	--	520	40	<100	--	40	10
APR 14...	--	20	--	1300	290	<100	--	90	10
MAY 06...	0	20	170	1000	70	100	10	90	4
JUN 15...	--	30	--	2300	40	<100	--	150	10
JUL 19...	--	550	--	93000	270	100	--	4000	20
AUG 16...	--	470	--	66000	40	100	--	3800	4
SEP 14...	--	230	--	64000	30	100	--	2200	0

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MA-TERTIAL (UG/G)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SELENIUM IN BOTTOM MA-TERTIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA-TERTIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA-TERTIAL (UG/G)
OCT 12...	--	--	0	--	<10	--	10	--
NOV 16...	--	--	0	--	<10	--	30	--
DEC 14...	.2	--	0	--	<10	--	10	--
JAN 17...	.1	--	0	--	<10	--	20	--
FEB 16...	.0	--	1	--	<10	--	20	--
MAR 14...	.0	--	1	--	<10	--	10	--
APR 14...	.0	--	0	--	<10	--	20	--
MAY 06...	.0	.0	0	0	<10	<1	40	31
JUN 15...	.0	--	0	--	<10	--	30	--
JUL 19...	.3	--	0	--	10	--	390	--
AUG 16...	.2	--	1	--	10	--	330	--
SEP 14...	.1	--	0	--	<10	--	260	--

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

GILA RIVER BASIN

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09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)
OCT 12...	1530	.9	.01	--	2
NOV 16...	1500	2.9	--	--	4
DEC 14...	1400	1.7	.00	--	2
JAN 17...	1600	2.0	.00	--	1
FEB 16...	1200	1.9	.00	--	11
MAR 14...	1130	1.1	.00	--	2
APR 14...	1415	2.7	.00	--	0
MAY 06...	1200	1.4	.00	0	1
JUN 15...	1015	2.5	.00	--	3
JUL 19...	1500	60	.00	--	3
AUG 16...	1100	55	.00	--	3
SEP 14...	1530	39	.00	--	4

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
MAY 06...	1200	40300	300

GILA RIVER BASIN

09448500 GILA RIVER AT HEAD OF SAFFORD VALLEY, NEAR SOLOMON, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	JAN 17,77 1130	MAY 6,77 1200		
TOTAL CELLS/ML	4100	300		
DIVERSITY: DIVISION	0.2	1.4		
..CLASS	0.2	1.4		
...ORDER	0.4	1.5		
...FAMILY	2.8	2.4		
...GENUS	2.8	0.0		
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
...CHLOROCOCCALES				
...NUCYSTACEAE				
....ANKISTRUEFSMUS	--	-	6	2
...SCENEDESMACEAE				
....SCENEDESMUS	--	-	25	8
...VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	--	-	6	2
CHRYSTOPHYTA				
..BACILLARIOPHYCEAE				
...CENTRALES				
...DICTYONETACEAE				
....CYCLOTELLA	130	3	--	-
...PENNALES				
...ACHNANTHACEAE				
....ACHNANTHES	--	-	*	0
...COCONEIS	--	-	19	6
...RHOTONSPHENTIA	--	-	*	0
...CYMBELLACEAE				
....AMPHORA	--	-	6	2
....EPITHEMIA	400	10	*	0
...RHOPALODIA	--	-	*	0
...DIATOMACEAE				
....DIATOMA	540	13	*	0
...FRAGILARIACEAE				
....SYNEDRA	400	10	6	2
...GOMPHONEMACEAE				
....GOMPHONEMA	270	6	6	2
...NAVICULACEAE				
....CALONEIS	--	-	*	0
....NAVICULA	1300#	32	19	6
...NITZSCHACEAE				
....NITZSCHIA	400	10	110#	35
...SURIPELLACEAE				
....SURTRELLA	540	13	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...HORMOGONALES				
...OSCILLATORIACEAE	--	-	100#	33
EUGLENOPHYTA (EUGLENIDS)				
..CRYPTOPHYCEAE				
...CRYPTOMONIDALES				
...CRYPTOMONODACEAE				
....CRYPTOMONAS	130	3	--	-

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

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

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 1976. 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 1976 AND WATER YEAR 1977

Canal	Calendar year 1976	Water year 1977
09449500. Consolidated Brown.....	3,770	2,100
09452000. Fourness.....	250	188
09452500. San Jose.....	13,920	5,300
09453000. Montezuma.....	15,350	5,440
09453500. Union.....	24,000	8,170
09458000. Graham.....	7,550	3,580
09459500. Smithville.....	7,720	2,140
09461500. Dodge-Nevada.....	6,520	2,310
09462500. Curtis.....	6,900	1,750
09463500. Ft. Thomas.....	8,110	2,260
09464000. Colvin-Jones.....	0	0
09464500. T. D. Burton.....	138	0
Total.....	94,230	33,640

COMBINED MONTHLY DISCHARGE OF CANALS DIVERTING FROM GILA RIVER IN SAFFORD VALLEY, AZ,
DURING WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Discharge, in cubic feet per second			Diversions in acre-feet
	Maximum	Minimum	Mean	
October.....	77.1	14.5	50.7	3,120
November.....	88.9	8.8	26.6	1,580
December.....	142	87.0	118	7,230
CAL YR 1976.....	325	8.8	130	94,230
January.....	24.4	0	1.7	106
February.....	34.0	0	11.0	614
March.....	70.9	38.3	54.7	3,360
April.....	61.1	3.1	23.6	1,400
May.....	11.9	0	1.9	117
June.....	21.5	1.2	9.8	585
July.....	86.9	20.3	47.7	2,940
August.....	166	65.2	104	6,400
September.....	164	48.9	104	6,190
WTR YR 1977.....	166	0	46.5	33,640

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) above mean sea level.

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.--43 years, 12.5 ft³/s (0.354 m³/s), 9,060 acre-ft/yr (11.2 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 or 5.79 m), by slope-area measurement of peak flow; no flow for most of time.

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)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
July 4	0500	2,590	73.3	Aug. 22	2000	*3,010	85.2
July 18	2230	2,990	84.7				13.25 4.039

No flow for most of year.

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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	145	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	255	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	378	10	.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	157	66	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	68	10	.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	25	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	258	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	11	17	.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	367	30	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	80	.20	.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	328	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	156	.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	.85	.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	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	232	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	139	.00	.00
TOTAL	85.00	.00	.00	.00	.00	.00	.00	.00	.00	1432.00	1305.20	.00
MEAN	2.74	.000	.000	.000	.000	.000	.000	.000	.000	46.2	42.1	.000
MAX	85	.00	.00	.00	.00	.00	.00	.00	.00	378	328	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	169	.00	.00	.00	.00	.00	.00	.00	.00	2840	2590	.00

CAL YR 1976 TOTAL 1313.40 MEAN 3.59 MAX 384 MIN .00 AC-FT 2610
WTR YR 1977 TOTAL 2822.20 MEAN 7.73 MAX 378 MIN .00 AC-FT 5600

GILA RIVER BASIN

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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 current year.

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.--6 years, 3.86 ft³/s (0.109 m³/s), 2,800 acre-ft/yr (3.45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 883 ft³/s (25.0 m³/s) Sept. 13, 1977 (gage height, 5.10 ft or 1.554 m), from rating curve extended above 668 ft³/s (18.9 m³/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 883 ft³/s (25.0 m³/s) Sept. 13, gage height, 5.10 ft (1.554 m); base discharge, 20 ft³/s (0.57 m³/s); no flow July 1-16.

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	.45	1.3	.86	1.4	1.9	.92	.92	3.0	.26	.00	.14	.45
2	.80	1.2	.74	.86	1.6	.92	.98	2.8	.37	.00	.11	.64
3	.69	1.2	.69	.74	1.4	.83	1.1	2.6	.49	.00	.11	.45
4	.54	1.1	.64	.80	1.2	.80	.92	2.4	.54	.00	.09	.37
5	.49	1.1	.64	.86	1.1	.80	.92	2.3	.59	.00	.06	.41
6	.45	1.1	.64	.74	1.1	.80	.98	1.9	.49	.00	.04	.33
7	.41	.98	.64	.74	1.1	.80	1.1	1.7	.45	.00	.04	.23
8	.37	.98	.59	.74	.98	.80	1.2	1.6	.41	.00	.04	.17
9	.33	.98	.59	.74	.92	.80	1.6	1.4	.33	.00	.04	.14
10	.26	.92	.59	.74	.86	.80	2.3	1.3	.23	.00	.06	.11
11	.23	.92	.59	.74	.80	.80	2.6	1.2	.17	.00	.11	.14
12	.23	1.1	.59	.74	.80	.80	2.6	1.1	.11	.00	.14	.26
13	.29	1.4	.59	.74	.80	.80	2.6	1.1	.09	.00	.17	20
14	.64	1.2	.59	.74	.80	.80	2.8	1.1	.06	.00	.23	2.3
15	.74	1.2	.59	.69	.74	.80	2.6	.98	.03	.00	.20	2.0
16	.59	1.1	.59	.69	.74	.80	2.8	.86	.02	.00	.20	.69
17	.49	1.1	.59	.69	.74	.80	2.6	.80	.02	.22	.20	.59
18	.49	1.1	.59	.69	.74	.74	2.8	.80	.01	.07	.50	.45
19	.45	1.1	.59	.69	.74	.74	3.0	.74	.01	.06	2.7	.41
20	.45	1.1	.64	.69	.80	.74	3.0	.69	.01	.07	1.2	.37
21	.49	.98	.64	1.1	.80	.74	3.0	.69	.01	.07	.74	.33
22	.92	.92	.64	4.0	.86	.74	2.8	.64	.02	.15	.69	.33
23	1.6	.92	.64	4.4	.98	.74	2.6	.59	.02	.20	.64	.41
24	1.6	.92	.59	3.1	1.1	.80	3.0	.59	.02	1.1	.54	.49
25	1.2	.92	.59	2.6	1.2	.80	3.1	.59	.02	1.7	.49	.41
26	1.1	.86	.59	1.7	1.1	.92	3.1	.59	.02	.74	.37	.37
27	2.8	1.1	.59	1.4	1.1	1.1	3.3	.54	.02	.49	.29	.33
28	1.9	1.1	.59	1.3	.98	1.1	3.5	.49	.02	.37	.23	.33
29	1.6	.98	.59	1.2	---	1.1	3.5	.41	.01	.26	.23	.29
30	1.6	.86	.59	2.6	---	.92	3.1	.37	.01	.23	.20	.26
31	1.4	---	.69	2.3	---	.92	---	.29	---	.20	.20	---
TOTAL	25.60	31.74	19.31	41.16	27.98	25.97	70.42	36.16	4.86	5.93	11.00	34.06
MEAN	.83	1.06	.62	1.33	1.00	.84	2.35	1.17	.16	.19	.35	1.14
MAX	2.8	1.4	.86	4.4	1.9	1.1	3.5	3.0	.59	1.7	2.7	20
MIN	.23	.86	.59	.69	.74	.74	.92	.29	.01	.00	.04	.11
AC-FT	51	63	38	82	55	52	140	72	9.6	12	22	68
CAL YR 1976	TOTAL 873.54		MEAN 2.39	MAX 92	MIN .00	AC-FT 1730						
WTR YR 1977	TOTAL 334.19		MEAN .92	MAX 20	MIN .00	AC-FT 663						

GILA RIVER BASIN

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) above mean sea level. 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) above mean sea level.

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.--48 years, 262 ft³/s (7.420 m³/s), 189,800 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 or 4,840 m at supplementary gage), from rating curve extended above 44,000 ft³/s (1,250 m³/s); no flow at times.

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, 6,090 ft³/s (172 m³/s) Aug. 15, gage height, 7.45 ft (2,271 m), base discharge, 3,000 ft³/s (85 m³/s); minimum daily, 0.51 ft³/s (0.014 m³/s) July 3.

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	16	65	46	26	132	78	35	32	10	.71	465	33
2	15	66	39	30	129	76	40	30	8.9	.57	379	26
3	12	68	42	63	127	69	42	29	8.5	.51	554	21
4	12	73	46	72	131	70	40	25	8.2	51	243	47
5	11	70	40	82	131	66	42	24	13	164	136	58
6	11	68	40	92	129	64	39	20	8.5	111	78	177
7	10	68	40	100	125	60	44	20	7.8	58	48	142
8	8.5	66	35	104	125	59	45	19	6.3	33	37	136
9	8.5	66	35	104	122	55	41	19	6.0	32	30	100
10	8.2	64	35	109	116	52	35	16	5.5	30	20	101
11	8.9	63	30	111	120	50	32	14	5.2	203	48	141
12	8.5	58	30	110	122	52	33	14	4.7	122	35	90
13	8.5	58	32	110	122	49	29	14	4.1	40	692	50
14	8.9	64	33	110	118	47	29	15	3.6	29	1560	50
15	9.3	73	31	110	111	46	28	15	3.0	41	1340	60
16	8.9	66	30	110	100	44	31	15	2.8	48	942	30
17	8.5	62	29	110	98	44	32	14	2.6	202	1030	22
18	8.2	66	27	115	98	41	37	14	2.5	396	949	20
19	8.9	64	24	115	96	34	38	13	2.3	213	758	16
20	8.5	62	24	118	92	32	38	14	2.1	88	856	15
21	8.9	59	22	120	88	32	41	14	2.1	74	668	13
22	11	64	22	120	80	30	42	15	2.5	58	501	12
23	13	62	24	120	78	30	43	12	2.5	193	589	12
24	14	60	24	120	85	27	46	12	2.6	161	416	12
25	15	59	24	122	84	26	43	12	2.5	154	284	10
26	19	58	25	123	79	27	39	12	2.1	406	207	10
27	20	58	24	123	80	31	39	12	1.5	437	161	10
28	43	58	24	122	78	29	36	12	1.0	216	123	9.6
29	73	58	22	120	---	35	32	12	.93	140	86	9.6
30	64	55	20	123	---	32	32	13	.93	74	60	8.9
31	63	---	19	129	---	26	---	14	---	366	48	---
TOTAL	543.2	1901	938	3243	2996	1413	1123	516	134.26	4141.79	13345	1442.1
MEAN	17.5	63.4	30.3	105	107	45.6	37.4	16.6	4.48	134	430	48.1
MAX	73	73	46	129	132	78	46	32	13	437	1560	177
MIN	8.2	55	19	26	78	26	28	12	.93	.51	20	8.9
AC-FT	1080	3770	1860	6430	5940	2800	2230	1020	266	8220	26470	2860
CAL YR 1976	TOTAL	28218.00	MEAN	77.1	MAX	1950	MIN	.50	AC-FT	55970		
WTR YR 1977	TOTAL	31736.35	MEAN	86.9	MAX	1560	MIN	.51	AC-FT	62950		

GILA RIVER BASIN

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09466500 GILA RIVER AT CALVA, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1974 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)
OCT								
12...	1130	8.9	7500	7.6	22.0	3	9.5	31
19...	0930	8.5	--	--	13.0	--	--	--
NOV								
16...	1100	65	2660	8.2	10.0	150	10.6	120
DEC								
14...	1000	32	4400	8.4	6.0	40	16.2	900
JAN								
17...	1130	120	2700	7.7	6.0	140	11.6	110
FEB								
17...	1800	98	3700	8.6	15.0	80	10.2	14
MAR								
15...	1140	50	7500	8.3	11.0	20	--	18
APR								
14...	1150	50	6800	7.5	16.0	3	10.2	20
MAY								
06...	1600	20	6600	--	28.0	2	10.2	16
JUN								
14...	1300	4.2	6350	7.9	33.0	40	9.8	26
JUL								
19...	1200	76	7250	8.1	28.0	4100	6.2	120
AUG								
17...	1200	1160	420	8.0	29.0	4100	5.9	7500
SEP								
14...	1030	8.0	4100	8.5	25.0	120	7.3	1300

DATE	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT									
12...	56	1000	830	270	90	1200	16	17	267
19...	--	--	--	--	--	--	--	--	--
NOV									
16...	360	420	190	120	30	390	8.3	8.1	290
DEC									
14...	900	820	520	220	65	840	13	13	358
JAN									
17...	1400	420	180	120	29	380	8.1	7.1	287
FEB									
17...	1100	--	--	--	--	--	--	--	304
MAR									
15...	290	980	720	260	81	1100	15	15	315
APR									
14...	10	970	720	260	78	1100	15	18	310
MAY									
06...	32	630	430	220	20	1000	17	17	240
JUN									
14...	430	1000	850	270	89	1100	15	18	230
JUL									
19...	140	81	0	25	4.5	140	6.8	5.5	180
AUG									
17...	11000	100	0	31	6.2	43	1.8	4.2	170
SEP									
14...	1800	780	510	230	51	530	8.2	18	340

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT								
12...	0	810	1800	1.6	73	4470	4360	6.08
19...	--	--	--	--	--	--	--	--
NOV								
16...	0	230	580	1.6	35	1550	1540	2.11
DEC								
14...	0	540	1300	1.9	37	3230	3200	4.39
JAN								
17...	0	220	540	2.0	36	1500	1480	2.04
FEB								
17...	1	340	810	2.0	37	2120	--	2.88
MAR								
15...	0	600	1600	1.8	36	3860	3860	5.25
APR								
14...	0	740	1700	1.9	37	4170	4090	5.67
MAY								
06...	0	610	1500	1.8	31	3840	3520	5.22
JUN								
14...	0	680	1800	1.7	31	4400	4110	5.98
JUL								
19...	0	81	110	1.1	18	416	474	.57
AUG								
17...	0	34	40	.8	28	255	271	.35
SEP								
14...	0	370	940	1.4	34	2970	2340	3.50

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL. NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
OCT							
12...	.03	.01	.46	--	.49	.04	.04
NOV							
16...	.68	.68	.43	--	1.1	.39	.04
DEC							
14...	1.3	1.2	.41	--	1.7	.07	.06
JAN							
17...	.87	.87	.54	--	1.4	.53	.11
FEB							
17...	.96	.96	.35	--	1.3	.02	.03
MAR							
15...	1.2	1.2	.36	--	1.6	.02	.02
APR							
14...	1.1	1.1	.61	--	1.7	.30	.03
MAY							
06...	.11	.11	.52	84	.63	.02	.04
JUN							
14...	.03	.03	2.1	--	2.1	.18	.04
JUL							
19...	3.5	--	17	--	21	3.3	--
AUG							
17...	.69	--	12	--	13	6.7	--
SEP							
14...	.73	--	1.1	--	1.8	11	--

GILA RIVER BASIN

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09466500 GILA RIVER AT CALVA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DTS- SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)	DTS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 12...	4	--	--	200	--	1300	1200	20	--	--	--	--
NOV 16...	3	3	--	0	--	420	370	<10	0	--	0	--
DEC 14...	5	--	--	100	--	860	810	<10	--	--	--	--
JAN 17...	14	--	--	200	--	410	350	<10	--	--	--	--
FEB 17...	7	6	--	100	--	560	520	10	1	--	--	--
MAR 15...	8	5	--	200	--	1100	1000	10	--	--	10	--
APR 14...	5	--	--	100	--	1100	1100	10	3	--	--	--
MAY 06...	5	5	2	0	20	1000	990	10	1	0	10	0
JUN 14...	4	--	--	100	--	1000	980	10	--	--	--	--
JUL 19...	75	--	--	2000	--	330	140	30	--	--	--	--
AUG 17...	51	3	--	2000	--	190	60	10	2	--	10	--
SEP 14...	8	--	--	300	--	630	580	10	--	--	--	--

DATE	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA- TERIAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT 12...	--	--	10	--	--	170	80	100	--	--	180	180
NOV 16...	<50	0	50	4	--	13000	40	<100	7	--	430	20
DEC 14...	--	--	20	--	--	1800	100	<100	--	--	150	130
JAN 17...	--	--	50	--	--	10000	20	<100	--	--	400	10
FEB 17...	<50	1	20	0	--	4800	--	100	4	--	220	--
MAR 15...	<50	--	70	--	--	530	40	100	--	--	120	90
APR 14...	<50	0	<10	5	--	150	110	<100	22	--	110	110
MAY 06...	50	0	20	4	7	170	50	100	4	5	40	20
JUN 14...	--	--	20	--	--	1700	50	100	--	--	710	430
JUL 19...	--	--	440	--	--	200000	360	400	--	--	8900	20
AUG 17...	200	1	750	6	--	120000	50	200	16	--	8300	0
SEP 14...	--	--	70	--	--	6400	30	<100	--	--	340	80

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

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MA- TERIAL (UG/G)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA- TERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA- TERIAL (UG/G)
OCT 12...	--	--	--	1	--	--	10	--	20	--	--
NOV 16...	--	--	--	1	1	--	<10	--	50	10	--
DEC 14...	.1	--	--	1	--	--	<10	--	20	--	--
JAN 17...	.1	--	--	1	--	--	<10	--	50	--	--
FEB 17...	1.5	.0	--	1	1	--	<10	--	30	--	--
MAR 15...	.2	.0	--	3	2	--	<10	--	40	30	--
APR 14...	.0	--	--	1	1	--	<10	--	20	20	--
MAY 06...	.0	.0	.0	1	1	0	10	<1	10	10	5
JUN 14...	.0	--	--	0	--	--	<10	--	30	--	--
JUL 19...	.4	--	--	4	--	--	10	--	370	--	--
AUG 17...	.5	.0	--	0	0	--	10	--	590	20	--
SEP 14...	.1	--	--	0	--	--	<10	--	20	--	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)	PCB IN BOTTOM MA- TERIAL (UG/KG)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	DDD IN BOTTOM MA- TERIAL (UG/KG)	DDE IN BOTTOM MA- TERIAL (UG/KG)	DDT IN BOTTOM MA- TERIAL (UG/KG)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)
OCT 12...	1130	4.9	.01	--	6	--	--	--	--	--	--	--
NOV 16...	1100	6.4	.00	--	2	--	--	--	--	--	--	--
DEC 14...	1000	4.7	.01	--	1	--	--	--	--	--	--	--
JAN 17...	1130	6.5	.00	--	0	--	--	--	--	--	--	--
FEB 17...	1800	5.6	.00	--	2	--	--	--	--	--	--	--
MAR 15...	1140	4.4	.00	--	1	--	--	--	--	--	--	--
APR 14...	1150	4.1	.00	--	2	--	--	--	--	--	--	--
MAY 06...	1600	4.9	.00	0	4	0	.0	0	.0	.0	.0	.0
JUN 14...	1300	15	.00	--	5	--	--	--	--	--	--	--
JUL 19...	1200	80	.00	--	3	--	--	--	--	--	--	--
AUG 17...	1200	142	.00	--	4	--	--	--	--	--	--	--
SEP 14...	1030	7.7	.00	--	2	--	--	--	--	--	--	--

		DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	HEPTA- CHLOR FPOXTDE IN BOT- TOM MA- TERIAL (UG/KG)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	
DATE	TIME								
MAY 06...	1600	.0	.0	.0	.0	.0	.0	.0	
		METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOX- APHENF IN BOTTOM MA- TERIAL (UG/KG)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	2,4-D IN BOTTOM MA- TERIAL (UG/KG)	2,4,5-T IN BOTTOM MA- TERIAL (UG/KG)	SILVEX IN BOTTOM MA- TERIAL (UG/KG)
DATE									
MAY 06...		.0	.0	.0	0	.0	0	0	0

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

GILA RIVER BASIN

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09466500 GILA RIVER AT CALVA, AZ--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DTS- CHARGE (CFS)	SUS- PENDE DTS- MENT (MG/L)	SUS- PENDE MENT DTS- CHARGE (T/DAY)	SUS. SED. STEVE DIAM. % FINER THAN .062 MM
OCT					
19...	0930	8.5	18	.41	88
NOV					
16...	1100	65	455	80	99
DEC					
14...	1000	32	51	4.4	98
JAN					
17...	1130	120	513	166	97
FEB					
17...	1800	98	197	52	67
MAR					
15...	1140	50	8	1.1	45
MAY					
06...	1600	20	17	.92	79
JUN					
14...	1300	4.2	144	1.6	96
JUL					
19...	1200	76	9330	1920	99
AUG					
17...	1200	1160	9350	29300	98

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	CHLOR-A PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
OCT					
12...	1130	--	--	--	15000
NOV					
16...	1100	10620	.058	.036	6500
JAN					
17...	1130	--	--	--	4100
FEB					
17...	1800	--	--	--	3300
MAY					
06...	1600	--	--	--	4500
JUN					
14...	1300	--	--	--	34000
JUL					
19...	1200	--	--	--	360
AUG					
17...	1200	--	--	--	14000
SEP					
14...	1030	--	--	--	720

GILA RIVER BASIN

09466500 GILA RIVER AT CALVA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 12,76 1130	NOV 16,76 1100	FEB 17,77 1800	MAY 6,77 1600
TOTAL CELLS/ML	15000	6500	3300	4500
DIVERSITY: DIVISION	0.2	0.0	0.0	0.5
..CLASS	0.2	0.0	0.0	0.5
...ORDER	0.8	0.2	0.2	0.7
...FAMILY	0.9	1.4	2.0	0.8
....GENUS	0.9	1.8	2.3	0.8

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	43	1
....OOCYSTIS	190	1	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	--	-	170	4
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	190	1	--	-	--	-	43	1
...ZYGNEMATALES								
...DESMIDIACEAE								
....CLOSTERIUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	*	0	220	3	98	3	--	-
...CENTRALES								
...COSCINODISCEAE								
....CYCLOTELLA	13000#	83	88	1	98	3	3900#	88
....MELOSTRA	--	-	88	1	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	--	-
...PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	43	1
...COCCONEIS	--	-	44	1	200	6	--	-
...CYMBELLACEAE								
....AMPHORA	--	-	44	1	33	1	--	-
....CYMBELLA	--	-	44	1	--	-	--	-
....RHODALDIA	--	-	--	-	33	1	--	-
...FRAGILARIACEAE								
....SYNEURA	--	-	44	1	33	1	43	1
...GOMPHONEMACEAE								
....GOMPHONEMA	--	-	44	1	33	1	--	-
...NAVICULACEAE								
....CALONEIS	--	-	44	1	--	-	--	-
....NAVICULA	1200	8	2600#	41	1200#	37	--	-
....PINNULARIA	--	-	--	-	--	-	--	-
...NITZSCHIA								
....NITZSCHIA	--	-	44	1	33	1	--	-
....NITZSCHIA	970	6	3100#	48	1200#	36	86	2
...SURIPELLACEAE								
....SURIPELLA	--	-	44	1	360	11	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..CRYPTOPHYCEAE								
...CRYPTOMONIDAE								
...CRYPTOMONODACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	43	1
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	--	-	43	1

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

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

09466500 GILA RIVER AT CALVA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	JUN 14,77 1300	JUL 19,77 1200	AUG 17,77 1200	SEP 14,77 1030
TOTAL CELLS/ML	34000	360	14000	720
DIVERSITY: DIVISION	0.0	0.0	1.0	0.7
..CLASS	0.0	0.0	1.0	0.7
...ORDER	0.3	0.0	1.2	0.7
...FAMILY	0.3	0.0	1.2	1.3
....GENUS	0.3	0.0	1.2	1.3

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...DOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	--	-
....DOCYSTIS	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	--	-	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-
...ZYGNEATALES								
...DESMIDIACEAE								
....CLUSTERIUM	--	-	--	-	--	-	120#	17
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALES								
...NAVICULACEAE								
....ENTOMONEIS	--	-	--	-	--	-	--	-
...CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	32000#	96	--	-	--	-	--	-
....MELOSTRA	--	-	--	-	1700	13	--	-
....STEPHANODISCUS	*	0	--	-	--	-	--	-
...PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...COCCONEIS	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....AMPHORA	*	0	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	860	6	--	-
...GOMPHONEMACEAE								
....GOMPHONEMA	*	0	--	-	--	-	--	-
...NAVICULACEAE								
....CALONEIS	*	0	--	-	--	-	--	-
....NAVICULA	260	1	--	-	--	-	120#	17
....PINNULARIA	--	-	360#	100	--	-	--	-
...NITZSCHACEAE								
....HANTZSCHIA	--	-	--	-	--	-	--	-
....NITZSCHIA	780	2	--	-	--	-	480#	67
...SURIRELLACEAE								
....SURIRELLA	*	0	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	10000#	75	--	-
EUGLENOPHYTA (EUGLENOIDS)								
..CRYPTOPHYCEAE								
...CRYPTOMONTOALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	*	0	--	-	--	-	--	-
...EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	860	6	--	-

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

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

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) above mean sea level. 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.--48 years (1929-77), 45.6 ft³/s (1.29 m³/s), 33,040 acre-ft/yr (40.7 hm³/yr); median of yearly mean discharges, 26 ft³/s (0.74 m³/s), 18,800 acre-ft/yr (23.2 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 or 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)
Aug. 1	2330	2,240 63.4	5.80 1.768	Aug. 16	0130	3,580 101	6.95 2.118
Aug. 3	2230	3,980 113	7.30 2.225	Sept. 9	2230	3,790 107	7.08 2.158
Aug. 13	2200	3,660 104	7.00 2.133	Sept. 11	1730	*5,400 153	8.15 2.484

No flow June 27 to July 4.

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	4.6	7.0	8.4	13	8.8	7.8	6.0	3.3	1.5	.00	131	3.6
2	4.6	7.0	9.5	13	9.2	7.8	6.0	4.1	1.4	.00	84	28
3	4.6	7.0	10	11	9.5	8.8	9.5	3.8	1.4	.00	253	12
4	4.3	7.4	8.8	11	9.2	7.4	11	3.6	1.7	.00	125	8.5
5	4.1	7.4	10	10	9.5	7.8	8.1	3.8	2.1	69	10	7.4
6	4.1	7.4	10	9.5	9.2	7.8	6.7	3.8	2.6	11	5.0	7.0
7	4.1	7.4	10	9.5	8.1	8.1	5.5	3.4	2.6	13	5.0	6.7
8	4.1	7.8	10	9.2	8.1	8.4	5.0	3.8	1.8	14	21	6.7
9	4.1	7.8	10	9.2	8.1	8.1	5.3	4.1	1.6	13	118	339
10	4.1	7.8	10	9.2	8.4	7.8	5.3	3.8	1.5	11	5.0	119
11	4.1	7.4	9.2	9.5	8.4	8.4	5.8	3.6	1.3	24	39	464
12	3.3	8.1	8.8	8.8	8.4	7.4	6.0	4.3	1.2	136	10	20
13	3.8	8.1	8.8	9.2	9.2	7.4	5.8	5.0	1.1	25	213	11
14	5.0	8.1	9.2	8.8	9.2	8.4	5.5	6.7	1.1	1.7	73	24
15	6.4	8.1	9.2	9.2	8.8	9.5	5.8	7.4	1.0	2.2	54	7.8
16	6.0	8.1	9.2	8.8	8.4	10	6.7	8.1	.90	18	496	6.7
17	4.6	8.1	9.2	8.8	8.1	11	6.4	8.4	.80	10	98	5.8
18	4.8	8.1	8.8	8.8	7.8	11	5.3	6.7	.70	12	30	5.8
19	5.0	8.1	8.8	9.2	7.8	10	5.3	6.4	.60	13	37	5.3
20	5.5	8.1	9.2	9.2	8.4	12	5.5	6.7	.50	4.3	15	4.6
21	6.7	8.4	9.5	9.5	7.8	15	5.3	5.8	.50	6.0	10	3.6
22	12	7.8	9.2	10	6.7	16	5.0	5.3	.50	16	7.8	4.3
23	8.1	7.8	9.2	8.4	6.4	14	4.8	5.5	.50	10	6.4	4.6
24	6.7	7.8	9.2	7.8	6.7	14	5.0	5.3	.50	56	93	4.6
25	4.3	7.8	9.2	7.4	7.0	14	5.3	5.3	.60	33	13	3.8
26	4.6	8.1	9.2	7.8	7.0	14	4.8	5.0	.40	128	6.7	3.8
27	5.0	8.1	9.2	8.1	7.8	13	4.6	4.3	.00	26	5.3	4.3
28	5.5	7.8	9.2	8.8	6.7	13	3.8	3.4	.00	14	4.6	4.8
29	5.0	8.1	9.2	8.8	---	13	3.4	3.3	.00	15	4.3	3.8
30	5.3	8.1	9.2	10	---	14	3.1	2.6	.00	28	3.8	3.3
31	5.8	---	10	9.5	---	9.2	---	1.9	---	12	3.8	---
TOTAL	160.2	234.1	289.4	291.0	228.7	324.1	171.6	148.5	30.40	721.20	1980.7	1133.8
MEAN	5.17	7.80	9.34	9.39	8.17	10.5	5.72	4.79	1.01	23.3	63.9	37.8
MAX	12	8.4	10	13	9.5	16	11	8.4	2.6	136	496	464
MIN	3.3	7.0	8.4	7.4	6.4	7.4	3.1	1.9	.00	.00	3.8	3.3
AC-FT	318	464	574	577	454	643	340	295	60	1430	3930	2250
CAL YR 1976	TOTAL	4745.50	MEAN	13.0	MAX	815	MIN	.50	AC-FT	9410		
WTR YR 1977	TOTAL	5713.70	MEAN	15.7	MAX	496	MIN	.00	AC-FT	11330		

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 at mean sea level. 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 or 763.423 m); no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,800 acre-ft (23.2 hm³) Aug. 28; elevation, 2,406.91 ft (733.626 m); minimum, 4 acre-ft (0.005 hm³) July 3, elevation, 2,382.79 ft (726.274 m).

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

2,382.60	0	2,400	8,250
2,385	198	2,405	15,310
2,390	1,380	2,410	24,420
2,395	3,800		

CONTENTS, IN ACRE-FeET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2060	2810	5580	3090	8020	11900	6060	3510	22	8.0	2780	17500
2	2110	2880	5650	3100	8210	11800	5950	3420	21	6.0	3240	17200
3	2130	2970	5700	3140	8410	11600	5920	3320	20	4.0	3700	16900
4	2150	3050	5780	3220	8680	11500	5860	3200	20	5.0	4160	16500
5	2170	3120	5860	3330	8930	11400	5850	3080	21	6.0	4240	16100
6	2190	3200	5850	3450	9180	11200	5800	2990	22	39	4150	15800
7	2220	3290	5760	3570	9440	11000	5770	2890	22	113	3990	15700
8	2210	3360	5680	3690	9720	10900	5770	2770	20	153	4210	15500
9	2210	3420	5580	3800	9930	10700	5760	2660	18	173	4000	15200
10	2210	3550	5510	4010	10100	10200	5720	2550	16	203	3890	15500
11	2220	3560	5420	4190	10400	9940	5650	2420	16	306	3700	15600
12	2220	3640	5340	4410	10600	9660	5560	2290	16	606	3650	16100
13	2230	3690	5230	4630	10800	9350	5410	2150	16	799	3980	16100
14	2250	3750	5150	4810	11000	9030	5280	2020	15	858	5270	16000
15	2260	3840	5060	5030	11100	8750	5190	1870	15	881	6810	15900
16	2270	3980	4960	5210	11300	8360	5120	1710	14	914	8940	15700
17	2280	4110	4880	5400	11500	8150	5010	1520	14	1120	10900	15400
18	2300	4230	4780	5580	11700	7980	4890	1360	13	1410	12400	15200
19	2300	4330	4600	5750	11800	7820	4790	1270	12	1810	13600	15000
20	2320	4440	4410	5940	11900	7620	4690	1160	12	2130	14900	14800
21	2320	4540	4210	6120	12100	7490	4600	1060	12	2090	16000	14700
22	2350	4650	3990	6310	12200	7300	4510	938	11	1890	16800	14600
23	2390	4770	3790	6480	12300	7090	4410	789	11	1750	17600	14500
24	2410	4870	3670	6660	12400	6970	4320	632	11	1820	18300	14300
25	2440	4990	3550	6840	12700	6720	4210	436	10	1790	18600	14200
26	2470	5090	3430	7020	12500	6630	4100	180	9.0	1960	18800	14000
27	2490	5200	3310	7190	12300	6490	3960	72	8.0	2390	18800	13900
28	2500	5270	3190	7350	12100	6360	3800	34	6.0	2510	18800	13800
29	2560	5370	3060	7530	---	6350	3710	27	6.0	2490	18500	13600
30	2640	5460	3010	7700	---	6280	3610	25	6.0	2440	18200	13500
31	2730	---	3060	7820	---	6190	---	24	---	2490	17900	---
MAX	2730	5460	5860	7820	12700	11900	6060	3510	22	2510	18800	17500
MIN	2060	2810	3010	3090	8020	6190	3610	24	6.0	4.0	2780	13500
†	2392.79	2396.87	2393.48	2399.51	2402.71	2397.68	2394.61	2383.16	2382.80	2392.31	2406.41	2403.75
‡	+770	+2730	-2400	+4760	+4260	-5890	-2580	-3586	-18	+2484	+15390	-4340

CAL YR 1976 MAX 119000 MIN 19 ‡ -132,100
WTR YR 1977 MAX 18800 MIN 4.0 ‡ +11,600

† 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) above mean sea level. 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)--65 years (1900-1901, 1903-4, 1914-77), 339 ft³/s (9.600 m³/s), 245,600 acre-ft/yr (303 km³/yr); median of yearly mean discharges, 212 ft³/s (6.00 m³/s), 154,000 acre-ft/yr (190 km³/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.

1928-77: Maximum discharge, 1,350 ft³/s (38.2 m³/s) July 28, 1952 (gage height, 4.64 ft or 1.414 m); no flow at times prior to 1938; minimum daily since 1938, 0.40 ft³/s (0.011 m³/s) in several years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 253 ft³/s (7.16 m³/s) Sept. 8, 9; minimum daily, 0.80 ft³/s (.023 m³/s) Jan. 19-28 June 18-21, July 6.

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	2.8	1.6	1.6	45	1.0	171	134	106	3.7	1.0	160	227
2	2.8	1.6	1.6	49	1.0	171	134	106	2.8	1.0	66	232
3	2.8	1.6	1.6	50	1.0	171	134	106	2.4	1.0	55	246
4	2.8	1.6	1.6	23	1.0	171	113	104	2.4	1.4	146	246
5	2.8	1.6	1.6	1.0	1.0	169	92	99	2.8	1.0	148	246
6	2.8	1.6	77	1.0	1.0	169	92	92	2.8	.80	148	246
7	2.8	1.6	99	1.0	1.0	171	78	92	3.2	24	146	251
8	2.4	1.6	108	1.0	1.0	173	48	92	2.8	3.7	148	253
9	2.4	1.6	108	1.0	1.0	195	57	92	2.0	3.7	146	253
10	2.4	1.6	100	1.0	1.0	211	58	92	1.4	3.7	156	218
11	2.4	1.6	100	1.0	1.0	211	73	95	1.4	3.2	156	119
12	2.4	1.6	99	1.0	1.0	211	109	93	1.4	3.2	156	93
13	2.4	1.6	99	1.0	1.0	211	109	93	1.6	2.8	136	85
14	2.4	1.6	100	1.0	3.2	213	109	93	1.6	2.8	126	101
15	2.4	1.6	102	1.0	4.8	213	104	93	1.4	2.8	86	134
16	2.4	1.6	100	1.0	3.2	213	92	93	1.0	2.8	9.6	136
17	2.4	1.6	100	1.0	3.2	206	92	95	1.0	2.8	8.8	138
18	2.4	1.6	108	1.0	3.2	184	93	97	.80	3.2	8.8	138
19	2.4	1.6	142	.80	3.7	186	93	97	.80	3.2	8.8	138
20	2.4	1.6	150	.80	3.7	188	93	97	.80	4.8	9.6	118
21	2.4	1.6	152	.80	3.7	186	92	97	.80	101	9.6	87
22	2.4	1.6	156	.80	3.7	184	92	95	1.0	210	66	87
23	2.4	1.6	156	.80	3.7	191	92	99	1.4	152	124	90
24	2.4	1.6	156	.80	3.7	177	92	106	1.6	154	126	90
25	2.4	1.6	156	.80	48	175	93	106	1.6	154	126	87
26	2.0	1.6	154	.80	175	177	95	109	1.0	154	124	87
27	2.0	1.6	154	.80	171	177	95	78	1.0	158	128	90
28	1.6	1.6	154	.80	173	159	102	24	1.0	158	152	92
29	1.6	1.6	154	1.0	---	128	106	8.8	1.0	158	197	77
30	1.6	1.6	86	1.0	---	128	106	6.0	1.0	158	220	49
31	1.6	---	49	1.0	---	130	---	4.8	---	158	227	---
TOTAL	73.2	48.0	3127.0	192.00	619.8	5620	2872	2660.6	49.50	1787.90	3524.2	4454
MEAN	2.36	1.60	101	6.19	22.1	181	95.7	85.8	1.65	57.7	114	148
MAX	2.8	1.6	156	50	175	213	134	109	3.7	210	227	253
MIN	1.6	1.6	1.6	.80	1.0	128	48	4.8	.80	.80	8.8	49
AC-FT	145	95	6200	381	1230	11150	5700	5280	98	3550	6990	8830
CAL YR 1976	TOTAL	98373.30	MEAN	269	MAX	668	MIN	1.6	AC-FT	195100		
WTR YR 1977	TOTAL	25028.20	MEAN	68.6	MAX	253	MIN	.80	AC-FT	49640		

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) above mean sea level. Sept. 10, 1917, to June 27, 1918, non-recording 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 non-recording gage 1.3 mi (2.1 km) downstream since Aug. 9, 1963, at datum 13.68 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 except those for November and April, which are fair. 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).--36 years (water years 1942-77), 240 ft³/s (6.80 m³/s), 173,900 acre-ft/yr (214 hm³/yr); median of yearly mean discharges, 150 ft³/s (4.25 m³/s), 109,000 acre-ft/yr (130 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 or 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)
Aug. 23	1915	1,320 37.4	5.04 1.536
Sept. 9	2300	*2,670 75.6	6.86 2.091

Minimum daily, 0.03 ft³/s (0.001 m³/s) July 7-11.

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	7.5	4.9	7.0	6.9	6.2	16.5	102	100	8.2	.06	142	203
2	8.0	4.6	7.1	50	6.2	16.3	104	107	6.2	.06	140	203
3	7.8	4.4	7.1	54	6.2	16.4	106	105	5.0	.06	41	230
4	7.7	4.3	7.1	54	6.2	16.5	105	104	4.2	.06	68	224
5	6.8	4.2	6.9	35	6.2	16.1	81	103	36	.06	121	232
6	6.5	4.3	7.1	15	6.2	15.7	79	95	11	.06	125	230
7	6.1	4.0	6.8	10	6.2	15.9	83	89	3.4	.03	115	224
8	5.3	4.0	9.4	9.5	6.5	16.5	66	89	2.8	.03	113	232
9	5.3	4.0	10.7	9.2	6.5	16.4	53	88	2.8	.03	181	377
10	5.2	4.0	10.4	7.9	6.5	20.5	64	88	2.4	.03	175	621
11	5.2	4.0	10.4	7.2	6.5	22.0	65	88	1.9	.03	138	264
12	5.2	4.0	10.2	6.7	6.5	22.1	98	88	1.5	12	137	232
13	5.1	4.0	10.2	6.5	6.5	22.1	105	87	1.1	43	136	227
14	5.4	4.0	10.2	6.3	6.5	21.5	105	90	.86	3.0	215	224
15	5.2	5.0	10.7	6.2	6.5	21.4	100	87	.62	1.1	211	224
16	5.2	5.0	10.7	5.9	6.5	21.4	90	85	.46	.96	167	222
17	5.0	5.0	10.4	5.9	8.9	21.3	85	85	.38	.86	26	222
18	5.0	5.0	10.4	5.8	8.9	19.3	85	88	.27	15	15	222
19	4.8	5.0	12.0	5.8	9.5	17.8	85	89	.24	4.3	10	222
20	4.5	5.0	15.3	5.8	8.9	17.7	85	88	.21	1.1	11	222
21	4.4	5.0	15.0	5.8	8.9	17.6	85	86	.18	.89	7.7	222
22	6.1	5.0	15.8	6.5	9.5	17.4	85	85	.18	145	5.8	158
23	6.3	5.0	15.8	7.1	8.9	17.9	85	82	.15	162	151	86
24	7.9	5.0	15.8	7.1	8.9	16.7	85	89	.15	145	104	86
25	6.7	6.0	15.8	6.5	8.9	15.7	85	90	.12	152	104	84
26	6.4	6.0	15.8	6.2	8.5	16.3	85	89	.12	153	107	86
27	5.7	6.0	15.6	6.2	16.0	16.1	85	92	.09	150	107	86
28	5.5	6.0	15.6	6.2	15.8	15.7	90	56	.09	259	114	88
29	5.5	6.0	15.8	6.2	---	13.1	95	25	.09	165	143	86
30	5.1	6.0	15.3	6.2	---	10.5	100	13	.06	148	176	68
31	5.1	---	7.1	6.2	---	10.3	---	9.8	---	144	198	---
TOTAL	181.5	144.7	3154.3	445.9	586.2	5407	2626	2559.8	90.77	1705.72	3424.5	6107
MEAN	5.85	4.82	10.2	14.4	20.9	17.4	87.5	82.6	3.03	55.0	110	204
MAX	8.0	6.0	15.8	6.9	16.0	22.1	106	107	36	259	215	621
MIN	4.4	4.0	6.9	5.8	6.2	10.3	53	9.8	.06	.03	5.8	68
AC-FT	360	287	6260	884	1160	10720	5210	5080	180	3380	6790	12110
CAL YR 1976 TOTAL	96209.10			263		MAX 687	MIN 4.0	AC-FT 190800				
WTR YR 1977 TOTAL	26433.39			72.4		MAX 621	MIN .03	AC-FT 52430				

GILA RIVER BASIN

09470000 GILA RIVER AT WINKELMAN, AZ--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTFMR 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)
OCT 27...	1500	6.0	1590	8.1	16.0	10	9.3	17	350	120	92	29
DEC 01...	1400	7.0	1400	8.3	11.0	1	11.3	<1	360	120	90	32
JAN 26...	1200	6.0	1450	8.2	13.0	8	10.2	4	320	120	82	29
FEB 15...	1100	6.5	1560	8.1	15.5	9	9.6	5	340	130	84	31
MAR 30...	1500	140	3050	8.3	17.5	20	9.9	3	460	280	110	45
APR 20...	1330	85	3800	8.3	20.0	35	9.7	100	550	380	130	55
MAY 25...	1430	90	4600	8.3	23.0	85	10.1	70	650	490	150	68
JUN 08...	1500	3.0	2000	8.0	31.0	45	7.6	--	400	230	110	30
JUL 25...	1600	150	2100	8.0	32.0	370	8.0	890	280	130	76	23
AUG 16...	1230	160	660	8.0	29.0	1300	7.9	25000	160	3	48	9.4
SEP 24...	1430	86	970	8.3	24.5	80	8.6	920	200	39	55	14
DATE	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RINE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 27...	180	4.2	6.2	285	0	170	240	.9	22	908	882	1.23
DEC 01...	160	3.7	5.1	289	0	160	230	.9	24	851	845	1.16
JAN 26...	160	3.9	5.1	250	0	170	210	1.2	23	806	806	1.10
FEB 15...	180	4.3	5.7	250	0	170	240	1.3	20	873	856	1.19
MAR 30...	480	9.7	8.8	220	0	290	700	1.4	25	1820	1770	2.48
APR 20...	610	11	12	210	0	390	930	1.4	20	2330	2250	3.17
MAY 25...	790	13	14	200	0	530	1200	1.6	17	2890	2870	3.93
JUN 08...	260	5.7	9.2	210	0	210	410	.9	20	1170	1160	1.59
JUL 25...	300	7.7	9.4	190	0	200	420	1.2	19	1180	1150	1.60
AUG 16...	72	2.5	6.0	190	0	56	80	.5	25	404	391	.55
SEP 24...	130	4.1	6.4	190	0	81	160	1.1	27	555	571	.75

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

GILA RIVER BASIN

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09470000 GILA RIVER AT WINKELMAN, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 27...	4	--	0	--	270	200	10	--
DEC 01...	3	--	0	--	200	170	<10	--
JAN 26...	3	--	0	--	240	170	<10	--
FEB 15...	3	--	0	--	250	190	10	--
MAR 30...	5	--	200	--	250	240	<10	--
APR 20...	4	--	200	--	630	570	10	--
MAY 25...	6	2	300	100	810	730	10	2
JUN 08...	8	--	200	--	370	290	<10	--
JUL 25...	13	--	300	--	380	340	10	--
AUG 16...	52	--	300	--	200	120	30	--
SEP 24...	--	--	300	--	250	150	<10	--

DATE	TOTAL CHRO- MIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FF) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA- TERIAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT 27...	--	10	--	490	30	<100	--	240	10
DEC 01...	--	10	--	120	10	<100	--	60	10
JAN 26...	--	60	--	430	10	<100	--	60	0
FEB 15...	--	10	--	500	20	100	--	70	0
MAR 30...	--	10	--	790	70	<100	--	250	0
APR 20...	--	10	--	1400	10	<100	--	420	20
MAY 25...	6	30	380	3900	20	100	30	500	0
JUN 08...	--	20	--	2100	20	<100	--	520	10
JUL 25...	--	90	--	17000	30	<100	--	920	0
AUG 16...	--	330	--	59000	10	300	--	2600	20
SEP 24...	--	30	--	4900	50	<100	--	160	10

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

GILA RIVER BASIN

09470000 GILA RIVER AT WINKELMAN, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRATE PLUS NITRITE (N) (MG/L)	DIS- SOLVED NITRATE PLUS NITRITE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN IN BOTTOM MATERIAL (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT 27...	--	--	.32	.15	.39	--	.71	.09	.05
DEC 01...	.09	.01	.11	.10	6.1	--	6.2	.08	.09
JAN 26...	--	--	.40	.43	.12	--	.52	.03	.03
FEB 15...	--	--	.02	.02	.10	--	.12	.04	.03
MAR 30...	--	--	.30	.30	1.3	--	1.6	.12	.06
APR 20...	--	--	.21	.14	1.5	--	1.7	.22	.05
MAY 25...	--	--	.32	.32	1.8	400	2.1	.39	.14
JUN 08...	--	--	.18	.18	.79	--	.97	.19	.12
JUL 25...	--	--	2.0	1.2	4.3	--	6.3	.84	.06
AUG 16...	--	--	.66	--	6.3	--	7.0	7.3	--
SEP 24...	--	--	.54	.54	.71	--	1.2	.30	.08

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MATERIAL (UG/G)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM IN BOTTOM MATERIAL (UG/G)	TOTAL SILVER (HG) (UG/L)	TOTAL SILVER IN BOTTOM MATERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MATERIAL (UG/G)
OCT 27...	.1	--	1	--	<10	--	10	--
DEC 01...	.1	--	1	--	<10	--	30	--
JAN 26...	.2	--	1	--	<10	--	130	--
FEB 15...	1.1	--	1	--	<10	--	10	--
MAR 30...	.2	--	0	--	<10	--	30	--
APR 20...	.3	--	4	--	<10	--	20	--
MAY 25...	.2	.0	0	1	<10	<1	40	74
JUN 08...	.1	--	1	--	<10	--	20	--
JUL 25...	.1	--	1	--	<10	--	100	--
AUG 16...	.4	--	0	--	<10	--	240	--
SEP 24...	.0	--	--	--	<10	--	20	--

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MATERIAL (UG/G)	PHENOLS (UG/L)
OCT 27...	1500	3.0	.00	--	3
DEC 01...	1400	--	.00	--	0
JAN 26...	1200	2.0	.00	--	4
FEB 15...	1100	1.7	.00	--	5
MAR 30...	1500	4.2	.00	--	0
APR 20...	1330	8.7	.00	--	1
MAY 25...	1430	12	.00	0	2
JUN 08...	1500	7.5	.00	--	5
JUL 25...	1600	95	.00	--	4
AUG 16...	1230	62	.01	--	4
SEP 24...	1430	7.1	.00	--	1

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

GILA RIVER BASIN

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09470000 GILA RIVER AT WINKELMAN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	JUN 8, 77	SEP 24, 77
TIME	1500	1430
TOTAL CELLS/ML	2100	420
DIVERSITY: DIVISION	1.5	1.2
..CLASS	1.5	1.2
...ORDER	2.1	1.2
....FAMILY	2.4	1.8
.....GENUS	2.8	1.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)				
..CHLOROPHYCEAE				
...CHLOROCOCCALES				
....DOCYSTACEAE				
.....ANKISTRODESMUS	57	3	120#	28
.....KIRCHNERIELLA	14	1	--	-
.....SELENASTRUM	29	1	--	-
...SCENEDESMACEAE				
....ACTINASTRUM	29	1	--	-
....SCENEDESMUS	190	9	--	-
....TETRASTRUM	170	8	--	-
..VOLVOCALES				
...CHLAMYDOMONADACEAE				
....CHLAMYDOMONAS	400#	19	--	-
CHRYSDOPHYTA				
..BACILLARIOPHYCEAE				
...CENTRALES				
...COSCINODISCAEAE				
....CYCLOTELLA	72	3	--	-
..PENNALES				
...GOMPHONEMATAEAE				
....GOMPHONEMA	14	1	--	-
...NAVICULACEAE				
....NAVICULA	29	1	90#	22
...NITZSCHIAEAE				
....HANTZSCHIA	14	1	--	-
....NITZSCHIA	850#	41	170#	41
CYANOPHYTA (BLUE-GREEN ALGAE)				
..CYANOPHYCEAE				
...CHROCOCCOCCALES				
....CHROCOCCOCCAEAE				
.....ANACYSTIS	86	4	--	-
EUGLENOPHYTA (EUGLENOIDS)				
..CRYPTOPHYCEAE				
...CRYPTOMONIDALES				
....CRYPTOMONODACEAE				
.....CRYPTOMONAS	57	3	--	-
..EUGLENOPHYCEAE				
...EUGLENALES				
....EUGLENACEAE				
.....EUGLENA	--	-	18	4
....PHACUS	43	2	--	-
....TRACHELOMONAS	14	1	18	4

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

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

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) above mean sea level (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.--35 years (water years 1931-33, 1936-40, 1951-77), 30.2 ft³/s (0.855 m³/s), 21,900 acre-ft/yr (27.0 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 or 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 or 7.28 m, present datum, from floodmarks; discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) and peak discharges above base of 2,400 ft³/s (68 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 14	2130	2,640 74.8	8.47 2.582	Aug. 10	0230	2,840 80.4	8.65 2.637
July 31	0400	*3,310 93.7	9.04 2.755	Aug. 21	0845	3,190 90.3	8.94 2.725

No flow Apr. 22 to May 5.

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	1.1	1.5	2.0	4.1	4.8	1.4	.24	.00	2.8	1.7	600	16
2	110	1.3	1.6	4.0	4.5	.75	.28	.00	3.1	1.8	50	26
3	12	1.2	2.5	3.9	4.5	.50	.54	.00	3.1	7.5	27	69
4	4.5	1.2	3.3	3.7	4.5	.45	.53	.00	3.2	44	17	65
5	3.4	1.2	3.9	3.7	4.4	.46	.49	.00	3.0	2.7	8.5	184
6	3.3	1.2	2.7	3.8	4.4	.46	.48	.50	3.2	4.3	8.6	80
7	3.2	1.2	2.5	4.0	4.3	.48	.54	.50	30	4.2	7.8	25
8	1.4	1.5	2.9	4.3	4.2	.46	.64	.50	26	3.9	7.8	10
9	.77	1.6	3.9	4.4	3.9	.41	.39	1.0	2.7	3.3	118	10
10	.58	1.7	2.9	4.1	3.5	.33	.30	1.0	1.5	3.1	596	5.0
11	.58	1.7	3.4	4.0	3.3	.28	.35	1.0	1.3	1.8	57	5.0
12	1.1	1.5	3.3	3.9	3.2	.29	.25	1.0	1.3	5.1	125	188
13	1.7	7.0	2.7	3.8	3.3	.47	.22	2.0	1.3	64	25	59
14	2.4	6.2	2.0	4.0	3.4	.51	.23	2.0	1.5	169	10	30
15	2.9	3.5	2.2	3.9	3.0	.29	.23	2.0	1.7	75	8.0	20
16	2.7	3.2	2.2	3.7	3.1	.19	.25	2.5	1.8	20	777	15
17	1.8	3.0	2.3	3.6	2.8	.21	.24	2.8	1.6	15	109	10
18	.70	3.1	2.6	3.5	2.2	.25	.21	3.1	1.0	20	96	9.0
19	.52	3.1	2.7	3.5	2.3	.29	.19	3.5	1.6	20	66	8.0
20	.41	3.0	2.8	3.5	2.1	.23	.10	3.5	1.1	10	35	7.0
21	.50	3.0	2.9	4.5	2.6	.22	.09	3.1	.82	5.0	466	7.0
22	.60	3.0	2.9	5.0	.99	.29	.00	2.3	.69	13	35	6.0
23	.70	3.2	3.0	5.0	.74	.33	.00	3.4	1.1	84	15	6.0
24	.80	3.2	3.1	4.2	1.1	.27	.00	2.4	1.1	59	25	6.0
25	.90	3.2	3.3	4.0	1.4	.20	.00	2.2	1.2	155	34	5.0
26	1.0	3.1	3.5	4.1	1.1	.27	.00	2.0	.80	93	17	5.0
27	1.3	2.7	4.1	4.2	1.8	.36	.00	2.4	.59	20	11	228
28	1.3	2.6	5.0	4.3	2.0	.42	.00	2.7	1.1	10	10	96
29	1.5	2.7	4.5	4.4	---	.41	.00	2.8	1.2	5.0	9.7	40
30	1.5	3.7	3.6	5.1	---	.24	.00	2.9	.77	59	13	25
31	1.6	---	3.6	4.8	---	.29	---	2.9	---	987	18	---
TOTAL	166.76	79.3	93.9	127.0	83.43	12.01	6.79	56.00	102.17	1966.4	3402.4	1265.0
MEAN	5.38	2.64	3.03	4.10	2.98	.39	.23	1.81	3.41	63.4	110	42.2
MAX	110	7.0	5.0	5.1	4.8	1.4	.64	3.5	30	987	777	228
MIN	.41	1.2	1.6	3.5	.74	.19	.00	.00	.59	1.7	7.8	5.0
AC-FT	331	157	186	252	165	.24	13	111	203	3900	6750	2510
CAL YR 1976	TOTAL	7818.15	MEAN	21.4	MAX	1470	MIN	.00	AC-FT	15510		
WTR YR 1977	TOTAL	7361.16	MEAN	20.2	MAX	987	MIN	.00	AC-FT	14600		

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.

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.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 3,954.01 ft (1,205.182 m) above mean sea level. 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.--66 years (1904-5, 1912-77), 59.2 ft³/s (1.677 m³/s), 42,890 acre-ft/yr (52.9 hm³/yr); median of yearly mean discharges, 49 ft³/s (1.39 m³/s), 35,500 acre-ft/yr (44 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 or 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, 5,200 ft³/s (147 m³/s) Aug. 23, gage height, 6.70 ft (2.042 m), base discharge, 3,000 ft³/s (85 m³/s); minimum, 1.6 ft³/s (0.045 m³/s) July 1, gage height, 2.07 ft (0.631 m).

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	9.7	15	16	16	14	12	6.0	4.8	1.8	543	126
2	44	9.7	13	16	16	12	12	6.4	4.4	2.2	117	49
3	51	9.7	12	15	14	13	12	7.2	4.4	3.4	61	85
4	16	9.7	12	14	14	13	13	8.4	5.6	296	40	51
5	12	9.7	12	14	14	12	14	9.1	6.4	163	24	293
6	8.4	9.7	14	14	14	12	14	7.2	6.4	30	18	266
7	8.4	9.7	14	14	14	12	14	7.6	8.4	10	18	74
8	8.0	9.7	13	14	14	12	14	8.0	88	10	17	48
9	7.6	10	13	14	14	13	15	8.0	62	10	10	26
10	7.6	10	14	14	13	12	15	8.4	25	10	546	15
11	7.6	11	13	14	13	12	14	10	12	10	86	33
12	7.6	12	14	14	12	13	13	9.7	7.6	10	102	142
13	8.4	14	14	13	11	13	13	7.6	4.8	44	95	84
14	7.6	25	14	13	12	13	13	9.1	4.2	43	45	50
15	7.6	18	13	13	12	13	14	11	3.9	178	44	30
16	7.6	15	12	12	12	13	12	10	3.7	78	709	20
17	7.6	14	12	12	12	12	10	11	3.2	40	233	15
18	7.6	14	12	12	12	12	9.7	9.1	2.7	178	252	10
19	7.6	14	14	12	11	11	9.1	10	2.7	43	306	10
20	7.6	14	14	13	12	9.1	8.4	9.7	2.5	30	74	10
21	7.6	14	14	18	11	9.7	8.0	9.7	2.5	12	557	10
22	7.6	14	14	19	12	9.1	8.0	10	3.7	22	143	9.0
23	7.6	14	14	18	9.7	9.1	9.7	8.0	3.9	268	527	8.0
24	7.6	14	13	18	9.7	11	12	7.2	3.0	118	52	7.0
25	7.6	14	13	15	8.0	10	12	7.6	2.0	71	43	7.0
26	7.6	14	13	15	9.1	14	11	7.6	2.0	181	44	109
27	22	13	14	14	10	15	8.4	7.2	1.9	70	22	183
28	9.7	14	14	14	11	14	8.0	6.0	1.8	40	12	72
29	9.7	12	16	15	---	12	7.6	6.0	1.8	50	7.6	41
30	9.7	12	17	19	---	12	7.2	5.2	1.8	30	4.4	25
31	9.7	---	15	17	---	13	---	4.4	---	841	3.9	---
TOTAL	354.2	383.6	421	455	342.5	375.0	343.1	252.4	287.1	2893.4	4755.9	1908.0
MEAN	11.4	12.8	13.6	14.7	12.2	12.1	11.4	8.14	9.57	93.3	153	63.6
MAX	51	25	17	19	16	15	15	11	88	841	709	293
MIN	7.6	9.7	12	12	8.0	9.1	7.2	4.4	1.8	1.8	3.9	7.0
AC=FT	703	761	835	902	679	744	681	501	569	5740	9430	3780
CAL YR 1976	TOTAL	13131.1	MEAN 35.9	MAX 1400	MIN 1.5	AC=FT	26050					
WTR YR 1977	TOTAL	12771.2	MEAN 35.0	MAX 841	MIN 1.8	AC=FT	25330					

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.--10 years, 40.6 ft³/s (1.150 m³/s), 29,400 acre-ft/yr (36.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,500 ft³/s (524 m³/s) July 20, 1974 (gage height, 10.43 ft or 3.179 m), from rating curve extended above 4,900 ft³/s (140 m³/s) on basis of slope-area measurements at gage heights 6.23 ft (1.899 m) and 8.89 ft (2.710 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)	
Aug. 23	2145	*8,900	252	7.90	2.408
Sept. 26	unknown	5,460	155	6.7	2.04

No flow June 15 to July 3.

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	3.3	5.8	17	16	19	16	14	6.6	3.0	.00	380	89
2	11	5.9	15	15	19	17	13	6.7	3.0	.00	115	96
3	48	5.9	16	15	19	17	12	6.8	2.7	.00	70	39
4	12	5.9	15	14	19	16	13	6.8	2.6	96	59	41
5	9.0	6.4	15	14	17	14	12	5.8	3.4	98	51	128
6	7.5	6.9	14	14	17	17	13	5.3	3.4	64	47	178
7	5.9	7.0	14	14	17	16	11	5.2	3.2	37	45	60
8	4.8	7.1	14	15	17	16	11	5.7	7.4	34	43	49
9	4.2	7.4	13	15	16	16	12	5.8	11	27	44	42
10	3.6	7.6	13	15	16	16	11	5.9	5.5	25	344	39
11	3.3	7.9	12	15	16	17	10	5.8	3.2	54	93	38
12	3.1	8.1	12	15	17	16	11	5.7	2.3	38	103	86
13	3.6	12	11	16	15	15	9.9	4.9	1.1	42	139	69
14	5.1	13	11	15	16	15	11	4.8	.25	55	75	46
15	4.7	18	12	15	16	16	11	5.2	.00	90	85	39
16	4.6	12	11	15	17	18	10	4.9	.00	69	525	32
17	4.3	13	11	14	15	17	8.7	5.1	.00	67	209	29
18	4.0	14	11	13	16	16	9.5	5.7	.00	129	139	27
19	3.5	14	11	13	17	16	9.2	5.4	.00	93	342	26
20	2.8	13	12	14	17	17	8.5	5.6	.00	75	96	22
21	3.3	15	12	16	16	16	8.4	5.2	.00	70	468	19
22	4.1	16	12	18	15	16	8.7	4.8	.00	60	194	19
23	3.9	14	12	16	15	13	9.2	4.9	.00	50	644	18
24	4.4	14	13	17	14	14	8.6	4.7	.00	90	122	18
25	4.4	14	14	17	14	16	9.5	4.8	.00	160	38	18
26	4.3	15	13	17	17	17	9.6	4.6	.00	98	38	1000
27	5.1	15	14	17	16	18	8.3	4.1	.00	72	33	1000
28	7.8	15	13	16	17	16	6.8	3.9	.00	58	27	200
29	5.3	15	13	18	---	13	6.6	3.6	.00	57	21	75
30	5.5	16	15	21	---	16	5.9	3.5	.00	51	17	50
31	5.7	---	14	20	---	14	---	3.2	---	582	14	---
TOTAL	202.1	339.9	405	485	462	493	302.2	161.0	52.05	2441.00	4620	3592
MEAN	6.52	11.3	13.1	15.6	16.5	15.9	10.1	5.19	1.74	78.7	149	120
MAX	48	18	17	21	19	18	14	6.8	11	582	644	1000
MIN	2.8	5.8	11	13	14	13	5.9	3.2	.00	.00	14	18
AC-FT	401	674	803	962	916	978	599	319	103	4840	9160	7120
CAL YR 1976	TOTAL	14727.30	MEAN	40.2	MAX	1890	MIN	.00	AC-FT	29210		
WTR YR 1977	TOTAL	13555.25	MEAN	37.1	MAX	1000	MIN	.00	AC-FT	26890		

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) above mean sea level. 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 different datum since June 18, 1975.

REMARKS.--Records fair. 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 Nov. 11, Dec. 15, Jan. 18, Feb. 16, and Mar. 16.

AVERAGE DISCHARGE.--30 years (water years 1944-46, 1951-77), 42.2 ft³/s (1.195 m³/s), 30,570 acre-ft/yr (37.7 hm³/yr); median of yearly discharges, 30 ft³/s (0.85 m³/s), 21,700 acre-ft/yr (27 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,600 ft³/s (810 m³/s) Aug. 2, 1951 (gage height, 20.2 ft or 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 or 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, 1,980 ft³/s (56.1 m³/s) Aug. 24, gage height, 11.70 ft (3.566 m), no peak above base of 3,000 ft³/s (85 m³/s); no flow for many days.

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	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	388	2.0
2	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	234	1.0
3	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	41	1.0
4	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.8	1.0
5	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	.00
6	.40	.00	.00	.00	.00	.00	.00	.00	.00	2.3	3.0	50
7	.30	.00	.00	.00	.00	.00	.00	.00	.00	2.8	3.0	30
8	.30	.00	.00	.00	.00	.00	.00	.00	.00	.80	3.0	10
9	.20	.00	.00	.00	.00	.00	.00	.00	.00	.60	209	5.0
10	.20	.00	.00	.00	.00	.00	.00	.00	.00	9.0	127	5.0
11	.10	.00	.00	.00	.00	.00	.00	.00	.00	4.3	144	2.0
12	.10	.00	.00	.00	.00	.00	.00	.00	.00	24	532	50
13	.10	.00	.00	.00	.00	.00	.00	.00	.00	65	38	15
14	.10	.00	.00	.00	.00	.00	.00	.00	.00	5.8	17	10
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	143	5.0
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	32	229	5.0
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	401	2.0
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	10	74	2.0
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	100	2.0
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	15	92	1.0
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	43	1.0
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.0	198	1.0
23	.00	.00	.00	.30	.00	.00	.00	.00	.00	142	56	.00
24	.00	.00	.00	.10	.00	.00	.00	.00	.00	30	403	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	80	50	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	100	25	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	30	10	178
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	10	5.0	50
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	5.0	10
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	70	2.0	5.0
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	108	2.0	.00
TOTAL	4.60	.00	.00	.40	.00	.00	.00	.00	.00	805.90	3590.8	444.00
MEAN	.15	.000	.000	.013	.000	.000	.000	.000	.000	26.0	116	14.8
MAX	1.0	.00	.00	.30	.00	.00	.00	.00	.00	142	532	178
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00
AC-FT	9.1	.00	.00	.8	.00	.00	.00	.00	.00	1600	7120	881

CAL YR 1976 TOTAL 9793.70 MEAN 26.8 MAX 2380 MIN .00 AC-FT 19430
WTR YR 1977 TOTAL 4845.70 MEAN 13.3 MAX 532 MIN .00 AC-FT 9610

NOTE.--No gage-height record Nov. 12 to Dec. 15.

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. Diversions for irrigation of several hundred acres above station.

AVERAGE DISCHARGE.--22 years, 26.6 ft³/s (0.753 m³/s), 19,270 acre-ft/yr (23.8 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 or 3.615 m, in gage well, 14.25 ft or 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 or 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, 2,560 ft³/s (72.5 m³/s) July 12, gage height, 5.33 ft (1.625 m), base discharge, 2,500 ft³/s (71 m³/s); minimum daily, 0.94 ft³/s (0.027 m³/s) Aug. 27.

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	11	8.0	8.0	10	16	11	12	4.8	3.1	1.3	77	1.2
2	11	7.6	6.9	10	15	10	11	4.7	3.2	1.3	14	7.6
3	7.5	7.1	7.2	10	14	11	11	4.3	3.8	1.2	11	4.0
4	6.3	7.3	7.6	30	13	12	9.2	4.6	3.8	1.8	7.6	3.8
5	5.8	5.8	9.2	15	13	10	8.2	5.7	4.3	2.0	5.1	3.9
6	4.8	5.7	8.8	14	13	8.6	8.0	6.2	3.8	1.7	1.9	33
7	4.8	7.8	8.6	13	13	8.6	8.4	6.7	3.6	1.7	1.9	5.0
8	4.2	8.0	8.6	14	12	11	8.9	7.8	3.1	1.6	98	4.0
9	4.0	8.7	10	23	12	11	8.5	6.7	3.5	1.6	33	4.0
10	3.6	8.5	11	17	13	11	7.7	6.6	2.7	1.5	2.0	132
11	5.7	8.7	9.9	15	14	10	7.8	6.1	2.5	1.6	2.0	70
12	5.6	8.7	11	14	13	11	8.1	5.8	2.2	1.53	2.0	10
13	5.9	9.4	23	13	12	9.2	7.4	6.6	2.1	18	2.0	5.0
14	7.0	9.2	25	13	11	7.0	7.3	7.1	2.0	8.4	14	5.0
15	7.1	9.6	25	13	9.4	7.0	7.4	5.3	1.9	7.2	69	5.0
16	8.2	9.3	20	12	11	7.1	6.6	5.1	1.7	4.6	66	5.0
17	8.1	9.1	15	12	9.7	7.4	6.2	5.1	1.7	7.3	5.0	5.0
18	7.5	9.7	10	12	7.5	7.1	6.4	4.3	1.7	5.9	1.2	5.0
19	6.3	9.8	10	11	9.2	6.7	6.6	5.3	1.5	2.3	6.8	5.0
20	5.2	9.7	10	12	9.8	7.1	7.9	5.0	1.4	2.2	3.2	5.0
21	5.4	9.4	8.0	12	8.1	6.8	8.2	4.8	1.4	2.1	1.2	5.0
22	6.8	8.3	8.0	33	6.1	7.2	6.7	4.8	1.5	4.2	1.2	4.7
23	7.8	8.6	8.0	62	6.1	6.7	6.2	4.6	1.4	68	1.1	5.4
24	8.5	7.0	8.0	25	6.1	6.7	6.5	4.3	1.4	27	25	3.7
25	8.6	9.6	8.0	15	11	7.1	6.8	4.2	1.5	6.4	1.2	2.1
26	8.1	9.8	8.0	16	11	10	6.6	5.0	1.5	7.0	1.1	2.7
27	8.2	11	8.0	14	11	15	7.0	4.7	1.3	6.2	.94	3.0
28	8.2	11	8.0	13	11	14	6.1	4.0	1.3	12	1.1	3.3
29	8.3	11	8.0	14	---	25	6.5	4.5	1.3	18	1.0	3.0
30	8.3	9.0	8.0	23	---	16	6.8	4.1	1.3	6.4	1.0	4.4
31	8.0	---	8.0	19	---	13	---	3.7	---	43	1.0	---
TOTAL	215.8	262.4	332.8	529	311.0	311.3	232.0	162.5	67.5	426.5	458.54	355.8
MEAN	6.96	8.75	10.7	17.1	11.1	10.0	7.73	5.24	2.25	13.8	14.8	11.9
MAX	11	11	25	62	16	25	12	7.8	4.3	153	98	132
MIN	3.6	5.7	6.9	10	6.1	6.7	6.1	3.7	1.3	1.2	.94	1.2
AC-FT	428	520	660	1050	617	617	460	322	134	846	910	706
CAL YR 1976	TOTAL	3414.10	MEAN	9.33	MAX	134	MIN	1.3	AC-FT	6770		
WTR YR 1977	TOTAL	3665.14	MEAN	10.0	MAX	153	MIN	.94	AC-FT	7270		

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 good except those June 1 to July 28, which are 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.--11 years, 38.6 ft³/s (1.093 m³/s), 27,970 acre-ft/yr (34.5 hm³/yr); median of yearly mean discharges, 32 ft³/s (0.91 m³/s) 23,200 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 15,000 ft³/s (425 m³/s) Dec. 20, 1967 (gage height, 11.95 ft or 3.642 m), from rating curve extended above 2,600 ft³/s (74 m³/s) and comparison with slope-area measurement for flood of Dec. 22-23, 1965, at site 3.5 mi (5.6 km) upstream; 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, 4,900 ft³/s (139 m³/s) Sept. 11, gage height, 9.50 ft (2.896 m), base discharge, 4,000 ft³/s (110 m³/s); no flow for many days.

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	.20	.00	.20	8.1	3.4	.00	.00	.00	.00	.00	343	.00
2	.40	.00	.20	2.7	2.0	.00	.00	.00	.00	.00	300	.00
3	.40	.00	.30	.50	1.7	.00	.00	.00	.00	.00	103	16
4	.20	.00	.40	1.0	1.2	.00	.00	.00	.00	.00	30	16
5	.10	.00	.40	2.7	1.2	.00	.00	.00	.00	.00	20	6.4
6	.00	.00	.30	.50	1.5	.00	.00	.00	.00	.00	10	43
7	.00	.00	.20	.40	1.2	.00	.00	.00	.00	.00	5.0	80
8	.00	.00	.30	.40	1.0	.00	.00	.00	.00	.00	3.0	15
9	.00	.00	.20	1.5	1.0	.00	.00	.00	.00	.00	160	6.9
10	.00	.00	.30	1.2	.70	.00	.00	.00	.00	.00	167	258
11	.00	.00	.20	.70	.50	.00	.00	.00	.00	.00	138	1180
12	.00	.00	.20	.40	.40	.00	.00	.00	.00	.00	507	46
13	.00	.00	.20	.40	.50	.00	.00	.00	.00	150	192	1.9
14	.30	.00	.20	.40	.50	.00	.00	.00	.00	30	173	1.0
15	.00	.00	.30	.40	.40	.00	.00	.00	.00	25	169	.50
16	.00	.00	.30	.40	.40	.00	.00	.00	.00	20	257	1.2
17	.00	.00	.40	.40	.40	.00	.00	.00	.00	16	432	1.2
18	.00	.00	.40	.40	.40	.00	.00	.00	.00	100	100	.70
19	.00	.00	.40	.40	.40	.00	.00	.00	.00	20	73	.40
20	.00	.00	.30	.40	.40	.00	.00	.00	.00	5.0	122	.40
21	.00	.00	.30	.40	.40	.00	.00	.00	.00	3.0	25	.40
22	.00	.00	.40	1.0	.30	.00	.00	.00	.00	1.0	82	.20
23	.00	.00	.50	33	.30	.00	.00	.00	.00	100	118	.20
24	5.1	.00	.50	5.4	.20	.00	.00	.00	.00	20	288	.20
25	.00	.00	.50	2.2	.20	.00	.00	.00	.00	60	140	.00
26	.00	.00	.50	1.9	.30	.00	.00	.00	.00	80	40	.00
27	.00	.00	.50	1.2	.30	.00	.00	.00	.00	30	10	.00
28	.00	.10	.40	1.0	.20	.00	.00	.00	.00	18	5.0	.96
29	.00	.10	.40	1.0	---	.00	.00	.00	.00	24	2.0	.78
30	.00	.10	.40	1.0	---	.00	.00	.00	.00	17	.00	5.0
31	.00	---	.50	1.2	---	.00	---	.00	---	21	.00	---
TOTAL	6.70	.30	10.60	72.60	21.40	.00	.00	.00	.00	740.00	4014.00	1804.60
MEAN	.22	.010	.34	2.34	.76	.000	.000	.000	.000	23.9	129	60.2
MAX	5.1	.10	.50	33	3.4	.00	.00	.00	.00	150	507	1180
MIN	.00	.00	.20	.40	.20	.00	.00	.00	.00	.00	.00	.00
AC-FT	13	.6	21	144	42	.00	.00	.00	.00	1470	7960	3580
CAL YR 1976 TOTAL	7666.70			MEAN 20.9	MAX 1550	MIN .00	AC-FT 15210					
WTR YR 1977 TOTAL	6670.20			MEAN 18.3	MAX 1180	MIN .00	AC-FT 13230					

GILA RIVER BASIN

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

[illegible]

GILA RIVER BASIN

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09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 27...	--	--	--	--	--	--	--	--
NOV 22...	--	--	--	--	--	--	--	--
DEC 03...	--	--	--	--	--	--	--	--
JAN 26...	0	380	82	2.2	35	936	922	1.27
FEB 15...	0	430	96	2.2	35	1040	1010	1.41
MAR 30...	--	--	--	--	--	--	--	--
APR 20...	--	--	--	--	--	--	--	--
MAY 25...	--	--	--	--	--	--	--	--
JUN 08...	--	--	--	--	--	--	--	--
JUL 21...	0	120	13	.8	14	369	356	.50
AUG 16...	0	33	5.5	.5	22	282	293	.38
SEP 24...	--	--	--	--	--	--	--	--

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
JAN 26...	.73	.73	.17	.90	.04	.03
FEB 15...	.29	.29	.10	.39	.04	.05
JUL 21...	4.0	2.0	81	85	9.8	.10
AUG 16...	1.2	.39	27	28	10	.00

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
JAN 26...	4	--	0	250	220	<10	--	--
FEB 15...	3	5	0	320	240	<10	0	0
JUL 21...	1300	5	--	470	90	110	0	0
AUG 16...	--	5	16000	550	110	100	0	10

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

GILA RIVER BASIN

09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL COBALT (CO) (UG/L)	DTS- SOLVED COBALT (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DTS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FF) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PR) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESF (MN) (UG/L)
JAN 26...	--	--	60	--	730	10	100	--	70
FEB 15...	<50	0	20	4	710	40	100	0	70
JUL 21...	850	0	950	11	2000	70	1700	3	80000
AUG 16...	900	0	1500	3	190000	10	3000	0	45000

DATE	DTS- SOLVED MAN- GANESF (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SILIC- NIUM (SE) (UG/L)	DTS- SOLVED SILIC- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)
JAN 26...	0	.4	--	1	--	<10	120	--
FEB 15...	0	.2	.0	1	1	<10	40	10
JUL 21...	0	5.0	.1	0	0	90	1500	10
AUG 16...	4	3.0	.0	--	0	90	3100	0

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
JAN 26...	1300	1.1	.00	2
FEB 15...	1200	1.0	.00	3
JUL 21...	1330	1210	.01	1
AUG 16...	1100	528	.02	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DTS- CHARGE (CFS)	SUS- PENDE SEDIM- MENT (MG/L)	SUS- PENDE SEDIM- MENT (T/DAY)	SUS. SED. STEVE DIAM. % FINER THAN .062 MM
JAN 26...	1300	2.0	173	.93	75
FEB 15...	1200	.40	206	.22	53
JUL 21...	1330	4.0	86000	929	99
AUG 16...	1100	240	52900	34300	92

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

GILA RIVER BASIN

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09473500 SAN PEDRO RIVER AT WINKELMAN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	JAN 26,77 1500	FEB 15,77 1200	AUG 16,77 1100
TOTAL CELLS/ML	1600	1900	29000
DIVERSITY: DIVISION	0.7	0.7	0.0
..CLASS	0.7	0.7	0.0
..ORDER	1.0	1.3	0.0
...FAMILY	2.0	1.9	0.0
....GENUS	0.0	2.0	0.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...VULVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	58	4	85	5	--	-
CHRYSOPHYTA						
..BACILLARIOPHYCEAE						
...CENTRALES						
...COSCINOIDISCAEAE						
....CYCLOTELLA	130	8	270	15	--	-
...PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	100	6	--	-
...CYMBELLACEAE						
....AMPHORA	29	2	--	-	--	-
....CYMBELLA	43	3	--	-	--	-
...GOMPHONEMACEAE						
....GOMPHONEMA	43	3	17	1	--	-
...NAVICULACEAE						
....CALONEIS	43	3	51	3	--	-
....NAVICULA	87	5	51	3	--	-
...NITZSCHACEAE						
....CYLINDROTHECA	29	2	17	1	--	-
....DENTICULA	14	1	--	-	--	-
...NITZSCHIA	920#	58	1100#	59	--	-
...SIIRIACEAE						
....SIIRIELLA	58	4	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...HORMOGONIALES						
...OSCILLATORIACEAE	140	9	--	-	--	-
....OSCILLATORIA	--	-	170	9	29000#	100

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

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

GILA RIVER BASIN

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) above mean sea level. 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 fair. 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).--66 years, 452 ft³/s (12.80 m³/s), 327,500 acre-ft/yr (404 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 or 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 or 3.84 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,450 ft³/s (69.4 m³/s) Sept. 11, gage height, 9.15 ft (2.789 m), no peak above base of 4,000 ft³/s (113 m³/s); minimum daily, 0.20 ft³/s (0.006 m³/s) June 26 to July 4, July 6-12.

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	16	7.9	9.2	98	18	152	125	102	12	.20	314	180
2	15	7.7	9.2	76	16	160	125	103	9.0	.20	366	180
3	14	7.2	9.2	63	16	167	143	105	7.7	.20	240	196
4	14	7.0	9.5	64	15	172	148	105	5.8	.20	123	214
5	13	7.0	9.8	73	15	174	120	106	5.4	.30	130	204
6	12	7.0	10	48	15	178	99	106	27	.20	100	252
7	12	6.7	15	39	15	178	90	96	7.4	.20	100	265
8	11	6.7	76	37	14	180	81	93	3.9	.20	100	262
9	10	6.5	81	30	14	184	61	92	2.8	.20	262	234
10	9.8	6.7	87	25	14	194	58	91	1.9	.20	305	691
11	9.5	7.0	84	25	13	226	57	92	1.4	.20	305	950
12	9.0	7.2	84	20	13	228	59	92	1.0	.20	467	355
13	8.9	7.7	84	20	13	232	93	91	.90	.43	432	130
14	8.9	7.9	84	20	13	236	95	93	.70	.26	314	96
15	8.4	8.2	86	15	13	236	99	92	.60	.49	286	95
16	8.4	8.2	87	15	13	238	93	90	.40	.15	366	116
17	8.4	7.9	87	15	13	236	86	89	.30	5.0	395	114
18	8.4	7.9	86	15	15	230	86	90	.30	112	252	112
19	8.2	7.9	89	15	15	204	82	91	.30	.60	167	110
20	7.9	7.9	110	15	15	202	82	91	.30	.40	155	108
21	8.4	8.2	126	20	15	200	82	90	.30	.30	150	96
22	8.9	8.2	133	25	15	198	83	89	.30	.50	150	73
23	9.2	8.2	143	50	15	194	83	88	.30	.162	175	72
24	9.8	8.2	148	80	15	198	84	86	.30	.242	272	70
25	10	8.2	149	50	15	188	84	92	.30	.156	355	69
26	9.5	8.2	150	30	15	188	86	91	.20	.188	150	69
27	8.9	9.0	152	25	132	186	89	92	.20	.150	120	71
28	8.2	8.7	156	25	142	182	90	79	.20	.125	100	147
29	8.2	8.7	160	25	---	173	93	29	.20	.264	110	96
30	8.2	9.0	162	25	---	142	102	14	.20	.156	150	72
31	8.0	---	128	20	---	127	---	14	---	.143	182	---
TOTAL	310.1	232.8	2803.9	1103	652	5983	2758	2674	91.60	2018.50	7093	5699
MEAN	10.0	7.76	90.4	35.6	23.3	193	91.9	86.3	3.05	65.1	229	190
MAX	16	9.0	162	98	142	238	148	106	27	264	467	950
MIN	7.9	6.5	9.2	15	13	127	57	14	.20	.20	100	69
AC-FT	615	462	5360	2190	1290	11870	5470	5300	182	4000	14070	11300
CAL YR 1976	TOTAL	99119.80	MEAN	271	MAX	1010	MIN	6.5	AC-FT	196600		
WTR YR 1977	TOTAL	31418.90	MEAN	86.1	MAX	950	MIN	.20	AC-FT	62320		

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHMS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL./100 ML)
OCT 27...	1300	12	2500	8.2	19.0	3	8.9	54
DEC 01...	1500	6.0	2500	8.3	11.5	10	11.0	26
JAN 26...	1400	35	2250	8.2	13.5	2	10.3	9
FEB 15...	1320	13	2650	8.1	16.0	4	9.4	16
MAR 30...	1400	150	3100	8.4	19.0	35	9.5	12
APR 20...	1500	80	3900	8.4	21.0	20	9.5	73
MAY 25...	1300	90	4800	8.4	24.0	120	9.5	80
JUN 08...	1330	4.0	2800	8.2	30.0	10	8.2	--
JUL 25...	1500	160	2200	8.4	32.0	8400	6.8	4800
AUG 16...	1415	350	610	7.9	29.0	22000	5.8	36000
SEP 24...	1330	110	1100	8.1	26.0	95	8.2	730

DATE	FECAL STREPTOCOCCI (COL. PER 100 ML)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED PHOSPHATE (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
OCT 27...	340	770	530	200	65	270	4.2	8.8	290
DEC 01...	73	840	590	220	71	270	4.1	7.8	312
JAN 26...	38	650	440	170	55	220	3.8	6.7	260
FEB 15...	50	810	600	210	70	290	4.4	8.2	260
MAR 30...	360	520	310	130	47	440	8.4	8.8	250
APR 20...	2100	610	430	150	57	610	11	12	220
MAY 25...	5600	680	520	160	69	740	12	14	200
JUN 08...	--	710	510	180	63	330	5.4	9.6	240
JUL 25...	25000	320	140	92	22	290	7.1	9.0	220
AUG 16...	100000	230	48	70	13	46	1.3	4.4	220
SEP 24...	2700	240	81	70	17	120	3.3	6.8	200

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 27...	0	630	330	.9	26	1740	1670	2.37
DEC 01...	0	680	330	1.0	29	1860	1760	2.53
JAN 26...	0	530	250	1.2	28	1470	1390	2.00
FEB 15...	0	690	340	1.3	26	1840	1760	2.50
MAR 30...	0	340	650	1.4	26	1820	1770	2.48
APR 20...	0	430	920	1.4	19	2360	2310	3.21
MAY 25...	0	540	1200	1.5	18	2860	2840	3.89
JUN 08...	0	570	440	1.1	23	1800	1740	2.45
JUL 25...	0	210	420	.9	17	1200	1180	1.63
AUG 16...	0	81	53	.4	15	393	392	.53
SEP 24...	0	110	160	.9	23	626	608	.85

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRATE PLUS NITRITE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT 27...	--	--	.01	.01	.22	--	.23	.03	.01
DEC 01...	.01	.01	.03	.02	.15	--	.18	.08	.04
JAN 26...	--	--	.61	.61	.06	--	.67	.02	.03
FEB 15...	--	--	.02	.03	.14	--	.16	.03	.03
MAR 30...	--	--	.33	.33	.98	--	1.3	.15	.03
APR 20...	--	--	.14	.09	1.4	--	1.5	.14	.02
MAY 25...	--	--	.20	.20	2.1	1200	2.3	.43	.15
JUN 08...	--	--	.01	.01	.47	--	.48	.11	.11
JUL 25...	--	--	1.6	1.5	13	--	15	13	.05
AUG 16...	--	--	1.2	.20	23	--	24	.49	.00
SEP 24...	--	--	.39	.40	.86	--	1.3	.36	.05

09474000 GILA RIVER AT KELVIN, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MATERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL RAPIUM IN BOTTOM MATERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS-SOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DIS-SOLVED CADMIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MATERIAL (UG/G)	DIS-SOLVED CADMIUM (CD) (UG/L)	TOTAL CHROMIUM IN BOTTOM MATERIAL (UG/G)
OCT 27...	3	--	--	200	--	320	250	<10	--	--	--	--
DEC 01...	3	3	--	0	--	270	240	<10	0	--	0	--
JAN 26...	3	--	--	100	--	280	210	10	--	--	--	--
FEB 15...	3	2	--	0	--	300	260	10	0	--	0	--
MAR 30...	5	--	--	200	--	440	370	<10	--	--	--	--
APR 20...	5	--	--	200	--	600	560	10	--	--	--	--
MAY 25...	6	1	2	300	100	750	710	10	2	1	10	6
JUN 08...	6	--	--	100	--	390	330	10	--	--	--	--
JUL 25...	170	--	--	3400	--	550	320	30	--	--	--	--
AUG 16...	--	4	--	7500	--	370	100	50	0	--	10	--
SEP 24...	--	--	--	400	--	190	150	<10	--	--	--	--

DATE	TOTAL COBALT (CO) (UG/L)	DIS-SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MATERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MATERIAL (UG/G)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)
OCT 27...	--	--	--	--	--	170	10	--	--	--	780	80
DEC 01...	<50	0	20	5	--	330	10	<100	1	--	850	10
JAN 26...	--	--	80	--	--	240	10	100	--	--	390	0
FEB 15...	<50	0	<10	2	--	230	10	100	2	--	430	10
MAR 30...	--	--	20	--	--	2100	30	<100	--	--	320	0
APR 20...	--	--	20	--	--	1100	10	<100	--	--	440	40
MAY 25...	<50	0	40	2	76	3800	30	100	3	20	530	20
JUN 08...	--	--	10	--	--	310	20	100	--	--	590	0
JUL 25...	--	--	860	--	--	230000	30	700	--	--	12000	0
AUG 16...	700	0	2800	5	--	490000	10	1400	0	--	28000	8
SEP 24...	--	--	40	--	--	22000	20	<100	--	--	280	10

DATE	TOTAL MERCURY (HG) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MATERIAL (UG/G)	TOTAL SELENIUM (SE) (UG/L)	DIS-SOLVED SELENIUM (SE) (UG/L)	TOTAL SELF-SELENIUM IN BOTTOM MATERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MATERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MATERIAL (UG/G)
OCT 27...	.0	--	--	0	--	--	<10	--	10	--	--
DEC 01...	.2	.1	--	0	0	--	<10	--	20	20	--
JAN 26...	.1	--	--	1	--	--	<10	--	100	--	--
FEB 15...	.2	.0	--	0	0	--	<10	--	20	10	--
MAR 30...	.2	--	--	0	--	--	<10	--	40	--	--
APR 20...	.3	--	--	0	--	--	<10	--	30	--	--
MAY 25...	.1	.0	.0	1	1	1	<10	<1	40	10	46
JUN 08...	.0	--	--	1	--	--	<10	--	10	--	--
JUL 25...	1.8	--	--	2	--	--	20	--	1300	--	--
AUG 16...	1.5	.0	--	--	0	--	60	--	2700	0	--
SEP 24...	.0	--	--	--	--	--	<10	--	30	--	--

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

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE TN BOTTOM MA- TERIAL (UG/G)	PHENDLS (UG/L)
OCT 27...	1300	2.8	.00	--	2
DEC 01...	1500	4.2	.00	--	2
JAN 26...	1400	1.9	.00	--	4
FEB 15...	1320	2.3	.00	--	3
MAR 30...	1400	4.7	.00	--	2
APR 20...	1500	11	.00	--	1
MAY 25...	1300	11	.00	0	2
JUN 08...	1330	5.5	.00	--	2
JUL 25...	1500	146	.01	--	2
AUG 16...	1415	327	.02	--	0
SEP 24...	1330	7.7	.00	--	1

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
DEC 01...	1500	18.0	15.5	240
JAN 26...	1400	--	--	480
FEB 15...	1320	--	--	620
APR 20...	1500	--	--	11000
MAY 25...	1300	--	--	230000
JUN 08...	1330	--	--	9900
JUL 25...	1500	--	--	360000
AUG 16...	1415	--	--	8100
SEP 24...	1330	--	--	1500

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDI- MENT (MG/L)	SUS- PENDE SEDI- MENT CHARGE (T/DAY)	SUS. SED. STEE DIAM. % FINER THAN .062 MM
OCT 27...	1300	12	26	.84	54
DEC 01...	1500	6.0	30	.49	19
JAN 26...	1400	35	50	4.7	62
FEB 15...	1320	13	57	2.0	26
MAR 30...	1400	150	150	61	80
APR 20...	1500	80	110	24	73
MAY 25...	1300	90	392	95	90
JUN 08...	1330	4.0	233	2.5	91
JUL 25...	1500	160	13300	5750	99
AUG 16...	1415	350	32200	30400	94

09474000 GILA RIVER AT KELVIN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 27,76 1300	DEC 1,76 1500	JAN 26,77 1400	FEB 15,77 1320	APR 20,77 1500	
TOTAL CELLS/ML	2100	240	480	620	11000	
DIVERSITY: DIVISTUN	0.0	0.9	1.2	1.2	1.3	
..CLASS	0.0	0.9	1.2	1.2	1.4	
..ORDER	0.0	0.9	1.6	1.6	2.0	
...FAMILY	0.4	1.8	2.4	2.4	2.5	
....GENIJS	0.4	2.3	2.6	3.0	3.1	
ORGANISM	CFLLS /ML	PER- CENT	CFLLS /ML	PER- CENT	CFLLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
....DUCYSTACEAE						
....ANKISTRODESMIJS	--	-	--	-	1400	13
....CHOUATFLLA	--	-	--	-	76	1
....DICTYOSPHAERIUM	--	-	--	-	300	3
....DUCYSTIS	--	-	--	-	*	0
....SELENASTRUM	--	-	--	-	76	1
....SCENEDESMACEAE						
....CHUICIGENTA	--	-	--	-	610	5
....SCENFDESMUS	--	-	--	-	610	5
....TETRASTRUM	--	-	--	-	300	3
...VULVOCALFS						
...CHLAMYDOMONADACEAE						
....CARTERIA	--	-	--	-	150	1
....CHLAMYDOMONAS	--	-	--	-	*	0
...PHACUTACEAE						
....PHACOTIJS	--	-	--	-	*	0
CHRYSOPHYTA						
..BACTILLARIOPHYCEAE						
...PENNALES						
...NAVICULACEAE						
....FNTUMONEIS	--	-	32	14	12	3
...CENTRALES						
...COSCINODISCACEAE						
...CYCLOTELLA	--	-	--	-	19	4
...MELUSIRA	--	-	--	-	45	7
...PENNALES					17	3
...ACHNANTHACEAE						
...CUCCONFIS	--	-	--	-	5000#	44
...RHODICOSPHENIA	--	-	--	-	230	2
...CYMBELLACEAE						
....AMPHORA	--	-	--	-	76	1
....CYMBELLA	--	-	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	*	0
...FRAGILLARIACEAE					14	2
....SYNEORA	--	-	--	-	14	2
...GOMPHONEMACEAE						
....GOMPHONEMA	--	-	--	-	12	3
...NAVICULACEAE					21	3
....CALONEIS	--	-	13	5	7	1
....NAVICULA	150	7	32	14	27	4
...NITZSCHIA						
....NITZSCHIA	1900#	93	65#	27	120#	26
...SURIRELLACEAE					150#	25
....SURIRELLA	--	-	16	7	3	1
...CHRYSOPHYCEAE						
...CHRYSDOMONADALES						
...CHROMULINACEAE						
....CHRYSOCOCCUS	--	-	--	-	3	1
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCCOCCALES						
...CHROCCOCCACEAE						
....ANACYSTIS	--	-	--	-	150	1
...HORMOGONALES						
...NOSTOCACEAE						
....APHANIZOMENON	--	-	--	-	150	1
...OSCELLATORIACEAE						
....LYNGRYA	--	-	--	-	120#	19
....OSCELLATORIA	--	-	81#	34	140#	23
					*	0

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

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

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 27, 76 1300		DEC 1, 76 1500		JAN 26, 77 1400		FEB 15, 77 1320		APR 20, 77 1500	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDAE										
....CRYPTOMONADACEAE										
.....CRYPTOMONAS	--	-	--	-	--	-	--	-	150	1
..EUGLENOPHYCEAE										
...EUGLENALFS										
....EUGLENACEAE										
.....EUGLENA	--	-	--	-	--	-	3	1	150	1
.....TRACHELOMONAS	--	-	--	-	--	-	--	-	380	3
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%

09474000 GILA RIVER AT KELVIN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 25,77 1500	JUN 8,77 1530	JUL 25,77 1500	AUG 16,77 1415	SEP 24,77 1530
TOTAL CELLS/ML	230000	9900	360000	8100	1500
DIVERSITY: DIVISION	0.9	1.1	0.2	1.4	0.8
..CLASS	0.9	1.1	0.2	1.4	0.8
..ORDER	1.0	1.6	0.3	1.4	0.9
...FAMILY	1.1	1.9	0.3	1.6	1.1
....GENUS	1.1	1.9	0.3	1.6	1.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
....CHLOROCYSTACEAE										
.....ANKISTRUPESMUS	2500	1	290	3	--	--	--	--	300#	20
.....CHODATELLA	--	--	--	--	--	--	--	--	--	--
.....DICTYOSPHAERIUM	*	0	--	--	--	--	--	--	--	--
.....DUCYSTIS	--	--	--	--	--	--	--	--	--	--
.....SELENASTRUM	*	0	--	--	--	--	--	--	--	--
.....SCENEDESMACEAE										
.....CRUCIGENTIA	*	0	--	--	--	--	--	--	--	--
.....SCENEDUSMUS	*	0	140	1	--	--	1400#	17	--	--
.....TETRASTRUM	1400	1	850	9	--	--	--	--	--	--
..VULVOCALLES										
...CHLAMYDOMONADACEAE										
....CARITERIA	--	--	140	1	--	--	--	--	--	--
....CHLAMYDOMONAS	*	0	--	--	--	--	--	--	--	--
....PHACUTACEAE										
....PHACOTUS	*	0	71	1	--	--	--	--	--	--
CHRYSTOPHYTA										
..BACILLARIOPHYCEAE										
...PENNALLES										
....NAVICULACEAE										
....ENTOMONETS	*	0	--	--	--	--	--	--	--	--
...CENTRALES										
....COSCINODISCACEAE										
.....CYCLOTELLA	1800	1	1100	11	*	0	--	--	14	1
.....MELOSIRA	170000#	76	--	--	--	--	--	--	--	--
...PENNALLES										
....ACHNANTHACEAE										
....CUCCONEIS	*	0	--	--	--	--	--	--	--	--
....RHODICOSPHEA	*	0	--	--	--	--	--	--	--	--
....CYMBELLACEAE										
.....AMPHORA	*	0	--	--	--	--	--	--	--	--
.....CYMBELLA	--	--	--	--	*	0	--	--	--	--
....DIATOMACEAE										
.....DIATOMA	*	0	--	--	--	--	--	--	--	--
....FRAGILARIACEAE										
.....SYNDRA	--	--	--	--	--	--	--	--	--	--
....GOMPHONEMACEAE										
.....GOMPHONEMA	*	0	--	--	--	--	--	--	--	--
....NAVICULACEAE										
.....CALONEIS	*	0	--	--	--	--	--	--	--	--
.....NAVICULA	*	0	210	2	--	--	700	9	57	4
....NITZSCHACEAE										
.....NITZSCHIA	*	0	6200#	63	11000	3	1100	13	1100#	74
....SURIRELLACEAE										
.....SURIRELLA	*	0	--	--	--	--	--	--	--	--
..CHRYSTOPHYCEAE										
...CHRYSUMONADALES										
....CHROMULINACEAE										
....CHRYSOCCOCUS	--	--	--	--	--	--	--	--	--	--
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
....CHROCOCCOCCAEAE										
.....ANACYSTIS	45000#	14	710	7	--	--	--	--	--	--
....HORMOGONALES										
.....NOSTOCACEAE										
.....APHANIZOMENON	*	0	--	--	--	--	--	--	--	--
....OSCILLATORIACEAE										
.....LYNGBYA	--	--	--	--	350000#	96	--	--	--	--
....OSCILLATORIA	*	0	--	--	--	--	4900#	61	--	--

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

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

GILA RIVER BASIN

09474000 GILA RIVER AT KELVIN, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 25,77 1300		JUN 8,77 1330		JUL 25,77 1500		AUG 16,77 1415		SEP 24,77 1330	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONADALES										
....CRYPTOMONADACEAE										
.....CRYPTOMONAS	*	0	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
....EUGLENACEAE										
.....EUGLENA	*	0	140	1	--	-	--	-	--	-
....TRACHELUMONAS	*	0	--	-	--	-	--	-	28	2
PYRKHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
....GLENODINIACEAE										
.....GLENODINIUM	*	0	--	-	--	-	--	-	--	-

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

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

GILA RIVER BASIN

279

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) above mean sea level. 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, 2.05 ft (0.625 m) Sept. 11; no flow over dam for most of year.

DAILY MEAN HEAD, IN FEET, OVER DAM, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	.05
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	(e)
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	.17
11	0	0	0	0	0	0	0	0	0	0	0	.42
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	.06	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	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	0	0	0
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	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	-----	0	0	-----

e Flow over crest of dam for short time, but mean for day less than 0.01 ft.

GILA RIVER BASIN

09475000 GILA RIVER AT ASHURST-HAYDEN DAM, NEAR FLORENCE, AZ--Continued

MONTHLY DIVERSIONS TO FLORENCE-CASA GRANDE CANAL
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Discharge, in cubic feet per second			Diversions in acre-feet	Water sluiced above flume (acre-feet)†
	Maximum	Minimum	Mean		
October	23	3.0	7.06	434	139
November	7	5	5.97	355	355
December	142	0	77.7	4,780	0
CAL YR 1976	878	0	253	182,900	655
January	95	12	32.9	2,030	0
February	128	2.5	14.9	826	0
March	191	113	156	9,600	0
April	136	45	77.8	4,630	0
May	90	19	65.4	4,020	0
June	8.0	0	2.73	162	0
July	206	0	43.1	2,650	0
August	471	71	198	12,150	12
September	576	35	145	8,620	95
WTR YR 1977	576	0	69.4	50,260	601

† 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 spillover the dam or water sluiced through the dam during times of flood runoff.

GILA RIVER BASIN

281

09479500 GILA RIVER NEAR LAVEEN, AZ

LOCATION.--Lat 33°15'25", long 112°09'59", in SW¼NW¼ 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) above mean sea level. 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.--35 years (1940-46, 1948-77), 21.3 ft³/s (0.603 m³/s), 15,430 acre-ft/yr (19.0 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 or 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, 430 ft³/s (12.2 m³/s) Oct. 22, gage height, 6.65 ft (2.027 m), no peak above base of 700 ft³/s (20 m³/s); no flow for most of year.

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	.00	1.6	1.6	1.4	.00	.00	.00	.00	.00	.00	9.4	.00
2	.00	1.9	3.6	1.6	.00	.00	.00	.00	.00	.00	9.7	.00
3	.00	1.9	1.4	1.6	.00	.00	.00	.00	.00	.00	8.4	.00
4	.00	2.2	.18	1.6	.00	.00	.00	.00	.00	.00	6.6	.00
5	.00	.54	1.4	1.6	.00	.00	.00	.00	.00	.00	.88	.00
6	.00	.10	1.6	1.6	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.40	1.6	1.6	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.40	1.6	1.6	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.46	.39	.77	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	1.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	2.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	2.5	.00	.06	.00	.00	.00	.00	.00	48	.00	.00
13	.00	1.8	.00	1.0	.00	.00	.00	.00	.00	116	.00	.00
14	.00	.90	.00	1.6	.00	.00	.00	.00	.00	20	.00	.00
15	.00	.90	.00	1.6	.00	.00	.00	.00	.00	9.8	.00	.00
16	.00	1.9	.00	1.6	.00	.00	.00	.00	.00	5.9	7.8	.00
17	.00	3.6	.00	1.6	.00	.00	.00	.00	.00	3.6	2.0	.00
18	.00	3.6	.00	1.6	.00	.00	.00	.00	.00	1.5	5.3	.00
19	.00	5.0	.00	.21	.00	.00	.00	.00	.00	.00	10	.00
20	.00	2.5	.00	.00	.00	.00	.00	.00	.00	.00	.81	.00
21	.00	1.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	65	1.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	170	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.53	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.49	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.87	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.61	.23	.00	.00	.00	.00	.00	.00	.05	.00	.93
28	.30	.85	.27	.00	.00	.00	.00	.00	.00	11	.00	3.7
29	.42	.86	.00	.00	---	.00	.00	.00	.00	10	.00	3.6
30	1.2	1.4	.00	.00	---	.00	.00	.00	.00	8.1	.00	4.4
31	1.6	---	.00	.00	---	.00	---	.00	---	9.0	.00	---
TOTAL	238.52	46.51	13.87	22.64	.00	.00	.00	.00	.00	242.95	60.89	12.63
MEAN	7.69	1.55	.45	.73	.000	.000	.000	.000	.000	7.84	1.96	.42
MAX	170	5.0	3.6	1.6	.00	.00	.00	.00	.00	116	10	4.4
MIN	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	473	92	28	45	.00	.00	.00	.00	.00	482	121	25

CAL YR 1976 TOTAL 702.71 MEAN 1.92 MAX 182 MIN .00 AC-FT 1390
WTR YR 1977 TOTAL 638.01 MEAN 1.75 MAX 170 MIN .00 AC-FT 1270

NOTE.--No gage-height record Oct. 1-28.

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.--28 years, 3.02 ft³/s (0.086 m³/s), 2,190 acre-ft/yr (2.70 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, 4,810 ft³/s (136 m³/s) Sept. 12, 1965 (gage height, 8.90 ft or 2.712 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)
Aug. 14	2230	868 24.6	5.42 1.652	Sept. 5	1800	*1,130 32.0	5.96 1.817
Aug. 15	1815	528 15.0	4.57 1.393				

Minimum daily discharge, 0.04 ft³/s (0.001 m³/s) June 9, 10, July 7, 8.

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	.94	.65	.56	.66	.52	.45	.26	.21	.06	.05	.67	.33
2	1.1	.65	.60	.60	.54	.43	.26	.25	.06	.05	.21	.18
3	.89	.65	.61	.60	.53	.43	.29	.28	.05	.11	.18	.15
4	.84	.65	.60	.60	.55	.43	.28	.30	.05	.09	.15	.14
5	.82	.65	.61	.60	.56	.40	.28	.28	.06	.08	.14	107
6	.82	.61	.60	.60	.56	.40	.28	.27	.06	.06	.14	5.0
7	.82	.61	.60	.60	.56	.40	.28	.23	.05	.04	.12	.46
8	.81	.61	.60	.62	.56	.38	.28	.22	.05	.04	.52	.33
9	.82	.61	.60	.59	.56	.40	.28	.25	.04	.05	31	.33
10	.82	.61	.60	.58	.55	.40	.29	.25	.04	.07	2.8	.34
11	.82	.61	.60	.60	.48	.36	.29	.23	.05	5.9	1.4	8.5
12	.81	.61	.60	.58	.48	.36	.27	.20	.06	.32	.20	3.1
13	.80	.70	.60	.52	.49	.36	.27	.18	.06	.17	.31	.35
14	.79	.61	.60	.51	.50	.33	.27	.18	.05	.76	49	.31
15	.77	.61	.60	.48	.48	.33	.26	.16	.06	1.6	71	.29
16	.74	.60	.60	.48	.45	.33	.26	.16	.06	1.2	35	.24
17	.73	.60	.60	.51	.44	.30	.28	.14	.06	1.1	3.1	.22
18	.71	.60	.60	.51	.45	.30	.30	.14	.06	.88	2.9	.23
19	.70	.60	.60	.49	.46	.30	.30	.12	.06	.66	2.0	.23
20	.71	.60	.61	.50	.48	.23	.27	.12	.06	.70	1.5	.23
21	.72	.60	.60	.57	.47	.23	.26	.10	.05	.55	3.3	.22
22	.72	.60	.60	.54	.45	.19	.25	.10	.06	.94	2.2	.22
23	.69	.60	.60	.55	.43	.18	.27	.08	.08	3.6	8.1	.21
24	.69	.60	.61	.52	.44	.20	.29	.08	.07	.76	1.1	.22
25	.69	.60	.60	.52	.45	.22	.31	.09	.06	.44	.80	.21
26	.74	.60	.60	.50	.45	.23	.31	.08	.06	1.1	.58	.22
27	.70	.60	.61	.48	.43	.23	.27	.08	.06	.41	.46	.22
28	.70	.58	.61	.48	.43	.23	.24	.08	.06	.30	.45	.20
29	.65	.58	.64	.53	---	.23	.20	.07	.07	.27	.38	.14
30	.70	.56	.63	.59	---	.23	.19	.08	.06	.21	.34	.09
31	.65	---	.60	.52	---	.26	---	.07	---	.19	.30	---
TOTAL	23.91	18.36	18.69	17.03	13.75	9.75	8.14	5.08	1.73	22.70	220.35	129.91
MEAN	.77	.61	.60	.55	.49	.31	.27	.16	.058	.73	7.11	4.33
MAX	1.1	.70	.64	.66	.56	.45	.31	.30	.08	5.9	71	107
MIN	.65	.56	.56	.48	.43	.18	.19	.07	.04	.04	.12	.09
AC-FT	47	36	37	34	27	19	16	10	3.4	45	437	258
CAL YR 1976	TOTAL	2067.20	MEAN 5.65	MAX 463	MIN .00	AC-FT 4100						
WTR YR 1977	TOTAL	489.40	MEAN 1.34	MAX 107	MIN .04	AC-FT 971						

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) above mean sea level (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.--58 years (1912-22, 1929-77), 23.0 ft³/s (0.651 m³/s), 16,660 acre-ft/yr (20.5 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 1930-77.--Maximum discharge, 17,100 ft³/s (484 m³/s) Aug. 1, 1974 (gage height, 12.94 ft or 3.944 m), from rating curve extended above 3,700 ft³/s (100 m³/s) on basis of slope-area measurement of peak flow; maximum gage height, 13.71 ft (4.179 m) Aug. 20, 1955; no flow at times in most years.

Flood of Dec. 22, 1914, probably about the same as that of Aug. 1, 1974.

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)
July 18	1500	2,010 56.9	6.00 1.829	Aug. 18	1600	*6,700 190	8.70 2.652
Aug. 14	1430	2,430 68.8	6.30 1.920	Sept. 4	1700	3,520 99.7	7.00 2.134
Aug. 16	0300	2,880 81.6	6.60 2.012	Sept. 11	2300	2,730 77.3	6.50 1.981

No flow for many days.

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	.90	.00	.00	1.4	2.2	1.1	.60	.00	.00	.00	.00	.00
2	.70	.00	.00	1.7	2.2	.80	.60	.00	.00	.00	.00	.00
3	.40	.00	.00	1.7	2.0	.70	.60	.00	.00	.00	.00	.00
4	.40	.00	.00	1.7	1.7	.60	.60	.00	.00	.00	.00	455
5	.40	.00	.00	2.0	1.6	.50	.60	.00	.00	.00	.00	85
6	.20	.00	.00	2.0	1.6	.40	.60	.00	.00	.00	.00	100
7	.00	.00	.00	2.1	1.6	.40	.60	.00	.00	.00	.00	10
8	.00	.00	.00	2.3	1.6	.50	.50	.00	.00	.00	.00	1.0
9	.00	.00	.00	2.5	1.6	.50	.50	.00	.00	.00	.30	.00
10	.00	.00	.00	2.5	1.7	.50	.50	.00	.00	.00	9.0	.00
11	.00	.00	.00	2.6	1.4	.40	.50	.00	.00	.00	.00	275
12	.00	.00	.00	2.6	1.4	.40	.40	.00	.00	.00	.00	245
13	.00	.00	.00	2.6	1.4	.50	.40	.00	.00	.00	2.4	10
14	.00	.00	.00	2.6	1.6	.50	.40	.00	.00	.00	143	1.0
15	.00	.00	.00	2.8	1.3	.60	.40	.00	.00	.00	1.0	.00
16	.00	.00	.00	2.8	1.3	.60	.40	.00	.00	.00	135	.00
17	.00	.00	.00	2.6	1.3	.60	.40	.00	.00	.00	.20	.00
18	.00	.00	.00	2.5	1.3	.70	.40	.00	.00	58	255	.00
19	.00	.00	.00	2.5	1.3	.70	.40	.00	.00	.00	8.0	.00
20	.00	.00	.00	2.5	1.3	.70	.40	.00	.00	.00	.00	.00
21	.00	.00	.00	2.6	1.2	.50	.40	.00	.00	.00	.00	.00
22	.00	.00	.00	2.5	1.1	.50	.40	.00	.00	.00	.00	.00
23	.00	.00	.00	5.9	1.1	.40	.20	.00	.00	.00	.00	.00
24	.00	.00	.00	3.3	1.1	.50	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	2.8	1.1	.50	.00	.00	.00	3.2	.00	.00
26	.00	.00	.20	2.6	.90	.70	.00	.00	.00	.00	.00	.00
27	.00	.00	.50	2.5	.90	.90	.00	.00	.00	.00	.00	.00
28	.00	.00	.80	2.3	1.0	.70	.00	.00	.00	.00	.00	.00
29	.00	.00	1.0	2.3	---	.60	.00	.00	.00	.00	.00	.00
30	.00	.00	1.1	3.3	---	.60	.00	.00	.00	7.1	.00	.00
31	.00	---	1.0	3.0	---	.60	---	.00	---	23	.00	---
TOTAL	3.00	.00	4.60	79.1	39.80	18.20	10.80	.00	.00	91.30	553.90	1182.00
MEAN	.097	.000	.15	2.55	1.42	.59	.36	.000	.000	2.95	17.9	39.4
MAX	.90	.00	1.1	5.9	2.2	1.1	.60	.00	.00	58	255	455
MIN	.00	.00	.00	1.4	.90	.40	.00	.00	.00	.00	.00	.00
AC-FT	6.0	.00	9.1	157	79	36	21	.00	.00	181	1100	2340
CAL YR 1976	TOTAL	7740.20	MEAN	21.1	MAX	1300	MIN	.00	AC-FT	15350		
WTR YR 1977	TOTAL	1982.70	MEAN	5.43	MAX	455	MIN	.00	AC-FT	3930		

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 and specific conductance of individual samples available in district office at Tucson, Ariz.

MONTHLY AND ANNUAL SUMMARY OF SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

Month	Discharge (cfs)	Suspended-sediment discharge (tons)
October 1976	3.00	0.5
November	0.0	0.0
December	4.60	0.1
January 1977	79.1	12
February	39.8	6.0
March	10.2	2.0
April	10.8	0.5
May	0.0	0.0
June	0.0	0.0
July	91.3	1,100
August	553.9	15,100
September	1,182.0	21,600
Total for year	1,982.7	37,821.1

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DTS-SOLVED OXYGEN (MG/L)	FECAL COLIFORM .7UM-MF (COL./100 ML)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DTS-SOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG/L)
OCT 28...	1430	E3.0	700	8.3	23.5	15	8.3	170	170	0	54	8.6
DEC 02...	1400	F4.0	765	8.1	14.0	20	10.3	840	180	0	57	9.7
29...	1330	E4.0	810	8.0	13.0	15	10.3	820	170	0	54	9.2
JAN 27...	1300	E4.0	840	8.2	20.0	25	7.3	81	190	0	60	9.5
FEB 16...	1430	F4.0	800	8.1	22.0	20	6.9	81	190	0	60	9.6
MAR 31...	1430	E5.0	850	8.1	23.5	20	6.7	83	180	0	55	9.3
APR 19...	1300	E5.0	820	8.2	25.0	--	6.6	320	190	0	60	9.4
MAY 26...	1500	F4.0	860	8.2	29.0	15	6.2	76000	200	0	62	11
JUN 09...	1700	E4.0	880	8.2	26.0	15	5.0	260	200	0	62	10
JUL 20...	1500	E20	530	8.2	25.0	3200	6.8	310000	140	0	41	8.7
AUG 18...	1500	F6.0	660	8.2	26.0	1200	6.1	48000	130	0	40	8.0
SEP 22...	1400	F5.0	740	8.0	27.0	25	5.9	730	180	0	54	10

DATE	DTS-SOLVED SODIUM (NA) (MG/L)	SODIUM ANION-SORPTION RATIO	DTS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DTS-SOLVED SULFATE (SO4) (MG/L)	DTS-SOLVED CHLORIDE (CL) (MG/L)	DTS-SOLVED FLUORIDE (F) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED RESIDUE AT 180 C (MG/L)	DTS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DTS-SOLVED SOLIDS PER AC-FT
OCT 28...	71	2.4	13	229	0	77	49	.5	39	459	448	.62
DEC 02...	73	2.4	13	285	0	72	45	.6	40	459	473	.62
29...	73	2.4	12	317	0	73	46	.6	39	440	478	.60
JAN 27...	78	2.5	12	250	0	80	49	.6	37	452	453	.61
FEB 16...	77	2.4	11	280	0	87	47	.7	36	472	471	.64
MAR 31...	88	2.9	14	320	0	82	48	.7	39	483	508	.66
APR 19...	78	2.5	12	250	0	81	47	.7	38	466	466	.63
MAY 26...	93	2.9	15	330	0	95	59	.4	42	541	555	.74
JUN 09...	86	2.7	14	300	0	89	50	.5	42	502	519	.68
JUL 20...	62	2.3	8.0	210	0	69	39	.4	32	324	364	.44
AUG 18...	63	2.4	9.6	230	0	75	40	.4	43	252	411	.34
SEP 22...	73	2.4	12	220	0	79	50	.4	36	451	437	.61

B Based on non-ideal colony count.

E Estimated.

GILA RIVER BASIN

09481710 SANTA CRUZ RIVER AT RIO RICO, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL. NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
OCT 28...	--	--	3.8	2.0	7.1	--	11	6.0	4.5
DEC 02...	.56	.26	3.2	.82	14	--	17	7.3	5.9
29...	.13	.09	.22	.22	20	--	20	6.5	4.4
JAN 27...	--	--	.05	.05	19	--	19	7.0	1.1
FEB 16...	--	--	.37	.37	20	--	20	6.4	.87
MAR 31...	--	--	.27	.00	25	--	25	6.2	4.6
APR 19...	--	--	.02	.01	27	--	27	7.2	5.5
MAY 26...	--	--	.47	.17	38	280	38	5.6	4.6
JUN 09...	--	--	.90	.91	22	--	23	5.4	4.1
JUL 20...	--	--	2.0	--	14	--	16	8.5	--
AUG 18...	--	--	2.9	2.9	13	--	16	11	1.8
SEP 22...	--	--	1.7	1.7	7.1	--	8.8	3.8	2.2

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERIAL (UG/G)
OCT 28...	6	--	100	--	240	180	<10	--
DEC 02...	5	--	0	--	200	160	<10	--
29...	4	--	0	--	160	150	<10	--
JAN 27...	5	--	100	--	170	150	<10	--
FEB 16...	5	--	100	--	170	140	<10	--
MAR 31...	4	--	100	--	200	150	<10	--
APR 19...	3	--	100	--	190	150	<10	--
MAY 26...	5	2	100	50	230	190	<10	<1
JUN 09...	5	--	100	--	260	190	<10	--
JUL 20...	16	--	2000	--	190	110	10	--
AUG 18...	39	--	1000	--	220	210	10	--
SEP 22...	--	--	400	--	210	190	<10	--

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

GILA RIVER BASIN

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09481710 SANTA CRUZ RIVER AT RIO RICO, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL CHROMIUM IN BOTTOM MA- TERTIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERTIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FF) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA- TERTIAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)
OCT 28...	--	10	--	660	40	<100	--	130	20
DEC 02...	--	20	--	470	30	<100	--	120	90
29...	--	20	--	240	20	<100	--	60	10
JAN 27...	--	10	--	590	170	<100	--	100	60
FEB 16...	--	40	--	600	50	<100	--	100	40
MAR 31...	--	10	--	350	40	<100	--	120	60
APR 19...	--	10	--	530	40	<100	--	100	60
MAY 26...	2	10	8	230	40	<100	10	80	0
JUN 09...	--	<10	--	250	30	<100	--	60	0
JUL 20...	--	290	--	100000	10	900	--	7000	80
AUG 18...	--	120	--	41000	10	400	--	2800	140
SEP 22...	--	<10	--	540	20	<100	--	100	0

DATE	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MA- TERTIAL (UG/G)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM IN BOTTOM MA- TERTIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA- TERTIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA- TERTIAL (UG/G)
OCT 28...	.1	--	0	--	<10	--	20	--
DEC 02...	.1	--	--	--	<10	--	40	--
29...	.1	--	0	--	<10	--	40	--
JAN 27...	.1	--	0	--	<10	--	40	--
FEB 16...	.1	--	0	--	<10	--	240	--
MAR 31...	.1	--	0	--	<10	--	40	--
APR 19...	.2	--	0	--	<10	--	40	--
MAY 26...	.0	.0	0	1	<10	<1	30	20
JUN 09...	.0	--	0	--	<10	--	30	--
JUL 20...	1.3	--	0	--	10	--	1600	--
AUG 18...	1.1	--	0	--	<10	--	670	--
SEP 22...	.0	--	--	--	<10	--	20	--

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

GILA RIVER BASIN

09481710 SANTA CRUZ RIVER AT RIO RICO, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	TOTAL CYANIDE IN BOTTOM MA- TERIAL (UG/G)	PHENOLS (UG/L)
OCT 28...	1430	25	.01	--	5
DEC 02...	1400	33	.02	--	2
29...	1330	47	.01	--	7
JAN 27...	1300	23	.03	--	0
FEB 16...	1430	23	.02	--	0
MAR 31...	1430	26	.03	--	4
APR 19...	1300	24	.04	--	6
MAY 26...	1500	42	.02	0	12
JUN 09...	1700	33	.02	--	6
JUL 20...	1500	--	.02	--	3
AUG 18...	1500	27	.02	--	3
SEP 22...	1400	25	.02	--	6

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	PERT- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
OCT 28...	1430	16.0	13.5	--
MAR 31...	1430	--	--	880000

GILA RIVER BASIN

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09481710 SANTA CRUZ RIVER AT RIO RICO, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAR 31, 77
TIME	1430
TOTAL CELLS/ML	880000
DIVERSITY: DIVISION	0.2
..CLASS	0.2
...ORDER	0.2
...FAMILY	0.3
....GENUS	0.3

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCELES		
...MUTICACTINACEAE		
....MUTICACTINIUM	840000#	96
...DUCYSTACEAE		
....ANKISTRUMESMUS	*	0
...SCENEDESMACEAE		
....ACTINASTRUM	*	0
....SCENEDESMUS	*	0
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...PENNALES		
...NAVTICULACEAE		
....NAVICULA	*	0
....PINNULARTA	*	0
EUGLENOPHYTA (EUGLENOIDS)		
..EUGLENOPHYCEAE		
...EUGLENALES		
...EUGLENACEAE		
....EUGLENA	32000	4

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

GILA RIVER BASIN

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) above mean sea level. Prior to Sept. 8, 1965, at datum 4.07 ft (1.241 m) higher.

REMARKS.--Records fair except those below 5 ft³/s (0.14 m³/s), which are 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.--32 years, 17.6 ft³/s (0.498 m³/s), 12,750 acre-ft/yr (15.7 hm³/yr); median of yearly mean discharges, 9.1 ft³/s (0.26 m³/s), 6,600 acre-ft/yr (8.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) Dec. 20, 1967 (gage height, 15.3 ft or 4.66 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of main channel at gage height 14.13 ft (4.307 m) and partial discharge measurement of main channel with contracted-opening measurement of bypass channel at gage height 15.3 ft (4.66 m); no flow for most of each year.

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)
July 18	1800	*3,290 93.2	7.32 2.231	Aug. 22	2330	2,000 56.6	5.97 1.820
July 26	2330	2,050 58.1	6.02 1.835	Sept. 4	1830	2,060 58.3	6.03 1.838
Aug. 1	0200	2,350 66.6	6.32 1.926	Sept. 11	1400	2,530 71.6	6.50 1.981

No flow for many days.

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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	284	.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	188
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	89
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.0
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0
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	38	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	66	.00	417
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	400
13	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10
14	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0
15	.60	.00	.00	.00	.00	.00	.00	.00	.00	.00	394	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	260	.00
17	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	20	.00
18	.70	.00	.00	.00	.00	.00	.00	.00	.00	218	5.0	.00
19	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00
20	1.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	1.3	.00	.00	.20	.00	.00	.00	.00	.00	.00	46	.00
23	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	199	.00
24	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.80	.00	.00	.00	.00	.00	.00	.00	.00	114	.00	165
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	70	.00	5.0
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	142	.00	.00
29	.00	.00	.40	.00	---	.00	.00	.00	.00	20	.00	.00
30	.00	.00	.40	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.40	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	13.90	.00	1.20	.20	.00	.00	.00	.00	.00	668.00	1208.30	1285.00
MEAN	.45	.0000	.039	.006	.000	.000	.000	.000	.000	21.5	39.0	42.8
MAX	1.6	.00	.40	.20	.00	.00	.00	.00	.00	218	394	417
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	28	.00	2.4	.4	.00	.00	.00	.00	.00	1320	2400	2550
CAL YR 1976	TOTAL	5653.70	MEAN	15.4	MAX	1040	MIN	.00	AC-FT	11210		
WTR YR 1977	TOTAL	3176.60	MEAN	8.70	MAX	417	MIN	.00	AC-FT	6300		

GILA RIVER BASIN

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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 fair.

AVERAGE DISCHARGE.--12 years, 0.43 ft³/s (0.012 m³/s), 312 acre-ft/yr (385,000 m³/yr); median of yearly mean discharges, 0.36 ft³/s (0.010 m³/s), 260 acre-ft/yr (320,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 896 ft³/s (25.4 m³/s) Sept. 25, 1976 (gage height, 2.64 ft or 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. 19	1630	217	6.15	1.77	0.539
Sept. 9	2030	*304	8.61	1.92	.585

No flow for most of year.

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	.00	.00	.00	6.2	.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	.48	.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	.78
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.36	.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	.62	.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	7.0	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.94	.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	2.8	---	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	6.2	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	15.20	.00	.00	.00	.00	.00	1.30	8.10	13.78
MEAN	.000	.000	.000	.49	.000	.000	.000	.000	.000	.042	.26	.46
MAX	.00	.00	.00	6.2	.00	.00	.00	.00	.00	.94	7.0	13
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	30	.00	.00	.00	.00	.00	2.6	16	27
CAL YR 1976	TOTAL	171.63	MEAN .47	MAX 111	MIN .00	AC-FT 340						
WTR YR 1977	TOTAL	38.38	MEAN .11	MAX 13	MIN .00	AC-FT 76						

GILA RIVER BASIN

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. Datum of gage is 2,317.82 ft (706.472 m) above mean sea level. 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.

REMARKS.--Records fair. 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.--72 years, 21.1 ft³/s (0.598 m³/s), 15,290 acre-ft/yr (18.9 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, 16,600 ft³/s (470 m³/s) Aug. 23, 1961 (gage height, 20.68 ft or 6.303 m, present datum), from rating curve extended above 4,200 ft³/s (120 m³/s) on basis of slope-area measurement of peak flow, and partial discharge measurement at gage height 18.4 ft (5.61 m), present datum; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,660 ft³/s (75.3 m³/s) Aug. 15, gage height, 9.40 ft (2.865 m), from high-water mark in gage well, base discharge, 1,700 ft³/s (48 m³/s); no flow for most of year.

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	.00	.00	.00	1.8	.00	.00	.00	.00	.00	.00	132	.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	38	.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	38
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	92
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	35	33
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	48	69
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	33	15	75
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	22	191
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	29	12
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.5	28	.10
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	354	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	40	212	.00
17	.00	.00	.00	.00	.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	76	48	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.30	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	136	.00	.00	.00	.00	117	.00	.00	.00
23	.00	.00	.00	18	.00	.00	.00	.00	4.6	.00	196	.00
24	113	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.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	64
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	290	.00	95
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	1.1	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	17	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.10	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	113.00	.00	.10	173.90	.00	.00	.00	.00	121.60	446.50	1160.40	669.10
MEAN	3.65	.000	.003	5.61	.000	.000	.000	.000	4.05	14.4	37.4	22.3
MAX	113	.00	.10	136	.00	.00	.00	.00	117	290	354	191
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	224	.00	.2	345	.00	.00	.00	.00	241	886	2300	1330
CAL YR 1976	TOTAL	5303.20	MEAN	14.5	MAX	1140	MIN	.00	AC-FT	10520		
WTR YR 1977	TOTAL	2684.60	MEAN	7.36	MAX	354	MIN	.00	AC-FT	5320		

GILA RIVER BASIN

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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 or 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)	
July 14	1430	268	7.59	3.77	1.149
Sept. 10	unknown	*300	8.5	4.0	1.22

No flow for most of year.

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	.00	.00	.00	9.8	.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	.98	.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	1.0	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00	1.0
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	20
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	6.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	12	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.1	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.46	.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	.33	.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	4.5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.24	.00	.00	5.0	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.01	.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	2.2	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.28	.00	.02	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	4.2	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	4.0	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	4.4	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	4.74	6.50	4.40	25.61	.00	2.22	.00	.00	.00	15.89	.98	21.50
MEAN	.15	.22	.14	.83	.000	.072	.000	.000	.000	.51	.032	.72
MAX	4.5	6.5	4.4	9.8	.00	2.2	.00	.00	.00	12	.98	20
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	9.4	13	8.7	51	.00	4.4	.00	.00	.00	32	1.9	43
CAL YR 1976	TOTAL	52.29	MEAN	.14	MAX	12	MIN	.00	AC-FT	104		
WTR YR 1977	TOTAL	81.84	MEAN	.22	MAX	20	MIN	.00	AC-FT	162		

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) above mean sea level (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. Some flow is waste water dumped into stream.

AVERAGE DISCHARGE.--8 years (1944-52), 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); 21 years (1956-77), 0.87 ft³/s (0.025 m³/s), 630 acre-ft/yr (777,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s (142 m³/s) Aug. 22, 1961 (gage height, 10.35 ft or 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)
July 14	1430	640 18.1	6.35 1.935
Sept. 10	1815	*1,480 41.9	7.96 2.426

No flow for most of year.

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	.00	.00	.00	28	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.44	.00	.00	.00	3.3	.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	.82
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	3.5	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	3.9	.00	.00	.00	.00	.00	.00	.00	4.5
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	73
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.7
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.99	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	15	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.1	.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	3.0	.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	3.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	14	.00	.00	.00	.00	1.6	.00	.00	.00
23	.00	.00	.00	.20	.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	5.0	.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	5.9	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	11	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	7.3	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3.80	.99	7.30	66.50	.00	5.00	.93	.00	1.60	48.14	3.30	80.02
MEAN	.12	.033	.24	2.15	.000	.16	.031	.000	.053	1.55	.11	2.67
MAX	3.8	.99	7.3	28	.00	5.0	.49	.00	1.6	26	3.3	73
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	7.5	2.0	14	132	.00	9.9	1.8	.00	3.2	95	6.5	159
CAL YR 1976	TOTAL 141.69	MEAN .39	MAX 23	MIN .00	AC-FT 281							
WTR YR 1977	TOTAL 217.58	MEAN .60	MAX 73	MIN .00	AC-FT 432							

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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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 195 ft³/s (5.52 m³/s) July 16, 1975 (gage height, 3.21 ft or 0.978 m); no flow most of each year.

Date	Time	Discharge		Gage height	
		(ft ³ /s)	(m ³ /s)	(ft)	(m)
June 22	1130	*129	3.65	2.58	0.786
Sept. 10	1800	73	2.07	1.90	.579

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	.00	.00	.00	1.9	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.61	.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	1.0	.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	.04	.00	1.5
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.10
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.41	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.24	.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	.30	.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	1.0	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.00	.00
22	.01	.00	.00	.16	.00	.00	.00	.00	2.8	.20	.00	.00
23	.03	.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	.03	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.95	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.79	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	1.5	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.04	.48	1.50	6.30	.00	1.60	.19	.00	2.80	1.18	.61	1.60
MEAN	.034	.016	.048	.20	.000	.052	.006	.000	.093	.038	.020	.053
MAX	1.0	.41	1.5	1.9	.00	1.6	.16	.00	2.8	.30	.61	1.5
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2.1	1.0	3.0	12	.00	3.2	.4	.00	5.6	2.3	1.2	3.2
CAL YR 1976	TOTAL	32.27	MEAN .088	MAX 3.4	MIN .00	AC-FT 64						
WTR YR 1977	TOTAL	17.30	MEAN .047	MAX 2.8	MIN .00	AC-FT 34						

GILA RIVER BASIN

09485390 ATTERBURY WASH TRIBUTARY AT TUCSON, AZ

LOCATION.--Lat 32°11'09", long 110°49'17", in SW¼NW¼ 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 or 1.128 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)
Aug. 11	2100	*390 11.0	3.70 1.128
Sept. 10	1700	87 2.46	1.78 .543

No flow for most of each year.

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	.00	.00	.00	2.7	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	6.0	.00	.00	.10	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.15	.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	2.8	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.6
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.88	15	2.2
12	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	2.1	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.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	.12	.00	.00	.00	.00	.00	.00	.00	.00
21	.12	.00	.00	2.3	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.17	.00	.00	.00	.00	3.1	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	1.3	.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	1.7	.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	1.8	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.98	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.33	.00	---
TOTAL	1.42	.16	.00	16.88	.00	1.70	.25	.00	3.10	2.91	17.10	6.80
MEAN	.046	.005	.000	.54	.000	.055	.008	.000	.10	.094	.55	.23
MAX	1.3	.16	.00	6.0	.00	1.7	.15	.00	3.1	1.5	15	4.6
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2.8	.3	.00	33	.00	3.4	.5	.00	6.1	5.8	34	13
CAL YR 1976	TOTAL 54.03	MEAN .15	MAX 42	MIN .00	AC-FT 107							
WTR YR 1977	TOTAL 50.32	MEAN .14	MAX 15	MIN .00	AC-FT 100							

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LOCATION.--Lat 32°14'37", long 110°53'05", in SE 1/4 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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 220 ft³/s (6.23 m³/s) Sept. 10, gage height, 2.65 ft (0.808 m), base discharge, 100 ft³/s (2.8 m³/s); no flow most of year.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	3.6	.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	.29	.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	5.6
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	.46	.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	.08	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.75	.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	.82	.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	---	2.6	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	2.60	4.72	.00	.82	.00	.00	2.50	.46	.00	5.60
MEAN	.000	.000	.084	.15	.000	.026	.000	.000	.083	.015	.000	.19
MAX	.00	.00	2.6	3.6	.00	.82	.00	.00	2.5	.46	.00	5.6
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	5.2	9.4	.00	1.6	.00	.00	5.0	.9	.00	11
CAL YR 1976	TOTAL 38.14	MEAN .10	MAX 17	MIN .00	AC-FT 76							
WTR YR 1977	TOTAL 16.70	MEAN .046	MAX 5.6	MIN .00	AC-FT 33							

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), above mean sea level (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.--12 years, 1.69 ft³/s (0.048 m³/s), 1,220 acre-ft/yr (1.50 hm³/yr); median of yearly mean discharges, 1.1 ft³/s (0.03 m³/s), 800 acre-ft/yr (0.99 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,900 ft³/s (394 m³/s) Dec. 20, 1967 (gage height, 7.65 ft or 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. 21	2100	592 16.8	3.40 1.036	Aug. 14	0200	826 23.4	3.65 1.113
Aug. 9	2300	*4,500 127	5.30 1.615	Sept. 10	2000	2,110 59.8	4.45 1.356

No flow for most of year.

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	.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	165	2.2
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	58	153
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	25
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	.10	56	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.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	3.2	4.1	.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	28	.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	.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	28.00	.00	.00	.00	.00	.00	.00	.00	.00	5.20	283.10	180.20
MEAN	.90	.000	.000	.000	.000	.000	.000	.000	.000	.17	9.13	6.01
MAX	28	.00	.00	.00	.00	.00	.00	.00	.00	3.2	165	153
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	56	.00	.00	.00	.00	.00	.00	.00	.00	10	562	357

CAL YR 1976	TOTAL	192.40	MEAN	.53	MAX	86	MIN	.00	AC-FT	382
WTR YR 1977	TOTAL	496.50	MEAN	1.36	MAX	165	MIN	.00	AC-FT	985

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) above mean sea level (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 60 ft³/s (1.70 m³/s) is waste water.

AVERAGE DISCHARGE (unadjusted for waste water and sewage effluent).--34 years (water years 1940-46, 1951-77), 36.2 ft³/s (1.03 m³/s) 26,230 acre-ft/yr (32.3 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, 17,000 ft³/s (481 m³/s) Aug. 14, 1940 (gage height, 9.9 ft or 3.02 m, site and datum then in use); no natural flow for most of each year. (See REMARKS.)

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,700 ft³/s (133 m³/s) Sept. 10, gage height, 9.95 ft (3.033 m), base discharge, 2,700 ft³/s (76 m³/s); minimum daily, 20 ft³/s (0.57 m³/s) Aug. 31, Sept. 14, 7.

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	34	40	39	79	41	39	32	39	34	30	149	20
2	37	40	36	35	42	39	32	37	36	30	50	20
3	37	40	32	35	42	39	32	39	34	30	83	20
4	36	42	32	35	39	39	34	39	30	31	50	20
5	37	42	34	35	39	37	34	39	32	32	40	45
6	36	39	32	35	39	34	39	37	32	35	40	124
7	41	39	32	35	44	34	41	32	36	33	30	20
8	39	42	32	35	42	36	41	39	41	31	30	44
9	32	41	32	35	42	30	37	39	34	32	30	48
10	30	39	34	35	41	30	39	30	36	35	193	413
11	37	39	36	41	41	30	41	27	32	33	49	147
12	37	41	32	39	44	30	42	29	29	32	64	228
13	32	42	30	39	42	30	37	34	34	35	110	65
14	39	39	30	39	42	30	36	36	34	32	90	65
15	41	39	30	37	42	30	36	32	29	34	140	65
16	39	37	30	39	42	30	36	36	30	32	284	65
17	39	39	30	41	42	30	36	36	32	30	35	60
18	42	39	32	41	42	30	36	29	29	29	35	50
19	41	39	30	41	41	30	37	30	23	53	52	50
20	41	37	32	41	42	30	37	34	24	30	41	50
21	71	39	34	41	41	36	37	34	30	30	34	50
22	61	39	34	113	42	36	36	30	60	30	38	45
23	59	41	36	47	39	30	36	34	70	30	184	40
24	111	41	36	40	37	30	37	30	35	27	27	35
25	50	39	30	40	37	30	39	26	32	27	27	30
26	40	37	32	40	39	30	39	26	30	30	27	30
27	35	39	36	40	37	29	37	27	30	162	24	224
28	35	39	36	44	39	30	39	27	30	25	24	50
29	35	41	36	44	---	30	39	26	30	42	21	36
30	35	41	37	45	---	30	39	26	32	30	21	32
31	35	---	36	41	---	32	---	34	---	30	20	---
TOTAL	1314	1191	1030	1327	1142	1002	1113	1013	1020	1122	2042	2191
MEAN	42.4	39.7	33.2	42.8	40.8	32.3	37.1	32.7	34.0	36.2	65.9	73.0
MAX	111	42	39	113	44	39	42	39	70	162	284	413
MIN	30	37	30	35	37	29	32	26	23	25	20	20
AC-FT	2610	2360	2040	2630	2270	1990	2210	2010	2020	2230	4050	4350

CAL YR 1976 TOTAL 21847 MEAN 59.7 MAX 1170 MIN 20 AC-FT 43330
WTR YR 1977 TOTAL 15507 MEAN 42.5 MAX 413 MIN 20 AC-FT 30760

NOTE.--Fragmentary, doubtful, or no gage-height record most of year.

LOCATION. -- Lat 32°40'03", long 111°55'39", in SW¼SW¼ sec.2, T.9 S., R.4 E., Pinal County, Hydrologic Unit 15050306, in Papago Indian Reservation, on right bank about 1 mi (2 km) downstream from Tat Momolikit Dam, 3.3 mi (5.3 km) south of Vaiva Vö, 10 mi (16 km) southwest of Chuichu, 12 mi (19 km) downstream from Gu Komelik and 52 mi (84 km) north of Sells.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 291 ft³/s (8.24 m³/s) July 17, gage height, 4.50 ft (1.372 m); no flow for most of year.

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	.40	.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	.30	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	4.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	1.1	.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	---	.90	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	6.00	.90	.40	.00	.00	.00	.00	.00	38.20	.00	.00
MEAN	.0000	.20	.029	.013	.0000	.0000	.0000	.0000	.0000	1.23	.0000	.0000
MAX	.00	4.9	.00	.40	.00	.00	.00	.00	.00	19	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	12	1.8	.8	.00	.00	.00	.00	.00	76	.00	.00
CAL YR 1976	TOTAL	72.20	MEAN .20	MAX 18	MIN .00	AC-FT	143					
WTR YR 1977	TOTAL	45.50	MEAN .12	MAX 19	MIN .00	AC-FT	90					

09489000 SANTA CRUZ RIVER NEAR LAVEEN, 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) above mean sea level.

REMARKS.--Records poor. 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.--35 years (1940-46, 1948-77), 18.0 ft³/s (0.510 m³/s), 13,040 acre-ft/yr (16.1 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 or 5.334 m); no flow for most of time in recent years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 472 ft³/s (13.4 m³/s) Oct. 23, gage height, 11.19 ft (3.411 m), base discharge, 380 ft³/s (11 m³/s); no flow for most of year.

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	.00	.00	.00	3.6	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.40	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.09	.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	.42	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	71	.00
16	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	5.2	.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	88	.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	.15
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.80	.00	.07
29	.00	.00	.00	.00	---	.92	.00	.00	.00	.07	.00	.00
30	.00	.00	.00	.00	---	.28	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	88.00	.65	.00	5.18	.00	1.20	.00	.00	.00	.87	76.20	.22
MEAN	2.84	.022	.000	.17	.000	.039	.000	.000	.000	.028	2.46	.007
MAX	88	.42	.00	3.6	.00	.92	.00	.00	.00	.80	71	.15
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	175	1.3	.00	10	.00	2.4	.00	.00	.00	1.7	151	.4

CAL YR 1976 TOTAL 1121.71 MEAN 3.06 MAX 282 MIN .00 AC-FT 2220
WTR YR 1977 TOTAL 172.32 MEAN .47 MAX 88 MIN .00 AC-FT 342

GILA RIVER BASIN

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DTS- CHARGE (CFS)
NOV		
01...	1200	.00
DEC		
28...	1200	.00
JAN		
24...	1200	.00
FEB		
22...	1200	.00
MAR		
30...	1200	.00
APR		
25...	1200	.00
MAY		
31...	1200	.00
JUN		
27...	1200	.00
JUL		
27...	1200	.00
AUG		
26...	1200	.00
SEP		
27...	1200	.00

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 current year.

GAGE.--Water-stage recorder. Altitude of gage is 8,650 ft (2,637 m), from topographic map.

REMARKS.--Records fair except those for Oct. 19 to May 16, which are poor. Minor storage at headwaters for recreation and stock purposes; the largest is Big Lake. No diversions above station.

AVERAGE DISCHARGE.--12 years, 12.6 ft³/s (0.357 m³/s), 9,130 acre-ft/yr (11.3 hm³/yr); median of yearly mean discharges, 8.6 ft³/s (0.24 m³/s), 6,200 acre-ft/yr (7.6 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 or 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. 22	2200	88 2.492	2.21 0.674
Apr. 8	unknown	*332 9.402	3.25 .991

Minimum daily, 0.24 ft³/s (0.007 m³/s) May 31.

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	1.2	.90	.90	.70	.90	.80	10	3.5	.32	.47	.47	.63
2	1.4	.90	1.3	.70	.90	.80	7.0	3.0	.42	.47	.42	1.6
3	1.2	.80	.93	.70	.90	.80	7.0	2.5	.47	.53	.42	7.1
4	1.0	.80	1.2	.70	.90	.90	13	2.0	.53	.74	.53	5.3
5	1.0	.70	1.1	.60	.90	.90	20	1.8	.47	.93	.37	2.8
6	1.0	.70	1.0	.60	.90	1.0	40	1.6	.53	.53	.37	1.7
7	.93	.70	1.0	.60	.90	1.3	90	1.5	.93	.42	.59	1.1
8	.93	.70	.90	.60	.90	1.5	150	1.3	1.2	.37	.66	.88
9	.93	.70	.90	.60	.90	2.0	100	1.1	1.3	.47	.59	.90
10	.93	.60	.80	.60	.90	3.0	70	1.0	.74	.74	.83	1.1
11	.93	.60	.80	.60	1.0	4.0	40	1.0	.53	1.3	1.4	3.4
12	.93	.60	.80	.60	1.0	6.0	25	1.0	.53	.53	2.6	2.6
13	.93	.60	.80	.60	1.0	9.0	15	.80	.47	.66	3.0	1.9
14	.93	.60	.80	.60	1.0	15	13	.70	.47	.47	1.8	1.2
15	.93	.60	.80	.60	1.0	20	10	.60	.42	.42	2.8	1.0
16	.83	.60	.80	.60	1.0	15	10	.50	.32	.37	8.4	.76
17	.93	.60	.90	.70	1.0	12	9.1	.47	.32	.37	11	.68
18	.83	.60	.90	.70	1.0	10	8.0	.47	.32	.74	7.7	.56
19	.80	.60	.90	.70	1.0	12	7.7	.47	.32	.66	5.0	.53
20	.90	.60	.90	.70	1.0	17	7.4	.47	.32	.66	5.0	.48
21	1.0	.60	.90	.70	1.0	30	5.9	.42	.32	.66	11	.44
22	1.2	.60	.80	.70	1.0	45	5.0	.42	.47	.93	8.8	.41
23	1.3	.60	.80	.80	1.0	30	4.8	.37	.59	.83	6.4	.53
24	1.2	.60	.80	.90	1.0	13	5.0	.37	.47	1.3	6.9	.48
25	1.1	.70	.80	.90	.90	9.8	6.4	.53	.53	3.0	3.3	.50
26	1.1	.70	.80	.90	.80	11	7.4	.47	.59	8.4	2.0	.50
27	.80	.70	.80	.90	.80	6.0	6.4	.37	.42	5.6	1.4	.50
28	.80	.50	.80	.90	.80	6.0	5.3	.32	.37	2.1	1.1	.50
29	.80	.70	.80	.90	---	5.0	5.0	.28	.47	1.4	.92	.50
30	.80	.80	.80	.90	---	8.0	4.0	.28	.83	.83	.81	.50
31	.90	---	.80	.90	---	12	---	.24	---	.59	.66	---
TOTAL	30.46	20.00	27.33	22.20	26.30	308.80	707.4	29.85	15.99	37.49	97.24	41.08
MEAN	.98	.67	.88	.72	.94	9.96	23.6	.96	.53	1.21	3.14	1.37
MAX	1.4	.90	1.3	.90	1.0	45	150	3.5	1.3	8.4	11	7.1
MIN	.80	.50	.80	.60	.80	.80	4.0	.24	.32	.37	.37	.41
AC-FT	60	40	54	44	52	613	1400	59	32	74	193	81

CAL YR 1976 TOTAL 3600.63 MEAN 9.84 MAX 80 MIN .50 AC-FT 7140
WTR YR 1977 TOTAL 1364.14 MEAN 3.74 MAX 150 MIN .24 AC-FT 2710

NOTE.--No gage-height record Oct. 19 to Dec. 1, Dec. 6 to Mar. 21, Mar. 28 to Apr. 12.

GILA RIVER BASIN

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.--15 years, 129 ft³/s (3.653 m³/s), 93,490 acre-ft/yr (115 hm³/yr); median of yearly mean discharges, 100 ft³/s (2.83 m³/s), 72,400 acre-ft/yr (89 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,100 ft³/s (314 m³/s) Oct. 20, 1972 (gage height, 8.14 ft or 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, 700 ft³/s (19.8 m³/s) Apr. 10, gage height, 3.20 ft (0.975 m), base discharge, 400 ft³/s (11 m³/s); minimum daily, 9.6 ft³/s (0.27 m³/s) Dec. 7.

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	25	25	19	17	19	24	48	78	22	17	23	28
2	25	24	18	16	21	21	44	71	24	17	21	30
3	29	24	18	16	16	14	37	67	27	19	20	49
4	25	23	17	16	17	17	37	62	30	21	19	65
5	23	23	16	17	17	14	52	55	29	21	20	58
6	22	22	15	17	20	16	84	54	25	20	17	65
7	21	22	14	14	21	21	125	51	22	16	18	46
8	21	22	16	14	17	24	245	46	22	15	26	38
9	21	21	16	16	17	26	493	44	22	15	27	34
10	21	21	16	17	21	39	440	41	22	15	22	53
11	21	21	14	15	17	28	264	40	20	22	25	45
12	20	21	15	17	18	27	198	38	15	23	43	52
13	20	21	15	17	19	35	180	37	12	23	48	48
14	21	22	14	18	21	46	157	37	11	22	50	42
15	21	21	14	16	21	58	125	37	11	21	51	36
16	21	20	14	16	21	62	125	33	11	20	71	31
17	21	17	14	16	24	54	120	32	12	20	78	28
18	21	20	17	17	25	35	120	29	11	20	88	26
19	21	22	16	18	25	35	120	28	11	21	95	24
20	21	21	16	18	25	40	108	27	11	20	138	23
21	21	18	16	19	25	50	91	26	12	21	157	22
22	27	17	14	21	27	89	87	25	14	24	140	21
23	34	17	13	22	24	135	80	24	16	26	97	23
24	32	17	14	21	25	95	84	23	16	30	84	23
25	28	18	13	20	25	89	93	25	17	49	67	21
26	25	17	13	21	18	57	104	25	20	48	52	20
27	26	21	14	20	19	44	106	24	17	45	43	21
28	26	10	15	18	19	46	99	22	16	46	38	21
29	26	10	14	21	---	38	89	22	17	45	34	21
30	25	15	16	20	---	30	84	21	19	33	31	20
31	25	---	17	19	---	41	---	21	---	28	30	---
TOTAL	736	593	473	550	584	1352	4039	1165	534	783	1673	1014
MEAN	23.7	19.8	15.3	17.7	20.9	43.6	135	37.6	17.8	25.3	54.0	33.8
MAX	34	25	19	22	27	135	493	78	30	49	157	65
MIN	20	10	13	14	16	14	37	21	11	15	17	20
AC-FT	1460	1180	938	1090	1160	2680	8010	2310	1060	1550	3320	2010
CAL YR 1976	TOTAL	30255	MEAN 82.7	MAX 580	MIN 10	AC-FT 60010						
WTR YR 1977	TOTAL	13496	MEAN 37.0	MAX 493	MIN 10	AC-FT 26770						

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 Pacheta 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.--20 years, 8.00 ft³/s (0.227 m³/s), 5,800 acre-ft/yr (7.15 hm³/yr); median of yearly mean discharges, 6.3 ft³/s (0.18 m³/s), 4,600 acre-ft/yr (5.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 323 ft³/s (9.15 m³/s) May 13, 1973 (gage height, 4.36 ft or 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)
Apr. 7	1800	43 1.218	3.14 0.957
Aug. 11	1400	*45 1.274	3.16 .963

Minimum daily, 0.41 ft³/s (0.012 m³/s), Feb. 8, 9, 11-13.

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	1.5	1.1	1.1	.80	.53	.80	3.4	14	1.5	1.5	1.5	1.7
2	1.3	1.1	1.1	.80	.53	.80	2.2	12	1.5	1.5	1.7	1.7
3	1.3	1.3	1.1	.80	.53	.66	2.2	12	1.5	1.5	1.7	2.0
4	1.1	1.3	1.1	.80	.53	.66	3.7	9.9	1.5	2.0	1.7	2.0
5	1.1	1.3	1.1	.80	.53	.53	5.2	9.4	1.6	1.5	1.7	2.0
6	1.1	1.3	.95	.80	.53	.66	10	8.3	1.6	1.5	1.5	2.2
7	1.1	1.3	.95	.80	.53	1.1	19	7.8	1.6	1.5	1.5	1.7
8	1.1	1.3	.95	.80	.41	1.3	22	6.0	1.8	1.5	1.5	1.9
9	1.1	1.3	.95	.80	.41	1.5	17	5.2	1.5	1.5	1.5	1.8
10	1.1	1.1	.95	.80	.53	2.0	16	4.8	1.7	1.5	1.5	1.9
11	1.1	1.5	.95	.66	.41	1.5	12	4.0	1.7	1.5	5.5	2.5
12	1.1	1.7	.95	.66	.41	1.3	10	4.0	1.7	1.5	2.4	2.5
13	1.1	1.7	.95	.53	.41	1.5	9.4	3.4	1.7	1.5	2.0	2.2
14	1.1	1.7	.95	.53	.53	1.3	8.8	3.4	1.7	1.5	2.9	2.0
15	1.1	1.7	.95	.53	.53	2.0	8.3	3.4	1.7	1.5	3.0	2.0
16	1.3	1.7	.95	.53	.53	2.2	7.4	3.1	1.7	1.7	5.5	1.7
17	1.3	1.5	.95	.53	.53	1.7	6.4	2.5	1.7	1.7	3.9	1.7
18	1.3	1.5	.95	.53	.66	1.3	5.6	2.3	1.7	1.5	2.9	1.7
19	1.3	1.5	.95	.53	.66	1.7	5.6	2.1	1.7	1.5	5.2	1.7
20	1.3	1.5	.95	.53	.80	2.0	5.6	1.9	1.7	1.7	4.1	1.5
21	1.3	1.5	.95	.66	.95	2.5	4.4	1.7	1.7	1.7	2.9	1.5
22	1.3	1.5	.95	.66	.80	2.5	4.0	1.6	1.7	1.5	2.4	1.5
23	1.5	1.5	.80	.53	.80	2.5	4.4	1.5	1.7	1.5	2.2	1.7
24	1.3	1.5	.80	.53	.66	2.2	7.4	1.4	1.5	1.5	2.2	1.5
25	1.3	1.3	.80	.53	.80	2.0	14	1.4	1.5	1.5	2.0	1.5
26	1.1	1.5	.80	.53	.66	2.0	21	1.3	1.5	1.5	2.0	1.7
27	1.3	1.3	.80	.53	.66	2.5	21	1.5	1.7	1.5	2.0	1.7
28	1.1	1.3	.80	.53	.66	2.2	19	1.5	1.5	1.5	2.0	1.7
29	1.1	1.1	.80	.53	---	1.7	17	1.5	1.5	1.7	2.0	1.5
30	1.1	1.1	.80	.53	---	2.0	15	1.5	1.5	1.5	1.7	1.5
31	1.1	---	.95	.53	---	2.2	---	1.5	---	1.5	1.7	---
TOTAL	37.3	42.0	29.00	19.65	16.52	50.81	307.0	135.9	48.6	48.0	76.3	54.2
MEAN	1.20	1.40	.94	.63	.59	1.64	10.2	4.38	1.62	1.55	2.46	1.81
MAX	1.5	1.7	1.1	.80	.95	2.5	22	14	1.8	2.0	5.5	2.5
MIN	1.1	1.1	.80	.53	.41	.53	2.2	1.3	1.5	1.5	1.5	1.5
AC-FT	74	83	58	39	33	101	609	270	96	95	151	108
CAL YR 1976 TOTAL	2132.10			MEAN 5.83	MAX 41	MIN .80	AC-FT 4230					
WTR YR 1977 TOTAL	865.28			MEAN 2.37	MAX 22	MTN .41	AC-FT 1720					

GILA RIVER BASIN

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)--24 years, 184 ft³/s (5.211 m³/s), 133,300 acre-ft/yr (164 hm³/yr); median of yearly mean discharges, 138 ft³/s (3.91 m³/s), 100,000 acre-ft/yr (123 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,900 ft³/s (507 m³/s) Oct. 19, 1972 (gage height, 18.0 ft or 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, 610 ft³/s (17.3 m³/s) Apr. 10, gage height, 4.38 ft (1.335 m), base discharge, 500 ft³/s (14 m³/s); minimum daily, 8.8 ft³/s (0.025 m³/s) June 20, 21.

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	20	30	31	37	33	38	62	112	22	29	45	35
2	21	27	33	32	37	42	67	104	24	32	40	39
3	20	26	35	30	41	40	63	97	26	29	37	47
4	22	25	31	31	37	35	50	91	31	42	33	79
5	18	23	30	29	35	37	52	86	32	51	31	87
6	16	23	27	28	36	36	76	81	29	43	30	96
7	15	22	23	27	38	34	120	76	25	37	28	89
8	14	22	32	23	40	39	190	70	24	30	24	65
9	13	22	29	23	37	41	369	65	24	25	25	58
10	12	22	30	26	38	44	446	60	25	26	37	49
11	12	23	29	27	42	58	319	53	22	41	52	54
12	12	23	25	33	37	51	246	48	17	40	50	65
13	12	26	25	36	37	48	220	44	14	38	56	73
14	13	26	28	30	39	56	200	42	12	40	69	67
15	15	28	34	33	40	69	166	42	9.7	39	72	60
16	14	26	33	34	40	80	155	43	9.5	37	132	51
17	13	26	31	36	40	85	148	41	11	32	138	44
18	12	23	32	37	42	75	143	39	10	32	129	39
19	12	24	33	32	45	59	137	36	9.2	34	193	35
20	13	29	32	33	45	57	131	34	8.8	33	202	32
21	13	27	32	36	46	59	120	32	8.8	37	196	29
22	19	24	30	38	46	70	103	31	10	36	169	27
23	27	22	27	40	49	123	97	29	14	39	159	30
24	35	24	29	39	45	137	94	27	15	44	122	30
25	31	26	27	36	50	119	105	27	15	51	102	29
26	26	27	24	35	47	107	121	27	18	79	82	28
27	33	27	34	34	40	85	130	28	15	68	65	29
28	24	26	32	33	39	67	128	27	16	69	55	28
29	27	18	28	33	---	81	124	25	17	70	47	27
30	25	23	33	37	---	61	121	23	25	66	41	24
31	24	---	29	35	---	50	---	22	---	54	38	---
TOTAL	583	740	928	1013	1141	1983	4503	1562	539.0	1323	2499	1445
MEAN	18.8	24.7	29.9	32.7	40.8	64.0	150	50.4	18.0	42.7	80.6	48.2
MAX	35	30	35	40	50	137	446	112	32	79	202	96
MIN	12	18	23	23	33	34	50	22	8.8	25	24	24
AC-FT	1160	1470	1840	2010	2260	3930	8930	3100	1070	2620	4960	2870
MEAN†	42.5	44.9	43.2	43.6	46.9	70.4	167	68.4	35.9	48.0	94.5	64.3
AC-FT†	2620	2670	2660	2680	2600	4330	9930	4200	2140	2950	5810	3820
CAL YR 1976	TOTAL	41267.0	MEAN	113	MAX 683	MIN 9.2	AC-FT	81850	MEAN †	133	AC-FT †	96,350
WTR YR 1977	TOTAL	18259.0	MEAN	50.0	MAX 446	MIN 8.8	AC-FT	36220	MEAN †	64.1	AC-FT †	46,410

† 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.--20 years, 59.3 ft³/s (1.679 m³/s), 42,960 acre-ft/yr (53.0 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, 1,870 ft³/s (53.0 m³/s) Oct. 20, 1972 (gage height, 7.11 ft or 2.167 m); maximum gage height, 8.43 ft (2.569 m) Oct. 20, 1972 (backwater from bridge downstream); minimum daily discharge, 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)
Apr. 10	0030	180 5.10	3.35 1.021
Aug. 16	0845	151 4.28	3.17 .966
Aug. 19	1900	*243 6.88	3.84 1.170

Minimum daily discharge, 4.6 ft³/s (0.13 m³/s) Nov. 29.

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	16	15	11	11	15	19	37	81	16	8.6	16	16
2	20	14	11	12	16	16	31	78	17	8.2	14	19
3	19	13	11	11	13	13	26	74	18	9.1	12	39
4	17	13	11	11	13	13	29	68	17	14	12	27
5	16	13	12	11	14	13	47	62	16	15	10	21
6	14	13	11	10	13	15	71	58	16	12	8.6	20
7	14	13	10	10	14	15	99	55	14	7.9	8.4	18
8	14	13	12	13	12	18	125	51	15	7.2	11	16
9	13	12	12	13	12	19	147	48	16	6.7	10	16
10	13	12	12	11	15	22	158	46	14	6.4	14	17
11	13	12	11	15	12	15	143	43	11	10	25	28
12	13	11	11	16	13	17	123	41	9.4	11	43	26
13	12	11	12	15	14	22	117	38	8.6	16	62	30
14	12	11	12	13	16	23	119	40	8.1	14	52	25
15	13	11	11	13	16	23	101	38	7.3	22	51	21
16	13	11	12	14	17	24	96	33	6.7	18	121	18
17	12	9.8	13	14	19	21	94	30	6.3	12	103	17
18	12	11	13	17	21	17	101	28	6.0	11	79	15
19	12	11	11	15	22	19	107	26	5.7	10	106	14
20	12	11	11	16	23	20	101	24	5.5	11	143	13
21	12	9.4	11	17	24	21	86	23	5.3	9.8	94	12
22	18	9.4	12	21	25	26	81	21	6.1	11	72	12
23	26	9.4	11	23	22	29	77	20	7.8	12	57	13
24	22	9.8	11	19	22	27	78	19	7.5	15	45	12
25	18	10	8.3	17	21	29	80	21	8.0	18	36	11
26	16	9.0	9.0	17	16	26	88	20	9.0	19	30	12
27	16	11	11	16	16	25	88	18	6.7	36	26	14
28	16	6.5	11	14	16	26	86	17	6.3	28	23	13
29	16	4.6	9.4	15	---	20	85	16	6.2	31	21	11
30	15	8.0	13	16	---	21	83	15	12	24	19	11
31	15	---	11	15	---	31	---	14	---	20	17	---
TOTAL	470	327.9	347.7	451	472	645	2704	1166	308.5	453.9	1341.0	537
MEAN	15.2	10.9	11.2	14.5	16.9	20.8	90.1	37.6	10.3	14.6	43.3	17.9
MAX	26	15	13	23	25	31	158	81	18	36	143	39
MIN	12	4.6	8.3	10	12	13	26	14	5.3	6.4	8.4	11
AC-FT	932	650	690	895	936	1280	5360	2310	612	900	2660	1070

CAL YR 1976	TOTAL	13273.4	MEAN 36.3	MAX 166	MIN 4.6	AC-FT 26330
WTR YR 1977	TOTAL	9224.0	MEAN 25.3	MAX 158	MIN 4.6	AC-FT 18300

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 except those for December, April, and May, which are fair. 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.--23 years (water years 1913-15, 1958-77), 356 ft³/s (10.08 m³/s), 258,000 acre-ft/yr (318 hm³/yr); median of yearly mean discharges, 260 ft³/s (7.36 m³/s), 188,000 acre-ft/yr (232 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,400 ft³/s (804 m³/s) Oct. 20, 1972 (gage height, 21.40 ft or 6.523 m), from rating curve extended above 8,900 ft³/s (250 m³/s) on basis of slope-area measurement at gage height 14.70 ft (4.481 m); minimum daily, 11 ft³/s (0.31 m³/s) July 6, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s (29 m³/s) Aug. 18, gage height, 4.98 ft (1.518 m), base discharge, 1,000 ft³/s (28 m³/s); minimum daily, 19 ft³/s (0.54 m³/s) June 19-24.

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	46	44	30	64	60	64	98	230	39	24	85	79
2	43	43	28	58	57	64	95	220	37	27	73	111
3	42	42	30	60	55	63	114	200	42	38	66	110
4	42	48	38	58	57	64	108	190	49	47	57	96
5	41	43	44	52	59	61	100	190	53	58	50	107
6	38	43	42	53	57	56	100	170	58	64	46	107
7	37	41	39	50	56	54	125	160	52	60	42	108
8	33	40	34	43	56	61	191	160	50	53	39	88
9	30	39	35	44	57	57	315	150	44	45	38	75
10	29	38	40	38	58	62	584	140	42	40	45	82
11	27	38	43	36	59	67	715	130	41	38	41	77
12	27	38	36	36	59	70	538	120	40	35	48	92
13	26	38	37	40	60	79	413	130	38	60	89	105
14	27	39	40	52	57	75	371	120	33	53	128	96
15	26	40	40	52	57	77	343	110	29	56	298	87
16	27	40	40	49	59	87	340	100	26	57	303	76
17	28	39	40	42	61	101	330	90	23	55	264	65
18	29	40	40	46	63	107	320	90	21	54	471	58
19	28	38	40	50	66	105	310	80	19	52	405	53
20	27	38	40	60	69	92	290	80	19	41	334	50
21	27	37	40	59	73	84	270	70	19	44	280	46
22	30	38	40	60	74	83	250	70	19	47	246	44
23	34	39	40	64	75	89	240	60	19	64	214	42
24	40	37	37	68	75	115	230	70	19	164	165	40
25	49	35	36	65	77	169	240	50	20	78	138	41
26	52	35	31	62	75	155	250	50	25	65	116	41
27	50	38	28	60	73	157	260	50	25	74	97	42
28	47	40	32	57	69	137	270	49	25	97	84	40
29	49	39	45	56	---	120	260	47	26	95	73	41
30	45	31	47	58	---	116	240	44	23	96	65	38
31	45	---	57	60	---	104	---	42	---	96	59	---
TOTAL	1121	1178	1189	1652	1773	2795	8310	3462	975	1877	4459	2137
MEAN	36.2	39.3	38.4	53.3	63.3	90.2	277	112	32.5	60.5	144	71.2
MAX	52	48	57	68	77	169	715	230	58	164	471	111
MIN	26	31	28	36	55	54	95	42	19	24	38	38
AC-FT	2220	2340	2360	3280	3520	5540	16480	6870	1930	3720	8840	4240
CAL YR 1976	TOTAL	62583	MEAN	171	MAX	1310	MIN	22	AC-FT	124100		
WTR YR 1977	TOTAL	30928	MEAN	84.7	MAX	715	MIN	19	AC-FT	61350		

GILA RIVER BASIN

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM 7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT 04...	1700	50	133	8.7	20.0	1	8.3	1	59	0
NOV 09...	1130	30	132	7.4	11.0	1	9.2	1	63	0
DEC 07...	1230	40	150	7.9	10.0	1	9.9	10	67	0
JAN 05...	1430	60	130	7.7	4.0	5	14.0	<1	56	0
FEB 07...	1200	60	130	8.0	5.0	2	8.8	--	57	0
MAR 09...	1030	70	134	8.2	21.5	2	12.4	1	55	0
APR 07...	1330	400	108	8.0	16.0	3	--	11	47	0
MAY 10...	1200	117	98	7.2	23.0	3	7.5	<1	44	0
JUN 07...	1500	60	135	8.8	23.0	8	8.4	4	58	0
JUN 17...	0800	22	148	8.2	21.5	1	--	--	64	0
JUL 13...	1130	80	140	8.0	24.0	3	7.6	34	63	0
AUG 09...	1230	80	140	8.8	27.0	2	8.0	8	66	0
SEP 05...	1030	101	135	--	24.0	4	--	31	63	0

DATE	TOTAL CAL- CIUM (CA) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	TOTAL PO- TAS- SIUM (K) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT 04...	--	15	--	5.3	--	6.4	.4	--	1.5
NOV 09...	--	15	--	6.1	--	6.8	.4	--	1.4
DEC 07...	--	15	--	7.1	--	6.9	.4	--	1.2
JAN 05...	--	13	--	5.6	--	6.3	.4	--	1.1
FEB 07...	--	14	--	5.3	--	6.6	.4	--	1.2
MAR 09...	--	13	--	5.5	--	6.6	.4	--	1.1
APR 07...	--	11	--	4.8	--	5.6	.4	--	1.3
MAY 10...	--	11	--	4.0	--	4.8	.3	--	1.4
JUN 07...	--	14	--	5.5	--	6.4	.4	--	1.6
JUN 17...	16	16	5.9	5.8	7.0	7.0	.4	1.5	1.6
JUL 13...	--	15	--	6.2	--	7.6	.4	--	1.9
AUG 09...	--	17	--	5.6	--	7.0	.4	--	1.8
SEP 05...	--	16	--	5.7	--	5.8	.3	--	1.9

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

GILA RIVER BASIN

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	BICARBONATE (HCO ₃) (MG/L)	CARBONATE (CO ₃) (MG/L)	DIS-SOLVED SULFATE (SO ₄) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO ₂) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
OCT 04...	87	0	3.1	1.5	.1	20	105	96	.14
NOV 09...	91	0	1.3	1.8	.2	19	99	97	.13
DEC 07...	91	0	3.3	1.5	.1	23	104	104	.14
JAN 05...	81	0	5.6	1.2	.1	22	101	95	.14
FEB 07...	83	0	5.6	1.6	.1	22	86	98	.12
MAR 09...	79	0	5.4	1.5	.1	21	90	93	.12
APR 07...	65	0	5.6	1.6	.2	18	77	81	.10
MAY 10...	55	0	5.9	1.2	.1	14	--	70	.10
JUN 07...	78	4	5.3	1.4	.1	12	81	89	.11
17...	89	0	3.0	1.4	.0	14	103	93	.01
JUL 13...	91	0	1.0	1.3	.1	21	99	99	.13
AUG 09...	89	0	5.4	1.7	.0	22	97	104	.13
SEP 05...	82	--	6.7	1.8	.1	24	100	103	.14

DATE	DIS-SOLVED NITRATE (N) (MG/L)	DIS-SOLVED NITRITE (N) (MG/L)	TOTAL NITRATE PLUS NITRITE (N) (MG/L)	DIS-SOLVED NITRATE PLUS NITRITE (N) (MG/L)	TOTAL KJEL- DAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED PHOSPHORUS (P) (MG/L)	DIS-SOLVED ORTHOPHOSPHORUS (P) (MG/L)
OCT 04...	--	--	.01	.00	.09	.10	.05	--	.01
NOV 09...	.00	.01	.01	.01	.00	.01	.04	--	.00
DEC 07...	--	--	.17	.14	.07	.24	.01	--	.01
JAN 05...	.00	.00	.00	.00	.17	.17	.02	--	.02
FEB 07...	--	--	.01	.01	.11	.12	.04	--	.04
MAR 09...	--	--	.01	.01	.12	.13	.03	--	.03
APR 07...	--	--	.15	.11	.25	.40	.01	--	.00
MAY 10...	--	--	.01	.00	.23	.24	.04	--	.02
JUN 07...	--	--	.02	.01	.15	.17	.05	--	.01
17...	--	--	--	.00	--	--	--	.00	--
JUL 13...	--	--	.02	--	.20	.22	.04	--	--
AUG 09...	--	--	.04	--	.41	.45	.16	--	--
SEP 05...	--	--	.06	--	.59	.65	.07	--	--

GILA RIVER BASIN

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09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRN- MIUM (CR) (UG/L)
OCT 04...	9	--	0	50	10	<10	--	--
NOV 09...	0	--	0	70	10	<10	--	--
DEC 07...	0	--	0	70	10	<10	--	--
JAN 05...	0	--	0	50	7	<10	--	--
FEB 07...	1	--	0	80	20	10	--	--
MAR 09...	0	--	0	190	7	<10	--	--
APR 07...	0	--	0	50	9	<10	--	--
MAY 10...	0	--	0	60	8	<10	--	--
JUN 07...	1	--	0	70	10	<10	--	--
17...	0	0	--	60	9	<10	1	0
JUL 13...	0	--	0	120	7	<10	--	--
AUG 09...	0	--	0	130	10	<10	--	--
SEP 05...	0	--	0	90	20	10	--	--

DATE	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DTS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)
OCT 04...	10	.0	--	0	--	<10	0	--
NOV 09...	0	--	--	0	--	<10	0	--
DEC 07...	0	.1	--	0	--	<10	10	--
JAN 05...	0	.0	--	0	--	<10	10	--
FEB 07...	10	.0	--	0	--	<10	20	--
MAR 09...	10	.0	--	0	--	<10	10	--
APR 07...	20	.0	--	0	--	<10	10	--
MAY 10...	0	.0	--	0	--	10	20	--
JUN 07...	0	.0	--	0	--	<10	20	--
17...	10	.0	.0	0	0	--	4	2
JUL 13...	8	.1	--	0	--	<10	40	--
AUG 09...	10	.0	--	0	--	<10	20	--
SEP 05...	10	.1	--	0	--	<10	50	--

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

GILA RIVER BASIN

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CU) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)
OCT 04...	--	--	<10	--	120	80	<100	--	10
NOV 09...	--	--	<10	--	210	60	<100	--	0
DEC 07...	--	--	<10	--	130	60	<100	--	0
JAN 05...	--	--	<10	--	130	170	<100	--	10
FEB 07...	--	--	<10	--	270	80	<100	--	10
MAR 09...	--	--	<10	--	150	50	<100	--	10
APR 07...	--	--	<10	--	390	180	<100	--	10
MAY 10...	--	--	10	--	240	160	<100	--	10
JUN 07...	--	--	<10	--	140	80	<100	--	20
JUN 17...	<50	0	<10	1	100	20	<100	4	10
JUL 13...	--	--	<10	--	300	100	<100	--	20
AUG 09...	--	--	20	--	370	80	<100	--	0
SEP 05...	--	--	<10	--	410	40	<100	--	10

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

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
OCT 04...	1700	1.5	.01	2
NOV 09...	1130	1.1	.01	4
DEC 07...	1230	.6	.00	2
JAN 05...	1430	.9	.00	1
FEB 07...	1200	.9	.00	0
MAR 09...	1030	.7	.00	3
APR 07...	1330	1.6	.00	0
MAY 10...	1200	1.2	.00	4
JUN 07...	1500	1.7	.00	2
JUN 17...	0800	1.4	--	--
JUL 13...	1130	1.8	.00	3
AUG 09...	1230	2.3	.00	4
SEP 05...	1030	2.1	.00	6

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
NOV 09...	1130	--	3.31	2.31	--
MAY 10...	1200	60300	--	--	920

09490500 BLACK RIVER NEAR FORT APACHE, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY 10, 77
TIME	1200
TOTAL CELLS/ML	920
DIVERSITY: DIVISION	1.2
..CLASS	1.2
..ORDER	1.4
...FAMILY	2.8
....GENUS	3.0

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...ODCISTACEAE		
....ANKISTRODESMIIS	*	0
...SCENEDESMACEAE		
....SCENEDESMUS	35	4
..ZYGNEMATALES		
...DESMIDIACEAE		
....CUSMARTUM	*	0
CHRYSTOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCAEAE		
....CYCLOTELLA	33	4
....MELOSIRA	*	0
..PENNALES		
...ACHNANTHACEAE		
....ACHNANTHES	5	1
...CUCULONIS	82	9
...PHOTICOSPHEA	5	1
...CYMBELLACEAE		
....CYMBELLA	8	1
...EPTHEMIA	30	3
...UTATACEAE		
....DIATOMA	14	1
...FRAGILARIACEAE		
....FRAGILARIA	100	11
...SYNEDRA	19	2
...GOMPHONEMACEAE		
....GOMPHONEMA	24	3
...NAVICULACEAE		
....NAVICULA	100	11
...NITZSCHACEAE		
....NITZSCHIA	130	14
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...OSCILLATORIACEAE		
....OSCILLATORIA	330	36

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

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

GILA RIVER BASIN

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 current year.

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.--12 years, 24.4 ft³/s (0.691 m³/s), 17,680 acre-ft/yr (21.8 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, 510 ft³/s (14.4 m³/s) Apr. 28, 1973 (gage height, 4.15 ft or 1.265 m); minimum daily, 4.7 ft³/s (0.13 m³/s) Mar. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 205 ft³/s (5.81 m³/s) Apr. 9, gage height, 3.74 ft (1.140 m), base discharge, 100 ft³/s (2.8 m³/s); minimum daily, 4.7 ft³/s (0.13 m³/s) Mar. 17.

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	13	8.0	5.0	10	9.0	11	15	50	16	12	12	13
2	13	6.0	6.0	9.0	9.0	11	15	45	17	12	11	14
3	13	5.6	7.0	9.0	9.0	10	20	40	17	12	11	30
4	13	5.6	8.0	9.0	9.0	9.0	30	40	17	12	12	20
5	13	5.5	8.0	9.0	9.0	8.0	30	40	16	13	11	13
6	13	5.5	8.0	9.0	9.0	7.0	35	40	16	10	11	12
7	13	5.5	8.0	9.0	9.0	6.0	40	35	17	10	12	11
8	13	5.5	8.0	9.0	9.0	5.0	50	35	16	10	14	10
9	13	5.5	8.0	9.0	9.0	5.6	70	35	19	9.6	14	11
10	13	5.5	8.0	9.0	9.0	5.2	80	30	16	11	14	11
11	12	5.5	8.0	10	9.0	7.0	70	27	16	16	15	15
12	12	5.5	8.0	10	9.0	10	60	27	15	14	18	14
13	12	5.5	8.0	10	9.0	13	50	27	15	15	16	13
14	13	5.5	8.0	10	10	6.0	45	27	14	15	17	12
15	13	6.0	8.0	10	11	6.4	40	26	14	14	15	11
16	13	7.0	8.0	11	11	5.6	40	22	14	12	25	11
17	13	8.0	8.0	12	12	4.7	45	19	14	12	23	11
18	13	8.0	8.0	12	12	10	50	18	14	13	22	11
19	13	8.0	8.0	12	12	9.0	50	18	13	14	30	11
20	13	8.0	8.0	12	11	8.0	45	17	13	13	45	10
21	15	8.0	8.0	12	11	7.0	40	16	13	13	35	9.9
22	15	8.0	8.0	12	12	17	40	16	13	13	25	10
23	15	8.0	8.0	12	11	20	40	16	13	16	23	11
24	14	8.0	8.0	12	11	17	45	16	12	15	21	9.9
25	13	8.0	8.0	12	12	13	45	17	14	13	20	9.2
26	13	8.0	9.0	10	11	10	45	16	13	16	18	9.8
27	13	8.0	10	9.0	11	10	50	16	12	15	17	17
28	12	7.0	10	9.0	11	10	50	16	12	14	16	16
29	12	6.0	10	9.0	---	13	50	16	12	13	15	11
30	10	5.0	10	9.0	---	14	50	15	12	12	14	9.5
31	9.0	---	10	9.0	---	15	---	15	---	12	13	---
TOTAL	398.0	199.2	253.0	315.0	286.0	303.5	1335	793	435	401.6	565	377.3
MEAN	12.8	6.64	8.16	10.2	10.2	9.79	44.5	25.6	14.5	13.0	18.2	12.6
MAX	15	8.0	10	12	12	20	80	50	19	16	45	30
MIN	9.0	5.0	5.0	9.0	9.0	4.7	15	15	12	9.6	11	9.2
AC-FT	789	395	502	625	567	602	2650	1570	863	797	1120	748
CAL YR 1976	TOTAL	7422.0	MEAN	20.3	MAX	101	MIN	5.0	AC-FT	14720		
WTR YR 1977	TOTAL	5661.6	MEAN	15.5	MAX	80	MIN	4.7	AC-FT	11230		

NOTE.--No gage-height record Mar. 28 to May 12.

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) above mean sea level.

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.--25 years (water years 1946, 1951-53, 1958-77), 42.7 ft³/s (1.209 m³/s), 30,940 acre-ft/yr (38.1 hm³/yr); median of yearly mean discharges, 39 ft³/s (1.10 m³/s), 28,300 acre-ft/yr (35 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 or 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, 316 ft³/s (8.95 m³/s) Apr. 9, gage height, 2.90 ft (0.884 m), base discharge, 180 ft³/s (5.1 m³/s); minimum daily, 8.9 ft³/s (0.25 m³/s) July 9.

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	20	19	12	14	12	13	23	67	25	12	11	18
2	25	16	12	13	12	13	20	64	26	12	11	19
3	21	12	13	13	12	13	24	60	28	13	11	43
4	20	12	13	13	12	13	35	54	26	16	11	22
5	20	12	13	13	12	13	34	56	26	16	9.9	19
6	18	11	13	12	12	14	38	55	25	12	9.5	17
7	19	11	13	12	12	15	56	53	24	9.7	10	16
8	19	11	13	12	12	15	90	52	25	9.2	13	16
9	19	11	13	12	12	18	144	51	28	8.9	15	15
10	19	11	13	13	12	19	106	47	25	9.0	13	16
11	18	11	13	14	12	19	81	43	23	19	15	16
12	18	12	13	15	12	22	68	40	22	13	20	21
13	18	11	13	15	12	24	68	40	21	15	26	19
14	18	11	13	15	12	22	63	40	20	14	27	19
15	18	11	13	15	12	22	55	38	19	13	25	16
16	18	10	13	15	12	21	58	35	18	13	36	15
17	18	14	13	15	12	19	64	32	17	13	40	15
18	18	15	13	15	12	20	68	30	17	14	34	13
19	18	13	13	15	12	22	70	29	16	17	39	12
20	18	13	13	15	13	25	61	29	15	14	62	13
21	22	15	13	15	14	28	53	28	15	13	63	12
22	24	16	13	15	15	36	53	27	15	17	54	12
23	24	15	13	15	15	38	54	27	16	17	42	13
24	23	15	13	13	15	30	55	27	15	25	34	13
25	21	15	13	12	15	26	60	28	15	15	30	12
26	20	13	14	12	14	22	61	27	15	18	27	12
27	19	12	15	12	13	22	60	25	13	24	24	18
28	19	12	15	12	13	25	65	25	13	17	22	22
29	19	12	15	12	---	18	66	25	13	16	21	14
30	20	12	15	12	---	29	66	25	14	14	20	13
31	19	---	15	12	---	24	---	24	---	13	19	---
TOTAL	610	384	412	418	355	660	1819	1203	590	451.8	794.4	501
MEAN	19.7	12.8	13.3	13.5	12.7	21.3	60.6	38.8	19.7	14.6	25.6	16.7
MAX	25	19	15	15	15	38	144	67	28	25	63	43
MIN	18	10	12	12	12	13	20	24	13	8.9	9.5	12
AC-FT	1210	762	817	829	704	1310	3610	2390	1170	896	1580	994
(†)	+300	-12080	-16690	+2870	-19100	-25930	+13410	+8260	-580	+3970	+11210	+8790

CAL YR 1976 MAX 172000 MIN 22900 † +17190
WTR YR 1977 MAX 85460 MIN 5040 † -25570

† Change in contents, in acre-feet.

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.--20 years, 31.3 ft³/s (0.886 m³/s), 22,680 acre-ft/yr (28.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 663 ft³/s (18.8 m³/s) Aug. 17, 1961 (gage height, 4.82 ft or 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, 122 ft³/s (3.46 m³/s) Aug. 16, gage height, 1.96 ft (0.597 m), base discharge, 100 ft³/s (2.83 m³/s); minimum daily, 6.0 ft³/s (0.17 m³/s) Nov. 28 to Dec. 1.

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	18	12	6.0	7.7	8.1	10	12	74	22	8.2	12	8.1
2	23	12	7.0	7.6	7.8	9.6	10	72	23	7.9	11	12
3	21	12	9.0	7.2	7.8	9.9	9.2	67	24	9.0	10	25
4	20	12	9.0	7.1	8.3	9.9	14	62	24	13	10	20
5	19	12	9.0	7.2	8.6	9.8	14	60	23	14	9.2	16
6	18	12	9.0	7.3	7.3	11	23	57	23	9.1	8.5	14
7	17	12	9.0	11	7.0	10	36	57	23	7.9	9.6	12
8	16	11	9.0	10	6.8	8.9	50	56	22	7.5	9.8	11
9	15	11	9.0	10	7.0	9.2	62	56	23	7.0	12	10
10	15	11	9.0	10	7.3	10	68	56	19	6.6	14	12
11	14	10	8.0	10	7.2	8.4	62	52	18	12	13	15
12	14	11	8.0	10	7.1	9.9	52	49	17	8.3	16	18
13	14	9.0	8.0	10	7.3	10	51	47	16	11	22	19
14	14	7.9	8.0	9.0	8.4	11	51	45	14	9.8	36	18
15	13	9.5	8.0	9.0	9.2	12	44	41	13	12	30	15
16	13	7.8	8.0	9.0	9.5	12	43	38	12	9.4	56	14
17	12	8.3	7.0	12	11	11	43	35	12	8.3	52	13
18	12	8.9	7.0	9.0	12	10	54	33	11	8.5	43	12
19	12	8.8	7.0	9.0	12	10	61	32	10	8.2	45	12
20	12	8.3	7.0	8.6	13	10	55	30	9.9	7.8	47	11
21	13	7.7	7.0	11	13	11	48	29	9.7	8.4	42	11
22	17	7.6	7.0	12	13	12	46	27	10	9.0	32	11
23	19	7.4	7.0	10	12	14	46	27	11	11	23	11
24	18	7.7	7.0	8.9	11	13	50	27	10	17	18	11
25	15	7.8	7.0	8.9	11	14	53	28	12	12	14	10
26	14	7.3	8.0	8.1	11	13	57	26	10	11	12	11
27	13	8.0	9.0	7.8	13	12	60	25	9.2	22	10	11
28	13	6.0	8.0	7.5	13	11	65	24	8.9	17	9.2	12
29	13	6.0	7.0	7.8	---	9.3	68	23	8.4	19	8.6	10
30	13	6.0	7.0	7.8	---	14	71	23	10	15	8.3	9.8
31	13	---	7.1	7.8	---	13	---	22	---	13	8.3	---
TOTAL	473	278.0	242.1	278.3	269.7	338.9	1378.2	1300	458.1	339.9	653.5	394.9
MEAN	15.3	9.27	7.81	8.98	9.63	10.9	45.9	41.9	15.3	11.0	21.1	13.2
MAX	23	12	9.0	12	13	14	71	74	24	22	56	25
MIN	23	6.0	6.0	7.1	6.8	8.4	9.2	22	8.4	6.6	8.3	8.1
AC-FT	938	551	480	552	535	672	2730	2580	909	674	1300	783
CAL YR 1976	TOTAL	9659.4	MEAN	26.4	MAX	136	MIN	6.0	AC-FT	19160		
WTR YR 1977	TOTAL	6404.6	MEAN	17.5	MAX	74	MIN	6.0	AC-FT	12700		

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) above mean sea level. Oct. 12, 1917, to Aug. 31, 1918, nonrecording gage at site 2,100 ft (640 m) upstream at different datum.

REMARKS.--Records good except those for period of no gage-height record, which are poor. 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.--21 years, 169 ft³/s (4.786 m³/s), 122,400 acre-ft/yr (151 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,670 ft³/s (246 m³/s) Aug. 12, 1971 (gage height, 13.8 ft or 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)
July 24	unknown	*1,980 56.1	6.48 1.975	Sept. 3	0730	1,740 49.3	6.17 1.881
Aug. 16	2115	1,370 38.8	5.71 1.740				

Minimum daily, 19 ft³/s (0.54 m³/s) June 30.

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	90	45	36	51	48	60	91	223	55	20	55	46
2	95	45	34	48	50	60	91	222	58	21	60	50
3	100	45	40	48	49	50	85	207	62	22	55	327
4	95	45	46	50	44	50	77	188	70	29	45	105
5	85	45	47	47	47	50	101	178	73	91	30	69
6	80	45	47	46	49	60	122	172	77	65	50	57
7	75	45	44	42	50	55	175	168	69	45	50	51
8	75	45	44	43	48	60	265	162	73	40	80	47
9	70	40	44	45	46	65	354	156	69	35	50	44
10	55	40	46	38	49	60	484	149	63	25	140	43
11	50	40	45	61	49	60	431	141	56	140	90	84
12	50	40	44	64	46	60	346	131	50	70	91	61
13	46	40	42	61	47	65	309	125	45	160	69	79
14	43	40	43	48	47	70	289	136	39	70	78	64
15	42	40	42	45	50	75	250	131	36	50	149	53
16	42	42	41	45	51	73	231	120	33	55	372	47
17	42	42	41	46	52	70	231	107	30	150	234	45
18	42	43	44	48	55	64	237	100	29	60	220	43
19	43	47	45	48	57	60	251	94	28	50	174	43
20	43	47	44	48	58	62	247	92	26	40	183	39
21	43	44	43	51	60	66	214	91	25	60	155	36
22	43	42	40	58	61	72	197	88	23	70	136	35
23	43	41	40	65	57	86	185	82	25	310	110	35
24	43	43	43	58	57	90	185	79	26	460	92	35
25	43	43	45	54	55	88	197	79	26	190	81	34
26	43	42	39	52	55	84	220	80	28	120	69	33
27	43	48	51	52	50	87	218	77	26	90	56	39
28	44	39	54	51	55	84	218	68	23	55	52	36
29	43	41	59	50	---	86	226	65	23	65	50	35
30	44	37	44	53	---	72	228	63	19	55	59	34
31	45	---	44	50	---	84	---	60	---	55	48	---
TOTAL	1740	1281	1361	1566	1442	2128	6755	3834	1285	2768	3183	1749
MEAN	56.1	42.7	43.9	50.5	51.5	68.6	225	124	42.8	89.3	103	58.3
MAX	100	48	59	65	61	90	484	223	77	460	372	327
MIN	42	37	34	38	44	50	77	60	19	20	30	33
AC=FT	3450	2540	2700	3110	2860	4220	13400	7600	2550	5490	6310	3470

CAL YR 1976	TOTAL	49271	MEAN	135	MAX	800	MIN	34	AC=FT	97730
WTR YR 1977	TOTAL	29092	MEAN	79.7	MAX	484	MIN	19	AC=FT	57700

NOTE.--No gage-height record July 6 to Aug. 11.

GILA RIVER BASIN

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--January 1976 to current.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DTS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHQS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT										
04...	1500	80	300	8.8	18.0	6	8.0	8	150	30
NOV										
09...	1300	58	420	8.2	10.0	4	8.8	1	190	45
DEC										
07...	1430	70	389	8.4	2.5	7	9.8	1	190	44
JAN										
05...	1630	65	390	8.3	3.0	30	12.2	12	180	51
FEB										
07...	1330	30	250	8.2	4.0	3	9.6	--	190	49
MAR										
09...	1230	50	349	8.4	7.0	50	12.0	1	180	--
APR										
07...	1500	320	220	7.8	16.0	260	--	160	160	66
MAY										
10...	1330	26	210	7.5	16.0	10	8.7	3	98	20
JUN										
07...	1600	80	300	8.4	27.0	15	8.3	48	150	30
17...	0930	31	275	8.5	18.5	1	--	--	180	46
JUL										
13...	1230	90	400	8.0	24.0	110	7.2	670	200	55
AUG										
09...	1345	100	425	8.3	27.0	45	7.2	320	220	69
SEP										
05...	1130	85	289	--	23.0	30	--	320	140	28

DATE	TOTAL CAL- CIUM (CA) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	TOTAL PO- TAS- SIUM (K) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT									
04...	--	44	--	9.5	--	7.6	.3	--	2.2
NOV									
09...	--	57	--	12	--	9.2	.3	--	2.3
DEC									
07...	--	56	--	12	--	8.7	.3	--	2.2
JAN									
05...	--	54	--	12	--	8.7	.3	--	2.2
FEB									
07...	--	57	--	12	--	8.3	.3	--	2.2
MAR									
09...	--	54	--	11	--	8.0	.3	--	2.1
APR									
07...	--	50	--	9.6	--	5.7	.2	--	2.1
MAY									
10...	--	30	--	5.6	--	4.7	.2	--	1.5
JUN									
07...	--	44	--	8.8	--	7.9	.3	--	2.2
17...	58	51	12	12	8.0	8.0	.3	2.5	2.5
JUL									
13...	--	63	--	11	--	10	.3	--	3.0
AUG									
09...	--	62	--	15	--	11	.3	--	3.0
SEP									
05...	--	41	--	7.9	--	5.8	.2	--	2.3

GILA RIVER BASIN

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09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT 04...	--	--	.01	.00	.20	.21	.05	--	.02
NOV 09...	--	--	.01	.01	.00	.01	.04	--	.01
DEC 07...	--	--	.14	.10	.04	.18	.04	--	.04
JAN 05...	.00	.00	.02	.00	.00	.02	.11	--	.07
FEB 07...	--	--	.02	.05	.21	.23	.05	--	.05
MAR 09...	--	--	.01	.01	1.3	1.3	.05	--	.04
APR 07...	--	--	.49	.22	.99	1.5	.48	--	.02
MAY 10...	--	--	.01	.00	.54	.55	.05	--	.03
JUN 07...	--	--	.04	.05	4.7	4.7	.07	--	.01
JUN 17...	--	--	--	.02	--	--	--	.01	--
JUL 13...	--	--	.07	--	.50	.57	.13	--	--
AUG 09...	--	--	.04	--	.40	.44	.16	--	--
SEP 05...	--	--	.04	--	.63	.67	.08	--	--

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DIS- SOLVED SOLIDS PER AC-FT)
OCT 04...	145	0	44	3.5	.1	18	197	201	.27
NOV 09...	179	0	51	4.9	.2	18	253	243	.34
DEC 07...	177	0	58	2.8	.2	20	248	248	.34
JAN 05...	162	0	62	2.9	.2	20	255	242	.35
FEB 07...	174	0	63	3.2	.2	19	245	251	.33
MAR 09...	--	--	58	3.1	.2	18	221	--	.30
APR 07...	120	0	27	2.0	.1	19	155	178	.21
MAY 10...	95	0	24	1.3	.1	16	125	130	.17
JUN 07...	140	1	42	3.7	.1	17	144	196	.20
JUN 17...	160	0	59	2.8	.1	17	243	231	.33
JUL 13...	180	0	75	4.2	.2	19	272	274	.37
AUG 09...	180	0	87	7.1	.2	19	286	293	.39
SEP 05...	130	--	36	2.1	.2	21	184	180	.25

GILA RIVER BASIN

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)
OCT								
04...	1	--	0	60	20	<10	--	--
NOV								
09...	0	--	0	80	20	<10	--	--
DEC								
07...	0	--	0	110	20	<10	--	--
JAN								
05...	1	--	0	60	20	<10	--	--
FEB								
07...	2	--	0	260	20	<10	--	--
MAR								
09...	0	--	0	60	10	<10	--	--
APR								
07...	9	--	0	60	10	10	--	--
MAY								
10...	1	--	0	60	10	<10	--	--
JUN								
07...	2	--	100	80	20	<10	--	--
17...	2	2	--	80	20	10	0	0
JUL								
13...	3	--	300	120	20	<10	--	--
AUG								
09...	2	--	100	110	20	10	--	--
SEP								
05...	1	--	100	80	20	<10	--	--

DATE	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESF (MN) (UG/L)
OCT									
04...	--	--	<10	--	260	70	<100	--	10
NOV									
09...	--	--	10	--	260	70	<100	--	20
DEC									
07...	--	--	10	--	320	70	<100	--	20
JAN									
05...	--	--	20	--	340	280	<100	--	20
FEB									
07...	--	--	<10	--	180	60	<100	--	10
MAR									
09...	--	--	<10	--	260	50	<100	--	10
APR									
07...	--	--	20	--	10000	2000	100	--	510
MAY									
10...	--	--	10	--	650	60	<100	--	30
JUN									
07...	--	--	<10	--	470	60	<100	--	40
17...	<50	0	<10	0	20	10	100	4	0
JUL									
13...	--	--	<10	--	4600	50	<100	--	200
AUG									
09...	--	--	20	--	1300	40	<100	--	80
SEP									
05...	--	--	<10	--	1500	30	<100	--	70

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

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SILICUM (SE) (UG/L)	DTS- SOLVED SILICUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)
OCT 04...	0	.0	--	0	--	<10	0	--
NOV 09...	10	--	--	0	--	<10	10	--
DEC 07...	10	.1	--	0	--	<10	10	--
JAN 05...	10	.0	--	0	--	<10	20	--
FEB 07...	0	.0	--	0	--	<10	10	--
MAR 09...	10	.0	--	0	--	<10	10	--
APR 07...	200	.0	--	0	--	<10	50	--
MAY 10...	0	.0	--	0	--	<10	200	--
JUN 07...	10	.0	--	0	--	<10	20	--
JUL 17...	0	.1	.1	0	0	--	4	2
JUL 13...	0	.0	--	0	--	<10	40	--
AUG 09...	4	.0	--	10	--	<10	40	--
SEP 05...	10	.0	--	0	--	<10	60	--

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
OCT 04...	1500	1.5	.01	2
NOV 09...	1300	.9	.00	1
DEC 07...	1430	1.6	.00	1
JAN 05...	1630	1.2	.00	0
FEB 07...	1330	1.2	.00	1
MAR 09...	1230	1.3	.00	3
APR 07...	1500	2.0	.00	1
MAY 10...	1330	2.1	.00	4
JUN 07...	1600	--	.00	4
JUL 17...	0930	1.6	--	--
JUL 13...	1230	5.9	.00	2
AUG 09...	1345	3.0	.00	4
SEP 05...	1130	3.2	.00	3

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLOROPHYLL RATIO PERI- PHYTON (UNITS)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
NOV 09...	1300	--	3.77	3.23	--
MAY 10...	1330	60000	--	--	1000

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

GILA RIVER BASIN

09494000 WHITE RIVER NEAR FORT APACHE, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	MAY 10, 77
TIME	1330
TOTAL CELLS/ML	1000
DIVERSITY: DIVISION	0.9
..CLASS	0.9
..ORDER	0.9
...FAMILY	2.7
....GENUS	3.0

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALFS		
...UOCCYSTACEAE		
....ANKISTRODESMIIS	7	1
CHRYSOPHYTA		
..BACTILLARIOPHYCEAE		
...PENNALFS		
...ACHNANTHACEAE		
....COCCONEIS	14	1
....RHODICUSPHENIA	7	1
...CYMBELLACEAE		
....CYMBELLA	78	8
...EPTHEMIA	170#	16
...RHODALDIA	7	1
...DIATOMACEAE		
....DIATOMA	28	3
...FRAGILARIACEAE		
....SYNECHA	110	10
...GOMPHONEMACEAE		
....GOMPHONEMA	50	5
...NAVTICULACEAE		
....GYROSIGMA	7	1
....NAVICULA	99	10
...NITZSCHACEAE		
....NITZSCHIA	160#	15
...SIURIRILLACEAE		
....SIURIPELLA	7	1
CYANOPHYTA (BLUE-GREEN ALGAE)		
..CYANOPHYCEAE		
...HORMOGONALES		
...OSCILLATORACEAE		
....OSCILLATORIA	300#	29

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) above mean sea level (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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	11	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	9.2	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	9.1	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	8.9	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	8.9	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	8.9	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	14	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	10	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	13	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	20	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	20	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	20	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	20	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	166.00	283.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	5.35	9.43	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	20	20	.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	329	561	.00	.00	.00	.00	.00
CAL YR 1976 TOTAL	2405.40		MEAN 6.57	MAX 22	MIN .00	AC-FT 4770						
WTR YR 1977 TOTAL	449.00		MEAN 1.23	MAX 20	MIN .00	AC-FT 891						

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) above mean sea level.

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.--53 years, 587 ft³/s (16.62 m³/s), 425,300 acre-ft/yr (524 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, 52,900 ft³/s (1,500 m³/s) Feb. 7, 1937 (gage height, 15.18 ft or 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 or 5.5 m, from floodmarks), from rating curve extended above 52,000 ft³/s (1,500 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,760 ft³/s (106 m³/s) July 23, gage height, 5.10 ft (1.554 m), base discharge, 3,500 ft³/s (99 m³/s); minimum daily, 87 ft³/s (2.46 m³/s) July 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	165	121	150	163	182	273	521	159	88	200	170
2	199	165	127	165	162	185	279	506	157	87	190	160
3	202	162	133	155	159	183	299	488	158	95	180	163
4	199	162	136	160	157	175	290	454	168	189	160	150
5	187	165	145	160	154	173	274	427	185	209	140	240
6	180	159	152	150	158	170	295	414	195	177	125	200
7	172	155	148	150	158	164	306	396	194	156	150	280
8	169	152	139	140	161	166	477	382	184	143	180	260
9	159	148	136	135	160	176	679	371	181	128	130	250
10	155	148	136	140	160	173	1010	355	171	116	250	240
11	152	148	142	125	163	183	1180	341	162	231	300	205
12	148	148	145	150	164	187	1010	324	153	155	597	431
13	148	148	139	150	161	188	853	306	147	271	487	302
14	155	152	136	150	163	203	776	305	138	172	582	270
15	148	155	145	150	159	206	733	306	127	156	505	250
16	145	148	136	145	162	210	672	289	118	160	771	230
17	142	155	135	145	167	225	619	272	110	265	857	220
18	142	155	137	140	170	237	609	250	103	171	593	200
19	142	155	142	145	175	237	611	237	98	150	673	185
20	142	155	154	150	180	229	614	227	94	140	681	170
21	145	152	149	160	185	217	588	221	90	163	639	160
22	155	148	147	160	196	214	538	215	94	176	554	155
23	172	142	141	160	196	226	500	205	92	433	430	150
24	180	142	136	160	195	251	473	196	93	488	370	145
25	180	145	134	180	202	309	468	195	94	330	320	140
26	183	142	131	170	202	339	488	190	94	240	290	140
27	180	159	119	165	189	345	520	182	104	220	260	230
28	176	155	121	160	184	333	522	184	99	210	230	200
29	172	136	130	160	---	310	540	170	97	220	220	260
30	172	118	145	160	---	298	540	169	96	210	200	200
31	165	---	160	160	---	276	---	164	---	210	190	---
TOTAL	5165	4539	4297	4750	4805	6979	17086	9266	3955	6368	11454	7896
MEAN	167	151	139	153	172	225	570	299	132	205	364	263
MAY	202	165	160	180	202	245	1180	521	195	488	857	163
MIN	142	118	119	125	154	164	273	164	90	87	125	140
AC-FT	10240	9000	8520	9420	9530	13840	33890	18380	7840	12630	22720	15660
CAL YR 1977 TOTAL	143101			MFAN 391	MAY 3510	MIN 105	AC-FT 283800					
WTR YR 1977 TOTAL	86560			MFAN 237	MAY 1180	MIN 87	AC-FT 171700					

NOTE.--No gage-height record Dec. 31 to Jan. 31, Aug. 23 to Sept. 30.

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 fair except those for period of no gage-height record, Sept. 2-23, which are poor. Small diversions for irrigation in the vicinity of the village of Cibecue.

AVERAGE DISCHARGE.--18 years, 37.4 ft³/s (1.059 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, 22,200 ft³/s (629 m³/s) Sept. 2, 1977 (gage height, 17.3 ft or 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 (*) (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)
July 17	1815	1,240 35.1	4.64 1.414	Sept. 2	unknown	*22,200 629	17.3 5.27
July 23	1900	2,180 61.7	5.58 1.701				

Minimum daily, 6.8 ft³/s (0.193 m³/s) July 1-6, 9-10.

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	18	15	17	22	17	15	15	13	9.0	6.8	12	8.0
2	18	15	16	18	17	15	18	13	9.0	6.8	10	1300
3	17	15	16	22	17	15	22	12	9.0	6.8	10	200
4	17	15	16	23	17	16	19	11	9.0	6.8	10	15
5	16	15	16	19	17	15	17	11	8.0	6.8	8.5	10
6	16	15	16	18	17	15	16	11	8.0	6.8	8.0	10
7	16	14	15	17	17	15	18	9.5	8.0	7.2	8.0	10
8	15	15	16	18	16	15	33	9.8	8.0	7.2	16	10
9	15	15	16	17	16	15	51	11	8.0	6.8	11	10
10	15	15	16	14	17	15	58	10	8.0	6.8	8.5	10
11	15	15	16	18	16	16	55	10	8.0	7.2	10	10
12	15	15	15	16	16	16	46	9.2	8.0	8.0	37	10
13	15	16	15	18	15	16	39	9.6	8.0	13	34	10
14	15	15	16	17	15	15	34	11	8.0	9.5	17	10
15	15	15	15	16	15	15	31	11	8.0	10	9.5	10
16	15	16	16	16	15	16	31	10	8.0	9.0	109	10
17	15	15	16	16	16	15	25	9.3	8.0	9.8	15	10
18	15	16	16	16	16	16	23	9.9	7.5	9.5	9.0	9.0
19	15	16	16	15	16	16	22	10	7.5	9.0	25	9.0
20	15	16	16	16	16	17	20	9.6	7.5	9.0	10	9.0
21	17	16	16	17	17	17	20	10	7.5	9.0	9.0	9.0
22	19	16	16	19	17	16	19	9.9	7.5	8.0	9.0	9.0
23	24	16	16	19	17	15	18	9.1	7.5	204	9.0	9.0
24	17	16	16	17	18	14	17	9.0	8.0	54	8.5	9.0
25	16	16	16	18	21	14	17	9.0	8.0	24	8.5	9.0
26	16	16	15	18	19	18	16	9.0	8.0	8.0	8.5	9.0
27	16	21	15	18	18	21	15	9.0	8.0	37	8.5	36
28	16	16	17	17	18	18	14	9.0	8.0	9.0	8.5	64
29	16	14	16	17	---	19	14	9.0	8.0	15	8.0	13
30	16	18	17	17	---	17	14	9.0	7.2	8.0	8.0	10
31	16	---	19	17	---	15	---	9.0	---	20	8.0	---
TOTAL	502	469	496	546	469	493	757	311.9	240.2	558.8	471.0	1857.0
MEAN	16.2	15.6	16.0	17.6	16.8	15.9	25.2	10.1	8.01	18.0	15.2	61.9
MAX	24	21	19	23	21	21	58	13	9.0	204	109	1300
MIN	15	14	15	14	15	14	14	9.0	7.2	6.8	8.0	8.0
AC-FT	996	930	984	1080	930	978	1500	619	476	1110	934	3680
CAL YR 1976	TOTAL	11859.5	MEAN	32.4	MAX	650	MIN	7.9	AC-FT	23520		
WTR YR 1977	TOTAL	7170.9	MEAN	19.6	MAX	1300	MIN	6.8	AC-FT	14220		

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 poor.

EXTREMES FOR PERIOD OF RECORD.--Not determined.

EXTREMES FOR CURRENT YEAR.--Water year 1976: Maximum discharge, 2,200 ft³/s or 62.3 m³/s (from rating curve extended above 440 ft³/s or 12 m³/s by logarithmic plotting), Feb. 9, gage height, 10.26 ft (3.127 m) base discharge, 1,000 ft³/s (28 m³/s); minimum, 6.5 ft³/s (0.18 m³/s) July 1-9, 11.

Water year 1977: Not determined.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10	14	12	14	65	36	29	11	6.5	20	10
2	10	10	16	14	14	67	38	27	11	6.5	16	11
3	10	11	16	14	14	71	37	26	10	6.5	15	10
4	10	11	15	14	21	72	36	31	10	6.5	13	10
5	10	11	14	12	102	62	35	30	9.0	6.5	13	10
6	10	11	14	12	196	57	33	26	9.0	6.5	12	12
7	10	11	14	14	227	55	32	23	9.0	6.5	11	10
8	10	11	14	13	131	59	29	24	9.0	6.5	11	10
9	10	11	13	14	664	68	28	24	8.3	6.5	10	10
10	10	11	13	13	669	88	26	22	7.5	6.8	10	10
11	10	11	13	13	314	95	26	20	7.5	6.5	10	10
12	10	11	13	12	199	89	25	20	7.5	9.5	10	10
13	10	11	14	12	183	81	23	18	7.5	12	10	10
14	10	11	16	12	158	70	24	18	7.5	9.1	10	10
15	10	11	14	13	132	69	32	18	7.5	11	10	10
16	10	11	12	13	113	70	42	18	7.1	12	10	9.0
17	10	11	13	14	97	75	42	18	7.1	10	10	9.0
18	10	11	14	14	83	85	32	17	7.1	10	10	9.0
19	10	11	18	13	75	101	38	18	7.1	10	10	9.0
20	10	11	26	13	72	94	113	18	6.8	14	10	9.0
21	10	11	25	13	69	71	188	16	6.8	11	10	8.7
22	10	11	20	13	62	57	182	16	6.8	20	20	8.7
23	10	11	19	14	56	55	115	14	6.8	70	10	10
24	10	11	16	14	52	60	81	14	6.8	50	10	40
25	10	11	16	14	49	60	62	14	6.8	50	10	60
26	10	11	15	14	47	60	52	13	6.8	20	10	50
27	10	11	14	14	46	56	43	13	6.8	30	10	150
28	10	15	13	14	50	48	39	12	6.8	40	10	30
29	10	27	14	14	56	47	35	12	6.8	50	10	20
30	10	16	12	13	---	43	32	11	6.8	25	10	15
31	10	---	11	14	---	38	---	11	---	45	10	---
TOTAL	310	353	471	412	3965	2088	1556	595	234.5	580.4	351	590.4
MEAN	10.0	11.8	15.2	13.3	137	67.4	51.9	19.2	7.82	18.7	11.3	19.7
MAX	10	27	26	14	669	101	188	30	11	70	20	150
MIN	10	10	11	12	14	38	23	11	6.8	6.5	10	8.7
AC-FT	615	700	934	817	7860	4140	3090	1180	465	1150	696	1170
WTR YR 1976	TOTAL	11506.3	MEAN	31.4	MAX	669	MIN	6.5	AC-FT	22820		

GILA RIVER BASIN

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09497850 CANYON CREEK NEAR GLOBE, AZ--Continued

MONTHLY DISCHARGE, IN CUBIC FEET PER SECOND,
OCTOBER 1976 TO SEPTEMBER 1977

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	--	--	11	700
November	--	--	11	660
December	--	--	11	690
CAL YR 1976	669	6.5	28.4	22,620
January	--	--	14	830
February	--	--	15	810
March	--	--	16	1,000
April	--	16	35.0	2,080
May	18	7.9	11.8	726
June	--	--	.7	400
July	--	--	13	810
August	--	--	17	1,100
September	--	--	14	840
WTR YR 1977	--	--	14.7	10,650

NOTE.--No gage-height record for most of water year.

09497900 CHERRY CREEK NEAR YOUNG, AZ

LOCATION.--Lat 34°04'58", long 110°55'25", in SE¼NE¼ sec.32, T.9 N., R.14 E., Gila County, Hydrologic Unit 15060103, on left bank 0.3 mi (0.5 km) downstream from Deadman Canyon and 2 mi (3 km) southeast of Young.

DRAINAGE AREA.--62.1 mi² (161 km²).

PERIOD OF RECORD.--August 1963 to September 1977 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 4,950 ft (1,509 m), from topographic map. Prior to June 11, 1973, at datum 2.07 ft (0.631 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--14 years, 10.2 ft³/s (0.289 m³/s), 7,390 acre-ft/yr (9.11 hm³/yr); median of yearly mean discharges, 7.0 ft³/s (0.20 m³/s), 5,100 acre-ft/yr (6.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,290 ft³/s (206 m³/s) Oct. 19, 1972 (gage height, 11.00 ft or 3.353 m, present datum), from rating curve extended above 110 ft³/s (3.1 m³/s) on basis of slope-area measurements at gage heights 7.97 and 11.00 ft (2.429 and 3.353 m), present datum; no flow July 18, 20, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge (*) (from rating curve extended above 110 ft³/s or 3.1 m³/s as explained above) and peak discharges above base of 250 ft³/s (7.1 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Aug. 13	1730	400 11.3	3.50 1.067
Sept. 2	1830	*530 15.0	3.90 1.189

Minimum daily discharge, 0.20 ft³/s (0.006 m³/s) July 29 to Aug. 12.

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	.40	.80	1.1	1.7	4.9	2.2	2.7	1.8	1.1	.60	.20	.30
2	.90	.80	1.1	1.7	4.7	2.2	3.0	1.8	1.1	.60	.20	26
3	.70	.77	1.1	2.0	4.0	2.2	4.2	1.8	1.1	.60	.20	32
4	.50	.78	1.1	2.2	3.5	2.2	5.2	1.8	1.1	.60	.20	4.6
5	.50	.82	1.1	1.8	3.0	2.2	4.0	1.8	1.1	.60	.20	20
6	.50	.82	1.2	1.7	2.5	2.2	3.0	1.6	1.1	.50	.20	3.9
7	.50	.82	1.2	1.7	2.5	2.2	3.0	1.6	1.1	.50	.20	1.2
8	.50	.82	1.2	1.7	2.5	2.2	3.0	1.6	1.1	.50	.20	1.0
9	.50	.82	1.2	1.7	2.2	2.0	3.0	1.6	1.0	.50	.20	5.3
10	.50	.82	1.2	1.7	2.2	2.0	3.0	1.6	1.0	.50	.20	5.9
11	.50	.82	1.2	1.7	2.2	1.8	2.5	1.5	1.0	.40	.20	23
12	.50	.83	1.2	1.7	2.2	1.8	2.5	1.5	1.0	.40	.20	2.0
13	.60	.90	1.2	1.7	2.2	1.8	2.5	1.5	1.0	.40	18	.97
14	.60	.82	1.4	1.8	2.1	1.8	2.5	1.5	1.0	.40	4.6	.80
15	.60	.82	1.4	1.8	2.0	1.8	2.5	1.4	1.0	.40	12	.70
16	.60	.96	1.4	1.8	2.0	1.8	2.5	1.4	1.0	.40	11	.55
17	.60	1.2	1.4	1.8	2.2	1.7	2.5	1.4	1.0	.30	.80	.48
18	.60	1.2	1.4	1.8	2.2	1.7	2.5	1.3	1.0	.30	.70	.57
19	.60	1.2	1.4	1.8	2.2	1.7	2.5	1.3	.90	.30	.49	.54
20	.70	1.2	1.4	1.8	2.2	1.7	2.5	1.3	.90	.30	.42	.51
21	1.0	1.2	1.4	1.8	2.2	1.7	2.2	1.3	.90	.30	.60	.49
22	.70	1.2	1.5	2.2	2.0	1.5	2.2	1.3	.90	.30	.99	.60
23	1.8	1.2	1.5	2.7	2.0	1.5	2.2	1.3	.80	.30	.41	.63
24	1.0	1.2	1.5	2.2	2.0	1.5	2.2	1.3	.80	.30	.35	.66
25	.80	1.2	1.4	2.0	2.2	1.5	2.0	1.2	.80	.30	.33	.59
26	.80	1.2	1.4	2.0	2.2	1.7	2.0	1.2	.70	.30	.31	.57
27	.80	1.3	1.4	2.0	2.2	2.5	2.0	1.2	.70	.30	.30	2.0
28	.80	1.1	1.4	2.0	2.2	2.5	2.0	1.2	.70	.30	.30	1.6
29	.80	1.1	1.4	2.0	---	3.0	1.8	1.2	.70	.20	.29	1.3
30	.80	1.1	1.4	2.7	---	3.0	1.8	1.2	.70	.20	.30	1.2
31	.80	---	1.6	5.2	---	2.7	---	1.2	---	.20	.30	---
TOTAL	21.50	29.82	40.8	62.4	70.5	62.3	79.5	44.7	28.30	12.10	54.89	139.96
MEAN	.69	.99	1.32	2.01	2.52	2.01	2.65	1.44	.94	.39	1.77	4.67
MAX	1.8	1.3	1.6	5.2	4.9	3.0	5.2	1.8	1.1	.60	18	32
MIN	.40	.77	1.1	1.7	2.0	1.5	1.8	1.2	.70	.20	.20	.30
AC-FT	43	59	81	124	140	124	158	89	56	24	109	278
CAL YR 1976	TOTAL	2776.16	MEAN 7.59	MAX 788	MIN .30	AC-FT 5510						
WTR YR 1977	TOTAL	646.77	MEAN 1.77	MAX 32	MIN .20	AC-FT 1280						

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LOCATION.--Lat 35°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.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--12 years, 31.6 ft³/s (0.895 m³/s), 22,890 acre-ft/yr (28.2 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, 8,300 ft³/s (235 m³/s) Oct. 19, 1972 (gage height, 14.0 ft or 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, 3.4 ft³/s (0.096 m³/s) Aug. 26, 27, 1965 (revised).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 408 ft³/s (11.6 m³/s) Sept. 11, gage height, 3.05 ft (0.930 m), no peak above base of 750 ft³/s (21.2 m³/s); minimum daily, 3.7 ft³/s (0.105 m³/s) Aug. 6.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	6.7	6.3	7.5	10	6.6	7.7	6.1	4.7	4.5	4.9	5.6
2	8.2	6.7	6.3	7.5	9.5	6.8	8.9	5.9	4.9	4.4	4.4	7.4
3	7.4	6.5	6.0	7.5	9.0	6.6	9.2	5.9	5.0	4.7	4.2	43
4	7.4	6.3	6.0	7.5	9.0	6.6	8.3	5.9	5.1	5.3	4.0	20
5	7.1	6.3	6.0	7.5	9.0	6.6	8.0	6.2	5.1	5.5	3.9	12
6	7.1	6.3	5.8	7.5	8.0	6.9	38	6.1	5.0	5.4	3.7	15
7	6.9	6.5	5.8	7.5	8.0	6.9	65	6.0	4.8	5.4	3.9	9.9
8	6.7	6.6	5.8	7.5	8.0	6.9	38	5.9	4.8	5.2	7.7	9.5
9	6.7	6.6	5.6	7.5	8.0	6.9	27	5.9	4.5	5.3	25	9.2
10	6.6	6.7	5.6	7.5	8.0	7.0	19	6.0	4.4	5.4	23	9.5
11	6.6	6.8	5.6	7.5	7.4	7.1	14	5.8	4.3	5.4	10	60
12	6.6	6.8	5.4	7.4	7.4	7.1	11	5.7	4.3	7.1	30	32
13	6.5	7.1	5.4	7.4	7.4	7.4	9.2	5.9	4.3	8.1	68	13
14	6.5	6.5	5.4	7.4	7.5	7.4	8.6	6.6	4.2	7.4	38	11
15	6.5	6.5	5.4	7.4	7.8	7.4	8.3	6.2	4.0	6.1	14	9.3
16	6.5	6.3	5.4	7.4	7.8	7.4	8.3	5.7	4.0	5.6	88	8.3
17	6.5	6.3	5.6	7.5	7.8	7.4	7.7	5.6	4.0	5.8	19	8.1
18	6.6	6.3	5.6	7.5	7.9	7.4	7.4	5.6	4.0	5.5	11	8.0
19	6.6	6.5	5.6	7.5	7.8	7.4	7.2	5.6	4.0	5.1	9.1	7.6
20	6.6	6.5	5.6	8.0	7.9	7.4	7.3	5.6	4.0	5.0	11	7.4
21	7.7	6.3	5.6	8.5	7.1	7.4	7.1	5.5	4.0	5.1	8.3	7.0
22	7.7	6.3	5.8	8.5	6.2	7.4	7.0	5.4	4.2	5.4	7.1	7.0
23	7.0	6.3	5.8	9.0	6.2	7.4	6.9	5.3	4.3	6.6	6.8	7.0
24	7.2	6.0	5.8	10	6.7	7.4	7.2	5.5	4.4	5.9	6.5	7.0
25	7.1	6.0	5.8	10	7.7	7.4	7.0	6.2	4.1	5.0	6.3	7.0
26	7.1	6.5	8.0	10	6.8	8.6	6.8	5.4	4.1	4.9	6.3	6.5
27	6.8	7.4	7.5	10	6.6	9.5	6.6	5.3	4.0	4.9	6.3	6.5
28	6.7	6.5	7.5	10	6.6	8.3	6.4	5.1	4.0	4.9	6.0	10
29	6.6	6.5	7.5	10	---	8.9	6.2	5.0	4.3	4.4	6.0	10
30	6.6	6.3	7.5	10	---	8.0	6.1	4.9	4.4	4.0	5.8	8.0
31	6.6	---	7.5	10	---	8.0	---	4.8	---	9.3	5.6	---
TOTAL	214.6	194.9	188.5	256.0	217.1	229.5	385.4	176.6	131.2	172.6	453.8	381.8
MEAN	6.92	6.50	6.08	8.26	7.75	7.40	12.8	5.70	4.37	5.57	14.6	12.7
MAX	8.2	7.4	8.0	10	10	9.5	65	6.6	5.1	9.3	88	60
MIN	6.5	6.0	5.4	7.4	6.2	6.6	6.1	4.8	4.0	4.0	3.7	5.6
AC=FT	426	387	374	508	431	455	764	350	260	342	900	757
CAL YR 1976	TOTAL	7567.0	MEAN	20.7	MAX	1450	MIN	4.7	AC=FT	15010		
WTR YR 1977	TOTAL	3002.0	MEAN</									

09498500 SALT RIVER NEAR ROOSEVELT, AZ

LOCATION.--Lat 33°37'10", long 110°55'15", in SE¼NE¼ 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).

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) above mean sea level. 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.--64 years, 827 ft³/s (23.4 m³/s), 599,200 acre-ft/yr (739 hm³/yr); median of yearly mean discharges, 660 ft³/s (18.7 m³/s), 478,000 acre-ft/yr (590 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 or 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, 25.8 ft (7.86 m) Dec. 23, 1965; 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, 10,200 ft³/s (289 m³/s) Sept. 3, gage height, 13.45 ft (4.100 m), base discharge, 4,000 ft³/s (113 m³/s); minimum daily, 96 ft³/s (2.72 m³/s) July 3.

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	232	192	154	226	229	218	277	540	170	107	232	195
2	223	188	149	226	226	215	274	520	165	101	218	190
3	220	185	158	226	220	215	286	515	168	96	241	1920
4	218	180	161	229	218	215	298	485	168	101	202	793
5	212	180	163	220	215	212	283	470	175	165	182	378
6	198	180	168	218	210	208	266	435	205	200	149	330
7	188	178	172	205	212	200	415	422	205	190	137	295
8	180	172	172	198	208	198	545	410	200	165	145	268
9	178	172	168	192	210	192	707	398	188	152	197	274
10	175	170	163	185	205	198	969	386	175	139	145	280
11	172	170	163	175	205	192	1390	378	170	147	188	273
12	170	168	165	158	208	198	1370	354	161	226	445	423
13	165	170	170	165	208	205	1070	342	154	207	354	310
14	165	170	168	168	205	208	889	322	147	256	574	283
15	172	172	165	182	205	215	812	318	141	208	346	271
16	168	172	163	190	205	218	742	310	129	182	1180	253
17	168	172	163	185	202	220	652	301	122	190	990	229
18	161	175	163	185	205	226	604	280	120	352	676	212
19	156	175	172	182	205	244	592	265	111	200	580	198
20	154	175	178	195	210	244	598	247	107	182	875	182
21	163	178	182	200	215	238	598	238	106	170	676	172
22	178	175	182	220	223	226	565	223	106	170	580	163
23	205	175	182	238	229	223	520	218	106	200	500	158
24	210	178	180	244	229	226	480	210	106	876	513	152
25	210	178	172	250	235	247	465	210	106	489	418	145
26	208	178	165	247	238	314	475	210	107	286	330	145
27	205	185	165	244	235	378	500	208	107	250	289	239
28	202	195	158	244	229	382	520	202	106	235	256	308
29	200	190	163	238	---	370	535	198	113	235	247	301
30	198	170	170	235	---	394	545	188	109	256	223	205
31	198	---	195	229	---	235	---	178	---	244	210	---
TOTAL	5852	5318	5212	6499	6044	7474	18242	9981	4253	6977	12298	9545
MEAN	189	177	168	210	216	241	608	322	142	225	397	318
MAX	232	195	195	250	238	382	1390	540	205	876	1180	1920
MIN	154	168	149	158	202	192	266	178	106	96	137	145
AC-FT	11610	10550	10340	12890	11990	14820	36180	19800	8440	13840	24390	18930
CAL YR 1976	TOTAL	169844	MEAN 464	MAX 9250	MIN 116	AC-FT 336900						
WTR YR 1977	TOTAL	97695	MEAN 268	MAX 1920	MIN 96	AC-FT 193800						

GILA RIVER BASIN

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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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLT- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	
DATE	TIME												
NOV													
04...	1130	180	3620	8.5	15.0	15	--	R22	310	150	83	24	
DEC													
29...	1400	154	4000	8.1	5.0	5	--	<1	360	160	90	32	
FEB													
03...	1230	220	2500	8.1	10.0	7	--	<1	350	150	89	30	
24...	1430	230	2500	8.1	13.0	25	--	B6	310	140	79	28	
APR													
01...	1015	277	1550	8.4	12.0	60	--	R10	270	100	74	20	
27...	1445	515	1380	8.4	21.0	40	8.4	R10	180	58	50	14	
JUN													
02...	1015	165	3400	8.0	25.0	10	6.2	R24	280	130	68	26	
29...	1030	114	4600	8.3	27.0	25	--	B10	240	97	32	40	
JUL													
28...	1100	210	1620	8.2	28.0	1800	--	560	240	96	68	16	
AUG													
24...	1030	445	1080	8.1	27.0	190	5.8	B140	180	54	48	14	
SEP													
29...	1115	304	3700	8.4	23.0	190	7.8	760	320	140	78	30	
		DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLOR- IDE (CL) (MG/L)	DIS- SOLVED FLUOR- IDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED (SUM OF CONSTITU- ENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
NOV													
04...	590	15	13	196	0	140	930	.2	18	1930	1900	2.62	
DEC													
29...	630	15	15	245	0	130	970	.2	19	2110	2010	2.87	
FEB													
03...	540	13	12	233	0	140	830	.3	19	1710	1780	2.33	
24...	510	13	12	215	0	120	820	.2	19	1760	1690	2.39	
APR													
01...	320	8.5	7.8	200	0	92	500	.2	17	1170	1130	1.59	
27...	230	7.4	5.9	150	1	55	360	.8	17	813	809	1.11	
JUN													
02...	560	15	12	180	0	120	840	.2	16	1780	1730	2.42	
29...	950	26	19	180	0	140	1500	.4	18	2830	2790	3.85	
JUL													
28...	220	6.2	6.4	170	0	87	330	--	--	1250	--	1.70	
AUG													
24...	190	6.2	5.5	150	0	51	300	.1	22	676	705	.92	
SEP													
29...	610	15	14	220	0	110	980	.2	20	2020	1950	2.75	

B Based on non-ideal colony count.

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

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
NOV 04...	.01	.00	.00	.01	.08	.08	.03	.00
DEC 29...	--	--	.01	.01	.35	.36	.00	.03
FEB 03...	.03	.00	.03	.03	.28	.31	.02	.03
24...	--	--	.04	.01	.02	.06	.00	.02
APR 01...	--	--	.01	.00	.14	.15	.12	.02
27...	--	--	.20	.20	.22	.42	.08	.03
JUN 02...	--	--	.19	.20	.69	.88	.05	.05
29...	--	--	.02	--	1.0	1.0	.04	--
JUL 28...	--	--	.32	--	3.5	3.8	.94	--
AUG 24...	--	--	.16	--	.89	1.1	.38	--
SEP 29...	--	--	.05	--	.49	.54	.28	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
NOV 04...	6	100	330	300	<10	10	600	10
DEC 29...	8	0	390	330	<10	<10	160	20
FEB 03...	5	0	310	280	<10	<10	300	10
24...	7	100	330	260	10	<10	820	20
APR 01...	8	100	230	170	<10	<10	1300	40
27...	5	0	180	130	<10	10	1100	40
JUN 02...	6	100	340	280	<10	20	540	30
29...	6	100	530	470	<10	10	700	20
JUL 28...	38	700	3300	160	20	30	190	20
AUG 24...	5	500	200	110	<10	20	5900	20
SEP 29...	23	500	390	360	<10	50	9600	10

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV 04...	100	40	20	.0	0	<10	30
DEC 29...	<100	20	20	.0	0	10	10
FEB 03...	<100	10	10	.0	0	<10	10
24...	<100	50	20	.1	0	<10	60
APR 01...	100	80	30	.8	1	<10	30
27...	<100	70	10	.6	1	<10	20
JUN 02...	<100	40	20	.0	0	<10	20
29...	0	80	20	.0	0	<10	20
JUL 28...	200	20	4	.0	0	20	30
AUG 24...	<100	340	0	.0	0	<10	40
SEP 29...	<100	330	10	.0	0	<10	50

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

09498500 SALT RIVER NEAR ROOSEVELT, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
NOV				
04...	1130	.9	.00	1
DEC				
29...	1400	.9	.00	0
FEB				
03...	1230	1.3	.00	0
24...	1430	2.4	.00	12
APR				
01...	1015	3.2	.00	5
27...	1445	3.5	.00	2
JUN				
02...	1015	1.4	.00	0
29...	1030	2.1	.00	1
JUL				
28...	1100	33	.00	0
AUG				
24...	1030	13	.00	0
SEP				
29...	1115	6.8	.00	0

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	FFB 24,77
TIME	1430
TOTAL CELLS/ML	490
DIVERSITY: DIVISION	1.0
..CLASS	1.0
..ORDER	1.1
...FAMILY	2.8
....GENUS	3.0

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALFS		
...SCENEDESMACEAE		
....SCENEDESMUS	43	9
CHRYSTOPHYTA		
.BACILLARIOPHYCEAE		
..PENNALFS		
...NAVICULACEAF		
....ENTOMONETS	39	8
..CENTRALES		
...BIDDULPHIACEAF		
....BIDDULPHIA	4	1
..PENNALFS		
...ACHNANTHACEAE		
....RHODICOSPHEINIA	47	10
...CYMBELLACEAF		
....AMPHORA	4	1
....CYMBELLA	4	1
...FRAGILARIACEAF		
....FRAGILARIA	4	1
....SYNEDRA	34	7
...GOMPHONEMATACEAF		
....GOMPHONEMA	34	7
...NAVICULACEAF		
....NAVICULA	90#	19
...NITZSCHACEAE		
....NITZSCHIA	110#	23
CYANOPHYTA (BLUE-GREEN ALGAE)		
.CYANOPHYCEAE		
..HORMOGONALFS		
...OSCILLATORIACEAE		
....OSCILLATORIA	69	14

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

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

GILA RIVER BASIN

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.--11 years, 14.1 ft³/s (0.399 m³/s), 10,220 acre-ft/yr (12.6 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, 44,400 ft³/s (1,260 m³/s) Sept. 5, 1970 (gage height, 14.1 ft or 4.30 m, in gage well, 18.7 ft or 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, 3,020 ft³/s (85.5 m³/s) Aug. 15, gage height, 5.57 ft (1.698 m), base discharge, 600 ft³/s (17 m³/s); minimum daily, 0.35 ft³/s (0.010 m³/s) Aug. 4-8.

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	1.6	1.7	1.6	1.5	1.4	1.2	1.3	1.5	1.1	.71	.47	.52
2	1.6	1.7	1.6	1.5	1.4	1.1	1.4	1.5	1.1	.71	.43	.52
3	1.6	1.7	1.7	2.7	1.4	1.1	1.4	1.5	1.1	.71	.39	.52
4	1.6	1.7	1.7	1.9	1.4	1.1	1.5	1.5	1.1	.71	.35	.59
5	1.7	1.7	1.7	1.7	1.4	1.1	1.5	1.5	1.1	.75	.35	.59
6	1.7	1.7	1.7	1.6	1.3	1.2	1.5	1.5	1.0	.67	.35	.67
7	1.7	1.7	1.7	1.5	1.3	1.2	1.5	1.5	1.0	.63	.35	.59
8	1.7	1.7	1.7	1.5	1.3	1.2	1.5	1.5	1.0	.63	.35	.59
9	1.7	1.7	1.7	1.5	1.3	1.2	1.5	1.5	.97	.63	.9	.59
10	1.7	1.7	1.7	1.5	1.3	1.2	1.5	1.4	.97	.63	.55	1.5
11	1.7	1.7	1.6	1.5	1.3	1.2	1.5	1.4	.97	.59	.51	22
12	1.7	1.7	1.5	1.5	1.3	1.2	1.6	1.4	.92	.59	.47	1.4
13	1.7	1.7	1.5	1.5	1.3	1.2	1.6	1.4	.92	.59	1.3	1.0
14	1.7	1.6	1.5	1.5	1.3	1.2	1.5	1.4	.92	.55	1.0	.94
15	1.7	1.7	1.5	1.5	1.3	1.2	1.6	1.3	.86	.59	200	.84
16	1.7	1.7	1.5	1.5	1.2	1.2	1.6	1.3	.86	.55	70	.94
17	1.7	1.8	1.5	1.5	1.2	1.2	1.5	1.3	.80	.59	1.0	.84
18	1.7	1.8	1.5	1.5	1.2	1.2	1.6	1.3	.80	.59	.67	.84
19	1.7	1.8	1.5	1.5	1.2	1.2	1.6	1.4	.80	.55	.59	.84
20	1.7	1.8	1.5	1.5	1.2	1.2	1.6	1.4	.80	.59	.59	.84
21	1.7	1.8	1.5	1.5	1.2	1.2	1.6	1.4	.80	.59	.59	.84
22	2.6	1.8	1.5	1.5	1.2	1.3	1.6	1.3	.80	.59	17	.84
23	2.6	1.8	1.5	1.5	1.2	1.3	1.7	1.3	.80	.71	.84	.94
24	2.0	1.7	1.5	1.5	1.2	1.3	1.7	1.3	.75	.67	.75	.94
25	1.8	1.7	1.5	1.5	1.2	1.4	1.7	1.2	.71	.65	.75	.94
26	1.8	1.7	1.5	1.5	1.2	1.4	1.7	1.2	.71	.60	.67	.94
27	1.7	1.7	1.5	1.4	1.2	1.4	1.7	1.2	.71	.60	.59	26
28	1.7	1.7	1.5	1.4	1.2	1.4	1.7	1.2	.71	.59	.59	3.6
29	1.7	1.7	1.5	1.4	---	1.4	1.6	1.2	.67	.59	.59	1.3
30	1.7	1.6	1.5	1.4	---	1.4	1.5	1.2	.67	.67	.59	1.3
31	1.7	---	1.5	1.4	---	1.3	---	1.1	---	.59	.59	---
TOTAL	54.6	51.5	48.4	47.9	35.6	38.4	46.8	42.1	26.42	19.41	307.17	74.60
MEAN	1.76	1.72	1.56	1.55	1.27	1.24	1.56	1.36	.88	.63	9.91	2.49
MAX	2.6	1.8	1.7	2.7	1.4	1.4	1.7	1.5	1.1	.75	200	26
MIN	1.6	1.6	1.5	1.4	1.2	1.1	1.3	1.1	.67	.55	.35	.52
AC-FT	108	102	96	95	71	76	93	84	52	38	609	148
CAL YR 1976	TOTAL	4688.30	MEAN	12.8	MAX	936	MIN	1.1	AC-FT	9300		
WTR YR 1977	TOTAL	792.90	MEAN	2.17	MAX	200	MIN	.35	AC-FT	1570		

GILA RIVER BASIN

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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) above mean sea level.

REMARKS.--Records good. Small diversions above station for irrigation.

AVERAGE DISCHARGE.--36 years (1941-77), 113 ft³/s (3,200 m³/s), 81,870 acre-ft/yr (101 hm³/yr); median of yearly mean discharges, 82 ft³/s (2.32 m³/s), 59,400 acre-ft/yr (73 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 or 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, 2,820 ft³/s (79.9 m³/s) Aug. 15, gage height, 6.72 ft (2.048 m), base discharge, 1,700 ft³/s (48 m³/s); no flow June 30 to July 26.

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	35	17	16	26	30	28	22	16	6.6	.00	7.8	3.2
2	32	16	16	27	28	27	33	16	6.6	.00	7.2	6.0
3	28	16	16	82	27	27	82	13	6.6	.00	9.3	12
4	26	16	16	114	26	27	73	13	6.6	.00	4.8	9.3
5	23	16	16	76	23	26	77	14	5.4	.00	5.4	8.5
6	22	17	16	73	23	25	97	14	4.8	.00	2.8	6.6
7	20	17	16	56	22	20	147	14	3.6	.00	2.5	4.8
8	15	17	17	44	22	16	175	14	3.6	.00	2.5	4.0
9	17	17	17	42	21	16	155	14	2.8	.00	9.3	3.6
10	16	17	17	35	21	16	124	14	3.2	.00	8.5	3.6
11	16	17	17	28	20	16	107	13	3.2	.00	6.6	83
12	16	18	17	28	20	16	79	12	2.8	.00	5.4	68
13	15	19	17	28	18	16	58	12	2.2	.00	11	26
14	15	19	17	28	18	15	51	18	2.0	.00	15	35
15	14	18	17	27	17	15	51	21	1.7	.00	166	39
16	13	18	17	24	17	16	48	17	1.7	.00	232	17
17	12	18	17	24	21	16	39	14	1.2	.00	151	12
18	11	17	17	24	22	16	37	13	1.2	.00	60	11
19	12	17	17	24	23	15	33	12	1.1	.00	24	9.3
20	11	17	17	24	26	15	30	11	.90	.00	28	7.8
21	12	16	16	24	27	14	26	10	.80	.00	15	7.8
22	38	15	16	30	28	13	23	10	.90	.00	65	7.2
23	68	15	16	104	30	13	21	9.3	1.1	.00	32	7.2
24	56	15	16	97	33	14	23	10	1.2	.00	16	6.6
25	32	15	15	68	35	14	23	14	1.1	.00	12	6.0
26	23	16	15	56	35	18	22	15	1.1	.00	8.5	5.4
27	20	16	15	46	28	26	21	15	.90	6.3	7.2	38
28	20	16	15	41	28	27	20	13	.60	9.3	6.0	15
29	18	16	16	33	---	30	18	12	.40	7.8	4.8	13
30	17	16	16	32	---	28	17	10	.00	3.6	4.4	9.3
31	17	---	20	28	---	23	---	7.8	---	47	4.4	---
TOTAL	690	500	509	1393	689	604	1732	411.1	75.90	74.00	934.4	485.2
MEAN	22.3	16.7	16.4	44.9	24.6	19.5	57.7	13.3	2.53	2.39	30.1	16.2
MAX	68	19	20	114	35	30	175	21	6.6	47	232	83
MIN	11	15	15	24	17	13	17	7.8	.00	.00	2.5	3.2
AC-FT	1370	992	1010	2760	1370	1200	3440	815	151	147	1850	962
CAL YR 1976 TOTAL	41740.90		MEAN	114	MAX	11000	MIN	3.6	AC-FT	82790		
WTR YR 1977 TOTAL	8097.60		MEAN	22.2	MAX	232	MIN	.0	AC-FT	16060		

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ--Continued

WATER-QUALITY RECORDS

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

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DTS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	
NOV 04...	1500	16	542	8.4	19.0	60	--	P22	170	20	46	13	
DEC 29...	1100	15	580	8.5	2.0	1	--	<1	200	16	56	15	
FEB 03...	1645	27	540	8.2	10.0	2	--	<1	170	7	47	12	
24...	0915	33	530	8.1	10.0	2	--	B8	170	3	47	13	
APR 01...	1400	22	500	8.5	13.0	1	--	<1	180	27	49	13	
27...	1100	21	390	8.5	20.0	4	6.7	B10	160	11	45	12	
JUN 02...	1400	6.4	540	8.5	29.0	1	9.8	<1	150	16	39	12	
29...	1415	.30	470	8.6	30.0	2	8.3	B2	160	25	41	13	
JUL 28...	1200	.00	--	--	--	--	--	--	--	--	--	--	
AUG 24...	1415	15	470	8.3	30.0	120	6.9	350	170	9	48	13	
SEP 29...	1430	25	480	8.4	27.0	--	9.2	740	190	32	52	14	
		DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED (SUM OF CONSTIT- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
NOV 04...	48	1.6	2.2	181	0	14	68	.4	9.8	288	291	.39	
DEC 29...	50	1.5	1.9	226	0	15	80	.5	11	325	342	.44	
FEB 03...	33	1.1	1.6	195	0	15	49	.4	11	262	265	.36	
24...	36	1.2	1.8	205	0	16	54	.5	10	284	280	.39	
APR 01...	37	1.2	1.7	180	1	15	56	.5	10	274	272	.37	
27...	32	1.1	1.8	180	2	14	47	.5	12	242	255	.33	
JUN 02...	44	1.6	2.2	160	0	16	64	.5	14	278	271	.38	
29...	46	1.6	2.4	160	0	14	75	.6	15	279	286	.38	
JUL 28...	--	--	--	--	--	--	--	--	--	--	--	--	
AUG 24...	39	1.3	2.6	200	0	12	65	.6	18	293	297	.40	
SEP 29...	46	1.5	2.6	190	0	12	75	.5	15	--	311	.42	

B Based on non-ideal colony count.

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

GILA RIVER BASIN

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09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJFL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHORUS (P) (MG/L)
NOV								
04...	.03	.00	.01	.03	.05	.06	.02	.01
DEC								
29...	--	--	.18	.12	.17	.35	.00	.04
FEB								
03...	--	--	.01	.01	.09	.10	.01	.00
24...	--	--	.01	.04	.00	.01	.00	.01
APR								
01...	--	--	.01	.00	.03	.04	.04	.02
27...	--	--	.01	.01	.05	.06	.02	.03
JUN								
02...	--	--	.02	.03	.44	.46	.05	.03
29...	--	--	.12	--	.61	.73	.00	--
AUG								
24...	--	--	.07	--	.59	.66	.19	--
SEP								
29...	--	--	.01	--	.12	.13	.08	--

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
NOV								
04...	3	100	120	60	<10	<10	250	60
DEC								
29...	2	0	110	60	<10	10	20	30
FEB								
03...	2	0	80	40	<10	<10	90	30
24...	2	100	100	50	10	<10	340	30
APR								
01...	2	0	80	40	<10	<10	80	90
27...	2	100	90	50	<10	10	250	10
JUN								
02...	1	100	130	70	<10	10	30	30
29...	4	100	150	80	<10	10	70	20
AUG								
24...	7	400	170	70	<10	20	5600	20
SEP								
29...	6	200	120	80	10	20	2300	10

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

GILA RIVER BASIN

09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)
NOV							
04...	<100	20	10	.1	0	<10	10
DEC							
29...	<100	10	0	.0	0	10	10
FEB							
03...	<100	0	0	.2	0	<10	30
24...	<100	10	0	.2	0	<10	70
APR							
01...	100	10	10	.3	0	<10	20
27...	<100	10	0	.0	0	<10	10
JUN							
02...	<100	0	0	.1	0	<10	10
29...	<100	8	0	.0	0	<10	20
AUG							
24...	<100	210	0	.0	0	<10	40
SEP							
29...	<100	110	20	.0	0	<10	30

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

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
NOV				
04...	1500	.7	.00	2
DEC				
29...	1100	.6	.00	0
FEB				
03...	1645	1.3	.00	0
24...	0915	1.7	.00	9
APR				
01...	1400	1.1	.00	0
27...	1100	1.7	.00	4
JUN				
02...	1400	1.2	.00	0
29...	1415	1.0	.00	1
AUG				
24...	1415	5.1	.00	1
SEP				
29...	1430	2.3	.00	1

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIO- MASS CHLORO- PHYLL RATIO PERT- PHYTON (UNITS)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
FEB			
24...	0915	--	87
JUN			
02...	1400	4436	--

GILA RIVER BASIN

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09499000 TONTO CREEK ABOVE GUN CREEK, NEAR ROOSEVELT, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE	FEB 20, 77
TIME	1430
TOTAL CELLS/ML	87
DIVERSITY: DIVISION	0.9
..CLASS	0.9
...ORDER	1.3
...FAMILY	2.8
...GENUS	2.8

ORGANISM	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)		
..CHLOROPHYCEAE		
...CHLOROCOCCALES		
...HYDRODICTYACEAE		
....PEDIASTRUM	26#	30
...VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	3	4
CHRYSOPHYTA		
..BACILLARIOPHYCEAE		
...CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	3	4
..PENNALES		
...ACHNANTHACEAE		
...CUCCONFIS	13	15
...CYMBELLACEAE		
...EPTHEMIA	3	4
...RHODALDIA	3	4
...DIATOMACEAE		
....DIATOMA	6	7
...GOMPHONEMACEAE		
....GOMPHONEMA	3	4
...NAVICULACEAE		
....NAVICULA	6	7
...NITZSCHACEAE		
....NITZSCHIA	19#	22

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 hm³), divided as follows: Roosevelt Lake, 1,382,000 acre-ft (1,700 hm³); Apache Lake, 245,000 acre-ft (302 hm³); Canyon Lake, 58,000 acre-ft (71.5 hm³); Saguaro Lake, 70,000 acre-ft (86.3 hm³). 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 hm³) May 22, 1941; minimum, 20,680 acre-ft (25.5 hm³) Sept. 16, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum contents of system, 951,700 acre-ft (1,170 hm³) Mar. 12; minimum, 451,600 acre-ft (557 hm³) Sept. 27.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 0800

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	926100	912900	917600	925200	940600	949500	934200	898900	832400	718300	593300	498100
2	932400	913200	917500	926500	941200	949000	933100	897300	829300	713800	589500	492600
3	933000	913500	917700	927800	941600	948600	932300	895100	824000	709500	585300	491700
4	932400	913800	918000	930800	942100	949500	931800	892900	821400	705500	581000	492000
5	929000	914000	918100	928600	942300	949900	931500	893500	818200	703500	576400	490700
6	925000	913600	918100	929500	942500	950000	930700	890800	814800	698700	571000	489600
7	926600	916300	918300	930200	942900	950700	929900	888500	811400	695400	565900	487500
8	923000	914400	918400	930500	943500	950700	928300	886900	807400	690900	561400	483400
9	921100	915400	918800	930700	944000	951000	927500	884400	803000	686100	557400	481300
10	919700	914800	919000	931200	946800	951300	926600	882300	800100	681100	552700	478600
11	918100	915100	919100	931200	944800	951000	926600	880300	795400	677000	549800	476200
12	918000	915500	919700	931600	945200	951700	926900	875400	791600	673300	545600	475100
13	915000	915300	919900	931700	945300	950300	926700	873000	788600	668100	542100	473700
14	913000	915400	919900	932300	944900	949800	926100	871400	784200	663800	542200	472200
15	912100	915500	920000	932400	945500	949100	924600	869900	781200	659100	537400	470000
16	910300	915400	920700	932900	946500	948400	923300	868800	777300	655000	537500	468400
17	910500	915500	920600	933300	948800	947500	922400	867300	773400	650400	538700	465600
18	909600	915800	921000	933700	946700	947400	921100	865500	769800	646400	538300	464400
19	909400	915900	921100	934000	947000	946900	919200	863900	766200	643200	539400	463300
20	909800	916100	921600	934400	947200	946400	917700	862100	762200	639300	533900	461800
21	909700	916200	921600	934800	947600	945100	915600	860200	758400	634900	531400	459400
22	910200	916600	921900	935800	947800	944600	914700	858600	754800	631100	530600	457900
23	912900	916700	922200	936200	947700	943800	913300	856700	751300	628000	527600	456500
24	911500	916600	922600	936700	947600	942200	912200	854700	747100	622300	524300	455100
25	911700	916800	922400	937600	948300	940500	910200	847600	741800	621600	521000	453200
26	912000	917000	923000	938200	948100	939000	908500	845800	739200	616600	518000	452600
27	912300	917500	923100	938200	948800	938600	906600	844300	735100	614400	518500	451600
28	911800	917500	923100	939100	948800	937300	905000	842100	731400	610200	510700	452700
29	912200	917300	924400	939500	---	936600	903100	840000	727900	605800	507700	453600
30	913800	917500	923100	940000	---	935900	899700	837800	722000	601600	504600	452100
31	912900	---	923200	940400	---	935100	---	835500	---	597300	501600	---
MEAN	916900	915600	920500	933400	945500	946000	921000	868800	778700	656800	543100	470700
MAX	933000	917500	924400	940400	948800	951700	934200	898900	832400	718300	593300	498100
MIN	909400	912900	917500	925200	940600	935100	899700	835500	722000	597300	501600	451600
(†)	-13200	+4700	+7600	+15400	+8900	-15300	-35200	-66600	-114100	-125000	-95300	-46100

CAL YR 1976 MAX 1231000 MIN 909400 † -82400
WTR YR 1977 MAX 951700 MIN 451600 † -474200

* 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, 1977, 451,900 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) above mean sea level.

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.--47 years, 830 ft³/s (23.51 m³/s), 601,300 acre-ft/yr (741 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 or 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.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,420 ft³/s (68.5 m³/s) Aug 5; no flow Dec. 21 to Mar. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	UCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	398	8.6	4.0	.00	.00	.00	725	1380	1660	2190	1880	1680
2	388	8.7	4.0	.00	.00	.00	777	1380	1860	2110	2060	1630
3	459	8.0	4.0	.00	.00	.00	692	1500	1910	1990	2200	1560
4	500	7.9	4.0	.00	.00	.00	633	1610	1900	1840	2290	1510
5	610	7.1	4.0	.00	.00	.00	663	1640	1840	1790	2420	1460
6	675	7.1	4.0	.00	.00	.00	875	1590	1740	1850	2360	1490
7	792	6.8	4.0	.00	.00	.00	1050	1490	1800	1910	2290	1480
8	858	6.5	4.0	.00	.00	.00	1120	1310	1900	2140	2160	1540
9	846	6.5	4.0	.00	.00	.00	1110	1250	1970	2340	2120	1610
10	726	6.5	4.0	.00	.00	.00	1040	1360	2010	2300	2230	1540
11	715	6.2	4.0	.00	.00	.00	1160	1390	1930	2200	2210	1260
12	1000	5.6	4.0	.00	.00	323	1250	1340	1860	2240	2170	975
13	1090	5.3	4.0	.00	.00	489	1330	1340	1790	2350	2000	1000
14	1060	5.0	2.7	.00	.00	542	1370	1230	1770	2270	1790	973
15	804	4.6	1.9	.00	.00	578	1400	958	1860	2280	1630	984
16	488	4.4	1.5	.00	.00	620	1400	880	1950	2160	1390	1090
17	448	4.2	1.2	.00	.00	654	1210	1000	1990	1940	1560	1000
18	108	4.0	2.4	.00	.00	626	1280	1110	1920	1870	1640	878
19	23	3.8	1.3	.00	.00	599	1320	1030	1820	1890	1720	838
20	15	3.6	1.0	.00	.00	586	1350	1080	1850	1940	1780	1030
21	13	3.4	.00	.00	.00	590	1320	1060	1950	2050	1800	960
22	9.9	3.6	.00	.00	.00	651	1340	1070	1940	2080	1820	918
23	10	4.0	.00	.00	.00	822	1240	1130	1920	1980	1970	960
24	9.5	4.0	.00	.00	.00	967	1200	1260	1930	1790	2010	874
25	9.3	4.0	.00	.00	.00	1100	1110	1210	1920	1860	2000	788
26	9.0	4.0	.00	.00	.00	1090	1290	1110	1930	1940	2020	713
27	9.0	4.0	.00	.00	.00	962	1340	1140	1880	2150	1950	675
28	9.0	4.0	.00	.00	.00	782	1340	1160	2000	2200	1680	565
29	8.9	4.0	.00	.00	---	750	1370	1150	2110	2210	1610	478
30	9.0	4.0	.00	.00	---	740	1390	1270	2200	2180	1690	480
31	8.9	---	.00	.00	---	698	---	1460	---	2050	1690	---
TOTAL	12108.5	159.4	64.00	.00	.00	14169.00	34695	38888	57110	64090	60140	32939
MEAN	391	5.31	2.06	.000	.000	457	1157	1254	1904	2067	1940	1098
MAX	1090	8.7	4.0	.00	.00	1100	1400	1640	2200	2350	2420	1680
MIN	8.9	3.4	.00	.00	.00	.00	633	880	1660	1790	1390	478
AC-FT	24020	316	127	.00	.00	28100	68820	77130	113300	127100	119300	65330

CAL YR 1976 TOTAL 231749.80 MEAN 633 MAX 1810 MIN .00 AC-FT 459700
WTR YR 1977 TOTAL 314362.90 MEAN 861 MAX 2420 MIN .00 AC-FT 623500

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 Oct. 18 to Mar. 11.

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, 1,700 micromhos July 26; minimum daily, 950 micromhos Oct. 4, 8, 9, 13.

WATER TEMPERATURES: Maximum, 23.0°C Sept. 5, 8; minimum, 11.0°C Mar. 15, 18, 19.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL./100 ML)
NOV 02...	1200	.00	--	--	--	--	--	--
DEC 30...	1200	.00	--	--	--	--	--	--
JAN 25...	1200	.00	--	--	--	--	--	--
FEB 23...	1200	.00	--	--	--	--	--	--
MAR 29...	1545	770	1350	7.6	13.0	4	--	<1
APR 26...	1100	1310	1120	7.9	14.0	2	--	<1
JUN 01...	1200	1700	1300	8.5	17.0	10	6.5	470
28...	0900	1940	1220	8.0	18.0	3	7.9	82
JUL 26...	1000	1960	1700	7.8	19.0	2	--	48
AUG 25...	1430	2020	1360	7.8	21.0	2	5.0	830
SEP 28...	1020	580	1550	7.5	22.0	2	1.6	<1

DATE	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG) (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
NOV 02...	--	--	--	--	--	--	--	--	--
DEC 30...	--	--	--	--	--	--	--	--	--
JAN 25...	--	--	--	--	--	--	--	--	--
FEB 23...	--	--	--	--	--	--	--	--	--
MAR 29...	<1	180	52	50	14	160	5.2	5.2	159
APR 26...	84	190	63	53	15	170	5.3	5.0	160
JUN 01...	620	190	58	51	15	180	5.7	5.3	160
28...	84	200	72	55	16	210	6.4	5.6	160
JUL 26...	238	220	78	59	17	220	6.5	5.9	170
AUG 25...	830	210	74	59	16	230	6.9	6.2	170
SEP 28...	380	220	77	57	18	220	6.5	6.1	170

B Based on non-ideal colony count.

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

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED (SUM OF TUNENTS) (MG/L)	DIS- SOLVED (TONS PER AC-FT)
NOV 02...	--	--	--	--	--	--	--	--
DEC 30...	--	--	--	--	--	--	--	--
JAN 25...	--	--	--	--	--	--	--	--
FEB 23...	--	--	--	--	--	--	--	--
MAR 29...	0	60	260	.4	16	655	644	.89
APR 26...	0	58	250	.4	16	662	646	.90
JUN 01...	0	62	260	.4	16	697	669	.95
28...	0	65	310	.4	15	747	756	1.02
JUL 26...	0	68	340	.3	16	795	810	1.08
AUG 25...	0	67	340	.3	16	796	818	1.08
SEP 28...	0	75	360	.4	17	843	837	1.15

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DIS- SOLVED KJEL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
MAR 29...	.01	.01	--	.42	--	.43	.07	--	.00
APR 26...	.01	.01	--	.16	--	.17	.03	--	.02
JUN 01...	.01	.01	--	.81	--	.82	.04	--	.03
28...	.03	--	--	.67	--	.70	.01	--	--
JUL 26...	.01	--	--	.36	--	.37	.02	--	--
AUG 25...	.03	--	--	.60	--	.63	.06	--	--
SEP 28...	.00	--	.06	--	.24	--	8.3	.05	--

DATE	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELF- NIUM (SF) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
APR 26...	20	<100	3	10	10	.0	.0	1	1	10	0	18
AUG 25...	0	<100	6	80	40	.0	.0	0	0	10	10	2.7
SEP 28...	--	--	--	--	--	--	--	--	--	--	--	2.3

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DIS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
APR 26...	4	4	140	110	<10	1	0	<50	0	<10	1	100
AUG 25...	1	2	230	120	<10	1	0	<50	1	20	1	60
SEP 28...	--	--	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDIM- MENT (MG/L)	SUS- PENDE SEDIM- MENT (T/DAY)	SUS- PENDE SEDIM- MENT (T/DAY)	SUS- PENDE SEDIM- MENT (T/DAY)
JUN 01...	1200	1700	15	69	99	
JUL 26...	1000	1960	2	11	80	

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

GILA RIVER BASIN

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1000					---	1200	1400	1200	1300	1400	1400
2	1000					---	1200	1400	1200	1300	1400	1400
3	1000					---	1200	1400	1200	1300	1400	1400
4	950					---	1200	1400	1200	1300	1400	1400
5	1000					---	1200	1400	1200	1300	1400	1400
6	1000					---	1200	1400	1200	1300	1400	1400
7	1000					---	1200	1400	1200	1300	1400	1400
8	950					---	1200	1400	1200	1300	1400	1400
9	950					---	1200	1400	1200	1300	1400	1400
10	1000					---	1200	1400	1200	1300	1400	1400
11	1000					---	1200	1400	1200	1300	1400	1400
12	1000					---	1200	1400	1200	1300	1400	1400
13	950					1000	1200	1400	1200	1300	1400	1400
14	1000					1100	1200	1400	1300	1300	1400	1400
15	1000					1100	1200	1400	1200	1300	1400	1400
16	1000					1000	1200	1400	1300	1300	1400	1400
17	1000					1100	1200	1400	1300	1300	1400	1400
18	---					1100	1200	1400	1300	1300	1400	1400
19	---					1100	1200	1400	1300	1400	1400	1400
20	---					1100	1200	1400	1300	1400	1400	1400
21	---					1100	1200	1400	1300	1400	1400	1400
22	---					1100	1200	1400	1300	1400	1400	1400
23	---					1100	1200	1400	1300	1400	1400	1400
24	---					1000	1200	1400	1300	1400	1400	1400
25	---					1100	1200	1400	1300	1400	1400	1400
26	---					1100	1200	1400	1300	1700	1400	1400
27	---					1100	1200	1400	1300	1400	1400	1400
28	---					1000	1200	1400	1300	1400	1400	1400
29	---					1000	1200	1400	1300	1400	1400	1400
30	---					1000	1200	1400	1300	1400	1400	1400
31	---					1100	---	---	---	1400	1400	---

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0					---	13.0	15.0	16.0	18.0	20.0	20.0
2	20.0					---	13.0	15.0	16.0	18.0	19.0	20.0
3	19.0					---	13.0	15.0	14.0	19.0	19.0	21.0
4	19.0					---	13.0	15.0	16.0	19.0	19.0	20.0
5	20.0					---	13.0	15.0	18.0	19.0	19.0	23.0
6	20.0					---	13.0	15.0	17.0	19.0	---	22.0
7	20.0					---	13.0	15.0	17.0	20.0	---	21.0
8	20.0					---	14.0	15.0	18.0	19.0	20.0	23.0
9	20.0					---	14.0	15.0	17.0	20.0	19.0	22.0
10	20.0					---	14.0	14.0	17.0	20.0	20.0	22.0
11	20.0					---	14.0	14.0	18.0	18.0	20.0	22.0
12	20.0					---	14.0	14.0	17.0	19.0	20.0	22.0
13	20.0					15.0	14.0	14.0	14.0	21.0	20.0	22.0
14	20.0					12.0	13.0	12.0	15.0	19.0	20.0	22.0
15	20.0					11.0	14.0	14.0	14.0	19.0	20.0	22.0
16	19.0					13.0	15.0	16.0	14.0	19.0	20.0	22.0
17	20.0					14.0	14.0	15.0	15.0	19.0	20.0	20.0
18	---					11.0	15.0	14.0	17.0	19.0	20.0	20.0
19	---					11.0	15.0	14.0	17.0	19.0	21.0	20.0
20	---					12.0	16.0	14.0	17.0	19.0	19.0	20.0
21	---					13.0	14.0	16.0	17.0	19.0	19.0	20.0
22	---					12.0	15.0	16.0	17.0	19.0	19.0	20.0
23	---					13.0	15.0	16.0	18.0	19.0	19.0	20.0
24	---					12.0	15.0	16.0	18.0	19.0	19.0	20.0
25	---					14.0	15.0	16.0	18.0	19.0	19.0	20.0
26	---					13.0	15.0	16.0	18.0	19.0	19.0	20.0
27	---					13.0	15.0	16.0	18.0	19.0	19.0	20.0
28	---					13.0	15.0	16.0	18.0	19.0	20.0	19.0
29	---					13.0	15.0	16.0	18.0	19.0	20.0	19.0
30	---					13.0	15.0	16.0	18.0	19.0	20.0	19.0
31	---					13.0	---	---	---	19.0	20.0	---

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

09502000 SALT RIVER BELOW STEWART MOUNTAIN DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE TIME	PHYTOPLANKTON									
	JUN 1,77 1200	JUN 28,77 0900	JUL 26,77 1000	AUG 25,77 1430	SEP 28,77 1020					
TOTAL CELLS/ML	1300	2100	3300	510	13000					
DIVERSITY: DIVISOR	1.7	1.2	1.2	1.1	0.6					
..CLASS	2.0	1.3	1.2	1.1	0.9					
..ORDER	2.5	1.4	1.7	1.3	1.1					
...FAMILY	2.4	2.1	2.2	1.9	1.2					
....GENUS	3.1	2.3	2.6	1.9	1.2					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCEAE										
...HYDRODICTYACEAE										
....PEDIASTRUM	30	2	120	6	45	1	22	4	--	-
...ONCOSTACEAE										
....ANKISTRUM	30	2	25	1	79	2	--	-	180	1
....KIRCHNERIELLA	--	-	--	-	79	2	--	-	--	-
....SELENASTRUM	--	-	* 0		--	-	--	-	--	-
....TETRAEDRUM	--	-	25	1	120	4	--	-	250	2
...SCENEDESMACEAE										
....ACTINASTRUM	--	-	--	-	200	6	--	-	--	-
....CRUCIGENTIA	30	2	40	2	34	1	22	4	250	2
....SCENEFUESMUS	190	15	140	7	1500#	47	--	-	120	1
....TETRASTROM	--	-	20	1	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTICATA	23	2	--	-	34	1	--	-	--	-
...CHLAMYDOMONAS	--	-	--	-	170	5	--	-	--	-
...PHACOTACEAE										
...PTEROMONAS	8	1	* 0		--	-	--	-	--	-
...VOLVOCAEAE										
....PANDORINA	120	9	--	-	--	-	43	9	--	-
CHRYSOPHYTA										
..BACILLARIOPHYCEAE										
...CENTRALES										
...DINOSCOLOPISACEAE										
....CYCLOTELLA	8	1	15	1	45	1	--	-	1200	9
...MELUSIRA	15	1	--	-	45	1	--	-	--	-
...PENNALES										
...CYMBELLA	--	-	* 0		--	-	--	-	--	-
...DIATOMEAE										
....DIATOMA	--	-	--	-	--	-	16	3	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	84	4	--	-	--	-	--	-
....SYNEDRA	--	-	--	-	120	4	16	3	180	1
...GOMPHONEMACEAE										
....GOMPHONEMA	8	1	* 0		--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	15	1	--	-	34	1	--	-	--	-
...NITZSCHACEAE										
....NITZSCHIA	490#	38	99	5	* 0		--	-	--	-
..CHRYSOPHYCEAE										
...CHRYSDOMONADACEAE										
...CHRYSDOMONADACEAE										
....DINORRYN	90	7	--	-	34	1	--	-	* 0	
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCEAE										
...CHROCOCCOCEAE										
....ANACYSTIS	60	5	20	1	90	3	--	-	370	3
...HORMOGONALFS										
...NOSTOCACEAE										
....ANABAENA	98	8	54	3	--	-	--	-	--	-
....ANABAEONOPSIS	--	-	69	3	--	-	--	-	--	-
...APHANIZOUMENON										
...OSCILLATORIACEAE										
....LYNGBYA	--	-	--	-	--	-	--	-	10000#	80
...OSCILLATORIA	--	-	1300#	63	--	-	310#	62	--	-
...RIVULARIACEAE										
....RAPHTOTIDOPSIS	--	-	--	-	530#	16	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...CRYPTOPHYCEAE										
...CRYPTOMONADACEAE										
...CRYPTOMONAS	45	4	* 0		--	-	--	-	--	-
...EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENAEAE										
...EUGLENA	--	-	--	-	--	-	11	2	--	-
...TRACHELOMONAS	--	-	* 0		45	1	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..PYRRHOPHYCEAE										
...PERIDINIALES										
...GLENODINIACEAE										
...GLENODINIUM	--	-	15	1	--	-	--	-	--	-
...PERIDINIACEAE										
....PERIDINIUM	23	2	--	-	--	-	--	-	--	-

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

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

GILA RIVER BASIN

09502800 WILLIAMSON VALLEY WASH NEAR PAULDEN, AZ

LOCATION.--Lat 34°52'00", long 112°36'45", in SE¼SE¼ 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) above mean sea level. 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.--12 years, 8.35 ft³/s (0.236 m³/s), 6,050 acre-ft/yr (7.46 hm³/yr); median of yearly mean discharges, 4.2 ft³/s (0.12 m³/s), 3,000 acre-ft/yr (3.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,910 ft³/s (111 m³/s) Feb. 9, 1976 (gage height, 7.58 ft or 2.310 m), from rating curve extended above 500 ft³/s (14 m³/s) on basis of slope-area measurement at gage height 7.38 ft (2.249 m) present datum; 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)
Aug. 15	0715	261 7.39	3.68 1.122	Sept. 12	1730	*1,300 36.82	5.35 1.631
Aug. 22	1045	369 10.45	3.95 1.204	Sept. 13	0030	501 14.19	4.22 1.286

Minimum daily, 0.27 ft³/s (0.008 m³/s) Aug. 8.

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	.40	.86	1.5	3.0	1.8	1.6	1.3	.64	.71	.39	.34	.49
2	.40	.96	1.5	2.4	1.8	1.4	1.9	.64	.45	.39	.35	.53
3	.40	.96	1.5	3.4	1.9	1.3	1.8	.64	.96	.45	.49	.57
4	.40	.96	1.5	2.2	1.8	1.5	1.5	.57	1.2	.51	.56	.55
5	.40	.96	1.5	2.2	1.9	1.4	1.4	.57	1.3	.51	.50	.55
6	.40	1.1	1.0	1.9	1.9	1.3	1.4	.57	1.3	.45	.40	.55
7	.40	1.1	1.0	1.9	1.8	1.1	1.4	.57	1.3	.45	.32	.55
8	.50	1.1	1.0	2.1	1.9	1.4	1.4	.64	.96	.45	.27	.54
9	.50	1.1	1.0	1.5	1.9	1.2	1.4	.64	1.2	.39	.32	.55
10	.50	1.2	1.0	1.6	1.9	1.4	1.5	.78	.78	.34	.54	1.0
11	.50	1.2	1.0	1.8	1.8	1.2	1.5	.86	.86	.34	.60	1.9
12	.50	1.2	1.0	1.8	1.5	1.3	1.6	.78	.57	.39	.71	2.33
13	.50	1.3	1.0	1.8	1.9	1.3	1.6	.86	.51	.39	.72	1.78
14	.51	1.3	1.5	1.8	1.6	1.3	1.8	1.2	.71	.39	.62	2.3
15	.51	1.4	1.5	1.8	1.8	1.3	1.9	1.2	.64	.45	27	1.7
16	.57	1.3	1.5	1.8	1.8	1.4	1.8	1.1	.64	.57	.87	.82
17	.57	1.2	1.5	1.6	1.8	1.3	1.6	1.1	.57	.57	.81	.73
18	.57	1.3	1.8	1.6	1.5	1.4	1.5	.86	.57	.64	.64	.69
19	.57	1.4	1.8	1.6	1.6	1.4	1.5	1.2	.45	.86	.58	.68
20	.64	1.4	1.8	1.6	1.8	1.4	1.5	1.2	.45	.71	.53	.64
21	.96	1.5	1.6	1.8	1.6	1.3	1.5	.96	.51	.39	.51	.74
22	1.1	1.5	1.6	1.9	1.6	1.3	1.4	.96	.57	.53	76	.77
23	1.2	1.5	1.6	1.8	1.5	1.3	1.4	.86	.57	.49	1.4	.78
24	1.1	1.6	1.8	1.9	1.9	1.3	1.4	1.3	.51	.43	.67	.81
25	.86	1.6	1.8	1.9	1.9	1.3	1.2	1.6	.64	.34	.51	.86
26	.86	1.8	1.6	1.9	1.8	1.5	1.1	1.4	.64	.30	.44	.83
27	.78	1.6	1.6	1.9	1.6	1.3	.96	1.3	.64	.30	.47	1.2
28	.78	1.4	1.9	1.8	1.6	1.3	.86	.71	.57	.32	.49	1.4
29	.86	1.3	1.6	1.9	---	1.3	.71	.96	.51	.30	.49	1.2
30	.86	1.5	2.2	1.9	---	1.3	.78	1.1	.45	.38	.48	1.3
31	.86	---	2.4	1.8	---	1.3	---	.96	---	.34	.48	---
TOTAL	19.96	38.60	46.6	59.9	49.2	41.4	42.61	28.73	21.74	13.76	119.11	474.03
MEAN	.64	1.29	1.50	1.93	1.76	1.34	1.42	.93	.72	.44	3.84	15.8
MAX	1.2	1.8	2.4	3.4	1.9	1.6	1.9	1.6	1.3	.86	.76	2.33
MIN	.40	.86	1.0	1.5	1.5	1.1	.71	.57	.45	.30	.27	.49
AC-FT	40	77	92	119	98	82	85	57	43	27	236	940

CAL YR 1976	TOTAL	5020.06	MEAN 13.7	MAX 2080	MIN .00	AC-FT 9960
WTR YR 1977	TOTAL	955.64	MEAN 2.62	MAX 233	MIN .27	AC-FT 1900

GILA RIVER BASIN

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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.--14 years, 32.6 ft³/s (0.923 m³/s), 23,620 acre-ft/yr (29.1 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, 6,130 ft³/s (174 m³/s) Dec. 30, 1965 (gage height, 8.48 ft or 2.585 m), from rating curve extended above 420 ft³/s (12 m³/s) on basis of slope-area measurements at gage heights 5.40, 5.96, and 8.48 ft (1.646, 1.817, and 2.585 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)
Sept. 11	2000	686 19.4	4.41 1.344
Sept. 12	2045	*1,290 36.5	5.47 1.667

Minimum daily discharge, 20 ft³/s (0.57 m³/s) Feb. 15, July 10, 12, 13, 15-18, 24-29, Aug. 5-7, 30, 31, Sept. 8.

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	23	22	22	23	23	22	27	27	22	21	21	21
2	23	22	22	23	22	23	30	27	22	21	21	21
3	23	22	22	24	22	23	29	27	22	22	22	21
4	23	22	22	24	22	23	29	27	22	22	21	21
5	22	22	22	24	22	24	29	27	22	22	20	21
6	22	22	22	24	22	24	28	26	22	21	20	21
7	22	22	23	24	22	24	28	26	22	21	20	21
8	22	22	23	23	22	25	28	26	25	21	21	20
9	23	22	23	23	22	25	29	25	22	21	21	21
10	23	22	23	23	22	25	29	26	22	20	43	21
11	22	22	23	24	22	25	29	25	22	21	36	116
12	23	22	23	24	21	26	28	24	22	20	23	408
13	23	22	23	24	21	26	29	24	22	20	22	291
14	23	22	23	24	21	26	28	23	22	21	28	86
15	23	22	23	24	20	27	29	24	22	20	34	36
16	23	22	23	24	21	27	29	23	22	20	25	26
17	22	22	23	24	21	27	29	23	22	20	22	23
18	22	22	23	24	21	27	29	23	22	20	21	22
19	22	22	23	24	21	27	27	22	22	25	21	22
20	22	22	23	24	22	27	29	22	22	22	21	22
21	22	22	23	24	22	27	28	22	22	21	21	21
22	22	22	23	25	22	27	29	22	22	21	22	21
23	22	22	23	24	22	27	28	22	22	21	22	21
24	22	22	23	24	22	27	28	22	72	20	22	21
25	22	22	23	23	22	27	29	22	25	20	21	21
26	22	22	23	23	22	27	28	22	22	20	21	21
27	22	22	23	24	22	27	27	22	22	20	21	22
28	22	22	23	23	22	27	28	22	21	20	21	22
29	22	22	23	23	---	27	28	22	21	20	21	22
30	22	22	23	23	---	28	27	22	21	22	20	22
31	22	---	24	23	---	27	---	22	---	21	20	---
TOTAL	693	660	708	734	608	801	852	739	713	647	713	1475
MEAN	22.4	22.0	22.8	23.7	21.7	25.8	28.4	23.8	23.8	20.9	23.0	49.2
MAX	23	22	24	25	23	28	30	27	72	25	43	408
MIN	22	22	22	23	20	22	27	22	21	20	20	20
AC-FT	1370	1310	1400	1460	1210	1590	1690	1470	1410	1280	1410	2930
CAL YR 1976	TOTAL	12323	MEAN 33.7	MAX 1350	MIN 20	AC-FT 24440						
WTR YR 1977	TOTAL	9343	MEAN 25.6	MAX 408	MIN 20	AC-FT 18530						

GILA RIVER BASIN

09504000 VERDE RIVER NEAR CLARKDALE, AZ

LOCATION (REVISED).--Lat 34°51'08", long 112°03'55", in NW¼SE¼ sec.17, T.17 N., R.3 E., Yavapai County, Hydrologic Unit 15060202, in Prescott National Forest, on left bank 1.7 mi (2.7 km) downstream from Sycamore Creek and 5.6 mi (9.0 km) north of Clarkdale.

DRAINAGE AREA.--3,520 mi² (9,120 km²), approximately (includes 373 mi² or 966 km² in Aubrey Valley Playa, a closed basin).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1915 to October 1916, June 1917 to June 1921, April 1965 to current year.

REVISED RECORDS.--WSP 1213: 1917, 1920.

GAGE.--Water-stage recorder. Altitude of gage is 3,500.37 ft (1,066.913 m), from bench mark at gage. June 1915 to June 1921 at site 2.5 mi (4.0 km) downstream at different datum.

REMARKS.--Records good except those for periods of no gage-height record, which are fair.

AVERAGE DISCHARGE.--16 years (water years 1916, 1918-20, 1966-77), 178 ft³/s (5.041 m³/s), 129,000 acre-ft/yr (159 hm³/yr); median of yearly mean discharges, 150 ft³/s (4.25 m³/s), 109,000 acre-ft/yr (134 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,600 ft³/s (1,430 m³/s) Feb. 21, 1920 (gage height, 19.1 ft or 5.82 m, site and datum then in use), from rating curve extended above 2,500 ft³/s (71 m³/s) on basis of float-area measurement at 35,000 ft³/s (990 m³/s); minimum daily, 55 ft³/s (1.56 m³/s) Aug. 31, Sept. 1, 1920.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,660 ft³/s (75.3 m³/s) Aug. 10, gage height, 5.67 ft (1.728 m), base discharge, 2,000 ft³/s (56.6 m³/s); minimum daily, 69 ft³/s (1.95 m³/s) Aug. 6, 31, Sept. 1, 2, 5-8.

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	76	78	82	86	80	80	83	79	77	77	72	69
2	77	78	82	83	80	80	90	78	77	73	72	69
3	76	78	83	85	80	80	87	78	78	75	125	70
4	76	79	83	84	80	80	84	78	78	101	79	70
5	76	79	83	85	80	79	83	79	78	92	70	69
6	75	79	83	83	80	80	83	78	78	80	69	69
7	74	79	82	82	80	80	82	77	78	75	70	69
8	75	79	83	83	80	81	82	77	80	75	70	69
9	75	79	82	81	81	80	82	78	79	75	70	70
10	75	79	81	82	80	79	82	79	77	73	200	74
11	75	79	81	82	80	79	83	78	76	76	100	78
12	75	79	81	81	79	80	83	77	76	75	80	142
13	75	79	80	81	78	81	83	78	76	75	200	372
14	75	79	81	81	78	81	83	80	75	74	120	188
15	75	79	82	82	76	81	83	80	75	74	150	111
16	75	79	82	82	77	81	82	78	74	74	120	89
17	75	79	82	81	77	81	83	77	74	89	90	82
18	75	80	82	82	78	81	82	77	74	82	80	78
19	76	80	82	82	77	81	82	78	74	83	71	77
20	76	80	82	82	77	82	82	79	74	80	71	75
21	77	81	82	82	79	82	81	78	75	77	71	75
22	79	80	83	83	78	77	81	78	75	77	73	76
23	80	81	83	81	79	82	80	77	76	119	72	76
24	85	81	83	80	82	82	81	80	76	99	73	76
25	78	83	82	80	82	83	81	82	97	77	71	75
26	78	83	82	80	80	85	79	81	88	73	71	75
27	77	82	82	80	81	82	80	79	81	73	71	80
28	78	82	82	80	81	82	79	79	77	73	70	81
29	78	82	81	80	---	81	79	78	75	73	70	77
30	79	82	82	80	---	82	79	78	75	73	70	76
31	78	---	87	80	---	81	---	77	---	72	69	---
TOTAL	2374	2397	2548	2536	2220	2506	2464	2430	2323	2464	2760	2757
MEAN	76.6	79.9	82.2	81.8	79.3	80.8	82.1	78.4	77.4	79.5	89.0	91.9
MAX	85	83	87	86	82	85	90	82	97	119	200	372
MIN	74	78	80	80	76	77	79	77	74	72	69	69
AC-FT	4710	4750	5050	5030	4400	4970	4890	4820	4610	4890	5470	5470
CAL YR 1976 TOTAL	54566											
MEAN	149											
MAX	9200											
MIN	68											
AC-FT	108200											
WTR YR 1977 TOTAL	29779											
MEAN	81.6											
MAX	372											
MIN	69											
AC-FT	59070											

NOTE.--No gage-height record Aug. 8-19.

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	FECAL COLIFORM (COL./ 100 ML)	FECAL STREPTOCOCCI KF AGAR (COL. PER 100 ML)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG/L)
NOV												
10...	1300	77	510	8.1	15.0	10.0	R8	--	230	0	51	24
DEC												
09...	1400	80	510	8.2	11.0	10.6	R2	--	230	41	54	24
JAN												
12...	1430	81	500	8.3	10.0	10.8	R1	--	240	0	55	24
FEB												
23...	1300	81	505	8.3	11.5	--	<1	--	240	0	54	25
MAR												
22...	1230	82	490	8.2	16.0	--	<1	--	230	0	54	24
APR												
26...	1400	80	620	8.1	22.0	8.4	R4	--	230	0	52	24
MAY												
24...	1400	--	490	8.2	14.5	7.5	43	--	240	0	56	24
JUN												
20...	1700	73	490	8.2	24.5	9.8	810	2600	220	0	49	24
JUL												
21...	1400	77	550	8.3	23.5	--	30	--	230	0	53	23
AUG												
19...	1100	74	495	8.1	22.5	7.4	370	--	240	0	58	23
SEP												
28...	1430	79	480	8.1	23.5	--	44	--	220	0	50	24

DATE	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED PHOSPHATE (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
NOV												
10...	25	.7	2.1	288	0	8.7	16	.2	20	276	290	.38
DEC												
09...	25	.7	2.0	235	0	9.8	13	.3	18	271	263	.37
JAN												
12...	24	.7	2.0	307	0	11	14	.2	19	298	302	.41
FEB												
23...	25	.7	2.1	316	0	11	15	.2	19	296	308	.40
MAR												
22...	25	.7	2.0	310	0	12	14	.2	17	295	302	.40
APR												
26...	25	.7	2.2	310	0	11	13	.3	18	279	299	.38
MAY												
24...	24	.7	2.0	310	0	9.5	15	.2	18	289	303	.39
JUN												
20...	25	.7	2.2	280	0	9.3	15	.2	19	271	282	.37
JUL												
21...	27	.8	2.2	310	0	7.3	13	.2	20	282	300	.38
AUG												
19...	25	.7	2.4	310	0	7.1	16	.2	22	298	309	.41
SEP												
28...	26	.8	2.4	290	0	9.7	11	.2	23	250	290	.34

B Results based on non-ideal colony count.

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

09504000 VERDE RIVER NEAR CLARKDALE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL PLUS NITRATE (N) (MG/L)	DIS- SOLVED PLUS NITRATE (N) (MG/L)	TOTAL KJFL- NHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED PHOS- PHORUS (P) (MG/L)
NOV 10...	--	--	--	.14	--	--	--	.02
DEC 09...	--	--	.26	.21	.15	.41	.02	.02
JAN 12...	.24	.00	.28	.29	.07	.35	.00	.04
FEB 23...	--	--	.17	.16	.06	.23	.24	.02
MAR 22...	--	--	.08	.08	.18	.26	.07	.02
APR 26...	--	--	.15	.13	.15	.30	.04	.08
MAY 24...	--	--	.09	.27	.32	.41	.02	.03
JUN 20...	--	--	.28	.04	.14	.47	.04	.01
JUL 21...	--	--	.17	.25	.31	.48	.07	.03
AUG 19...	--	--	.42	.43	.42	.80	.20	.04
SEP 28...	--	--	.15	.20	.05	.20	.00	.01

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
NOV 10...	17	200	200	150	<10	0	<10	460	20
DEC 09...	19	200	210	160	<10	10	10	170	20
JAN 12...	15	200	190	160	<10	0	10	170	20
FEB 23...	20	200	200	160	<10	0	<10	300	20
MAR 22...	16	200	210	160	<10	0	10	400	20
APR 26...	18	100	190	160	10	10	10	220	30
MAY 24...	17	200	180	150	<10	0	<10	230	50
JUN 20...	12	300	200	160	<10	10	<10	230	30
JUL 21...	15	300	240	160	<10	10	10	920	20
AUG 19...	15	400	240	160	10	10	30	2400	30
SEP 28...	18	300	140	160	<10	0	<10	1200	20

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SILF- MIUM (SF) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)
NOV 10...	100	40	20	.0	1	<10	0	.4	.00
DEC 09...	<100	10	0	.0	0	<10	20	.7	.00
JAN 12...	<100	20	10	.2	0	<10	10	.7	.00
FEB 23...	<100	30	20	.0	1	<10	10	.8	.00
MAR 22...	100	20	0	.0	1	<10	40	1.3	.00
APR 26...	<100	20	10	.3	0	<10	20	1.7	.00
MAY 24...	<100	20	20	.0	0	<10	20	2.7	.00
JUN 20...	<100	20	4	.3	1	<10	30	1.3	.00
JUL 21...	<100	40	20	.0	0	<10	30	1.0	.00
AUG 19...	<100	180	10	.1	0	<10	50	4.4	.00
SEP 28...	<100	40	0	.0	0	<10	20	1.4	.00

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

GILA RIVER BASIN

351

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)
NOV 04...	1230	69	590	8.1	15.0	11.0	828	--	270	0	55	32
DEC 10...	0930	85	565	8.4	6.0	10.4	21	--	280	10	58	32
JAN 14...	1200	86	440	8.2	6.0	10.2	86	--	260	0	56	30
FEB 24...	1230	74	560	7.8	9.5	10.8	140	--	270	0	57	30
MAR 23...	1100	65	560	8.2	14.0	10.0	811	--	280	6	58	32
APR 27...	1300	53	590	8.3	21.0	9.4	60	--	280	8	57	33
MAY 25...	1130	73	600	8.3	15.5	8.8	45	--	280	89	55	34
JUN 21...	1200	43	600	8.1	21.0	8.1	80	100	290	8	57	35
JUL 22...	1200	61	560	8.3	23.0	7.1	180	--	250	0	53	29
AUG 18...	1130	94	570	8.0	26.0	8.7	1600	--	270	0	63	27
SEP 29...	1200	79	560	8.1	23.0	--	F330	--	270	9	56	32

DATE	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED (SUM OF CONSTIT- TUENTS) (MG/L)	DIS- SOLVED (TUNS PER AC-FT)
NOV 04...	28	.7	2.4	333	0	38	17	.3	19	352	356	.48
DEC 10...	27	.7	2.2	325	0	38	16	.3	18	310	352	.42
JAN 14...	26	.7	2.1	326	0	37	15	.3	20	346	348	.47
FEB 24...	26	.7	2.2	326	0	41	18	.2	19	335	354	.46
MAR 23...	26	.7	2.2	330	0	44	16	.3	17	349	358	.47
APR 27...	28	.7	2.7	330	0	36	16	.2	21	352	357	.48
MAY 25...	28	.7	2.3	230	0	37	18	.4	19	346	308	.47
JUN 21...	29	.7	2.7	340	0	39	21	.2	23	344	375	.47
JUL 22...	29	.8	2.5	330	0	27	16	.2	22	337	343	.46
AUG 18...	27	.7	3.1	340	0	28	17	.3	24	344	360	.47
SEP 29...	27	.7	2.9	320	0	34	14	.2	25	335	350	.46

GILA RIVER BASIN

09504200 VERDE RIVER NEAR CORNVILLE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN TN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO. PHOS- PHURUS (P) (MG/L)
NOV 04...	--	--	.01	.01	.57	--	.58	.76	.02
DEC 10...	--	--	.34	.07	.42	--	.76	.03	.01
JAN 14...	.18	.00	.22	.18	.45	--	.67	.07	.04
FEB 24...	--	--	.07	.03	.15	--	.22	.06	.01
MAR 23...	--	--	.01	.01	.38	--	.39	.07	.03
APR 27...	--	--	.12	.11	.22	--	.34	.08	.07
MAY 25...	--	--	.07	.07	.33	--	.40	.06	.04
JUN 21...	--	--	.07	.01	.13	103	.20	.12	.02
JUL 22...	--	--	.26	.31	.43	--	.69	.21	.05
AUG 18...	--	--	.72	.65	.79	--	1.5	.38	.03
SEP 29...	--	--	.26	.26	.03	--	.20	.20	.03

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL ARSENIC IN BOTTOM MA- TERIAL (UG/G)	TOTAL BARIUM (BA) (UG/L)	TOTAL BARIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM TN BOTTOM MA- TERIAL (UG/G)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL CHRO- MIUM TN BOTTOM MA- TERIAL (UG/G)
NOV 04...	16	--	200	--	250	170	<10	--	0	--
DEC 10...	16	--	200	--	220	180	<10	--	10	--
JAN 14...	15	--	100	--	190	160	<10	--	0	--
FEB 24...	18	--	200	--	200	160	<10	--	0	--
MAR 23...	17	--	200	--	250	160	<10	--	0	--
APR 27...	16	--	100	--	210	170	10	--	0	--
MAY 25...	13	--	200	--	200	150	<10	--	10	--
JUN 21...	15	5	100	700	210	170	<10	<1	10	2
JUL 22...	15	--	300	--	260	170	10	--	10	--
AUG 18...	20	--	400	--	260	180	10	--	10	--
SEP 29...	18	--	400	--	190	170	<10	--	10	--

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

GILA RIVER BASIN

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09504200 VERDE RIVER NEAR CORNVILLE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL LEAD IN BOTTOM MA- TERIAL (UG/G)	TOTAL MAN- GANESE (MN) (UG/L)	DTS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)
NOV 04...	10	--	580	20	100	--	40	10	.0
DEC 10...	10	--	330	20	<100	--	40	20	.0
JAN 14...	10	--	510	10	<100	--	40	20	.2
FEB 24...	<10	--	160	20	<100	--	20	20	.0
MAR 23...	10	--	780	30	<100	--	40	10	.1
APR 27...	10	--	640	20	100	--	60	30	.1
MAY 25...	<10	--	480	50	<100	--	40	20	.1
JUN 21...	10	12	830	30	<100	10	70	20	.0
JUL 22...	50	--	3600	10	100	--	130	0	.0
AUG 18...	50	--	4500	70	<100	--	220	8	.2
SEP 29...	10	--	2900	10	<100	--	110	0	.0

DATE	TOTAL MERCURY IN BOTTOM MA- TERIAL (UG/G)	TOTAL SILVER IN BOTTOM MA- TERIAL (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA- TERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA- TERIAL (UG/G)	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	
NOV 04...	--	1	--	<10	--	40	--	1.4	.00
DEC 10...	--	1	--	<10	--	50	--	.8	.00
JAN 14...	--	1	--	<10	--	30	--	.7	.00
FEB 24...	--	1	--	<10	--	20	--	1.3	.00
MAR 23...	--	1	--	<10	--	30	--	2.2	.00
APR 27...	--	1	--	<10	--	20	--	1.0	.00
MAY 25...	--	1	--	<10	--	30	--	2.0	.00
JUN 21...	.0	2	0	<10	<1	60	20	2.2	.00
JUL 22...	--	1	--	<10	--	110	--	2.9	.00
AUG 18...	--	0	--	<10	--	110	--	6.3	.00
SEP 29...	--	0	--	<10	--	60	--	2.8	.00

< Results based on non-ideal colony count.

GILA RIVER BASIN

09504500 OAK CREEK NEAR CORNVILLE, AZ

LOCATION.--Lat 34°45'56", long 111°53'24", in NW¼SE¼ sec.23, T.16 N., 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.--34 years, 81.3 ft³/s (2.302 m³/s), 58,900 acre-ft/yr (72.6 hm³/yr); median of yearly mean discharges, 70 ft³/s (1.98 m³/s), 50,700 acre-ft/yr (63 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s (700 m³/s) Sept. 5, 1970 (gage height, 16.48 ft or 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, 415 ft³/s (11.75 m³/s) July 18, gage height, 4.54 ft (1.384 m), no peak above base of 1,300 ft³/s (37 m³/s); minimum daily, 16 ft³/s (0.453 m³/s) July 30, Aug. 5.

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	34	31	38	46	38	36	35	29	23	19	18	17
2	46	32	38	40	38	37	44	29	25	21	18	18
3	42	33	38	48	37	38	48	27	27	30	16	23
4	40	31	37	55	37	37	42	30	28	32	17	25
5	35	33	37	43	37	36	40	30	31	37	16	21
6	34	33	37	44	37	35	140	29	29	33	17	19
7	32	32	37	39	37	35	96	30	31	28	17	18
8	30	34	37	38	37	35	84	32	36	26	17	20
9	30	31	37	38	37	35	59	31	33	24	18	20
10	30	34	37	36	41	34	48	32	27	23	40	26
11	28	35	37	35	38	36	42	26	25	23	28	43
12	25	35	37	35	37	35	39	26	24	22	28	56
13	27	35	37	35	37	35	35	25	22	21	33	39
14	26	36	37	36	37	35	34	37	19	20	37	44
15	26	37	35	37	37	34	32	42	18	22	59	30
16	28	35	34	37	37	33	32	34	20	21	38	27
17	28	36	35	38	36	32	31	28	22	24	34	27
18	30	37	35	37	37	33	31	26	23	81	33	27
19	25	38	36	38	37	34	29	28	22	59	29	27
20	27	38	36	38	36	33	30	27	19	37	27	23
21	30	37	35	38	35	35	30	25	20	33	26	23
22	33	39	36	40	34	29	32	24	22	30	27	23
23	42	39	36	42	35	29	30	26	22	34	24	22
24	42	39	35	39	38	29	33	28	23	39	25	24
25	35	39	35	38	49	33	35	34	29	30	24	25
26	33	38	35	38	39	39	34	32	33	23	21	24
27	33	38	37	38	36	38	31	29	27	21	19	27
28	33	38	37	38	36	36	30	32	20	22	20	41
29	33	38	36	37	---	37	29	33	19	19	20	32
30	33	38	36	37	---	36	29	29	19	16	18	30
31	33	---	44	37	---	35	---	22	---	18	17	---
TOTAL	1003	1069	1134	1215	1047	1074	1284	912	738	888	781	821
MEAN	32.4	35.6	36.6	39.2	37.4	34.6	42.8	29.4	24.6	28.6	25.2	27.4
MAX	46	39	44	55	49	39	140	42	36	81	59	56
MIN	25	31	34	35	34	29	29	22	18	16	16	17
AC-FT	1990	2120	2250	2410	2080	2130	2550	1810	1460	1760	1550	1630

CAL YR 1976 TOTAL 31858 MEAN 87.0 MAX 4660 MIN 15 AC-FT 63190
WTR YR 1977 TOTAL 11966 MEAN 32.8 MAX 140 MIN 16 AC-FT 23730

GILA RIVER BASIN

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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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM 7UM-MF (COL./ 100 ML)	FECAL STREP- TOCOCCT KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	
DATE	TIME												
NOV													
11...	1430	35	380	8.1	15.0	9.4	810	--	190	4	43	21	
DEC													
13...	1330	36	360	8.4	9.0	11.0	8140	--	190	0	42	20	
JAN													
14...	1600	37	350	8.2	9.0	10.0	8140	--	180	0	40	19	
FEB													
24...	1600	42	340	8.1	--	--	61	--	180	0	39	19	
MAR													
23...	1400	30	340	8.3	17.0	10.6	88	--	190	0	42	20	
APR													
27...	1700	26	355	8.5	22.5	8.2	110	--	190	0	42	20	
MAY													
25...	1315	33	350	8.3	23.0	7.4	8420	--	190	6	40	21	
JUN													
20...	1430	16	410	8.4	25.0	9.4	84	380	190	5	43	21	
JUL													
22...	1430	27	360	7.7	27.0	6.5	670	--	180	0	42	19	
AUG													
18...	1300	31	335	8.1	28.5	7.2	560	--	180	0	40	19	
SEP													
29...	1500	32	365	8.1	24.5	--	58	--	180	0	39	20	
DATE		DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AN- ION- CON- CENTR- TION (MG/L)	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
NOV													
11...	7.8	.2	1.2	231	0	2.5	8.3	.1	15	213	213	.29	
DEC													
13...	7.1	.2	1.0	212	9	3.8	7.4	.1	14	188	209	.26	
JAN													
14...	7.4	.2	1.0	222	0	6.7	8.8	.1	14	209	207	.28	
FEB													
24...	7.6	.3	1.2	215	0	5.8	11	.1	13	195	203	.27	
MAR													
23...	7.9	.3	1.2	230	0	4.5	8.6	.1	13	210	211	.29	
APR													
27...	7.8	.2	1.2	230	5	4.6	8.0	.1	13	196	215	.27	
MAY													
25...	7.5	.2	1.2	220	0	3.5	8.0	.1	13	195	203	.27	
JUN													
20...	10	.3	1.3	230	0	2.5	14	.1	15	223	221	.30	
JUL													
22...	8.1	.3	1.7	230	0	1.1	8.4	.1	16	213	210	.29	
AUG													
18...	7.2	.2	1.5	220	0	4.7	7.8	.1	16	194	205	.26	
SEP													
29...	6.9	.2	1.4	220	0	5.0	8.0	.1	17	190	206	.26	

B Results based on non-ideal colony count.

09504500 OAK CREEK NEAR CORNVILLE, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DTS-SOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS-SOLVED THON (FF) (UG/L)
NOV 11...	8	200	90	20	<10	0	<10	500	50
DEC 13...	8	200	60	20	<10	10	10	120	50
JAN 14...	9	100	40	20	<10	0	<10	160	40
FEB 24...	17	200	60	20	<10	0	<10	630	20
MAR 23...	7	200	50	20	<10	10	<10	250	40
APR 27...	8	100	60	20	10	0	10	170	50
MAY 25...	6	200	80	20	<10	10	<10	250	20
JUN 20...	9	200	90	20	<10	10	10	150	40
JUL 22...	9	300	130	20	<10	10	<10	1100	20
AUG 18...	8	400	100	40	10	10	10	1400	20
SEP 29...	8	300	60	20	<10	10	<10	880	30

DATE	DTS-SOLVED NITRATE (N) (MG/L)	DTS-SOLVED NITRITE (N) (MG/L)	TOTAL NITRATE PLUS NITRITE (N) (MG/L)	DIS-SOLVED NITRATE PLUS NITRITE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DIS-SOLVED URTHO. PHOSPHORUS (P) (MG/L)
NOV 11...	--	--	.08	.03	.29	.47	.03	.01
DEC 13...	--	--	.10	.06	.40	.50	.01	.00
JAN 14...	.08	.00	.08	.08	.03	.11	.01	.03
FEB 24...	--	--	.06	.03	.25	.31	.03	.00
MAR 23...	--	--	.04	.04	.01	.05	.02	.02
APR 27...	--	--	.06	.05	.14	.20	.04	.05
MAY 25...	--	--	.04	.07	.00	.04	.06	.02
JUN 20...	--	--	.05	.07	.18	.23	.03	.01
JUL 22...	--	--	.07	.10	.28	.35	.10	.02
AUG 18...	--	--	.18	.11	.28	.46	.13	.02
SEP 29...	--	--	.04	.05	.16	.20	.14	.00

DATE	TOTAL LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS-SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELF-NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)
NOV 11...	<100	30	20	.0	0	<10	10	.8	.00
DEC 13...	<100	20	10	.0	0	<10	10	.8	.00
JAN 14...	<100	20	20	.1	0	<10	10	1.0	.00
FEB 24...	<100	60	10	.1	1	<10	20	2.0	.00
MAR 23...	<100	20	10	.3	1	<10	20	1.3	.00
APR 27...	<100	30	20	.2	1	<10	10	1.5	.00
MAY 25...	<100	30	10	.0	0	<10	10	--	.00
JUN 20...	<100	20	20	.4	1	<10	6	1.4	.00
JUL 22...	<100	90	8	.1	0	<10	40	2.5	.00
AUG 18...	<100	120	8	.1	0	<10	10	3.1	.00
SEP 29...	<100	40	20	.0	0	<10	40	7.0	.00

< Actual value is known to less than value shown.

GILA RIVER BASIN

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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.--16 years, 30.4 ft³/s (0.861 m³/s), 22,020 acre-ft/yr (27.2 hm³/yr); median of yearly mean discharges, 24 ft³/s (0.68 m³/s), 17,400 acre-ft/yr (21 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,670 ft³/s (217 m³/s) Sept. 5, 1970 (gage height, 12.41 ft or 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, 155 ft³/s (4.39 m³/s) Apr. 7, gage height, 4.71 ft (1.436 m), no peak above base of 600 ft³/s (17 m³/s); minimum daily, 5.9 ft³/s (0.17 m³/s), Apr. 14-17.

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	6.2	6.8	7.3	8.8	8.1	7.6	7.1	6.3	6.5	6.5	6.6	7.5
2	6.2	6.8	7.6	8.2	8.2	7.6	8.3	6.3	6.4	6.5	6.8	7.6
3	6.2	6.8	7.6	8.8	8.1	7.6	7.7	6.3	6.5	6.6	7.2	7.8
4	6.2	6.8	7.6	8.4	8.1	7.6	7.3	6.3	7.0	6.9	6.7	7.5
5	6.2	6.8	7.6	8.8	8.1	7.6	7.2	6.4	7.1	8.3	6.6	7.4
6	6.3	6.9	7.6	8.3	8.1	7.6	47	6.4	7.0	6.7	6.5	7.8
7	6.3	6.9	7.6	8.0	8.1	7.6	102	6.3	7.0	6.5	6.5	7.6
8	6.3	6.9	7.6	8.3	8.1	7.6	33	6.3	7.2	6.4	6.6	7.6
9	6.3	6.9	7.6	8.1	8.2	7.3	19	6.3	6.9	6.4	8.5	7.7
10	6.3	6.9	7.7	7.9	8.3	7.2	11	6.4	6.8	6.4	8.3	8.6
11	6.3	6.9	7.9	8.0	8.1	7.3	8.2	6.2	6.8	6.8	7.4	8.7
12	6.3	6.9	7.9	7.9	8.1	7.3	6.6	6.1	6.8	7.3	7.7	8.1
13	6.3	6.9	7.9	8.1	8.1	7.3	6.1	6.6	6.7	7.2	7.4	8.0
14	6.4	7.1	7.9	8.1	8.1	7.3	5.9	7.1	6.6	6.7	7.2	7.9
15	6.4	7.1	7.9	8.1	8.1	7.3	5.9	6.7	6.6	6.6	7.5	7.7
16	6.4	7.1	7.9	8.1	8.1	7.3	5.9	6.5	6.5	6.7	8.0	7.3
17	6.4	7.1	7.9	8.1	8.1	7.3	5.9	6.5	6.5	6.6	7.7	7.3
18	6.4	7.3	7.9	8.1	8.1	7.1	6.3	6.5	6.5	6.6	7.3	7.3
19	6.4	7.3	7.9	8.1	7.8	7.1	6.4	6.5	6.5	7.0	7.4	7.3
20	6.4	7.3	8.0	8.1	7.8	7.1	6.3	6.5	6.6	6.8	7.3	7.0
21	6.5	7.3	7.9	8.2	7.8	7.0	6.3	6.5	6.6	6.6	7.3	7.0
22	7.1	7.3	8.0	8.6	7.8	7.0	6.3	6.4	6.7	7.0	7.4	7.4
23	7.1	7.3	8.0	8.7	7.7	7.1	6.3	6.3	6.8	7.6	7.5	7.7
24	6.7	7.3	8.1	8.3	8.4	7.1	6.4	6.6	6.8	7.6	7.4	7.1
25	6.7	7.3	8.0	8.2	8.7	7.3	6.3	7.0	6.8	6.9	7.3	7.0
26	6.7	7.3	7.9	8.4	8.0	7.7	6.4	6.8	6.9	6.8	7.2	6.9
27	6.8	7.3	8.0	8.4	7.9	7.2	6.3	6.7	6.7	6.8	7.2	9.3
28	6.9	7.3	8.0	8.4	7.6	7.1	6.3	6.7	6.6	6.7	7.4	8.4
29	6.9	7.3	7.9	8.4	---	7.1	6.3	6.6	6.5	6.7	7.4	7.1
30	6.9	7.3	8.1	8.2	---	7.1	6.3	6.5	6.5	6.6	7.4	6.9
31	6.9	---	8.9	8.1	---	7.1	---	6.4	---	6.6	7.4	---
TOTAL	201.4	212.5	243.7	256.2	225.7	226.5	376.3	201.0	201.4	211.4	226.1	228.5
MEAN	6.50	7.08	7.86	8.26	8.06	7.31	12.5	6.48	6.71	6.82	7.29	7.62
MAX	7.1	7.3	8.9	8.8	8.7	7.7	102	7.1	7.2	8.3	8.5	9.3
MIN	6.2	6.8	7.3	7.9	7.6	7.0	5.9	6.1	6.4	6.4	6.5	6.9
AC-FT	399	421	483	508	448	449	746	399	399	419	448	453
CAL YR 1976 TOTAL	11218.7			MEAN 30.7	MAX 2000	MIN 6.0	AC-FT 22250					
WTR YR 1977 TOTAL	2810.7			MEAN 7.70	MAX 102	MIN 5.9	AC-FT 5580					

GILA RIVER BASIN

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 current year.

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 poor.

AVERAGE DISCHARGE.--20 years, 6.53 ft³/s (0.185 m³/s), 4,730 acre-ft/yr (5.83 hm³/yr); median of yearly mean discharges, 4.2 ft³/s (0.12 m³/s) 3,000 acre-ft/yr (3.7 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 or 3.868 m, about 13.3 ft or 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, 16 ft³/s (0.45 m³/s) Apr. 6, recorded gage height, 3.36 ft (1.024 m), no peak above base of 200 ft³/s (5.7 m³/s); no flow for many days.

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	.00	.00	.00	.00	.16	.09	.02	.13	.00	.00	.00	.00
2	.00	.00	.00	.00	.15	.09	.17	.10	.00	.00	.00	.00
3	.00	.00	.00	.00	.14	.09	.17	.09	.00	.00	.00	.00
4	.00	.00	.00	.00	.13	.09	.16	.07	.00	.00	.00	.00
5	.00	.00	.00	.00	.12	.09	.13	.06	.00	.00	.00	.00
6	.00	.00	.00	.00	.12	.08	7.6	.05	.00	.00	.00	.00
7	.00	.00	.00	.00	.11	.08	3.8	.01	.00	.00	.00	.00
8	.00	.00	.00	.00	.10	.09	2.0	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.10	.09	1.1	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.12	.08	.84	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.10	.08	.75	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.10	.08	.68	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.10	.08	.64	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.08	.08	.58	.00	.00	.00	.00	.00
15	.00	.00	.00	.07	.08	.08	.52	.00	.00	.00	.00	.00
16	.00	.00	.00	.11	.08	.08	.48	.00	.00	.00	.00	.00
17	.00	.00	.00	.13	.09	.07	.43	.00	.00	.00	.00	.00
18	.00	.00	.00	.15	.08	.07	.39	.00	.00	.00	.00	.00
19	.00	.00	.00	.16	.07	.06	.36	.00	.00	.00	.00	.00
20	.00	.00	.00	.16	.07	.06	.34	.00	.00	.00	.00	.00
21	.00	.00	.00	.17	.07	.06	.32	.00	.00	.00	.00	.00
22	.00	.00	.00	.19	.06	.06	.30	.00	.00	.00	.00	.00
23	.00	.00	.00	.19	.06	.06	.29	.00	.00	.00	.00	.00
24	.00	.00	.00	.18	.10	.05	.27	.00	.00	.00	.00	.00
25	.00	.00	.00	.18	.15	.06	.25	.00	.00	.00	.00	.00
26	.00	.00	.00	.17	.11	.10	.23	.00	.00	.00	.00	.00
27	.00	.00	.00	.17	.10	.08	.21	.00	.00	.00	.00	.00
28	.00	.00	.00	.17	.09	.06	.18	.00	.00	.00	.00	.00
29	.00	.00	.00	.17	---	.06	.16	.00	.00	.00	.00	.00
30	.00	.00	.00	.16	---	.04	.15	.00	.00	.00	.00	.00
31	.00	---	.00	.15	---	.03	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	2.68	2.84	2.27	23.52	.51	.00	.00	.00	.00
MEAN	.000	.000	.000	.086	.10	.073	.78	.016	.000	.000	.000	.000
MAX	.00	.00	.00	.19	.16	.10	7.6	.13	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.06	.03	.02	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	5.3	5.6	4.5	47	1.0	.00	.00	.00	.00
CAL YR 1976	TOTAL	1717.10	MEAN	4.69	MAX	500	MIN	.00	AC-FT	3410		
WTR YR 1977	TOTAL	31.82	MEAN	.087	MAX	7.6	MIN	.00	AC-FT	63		

GILA RIVER BASIN

359

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 to September 1977.

GAGE.--Water-stage recorder and sharp-crested weir. Altitude of gage is 3,560 ft (1,085 m), from topographic map.

REMARKS.--Records good. No diversions between outlet and gage since June 1977 when gate was removed.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 2.94 ft³/s (.083 m³/s) July 14, 1959, minimum observed, 1.43 ft³/s (.040 m³/s) June 9, 1961.

Discharge measurements made prior to beginning of continuous discharge record

Date	Discharge (ft ³ /s) (m ³ /s)		Date	Discharge (ft ³ /s) (m ³ /s)		Date	Discharge (ft ³ /s) (m ³ /s)	
June 19, 1948	2.32	.066	June 22, 1955	2.00	.057	July 23, 1958	2.13	.060
June 23, 1949	2.07	.059	Nov. 11, 1955	1.99	.056	July 14, 1959	2.94	.083
June 29, 1950	2.36	.067	June 21, 1956	2.62	.074	June 9, 1961	1.43	.040
June 12, 1951	2.79	.079	June 22, 1956	1.95	.055	Jan. 22, 1976	2.59	.073
June 20, 1952	2.60	.074	Oct. 25, 1956	2.22	.063	July 9, 1976	2.82	.080
June 17, 1953	2.48	.070	May 29, 1957	2.43	.069	July 22, 1976	2.28	.066
Jan. 24, 1954	2.39	.068	July 9, 1957	2.44	.069			
June 29, 1954	1.96	.056	June 12, 1958	2.20	.062			

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							2.5	2.4	2.5	2.5	2.6	2.6
2							2.5	2.4	2.5	2.5	2.6	2.6
3							2.5	2.4	2.4	2.5	2.6	2.6
4							2.5	2.5	2.4	2.5	2.6	2.6
5							2.5	2.4	2.4	2.5	2.6	2.7
6							2.5	2.4	2.4	2.5	2.6	2.7
7							2.5	2.4	2.4	2.5	2.6	2.7
8							2.4	2.4	2.4	2.5	2.6	2.7
9							2.5	2.4	2.5	2.5	2.6	2.7
10							2.5	2.5	2.5	2.4	2.6	2.7
11							2.5	2.5	2.5	2.4	2.6	2.7
12							2.4	2.5	2.5	2.5	2.6	2.7
13							2.4	2.5	2.5	2.5	2.6	2.7
14							2.5	2.5	2.5	2.5	2.6	2.8
15							2.5	2.5	2.5	2.5	2.6	2.7
16							2.5	2.5	2.5	2.5	2.6	2.7
17							2.4	2.5	2.5	2.5	2.6	2.7
18							2.4	2.5	2.5	2.5	2.6	2.6
19							2.4	2.4	2.5	2.5	2.6	2.6
20							2.4	2.4	2.5	2.5	2.6	2.6
21							2.4	2.4	2.5	2.5	2.6	2.6
22							2.4	2.4	2.5	2.5	2.6	2.6
23							2.4	2.5	2.5	2.5	2.6	2.6
24							2.4	2.5	2.5	2.5	2.6	2.5
25							2.3	2.5	2.5	2.5	2.6	2.5
26							2.3	2.5	2.5	2.5	2.6	2.6
27							2.3	2.5	2.5	2.5	2.6	2.6
28							2.3	2.5	2.5	2.6	2.6	2.6
29							2.4	2.5	2.5	2.6	2.6	2.6
30							2.4	2.5	2.5	2.6	2.6	2.6
31							---	2.5	---	2.6	2.6	---
TOTAL							72.9	76.3	74.4	77.7	80.6	79.2
MEAN							2.43	2.46	2.48	2.51	2.60	2.64
MAX							2.5	2.5	2.5	2.6	2.6	2.8
MIN							2.3	2.4	2.4	2.4	2.6	2.5
AC-FT							145	151	148	154	160	157

GILA RIVER BASIN

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 good.

AVERAGE DISCHARGE.--20 years, 6.83 ft³/s (0.193 m³/s), 4,950 acre-ft/yr (6.10 hm³/yr); median of yearly mean discharges, 4.7 ft³/s (0.14 m³/s), 3,400 acre-ft/yr (4.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,590 ft³/s (102 m³/s) Sept. 5, 1970 (gage height, 11.50 ft or 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, 69.0 ft³/s (1.95 m³/s) Apr. 6, gage height, 3.51 ft (1.070 m); no peak above base of 150 ft³/s (4.2 m³/s); no flow for many days during year.

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	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	7.0	.03	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	31	.03	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	22	.02	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	11	.01	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	5.9	.01	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	3.2	.01	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	1.5	.00	.00	1.4	.00	.00
12	.00	.00	.00	.00	.00	.00	.50	.00	.00	.25	.03	.00
13	.00	.00	.00	.00	.00	.00	.15	.00	.00	.06	.00	.00
14	.00	.00	.00	.00	.00	.00	.07	.00	.00	.04	.00	.00
15	.00	.00	.00	.00	.00	.00	.05	.00	.00	.03	.00	.00
16	.00	.00	.00	.00	.00	.00	.04	.00	.00	.03	.00	.00
17	.00	.00	.00	.00	.00	.00	.04	.00	.00	.05	.00	.00
18	.00	.00	.00	.00	.00	.00	.03	.00	.00	.04	.00	.00
19	.00	.00	.00	.00	.00	.00	.03	.00	.00	.02	.00	.00
20	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.03	.00	.00	.02	.00	.00
23	.00	.00	.00	.00	.00	.00	.03	.00	.00	.02	.00	.00
24	.00	.00	.00	.00	.00	.00	.04	.00	.00	.01	.00	.00
25	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.04	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	82.92	.25	.00	1.97	.03	.00
MEAN	.000	.000	.000	.000	.000	.000	2.76	.008	.000	.064	.001	.000
MAX	.00	.00	.00	.00	.00	.00	31	.04	.00	1.4	.03	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	164	.5	.00	3.9	.06	.00
CAL YR 1976	TOTAL	2453.94	MEAN 6.70	MAX 443	MIN .00	AC-FT 4870						
WTR YR 1977	TOTAL	85.17	MEAN .23	MAX 31	MIN .00	AC-FT 169						

GILA RIVER BASIN

361

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) above mean sea level (Arizona Highway Department bench mark).

REMARKS.--Records good. No known diversions above station.

AVERAGE DISCHARGE.--17 years, 34.4 ft³/s (0.974 m³/s), 24,920 acre-ft/yr (30.7 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, 26,600 ft³/s (753 m³/s) Sept. 5, 1970 (gage height, 14.35 ft or 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, 304 ft³/s (8.61 m³/s) Apr. 7, gage height, 3.82 ft (1.164 m), no peak above base of 600 ft³/s (17.0 m³/s); no flow for many days.

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	.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	104	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	155	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	66	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	34	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	18	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	9.4	.00	.00	.17	.00	.00
12	.00	.00	.00	.00	.00	.00	4.1	.00	.00	.02	.00	.00
13	.00	.00	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.53	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.02	.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	.00
30	.00	.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	394.75	.00	.00	.19	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	13.2	.000	.000	.006	.000	.000
MAX	.00	.00	.00	.00	.00	.00	155	.00	.00	.17	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	783	.00	.00	.4	.00	.00
CAL YR 1976 TOTAL	13013.66			MEAN 35.6	MAX 2540	MIN .00	AC-FT 25810					
WTR YR 1977 TOTAL	394.94			MEAN 1.08	MAX 155	MIN .00	AC-FT 783					

GILA RIVER BASIN

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) above mean sea level.

REMARKS.--Records good. About 10,000 acres (40 km²) above station are irrigated by surface water and ground water.

AVERAGE DISCHARGE.--5 years, 332 ft³/s (9.402 m³/s), 240,500 acre-ft/yr (296 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,600 ft³/s (1,150 m³/s) Oct. 20, 1972 (gage height, 18.51 ft or 5.642 m recorded, 19.0 ft or 5.79 m, top of surge in gage well and from profile past gage); minimum daily, 13 ft³/s (0.37 m³/s) July 6, 7, 1976.

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 or 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, 3,490 ft³/s (98.8 m³/s) Aug. 23, gage height, 7.49 ft (2.283 m), base discharge, 3,000 ft³/s (85 m³/s); minimum daily, 14.0 ft³/s (0.396 m³/s) July 3, 10.

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	131	72	87	88	127	128	91	42	35	18	18	58
2	129	69	88	88	129	137	93	43	38	20	15	32
3	131	68	89	88	136	135	125	41	38	14	22	32
4	119	64	91	88	129	137	123	42	45	16	16	38
5	104	60	93	88	125	131	127	44	46	58	32	44
6	95	61	88	88	136	110	136	44	51	64	25	36
7	87	65	83	88	133	110	340	41	45	42	15	32
8	78	64	85	88	135	113	268	39	50	28	18	25
9	74	65	82	88	134	102	187	40	74	21	35	18
10	71	64	88	94	139	100	133	43	75	14	221	25
11	65	74	88	106	141	121	99	42	52	15	123	42
12	45	77	88	106	142	110	83	37	39	28	100	72
13	45	72	88	106	132	91	76	39	37	36	239	166
14	46	77	88	106	126	93	57	51	37	29	141	889
15	48	78	88	106	129	94	45	77	42	27	195	273
16	48	80	88	106	126	81	42	71	38	24	198	171
17	48	80	88	106	123	100	49	62	31	24	153	156
18	43	80	88	106	121	92	51	50	33	21	131	115
19	44	82	88	106	123	87	55	45	31	75	113	101
20	42	82	88	106	129	94	53	45	30	82	99	74
21	42	82	88	109	119	94	48	44	26	48	90	61
22	49	80	88	136	118	93	45	39	24	40	90	56
23	75	80	88	147	117	81	54	40	27	45	712	53
24	92	80	88	147	126	82	51	46	30	113	250	54
25	97	83	88	144	146	78	56	62	31	95	171	53
26	88	82	88	136	147	102	46	68	33	49	150	52
27	78	81	88	125	136	114	74	54	26	39	136	72
28	80	81	88	125	130	114	77	45	24	33	129	156
29	77	84	88	125	---	112	53	42	25	23	115	138
30	78	88	88	125	---	140	42	45	22	18	102	121
31	80	---	88	125	---	135	---	38	---	21	83	---
TOTAL	2329	2255	2722	3390	3654	3311	2779	1461	1137	1180	3937	3175
MEAN	75.1	75.2	87.8	109	131	107	92.6	47.1	37.9	38.1	127	106
MAX	131	88	93	147	147	140	340	77	75	113	712	889
MIN	42	60	82	88	117	78	42	37	22	14	15	18
AC-FT	4620	4470	5400	6720	7250	6570	5510	2900	2260	2340	7810	6300
CAL YR 1976	TOTAL	97335	MEAN	266	MAX	12800	MIN	13	AC-FT	193100		
WTR YR 1977	TOTAL	31330	MEAN	85.8	MAX	889	MIN	14	AC-FT	62140		

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.

AVERAGE DISCHARGE.--12 years, 54.6 ft³/s (1.546 m³/s), 39,560 acre-ft/yr (48.8 hm³/yr); median of yearly mean discharges, 42 ft³/s (1.19 m³/s), 30,400 acre-ft/yr (37 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,300 ft³/s (320 m³/s) Oct. 19, 1972 (gage height, 9.61 ft or 2.929 m), from rating curve extended above 2,100 ft³/s (60 m³/s), on basis of slope-area measurement at gage height 8.3 ft (2.53 m); 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, 101 ft³/s (2,860 m³/s) July 26, gage height, 3.56 ft (1.085 m), no peak above base of 1,000 ft³/s (28 m³/s); minimum daily, 12 ft³/s (0.34 m³/s) Oct. 10-12, Aug. 1-3.

DAY	OCT	NOV	DEC	JAN	FFB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	14	18	21	15	16	17	16	15	14	12	14
2	14	14	18	19	15	15	20	16	15	14	12	14
3	14	14	18	20	15	15	21	16	15	14	12	15
4	14	14	18	21	14	16	21	15	15	14	14	16
5	14	14	18	21	15	15	21	15	16	14	14	15
6	13	14	18	19	15	15	34	15	16	14	13	15
7	13	14	17	17	14	15	50	15	16	15	14	15
8	13	14	17	18	15	15	38	15	16	14	14	15
9	13	15	17	19	15	15	33	15	16	13	14	15
10	12	15	17	17	15	15	24	15	15	13	15	16
11	12	15	17	17	15	15	22	15	14	15	15	18
12	12	15	18	17	14	15	19	15	14	15	15	17
13	13	15	18	17	15	15	19	16	14	15	15	17
14	13	15	18	17	15	16	18	17	14	14	16	17
15	13	15	18	17	15	16	17	17	14	15	16	16
16	13	15	17	17	14	16	17	16	13	15	18	16
17	13	15	17	17	14	16	16	16	13	14	18	16
18	13	16	18	16	14	16	16	16	13	14	17	15
19	13	16	18	17	14	16	16	15	13	15	16	15
20	13	16	18	17	14	16	16	15	13	15	15	15
21	13	16	18	17	14	16	17	15	13	14	15	15
22	15	16	18	19	14	16	17	15	14	13	15	16
23	18	16	18	23	14	15	16	15	14	23	17	17
24	18	16	17	19	16	16	16	17	14	17	16	17
25	16	17	17	18	18	16	16	18	15	14	16	17
26	15	17	17	17	17	18	16	17	15	21	15	16
27	14	17	17	17	17	18	16	17	14	21	15	22
28	14	17	17	17	16	19	16	16	14	15	15	26
29	14	17	17	15	---	18	17	16	14	14	14	30
30	14	17	17	15	---	18	17	15	14	13	14	22
31	14	---	19	15	---	17	---	15	---	13	14	---
TOTAL	427	461	545	553	418	496	619	487	431	464	461	510
MEAN	13.8	15.4	17.6	17.8	14.9	16.0	20.6	15.7	14.4	15.0	14.9	17.0
MAX	18	17	19	23	18	19	50	18	16	23	18	30
MIN	12	14	17	15	14	15	16	15	13	13	12	14
AC-FT	847	914	1080	1100	829	984	1230	966	855	920	914	1010
CAL YR 1976	TOTAL	19599	MEAN 53.5	MAX 58	3180	MIN 12	AC-FT 38870					
WTR YR 1977	TOTAL	5872	MEAN 16.1	MAX 50	50	MIN 12	AC-FT 11650					

GILA RIVER BASIN

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) above mean sea level.

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.--25 years, 42.9 ft³/s (1.21 m³/s), 31,080 acre-ft/yr (38.3 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	47	48	47	48	25	39	36	44	43	44	43
2	42	47	48	47	29	42	39	41	45	43	44	42
3	42	47	48	47	48	24	39	42	45	43	44	43
4	43	47	48	46	28	41	39	42	45	43	43	44
5	43	48	48	48	45	41	22	41	45	43	44	43
6	43	48	48	41	45	41	39	38	45	43	44	44
7	37	48	48	48	45	23	22	44	45	43	44	44
8	44	48	48	49	26	41	39	44	45	43	44	44
9	44	47	48	48	44	22	38	45	45	43	44	44
10	46	47	48	48	26	41	40	44	45	43	43	44
11	46	48	48	49	44	24	39	44	45	43	43	44
12	45	47	48	49	43	41	22	44	45	45	43	44
13	46	47	48	49	43	41	39	45	44	45	43	44
14	44	47	48	48	25	41	21	45	44	45	43	44
15	44	48	48	48	43	23	39	45	44	45	43	44
16	46	48	48	48	24	40	39	45	44	45	43	44
17	46	47	48	48	42	24	40	45	44	45	43	44
18	47	48	47	48	24	40	21	45	44	45	43	44
19	47	48	47	49	42	40	22	45	44	45	43	44
20	47	47	47	49	42	39	22	45	44	45	42	44
21	47	47	47	49	42	39	24	45	44	45	43	44
22	45	47	47	49	33	23	24	45	44	45	43	45
23	46	47	47	49	24	41	36	45	44	45	43	45
24	47	46	47	48	42	23	36	46	44	45	43	45
25	47	46	47	32	27	40	37	46	44	44	43	45
26	47	46	47	49	42	40	37	45	44	44	43	21
27	47	45	48	30	42	41	37	45	44	44	43	19
28	47	46	48	48	42	40	37	45	44	43	43	44
29	47	45	48	48	---	23	37	45	44	43	42	44
30	47	41	47	48	---	40	37	41	44	43	43	44
31	47	---	47	29	---	22	---	40	---	44	43	---
TOTAL	1397	1405	1477	1433	1050	1066	1002	1353	1331	1363	1339	1271
MEAN	45.1	46.8	47.6	46.2	37.5	34.4	33.4	43.6	44.4	44.0	43.2	42.4
MAX	47	48	48	49	48	42	40	46	45	45	44	45
MIN	37	41	47	29	24	22	21	36	44	43	42	19
AC-FT	2770	2790	2930	2840	2080	2110	1990	2680	2640	2700	2660	2520
CAL YR 1976	TOTAL	15852	MEAN 43.3	MAX 48	MIN 33	AC-FT 31440						
WTR YR 1977	TOTAL	15487	MEAN 42.4	MAX 49	MIN 19	AC-FT 30720						

GILA RIVER BASIN

365

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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	16	23	.00	.00	.00	.00	22	25	.00	.00	.00
2	28	26	23	.00	.00	.00	.00	22	24	.00	.00	6.1
3	28	27	22	.00	.00	.00	.00	22	25	.00	.00	13
4	25	28	23	.00	.00	.00	.00	23	25	.00	.00	13
5	22	23	23	.00	.00	.00	.00	25	24	.00	.00	13
6	24	23	22	.00	.00	.00	.00	25	24	.00	.00	6.1
7	24	24	23	.00	.00	.00	.00	18	25	.00	.00	4.5
8	24	21	22	.00	.00	.00	.00	24	24	.00	.00	1.9
9	23	18	23	.00	.00	.00	.00	26	24	.00	.00	.00
10	24	20	22	.00	.00	.00	.00	25	21	.00	.00	.00
11	24	23	23	.00	.00	.00	.00	25	17	.00	.00	.00
12	25	23	22	.00	.00	.00	.00	26	17	.00	.00	.00
13	28	23	23	.00	.00	.00	.00	25	13	.00	.00	.00
14	28	23	12	.00	.00	.00	.00	25	5.0	.00	.00	.00
15	28	23	.00	.00	.00	.00	.00	26	.00	.00	.00	.00
16	28	23	.00	.00	.00	.00	.00	25	.00	.00	.00	.00
17	28	23	.00	.00	.00	.00	.00	26	.00	.00	.00	.00
18	28	23	.00	.00	.00	.00	.00	26	.00	.00	.00	.00
19	27	23	.00	.00	.00	.00	.00	25	.00	.00	.00	.00
20	28	23	.00	.00	.00	.00	.00	26	.00	.00	.00	.00
21	28	23	.00	.00	.00	.00	.00	25	.00	.00	.00	.00
22	27	23	.00	.00	.00	.00	.00	25	.00	.00	.00	.00
23	28	22	.00	.00	.00	.00	.00	25	.00	.00	.00	.00
24	28	23	.00	.00	.00	.00	.00	25	.00	.00	9.5	.00
25	27	23	.00	.00	.00	.00	.00	25	.00	.00	21	.00
26	28	23	.00	.00	.00	.00	.00	26	.00	.00	21	.00
27	25	23	.00	.00	.00	.00	9.0	25	.00	.00	21	.00
28	25	23	.00	.00	.00	.00	21	25	.00	.00	21	.00
29	26	23	.00	.00	---	.00	22	25	.00	.00	21	.00
30	25	22	.00	.00	---	.00	22	25	.00	.00	21	.00
31	25	---	.00	.00	---	.00	---	25	---	.00	14	---
TOTAL	814	684	306.00	.00	.00	.00	74.00	763	293.00	.00	149.50	57.60
MEAN	26.3	22.8	9.87	.000	.000	.000	2.47	24.6	9.77	.000	4.82	1.92
MAX	28	28	23	.00	.00	.00	22	26	25	.00	21	13
MIN	22	16	.00	.00	.00	.00	.00	18	.00	.00	.00	.00
AC-FT	1610	1360	607	.00	.00	.00	147	1510	581	.00	297	114
CAL YR 1976	TOTAL	7931.97	MEAN 21.7	MAX 31	MIN .00	AC-FT 15730						
WTR YR 1977	TOTAL	3141.10	MEAN 8.61	MAX 28	MIN .00	AC-FT 6230						

GILA RIVER BASIN

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 or 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, 502 ft³/s (14.2 m³/s) Aug. 17, gage height, 4.14 ft (1.262 m), base discharge, 300 ft³/s (8.5 m³/s); minimum daily, 1.0 ft³/s (0.028 m³/s) July 10, 11, 15, 16, Aug. 8.

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	28	26	25	16	8.9	6.0	7.7	8.5	22	1.3	1.3	11
2	34	26	25	14	8.9	6.4	9.4	12	22	1.3	4.9	11
3	34	22	25	17	8.9	6.4	16	13	24	1.3	2.9	9.4
4	35	27	25	18	8.9	6.4	15	16	28	1.3	2.2	6.8
5	33	29	25	25	8.5	6.4	21	17	24	1.5	1.5	4.9
6	28	29	25	18	8.5	6.0	30	20	24	1.7	1.2	5.7
7	26	25	25	17	8.5	6.0	20	21	23	1.5	1.1	6.4
8	26	25	25	15	8.1	6.0	15	22	22	1.2	1.0	6.0
9	27	26	25	14	7.7	6.0	12	18	22	1.1	1.7	4.6
10	27	24	26	12	8.1	5.7	9.8	20	21	1.0	6.8	3.8
11	27	22	26	10	7.7	5.7	8.9	22	19	1.0	5.4	3.5
12	25	26	26	10	7.2	5.7	8.1	23	16	1.5	3.5	5.7
13	25	28	26	10	7.2	5.7	7.7	26	14	1.5	2.9	8.1
14	26	28	27	9.4	7.2	5.4	7.2	28	13	1.3	3.5	6.0
15	27	28	27	8.9	7.2	5.4	6.8	29	12	1.0	5.7	3.5
16	27	27	22	8.5	6.8	5.4	7.2	27	8.5	1.0	47	3.0
17	26	26	16	8.1	6.8	6.0	7.2	26	6.0	1.2	151	2.9
18	27	26	12	8.1	6.4	6.0	7.2	24	4.9	8.8	55	2.4
19	26	28	10	7.2	6.4	6.0	7.2	24	3.2	6.4	19	2.2
20	25	28	9.5	6.8	6.0	6.0	6.8	24	3.0	3.0	9.4	2.0
21	27	27	9.0	7.7	6.0	5.7	6.4	24	2.9	2.2	5.7	1.9
22	32	27	9.0	60	6.0	5.7	6.0	23	2.7	2.7	5.4	2.0
23	38	27	8.6	98	6.0	5.7	6.0	23	2.5	5.2	4.9	2.5
24	38	27	8.1	37	6.4	6.0	6.0	24	2.2	4.3	3.5	2.4
25	35	27	7.6	24	8.1	6.0	5.7	27	2.0	2.9	2.9	1.9
26	31	26	7.2	17	7.8	8.1	5.7	26	1.9	1.5	2.4	1.4
27	30	27	6.8	15	6.4	8.1	5.7	24	1.7	1.7	2.2	5.4
28	28	29	6.8	13	6.0	8.1	5.7	24	1.5	1.7	2.9	40
29	27	25	7.2	11	---	8.1	5.4	24	1.4	1.3	5.7	17
30	27	25	7.6	10	---	7.7	5.4	24	1.3	2.2	6.0	8.5
31	27	---	10	9.8	---	7.2	---	24	---	5.7	7.2	---
TOTAL	899	793	540.4	555.5	206.6	195.0	288.2	687.5	351.7	71.3	387.5	191.9
MEAN	29.0	26.4	17.4	17.9	7.38	6.29	9.61	22.2	11.7	2.30	12.5	6.40
MAX	38	29	27	98	8.9	8.1	30	29	28	8.8	151	40
MIN	25	22	6.8	6.8	6.0	5.4	5.4	8.5	1.3	1.0	1.0	1.4
AC-FT	1780	1570	1070	1100	410	387	572	1360	698	141	769	381
CAL YR 1976	TOTAL	25400.2	MEAN	69.4	MAX	4000	MIN	5.9	AC-FT	50380		
WTR YR 1977	TOTAL	5167.6	MEAN	14.2	MAX	151	MIN	1.0	AC-FT	10250		

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	.20	.34	1.1	1.8	.33	.25	.32	.06	.00	.00	.15
2	3.9	.20	.34	.60	1.7	.33	.56	.19	.05	.00	.00	.15
3	3.0	.20	.38	4.2	1.5	.33	.47	.16	.00	.00	.00	.15
4	2.1	.16	.39	20	1.4	.33	6.1	.15	.00	.00	.00	.15
5	1.6	.16	.41	13	1.3	.29	17	.14	.00	.00	.00	.14
6	1.3	.16	.39	15	1.2	.29	17	.14	.00	.00	.00	.13
7	.84	.16	.39	10	1.1	.29	14	.14	.00	.00	.00	.11
8	.72	.16	.42	8.0	1.1	.29	11	.13	.00	.00	.00	.10
9	.56	.16	.43	7.4	.96	.27	7.8	.12	.00	.00	.00	.09
10	.51	.16	.42	6.1	.89	.27	5.9	.11	.00	.00	.00	.09
11	.47	.16	.46	5.8	.84	.29	4.5	.11	.00	.00	.00	.14
12	.56	.16	.47	5.5	.73	.29	3.5	.11	.00	.00	1.6	.20
13	.38	.20	.47	4.5	.72	.27	2.7	.11	.00	.00	.25	.25
14	.38	.20	.47	4.1	.69	.27	2.1	.13	.00	.00	.10	.20
15	.38	.21	.47	3.6	.60	.27	1.6	.22	.00	.00	3.9	.15
16	.29	.20	.47	3.2	.60	.27	1.4	.15	.00	.00	8.6	.14
17	.29	.23	.47	2.9	.47	.27	1.2	.12	.00	.00	8.2	.13
18	.29	.25	.45	2.6	.44	.27	1.1	.11	.00	.00	4.2	.11
19	.25	.25	.47	2.3	.44	.27	.97	.10	.00	.00	2.1	.10
20	.25	.25	.46	2.1	.44	.27	.84	.09	.00	.00	1.8	.10
21	.34	.25	.46	2.4	.41	.27	.69	.09	.00	.00	1.3	.09
22	.38	.25	.46	3.4	.38	.27	.64	.08	.00	.00	.96	.08
23	.47	.25	.47	12	.38	.27	.60	.07	.00	.00	.96	.09
24	.38	.25	.51	8.6	.41	.27	.58	.07	.00	.00	.60	.10
25	.34	.30	.51	6.7	.38	.29	.56	.07	.00	.00	.56	.09
26	.34	.32	.51	5.4	.36	.31	.52	.07	.00	.00	.47	.10
27	.29	.31	.51	4.5	.36	.29	.50	.08	.00	.00	.38	.72
28	.29	.32	.51	3.8	.36	.29	.46	.07	.00	.00	.38	.51
29	.25	.34	.51	3.2	---	.31	.44	.07	.00	.00	.34	.38
30	.25	.34	.56	2.7	---	.27	.42	.07	.00	.00	.25	.34
31	.25	---	1.1	2.3	---	.27	---	.07	---	.00	.16	---
TOTAL	26.15	6.76	14.68	177.00	21.96	8.87	105.40	3.66	.11	.00	37.11	5.28
MEAN	.84	.23	.47	5.71	.78	.29	3.51	.12	.004	.000	1.20	.18
MAX	4.5	.34	1.1	20	1.8	.33	17	.32	.06	.00	8.6	.72
MIN	.25	.16	.34	.60	.36	.27	.25	.07	.00	.00	.00	.08
AC-FT	52	13	29	351	44	18	209	7.3	.2	.00	74	10
CAL YR 1976	TOTAL	4408.35	MEAN	12.0	MAX	1260	MIN	.00	AC-FT	8740		
WTR YR 1977	TOTAL	406.98	MEAN	1.12	MAX	20	MIN	.00	AC-FT	807		

GILA RIVER BASIN

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1968 to current year.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)		
DATE	TIME									
OCT										
12...	1100	.46	255	7.4	21.0	92	0	25		
NOV										
12...	1300	.16	328	7.1	18.0	120	0	32		
DEC										
15...	1345	.45	355	7.2	17.0	120	0	34		
JAN										
13...	1230	4.4	145	7.6	7.0	48	0	12		
FEB										
14...	1300	.69	340	7.1	16.0	83	0	23		
MAR										
15...	1030	.21	290	8.0	9.0	110	0	30		
APR										
15...	1230	1.2	170	7.6	19.0	63	0	17		
MAY										
16...	1230	.17	310	7.8	21.5	120	0	33		
JUN										
15...	1200	.00	--	--	--	--	--	--		
JUL										
15...	1200	.00	--	--	--	--	--	--		
AUG										
15...	1200	.00	--	--	--	--	--	--		
SEP										
12...	1400	.19	435	7.9	28.0	160	0	44		
		DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BTCAR- BONATE (CO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)
DATE		(MG/L)	(MG/L)			(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)
OCT										
12...	7.2	17	.8	1.0	127	0	5.1	6.7	1.2	
NOV										
12...	9.7	21	.8	1.0	173	0	5.6	8.6	1.6	
DEC										
15...	9.7	24	.9	1.0	183	0	11	11	1.8	
JAN										
13...	4.3	10	.6	.7	64	0	10	3.8	1.0	
FEB										
14...	6.3	16	.8	.8	119	0	11	7.3	1.5	
MAR										
15...	8.9	19	.8	.9	158	0	9.7	7.4	1.6	
APR										
15...	4.9	13	.7	.9	87	0	11	6.1	1.2	
MAY										
16...	8.8	22	.9	1.1	170	0	8.1	12	1.5	
JUN										
15...	--	--	--	--	--	--	--	--	--	--
JUL										
15...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	--	--	--	--	--	--	--	--	--	--
SEP										
12...	13	28	1.0	1.8	240	0	2.9	10	1.8	

GILA RIVER BASIN

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09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED SILICA (STD2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	TOTAL FILTR- RABLE RESIDUE (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	TOTAL NON- FILTR- RABLE RESIDUE (MG/L)	DTS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT								
12...	30	148	130	156	.20	<1	.01	.02
NOV								
12...	27	195	--	192	2.70	--	.03	.00
DEC								
15...	30	211	--	213	.29	--	.12	.03
JAN								
13...	23	92	--	97	.13	--	.06	.00
FEB								
14...	28	145	--	153	.20	--	.01	.05
MAR								
15...	28	188	--	184	.26	--	.05	.03
APR								
15...	26	128	--	124	.17	--	.20	.01
MAY								
16...	33	194	--	204	.26	--	.10	.02
JUN								
15...	--	--	--	--	--	--	--	--
JUL								
15...	--	--	--	--	--	--	--	--
AUG								
15...	--	--	--	--	--	--	--	--
SEP								
12...	41	254	--	261	.35	--	--	--

DATE	DIS- SOLVED ARSENIC (AS) (UG/L)	DIS- SOLVED BARIUM (BA) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DTS- SOLVED COPALT (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
OCT							
12...	9	0	40	0	0	5	50
NOV							
12...	--	--	50	--	--	--	20
DEC							
15...	--	--	30	--	--	--	20
JAN							
13...	--	--	20	--	--	--	50
FEB							
14...	--	--	30	--	--	--	30
MAR							
15...	7	0	20	0	0	3	30
APR							
15...	--	--	20	--	--	--	10
MAY							
16...	--	--	30	--	--	--	40
SEP							
12...	--	--	70	--	--	--	110

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

GILA RIVER BASIN

09508300 WET BOTTOM CREEK NEAR CHILDS, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED LEAD (PB) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	DIS- SOLVED MOLYB- DENUM (MO) (UG/L)	DIS- SOLVED SELF- NIUM (SF) (UG/L)	DIS- SOLVED SILVER (AG) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	CYANIDE (CN) (MG/L)
OCT							
12...	0	.2	0	0	0	10	.01
NOV							
12...	--	--	--	--	--	--	--
DEC							
15...	--	--	--	--	--	--	--
JAN							
13...	--	--	--	--	--	--	--
FEB							
14...	--	--	--	--	--	--	--
MAR							
15...	1	.0	0	0	0	0	.00
APR							
15...	--	--	--	--	--	--	--
MAY							
16...	--	--	--	--	--	--	--
SEP							
12...	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
OCT				
12...	1100	.46	1	.00
NOV				
12...	1300	.16	0	.00
DEC				
15...	1345	.45	0	.00
JAN				
13...	1230	4.4	0	.00
FEB				
14...	1300	.69	0	.00
MAR				
15...	1030	.21	0	.00
APR				
15...	1230	1.2	1	.00
MAY				
16...	1230	.17	1	.00
SEP				
12...	1400	.19	1	.00

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) above mean sea level. 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 gage—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, 85,520 acre-ft (105 hm³) Oct. 17; minimum, 4,810 acre-ft (5.9 hm³) Mar. 23.

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80350	79980	68500	51790	54650	34050	9900	23010	31310	30500	34550	45880
2	80710	79440	67870	51390	54990	32810	10410	23250	31490	30520	34560	46110
3	81170	78810	67720	52300	55140	31440	11030	23440	31640	30520	34710	46340
4	81480	78300	67590	52690	55250	30070	11590	23670	31820	30520	34800	46540
5	81830	77790	67310	53080	55320	28680	12200	23890	32000	30550	34930	46670
6	82140	76800	67260	53500	55260	27380	12800	24110	32240	30590	34930	46900
7	82370	76800	67450	53820	55020	25740	13400	24350	32330	30690	34980	47070
8	82600	76400	67000	54120	54520	23490	14330	24580	32460	30830	35080	47150
9	82820	75850	66800	54310	54000	21230	15260	24750	32570	30940	35080	47230
10	83030	75330	66600	54480	53430	18490	16040	25010	32660	30960	35230	47270
11	83200	74860	67200	54530	53020	16130	16640	25260	32600	31020	35560	47560
12	83410	74430	67700	54800	52350	15030	17160	25510	32520	31070	36020	47740
13	83600	74120	66200	54960	51720	14360	17650	25770	32360	31060	36540	48060
14	83740	73670	65900	55100	50910	13570	17990	26080	32230	31160	36970	48420
15	84390	73200	65500	55220	50120	12610	18410	26420	32090	31290	37390	49720
16	85040	72360	65000	55270	48980	11710	18670	26860	31930	31430	38150	50290
17	85460	71520	64680	55310	47860	10720	19000	27070	31760	31560	39200	50700
18	84940	70680	64090	55310	46510	9700	19290	27400	31600	31710	39910	51060
19	84560	70350	62910	55190	46130	8730	19600	27750	31390	31830	40440	51400
20	84050	70030	61780	55060	44060	7750	19920	28060	31200	31990	40880	51650
21	82350	69700	60360	54900	42930	6690	20200	28300	31000	32200	41210	51920
22	81440	69310	58900	54790	41890	5460	20520	28570	30830	32430	41540	52190
23	81350	68960	57900	55030	40680	5040	20860	28810	30660	32640	41840	52440
24	81240	68600	57300	55130	39560	5620	21090	29000	30460	32940	43150	52680
25	81260	68340	56670	55090	38360	6200	21360	29310	30300	33240	43830	52870
26	81280	68170	55920	55050	37420	6730	21640	29560	30340	33520	44270	53090
27	81170	67960	55010	54950	36410	7230	21960	29880	30320	33730	44630	53560
28	81000	67780	53830	54910	35310	7860	22210	30210	30390	33940	44900	53930
29	80850	67740	52570	54710	---	8380	22480	30510	30440	34180	45180	54310
30	80670	68230	51750	54630	---	8910	22790	30780	30470	34280	45420	54440
31	80310	---	51540	54410	---	9380	---	31050	---	34440	45650	---
MEAN	82380	72850	62480	54380	48280	15200	17550	26850	31510	31880	39080	49840
MAX	85460	79980	68500	55310	55320	34050	22790	31050	32660	34440	45650	54440
MIN	80310	67740	51540	51390	35310	5040	9900	23010	30300	30500	34550	45880

CAL YR 1976 MEAN 100100 MAX 172000 MIN 22900
WTR YR 1977 MEAN 44340 MAX 85460 MIN 5040

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) above mean sea level. Since Feb. 18, 1975, supplementary water-stage recorder at site 30 ft upstream from main gage at same datum.

REMARKS.--Records good except those for April to September, 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).--89 years, 652 ft³/s (18.46 m³/s), 472,000 acre-ft/yr (582 hm³/yr); median of yearly mean discharge, 530 ft³/s (15.0 m³/s), 384,000 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.
1939-77: Maximum discharge, 45,800 ft³/s (1,300 m³/s) Mar. 15, 1941; no flow at Bartlett Dam at times when gates in dam were closed.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s (42.5 m³/s) Mar. 5, gage height, 6.12 ft (1.865 m); minimum daily, 5.0 ft³/s (0.142 m³/s) May 26 to June 6.

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	104	399	235	273	386	853	17	10	5.0	50	22	20
2	101	362	228	302	402	857	26	10	5.0	52	23	20
3	99	370	306	277	425	921	18	10	5.0	54	20	20
4	100	440	345	239	398	946	18	10	5.0	47	26	20
5	97	464	375	203	392	918	15	10	5.0	52	27	20
6	97	469	277	185	387	892	13	9.0	5.0	47	26	20
7	97	464	132	185	410	1010	14	9.0	10	38	28	20
8	97	431	423	218	530	1090	14	9.0	43	40	19	20
9	97	442	357	229	534	1220	13	9.0	50	35	17	20
10	97	419	357	227	515	1360	12	9.0	53	33	19	20
11	97	459	350	224	489	1310	11	9.0	140	28	21	20
12	97	425	316	222	461	781	11	8.0	176	27	21	20
13	97	321	347	219	481	551	11	8.0	187	47	22	20
14	97	433	370	220	539	575	11	8.0	180	67	22	20
15	97	456	396	233	620	640	11	8.0	168	55	22	20
16	97	702	510	255	726	628	11	7.0	165	44	45	20
17	168	644	379	257	844	641	11	7.0	167	40	44	25
18	508	619	505	279	938	635	11	7.0	177	36	33	25
19	501	377	847	310	887	623	11	7.0	190	32	30	25
20	467	373	794	322	802	630	11	7.0	204	30	27	25
21	457	393	933	342	769	630	11	6.0	215	28	23	25
22	400	426	967	342	713	630	11	6.0	202	31	24	25
23	255	432	755	304	708	292	11	6.0	199	32	20	25
24	270	406	488	296	848	66	11	6.0	177	37	20	25
25	270	349	518	303	773	38	11	6.0	167	30	20	25
26	284	332	608	305	717	30	11	5.0	131	27	20	25
27	313	322	642	307	753	25	11	5.0	110	26	20	25
28	336	289	807	308	820	21	11	5.0	90	28	20	25
29	320	269	852	308	---	20	11	5.0	70	30	20	25
30	309	246	677	313	---	17	11	5.0	60	24	20	25
31	375	---	354	347	---	18	---	5.0	---	22	20	---
TOTAL	6801	12533	15450	8354	17267	18868	380	231.0	3361.0	1169	741	670
MEAN	219	418	498	269	617	609	12.7	7.45	112	37.7	23.9	22.3
MAX	508	702	967	347	938	1360	26	10	215	67	45	25
MIN	97	246	132	185	386	17	11	5.0	5.0	22	17	20
AC-FT	13490	24860	30650	16570	34250	37420	754	458	6670	2320	1470	1330
CAL YR 1976 TOTAL	185786.20			MEAN 508	MAX 1880	MIN .36	AC-FT 368500					
WTR YR 1977 TOTAL	85825.00			MEAN 235	MAX 1360	MIN 5.0	AC-FT 170200					

GILA RIVER BASIN

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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. Reservoir was drained for repair and no water samples were collected after March 29, 1977.

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, 850 micromhos Mar. 29; minimum daily, 470 micromhos Oct. 9, 11, Dec. 4.

WATER TEMPERATURES: Maximum, 22.0°C Oct. 1, 2; minimum, 8.0°C on several days during January.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	FECAL COLIFORM (COL./100 ML)	FECAL STREPTOCOCCI (COL./100 ML)	HARDNESS (CA, MG)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DISSOLVED MAGNESIUM (MG)	DISSOLVED SODIUM (NA) (MG/L)
NOV 02...	1100	332	530	7.8	18.5	1	<1	220	16	43	28	40
DEC 30...	1400	780	570	8.0	10.0	1	<1	230	7	44	30	36
JAN 25...	1230	310	590	8.4	9.0	<1	<1	250	25	49	31	34
FEB 23...	1045	710	620	8.3	10.0	<1	810	240	12	44	32	33
MAR 29...	1000	24	850	7.9	13.0	8100	81000	340	10	66	43	48

DATE	SODIUM AD-SURP-TION RATIO	DISSOLVED PO-TAS-SIUM (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DISSOLVED SULFATE (SO4) (MG/L)	DISSOLVED CHLORIDE (CL) (MG/L)	DISSOLVED FLUORIDE (F) (MG/L)	DISSOLVED SILICA (SiO2) (MG/L)	DISSOLVED SOLIDS (SUM OF DUE AT CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DISSOLVED SOLIDS (TONS PER AC-FT)
NOV 02...	1.2	3.5	252	0	59	19	.3	19	328	336	.45
DEC 30...	1.0	3.1	276	0	61	19	.4	19	342	349	.47
JAN 25...	.9	2.9	268	3	62	21	.4	19	343	355	.47
FEB 23...	.9	2.9	280	0	59	26	.3	18	348	353	.47
MAR 29...	1.1	4.7	404	0	67	28	.6	16	466	473	.63

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DISSOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJELDAHL NITROGEN (N) (MG/L)	TOTAL NITROGEN (N) (MG/L)	TOTAL PHOSPHORUS (P) (MG/L)	DISSOLVED ORTHO. PHOSPHORUS (P) (MG/L)
NOV 02...	.07	.07	.13	.20	.03	.02
DEC 30...	.03	.02	.37	.40	.03	.03
JAN 25...	.08	.07	.23	.31	.07	.06
FEB 23...	.00	.02	.14	.14	.03	.04
MAR 29...	.21	.20	11	11	7.3	.02

B Based on non-ideal colony count.

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

GILA RIVER BASIN

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS- SOLVED CAD- MIUM (CD) (UG/L)	DTS- SOLVED CHRO- MIUM (CR) (UG/L)	TOTAL COBALT (CO) (UG/L)	DTS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
JAN 25...	14	14	190	160	<10	0	0	<50	0	<10	0	230

DATE	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DTS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELF- NIUM (SF) (UG/L)	DTS- SOLVED SELF- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
JAN 25...	0	<100	3	30	20	.2	.0	1	1	10	10	2.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDIM- MENT (MG/L)	SUS- PENDE SEDIM- MENT (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
NOV 02...	1100	332	23	21	90
DEC 30...	1400	780	24	51	90
JAN 25...	1230	310	20	17	72
FEB 23...	1045	710	11	21	76
MAR 29...	1000	24	8560	555	100
AUG 15...	1530	--	1770	--	92
DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	CHLOR-A PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
NOV 02...	1100	4071	2.91	1.75	1800
DEC 30...	1400	--	--	--	530
JAN 25...	1230	6216	.037	.036	1100
FEB 23...	1045	--	--	--	1100

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

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
UNCF-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	520	530	500	550	500	560						
2	490	520	480	540	500	610						
3	490	530	490	550	500	560						
4	485	530	470	530	530	550						
5	480	530	480	550	520	550						
6	480	530	480	560	530	560						
7	485	525	---	560	600	550						
8	---	530	530	550	560	550						
9	470	530	540	550	580	560						
10	485	540	540	550	500	600						
11	470	535	530	560	500	600						
12	500	540	540	550	510	600						
13	490	535	510	560	510	600						
14	480	530	530	560	520	600						
15	480	530	510	560	520	610						
16	490	525	490	560	520	610						
17	500	530	490	560	510	630						
18	500	530	490	550	520	650						
19	490	530	490	560	540	640						
20	485	525	490	560	520	660						
21	490	525	500	560	520	730						
22	500	530	530	560	530	670						
23	490	530	530	560	530	760						
24	495	525	530	560	530	---						
25	510	540	510	560	520	---						
26	500	535	480	570	520	---						
27	510	540	490	560	520	---						
28	500	530	500	560	510	---						
29	510	535	490	560	---	850						
30	500	525	490	560	---	---						
31	500	---	490	560	---	---						

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
UNCF-DAILY

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

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

09510000 VERDE RIVER BELOW BARTLETT DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	NOV 2, 76 1100	DEC 10, 76 1400	JAN 25, 77 1230	FEB 23, 77 1045				
TOTAL CELLS/ML	1900	530	1100	1100				
DIVERSITY: DIVISION	1.1	1.9	1.7	1.7				
..CLASS	1.1	1.9	1.8	2.3				
...ORDER	1.8	2.1	2.2	2.7				
...FAMILY	2.3	2.7	2.2	3.1				
...GENUS	3.0	0.0	2.6	3.3				
ORGANISM	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHLORACTACEAE								
...SCHROEDERIA	* 0	--	--	--	--	--	--	--
...COELASTRACEAE	--	--	42 8	--	--	--	--	--
...HYDRODICTYACEAE	14 1	--	--	--	--	--	--	--
...PEDASTRUM								
...MICRACTINIACEAE								
...GOLENKINIA	* 0	--	--	--	--	--	--	--
...MICRACTINIUM	--	--	--	--	--	--	* 0	--
...DUCYSTACEAE								
...ANKISTRODESMIUS	28 2	--	--	* 0	43 4	--	--	--
...CHODATELLA	--	--	5 1	--	--	--	--	--
...FRANCEIA	--	--	52 10	--	--	--	--	--
...UNCYSTIS	--	--	21 4	--	--	--	--	--
...TETRAFORON	78 4	--	--	--	--	--	--	--
...SCENEDESMACEAE								
...CRUCIGENIA	140 8	--	--	20 2	--	--	--	--
...SCENEDESMIUS	240 14	68 13	100 9	66 6	--	--	--	--
...TETRASTRUM	28 2	21 4	20 2	--	--	--	--	--
...VULVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	14 1	--	25 2	--	--	--	--	--
...PHACOTACEAE								
...PHACOTUS	* 0	--	* 0	--	--	--	--	--
...VULVOCAEEAE								
...PANDURINA	--	--	--	--	26 2	--	--	--
CHRYSOPHYTA								
..RACILLARIOPHYCEAE								
...CENTRALES								
...COSCINODISCEAE								
...CYCLOTETRA	480# 27	120# 23	140 13	89 8	--	--	--	--
...MELOSIRA	230 13	--	75 7	69 6	--	--	--	--
...PENNIALES								
...CYMBELLACEAE								
...EPITHEMIA	--	--	--	* 0	--	--	--	--
...DIATOMACEAE								
...DIATOMA	--	--	--	16 2	--	--	--	--
...FRAGILARIACEAE								
...SYNEURA	21 1	--	--	--	--	--	--	--
...GOMPHONEMACEAE								
...GOMPHONEMA	* 0	--	--	--	--	--	--	--
...NAVICULACEAE								
...NAVICULA	* 0	--	--	36 3	--	--	--	--
...NITZSCHIA	380# 21	16 3	20 2	73 7	--	--	--	--
...NITZSCHIA								
..CHRYSOPHYCEAE								
...CHRYSDOMONADACEAE								
...CHRYSDOMONAS	--	--	--	390# 36	--	--	--	--
...DINOBRYON								
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCACEAE								
...CHROCOCCACEAE								
...AMACYSTIS	--	--	520# 48	130 12	--	--	--	--
...HORMOGONALES								
...OSCILLATORIACEAE	--	150# 27	--	--	--	--	--	--
...OSCILLATOPIA	--	--	65 6	--	--	--	--	--
EUGLENOPHYTA (EUGLENOTUS)								
..CRYPTOPHYCEAE								
...CRYPTOMONTOALES								
...CRYPTOMONTOACEAE								
...CRYPTOMONAS	* 0	21 4	15 1	33 3	--	--	--	--
..EUGLENOPHYCEAE								
...EUGLENALES								
...EUGLENACEAE								
...EUGLENA	--	--	* 0	10 1	--	--	--	--
...TRACHELOMONAS	64 4	16 3	65 6	7 1	--	--	--	--
PYRRHOPHYTA (FIRE ALGAE)								
..PYRRHOPHYCEAE								
...GYMNODINIALES								
...GYMNODINIACEAE								
...GYMNODINIUM	--	5 1	* 0	16 2	--	--	--	--
...PERTONIALES								
...CERATIACEAE								
...CERATIUM	--	--	--	26 2	--	--	--	--
...GLENODINIACEAE								
...GLENODINIUM	--	--	--	40 4	--	--	--	--

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

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

GILA RIVER BASIN

379

09510100 EAST FORK SYCAMORE CREEK NEAR SUNFLOWER, AZ

LOCATION.--Lat 33°56'58", long 111°27'39", in NE¼ 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. No storage or diversion above station.

AVERAGE DISCHARGE.--16 years, 0.564 ft³/s (0.0160 m³/s), 409 acre-ft/yr (504,000 m³/yr); median of yearly mean discharges, 0.25 ft³/s (0.0071 m³/s), 180 acre-ft/yr (222,000 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 or 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, 4.8 ft³/s (0.14 m³/s) Jan. 3 (gage height, 1.63 ft or 0.497 m), no peak discharges above base of 20 ft³/s (0.6 m³/s); no flow for many days.

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	.00	.01	.01	.02	.05	.05	.06	.05	.01	.00	.00	.00
2	.01	.01	.01	.01	.05	.05	.28	.04	.01	.00	.00	.00
3	.01	.01	.00	1.3	.05	.06	.39	.04	.00	.00	.00	.00
4	.01	.01	.00	.15	.05	.06	.16	.04	.00	.00	.00	.00
5	.01	.01	.00	.16	.05	.06	.13	.04	.00	.00	.00	.00
6	.01	.01	.00	.09	.05	.06	.11	.04	.00	.00	.00	.00
7	.00	.01	.00	.08	.05	.06	.10	.04	.00	.00	.00	.00
8	.00	.01	.00	.07	.05	.06	.09	.04	.00	.00	.00	.00
9	.00	.01	.00	.06	.05	.06	.09	.04	.00	.00	.00	.00
10	.00	.01	.00	.06	.05	.06	.08	.04	.00	.00	.00	.00
11	.00	.01	.00	.05	.04	.06	.08	.04	.00	.00	.00	.00
12	.00	.01	.00	.05	.04	.06	.08	.03	.00	.00	.00	.00
13	.00	.01	.00	.05	.04	.06	.07	.04	.00	.00	.00	.00
14	.00	.01	.00	.05	.04	.06	.07	.05	.00	.00	.00	.00
15	.00	.01	.00	.05	.04	.06	.07	.04	.00	.00	.00	.00
16	.00	.01	.00	.05	.04	.06	.07	.04	.00	.00	.01	.00
17	.00	.01	.00	.05	.04	.06	.07	.03	.00	.00	.01	.00
18	.00	.01	.00	.05	.04	.05	.07	.03	.00	.00	.00	.00
19	.00	.01	.01	.05	.04	.05	.07	.03	.00	.00	.00	.00
20	.00	.01	.01	.05	.04	.05	.07	.03	.00	.00	.00	.00
21	.00	.01	.01	.05	.04	.05	.06	.02	.00	.00	.00	.00
22	.00	.01	.01	.06	.04	.05	.06	.02	.00	.00	.00	.00
23	.02	.01	.01	.06	.04	.05	.06	.02	.00	.00	.00	.00
24	.01	.01	.01	.05	.04	.05	.06	.02	.00	.00	.00	.00
25	.01	.01	.01	.05	.05	.05	.06	.02	.00	.00	.00	.00
26	.01	.01	.01	.05	.05	.06	.05	.02	.00	.00	.00	.00
27	.01	.01	.01	.05	.05	.06	.05	.02	.00	.00	.00	.00
28	.01	.01	.01	.05	.05	.06	.05	.02	.00	.00	.00	.00
29	.01	.01	.01	.05	---	.08	.05	.01	.00	.00	.00	.00
30	.01	.01	.01	.05	---	.06	.05	.01	.00	.00	.00	.00
31	.01	---	.02	.05	---	.06	---	.01	---	.00	.00	---
TOTAL	.15	.30	.16	3.07	1.26	1.78	2.76	.96	.02	.00	.02	.00
MEAN	.005	.010	.005	.099	.045	.057	.092	.031	.001	.000	.001	.000
MAX	.02	.01	.02	1.3	.05	.08	.39	.05	.01	.00	.01	.00
MIN	.00	.01	.00	.01	.04	.05	.05	.01	.00	.00	.00	.00
AC-FT	.3	.6	.3	6.1	2.5	3.5	5.5	1.9	.04	.00	.04	.00
CAL YR 1976	TOTAL	127.06	MEAN	.35	MAX	44	MIN	.00	AC-FT	252		
WTR YR 1977	TOTAL	10.48	MEAN	.029	MAX	1.3	MIN	.00	AC-FT	21		

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) above mean sea level. Prior to Oct. 1, 1970, at datum 0.16 ft (0.049 m) lower.

REMARKS.--Records fair except those for period of no gage-height record, Mar. 21 to Apr. 22, which are poor.

AVERAGE DISCHARGE.--16 years (1961-77), 17.8 ft³/s (0.504 m³/s), 12,900 acre-ft/yr (15.9 hm³/yr); median of yearly mean discharges, 7.7 ft³/s (0.22 m³/s), 5,600 acre-ft/yr (6.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,200 ft³/s (685 m³/s) Sept. 5, 1970 (gage height, 19.7 ft or 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 (*) (from rating curve extended above 3,600 ft³/s or 102 m³/s, as explained above) and peak discharges above 400 ft³/s (11 m³/s):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage height (ft) (m)
Aug. 13	2200	1,050 29.7	3.38 1.030
Aug. 16	0130	*6,150 174	8.40 2.560

Minimum daily discharge, 0.01 ft³/s (<0.001 m³/s) June 17-19, June 21 to July 5.

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	.60	.41	.34	.91	1.7	1.0	2.0	.33	.06	.01	.03	.16
2	.35	.36	.30	.40	1.7	1.0	3.0	.42	.07	.01	.03	.16
3	.20	.29	.34	33	1.6	1.0	2.0	.28	.08	.01	.04	9.6
4	.28	.25	.39	47	1.6	1.0	1.5	.28	.10	.01	.04	.76
5	.31	.24	.36	19	1.6	1.0	1.2	.28	.09	.01	.04	.89
6	.34	.31	.30	15	1.6	1.0	1.0	.24	.07	.02	.05	.09
7	.34	.28	.32	2.6	1.5	1.0	.90	.19	.07	.02	.04	.07
8	.36	.25	.35	1.6	1.5	1.0	.80	.19	.06	.02	.04	.05
9	.41	.27	.37	3.3	1.5	1.0	.70	.19	.04	.02	.05	.05
10	.47	.28	.28	2.2	1.4	1.0	.70	.19	.05	.02	.71	.05
11	.46	.31	.26	1.9	1.4	1.0	.70	.16	.04	.02	.11	.04
12	.43	.35	.29	1.6	1.4	1.0	.70	.16	.04	.02	.09	.04
13	.50	.43	.29	1.6	1.3	1.0	.60	.19	.03	.02	83	.04
14	.53	.42	.31	1.6	1.3	1.0	.60	.24	.02	.02	31	.03
15	.47	.45	.29	1.4	1.2	1.0	.60	.24	.02	.02	88	.03
16	.48	.37	.26	1.4	1.3	1.0	.60	.24	.02	.03	561	.04
17	.47	.29	.28	1.2	1.2	1.1	.60	.16	.01	.03	6.9	.04
18	.49	.25	.32	1.1	1.2	1.2	.60	.13	.01	.03	.89	.04
19	.48	.26	.33	1.1	1.2	1.1	.60	.11	.01	.02	.40	.05
20	.42	.27	.35	1.1	1.1	1.1	.55	.11	.02	.03	.33	.05
21	.47	.30	.36	1.2	1.0	1.0	.55	.11	.01	.03	.28	.05
22	.52	.29	.37	1.2	1.0	1.0	.55	.11	.01	.03	.33	.07
23	36	.29	.38	1.9	1.0	1.0	.66	.09	.01	.03	.35	.07
24	2.9	.30	.38	2.6	1.0	1.0	.60	.09	.01	.03	.28	.07
25	1.2	.30	.32	2.2	1.0	1.0	.55	.09	.01	.02	.28	.07
26	.76	.35	.30	2.0	1.0	1.0	.47	.07	.01	.02	.33	.07
27	.62	.34	.29	1.8	1.0	1.0	.47	.07	.01	.02	.28	5.0
28	.52	.22	.29	1.8	1.0	1.0	.47	.05	.01	.02	.28	1.7
29	.51	.26	.33	1.7	---	1.0	.45	.04	.01	.02	.28	.07
30	.53	.35	.38	1.7	---	1.0	.42	.04	.01	.02	.19	.05
31	.47	---	1.8	1.7	---	1.0	---	.03	---	.02	.19	---
TOTAL	52.89	9.34	11.53	158.81	36.3	31.5	25.14	5.12	1.01	.65	797.79	19.50
MEAN	1.71	.31	.37	5.12	1.30	1.02	.84	.17	.034	.021	25.7	.65
MAX	36	.45	1.8	47	1.7	1.2	3.0	.42	.10	.03	561	9.6
MIN	.20	.22	.26	.40	1.0	1.0	.42	.03	.01	.01	.03	.03
AC-FT	105	19	23	315	72	62	50	10	2.0	1.3	1580	39
CAL YR 1976	TOTAL	5300.29	MEAN	14.5	MAX	1580	MIN	.02	AC-FT	10510		
WTR YR 1977	TOTAL	1149.58	MEAN	3.15	MAX	561	MIN	.01	AC-FT	2280		

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) above mean sea level.

REMARKS.--Records good. 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.--16 years, 514 ft³/s (14.56 m³/s), 372,400 acre-ft/yr (459 hm³/yr); median of yearly mean discharges, 410 ft³/s (11.6 m³/s), 297,000 acre-ft/yr (366 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,300 ft³/s (886 m³/s) Dec. 31, 1965 (gage height, 12.75 ft or 3.886 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, 2,800 ft³/s (79.3 m³/s) Oct. 23, gage height, 6.02 ft (1.835 m); no flow May 17 to June 11.

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	43	373	227	246	340	849	35	6.6	.00	45	17	23
2	43	363	216	274	343	807	35	6.2	.00	43	17	21
3	44	339	217	259	363	874	35	5.8	.00	43	17	20
4	42	388	202	251	331	938	35	5.9	.00	46	18	19
5	40	426	159	207	330	913	34	5.5	.00	40	18	19
6	40	425	152	176	333	834	31	4.7	.00	36	19	21
7	39	442	130	162	328	944	29	3.8	.00	34	18	21
8	39	393	350	179	414	1010	26	3.2	.00	34	20	22
9	39	421	350	203	450	1120	23	2.5	.00	34	20	23
10	39	385	350	204	450	1250	21	2.2	.00	33	23	24
11	39	421	350	205	419	1250	20	1.8	.00	32	24	33
12	40	442	300	207	401	943	18	.60	62	31	40	31
13	39	319	330	208	395	589	16	.71	107	30	30	27
14	40	386	360	209	454	540	15	2.1	129	42	61	25
15	41	400	390	210	507	630	14	1.7	141	44	34	23
16	41	586	450	239	617	611	14	.35	147	36	329	22
17	42	597	400	246	706	616	13	.00	148	35	106	23
18	257	615	550	264	829	615	13	.00	150	32	51	23
19	411	427	750	299	815	607	12	.00	146	31	41	23
20	394	363	800	307	753	603	12	.00	147	29	38	23
21	419	361	850	331	744	615	11	.00	149	29	36	24
22	375	398	925	336	681	620	11	.00	150	27	35	25
23	621	398	821	324	667	444	10	.00	150	28	33	27
24	230	397	506	282	782	206	10	.00	148	28	32	28
25	249	347	458	298	777	110	9.5	.00	147	25	31	28
26	247	323	562	295	697	60	9.2	.00	115	24	29	28
27	274	316	608	295	726	50	8.8	.00	71	24	28	45
28	310	296	765	295	771	45	7.9	.00	63	23	28	42
29	317	267	881	291	---	40	7.6	.00	57	22	27	36
30	285	254	747	287	---	40	7.2	.00	51	21	25	35
31	333	---	492	305	---	40	---	.00	---	19	24	---
TOTAL	5412	11868	14648	7894	15423	18813	543.2	53.66	2278.00	1000	1269	784
MEAN	175	396	473	255	551	607	18.1	1.73	75.9	32.3	40.9	26.1
MAX	621	615	925	336	829	1250	35	6.6	150	46	329	45
MIN	39	254	130	162	328	40	7.2	.00	.00	19	17	19
AC-FT	10730	23540	29050	15660	30590	37320	1080	106	4520	1980	2520	1560
CAL YR 1976 TOTAL	176250.00			MEAN 482	MAX 1810	MIN .00	AC-FT 349600					
WTR YR 1977 TOTAL	79985.86			MEAN 219	MAX 1250	MIN .00	AC-FT 158700					

LOCATION.--Lat 33°32'19", long 111°54'57", in SW¼ sec.2, T.2 N., R.4 E., Maricopa County, Hydrologic Unit 15060106, on upstream side of ford on Indian Bend Road, in Scottsdale.

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) above mean sea level.

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 (1961-75), 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 or 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, 140 ft³/s (3.96 m³/s) Oct. 23, gage height, 1.55 ft (0.472 m), base discharge, 20 ft³/s (0.6 m³/s); no flow for most of year.

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	.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	37	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	35	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	5.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	1.5	.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	90.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	2.91	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
MAX	37	.00	.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	179	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1976	TOTAL	813.80	MEAN	2.22	MAX	603	MIN	.00	AC=FT	1610		
WTR YR 1977	TOTAL	90.20	MEAN	.25	MAX	37	MIN	.00	AC=FT	179		

GILA RIVER BASIN

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09512200 SALT RIVER TRIBUTARY IN SOUTH MOUNTAIN PARK, AT PHOENIX, AZ

LOCATION.--Lat 33°20'49", long 112°05'03", in NE4NE4 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) above mean sea level.

REMARKS.--Records poor. No storage or diversion above station.

AVERAGE DISCHARGE.--16 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 or 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, 5.0 ft³/s (0.142 m³/s) Oct. 23, gage height, 2.00 ft (0.610 m), no peak above base of 20 ft³/s (0.6 m³/s); no flow for most of year.

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	.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	.20	.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	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.006	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.20	.00	.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	.4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1976 TOTAL 2.20 MEAN .006 MAX 1.2 MIN .00 AC-FT 4.4
WTR YR 1977 TOTAL 0.20 MEAN .001 MAX .20 MIN .00 AC-FT .4

GILA RIVER BASIN

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) above mean sea level (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 poor. Peak flow regulated from 161 mi² (417 km²) by Cave Creek Dam 12 mi (19 km) upstream. Flow probably affected by urbanization.

AVERAGE DISCHARGE.--20 years, 2.72 ft³/s (0.0770 m³/s), 1,970 acre-ft/yr (2.43 hm³/yr); median of yearly mean discharges, 0.83 ft³/s (0.024 m³/s), 600 acre-ft/yr (0.74 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 or 3.423 m, present datum); no flow for most of time each year.

EXTREMES FOR CURRENT YEAR.--No flow for entire year.

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	.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	.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	.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	.00	.00	.00	.00	.00	.00	.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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00
WATER YEAR 1976	TOTAL	86.90	MEAN	.24	MAX	67	MIN	.00	AC-FT	172		
WATER YEAR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	0		

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). Diversion by Perry Canal, which heads 300 ft (90 m) above the gage, began on Mar. 7 and was measured at 2.65 ft³/s (0.075 m³/s) Nov. 17, 1.70 ft³/s (0.048 m³/s) Apr. 26, 0.65 ft³/s (0.018 m³/s) May 19, and 0.15 ft³/s (0.004 m³/s) June 15. Diversion dam was washed out on July 11.

AVERAGE DISCHARGE.--37 years (unadjusted for diversions to Perry Canal), 16.4 ft³/s (0.464 m³/s), 11,880 acre-ft/yr (14.6 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, 19,800 ft³/s (561 m³/s) Sept. 5, 1970 (gage height, 14.90 ft or 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)
Aug. 23	1800	*5,480 155	7.95 2.423
Sept. 12	1500	2,600 73.6	5.89 1.795

Minimum daily, 0.20 ft³/s (0.006 m³/s), Oct. 7, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FFB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	1.0	1.0	1.5	2.7	2.3	.70	.70	.40	.40	1.0	.90
2	.80	1.0	1.0	1.4	2.7	2.3	.70	.80	.40	.40	9.0	.90
3	.70	1.0	1.0	1.9	2.7	1.9	.70	.80	.40	.40	19	.90
4	.60	1.0	1.0	2.3	2.7	1.5	.70	.80	.40	.40	1.2	.80
5	.40	1.0	1.1	2.5	2.6	1.5	.70	.70	.40	.40	1.2	.90
6	.30	1.0	1.2	2.3	2.6	1.2	.70	.80	.40	.40	1.2	.90
7	.20	1.0	1.2	2.3	2.6	1.0	.70	.90	.40	.40	1.0	.80
8	.30	1.0	1.1	1.9	2.6	.70	.70	.80	.40	.40	107	.80
9	.30	1.0	1.1	1.9	2.6	.70	.70	.80	.40	.40	75	.80
10	.20	1.1	1.1	1.9	2.5	.60	.70	.70	.40	.40	60	1.1
11	.30	1.2	1.0	1.7	2.5	.60	.70	.70	.40	37	1.0	1.6
12	.30	1.2	1.0	1.7	2.5	.60	.70	.70	.40	56	1.0	175
13	.40	1.2	1.1	1.7	2.5	.50	.70	.60	.40	7.0	1.0	5.0
14	.40	1.2	1.0	2.1	2.5	.50	.60	.60	.40	1.0	1.0	1.0
15	.40	1.2	1.0	2.3	2.5	.60	.60	.60	.40	1.0	.50	.90
16	.40	1.1	1.0	2.3	2.5	.50	.70	.60	.40	1.0	.70	.90
17	.40	1.0	1.0	2.5	2.5	.60	.70	.60	.40	1.5	8.0	.80
18	.40	.90	1.0	2.5	2.5	.60	.60	.50	.40	1.5	.50	.80
19	.40	.90	1.0	2.3	2.5	.60	.60	.50	.60	25	.40	.70
20	.40	.80	1.0	2.3	2.5	.60	.60	.50	.60	8.0	.40	.70
21	.40	.80	1.0	2.3	2.3	.60	.70	.50	.60	1.0	.40	.70
22	2.7	.80	1.1	2.5	2.3	.60	.70	.50	.60	1.0	70	.80
23	17	.90	1.1	2.8	2.3	.60	.70	.50	.50	25	530	.80
24	3.0	.80	1.1	2.8	2.3	.60	.70	.50	.50	8.0	5.0	.70
25	1.4	.90	.90	2.8	3.0	.60	.70	.50	.50	1.0	1.2	.70
26	1.1	1.0	.80	2.8	2.8	.60	.70	.50	.50	1.0	1.0	.70
27	1.1	1.1	.90	2.8	2.8	.60	.70	.50	.50	1.0	1.0	43
28	1.1	1.0	1.0	2.8	2.5	.70	.60	.50	.50	1.0	1.0	2.1
29	1.1	1.0	1.0	2.8	---	.60	.70	.40	.50	1.0	1.0	.70
30	1.1	1.1	1.1	2.8	---	.60	.70	.40	.40	1.0	.90	.70
31	1.1	---	1.2	2.7	---	.60	---	.40	---	1.0	.80	---
TOTAL	39.40	30.20	32.10	71.2	71.6	26.10	20.40	18.90	13.50	185.00	902.40	247.10
MEAN	1.27	1.01	1.04	2.30	2.56	.84	.68	.61	.45	5.97	29.1	8.24
MAX	17	1.2	1.2	2.8	3.0	2.3	.70	.90	.60	56	530	175
MIN	.20	.80	.80	1.4	2.3	.50	.60	.40	.40	.40	.40	.70
AC-FT	78	60	64	141	142	52	40	37	27	367	1790	490
CAL YR 1976	TOTAL	7485.20	MEAN	20.5	MAX	3390	MIN	.20	AC-FT	14850		
WTR YR 1977	TOTAL	1657.90	MEAN	4.54	MAX	530	MIN	.20	AC-FT	3290		

GILA RIVER BASIN

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.--7 years, 41.1 ft³/s (1.16 m³/s), 29,780 acre-ft/yr (36.7 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 or 6.285 m, site and datum then in use; 25.3 ft or 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, 2,390 ft³/s (67.7 m³/s) Aug. 24, gage height, 10.42 ft (3.176 m), base discharge, 1,800 ft³/s (51 m³/s); no flow May 27 to July 12.

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	5.0	.90	.60	.60	.70	.80	.30	.10	.00	.00	.10	.30
2	3.0	.80	.60	.60	.70	.90	.30	.10	.00	.00	.10	.30
3	1.5	.80	.60	.60	.70	.90	.30	.10	.00	.00	.10	.30
4	1.0	.80	.60	.60	.70	.90	.30	.10	.00	.00	.10	.30
5	.70	.80	.60	.60	.70	.90	.30	.10	.00	.00	.10	.30
6	.60	.80	.60	.60	.70	.50	.30	.10	.00	.00	.10	.30
7	.50	.80	.60	.60	.70	.50	.20	.10	.00	.00	.10	.20
8	.40	.70	.60	.60	.70	.50	.20	.10	.00	.00	.10	.70
9	.30	.70	.60	.60	.70	.50	.20	.10	.00	.00	.47	.90
10	.30	.70	.60	.60	.70	.50	.20	.10	.00	.00	109	1.1
11	.30	.70	.60	.60	.70	.50	.20	.10	.00	.00	12	1.7
12	.30	.70	.60	.60	.70	.50	.20	.10	.00	.00	8.9	52
13	.30	.70	.60	.60	.70	.50	.20	.10	.00	.48	1.0	169
14	.30	.70	.60	.60	.70	.40	.20	.10	.00	1.7	.30	10
15	.30	.70	.60	.60	.70	.40	.20	.10	.00	.10	.25	5.5
16	.30	.70	.50	.60	.70	.40	.20	.10	.00	.10	.25	2.1
17	.30	.70	.50	.60	.70	.40	.20	.10	.00	.10	.25	1.4
18	.30	.70	.50	.60	.60	.40	.20	.10	.00	.10	.20	1.1
19	.30	.70	.50	.60	.60	.40	.20	.10	.00	6.6	.30	1.0
20	.30	.70	.50	.60	.60	.40	.20	.10	.00	3.8	.30	.80
21	.30	.70	.50	.70	.60	.40	.20	.10	.00	3.7	.30	.70
22	60	.70	.50	.70	.60	.40	.20	.10	.00	.20	.20	.60
23	70	.70	.50	.70	.60	.40	.20	.10	.00	.10	.20	.60
24	18	.70	.50	.70	.60	.40	.20	.10	.00	6.1	200	.50
25	5.0	.70	.50	.70	.60	.40	.20	.10	.00	4.6	100	.50
26	2.0	.70	.50	.70	.60	.40	.20	.10	.00	9.8	1.0	.40
27	1.0	.60	.50	.70	.60	.50	.20	.00	.00	8.7	.50	.20
28	1.0	.60	.50	.70	.70	.50	.10	.00	.00	.10	.50	28
29	1.0	.60	.50	.70	---	.50	.10	.00	.00	.10	.50	4.6
30	.90	.60	.60	.70	---	.40	.10	.00	.00	.10	.50	.70
31	.90	---	.70	.70	---	.40	---	.00	---	.10	.50	---
TOTAL	176.40	21.40	17.30	19.70	18.60	15.90	6.30	2.60	.00	50.90	484.75	286.10
MEAN	5.69	.71	.56	.64	.66	.51	.21	.084	.000	1.64	15.6	9.54
MAX	70	.90	.70	.70	.70	.90	.30	.10	.00	9.8	200	169
MIN	.30	.60	.50	.60	.60	.40	.10	.00	.00	.00	.10	.20
AC-FT	350	42	34	39	37	32	12	5.2	.00	101	962	567
CAL YR 1976	TOTAL	22109.10	MEAN 60.4	MAX 6480	MIN .20	AC-FT 43850						
WTR YR 1977	TOTAL	1099.95	MEAN 3.01	MAX 200	MIN .00	AC-FT 2180						

NOTE.--No gage-height record Oct. 25 to Feb. 14 and Aug. 12 to Sept. 8.

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) above mean sea level. 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 poor. 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, and 1968 water years.

COOPERATION.--Records collected and prepared in cooperation with Maricopa County Municipal Water Conservation District No. 1.

AVERAGE DISCHARGE.--49 years (water years 1915-19, 1934-77), 78.4 ft³/s (2.220 m³/s), 56,800 acre-ft/yr (70.0 hm³/yr); median of yearly mean discharges, 39 ft³/s (1.10 m³/s), 28,300 acre-ft/yr (35 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 or 9.1 m, same datum as in 1919, from floodmarks), Nov. 27, 1919 (gage height, 33 ft or 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 1976 TO SEPTEMBER 1977

Month	Inflow to Lake Pleasant		Diversions in acre-feet	Spill in acre-feet
	Mean (cfs)	Runoff in acre-feet		
October.....	5.25	323	30	0
November.....	2.49	148	29	0
December.....	3.38	208	26	0
CAL YR 1976	67.7	49,130	24,600	0
January.....	6.60	406	12	0
February.....	5.29	294	30	0
March.....	3.68	226	1,260	0
April.....	7.73	460	3,370	0
May.....	1.81	111	2,900	0
June.....	.52	31	3,700	0
July.....	0	0	4,810	0
August.....	1.71	105	6,180	0
September.....	6.57	404	2,920	0
WTR YR 1977	3.75	2,720	25,270	0

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) above mean sea level.

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, 33,810 acre-ft (41.7 hm³) Oct. 1, gage height, 116.55 ft (35.524 m); minimum, 2,850 acre-ft (3.51 hm³) Sept. 16, 23-26, gage height, 76.36 ft (23.278 m).

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

75	2,400	100	15,660
80	4,160	110	25,670
85	6,210	120	38,590
90	9,640		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
INSTANTANEOUS OBSERVATIONS AT 1700

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33800	33400	32900	32800	33000	32700	30800	26900	23300	18300	12000	5430
2	33800	33400	32800	32800	33000	32700	30700	26800	23200	18100	11800	5210
3	33800	33300	32800	32900	33000	32700	30600	26600	23100	17900	11600	4990
4	33700	33300	32800	33000	33000	32700	30500	26400	22900	17700	11400	4770
5	33700	33300	32800	33000	32900	32600	30400	26300	22900	17500	11200	4520
6	33700	33200	32800	33000	32900	32600	30300	26100	22700	17300	10900	4270
7	33700	33200	32800	33000	32900	32600	30200	26000	22600	17100	10700	4080
8	33600	33200	32800	33000	32900	32600	30100	25800	22500	16900	10400	3810
9	33500	33200	32800	33000	32900	32600	30000	25600	22300	16700	10200	3610
10	33500	33200	32800	33000	32900	32500	29900	25500	22200	16500	9900	3430
11	33500	33200	32800	33000	32900	32500	29700	25300	22000	16300	9690	3270
12	33500	33200	32800	33000	32900	32500	29600	25200	21800	16100	9440	3070
13	33500	33200	32800	33000	32900	32500	29500	25100	21700	15900	9210	3060
14	33400	33200	32700	33000	32800	32400	29400	25000	21500	15600	8930	2970
15	33400	33200	32700	33000	32800	32400	29200	24900	21300	15400	8750	2860
16	33400	33200	32700	33000	32800	32300	29100	24700	21100	15200	8490	2850
17	33400	33100	32700	33000	32800	32200	28900	24600	21000	15000	8260	2860
18	33400	33100	32700	33000	32800	32100	28800	24500	20800	14800	8070	2860
19	33400	33100	32700	33000	32800	32000	28700	24400	20600	14600	7820	2860
20	33400	33100	32700	33000	32800	32000	28500	24400	20400	14400	7600	2860
21	33300	33100	32700	33000	32800	31900	28400	24300	20200	14200	7380	2860
22	33300	33100	32700	33000	32800	31800	28300	24200	20100	14000	7120	2860
23	33500	33100	32700	33000	32700	31700	28100	24100	19900	13800	6910	2850
24	33500	33100	32700	33000	32700	31600	27900	24000	19700	13600	7000	2850
25	33500	33100	32700	33000	32700	31500	27800	23900	19500	13400	6920	2850
26	33500	33000	32600	33000	32700	31400	27700	23800	19300	13200	6710	2850
27	33500	33000	32600	33000	32700	31300	27600	23700	19100	13000	6460	2890
28	33400	33000	32600	33000	32700	31200	27400	23600	18900	12900	6280	2900
29	33400	32900	32600	33000	---	31100	27300	23500	18700	12700	6070	2910
30	33400	32900	32600	33000	---	31000	27100	23400	18600	12400	5870	2920
31	33400	---	32700	33000	---	30900	---	23400	---	12200	5620	---
TOTAL	1038800	994600	1014600	1022500	919500	994600	872500	772000	633900	472700	268700	102380
MAX	33800	33400	32900	33000	33000	32700	30800	26900	23300	18300	12000	5430
MIN	33500	32900	32600	32800	32700	30900	27100	23400	18600	12200	5620	2850
(†)	116.23	115.88	115.75	115.90	115.70	114.30	111.20	107.93	103.16	95.64	83.62	76.58
(‡)	-430	-460	-180	+210	-260	-1820	-3790	-3720	-4790	-6340	-6610	-2700
CAL YR 1976	MAX	51000	MIN	18290	‡	+14060						
WTR YR 1977	MAX	33810	MIN	2850	‡	-30890						

† Gage height, in feet, at 1700 on last day of month.

‡ Change in contents, in acre-feet.

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.

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.--12 years, 6.87 ft³/s (0.195 m³/s), 4,980 acre-ft/yr (6.14 hm³/yr); median of yearly mean discharges, 3.5 ft³/s (0.10 m³/s), 2,500 acre-ft/yr (3.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,600 ft³/s (527 m³/s) Sept. 5, 1970 (gage height, 13.5 ft or 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, 4.0 ft³/s (0.113 m³/s) Aug. 16, gage height, 0.90 ft (0.274 m) no peak above base of 200 ft³/s (5.7 m³/s); no flow for most of year.

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	.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	.50	.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	.00	.00	.00	.00	.00	.50	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.016	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00
CAL YR 1976	TOTAL	1943.30	MEAN	5.31	MAX	717	MIN	.00	AC-FT	3850		
QTR YR 1977	TOTAL	0.50	MEAN	.001	MAX	.50	MIN	.00	AC-FT	1.0		

GILA RIVER BASIN

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) above mean sea level. 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 poor. No storage or diversion above station.

AVERAGE DISCHARGE.--16 years (water years 1962-77), 6.70 ft³/s (0.190 m³/s), 4,850 acre-ft/yr (5.98 hm³/yr); median of yearly mean discharges, 3.3 ft³/s (0.093 m³/s), 24,800 acre-ft/yr (3.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft³/s (552 m³/s) Sept. 5, 1970 (gage height, 9.98 ft or 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, 805 ft³/s (22.8 m³/s) Aug. 17, gage height, 4.45 ft (1.356 m), base discharge, 500 ft³/s (14 m³/s); no flow for most of year.

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	.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	13	.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	4.2	.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	2.0
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	23	.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	2.4
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	17.20	.00	.00	.00	.00	.00	.00	23.00	4.40
MEAN	.000	.000	.000	.55	.000	.000	.000	.000	.000	.000	.74	.15
MAX	.00	.00	.00	13	.00	.00	.00	.00	.00	.00	23	2.4
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	34	.00	.00	.00	.00	.00	.00	46	8.7
CAL YR 1976	TOTAL	2348.60	MEAN	6.42	MAX	1160	MIN	.00	AC-FT	4660		
WTR YR 1977	TOTAL	44.60	MEAN	.12	MAX	23	MIN	.00	AC-FT	88		

GILA RIVER BASIN

391

09513835 NEW RIVER AT BELL ROAD, NEAR PEORIA, AZ

LOCATION.--Lat 33°38'18", long 112°14'22", in NE¼NE¼ 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) above mean sea level (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. No flow since Sept. 28, 1976.

AVERAGE DISCHARGE.--10 years, 5.01 ft³/s (0.142 m³/s), 3,630 acre-ft/yr (4.48 hm³/yr); median of yearly mean discharges, 1.5 ft³/s (0.042 m³/s), 1,100 acre-ft/yr (1.36 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s (413 m³/s) Dec. 19, 1967 (gage height, 13.5 ft or 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.--No flow for entire year.

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	.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	.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	.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	.00	.00	.00	.00	.00	.00	.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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1976 TOTAL	1131.50		MEAN 3.09	MAX	450	MIN	.00	AC-FT	2240			
WTR YR 1977 TOTAL	0.00		MEAN .000	MAX	.00	MIN	.00	AC-FT	0			

LOCATION.--Lat 35°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.

PERIOD OF RECORD.--Water years 1960-67 (annual maximums only), October 1967 to current year.

REMARKS. --Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s (326 m³/s) Aug. 1, 1964 (gage height, 10.48 ft or 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 about 70 ft³/s (1.98 m³/s) Jan. 3 (gage height, about 6.6 ft or 2.01 m, from outside high-water mark); no peak discharge above base of 100 ft³/s (2.8 m³/s); no flow for most of year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

[illegible]

GILA RIVER BASIN

393

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) above mean sea level (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.--No flow since spring of 1973. 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.--9 years (1968-72, 1973-77), 3.82 ft³/s (0.108 m³/s), 2,770 acre-ft/yr (3.42 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s (583 m³/s) Sept. 6, 1970 (gage height, 11.21 ft or 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.--No flow for entire year.

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	.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	.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	.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	.00	.00	.00	.00	.00	.00	.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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1976	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		
WTR YR 1977	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		

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) above mean sea level. 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.--31 years (water years 1947-77), 13.9 ft³/s (0.394 m³/s), 10,070 acre-ft/yr (12.4 hm³/yr); median of yearly mean discharges, 7.5 ft³/s (0.21 m³/s), 5,400 acre-ft/yr (6.6 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 or 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, 315 ft³/s (8.92 m³/s) Aug. 15, gage height, 5.90 ft (1.798 m), no peak above base of 500 ft³/s (14 m³/s); minimum daily, 1.0 ft³/s (0.028 m³/s) Aug. 23.

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	1.5	1.6	1.9	2.0	2.0	1.8	1.8	1.6	1.8	1.4	1.3	1.5
2	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.8	1.4	1.3	1.7
3	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.7	1.4	1.3	1.7
4	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.7	1.4	1.3	1.5
5	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.7	1.4	1.3	1.0
6	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.7	1.4	1.2	1.9
7	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.7	1.4	1.2	1.7
8	1.5	1.6	1.9	2.0	1.9	1.8	1.7	1.7	1.6	1.4	1.2	1.5
9	1.5	1.6	1.9	2.0	1.8	1.8	1.7	1.7	1.6	1.4	1.2	2.4
10	1.5	1.6	1.9	2.0	1.8	1.8	1.7	1.7	1.6	1.4	1.2	2.3
11	1.5	1.6	1.9	2.0	1.8	1.8	1.7	1.7	1.6	1.4	1.2	1.5
12	1.5	1.6	1.9	2.0	1.8	1.8	1.7	1.8	1.6	1.4	1.2	2.5
13	1.5	1.6	1.9	2.0	1.8	1.8	1.7	1.8	1.6	1.3	1.2	2.5
14	1.5	1.6	1.9	2.0	1.8	1.8	1.7	1.8	1.5	1.3	1.2	2.5
15	1.5	1.7	1.9	2.0	1.8	1.8	1.6	1.8	1.5	1.3	2.2	2.4
16	1.5	1.7	1.9	2.0	1.8	1.8	1.6	1.8	1.5	1.3	1.5	2.4
17	1.5	1.7	1.9	2.0	1.8	1.8	1.6	1.8	1.5	1.3	2.5	2.4
18	1.5	1.7	1.9	2.0	1.8	1.8	1.6	1.8	1.5	1.3	1.1	2.4
19	1.5	1.7	1.9	2.0	1.8	1.8	1.6	1.8	1.5	1.3	1.3	2.3
20	1.5	1.7	1.9	2.1	1.8	1.8	1.6	1.8	1.5	2.4	1.1	2.3
21	1.6	1.7	1.9	2.1	1.8	1.8	1.6	1.9	1.5	2.3	1.1	2.3
22	1.6	1.7	1.9	2.1	1.8	1.8	1.6	1.9	1.5	1.9	1.1	2.3
23	2.3	1.8	2.0	2.1	1.8	1.8	1.6	1.9	1.5	1.9	1.0	2.2
24	1.6	1.8	2.0	2.1	1.8	1.7	1.6	1.9	1.5	1.3	1.3	2.2
25	1.6	1.8	2.0	2.1	1.8	2.1	1.6	1.9	1.5	1.3	1.1	2.2
26	1.6	1.8	2.0	2.0	1.8	1.9	1.6	1.9	1.5	1.3	1.1	2.2
27	1.6	1.8	2.0	2.0	1.8	1.7	1.6	1.9	1.5	1.3	1.7	2.1
28	1.6	1.8	2.0	2.0	1.8	1.7	1.6	1.8	1.5	1.3	1.9	2.1
29	1.6	1.8	2.0	2.0	---	1.7	1.6	1.8	1.4	1.3	1.4	2.1
30	1.6	1.8	2.0	2.0	---	1.7	1.6	1.8	1.4	1.3	1.7	2.1
31	1.6	---	2.0	2.0	---	1.7	---	1.8	---	1.3	1.7	---
TOTAL	48.3	50.4	59.8	71.6	51.3	55.6	49.5	55.3	47.0	53.3	44.9	77.8
MEAN	1.56	1.64	1.93	2.31	1.63	1.79	1.65	1.78	1.57	1.77	2.74	2.50
MAX	2.3	1.8	2.0	2.0	2.0	2.1	1.8	1.9	1.8	1.9	2.5	1.5
MIN	1.5	1.6	1.9	2.0	1.8	1.7	1.6	1.8	1.4	1.3	1.0	1.5
AC-FT	96	100	119	142	102	110	98	110	93	106	168	154

CAL YR 1976 TOTAL 5425.5 MEAN 14.8 MAX 1390 MIN 1.0 AC-FT 10760
WTR YR 1977 TOTAL 704.8 MEAN 1.93 MAX 25 MIN 1.0 AC-FT 1400

NOTE.--No gage-height record Mar. 29 to Apr. 28.

GILA RIVER BASIN

395

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) above mean sea level.

REMARKS.--No flow since Sept. 28, 1976. Flow regulated by several small retention dams in upper end of basin. Records do not include irrigation return flow past station.

AVERAGE DISCHARGE.--16 years, 3.34 ft³/s (0.095 m³/s), 2,420 acre-ft/yr (2.98 hm³/yr); median of yearly mean discharges, 1.8 ft³/s (0.051 m³/s), 1,300 acre-ft/yr (1.60 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s (411 m³/s) July 23, 1961 (gage height, 4.70 ft or 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.--No flow for entire year.

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	.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	.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	.00	.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	.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	.00	.00	.00	.00	.00	.00	.00	.00	.00
CAL YR 1976	TOTAL	2635.00	MEAN 7.20	MAX 1750	MIN .00	AC-FT 5230						
WTR YR 1977	TOTAL	0.00	MEAN .000	MAX .00	MIN .00	AC-FT .00						

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 Massayampa 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 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 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, 948,600 acre-ft (1,170 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.--42 years, 174 ft³/s (4.928 m³/s), 126,100 acre-ft/yr (155 hm³/yr); median of yearly mean discharges, 66 ft³/s (1.87 m³/s), 47,800 acre-ft/yr (59 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 48,900 ft³/s (1,380 m³/s) Jan. 2, 1966; 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, 189 ft³/s (5.35 m³/s) Mar. 24; minimum daily, 24 ft³/s (0.68 m³/s) July 14, 15.

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	111	92	63	93	77	88	72	81	91	42	48	39
2	106	91	63	92	69	78	79	73	78	26	49	39
3	83	89	58	91	68	70	85	74	77	43	49	47
4	79	79	58	90	78	60	102	79	72	48	39	49
5	83	73	58	92	82	69	122	88	75	52	48	42
6	82	68	59	89	81	61	87	78	72	43	46	41
7	83	68	58	80	92	63	77	77	68	41	45	35
8	85	73	60	80	96	72	72	81	72	50	51	32
9	84	83	69	81	87	76	71	75	74	51	41	42
10	84	78	60	80	85	75	60	75	68	48	35	44
11	82	67	52	80	90	79	69	84	52	49	42	48
12	87	69	54	78	92	86	61	84	46	28	42	75
13	72	92	53	78	90	97	59	77	50	25	44	78
14	61	102	78	77	92	97	61	96	45	24	38	101
15	71	108	73	76	97	99	67	107	25	24	42	99
16	67	101	78	76	94	95	118	70	29	32	64	70
17	66	99	78	72	85	81	69	83	32	36	90	67
18	67	89	78	71	96	96	71	76	75	37	88	71
19	69	94	84	71	99	126	67	76	56	42	80	71
20	69	98	85	70	99	147	63	76	46	45	75	79
21	69	93	95	72	99	161	70	76	47	57	58	91
22	81	72	96	72	100	171	75	76	41	67	40	94
23	93	67	96	77	100	174	70	98	39	58	48	97
24	112	66	96	78	96	189	80	98	47	66	67	108
25	115	66	95	82	98	137	75	87	55	69	70	98
26	93	65	90	83	97	102	82	88	58	65	71	110
27	93	61	90	84	95	106	82	93	59	54	72	93
28	92	63	89	85	87	102	70	93	59	45	63	95
29	91	63	89	84	---	91	69	90	56	47	53	103
30	91	63	84	84	---	90	73	93	44	52	57	94
31	92	---	92	80	---	63	---	96	---	43	51	---
TOTAL	2613	2392	2331	2498	2521	3101	2278	2598	1708	1409	1706	2152
MEAN	84.3	79.7	75.2	80.6	90.0	100	75.9	83.8	56.9	45.5	55.0	71.7
MAX	115	108	96	93	100	189	122	107	91	69	90	110
MIN	61	61	52	70	68	60	59	70	25	24	35	32
AC-FT	5180	4740	4620	4950	5000	6150	4520	5150	3390	2790	3380	4270
(†)	48	26	9.9	0	38	1530	1780	1420	1510	1610	2100	2520
(‡)	1130	1080	1160	1230	1120	1210	1170	1340	940	865	1120	1160

CAL YR 1976 TOTAL 23000 MEAN 62.8 MAX 1230 MIN 19 AC-FT 45620
WTR YR 1977 TOTAL 27307 MEAN 74.8 MAX 189 MIN 24 AC-FT 54160

† 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, 6,500 micromhos Apr. 20, July 2; minimum daily, 2,500 micromhos Oct. 2.

WATER TEMPERATURES: Maximum, 30.0°C on many days during July, August, and September; minimum, 10°C on many days during November, December, and January.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM (7UM-MF (COL./ 100 ML)
NOV								
01...	1445	92	4950	7.9	19.0	45	--	7000
DEC								
28...	1345	89	5900	7.3	9.0	20	--	5500
JAN								
24...	1400	78	5800	7.6	15.0	9	7.4	8175
FEB								
22...	1730	100	3700	7.6	16.0	15	--	2800
MAR								
30...	1315	90	4300	8.0	15.0	20	--	1400
APR								
25...	1500	75	4400	8.0	22.0	60	--	960
MAY								
31...	1330	96	5300	7.6	28.0	40	--	100
JUN								
27...	1400	59	4600	8.0	27.0	110	8.6	800
JUL								
27...	1245	54	5500	8.2	30.0	65	11.6	860
AUG								
26...	0950	71	5600	8.3	27.0	80	8.4	8900
SEP								
27...	1020	93	3700	7.7	25.0	40	6.2	2250

DATE	FECAL STREP- TOCOCC KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
NOV									
01...	13000	910	660	200	100	800	12	11	305
DEC									
28...	1800	1000	750	230	110	870	12	11	337
JAN									
24...	760	1100	830	260	110	850	11	11	329
FEB									
22...	2600	850	600	190	91	670	10	13	303
MAR									
30...	1350	930	670	210	98	770	11	12	320
APR									
25...	1300	890	650	210	88	760	11	9.2	290
MAY									
31...	680	940	700	220	96	800	11	11	300
JUN									
27...	2800	1000	760	240	98	810	11	11	300
JUL									
27...	82400	950	720	230	92	730	10	11	290
AUG									
26...	2700	1100	810	260	100	810	11	11	310
SEP									
27...	5100	620	390	140	65	590	10	13	280

B Results based on non-ideal colony count.

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS-SOLVED NITRATE (N) (MG/L)	DTS-SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DTS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	DTS-SOLVED AMMONIA NITRO- GEN (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	DTS-SOLVED KJEL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DTS-SOLVED PHOS- PHORUS (P) (MG/L)	DTS-SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
NOV 01...	15	.00	15	15	--	--	4.9	--	20	2.3	--	1.9
DEC 28...	--	--	21	14	--	--	4.8	--	26	2.4	--	2.3
JAN 24...	--	--	16	15	--	--	1.6	--	18	2.1	--	2.2
FEB 22...	--	--	11	11	--	--	6.3	--	17	3.1	--	2.9
MAR 30...	--	--	16	14	--	.48	4.2	--	20	2.4	--	2.2
APR 25...	--	--	9.5	10	--	--	1.4	--	11	.88	--	.61
MAY 31...	--	--	12	13	--	--	4.4	--	16	1.6	--	1.3
JUN 27...	--	--	14	--	--	--	3.5	--	18	1.6	--	--
JUL 27...	--	--	11	--	--	--	3.0	--	14	3.9	--	--
AUG 26...	--	--	14	--	--	--	1.4	--	15	9.4	--	--
SEP 27...	--	--	14	--	.05	--	--	6.1	--	11	4.5	--

DATE	CAR- BONATE (CO3) (MG/L)	DTS-SOLVED SULFATE (SO4) (MG/L)	DTS-SOLVED CHLOR- IDE (CL) (MG/L)	DTS-SOLVED FLUOR- IDE (F) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS-SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DTS-SOLVED SOLIDS (TONS PER AC-FT)
NOV 01...	0	790	1100	5.3	34	3520	3270	4.79
DEC 28...	0	820	1200	2.3	33	3730	3510	5.07
JAN 24...	0	840	1200	2.7	26	3610	3540	4.91
FEB 22...	0	630	1000	2.3	28	2900	2830	3.94
MAR 30...	0	700	1100	2.2	28	3240	3160	4.41
APR 25...	0	750	1000	4.7	27	3190	3040	4.34
MAY 31...	0	770	1100	2.1	26	3400	3240	4.62
JUN 27...	0	770	1200	2.3	28	3450	3310	4.69
JUL 27...	0	680	1100	1.6	23	3130	3010	4.26
AUG 26...	0	840	1200	2.1	27	3590	3410	4.88
SEP 27...	0	450	770	1.6	28	2250	2200	3.06

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DTS- SOLVED ARSENIC (AS) (UG/L)	TOTAL RADIUM (RA) (UG/L)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CADMIUM (CD) (UG/L)	DTS- SOLVED CADMIUM (CD) (UG/L)	DTS- SOLVED CHROMIUM (CP) (UG/L)
NOV 01...	10	--	200	2800	2800	10	--	--
DEC 28...	10	--	0	2900	2700	<10	--	--
JAN 24...	8	8	0	2700	2600	<10	0	0
FEB 22...	12	--	0	2200	2100	<10	--	--
MAR 30...	13	--	100	2500	2400	10	--	--
APR 25...	12	15	100	2400	2500	10	3	10
MAY 31...	13	--	200	2500	2400	<10	--	--
JUN 27...	10	--	100	2800	510	10	--	--
JUL 27...	8	7	700	2300	2100	10	0	0
AUG 26...	6	--	1200	3000	2800	<10	--	--
SEP 27...	14	--	400	1700	--	<10	--	--

DATE	TOTAL COBALT (CO) (UG/L)	DTS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DTS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)
NOV 01...	--	--	10	--	3300	20	<100	--	190
DEC 28...	--	--	20	--	1100	20	<100	--	100
JAN 24...	<50	0	10	6	650	10	<100	3	210
FEB 22...	--	--	10	--	800	20	100	--	200
MAR 30...	--	--	10	--	1000	30	100	--	100
APR 25...	<50	0	20	3	2900	20	100	3	190
MAY 31...	--	--	20	--	1800	30	<100	--	200
JUN 27...	--	--	30	--	4300	20	<100	--	240
JUL 27...	<50	0	10	1	4000	10	100	2	230
AUG 26...	--	--	40	--	4300	40	<100	--	200
SEP 27...	--	--	30	--	2100	--	<100	--	150

DATE	DTS- SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SILVER (SF) (UG/L)	DTS- SOLVED SILVER (SF) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)
NOV 01...	110	.1	--	10	--	<10	40	--
DEC 28...	60	.0	--	12	--	10	20	--
JAN 24...	210	.2	.0	10	9	10	20	20
FEB 22...	150	.1	--	7	--	10	20	--
MAR 30...	80	.0	--	8	--	<10	30	--
APR 25...	90	.0	.0	7	7	<10	30	10
MAY 31...	100	.0	--	10	--	<10	40	--
JUN 27...	70	.0	--	15	--	<10	50	--
JUL 27...	60	.0	.0	5	10	<10	40	10
AUG 26...	40	.0	--	20	--	<10	30	--
SEP 27...	--	.0	--	5	--	<10	40	--

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

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ATRA- ZINE (UG/L)	ATRA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)
NOV											
01...	1445	5.2	.01	1	ND	--	ND	ND	ND	--	ND
DEC											
28...	1345	4.7	.01	1	--	--	--	--	--	--	--
JAN											
04...	1445	--	--	--	--	ND	--	--	--	2	--
24...	1400	6.3	.01	1	--	--	--	--	--	--	--
FEB											
22...	1730	8.4	.01	9	ND	--	ND	--	ND	--	ND
MAR											
30...	1315	7.4	7.0	2	--	--	--	--	--	--	--
APR											
25...	1500	9.9	.00	4	--	--	--	--	--	--	--
29...	1215	--	--	--	--	ND	--	--	--	ND	--
MAY											
03...	1100	--	--	--	ND	--	ND	--	ND	--	ND
31...	1330	6.5	.01	0	--	--	--	--	--	--	--
JUN											
27...	1400	9.5	.00	1	--	--	--	--	--	--	--
JUL											
27...	1245	13	.01	1	--	--	--	--	--	--	--
AUG											
09...	0930	--	--	--	ND	--	ND	--	ND	--	ND
26...	0950	11	.01	1	--	--	--	--	--	--	--
SEP											
27...	1020	8.6	.01	4	--	--	--	--	--	--	--

DATE	P,P' DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	O,P' DDE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)	P,P' DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	P,P' DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- ELDRIN (UG/L)
NOV										
01...	--	ND	--	--	ND	--	--	ND	--	ND
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
04...	2.7	--	1.2	22	--	ND	--	--	ND	--
24...	--	--	--	--	--	--	--	--	--	--
FEB										
22...	--	.03	--	--	ND	--	--	ND	--	ND
MAR										
30...	--	--	--	--	--	--	--	--	--	--
APR										
25...	--	--	--	--	--	--	--	--	--	--
29...	1.4	--	--	16	--	--	.2	--	ND	--
MAY										
03...	--	--	--	--	ND	--	--	ND	--	.01
31...	--	--	--	--	--	--	--	--	--	--
JUN										
27...	--	--	--	--	--	--	--	--	--	--
JUL										
27...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	ND	--	--	ND	--	--	ND	--	ND
26...	--	--	--	--	--	--	--	--	--	--
SEP										
27...	--	--	--	--	--	--	--	--	--	--

ND Material specifically analyzed for but not detected.

GILA RIVER BASIN

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09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DI-ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)
NOV 01...	1445	--	ND	--	ND	--	ND	--	ND	--	ND	--
JAN 04...	1445	.6	--	ND	--	ND	--	ND	--	ND	--	ND
FEB 22...	1730	--	ND	--	ND	--	ND	--	ND	--	ND	--
APR 29...	1215	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAY 03...	1100	--	ND	--	ND	--	ND	--	ND	--	ND	--
AUG 09...	0930	--	ND	--	ND	--	ND	--	ND	--	ND	--

DATE	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METH- OXY- CHLOR (UG/L)	METHOX- YCHLOR IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)
NOV 01...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
JAN 04...	--	ND	--	ND	--	ND	--	ND	--	ND	--
FEB 22...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
APR 29...	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAY 03...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
AUG 09...	ND	--	ND	--	1.1	--	ND	--	ND	--	ND

DATE	SIMA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MA- TERIAL (UG/KG)
NOV 01...	ND	ND	--	ND	--	ND	ND	ND	ND	ND	ND
JAN 04...	--	--	ND	--	ND	--	--	--	--	--	--
FEB 22...	--	ND	--	ND	--	ND	--	ND	--	ND	--
APR 29...	--	--	21	--	ND	--	--	--	--	--	--
MAY 03...	--	ND	--	ND	--	ND	--	ND	--	ND	--
AUG 09...	--	1	--	ND	--	ND	--	ND	--	ND	--

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 1976 TO SEPTEMBER 1977

DATE	TIME	SUS- PENDED SEDIMENT (MG/L)	SUS. SFD. SIEVE DIAM. % FINER THAN .062 MM
NOV			
01...	1445	122	87
DEC			
28...	1345	56	85
JAN			
24...	1400	120	36
FEB			
22...	1730	56	84
MAR			
30...	1315	102	53
APR			
25...	1500	114	95
MAY			
31...	1330	99	76
JUN			
27...	1400	240	98
JUL			
27...	1245	190	93
AUG			
26...	0950	251	62
SEP			
27...	1020	103	81

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	CHLOR-A PERT- PHYTON CHROMO- SPECT- METRIC (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
NOV					
01...	1445	559	8.53	2.69	240
DEC					
28...	1345	--	--	--	17000
JAN					
24...	1400	496	37.2	10.9	8300
FEB					
22...	1730	--	--	--	27000
MAY					
31...	1330	9628	--	--	110000
JUN					
27...	1400	--	--	--	48000
JUL					
27...	1245	1876	--	--	94000
AUG					
26...	0950	--	--	--	70000
SEP					
27...	1020	--	--	--	42000

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2600	5100	6100	---	5000	4200	5900	---	5700	5400	5900	5600
2	2500	4700	6200	---	5100	5600	5500	5800	5800	6500	6000	5700
3	---	4950	5700	4900	5100	5200	---	6200	5600	---	5600	5700
4	4800	5400	5900	4600	5300	5300	5400	5400	5500	---	5700	---
5	4550	5700	---	4500	5300	5400	5100	5500	---	5100	5800	---
6	4550	5600	6000	4500	---	---	5100	5600	5200	5400	5600	---
7	4500	---	5500	4600	4500	5400	5400	5800	5400	5500	---	5800
8	4300	5500	5200	4600	4900	5700	5200	---	5600	5200	5500	6000
9	4550	5200	3800	---	5300	5500	5500	5500	5400	4800	5700	4800
10	---	6000	4100	4600	5400	5700	---	5400	5500	---	6100	5000
11	---	4750	6200	4800	6000	5500	5400	5400	6300	4900	5600	---
12	4500	5400	---	4800	5600	5400	5400	5200	---	5700	5900	5500
13	4300	5250	4700	4800	---	---	6100	5400	6100	6100	5300	4500
14	5500	---	4700	5000	4500	5500	6000	5300	5700	6100	---	4400
15	4950	5000	5400	5000	4900	5700	6300	---	6100	6200	5900	4500
16	5100	4700	5400	---	4900	5900	6400	5100	5600	5700	5000	4800
17	---	5100	5700	5400	5400	5300	---	5000	6000	---	5300	5000
18	5500	4700	5800	5100	5200	5500	5900	5100	5400	5700	4500	---
19	5300	4700	---	5000	4500	5400	6000	5100	---	5600	5000	4800
20	4600	5200	5500	5500	---	---	6500	5300	6300	5500	5000	4000
21	4300	---	5900	5200	---	5400	5500	5800	5700	5500	---	4100
22	4400	4550	5700	5300	4700	5600	5600	---	6100	5000	5900	4100
23	3800	4900	5900	---	4900	5300	6300	5000	6400	5400	5800	4000
24	---	5000	5600	5100	5400	5200	---	5000	6400	---	5300	---
25	---	---	---	4700	5300	5600	6300	5200	5800	5200	5400	---
26	3550	5200	---	4700	4600	5600	5000	5100	---	4900	5500	4100
27	2900	6000	6000	4300	---	---	5600	5300	5000	4900	5500	3400
28	3000	---	5400	4200	4600	5000	6300	5500	5300	5100	---	3900
29	4500	5900	5000	4100	---	4800	6000	---	5500	5300	5700	4400
30	3900	6300	5300	---	---	4700	6000	---	5600	5300	5300	4900
31	---	---	---	4600	---	4700	---	5300	---	---	5500	---
TOTAL	102450	130800	136700	119900	116400	144100	149700	134300	149000	136000	147500	109000
MEAN	4270	5230	5470	4800	5060	5340	5760	5370	5730	5440	5460	4740
MAX	5500	6300	6200	5500	6000	5900	6500	6200	6400	6500	6100	6000
MIN	2500	4550	3800	4100	4500	4200	5000	5000	5000	4800	3500	3400

WTR YR 1977 TOTAL 1575850 MEAN 5240 MAX 6500 MIN 2500

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	16.0	12.0	---	14.0	14.0	17.0	---	25.0	28.0	30.0	27.0
2	24.0	16.0	12.0	---	15.0	14.0	17.0	22.0	28.0	28.0	30.0	28.0
3	---	17.0	13.0	14.0	14.0	12.0	---	23.0	26.0	---	30.0	---
4	21.0	17.0	13.0	14.0	13.0	13.0	16.0	22.0	27.0	---	30.0	---
5	21.0	18.0	---	14.0	13.0	14.0	16.0	22.0	---	28.0	29.0	---
6	21.0	18.0	12.0	14.0	---	---	19.0	22.0	27.0	27.0	29.0	---
7	21.0	---	12.0	13.0	13.0	14.0	19.0	21.0	27.0	27.0	---	29.0
8	20.0	17.0	12.0	12.0	14.0	16.0	20.0	---	28.0	29.0	30.0	28.0
9	20.0	17.0	12.0	---	14.0	17.0	20.0	22.0	26.0	29.0	29.0	30.0
10	---	18.0	13.0	10.0	15.0	16.0	---	22.0	24.0	---	30.0	29.0
11	---	17.0	12.0	10.0	15.0	15.0	18.0	21.0	24.0	30.0	30.0	---
12	20.0	17.0	---	10.0	15.0	15.0	19.0	20.0	---	29.0	30.0	25.0
13	20.0	16.0	13.0	10.0	---	---	20.0	20.0	24.0	28.0	30.0	27.0
14	20.0	---	14.0	11.0	15.0	16.0	20.0	19.0	24.0	28.0	---	27.0
15	20.0	17.0	13.0	11.0	16.0	15.0	20.0	---	24.0	29.0	29.0	28.0
16	20.0	17.0	14.0	---	16.0	15.0	20.0	21.0	25.0	29.0	28.0	26.0
17	---	16.0	14.0	12.0	16.0	16.0	---	20.0	25.0	---	28.0	24.0
18	20.0	16.0	14.0	12.0	17.0	15.0	18.0	20.0	24.0	28.0	29.0	---
19	20.0	17.0	---	13.0	16.0	16.0	21.0	20.0	---	28.0	30.0	22.0
20	19.0	17.0	15.0	14.0	---	---	19.0	19.0	23.0	28.0	30.0	23.0
21	19.0	---	14.0	15.0	---	---	19.0	20.0	24.0	28.0	---	23.0
22	19.0	16.0	13.0	16.0	17.0	18.0	20.0	---	23.0	28.0	29.0	22.0
23	19.0	16.0	12.0	---	15.0	19.0	20.0	22.0	25.0	27.0	30.0	23.0
24	---	17.0	11.0	15.0	16.0	24.0	---	20.0	26.0	---	28.0	---
25	---	---	---	14.0	14.0	18.0	22.0	20.0	26.0	29.0	29.0	---
26	18.0	16.0	---	14.0	12.0	15.0	23.0	21.0	---	30.0	27.0	26.0
27	17.0	15.0	10.0	15.0	---	---	25.0	22.0	27.0	30.0	27.0	25.0
28	15.0	---	10.0	14.0	13.0	17.0	21.0	23.0	27.0	30.0	---	25.0
29	15.0	10.0	11.0	15.0	---	17.0	22.0	---	28.0	30.0	26.0	25.0
30	15.0	10.0	10.0	---	---	16.0	22.0	---	27.0	29.0	27.0	25.0
31	---	---	---	14.0	---	18.0	---	24.0	---	---	27.0	---

GILA RIVER BASIN

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	NOV 1,76 1445	DEC 28,76 1345	JAN 24,77 1400	FEB 22,77 1730	MAY 31,77 1330	
TOTAL CELLS/ML	240	17000	8300	27000	110000	
DIVERSITY: DIVISION	1.4	0.3	1.1	1.5	0.7	
..CLASS	1.4	0.3	1.1	1.5	0.7	
...ORDER	1.6	0.4	1.4	1.7	0.8	
...FAMILY	2.0	1.0	1.9	2.4	1.5	
....GENUS	2.3	1.0	2.0	2.5	1.6	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
..CHLOROPHYCEAE						
...CHLOROCOCCALES						
...CHARACIACEAE						
...SCHROEDERIA	--	-	--	-	2100	2
...COELASTRACEAE						
...COELASTRUM	--	-	--	-	6900	6
...HYDRODICTYACEAE						
...PEDIASTRUM	--	-	--	-	--	-
...MTCRACTINIACEAE						
...MICRACTINIUM	--	-	14000#	83	--	-
...OOCYSTACEAE					11000#	40
...ANKISTRODESUS	--	-	--	-	200	1
...CHODATELLA	--	-	250	1	--	-
...KIRCHNERIELLA	--	-	--	-	*	0
...OOCYSTIS	--	-	--	-	970	12
...SELENASTRUM	--	-	--	-	*	0
...SCENEDESMACEAE						
...ACTINASTRUM	--	-	--	-	--	-
...CIRCICTIGENIA	70#	29	--	-	--	-
...SCENEDESMUS	--	-	1600	9	4200#	50
..TETRASPORALES					6100#	23
...PALMELLACEAE					69000#	65
...SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
...CHLAMYDOMONAS	9	4	140	1	--	-
...CHLOROGONIUM	--	-	*	0	--	-
CHRYSTOPHYTA						
..BACTILLARIOPHYCEAE						
...PENNALES						
...NAVICULACEAE						
...FUTUMONEIS	9	4	--	-	--	-
..CENTRALES						
...COSCIINODISCACEAE						
...CYCLOTELLA	--	-	--	-	2200#	26
...MELOSIRA	--	-	--	-	4300#	16
...STEPHANODISCUS	--	-	--	-	200	1
...PENNALES					390	1
...FRAGILARIACEAE						
...SYNEORA	--	-	--	-	--	-
...GOMPHONEMACEAE						
...GOMPHONEMA	--	-	*	0	--	-
...NAVICULACEAE						
...AMPHIPLEURA	--	-	--	-	--	-
...CALONEIS	--	-	--	-	--	-
...NAVICULA	87#	36	140	1	160	2
...NEIDITUM	--	-	--	-	--	-
...PINNULARIA	--	-	--	-	290	1
...NITZSCHACEAE					--	-
...DENTICULA	--	-	--	-	--	-
...NITZSCHIA	35	14	110	1	81	1
...SURIPELLACEAE	--	-	--	-	--	-
...SURIPELLA	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
..CYANOPHYCEAE						
...CHROCOCCOCCALES						
...CHROCOCCOCCACEAE						
...ANACYSTIS	--	-	--	-	2200	8
...HORMOGONALES						
...NOSTOCACEAE						
...APHANIZOMENON	--	-	--	-	590	2
...OSCILLATORIA						
...OSCILLATORIA	--	-	360	2	--	-

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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09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	NOV 1, 76 1445		DEC 28, 76 1345		JAN 24, 77 1400		FEB 22, 77 1730		MAY 31, 77 1330	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDALES										
....CRYPTOMONODACEAE										
.....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALES										
....EUGLENA	26	11	110	1	280	3	1500	5	*	0
.....PHACUS	9	4	--	-	*	0	*	0	--	-
.....TRACHELUMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...PERIDINIALES										
....PERIDINIACEAE										
.....PERIDINIUM	--	-	--	-	--	-	--	-	--	-

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

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON								
DATE TIME	JUN 27, 77 1400		JUL 27, 77 1245		AUG 26, 77 0950		SEP 27, 77 1020	
TOTAL CELLS/ML	48000		94000		70000		42000	
DIVERSITY: DIVISION	0.9		1.0		0.8		0.9	
..CLASS	0.9		1.0		0.8		0.9	
...ORDER	1.0		1.1		1.5		1.0	
...FAMILY	1.4		1.4		1.5		1.3	
....GENUS	1.4		1.4		1.6		1.4	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
..CHLOROPHYCEAE								
...CHLOROCOCCALES								
...CHARACTACEAE								
...SCHROEDERIA	--	-	--	-	--	-	--	-
...CLOSTRACEAE								
...COELASTRUM	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
...POTASTRUM	4100	9	--	-	--	-	--	-
...MICRACITINACEAE								
...MICRACITINUM	--	-	3900	4	--	-	1400	3
...DUCYSTACEAE								
...ANKISTROPSMUS	--	-	*	0	*	0	--	-
...CHODATELLA	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	--	-	--	-
...DUCYSTIS	--	-	--	-	--	-	--	-
...SELENASTRUM	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
...ACTINASTRUM	--	-	--	-	1500	2	--	-
...CRUCIGENIA	--	-	--	-	--	-	--	-
...SCENEDESMUS	31000#	64	43000#	46	13000#	19	32000#	76
...TETRASPORALES								
...PALMELLACEAE								
...SPHAEROCYSTIS	--	-	--	-	39000#	56	--	-
...VOLVOCALES								
...CHLAMYDOMONADACEAE								
...CHLAMYDOMONAS	--	-	--	-	--	-	340	1
...CHLOROGONTUM	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
..BACILLARIOPHYCEAE								
...PENNALLES								
...NAVICULACEAE								
...ENTOMONEIS	--	-	*	0	--	-	--	-
...CENTRALES								
...CUCULINODISCACEAE								
...CYCLOTELLA	12000#	25	45000#	48	15000#	21	5000	12
...PELOSIRA	--	-	--	-	--	-	--	-
...STEPHANODISCUS	--	-	--	-	--	-	510	1
...PENNALLES								
...FRAGILARIACEAE								
...SYNEDRA	--	-	--	-	1100	2	510	1
...GOMPHONEMACEAE								
...GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULACEAE								
...AMPHIPLURA	--	-	--	-	--	-	--	-
...CALONEIS	--	-	--	-	--	-	*	0
...NAVICULA	520	1	*	0	--	-	510	1
...NEIDIUM	--	-	--	-	--	-	*	0
...PINNULARIA	--	-	--	-	--	-	--	-
...NITZSCHACEAE								
...DENTICULA	--	-	--	-	--	-	--	-
...NITZSCHIA	650	1	1500	2	--	-	--	-
...SURIPELLACEAE								
...SURIPELLA	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
..CYANOPHYCEAE								
...CHROCOCCALES								
...CHROCOCCACEAE								
...ANACYSTIS	--	-	--	-	--	-	--	-
...HORMOGONALES								
...NOSTOCACEAE								
...APHANIZOMENON	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE								
...OSCILLATORIA	--	-	--	-	--	-	--	-

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

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

GILA RIVER BASIN

407

09518000 GILA RIVER ABOVE DIVERSIONS, AT GILLESPIE DAM, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	JUN 27,77 1400		JUL 27,77 1245		AUG 26,77 0950		SEP 27,77 1020	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENIDS)								
..CRYPTOPHYCEAE								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	*	0	--	-	--	-
..EURLINOPHYCEAE								
...EUGLENALES								
....EUGLENACEAE								
.....EUGLENA	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	510	1
....TRACHELOMONAS	*	0	--	-	--	-	680	2
PYRROPHOPHYTA (FIRE ALGAE)								
..DINOPHYCEAE								
...PERIDINIALES								
....PERIDINIACEAE								
.....PERIDINTUM	--	-	--	-	--	-	*	0

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

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

GILA RIVER BASIN

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) above mean sea level. 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 fair except those for Oct. 10 to Dec. 6, which are poor. 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 observed, 85,000 ft³/s (2,400 m³/s) Dec. 28, 1923 (gage height, 16.0 ft or 4.88 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, about 100 ft³/s (2.83 m³/s) Apr. 5, gage height, 10.04 ft (3.060 m), no peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily, 1.1 ft³/s (0.031 m³/s) July 25, 26.

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	87	70	45	70	58	68	49	8.1	66	14	1.7	2.4
2	84	70	45	70	50	59	56	8.3	24	9.0	1.8	2.3
3	65	70	40	70	49	51	63	8.0	16	9.9	1.5	2.4
4	61	60	40	70	59	42	80	8.0	15	10	1.4	2.4
5	66	55	40	70	63	51	100	10	15	10	1.6	2.3
6	66	50	41	68	61	44	65	10	15	10	1.9	2.0
7	66	50	39	60	71	46	55	10	13	9.4	1.9	1.9
8	67	55	41	60	74	55	50	13	14	9.7	2.1	1.8
9	67	65	50	61	67	55	50	13	15	9.7	2.1	2.0
10	67	60	42	60	65	55	40	16	14	8.3	2.1	1.8
11	65	50	34	60	70	58	6.5	23	10	6.0	2.0	1.7
12	70	50	35	58	72	65	7.5	20	7.1	3.8	1.8	3.0
13	55	70	35	58	70	74	7.5	13	7.1	3.8	1.4	5.4
14	45	80	60	57	72	75	7.0	32	7.1	3.7	1.5	5.5
15	55	85	55	57	76	77	6.5	43	9.2	3.7	2.2	3.5
16	50	80	60	57	73	73	58	26	13	4.1	2.8	3.2
17	50	80	60	52	66	60	6.5	57	15	4.1	5.6	3.3
18	50	70	60	51	75	51	6.5	51	17	3.8	5.4	3.4
19	50	75	65	51	76	45	6.7	51	14	3.9	3.9	2.7
20	50	80	65	51	76	39	6.6	51	11	4.1	3.4	3.6
21	50	75	75	52	76	38	6.6	51	11	3.4	2.5	3.9
22	60	55	75	52	76	38	6.1	51	11	3.4	2.1	4.1
23	70	50	75	57	76	38	6.1	73	11	2.4	2.2	4.1
24	90	50	75	58	74	51	6.1	72	13	1.5	2.6	5.4
25	90	50	75	62	74	50	6.1	62	15	1.1	2.9	5.8
26	70	50	70	63	74	55	6.1	63	18	1.1	3.0	2.4
27	70	45	70	64	74	80	6.1	67	20	1.2	3.5	4.0
28	70	45	70	66	68	80	6.1	67	19	1.5	3.6	6.2
29	70	45	70	65	---	60	6.1	65	19	1.7	3.0	5.2
30	70	45	65	65	---	45	5.8	67	17	1.6	2.9	3.9
31	70	---	70	61	---	40	---	70	---	1.6	2.7	---
TOTAL	2016	1835	1742	1876	1935	1718	788.5	1179.4	471.5	161.5	79.1	296.9
MEAN	65.0	61.2	56.2	60.5	69.1	55.4	26.3	38.0	15.7	5.21	2.55	9.90
MAX	90	85	75	70	76	80	100	73	66	14	5.6	6.2
MIN	45	45	34	51	49	38	5.8	8.0	7.1	1.1	1.4	1.7
AC-FT	4000	3640	3460	3720	3840	3410	1560	2340	935	320	157	589
CAL YR 1976	TOTAL	15056.6	MEAN	41.1	MAX	1200	MIN	1.4	AC-FT	29860		
WTR YR 1977	TOTAL	14098.9	MEAN	38.6	MAX	100	MIN	1.1	AC-FT	27970		

GILA RIVER BASIN

409

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) above mean sea level (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 poor. Many diversions above station for irrigation. Flow above station regulated by reservoirs at and above Painted Rock Dam. (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 or 3.136 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.5 ft³/s (0.16 m³/s) Oct. 1, gage height, 4.17 ft (1.271 m); no flow Apr. 18 to Sept. 30.

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	5.0	3.0	1.6	2.4	1.2	.50	.30	.00	.00	.00	.00	.00
2	4.5	3.0	1.6	2.5	1.1	.50	.30	.00	.00	.00	.00	.00
3	4.1	3.0	1.5	2.5	1.1	.50	.30	.00	.00	.00	.00	.00
4	3.5	2.9	1.5	2.6	1.1	.50	.20	.00	.00	.00	.00	.00
5	3.4	2.9	1.4	2.6	1.1	.50	.20	.00	.00	.00	.00	.00
6	3.4	2.8	1.4	2.5	1.0	.50	.20	.00	.00	.00	.00	.00
7	3.4	2.8	1.3	2.5	1.0	.50	.20	.00	.00	.00	.00	.00
8	3.4	2.7	1.4	2.4	1.0	.50	.20	.00	.00	.00	.00	.00
9	3.3	2.7	1.4	2.4	1.0	.50	.20	.00	.00	.00	.00	.00
10	3.3	2.6	1.4	2.3	1.0	.50	.20	.00	.00	.00	.00	.00
11	3.3	2.6	1.5	2.3	.90	.40	.10	.00	.00	.00	.00	.00
12	3.3	2.5	1.5	2.2	.90	.40	.10	.00	.00	.00	.00	.00
13	3.3	2.5	1.6	2.2	.90	.40	.10	.00	.00	.00	.00	.00
14	3.3	2.4	1.6	2.1	.90	.40	.10	.00	.00	.00	.00	.00
15	3.2	2.4	1.7	2.1	.80	.40	.10	.00	.00	.00	.00	.00
16	3.2	2.3	1.7	2.0	.80	.40	.10	.00	.00	.00	.00	.00
17	3.2	2.3	1.8	2.0	.80	.40	.10	.00	.00	.00	.00	.00
18	3.2	2.2	1.8	1.9	.80	.40	.00	.00	.00	.00	.00	.00
19	3.2	2.2	1.9	1.9	.80	.40	.00	.00	.00	.00	.00	.00
20	3.2	2.1	1.9	1.8	.70	.40	.00	.00	.00	.00	.00	.00
21	3.2	2.1	1.9	1.8	.70	.40	.00	.00	.00	.00	.00	.00
22	3.1	2.0	2.0	1.7	.70	.40	.00	.00	.00	.00	.00	.00
23	3.1	2.0	2.0	1.6	.70	.40	.00	.00	.00	.00	.00	.00
24	3.1	1.9	2.1	1.6	.60	.40	.00	.00	.00	.00	.00	.00
25	3.1	1.9	2.1	1.5	.60	.30	.00	.00	.00	.00	.00	.00
26	3.1	1.8	2.2	1.5	.60	.30	.00	.00	.00	.00	.00	.00
27	3.1	1.8	2.2	1.4	.60	.30	.00	.00	.00	.00	.00	.00
28	3.0	1.8	2.2	1.4	.60	.30	.00	.00	.00	.00	.00	.00
29	3.0	1.7	2.3	1.3	---	.30	.00	.00	.00	.00	.00	.00
30	3.0	1.7	2.3	1.3	---	.30	.00	.00	.00	.00	.00	.00
31	3.0	---	2.4	1.2	---	.30	---	.00	---	.00	.00	---
TOTAL	103.5	70.6	55.2	61.5	24.00	12.70	3.00	.00	.00	.00	.00	.00
MEAN	3.34	2.35	1.78	1.98	.86	.41	.10	.000	.000	.000	.000	.000
MAX	5.0	3.0	2.4	2.6	1.2	.50	.30	.00	.00	.00	.00	.00
MIN	3.0	1.7	1.3	1.2	.60	.30	.00	.00	.00	.00	.00	.00
AC-FT	205	140	109	122	48	25	6.0	.00	.00	.00	.00	.00
CAL YR 1976 TOTAL	2346.70			MEAN 6.41	MAX	220	MIN .00	AC-FT 4650				
WTR YR 1977 TOTAL	330.50			MEAN .91	MAX	5.0	MIN .00	AC-FT 656				

GILA RIVER BASIN

09520170 RIO CORNEZ NEAR AJO, AZ

LOCATION.--Lat 32°29'58", long 112°52'50", in SE¼NE¼ 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 current year.

GAGE.--Water-stage recorder. Datum of gage is 1,309.45 ft (399.120 m) above mean sea level (State Highway Department bench mark).

REMARKS.--Records poor.

AVERAGE DISCHARGE.--10 years, 3.85 ft³/s (0.109 m³/s), 2,790 acre-ft/yr (3.44 hm³/yr); median of yearly mean discharges, 2.7 ft³/s (0.076 m³/s), 2,000 acre-ft/yr (2.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,030 ft³/s (227 m³/s) Sept. 4, 1976 (gage height, 10.41 ft or 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)
July 18	0315	1,300 36.8	7.26 2.213	Aug. 13	0145	597 16.9	6.59 2.009
Aug. 2	2115	597 16.9	6.59 2.009	Sept. 10	1445	*1,390 39.4	7.33 2.234

No flow for most of year.

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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	50	.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	173
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	37
12	.00	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	259	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	100	.00
15	.00	84	.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	8.3	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	165	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	.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	---	.01	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	114.00	.01	.00	.00	.00	.00	.00	.00	178.30	449.00	210.00
MEAN	.000	3.80	.000	.000	.000	.000	.000	.000	.000	5.75	14.5	7.00
MAX	.00	84	.01	.00	.00	.00	.00	.00	.00	165	259	173
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	226	.02	.00	.00	.00	.00	.00	.00	354	891	417

CAL YR 1976	TOTAL	4325.02	MEAN 11.8	MAX 865	MIN .00	AC-FT 8580
WTR YR 1977	TOTAL	951.31	MEAN 2.61	MAX 259	MIN .00	AC-FT 1890

GILA RIVER BASIN

411

09520360 GILA RIVER NEAR MOHAWK, AZ

LOCATION.--Lat 32°47'20", long 113°45'50", 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 310 ft (94.5 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Painted Rock Dam (see 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 or 2.268 m); no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 204 ft³/s (5.78 m³/s) Aug. 15, gage height, 4.22 ft (1.286 m), based on culvert computation of peak flow; no flow for most of year.

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	.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	36	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	39	.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	.00
30	.00	.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	.00	75.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	2.42	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	39	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	149	.00
CAL YR 1976	TOTAL	0.00	MEAN	.000	MAX	.00	MIN	.00	AC-FT	.00		
WTR YR 1977	TOTAL	75.00	MEAN	.21	MAX	39	MIN	.00	AC-FT	149		

NOTE.--No gage-height record Dec. 20 to Apr. 17. (Observation of no flow Feb. 9, Apr. 13).

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 Gila City" 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."

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) above mean sea level. 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) above mean sea level, 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 (see 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, 1,970 ft³/s (55.8 m³/s) Sept. 11, 12.35 ft (3.764 m); minimum daily, 0.01 ft³/s (<0.001 m³/s) Aug. 13, 14.

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	2.6	.59	.73	1.0	1.0	2.2	.45	.13	.79	.12	.06	1.1
2	2.2	.59	.66	.86	1.0	1.6	.44	.10	.69	.07	.06	1.1
3	2.0	.60	.60	.76	.99	1.0	.44	.08	.57	.09	.06	1.0
4	1.8	.62	.64	.73	.95	.76	.43	.07	.62	.16	.06	1.0
5	1.7	.64	.65	.70	.89	.66	.40	.09	.64	.17	.06	1.0
6	1.6	.66	.59	.73	.89	.89	.40	.11	.67	.08	.05	1.0
7	1.4	.69	.56	.73	.91	.78	.40	.12	.67	.13	.22	1.1
8	1.2	.71	.61	.85	.90	.73	.40	.16	.71	.26	.21	1.4
9	1.1	.73	.63	.79	.86	.68	.44	.18	.90	.42	.15	1.3
10	1.2	.77	.67	.61	.93	.62	.45	.20	.88	.47	.09	109
11	1.2	.86	.63	.56	.92	.53	.44	.40	.88	.51	.05	1050
12	1.2	.94	.63	.59	1.0	.55	.44	.49	.88	.46	.03	77
13	1.1	1.2	.60	.59	1.1	.62	.46	.55	.74	.36	.01	20
14	1.0	1.2	.64	.60	1.0	.61	.58	.57	.63	.23	.01	6.1
15	1.0	1.2	.69	.56	1.0	.60	.74	.55	.62	.19	12	3.7
16	.89	1.2	.64	.57	.85	.63	.78	.54	.64	.18	34	3.1
17	.89	1.2	.66	.58	.83	.63	.76	.52	.64	.17	10	2.9
18	.81	1.2	.64	.61	.77	.67	.72	.55	.51	.14	3.3	2.4
19	.77	1.2	.61	.72	.75	.71	.66	.56	.38	.19	2.0	2.4
20	.79	1.2	.57	.90	.73	.73	.63	.55	.24	.20	1.4	1.7
21	3.0	1.2	.57	.97	.73	.74	.57	.53	.14	.17	1.1	1.5
22	3.0	1.2	.56	1.0	.73	.76	.48	.52	.54	.14	.92	1.9
23	1.0	1.2	.54	1.0	.65	.77	.42	.52	.68	.11	.91	2.1
24	1.0	1.1	.52	1.1	.64	.71	.32	.62	.64	.11	.89	1.7
25	1.0	1.0	.52	1.1	.63	.67	.27	.99	.60	.17	.87	1.4
26	1.0	1.0	.55	1.0	.62	.63	.25	1.4	.51	.14	1.2	1.3
27	1.0	.87	.59	.99	.86	.59	.22	1.2	.47	.11	1.1	1.3
28	1.0	.73	.60	.99	1.5	.56	.22	1.1	.40	.11	1.1	1.2
29	1.0	.71	.63	.99	---	.52	.19	.93	.28	.08	1.1	1.1
30	1.0	.73	.64	.96	---	.51	.16	.86	.22	.08	1.1	1.0
31	.70	---	.80	.94	---	.48	---	.87	---	.06	1.1	---
TOTAL	41.15	27.74	19.17	25.08	24.63	23.14	13.56	16.06	17.78	5.88	75.21	1302.8
MEAN	1.33	.92	.62	.81	.88	.75	.45	.52	.59	.19	2.43	43.4
MAX	3.0	1.2	.80	1.1	1.5	2.2	.78	1.4	.90	.51	34	1050
MIN	.70	.59	.52	.56	.62	.48	.16	.07	.14	.06	.01	1.0
AC-FT	82	55	38	50	49	46	27	32	35	12	149	2580

CAL YR 1976 TOTAL 631.13 MEAN 1.72 MAX 120 MIN .00 AC-FT 1250
WTR YR 1977 TOTAL 1592.20 MEAN 4.36 MAX 1050 MIN .01 AC-FT 3160

GILA RIVER BASIN

413

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. Altitude of gage is 125 ft (38.1 m), from topographic map.

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, 757 ft³/s (21.4 m³/s) Sept. 11; minimum daily, 46 ft³/s (1.30 m³/s) Oct. 7.

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	53	56	71	90	75	111	128	94	85	102	113	74
2	52	53	72	90	76	118	128	92	82	105	110	74
3	57	54	87	90	83	114	126	87	80	101	112	74
4	55	55	73	79	91	112	127	85	81	101	100	73
5	53	54	71	65	86	112	109	86	81	100	94	72
6	51	53	71	65	86	112	131	89	80	101	97	72
7	46	55	78	65	85	112	130	86	82	106	94	72
8	48	53	87	65	85	114	129	85	71	108	94	74
9	55	53	88	65	85	115	127	88	71	116	95	76
10	54	52	88	64	92	109	127	90	83	108	92	79
11	53	53	89	68	107	109	124	88	81	108	99	757
12	54	53	88	67	113	110	131	89	82	107	94	247
13	55	56	88	66	114	110	139	88	75	108	96	108
14	53	54	88	66	119	108	141	88	77	111	104	87
15	53	54	85	67	113	109	143	87	92	113	200	85
16	53	59	88	65	116	111	139	87	95	114	287	81
17	53	64	89	64	114	109	140	87	90	108	130	75
18	52	61	91	69	115	110	139	89	89	110	122	87
19	52	63	91	69	114	114	142	85	89	121	118	79
20	56	64	91	65	113	113	139	85	90	110	117	82
21	56	62	92	70	114	112	140	85	89	111	116	69
22	58	68	96	73	115	110	139	84	90	113	111	69
23	55	80	92	69	116	110	129	85	91	111	119	75
24	55	81	92	68	107	108	128	85	86	109	90	75
25	56	126	90	71	86	109	120	87	87	112	71	85
26	57	254	89	73	86	111	116	87	89	114	74	67
27	54	92	90	69	89	110	119	87	89	113	73	65
28	54	81	91	72	92	109	120	84	93	115	74	68
29	54	76	91	70	---	110	120	85	94	115	74	71
30	54	73	92	70	---	109	99	85	95	118	74	69
31	56	---	91	73	---	113	---	83	---	117	76	---
TOTAL	1667	2112	2680	2182	2787	3443	3869	2692	2559	3406	3320	3141
MEAN	53.8	70.4	86.5	70.4	99.5	111	129	86.8	85.3	110	107	105
MAX	58	254	96	90	119	118	143	94	95	121	287	757
MIN	46	52	71	64	75	108	99	83	71	100	71	65
AC-FT	3310	4190	5320	4330	5530	6830	7670	5340	5080	6760	6590	6230
CAL YR 1976	TOTAL	32512	MEAN 88.8	MAX 254	MIN 46	AC-FT 64490						
WTR YR 1977	TOTAL	33858	MEAN 92.8	MAX 757	MIN 46	AC-FT 67160						

GILA RIVER BASIN

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	FFCAL COLI- FORM 7UM-MF (COL./ 100 ML)	FFCAL STREP- TOCOCCI KF ACAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NUN- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)
OCT												
04...	1430	51	2890	--	24.5	--	--	--	--	--	--	--
06...	1010	52	2990	7.8	24.0	2	857	--	570	340	140	54
06...	1035	52	--	--	24.0	--	--	--	--	--	--	--
12...	1425	53	3010	--	24.5	--	--	--	--	--	--	--
18...	1530	27	3070	8.1	28.0	--	--	--	590	360	150	53
26...	1420	53	3100	--	23.0	--	--	--	--	--	--	--
NOV												
01...	1135	58	3000	--	23.0	--	--	--	--	--	--	--
08...	1315	53	3110	--	23.0	--	--	--	--	--	--	--
10...	1020	53	3100	7.8	22.5	2	34	--	590	350	150	53
10...	1035	53	--	--	22.5	--	--	--	--	--	--	--
15...	1355	53	3100	--	21.5	--	--	--	--	--	--	--
22...	1320	61	2930	8.1	22.0	--	--	--	560	320	130	57
29...	1345	80	3110	--	21.5	--	--	--	--	--	--	--
DEC												
08...	1035	84	2900	7.8	17.5	3	26	250	550	350	130	55
08...	1420	84	2830	--	20.5	--	--	--	--	--	--	--
13...	1335	86	3080	--	22.0	--	--	--	--	--	--	--
20...	1410	88	3140	8.2	22.0	--	--	--	560	320	140	51
27...	1355	88	3120	--	20.5	--	--	--	--	--	--	--
JAN												
03...	1010	86	3110	--	21.0	--	--	--	--	--	--	--
10...	1420	64	3090	--	20.5	--	--	--	--	--	--	--
12...	1110	67	3090	7.7	18.0	2	86	360	580	330	140	55
12...	1125	67	--	--	18.0	--	--	--	--	--	--	--
17...	1040	65	3050	--	--	--	--	--	--	--	--	--
24...	0945	69	3090	8.0	21.0	--	--	--	580	340	140	55
31...	1340	73	3000	--	23.0	--	--	--	--	--	--	--
FEB												
07...	1430	58	3260	--	22.0	--	--	--	--	--	--	--
09...	1045	86	3260	7.7	19.5	2	12	3300	610	360	150	57
14...	1110	124	3500	--	21.0	--	--	--	--	--	--	--
22...	1400	113	3520	8.1	23.0	--	--	--	680	420	160	68
28...	1330	88	3270	--	24.0	--	--	--	--	--	--	--
MAR												
07...	1345	112	3590	--	23.0	--	--	--	--	--	--	--
09...	1145	120	3770	7.8	22.0	5	28	96	660	390	160	64
14...	1400	110	3680	--	24.0	--	--	--	--	--	--	--
21...	1130	112	3640	8.0	21.5	--	--	--	670	400	160	65
28...	1340	109	3720	--	24.5	--	--	--	--	--	--	--
APR												
04...	1310	126	3770	--	25.0	--	--	--	--	--	--	--
11...	1345	122	3980	--	24.0	--	--	--	--	--	--	--
13...	1100	133	3950	7.7	23.0	2	400	180	790	510	190	77
18...	1410	135	3840	--	25.0	--	--	--	--	--	--	--
25...	1400	123	4010	8.1	27.0	--	--	--	740	470	180	70
MAY												
02...	1330	94	3890	--	26.0	--	--	--	--	--	--	--
04...	1110	128	3300	7.7	25.5	1	150	140	620	370	150	59
09...	1405	89	3160	--	25.5	--	--	--	--	--	--	--
16...	1425	88	3230	8.0	23.0	--	--	--	600	360	150	54
23...	1455	86	3230	--	23.5	--	--	--	--	--	--	--
31...	1445	82	3240	--	28.0	--	--	--	--	--	--	--
JUN												
06...	1400	73	3200	--	27.5	--	--	--	--	--	--	--
08...	1045	70	3170	8.2	26.0	2	150	1300	590	350	140	58
13...	1355	73	3120	--	26.0	--	--	--	--	--	--	--
20...	0900	90	3610	8.0	23.5	--	--	--	710	450	170	70
27...	1355	90	3400	--	28.5	--	--	--	--	--	--	--
JUL												
05...	1120	97	3590	--	25.5	--	--	--	--	--	--	--
11...	1120	103	3690	--	25.5	--	--	--	--	--	--	--
13...	1040	147	3630	7.8	24.5	2	140	260	690	450	170	65
18...	0820	108	3590	--	24.5	--	--	--	--	--	--	--
25...	1330	117	3730	7.7	27.0	--	--	--	710	460	170	70
AUG												
01...	1145	108	3610	--	25.5	--	--	--	--	--	--	--
08...	1420	94	3790	--	28.5	--	--	--	--	--	--	--
10...	1100	91	3550	8.0	27.5	2	430	380	630	370	160	55
15...	1530	101	3720	--	25.5	--	--	--	--	--	--	--
22...	1520	109	3570	7.8	26.5	--	--	--	660	410	160	64
29...	1400	74	3340	--	27.0	--	--	--	--	--	--	--
SEPT												
06...	1130	72	3300	--	26.0	--	--	--	--	--	--	--
12...	1410	166	1620	--	26.0	--	--	--	--	--	--	--
14...	1000	92	2880	7.7	24.0	20	82200	1800	530	310	130	49
19...	1400	73	3230	--	25.0	--	--	--	--	--	--	--
26...	1400	76	3270	7.8	25.5	--	--	--	610	370	140	63

B Based on non-ideal colony count.

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)
OCT												
04...	--	--	--	--	--	--	--	--	--	--	--	--
06...	440	8.0	6.9	286	0	500	530	1.0	21	1910	1840	2.60
06...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
18...	450	8.0	6.9	290	0	520	510	.9	23	1860	1860	2.53
26...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
01...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
10...	440	7.9	6.9	292	0	500	590	1.0	23	1940	1920	2.64
10...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
22...	430	7.9	6.6	295	0	490	500	1.0	22	1830	1790	2.49
29...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
08...	410	7.6	6.4	242	0	500	500	1.0	22	1840	1750	2.50
08...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
20...	460	8.5	6.4	296	0	470	600	1.0	24	1940	1900	2.64
27...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
12...	450	8.2	6.3	302	0	510	600	.9	25	1970	1940	2.68
12...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	460	8.3	6.7	293	0	520	560	1.0	24	1940	1920	2.64
31...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
07...	--	--	--	--	--	--	--	--	--	--	--	--
09...	470	8.3	6.5	305	0	510	620	.9	25	2020	2000	2.75
14...	--	--	--	--	--	--	--	--	--	--	--	--
22...	510	8.5	7.1	320	0	530	730	.8	25	2150	2190	2.92
28...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
07...	--	--	--	--	--	--	--	--	--	--	--	--
09...	500	8.5	6.9	331	0	510	720	.9	24	2160	2150	2.94
14...	--	--	--	--	--	--	--	--	--	--	--	--
21...	540	9.1	7.2	323	0	510	750	1.0	25	2280	2220	3.10
28...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
04...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
13...	580	9.0	8.0	340	0	580	780	.9	25	2460	2410	3.35
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	600	9.6	7.7	330	0	550	850	1.0	26	2460	2450	3.35
MAY												
02...	--	--	--	--	--	--	--	--	--	--	--	--
04...	480	8.4	7.1	300	0	510	660	1.1	25	2070	2050	2.82
09...	--	--	--	--	--	--	--	--	--	--	--	--
16...	480	8.6	6.8	290	0	490	620	1.0	24	2010	1970	2.73
23...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	--	--	--	--	--	--	--	--	--	--	--	--
08...	470	8.4	6.9	290	0	510	600	1.0	24	2000	1960	2.72
13...	--	--	--	--	--	--	--	--	--	--	--	--
20...	530	8.6	7.5	320	0	530	740	1.0	28	2200	2240	2.99
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
05...	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--
13...	540	8.9	7.0	300	0	520	760	.9	24	2270	2240	3.09
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	550	9.0	7.6	310	0	500	810	.9	25	2290	2290	3.11
AUG												
01...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
10...	510	8.9	7.0	310	0	490	740	.8	22	2240	2140	3.05
15...	--	--	--	--	--	--	--	--	--	--	--	--
22...	490	8.3	7.2	310	0	490	730	.9	26	2220	2120	3.02
29...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
06...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
14...	400	7.6	8.2	260	0	380	580	.9	21	1750	1700	2.38
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	460	8.1	6.4	290	0	490	640	.9	24	2010	1970	2.73

GILA RIVER BASIN

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS-SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJFL- DAHL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS-SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)
OCT									
06...	.03	.94	.87	--	--	.57	1.5	.07	.07
18...	--	--	1.0	--	--	--	--	--	--
NOV									
10...	--	.95	1.6	--	--	.54	1.5	.04	.04
22...	--	--	1.3	--	--	--	--	--	--
DEC									
08...	--	1.1	1.1	--	--	.30	1.4	.06	.04
20...	--	--	1.2	--	--	--	--	--	--
JAN									
12...	--	1.3	1.4	--	--	.23	1.5	.06	.04
24...	--	--	1.4	--	--	--	--	--	--
FEB									
09...	--	.99	1.0	--	--	.46	1.5	.06	.06
22...	--	--	.93	--	--	--	--	--	--
MAR									
09...	--	.98	.81	--	--	.29	1.3	.07	.04
21...	--	--	.99	--	--	--	--	--	--
APR									
13...	--	.82	.83	--	--	.54	1.4	.04	.05
25...	--	--	.96	--	--	--	--	--	--
MAY									
04...	--	1.1	1.1	--	--	.18	1.3	.06	.09
16...	--	--	.92	--	--	--	--	--	--
JUN									
08...	--	1.1	1.2	.13	.55	.68	1.8	.06	.04
20...	--	--	.85	--	--	--	--	--	--
JUL									
13...	--	.68	.68	--	--	.79	1.5	.05	.04
25...	--	--	.75	--	--	--	--	--	--
AUG									
10...	--	.59	--	--	--	.65	1.2	.05	--
SEP									
14...	--	1.1	--	--	--	.71	1.8	.12	.04

DATE	TOTAL ARSENIC (AS) (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	TOTAL BORON (B) (UG/L)	DIS-SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DIS-SOLVED CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	DIS-SOLVED CHRO- MIUM (CR) (UG/L)
OCT								
06...	--	--	--	630	--	--	--	--
18...	--	--	--	640	--	--	--	--
NOV								
10...	10	10	720	650	10	1	0	0
22...	--	--	--	640	--	--	--	--
DEC								
20...	--	--	--	680	--	--	--	--
JAN								
24...	--	--	--	710	--	--	--	--
FEB								
09...	11	6	930	680	10	13	0	0
22...	--	--	--	710	--	--	--	--
MAR								
21...	--	--	--	740	--	--	--	--
APR								
25...	--	--	--	720	--	--	--	--
MAY								
04...	11	10	720	680	<10	0	10	0
16...	--	--	--	670	--	--	--	--
JUN								
20...	--	--	--	710	--	--	--	--
JUL								
25...	--	--	--	720	--	--	--	--
AUG								
10...	13	9	770	710	10	3	0	0
22...	--	--	--	730	--	--	--	--
SEP								
26...	--	--	--	690	--	--	--	--

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

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL COBALT (CO) (UG/L)	DIS- SOLVED COBALT (CO) (UG/L)	TOTAL COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DIS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)
OCT									
06...	--	--	--	--	--	60	--	--	--
18...	--	--	--	--	--	10	--	--	--
NOV									
10...	<50	0	10	2	130	20	<100	3	770
22...	--	--	--	--	--	10	--	--	--
DEC									
20...	--	--	--	--	--	10	--	--	--
JAN									
24...	--	--	--	--	--	20	--	--	--
FEB									
09...	<50	1	<10	2	290	0	<100	74	980
22...	--	--	--	--	--	10	--	--	--
MAR									
21...	--	--	--	--	--	10	--	--	--
APR									
25...	--	--	--	--	--	20	--	--	--
MAY									
04...	<50	0	10	2	260	40	<100	0	820
16...	--	--	--	--	--	10	--	--	--
JUN									
20...	--	--	--	--	--	10	--	--	--
JUL									
25...	--	--	--	--	--	0	--	--	--
AUG									
10...	<50	1	10	3	250	20	<100	18	1000
22...	--	--	--	--	--	10	--	--	--
SEP									
26...	--	--	--	--	--	0	--	--	--

DATE	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DIS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
OCT								
06...	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--
NOV								
10...	660	.0	.0	12	12	10	20	1.8
22...	--	--	--	--	--	--	--	--
DEC								
20...	--	--	--	--	--	--	--	--
JAN								
24...	--	--	--	--	--	--	--	--
FEB								
09...	940	.3	.0	10	10	20	0	1.8
22...	--	--	--	--	--	--	--	--
MAR								
21...	--	--	--	--	--	--	--	--
APR								
25...	--	--	--	--	--	--	--	--
MAY								
04...	640	.0	.0	10	9	20	10	1.9
16...	--	--	--	--	--	--	--	--
JUN								
20...	--	--	--	--	--	--	--	--
JUL								
25...	--	--	--	--	--	--	--	--
AUG								
10...	750	.0	.0	45	8	40	10	1.9
22...	--	--	--	--	--	--	--	--
SEP								
26...	--	--	--	--	--	--	--	--

< 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 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SUS- PENDE SEDIM- MENT (MG/L)	SUS- PENDE SEDIM- MENT DIS- CHARGE (T/DAY)	SUS. SED. SIEVE DIAM. % FINER THAN .062 MM
OCT					
06...	1035	52	3	.42	56
NOV					
10...	1035	53	6	.86	34
DEC					
08...	1035	84	4	.91	49
JAN					
12...	1125	67	4	.72	54
FEB					
09...	1045	86	6	1.4	57
MAR					
09...	1145	120	21	6.8	80
APR					
13...	1100	133	11	4.0	55
MAY					
04...	1110	128	8	2.8	62
JUN					
08...	1045	70	9	1.7	51
JUL					
13...	1040	147	10	4.0	49
AUG					
10...	1100	91	16	3.9	37
SEP					
14...	1000	92	72	18	81

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	CHLOR-A PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	CHLOR-B PERI- PHYTON CHROMO- SPECT- METRIC (MG/M2)	PERI- PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI- PHYTON BIOMASS ASH WEIGHT G/SQ M	TOTAL PHYTO- PLANK- TON (CELLS PER ML)
OCT							
06...	1010	--	--	--	--	--	310
NOV							
10...	1020	--	--	--	22.7	16.9	390
DEC							
08...	1035	--	--	--	--	--	97
JAN							
12...	1110	--	--	--	--	--	450
FEB							
09...	1045	1052	4.46	3.04	--	--	590
MAR							
09...	1145	--	--	--	--	--	360
APR							
13...	1100	--	--	--	--	--	510
MAY							
04...	1110	539	--	--	--	--	500
JUN							
08...	1045	--	--	--	--	--	1500
JUL							
13...	1040	--	--	--	--	--	2800
AUG							
10...	1100	318	--	--	--	--	760
SEP							
14...	1000	--	--	--	--	--	1100

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.
PHYTOPLANKTON ANALYSES, OCTOBER 1976 TO SEPTEMBER 1977

DATE TIME	OCT 6,76 1010	NOV 10,76 1020	DEC 8,76 1035	JAN 12,77 1110	FEB 9,77 1045	MAR 9,77 1145				
TOTAL CELLS/ML	310	390	97	450	590	360				
DIVERSITY: DIVISION	0.6	0.5	0.6	0.9	0.0	0.0				
..CLASS	0.7	0.5	0.6	0.9	0.0	0.0				
...ORDER	1.2	0.8	1.5	1.3	1.0	0.4				
...FAMILY	2.3	2.5	2.7	1.8	2.0	2.4				
....GENUS	2.5	2.5	2.8	1.8	2.5	2.6				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...COELASTRACEAE										
....COELASTRUM	--	-	--	-	--	-	--	-	--	-
....DOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	4	4	4	1	--	-
....CHODATELLA	--	-	--	-	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
....SCENEDESMUS	--	-	27	7	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CARTERIA	--	-	--	-	--	-	--	-	--	-
....CHLAMYDOMONAS	--	-	--	-	2	2	--	-	--	-
CHRYSDOPHYTA										
..RACILLARIOPHYCEAE										
...PFENNALES										
...NAVICULACEAE										
....ENTOMONEIS	--	-	--	-	--	-	* 0	--	--	-
...CENTRALFS										
...COSCINODISCACEAE										
...CYCLOTELLA	5	2	27	7	29#	30	17	4	230#	39
...MELOSTIRA	24	8	--	-	--	-	--	-	23	4
...RHIZOSOLENACEAE										
....RHIZOSOLENIA	--	-	--	-	* 0	--	17	4	--	-
...PFENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	16	4	9	9	21	5	--	-
....COCCONEIS	--	-	* 0	--	--	-	* 0	--	--	-
...CYMBELLACEAE										
....AMPHORA	19	6	91#	23	23#	23	21	5	52	9
....CYMBELLA	--	-	--	-	--	-	--	-	12	2
....EPITHEMIA	--	-	--	-	--	-	--	-	12	2
...EUNOTIACEAE										
....EUNOTIA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
...SYNEDRA	10	3	5	1	6	6	* 0	--	--	-
...GOMPHONEMACEAE										
....GOMPHONEMA	5	2	11	3	* 0	--	4	1	29	5
...NAVICULACEAE										
....CALONEIS	10	3	--	-	--	-	4	1	12	2
....FRUSTULTA	--	-	--	-	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	2	2	--	-	--	-
....NAVICULA	150#	50	150#	40	12	13	13	3	140#	23
....NEIDIUM	--	-	--	-	--	-	--	-	--	-
....PINNULARIA	--	-	--	-	* 0	--	--	-	12	2
...STAURONEIS	--	-	--	-	--	-	--	-	--	-
...NITZSCHACEAE										
....DENTICULA	--	-	--	-	--	-	--	-	--	-
....NITZSCHIA	38	13	48	12	6	6	13	3	75	13
...SURIPELLACEAE										
....SURIPELLA	--	-	5	1	--	-	--	-	--	-
...NAVICULACEAE										
....PLAGIOTROPIS	--	-	--	-	--	-	* 0	--	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
....ANACYSTIS	--	-	--	-	--	-	17	4	--	-
...HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	--	-	320#	71	--	-

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.
PHYTOPLANKTON ANALYSES, OCTOBER 1976 TO SEPTEMBER 1977

DATE TIME	OCT 6,76 1010		NOV 10,76 1020		DEC 8,76 1035		JAN 12,77 1110		FEB 9,77 1045		MAR 9,77 1145	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENUIDS)												
..CRYPTOPHYCEAE												
...CRYPTOMONIDAE												
...CRYPTOCHRYSIDACEAE												
...CHROMONAS	5	2	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
...CRYPTOMONAS	14	5	--	-	--	-	--	-	--	-	--	-
..EUGLENALES												
...EUGLENA	--	-	--	-	4	4	--	-	--	-	--	-
...LEPOTOCYCLIS	24	8	--	-	--	-	--	-	--	-	--	-
...TRACHELOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...PERIDINIALES												
...GLENODINIACEAE												
...GLENODINIUM	--	-	5	1	--	-	--	-	--	-	--	-

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

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

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, AZ--Continued

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

09520700 GILA RIVER NEAR MOUTH, NEAR YUMA, ARIZ.
PHYTOPLANKTON ANALYSES, OCTOBER 1976 TO SEPTEMBER 1977

DATE TIME	APR 13,77 1100	MAY 4,77 1110	JUN 8,77 1045	JUL 13,77 1040	AUG 10,77 1100	SEP 14,77 1000				
TOTAL CELLS/ML	510	560	1500	2800	760	1100				
DIVERSITY: DIVISION	0.8	1.1	0.5	0.9	1.5	1.5				
..CLASS	0.8	1.1	0.5	0.9	1.5	1.5				
..ORDER	1.5	1.5	0.9	0.9	1.7	2.1				
...FAMILY	3.0	2.6	2.5	1.4	3.0	2.7				
....GENUS	3.1	2.9	2.8	1.5	3.2	2.8				
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...COELASTRACEAE										
...COELASTRUM	--	-	--	-	--	-	150#	20	--	-
...OCYSTACEAE										
...ANKISTRODESMUS	--	-	--	-	--	-	--	-	--	-
...CHODATELLA	--	-	--	-	--	-	--	-	8	1
...TETRAEDRON	--	-	--	-	--	-	--	-	8	1
...SCENEDESMAEAE										
...SCENEDESMUS	--	-	14	3	57	4	46	2	31	4
...VOLVOCALES										
...CHLAMYDOMONADACEAE										
...CARTERIA	4	1	--	-	--	-	--	-	15	2
...CHLAMYDOMONAS	4	1	--	-	38	3	--	-	8	1
CHRYSOPHYTA										
..RACILLANTOPHYCEAE										
...PENNIALES										
...NAVICULACEAE										
...ENTOMONFIS	4	1	--	-	--	-	69	2	23	3
..CENTRALES										
...COSCINODISCEAEAE										
...CYCLOTELLA	100#	21	48	10	67	4	23	1	15	2
...MELOSIRA	--	-	--	-	--	-	--	-	--	-
...RHIZOSOLENACEAE										
...RHIZOSOLENIA	--	-	--	-	--	-	--	-	--	-
...PENNIALES										
...ACHNANTHACEAE										
...ACHNANTHES	12	2	3	1	10	1	--	-	--	-
...COCONEIS	51	10	14	3	--	-	46	2	54	7
...CYMBELLACEAE										
...AMPHORA	82#	16	72	14	340#	23	140	5	210#	27
...CYMBELLA	--	-	3	1	38	3	23	1	15	2
...EPITHEMIA	--	-	10	2	--	-	--	-	--	-
...EUNOTIACEAE										
...EUNOTIA	--	-	--	-	10	1	--	-	--	-
...FRAGILARIACEAE										
...FRAGILARIA	--	-	--	-	--	-	23	1	--	-
...SYNEDRA	39	8	--	-	--	-	23	1	8	1
...GOMPHONEMACEAE										
...GOMPHONEMA	23	5	17	3	67	4	46	2	--	-
...NAVICULACEAE										
...CALONEIS	--	-	3	1	10	1	*	0	--	-
...FRUSTULIA	--	-	3	1	--	-	--	-	--	-
...GYROSTIGMA	--	-	--	-	--	-	--	-	--	-
...NAVICULA	62	12	82#	16	240#	16	140	5	61	8
...NEIDIUM	--	-	--	-	10	1	--	-	--	-
...PINNULARIA	--	-	--	-	19	1	--	-	--	-
...STAURONEIS	--	-	3	1	--	-	--	-	--	-
...NITZSCHIAEAE										
...DENTICULA	--	-	--	-	10	1	--	-	--	-
...NITZSCHIA	39	8	68	14	540#	36	34	1	69	9
...SURIARELLACEAE										
...SURIARELLA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
...PLAGIOTROPIS	--	-	3	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCOCCOCCALES										
...CHROCOCCOCCAEAE										
...ANACYSTIS	--	-	--	-	29	2	--	-	61	8
...HORMOGONALES										
...OSCILLATORIACEAE										
...OSCILLATORIA	78#	15	160#	31	--	-	2100#	77	--	-
									430#	41

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	APR 13, 77 1100		MAY 4, 77 1110		JUN 8, 77 1045		JUL 13, 77 1040		AUG 10, 77 1100		SEP 14, 77 1000	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)												
..CRYPTOPHYCEAE												
...CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROMONAS	--	-	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE												
...CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE												
...EUGLENALES												
....EUGLENACEAE												
....EUGLENA	4	1	--	-	10	1	--	-	8	1	25	2
....LEPDOCYNCLIS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	--	-	--	-	31	4	49	5
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 1%

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

COLORADO RIVER MAIN STEM

423

09521100 COLORADO RIVER BELOW YUMA MAIN CANAL
WASTEWAY, AT YUMA, AZ

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.

DRAINAGE AREA.--246,500 mi² (638,400 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).

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.

GAGE.--Water-stage recorder. Datum of gage is 101.99 ft (31.087 m) above mean sea level.

REMARKS.--Records excellent except those for August which are good. 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.

AVERAGE DISCHARGE.--14 years, 849 ft³/s (24.04 m³/s), 615,100 acre-ft/yr (758 hm³/yr).

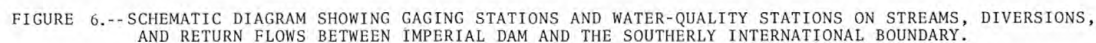
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,310 ft³/s (150 m³/s) Aug. 19, 1977 (gage height, 17.28 ft or 5.267 m); minimum daily, 260 ft³/s (7.36 m³/s) Jan. 17, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height since at least 1878, 34.0 ft (10.4 m) Jan. 22, 1916 (discharge, 250,000 ft³/s or 7,080 m³/s), at former gaging station at Yuma.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,310 ft³/s (150 m³/s) Aug. 19, gage height 17.28 ft (5.267 m); minimum daily, 446 ft³/s (12.6 m³/s) Feb. 25.

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	974	827	1290	531	1180	495	605	775	1170	547	615	684
2	850	812	1300	517	1170	501	579	733	1200	667	603	1380
3	796	823	1290	500	1170	485	574	590	1190	556	612	1340
4	646	773	1270	661	1230	491	586	554	1340	558	569	1320
5	654	785	1200	1380	1220	730	567	491	1310	546	565	1330
6	713	785	485	1370	1210	705	572	609	1340	547	545	1340
7	667	763	480	1330	1290	678	627	1550	1460	571	550	1250
8	698	767	482	1280	1290	548	871	1400	1440	576	554	1250
9	710	748	479	1250	1340	520	765	1380	1470	538	561	1250
10	745	775	473	1060	1330	496	647	1300	1520	547	566	1220
11	948	778	484	1020	1400	550	615	1290	1470	543	660	1430
12	910	800	481	1020	1300	590	606	1320	1440	547	682	1750
13	906	763	484	1040	616	583	615	1320	631	585	737	2090
14	900	893	474	1040	575	584	617	1310	552	830	598	1510
15	917	1070	481	1010	550	584	610	1420	548	804	673	1120
16	967	857	480	1010	536	584	596	1500	518	698	2010	1160
17	955	831	485	989	510	565	600	1260	504	608	3010	1150
18	906	895	488	978	511	549	585	1240	527	605	4090	1160
19	967	951	484	991	505	528	597	1150	760	607	5160	1160
20	934	1020	484	978	500	543	615	1180	682	577	3890	1160
21	954	1050	487	993	502	548	609	1240	540	578	1740	1130
22	938	1260	497	1030	514	551	883	1210	516	580	855	1140
23	961	1210	496	1010	521	551	786	1230	507	556	733	1140
24	927	1310	527	1010	508	534	614	1230	497	562	666	1130
25	919	1420	736	1010	446	534	602	1240	535	552	638	1140
26	929	1410	730	993	452	548	584	1220	604	555	616	1120
27	923	882	620	1050	449	568	593	1190	584	564	620	1130
28	935	514	485	1060	459	577	594	1190	558	661	602	1160
29	936	498	478	1040	---	574	590	1200	548	891	580	1130
30	978	586	492	1050	---	575	567	1220	534	725	580	1010
31	1080	---	548	1130	---	577	---	1250	---	634	558	---
TOTAL	27243	26856	19670	31331	23284	17446	18871	35792	26495	18915	35438	37284
MEAN	879	895	635	1011	832	563	629	1155	883	610	1143	1243
MAX	1080	1420	1300	1380	1400	730	883	1550	1520	891	5160	2090
MIN	646	498	473	500	446	485	567	491	497	538	545	684
AC-FT	54040	53270	39020	62150	46180	34600	37430	70990	52550	37520	70290	73950
CAL YR 1976 TOTAL	328975				2580		392	AC-FT	652500			
WTR YR 1977 TOTAL	318625				5160		446	AC-FT	632000			



COLORADO RIVER MAIN STEM

425

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY
ABOVE MORELOS DAM, NEAR ANDRADE, CA

LOCATION.--Lat 32°43'07", long 114°43'05", in NE4SE4 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 at mean sea level. 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, 114.24 ft (34.820 m) Jan. 28, 1958; 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, 12,000 ft³/s (340 m³/s) Aug. 18, elevation, 114.34 ft (34.851 m); minimum discharge, 752 ft³/s (21.3 m³/s) Oct. 7; minimum elevation, 102.33 ft (31.190 m) Oct. 8.

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	1050	939	1480	2560	1380	2380	3360	2610	1340	2310	2850	1580
2	995	915	1530	2310	1370	2380	3510	2290	1340	2300	2880	1420
3	965	945	1510	2060	1350	2380	3480	2030	1340	2470	2770	1460
4	797	904	1500	1790	1410	2470	3650	1820	1430	2460	2760	1420
5	797	915	1470	1460	1440	2490	3650	1670	1420	2460	2680	1440
6	825	955	1720	1490	1400	2490	3740	1610	1450	2540	2660	1450
7	799	945	1750	1460	1470	2500	3750	1620	1560	2540	2630	1380
8	797	965	1910	1410	1490	2620	3750	1520	1580	2540	2600	1360
9	806	935	2090	1390	1560	2620	3830	1520	1580	2520	2590	1390
10	835	955	2110	1210	1520	2620	3810	1450	1660	2550	2580	1360
11	1020	945	2120	1130	1580	2630	3890	1440	1660	2550	2590	1480
12	1020	955	2270	1130	1580	2620	3890	1440	1650	2620	2550	1740
13	985	935	2470	1170	1750	2680	3890	1440	1850	2640	2560	2110
14	1030	975	2480	1160	1800	2770	3890	1460	1870	2630	2540	1740
15	1040	1170	2480	1130	1840	2770	3870	1470	1850	2670	2760	1250
16	1110	1020	2480	1120	1890	2810	3890	1660	1920	2680	9510	1300
17	1110	995	2630	1110	1880	2800	3840	1350	1920	2680	9530	1340
18	1060	1040	2620	1100	1970	2780	3860	1400	1970	2670	11300	1330
19	1120	1090	2610	1120	1980	2780	3870	1310	1980	2690	7910	1340
20	1110	1200	2700	1110	1940	2860	3870	1340	2030	2710	5410	1340
21	1110	1200	2910	1110	2160	2860	3890	1380	2060	2710	3470	1320
22	1130	1420	2890	1200	2140	2860	3760	1380	2070	2680	2200	1330
23	1110	1370	2800	1170	2150	3010	3720	1390	2110	2680	2150	1320
24	1110	1470	2800	1180	2140	3020	3680	1400	2160	2690	2150	1320
25	1090	1620	2800	1190	2160	3030	3660	1380	2120	2680	2200	1330
26	1100	1600	2780	1170	2170	3050	3560	1360	2150	2720	2230	1300
27	1100	1720	2800	1230	2170	3100	3480	1350	2150	2750	2240	1330
28	1110	1730	2810	1250	2130	3120	3320	1340	2200	2750	2230	1350
29	1080	1710	2840	1220	---	3130	3110	1340	2230	2730	2250	1320
30	1070	1790	2820	1220	---	3130	2870	1360	2160	2710	2110	1260
31	1170	---	2850	1300	---	3220	---	1390	---	2720	1870	---
TOTAL	31451	35328	73030	41660	49820	85980	110340	47520	54810	81050	109760	42410
MEAN	1015	1178	2356	1344	1779	2774	3678	1533	1827	2615	3541	1414
MAX	1170	1790	2910	2560	2170	3220	3890	2610	2230	2750	11300	2110
MIN	797	904	1470	1100	1350	2380	2870	1310	1340	2300	1870	1250
AC-FT	62380	70070	144900	82630	98820	170500	218900	94260	108700	160800	217700	84120

CAL YR 1976	TOTAL	730797	MEAN	2091	MAX	7880	MTN	797	AC-FT	1450000
WTR YR 1977	TOTAL	763159	MEAN	2091	MAX	11300	MTN	797	AC-FT	1514000

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	DIS- SOLVED OXYGEN (MG/L)	CHEM- ICAL OXYGEN DEMAND (HIGH LEVFL) (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	FECAL STREP- TOCOCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)
OCT											
04...	0845	800	1820	8.1	--	27	--	--	--	--	450
05...	0830	797	1820	7.9	22.5	--	6.6	12	460	--	--
12...	0830	1050	1630	8.1	--	30	--	--	--	--	415
18...	0830	1050	1660	8.1	--	13	--	--	--	--	425
19...	0830	1120	--	--	--	--	--	18	--	--	--
26...	0830	1120	1670	8.1	--	10	--	--	--	--	425
NOV											
01...	0830	950	1740	8.1	22.0	10	--	--	--	--	435
08...	0830	943	1770	8.1	19.0	15	--	--	--	--	440
09...	0855	935	1770	7.9	19.0	--	7.9	16	3900	--	--
09...	0930	935	--	--	19.0	--	--	--	--	--	--
15...	0830	1310	1580	8.1	18.0	15	--	--	--	--	410
22...	0835	1460	1760	8.2	17.0	20	--	26	--	--	440
29...	0835	1750	1730	8.1	14.0	4.0	--	--	--	--	430
DEC											
06...	0700	1730	1520	8.1	--	5.0	--	--	--	--	400
07...	0730	1720	1600	7.7	13.0	--	8.9	26	813	97	--
13...	0830	2490	1520	8.1	--	10	--	--	--	--	400
20...	0830	2640	1540	8.1	--	10	--	--	--	--	400
20...	0840	2640	--	--	12.5	--	--	16	--	--	--
27...	0830	2800	1710	8.1	9.5	3.0	--	--	--	--	430
JAN											
03...	0840	2020	1630	8.0	14.0	4.0	--	--	--	--	410
10...	0830	1220	1670	8.0	--	5.0	--	--	--	--	425
11...	0840	1130	1750	7.9	11.0	--	8.8	29	70	150	--
17...	0830	1100	1710	8.1	12.0	7.0	--	--	--	--	430
24...	0830	1140	1670	8.1	--	7.0	--	--	--	--	425
25...	0900	1220	--	--	15.0	--	--	16	--	--	--
31...	0830	1270	1650	8.0	13.5	9.0	--	--	--	--	415
FEB											
07...	0840	1490	1600	8.0	13.5	7.0	--	--	--	--	400
08...	0840	1470	1600	8.0	13.0	--	9.3	45	67	180	--
08...	0850	1470	--	--	13.0	--	--	--	--	--	--
14...	0830	1800	1620	8.1	15.5	15	--	--	--	--	415
22...	0840	2190	--	--	16.5	--	--	3	--	--	--
22...	0845	2190	1570	8.1	17.0	8.0	--	--	--	--	405
28...	0830	2200	1470	8.1	--	8.0	--	--	--	--	390
MAR											
07...	0845	2490	1580	8.1	15.0	9.0	--	--	--	--	405
08...	0900	2620	1450	8.2	15.0	--	9.0	23	70	87	--
14...	0845	2830	1460	8.1	15.0	30	--	--	--	--	390
21...	0840	2850	1440	8.1	18.5	10	--	--	--	--	385
22...	0830	2860	--	--	--	--	--	36	--	--	--
28...	0830	3130	1420	8.2	15.5	30	--	--	--	--	385
APR											
04...	0830	3690	1420	8.1	16.5	30	--	--	--	--	385
11...	0845	3890	1400	8.2	19.5	8.0	--	--	--	--	380
12...	0845	3870	1400	7.9	19.0	--	7.8	28	77	100	--
18...	0830	3840	1390	8.3	22.0	25	--	--	--	--	380
25...	0840	3680	1380	8.3	21.5	10	--	16	--	--	380
MAY											
02...	0830	2210	1470	8.3	23.5	20	--	--	--	--	390
03...	0920	2070	1470	7.8	22.0	--	7.4	44	15	54	--
03...	0925	2070	--	--	22.0	--	--	--	--	--	--
09...	0830	1540	1520	8.3	--	4.0	--	--	--	--	400
16...	0830	1760	1510	8.2	20.5	8.0	--	--	--	--	405
23...	1050	1390	1630	8.2	23.5	20	--	3	--	--	415
31...	0810	1390	1550	8.1	24.0	20	--	--	--	--	405

COLORADO RIVER MAIN STEM

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ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

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, 1,860 micromhos Nov. 20; minimum, 1,220 micromhos Aug. 17.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	NON- CAR- BONATE HARD- NESS (MG/L)	TOTAL CAL- CIUM (CA) (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	TOTAL MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	TOTAL SODIUM (NA) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	TOTAL TAS- SIUM (K) (MG/L)	DIS- SOLVED PU- TAS- SIUM (K) (MG/L)	RICAR- BONATE (HCO3) (MG/L)
OCT											
04...	256	--	121	--	36	--	220	4.5	--	6.6	236
05...	--	--	--	--	--	--	--	--	--	--	--
12...	241	--	113	--	32	--	190	4.1	--	6.4	212
18...	248	--	114	--	34	--	195	4.1	--	6.2	216
19...	--	--	--	--	--	--	--	--	--	--	--
26...	250	--	114	--	34	--	195	4.1	--	6.2	214
NOV											
01...	253	--	118	--	34	--	210	4.4	--	5.9	222
08...	253	--	118	--	35	--	215	4.5	--	6.4	228
09...	--	110	--	38	--	210	--	--	5.1	5.9	--
09...	--	--	--	--	--	--	--	--	--	--	--
15...	242	--	108	--	34	--	185	4.0	--	6.2	204
22...	256	--	118	--	35	--	215	4.5	--	5.8	224
29...	250	--	114	--	35	--	210	4.4	--	6.3	220
DEC											
06...	238	--	110	--	31	--	175	3.8	--	6.0	198
07...	--	--	--	--	--	--	--	--	--	--	--
13...	238	--	107	--	32	--	175	3.8	--	6.0	198
20...	230	--	111	--	30	--	180	3.9	--	6.1	208
20...	--	--	--	--	--	--	--	--	--	--	--
27...	253	--	118	--	33	--	205	4.3	--	6.3	216
JAN											
03...	240	--	112	--	32	--	190	4.1	--	5.8	208
10...	251	--	114	--	34	--	195	4.1	--	5.8	212
11...	--	--	--	--	--	--	--	--	--	--	--
17...	253	--	116	--	34	--	205	4.3	--	6.2	216
24...	251	--	111	--	36	--	195	4.1	--	6.2	212
25...	--	--	--	--	--	--	--	--	--	--	--
31...	243	--	107	--	36	--	195	4.2	--	5.6	210
FEB											
07...	236	--	106	--	33	--	190	4.1	--	5.6	200
08...	--	100	--	36	--	190	--	--	4.7	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
14...	248	--	110	--	34	--	190	4.1	--	6.0	204
22...	--	--	--	--	--	--	--	--	--	--	--
22...	241	--	105	--	35	--	185	4.0	--	6.0	200
28...	232	--	106	--	31	--	165	3.6	--	5.8	192
MAR											
07...	241	--	105	--	35	--	185	4.0	--	6.0	200
08...	--	--	--	--	--	--	--	--	--	--	--
14...	232	--	104	--	32	--	165	3.6	--	5.6	192
21...	228	--	102	--	32	--	160	3.5	--	5.6	192
22...	--	--	--	--	--	--	--	--	--	--	--
28...	231	--	103	--	31	--	155	3.4	--	5.6	188
APR											
04...	231	--	101	--	32	--	155	3.4	--	5.6	188
11...	228	--	100	--	32	--	155	3.5	--	5.6	186
12...	--	--	--	--	--	--	--	--	--	--	--
18...	224	--	99	--	32	--	150	3.4	--	5.6	190
25...	226	--	98	--	33	--	150	3.3	--	5.4	188
MAY											
02...	228	--	100	--	34	--	165	3.6	--	6.0	198
03...	--	100	--	33	--	160	--	--	5.2	5.3	--
03...	--	--	--	--	--	--	--	--	--	--	--
09...	234	--	103	--	35	--	175	3.8	--	5.8	202
16...	240	--	102	--	37	--	170	3.7	--	5.4	202
23...	240	--	109	--	35	--	190	4.1	--	5.6	214
31...	236	--	105	--	35	--	180	3.9	--	5.6	206

COLORADO RIVER MAIN STEM

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ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	DIS-SOLVED OXYGEN (MG/L)	CHEMICAL OXYGEN DEMAND (HIGH LFVFL) (MG/L)	FECAL COLIFORM (COL./100 ML)	FFCAL TOCOCCT KF AGAR (COL. PER 100 ML)	HARDNESS (CA, MG) (MG/L)
JUN											
06...	0830	1470	1550	8.2	26.0	7.0	--	--	--	--	405
07...	0830	1540	1540	8.0	26.0	--	7.3	11	200	180	--
13...	0830	1770	1530	8.1	25.5	6.0	--	--	--	--	405
20...	0830	2060	1560	8.2	--	3.0	--	--	--	--	405
27...	0835	2150	1480	8.0	26.5	9.0	--	15	--	--	390
JUL											
05...	0810	2450	1420	8.0	28.0	5.0	--	--	--	--	385
11...	0820	2500	1420	8.0	28.0	9.0	--	--	--	--	390
12...	0840	2600	1400	8.0	27.5	--	6.9	0	57	48	--
18...	0830	2680	1410	8.0	28.5	7.0	--	--	--	--	380
25...	0830	2680	1440	7.9	28.5	10	--	0	--	--	390
AUG											
01...	0830	2860	1380	8.0	--	4.0	--	--	--	--	370
08...	0830	2590	1380	7.9	--	3.0	--	--	--	--	370
09...	0900	2580	1300	7.8	28.5	--	6.5	15	100	38	--
09...	0910	2580	--	--	28.5	--	--	--	--	--	--
15...	0830	2490	1370	7.9	--	6.0	--	--	--	--	370
22...	1030	2100	1660	8.0	--	8.0	--	--	--	--	430
23...	0830	2160	--	--	29.5	--	--	14	--	--	--
29...	0850	2210	1610	8.0	29.0	6.0	--	--	--	--	420
SEP											
06...	0830	1500	1500	7.9	--	5.0	--	--	--	--	395
12...	0830	1660	1300	7.8	--	120	--	--	--	--	330
13...	0835	2120	1290	7.9	27.5	--	5.1	25	8600	960	--
19...	0835	1390	1620	7.9	24.0	23	--	--	--	--	420
26...	0835	1320	1630	7.9	25.5	8.0	--	--	--	--	420
27...	0845	1340	--	--	24.5	--	--	18	--	--	--
DATE	NON-CARBONATE HARDNESS (MG/L)	TOTAL CALCIUM (CA) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG/L)	DIS-SOLVED MAGNESIUM (MG/L)	TOTAL SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	TOTAL POTASSIUM (K) (MG/L)	DIS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)
JUN											
06...	240	--	106	--	34	--	180	3.9	--	5.6	202
07...	--	--	--	--	--	--	--	--	--	--	--
13...	241	--	102	--	37	--	175	3.8	--	5.8	200
20...	240	--	107	--	34	--	180	3.9	--	5.6	202
27...	230	--	100	--	34	--	170	3.7	--	5.4	192
JUL											
05...	236	--	100	--	33	--	155	3.4	--	5.4	182
11...	239	--	99	--	35	--	155	3.4	--	5.6	184
12...	--	--	--	--	--	--	--	--	--	--	--
18...	229	--	98	--	33	--	155	3.5	--	5.8	184
25...	232	--	100	--	34	--	160	3.5	--	5.9	192
AUG											
01...	219	--	98	--	31	--	155	3.5	--	5.4	184
08...	219	--	98	--	31	--	155	3.5	--	5.5	184
09...	--	95	--	34	--	160	--	--	5.0	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
15...	222	--	96	--	32	--	150	3.4	--	5.6	180
22...	248	--	109	--	38	--	195	4.1	--	6.6	222
23...	--	--	--	--	--	--	--	--	--	--	--
29...	250	--	109	--	36	--	185	3.9	--	5.8	208
SEP											
06...	236	--	101	--	35	--	170	3.7	--	5.5	194
12...	188	--	91	--	25	--	145	3.5	--	7.4	174
13...	--	--	--	--	--	--	--	--	--	--	--
19...	248	--	109	--	36	--	190	4.0	--	5.5	210
26...	248	--	106	--	38	--	190	4.0	--	5.7	210
27...	--	--	--	--	--	--	--	--	--	--	--

B Based on non-ideal colony count.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLORIDE (CL) (MG/L)	DTS- SOLVED FLUORIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED (RESIST- DUE AT 180 C) (MG/L)	TOTAL FILTRABLE RESIDUE (MG/L)	DTS- SOLVED SULFIDS (SUM OF CONSTITUENTS) (MG/L)	DTS- SOLVED SULFIDS (TUNS PER AC-FT)	TOTAL NON- FILTRABLE RESIDUE (MG/L)
OCT										
04...	0	400	232	.6	15	1170	--	1150	1.59	--
05...	--	--	--	--	--	--	--	--	--	41
12...	0	380	190	.6	13	1040	--	1030	1.41	--
18...	0	385	195	.6	12	1060	--	1050	1.44	--
19...	--	--	--	--	--	--	--	--	--	26
26...	0	390	198	.5	12	1060	--	1060	1.44	--
NOV										
01...	0	400	212	.6	12	1120	--	1100	1.52	--
08...	0	405	218	.5	14	1130	--	1120	1.54	--
09...	--	--	--	--	--	--	1000	--	--	30
09...	--	--	--	--	--	--	--	--	--	--
15...	0	380	178	.4	12	1000	--	1000	1.36	--
22...	0	405	215	.5	13	1130	--	1120	1.54	33
29...	0	400	210	.6	12	1110	--	1100	1.51	--
DEC										
06...	0	360	172	.5	10	966	--	964	1.31	--
07...	--	--	--	--	--	--	--	--	--	16
13...	0	360	172	.6	11	1020	--	964	1.39	--
20...	0	365	172	.5	11	980	--	979	1.33	--
20...	--	--	--	--	--	--	--	--	--	25
27...	0	395	205	.6	12	1090	--	1080	1.48	--
JAN										
03...	0	380	190	.6	12	1030	--	1030	1.40	--
10...	0	390	198	.5	13	1070	--	1060	1.46	--
11...	--	--	--	--	--	--	--	--	--	19
17...	0	395	205	.6	12	1080	--	1080	1.47	--
24...	0	390	198	.6	13	1060	--	1060	1.44	--
25...	--	--	--	--	--	--	--	--	--	18
31...	0	385	192	.5	11	1050	--	1040	1.43	--
FEB										
07...	0	370	190	.5	10	1000	--	1010	1.36	--
08...	--	--	--	--	--	--	--	--	--	15
08...	--	--	--	--	--	--	--	--	--	--
14...	0	375	195	.5	11	1030	--	1020	1.40	--
22...	--	--	--	--	--	--	--	--	--	42
22...	0	370	185	.4	10	996	--	996	1.35	--
28...	0	360	160	.5	10	942	--	934	1.28	--
MAR										
07...	0	370	185	.5	10	1000	--	997	1.36	--
08...	--	--	--	--	--	--	--	--	--	25
14...	0	355	158	.5	9.8	940	--	926	1.28	--
21...	0	350	155	.5	9.5	916	--	911	1.25	--
22...	--	--	--	--	--	--	--	--	--	28
28...	0	350	150	.5	9.5	890	--	898	1.21	--
APR										
04...	0	345	152	.6	9.6	894	--	895	1.22	--
11...	0	345	148	.5	8.0	888	--	887	1.21	--
12...	--	--	--	--	--	--	--	--	--	48
18...	0	340	145	.5	9.5	878	--	876	1.19	--
25...	0	340	142	.5	8.5	872	--	871	1.19	32
MAY										
02...	0	355	160	.6	9.2	950	--	929	1.29	--
03...	--	--	--	--	--	--	970	--	--	25
03...	--	--	--	--	--	--	--	--	--	--
09...	0	360	172	.6	7.9	966	--	960	1.31	--
16...	0	360	168	.6	8.1	968	--	952	1.32	--
23...	0	375	192	.7	12	1040	--	1030	1.41	39
31...	0	365	178	.7	10	986	--	981	1.34	--
JUN										
06...	0	365	178	.5	10	982	--	980	1.34	--
07...	--	--	--	--	--	--	--	--	--	30
13...	0	360	175	.5	10	968	--	965	1.32	--
20...	0	365	180	.5	11	986	--	984	1.34	--
27...	0	360	162	.5	9.2	934	--	937	1.27	26
JUL										
05...	0	350	152	.5	9.0	898	--	896	1.22	--
11...	0	345	155	.5	8.8	894	--	896	1.22	--
12...	--	--	--	--	--	--	--	--	--	27
18...	0	345	152	.6	8.9	918	--	890	1.25	--
25...	0	345	160	.5	10	928	--	911	1.26	20
AUG										
01...	0	335	148	.5	10	872	--	874	1.19	--
08...	0	335	148	.5	10	872	--	875	1.19	--
09...	--	--	--	--	--	--	--	--	--	23
09...	--	--	--	--	--	--	--	--	--	--
15...	0	335	145	.6	9.2	866	--	863	1.18	--
22...	0	385	195	.6	13	1050	--	1050	1.43	--
23...	--	--	--	--	--	--	--	--	--	17
29...	0	380	185	.6	12	1040	--	1020	1.41	--
SEP										
06...	0	355	170	.5	10	948	--	944	1.29	--
12...	0	270	158	.5	10	794	--	797	1.08	--
13...	--	--	--	--	--	--	--	--	--	84
19...	0	380	190	.5	12	1030	--	1030	1.40	--
26...	0	380	192	.6	12	1030	--	1030	1.40	--
27...	--	--	--	--	--	--	--	--	--	3

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ORGANIC NITRO- GEN (N) (MG/L)	TOTAL KJFL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	DTS- SOLVED ORTHOP- PHOS- PHORUS (P) (MG/L)
OCT						
04...	--	--	--	--	--	--
05...	.86	.88	1.3	.14	--	.05
12...	--	--	--	--	--	--
18...	--	--	--	--	--	--
19...	.34	.34	.35	.10	--	--
26...	--	--	--	--	--	--
NOV						
01...	--	--	--	--	--	--
08...	--	--	--	--	--	--
09...	.42	.62	1.0	.15	.09	.11
15...	--	--	--	--	--	--
22...	.20	.29	.56	.10	--	--
29...	--	--	--	--	--	--
DEC						
06...	--	--	--	--	--	--
07...	.09	.20	.73	.06	--	.04
13...	--	--	--	--	--	--
20...	--	--	--	--	--	--
20...	.50	.37	.63	.06	--	--
27...	--	--	--	--	--	--
JAN						
03...	--	--	--	--	--	--
10...	--	--	--	--	--	--
11...	.26	.37	.67	.08	--	.05
17...	--	--	--	--	--	--
24...	--	--	--	--	--	--
25...	.19	.30	.54	.05	--	--
31...	--	--	--	--	--	--
FEB						
07...	--	--	--	--	--	--
08...	.24	.41	.73	.09	.04	.05
14...	--	--	--	--	--	--
22...	.38	.51	.79	.09	--	--
22...	--	--	--	--	--	--
28...	--	--	--	--	--	--
MAR						
07...	--	--	--	--	--	--
08...	.32	.44	.65	.06	--	.03
14...	--	--	--	--	--	--
21...	--	--	--	--	--	--
22...	.26	.37	.65	.06	--	.04
28...	--	--	--	--	--	--
APR						
04...	--	--	--	--	--	--
11...	--	--	--	--	--	--
12...	.45	.56	.72	.08	--	.03
18...	--	--	--	--	--	--
25...	.14	.22	1.0	.03	--	--
MAY						
02...	--	--	--	--	--	--
03...	.11	.20	.46	.05	.02	.05
09...	--	--	--	--	--	--
16...	--	--	--	--	--	--
23...	--	--	--	.07	--	--
31...	--	--	--	--	--	--
JUN						
06...	--	--	--	--	--	--
07...	.88	.92	1.1	.09	--	.01
13...	--	--	--	--	--	--
20...	--	--	--	--	--	--
27...	.30	.35	.52	.06	--	--
JUL						
05...	--	--	--	--	--	--
11...	--	--	--	--	--	--
12...	.32	.37	.52	.05	--	.03
18...	--	--	--	--	--	--
25...	.50	.55	.71	.04	--	--
AUG						
01...	--	--	--	--	--	--
08...	--	--	--	--	--	--
09...	.41	.43	.62	.06	.03	.03
15...	--	--	--	--	--	--
22...	--	--	--	--	--	--
23...	.54	.63	.91	.10	--	--
29...	--	--	--	--	--	--
SEP						
06...	--	--	--	--	--	--
12...	--	--	--	--	--	--
13...	.05	.11	.57	.14	--	.02
19...	--	--	--	--	--	--
26...	--	--	--	--	--	--
27...	.08	.11	.41	.09	--	--

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ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL NITRATE (N) (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)	TOTAL NITRITE (N) (MG/L)	DIS- SOLVED NITRITE (N) (MG/L)	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL AMMONIA NITRO- GEN (N) (MG/L)
OCT							
04...	--	.43	--	--	--	--	--
05...	.38	--	.03	.03	.41	.39	.02
12...	--	.29	--	--	--	--	--
18...	--	.52	--	--	--	--	--
19...	.01	--	.00	--	.01	--	.00
26...	--	.16	--	--	--	--	--
NOV							
01...	--	.27	--	--	--	--	--
08...	--	.20	--	--	--	--	--
09...	.36	--	.03	.02	.39	.35	.20
15...	--	.25	--	--	--	--	--
22...	.25	.36	.02	--	.27	--	.09
29...	--	.36	--	--	--	--	--
DEC							
06...	--	.32	--	--	--	--	--
07...	.52	--	.01	.01	.53	.46	.11
13...	--	.59	--	--	--	--	--
20...	--	.27	--	--	--	--	--
20...	.25	--	.01	--	.26	--	.07
27...	--	.29	--	--	--	--	--
JAN							
03...	--	.27	--	--	--	--	--
10...	--	.36	--	--	--	--	--
11...	.29	--	.01	.02	.30	.31	.11
17...	--	.25	--	--	--	--	--
24...	--	.36	--	--	--	--	--
25...	.23	--	.01	--	.24	--	.11
31...	--	.34	--	--	--	--	--
FEB							
07...	--	.32	--	--	--	--	--
08...	.31	--	.01	.01	.32	.25	.17
14...	--	.29	--	--	--	--	--
22...	.27	--	.01	--	.28	--	.13
22...	--	.23	--	--	--	--	--
28...	--	.23	--	--	--	--	--
MAR							
07...	--	.29	--	--	--	--	--
08...	.21	.26	.00	.00	.21	.26	.12
14...	--	.23	--	--	--	--	--
21...	--	.23	--	--	--	--	--
22...	.28	.27	.00	.00	.28	.27	.11
28...	--	.16	--	--	--	--	--
APR							
04...	--	.18	--	--	--	--	--
11...	--	.16	--	--	--	--	--
12...	.15	--	.01	.01	.16	.17	.11
18...	--	.14	--	--	--	--	--
25...	.78	.18	.02	--	.80	--	.06
MAY							
02...	--	.18	--	--	--	--	--
03...	.25	.24	.01	.01	.26	.25	.09
09...	--	.25	--	--	--	--	--
16...	--	.18	--	--	--	--	--
23...	.26	.27	.01	--	.27	--	.02
31...	--	.18	--	--	--	--	--
JUN							
06...	--	.23	--	--	--	--	--
07...	.18	--	.03	.01	.21	.24	.04
13...	--	.23	--	--	--	--	--
20...	--	.20	--	--	--	--	--
27...	.15	.16	.02	--	.17	--	.05
JUL							
05...	--	.16	--	--	--	--	--
11...	--	.20	--	--	--	--	--
12...	.13	.16	.02	.00	.15	.16	.05
18...	--	.20	--	--	--	--	--
25...	.15	.23	.01	--	.16	--	.05
AUG							
01...	--	.14	--	--	--	--	--
08...	--	.16	--	--	--	--	--
09...	.18	--	.01	.01	.19	.18	.02
15...	--	.16	--	--	--	--	--
22...	--	.29	--	--	--	--	--
23...	.26	--	.02	--	.28	--	.09
29...	--	.16	--	--	--	--	--
SEP							
06...	--	.23	--	--	--	--	--
12...	--	1.0	--	--	--	--	--
13...	.42	.02	.04	.01	.46	.03	.06
19...	--	.29	--	--	--	--	--
26...	--	.27	--	--	--	--	--
27...	.28	--	.02	--	.30	--	.03

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TOTAL ARSENIC (AS) (UG/L)	DTS- SOLVED ARSENIC (AS) (UG/L)	DTS- SOLVED RUBIN (R) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	DTS- SOLVED CAD- MIUM (CD) (UG/L)	DTS- SOLVED CHRON- MIUM (CR) (UG/L)	TOTAL CORALIT (CO) (UG/L)	DTS- SOLVED CORALIT (CO) (UG/L)	TOTAL CUPPER (CU) (UG/L)	DTS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)
OCT											
05...	--	--	300	--	--	--	--	--	--	--	970
19...	--	--	--	--	--	--	--	--	--	--	630
NOV											
09...	4	3	280	10	0	0	<50	0	<10	0	560
22...	--	--	--	--	--	--	--	--	--	--	1200
DEC											
07...	--	--	230	--	--	--	--	--	--	--	400
20...	--	--	270	--	--	--	--	--	--	--	--
JAN											
11...	--	--	250	--	--	--	--	--	--	--	420
25...	--	--	230	--	--	--	--	--	--	--	480
FEB											
08...	2	1	160	<10	0	0	50	0	<10	2	420
22...	--	--	230	--	--	--	--	--	--	--	1300
MAR											
08...	--	--	220	--	--	--	--	--	--	--	820
22...	--	--	210	--	--	--	--	--	--	--	860
APR											
12...	--	--	190	--	--	--	--	--	--	--	1200
25...	--	--	190	--	--	--	--	--	--	--	860
MAY											
03...	3	3	210	<10	0	0	<50	0	10	0	750
25...	--	--	240	--	--	--	--	--	--	--	890
JUN											
07...	--	--	230	--	--	--	--	--	--	--	840
27...	--	--	270	--	--	--	--	--	--	--	450
JUL											
12...	--	--	200	--	--	--	--	--	--	--	520
25...	--	--	200	--	--	--	--	--	--	--	570
AUG											
09...	2	4	190	10	3	0	<50	1	10	3	460
23...	--	--	300	--	--	--	--	--	--	--	520
SEP											
13...	--	--	210	--	--	--	--	--	--	--	2100
27...	--	--	250	--	--	--	--	--	--	--	730

DATE	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DTS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SILF- NIUM (SF) (UG/L)	DTS- SOLVED SELE- NIUM (SE) (UG/L)	TOTAL ZINC (ZN) (UG/L)	DTS- SOLVED ZINC (ZN) (UG/L)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	30	<100	1	110	40	.0	.1	3	2	10	10
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
07...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
JAN											
11...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
08...	20	<100	3	120	110	.2	.0	3	3	10	0
22...	--	--	--	--	--	--	--	--	--	--	--
MAR											
08...	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	0	<100	0	110	20	.0	.0	3	3	10	0
23...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	80	<100	16	90	10	.0	.0	4	3	20	8
23...	--	--	--	--	--	--	--	--	--	--	--
SEP											
13...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--

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

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	TOTAL PCR (UG/L)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ATRA- ZINE (UG/L)	ATRA- ZINE IN BOTTOM MATERI- AL (UG/ KG DRY SOLIDS)	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)
OCT										
05...	0830	3.7	.0	.00	--	--	--	.0	--	.00
19...	0830	3.1	--	--	--	--	--	--	--	--
NOV										
09...	0855	2.8	--	--	--	--	--	--	--	--
09...	0930	--	--	ND	ND	ND	ND	ND	ND	ND
22...	0835	2.7	--	--	--	--	--	--	--	--
DEC										
07...	0730	3.3	.0	.00	--	--	--	.0	--	.00
20...	0840	2.6	--	--	--	--	--	--	--	--
JAN										
11...	0840	2.8	.0	.00	--	--	--	.0	--	.00
25...	0900	.7	--	--	--	--	--	--	--	--
FEB										
08...	0840	2.7	.0	.00	--	--	--	.0	--	.00
08...	0850	--	--	ND	--	ND	--	ND	--	ND
22...	0840	3.4	--	--	--	--	--	--	--	--
MAR										
08...	0900	3.2	.0	.00	--	--	--	.0	--	.00
22...	0830	3.5	--	--	--	--	--	--	--	--
APR										
12...	0845	3.9	.0	.00	--	--	--	.0	--	.00
25...	0840	3.0	--	--	--	--	--	--	--	--
MAY										
03...	0920	3.5	.0	.00	--	--	--	.0	--	.00
03...	0925	--	--	ND	ND	ND	ND	ND	ND	ND
23...	1050	3.7	--	--	--	--	--	--	--	--
JUN										
07...	0830	3.4	.0	.00	--	--	--	.0	--	.00
27...	0835	2.9	--	--	--	--	--	--	--	--
JUL										
12...	0840	3.1	.0	.00	--	--	--	.0	--	.00
25...	0830	2.6	--	--	--	--	--	--	--	--
AUG										
09...	0900	3.3	.0	.00	--	--	--	.0	--	.00
09...	0910	--	--	ND	--	ND	--	ND	--	ND
23...	0830	3.7	--	--	--	--	--	--	--	--
SEP										
13...	0835	4.2	.0	.00	--	--	--	.0	--	.00
27...	0845	2.7	--	--	--	--	--	--	--	--

DATE	DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDD (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	P,P' DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DZINON (UG/L)	DT- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- ELDRIN (UG/L)
OCT									
05...	--	.00	--	--	.00	--	.00	--	.00
19...	--	--	--	--	--	--	--	--	--
NOV									
09...	--	--	--	--	--	--	--	--	--
09...	ND	ND	--	.4	ND	ND	ND	ND	ND
22...	--	--	--	--	--	--	--	--	--
DEC									
07...	--	.00	--	--	.00	--	.01	--	.00
20...	--	--	--	--	--	--	--	--	--
JAN									
11...	--	.00	--	--	.00	--	.00	--	.00
25...	--	--	--	--	--	--	--	--	--
FEB									
08...	--	.00	--	--	.00	--	.00	--	.00
08...	--	ND	--	--	ND	--	ND	--	ND
22...	--	--	--	--	--	--	--	--	--
MAR									
08...	--	.00	--	--	.00	--	.01	--	.00
22...	--	--	--	--	--	--	--	--	--
APR									
12...	--	.00	--	--	.00	--	.01	--	.00
25...	--	--	--	--	--	--	--	--	--
MAY									
03...	--	.00	--	--	.00	--	.00	--	.00
03...	ND	ND	ND	--	ND	ND	ND	ND	ND
23...	--	--	--	--	--	--	--	--	--
JUN									
07...	--	.00	--	--	.00	--	.00	--	.00
27...	--	--	--	--	--	--	--	--	--
JUL									
12...	--	.00	--	--	.00	--	.00	--	.00
25...	--	--	--	--	--	--	--	--	--
AUG									
09...	--	.00	--	--	.00	--	.00	--	.00
09...	--	ND	--	--	ND	--	ND	--	ND
23...	--	--	--	--	--	--	--	--	--
SEP									
13...	--	.00	--	--	.00	--	.01	--	.00
27...	--	--	--	--	--	--	--	--	--

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

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DI- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRTN (UG/L)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)
OCT												
05...	0830	--	.00	--	.00	--	.00	--	.00	--	.00	--
NOV												
09...	0930	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC												
07...	0730	--	.00	--	.00	--	.00	--	.00	--	.00	--
JAN												
11...	0840	--	.00	--	.00	--	.00	--	.00	--	.00	--
FEB												
08...	0840	--	.00	--	.00	--	.00	--	.00	--	.00	--
08...	0850	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAR												
08...	0900	--	.00	--	.00	--	.00	--	.00	--	.00	--
APR												
12...	0845	--	.00	--	.00	--	.00	--	.00	--	.00	--
MAY												
03...	0920	--	.00	--	.00	--	.00	--	.00	--	.00	--
03...	0925	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN												
07...	0830	--	.00	--	.00	--	.00	--	.00	--	.00	--
JUL												
12...	0840	--	.00	--	.00	--	.00	--	.00	--	.00	--
AUG												
09...	0900	--	.00	--	.00	--	.00	--	.00	--	.00	--
09...	0910	--	ND	--	ND	--	ND	--	ND	--	ND	--
SEP												
13...	0835	--	.00	--	.00	--	.00	--	.00	--	.00	--

DATE	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METH- OXY- CHLOR (UG/L)	METHOX- YCHLOR IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)	SIMA- ZINE TOTAL COUL- SON COND. (UG/L)
OCT											
05...	.00	--	--	--	.00	--	.00	--	.00	--	--
NOV											
09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC											
07...	.00	--	--	--	.00	--	.00	--	.00	--	--
JAN											
11...	.00	--	--	--	.00	--	.00	--	.00	--	--
FEB											
08...	.00	--	--	--	.00	--	.00	--	.00	--	--
08...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
MAR											
08...	.00	--	--	--	.00	--	.00	--	.00	--	--
APR											
12...	.00	--	--	--	.00	--	.00	--	.00	--	--
MAY											
03...	.00	--	--	--	.00	--	.00	--	.00	--	--
03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN											
07...	.00	--	--	--	.00	--	.00	--	.00	--	--
JUL											
12...	.00	--	--	--	.00	--	.00	--	.00	--	--
AUG											
09...	.00	--	--	--	.00	--	.00	--	.00	--	--
09...	ND	--	ND	--	ND	--	ND	--	ND	--	ND
SEP											
13...	.00	--	--	--	.05	--	.00	--	.01	--	--

ND Material specifically analyzed for but not detected.

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	SIMA- ZINF TN BOTTOM MATERIAL (UG/ KG DRY SOLIDS)	TOTAL TOX- APHENE (UG/L)	TOX- APHENE TN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION TN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D TN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T TN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX TN BOTTOM MA- TERIAL (UG/KG)
OCT 05...	--	0	--	.00	--	.01	--	.00	--	.02	--
NOV 09...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DEC 07...	--	0	--	.00	--	.00	--	.00	--	.00	--
JAN 11...	--	0	--	.00	--	.00	--	.00	--	.00	--
FEB 08...	--	0	--	.00	--	.00	--	.00	--	.00	--
08...	--	ND	--	ND	--	ND	--	ND	--	ND	--
MAR 08...	--	0	--	.00	--	.00	--	.00	--	.00	--
APR 12...	--	0	--	.00	--	.00	--	.00	--	.00	--
MAY 03...	--	0	--	.00	--	.00	--	.00	--	.00	--
03...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
JUN 07...	--	0	--	.00	--	.00	--	.00	--	.00	--
JUL 12...	--	0	--	.00	--	.00	--	.00	--	.00	--
AUG 09...	--	0	--	.00	--	.00	--	.00	--	.00	--
09...	--	ND	--	ND	--	ND	--	ND	--	ND	--
SEP 13...	--	0	--	.00	--	.00	--	.00	--	.00	--

ND Material specifically analyzed for but not detected.

WATER QUALITY DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	BIOMASS CHLORO- PHYLL RATIO PERI- PHYTON (UNITS)	CHLOR-A PERI- PHYTON SPECT- METRIC (MG/M2)	CHLOR-B PERI- PHYTON SPECT- METRIC (MG/M2)	TOTAL PHYTO- PLANK- TON (CELLS PER ML)	CHLORO- PHYLL A (UG/L)	CHLORO- PHYLL B (UG/L)
OCT 05...	0830	--	--	--	16000	28.8	19.2
NOV 09...	0855	1578	1.56	.759	3400	7.90	.000
DEC 07...	0730	--	--	--	1200	11.5	9.48
JAN 11...	0840	--	--	--	800	.000	.000
FEB 08...	0840	--	--	--	64	--	--
MAR 08...	0900	--	--	--	400	--	--
APR 12...	0845	--	--	--	--	5.95	3.47
MAY 03...	0920	--	--	--	1800	--	--
JUN 07...	0830	--	--	--	6100	--	--
JUL 12...	0840	--	--	--	290	--	--
AUG 09...	0900	1254	--	--	1200	1.10	1.53
SEP 13...	0835	--	--	--	790	.783	.000

COLORADO RIVER MAIN STEM

09522000 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY,
ABOVE MORELOS DAM, NEAR ANDRADE, CA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1620	1740	1720	1510	1620	1490	1430	1460	1530	1410	1380	1570
2	1710	1750	1700	1590	1600	1510	1450	1470	1520	1460	1410	1540
3	1720	1760	1670	1630	1600	1520	1450	1470	1540	1420	1420	1470
4	1820	1780	1590	1670	1630	1520	1420	1460	1550	1420	1420	1480
5	1820	1760	1570	1660	1690	1560	1420	1480	1570	1420	1420	1490
6	1820	1740	1520	1690	1620	1500	1400	1490	1550	1420	1440	1500
7	1770	1780	1530	1710	1600	1580	1400	1510	1540	1420	1420	1520
8	1780	1770	1520	1650	1580	1510	1400	1510	1520	1420	1380	1520
9	1770	1780	1510	1640	1550	1490	1490	1520	1480	1430	1390	1510
10	1760	1740	1510	1670	1540	1480	1430	1500	1510	1430	1380	1540
11	1630	1710	1540	1710	1570	1500	1400	1490	1530	1420	1390	1570
12	1630	1690	1530	1740	1570	1520	1390	1490	1530	1420	1390	1300
13	1640	1690	1520	1740	1610	1470	1410	1500	1530	1420	1430	1300
14	1610	1700	1520	1770	1620	1460	1400	1510	1530	1440	1420	1340
15	1630	1580	1510	1750	1610	1450	1400	1550	1550	1420	1370	1510
16	1610	1730	1490	1700	1610	1440	1390	1510	1550	1420	1300	1590
17	1620	1770	1500	1710	1580	1440	1410	1540	1550	1430	1220	1610
18	1660	1780	1500	1750	1590	1450	1390	1600	1580	1410	1240	1630
19	1640	1830	1520	1770	1610	1440	1380	1630	1550	1440	1240	1620
20	1650	1860	1540	1690	1590	1450	1380	1650	1560	1430	1300	1620
21	1620	1820	1490	1700	1570	1440	1390	1660	1520	1440	1510	1570
22	1690	1760	1470	1650	1570	1450	1420	1640	1500	1440	1660	1580
23	1600	1810	1470	1640	1550	1400	1370	1630	1500	1430	1790	1590
24	1620	1760	1510	1670	1540	1410	1400	1600	1500	1470	1840	1580
25	1650	1750	1550	1670	1500	1420	1380	1530	1520	1440	1730	1630
26	1670	1730	1580	1670	1500	1420	1360	1530	1510	1430	1640	1630
27	1710	1710	1710	1630	1490	1450	1360	1520	1480	1430	1600	1620
28	1740	1740	1560	1610	1470	1420	1380	1530	1430	1420	1590	1620
29	1740	1730	1510	1590	---	1430	1400	1570	1410	1410	1610	1560
30	1700	1780	1500	1600	---	1410	1420	1610	1410	1420	1550	1580
31	1720	---	1510	1650	---	1410	---	1550	---	1430	1530	---
TOTAL	52370	52530	47870	51830	44180	45440	42120	47710	45550	44260	45410	46190
MEAN	1690	1750	1540	1670	1580	1470	1400	1540	1520	1430	1460	1540
MAX	1820	1860	1720	1770	1690	1580	1490	1660	1580	1470	1840	1630
MIN	1600	1580	1470	1510	1470	1400	1360	1460	1410	1410	1220	1300
WTR YR 1977	TOTAL	565460	MEAN	1550	MAX	1860	MIN	1220				

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE JUN 7, 77
TIME 1402
TOTAL COUNT 15
DIVERSITY: PHYUM 0.0
 CLASS 0.0
 ORDER 0.7
 FAMILY 0.0
 GENUS 0.0
 GENUS-INSECTA 0.0
ORGANISM COUNT
ARTHROPODA (ARTHROPODS)
 INSECTA
 DIPTERA
 EMPTIDAE 1
 TRICHOPTERA 13
 ODONATA
 COLEOPTERIDAE 1

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 5,76 0830	NOV 9,76 0855	DEC 7,76 0730	JAN 11,77 0840	FEB 8,77 0840	MAR 8,77 0900						
TOTAL CFLLS/ML	16000	3400	1200	800	64	400						
DIVERSITY: DIVISION	0.7	0.6	0.1	1.6	0.0	0.9						
..CLASS	0.7	0.6	0.1	1.6	0.0	0.9						
...ORDER	0.9	1.2	0.8	2.3	1.0	1.4						
...FAMILY	0.9	1.3	1.2	3.2	2.0	2.8						
....GENUS	1.6	1.6	1.8	3.5	2.0	3.2						
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT				
CHLOROPHYTA (GREEN ALGAE)												
..CHLOROPHYCEAE												
...CHLOROCOCCALES												
...COELASTRACEAE												
...COELASTRUM	--	-	--	-	--	-	--	-				
...OOCYSTACEAE												
...ANKISTRODESMUS	--	-	--	-	4	1	--	-				
...KIRCHNERIELLA	*	0	--	-	--	-	--	-				
...SLENASTRUM	--	-	59	2	--	-	--	-				
...TETRAEDRON	--	-	--	-	--	-	--	-				
...WESTELLA	*	0	--	-	--	-	--	-				
...SCENEDESMACEAE												
...SCENEDESMIUS	530	3	--	-	--	-	--	-				
...VOLVOCALES												
...CHLAMYDOMONADACEAE												
...CARTERIA	--	-	--	-	16	2	--	-				
...CHLAMYDOMONAS	620	4	--	-	56	5	--	-				
...ZYGEMATALES												
...DESMIDIACEAE												
...COSMARION	--	-	--	-	--	-	--	-				
CHRYSTOPHYTA												
..BACILLARIOPHYCEAE												
...PENNALES												
...NAVICULACEAE												
...ENTOMONEIS	--	-	--	-	9	1	12	2	--	-	7	2
...CENTRALES												
...COSCINODISCEAE												
...CYCLOTELLA	9900# 63		240	7	770# 63		77	10	28# 44		13	3
...MFLORIRA	3700# 23		2400# 70		200# 16		64	8	--	-	53	13
...PENNALES												
...ACHNANTHACEAE												
...ACHNANTHES	--	-	--	-	--	-	--	-	--	-	17	4
...COCONEIS	--	-	--	-	26	2	12	2	--	-	3	1
...RHOTOCSPHENIA	--	-	--	-	--	-	--	-	--	-	3	1
...CYMBELLACEAE												
...AMPHORA	*	0	--	-	17	1	20	3	4	6	--	-
...CYMRELLA	--	-	--	-	--	-	--	-	--	-	3	1
...RHOPALODIA	--	-	--	-	--	-	--	-	--	-	--	-
...DIATOMACEAE												
...DIATOMA	--	-	--	-	--	-	8	1	--	-	7	2
...FRAGILARIACEAE												
...FRAGILARIA	--	-	--	-	--	-	--	-	4	6	--	-
...SYNEDRA	--	-	--	-	--	-	12	2	--	-	--	-
...GOMPHONEMACEAE												
...GOMPHONEMA	--	-	--	-	--	-	--	-	--	-	3	1
...NAVICULACEAE												
...CALONEIS	--	-	--	-	--	-	*	0	--	-	--	-
...DIPLONEIS	--	-	--	-	9	1	--	-	--	-	--	-
...NAVICULA	88	1	240	7	77	6	52	7	12#	19	77#	19
...PINNULARIA	--	-	--	-	--	-	--	-	--	-	7	2
...NITZSCHIA												
...NITZSCHIA	270	2	180	5	110	9	77	10	16#	25	87#	22
...SURIARELLACEAE												
...SURIARELLA	--	-	--	-	--	-	4	1	--	-	20	5
...NAVICULACEAE												
...PLAGIOTROPIS	--	-	--	-	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
..CYANOPHYCEAE												
...CHROCOCCOCCALES												
...CHROCOCCOCCAEAE												
...AGMENELLUM	--	-	--	-	--	-	--	-	--	-	--	-
...ANACYSTIS	530	3	--	-	--	-	48	6	--	-	--	-
...HORMOGONALES												
...NOSTOCACEAE												
...ANABAENA	--	-	--	-	--	-	--	-	--	-	33	8
...ANABAENOPSIS	--	-	--	-	--	-	81	10	--	-	--	-
...OSCILLATORIACEAE												
...LYNGBYA	--	-	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIA	--	-	--	-	--	-	220#	28	--	-	60#	15
...RIVULARIACEAE												
...RAPHIDIOPSIS	--	-	180	5	--	-	--	-	--	-	--	-

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	OCT 5,76 0830		NOV 9,76 0855		DEC 7,76 0730		JAN 11,77 0840		FER 8,77 0840		MAR 8,77 0900	
ORGANISM	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT	CELLS /ML	PFR- CENT
EUGLENOPHYTA (EUGLENIDS)												
..CRYPTOPHYCEAE												
...CRYPTOMONADACEAE												
....CHROMONAS	--	-	--	-	9	1	16	2	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	88	1	--	-	--	-	20	3	--	-	--	-
..EUGLENOPHYCEAE												
...EUGLENALES												
....ASTASIACEAE												
....ASTASTA	--	-	--	-	9	1	--	-	--	-	--	-
...EUGLENAEAE												
....EUGLENA	--	-	--	-	--	-	--	-	--	-	3	1
....PHACUS	--	-	--	-	--	-	--	-	--	-	--	-
....TRACHELOMONAS	88	1	120	4	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)												
..DINOPHYCEAE												
...GYMNODINIALES												
....GYMNODINIACEAE												
.....GYMNODINIUM	--	-	--	-	--	-	--	-	--	-	--	-

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 3, 77 0920	JUN 7, 77 0830	JUL 12, 77 0840	AUG 9, 77 0900	SEP 13, 77 0835					
TOTAL CELLS/ML	1800	6100	290	1200	790					
DIVERSITY: DIVISION	1.1	1.4	0.7	1.1	1.3					
..CLASS	1.1	1.4	0.7	1.1	1.3					
...ORDER	1.9	2.0	1.4	1.5	2.1					
...FAMILY	2.5	2.3	2.7	2.0	2.2					
....GENUS	3.1	2.5	2.8	2.4	2.5					
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...COELASTRACEAE										
...COFLASTRUM	--	-	--	-	25	8	--	-	--	-
...UNCYSTACEAE										
...ANKISTRUMESMUS	41	2	39	1	--	-	11	1	17	2
...KIRCHNEITELLA	--	-	--	-	--	-	--	-	--	-
...SELENASTRUM	--	-	--	-	--	-	--	-	--	-
...TETRAEDRON	--	-	--	-	--	-	*	0	8	1
...WESTFLLA	--	-	--	-	--	-	--	-	--	-
...SCENEDESMACEAE										
...SCENEDESMUS	210	11	710	12	--	-	69	6	50	6
...VULVOCALES										
...CHLAMYDOMONADACEAE										
...CARIFTA	41	2	160	3	--	-	--	-	--	-
...CHLAMYDOMONAS	21	1	--	-	--	-	*	0	17	2
...ZYGNEMATALS										
...USMIDIACEAE										
...COSMARITUM	--	-	--	-	37	13	--	-	--	-
CHRYSTOPHYTA										
..BACTILLARIOPHYCEAE										
..PENNALES										
...NAVICULACEAE										
...FNTUMONEIS	--	-	--	-	--	-	*	0	--	-
..CENTRALES										
...COSCINODISCACEAE										
...CYCLOTELLA	310#	17	2400#	40	18	6	11	1	210#	26
...MELUSIRA	510#	28	240	4	18	6	21	2	83	11
..PENNALES										
...ACHNANTHACEAE										
...ACHNANTHES	21	1	--	-	--	-	--	-	--	-
...COCCONEIS	--	-	--	-	--	-	--	-	--	-
...RHODICUSPHENIA	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
...AMPHORA	--	-	39	1	--	-	--	-	--	-
...CYMBELLA	--	-	--	-	--	-	--	-	--	-
...RHODALDIA	--	-	--	-	6	2	--	-	--	-
...DIATOMACEAE										
...DIATOMA	--	-	--	-	92#	31	--	-	--	-
...FRAGILARIACEAE										
...FRAGILARIA	120	7	160	3	--	-	16	1	--	-
...SYNEDRA	--	-	--	-	49#	17	*	0	--	-
...GOMPHONEMACEAE										
...GOMPHONEMA	21	1	39	1	--	-	--	-	--	-
...NAVICULACEAE										
...CALONEIS	10	1	39	1	--	-	--	-	--	-
...DIPLONEIS	10	1	--	-	--	-	--	-	--	-
...NAVICULA	140	8	280	5	31	10	16	1	--	-
...PINNULARIA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIA										
...NITZSCHIA	140	8	430	7	18	6	170	15	290#	37
...SIRIRELLACEAE										
...SIRIRELLA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
...PLAGIOTROPIS	--	-	--	-	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROCCOCCALES										
...CHROCCOCCACEAE										
...AGMENELLUM	--	-	--	-	--	-	43	4	--	-
...ANACYSTIS	--	-	1500#	25	--	-	11	1	83	11
...HORMOGONALES										
...NOSTOCACEAE										
...ANABAENA	--	-	--	-	--	-	--	-	--	-
...ANABAENOPSIS	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
...LYNGBYA	--	-	--	-	--	-	85	7	--	-
...OSCILLATORIA	220	12	--	-	--	-	630#	54	--	-
...RIVULARIACEAE										
...RAPHIDIOPSIS	--	-	--	-	--	-	58	5	--	-

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 1976 TO SEPTEMBER 1977

PHYTOPLANKTON

DATE TIME	MAY 3,77 0920		JUN 7,77 0830		JUL 12,77 0840		AUG 9,77 0900		SEP 13,77 0835	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)										
..CRYPTOPHYCEAE										
...CRYPTOMONIDAE										
...CRYPTOCHRYSIDACEAE										
....CHROMONAS	--	-	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	--	-
..EUGLENOPHYCEAE										
...EUGLENALFS										
...ASTACEAE										
....ASTASIA	--	-	--	-	--	-	--	-	--	-
...EUGLENACEAE										
....EUGLENA	--	-	--	-	--	-	--	-	8	1
....PHACUS	--	-	--	-	--	-	--	-	17	2
....TRACHELUMONAS	--	-	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...GYMNODINIALES										
...GYMNODINIACEAE										
....GYMNODINIUM	--	-	--	-	--	-	--	-	8	1

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

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

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.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. 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.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,880 ft³/s (195 m³/s) Aug. 19, elevation, 84.23 ft (25.673 m); no flow for many days.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	469	273	236	316	230	211	24	197	181	74	.00	40
2	388	274	234	287	230	211	147	200	183	40	.00	52
3	354	260	232	248	230	209	176	197	183	2.7	.00	31
4	334	250	230	236	226	209	233	190	186	.00	.00	26
5	320	242	224	230	226	204	213	188	186	.00	.00	21
6	308	240	258	228	226	206	204	190	195	.00	.00	17
7	298	238	260	226	262	249	202	188	195	.00	.00	14
8	290	240	244	230	247	238	198	186	191	.00	.00	11
9	290	240	244	232	240	224	195	181	188	.00	.00	8.6
10	286	240	240	232	232	220	195	183	184	.00	.00	14
11	284	238	238	232	228	217	193	181	184	.00	.00	5.4
12	282	240	240	232	226	217	191	178	184	.00	.00	1.7
13	276	240	238	232	228	219	195	179	183	6.5	.00	31
14	272	236	240	234	228	213	202	165	183	.00	.00	3.3
15	270	232	242	226	230	213	200	171	183	.00	.00	.00
16	270	232	242	224	228	215	202	171	181	.00	176	.00
17	264	230	244	224	224	219	204	168	181	.00	2040	.00
18	264	232	244	224	226	220	206	174	190	.00	4480	.00
19	262	234	244	226	224	167	206	179	193	.00	6530	.00
20	262	240	244	226	224	36	198	183	191	17	4580	.00
21	260	242	236	230	228	25	200	191	188	42	2730	.00
22	262	242	234	230	224	21	202	193	186	.00	1340	.00
23	266	242	234	232	224	14	202	191	186	.00	301	.00
24	266	242	234	232	220	8.6	202	184	173	.00	152	.00
25	260	234	234	232	219	4.6	198	188	176	.00	120	.00
26	254	238	232	234	217	3.2	197	191	126	.00	99	.00
27	254	234	232	236	215	.20	198	191	124	.00	83	.00
28	252	234	230	238	209	.00	200	188	104	.00	71	.00
29	248	236	230	238	---	.00	200	186	82	.00	61	.00
30	250	236	232	238	---	.00	200	183	77	.00	52	.00
31	248	---	240	236	---	.00	---	178	---	.00	46	---
TOTAL	8863	7231	7386	7321	6371	4193.60	5783	5713	5107	182.20	22861.00	276.00
MEAN	286	241	238	236	228	135	193	184	170	5.88	737	9.20
MAX	469	274	260	316	262	249	233	200	195	74	6530	52
MIN	248	230	224	224	209	.00	24	165	77	.00	.00	.00
AC-FT	17580	14340	14650	14520	12640	8320	11470	11330	10130	361	45340	547
CAL YR 1976	TOTAL	94417.60	MEAN	258	MAX	4470	MIN	2.6	AC-FT	187300		
WTR YR 1977	TOTAL	81287.80	MEAN	223	MAX	6530	MIN	.00	AC-FT	161200		

COLORADO RIVER MAIN STEM

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1968 to current year.

REMARKS.--Unpublished chemical analyses (continuing record) for water years 1962-68 available from district office in Tucson, Ariz. No flow Mar. 28-31; July 4-12, 14-19, 22-31; Aug. 1-15; Sept. 16-31.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DIS-SOLVED POTASSIUM (K) (MG/L)
OCT												
01...	1140	458	4430	--	--	--	--	--	--	--	--	--
05...	1400	318	5140	7.9	25.0	870	570	200	89	850	13	9.4
19...	1500	260	5260	--	24.0	--	--	--	--	--	--	--
NOV												
12...	1115	250	5320	8.0	21.5	870	580	200	90	880	13	9.4
23...	1205	242	5370	--	--	--	--	--	--	--	--	--
DEC												
10...	1100	250	5460	8.1	16.0	890	580	210	88	900	13	9.0
21...	1430	234	5410	--	--	--	--	--	--	--	--	--
JAN												
11...	1220	235	5290	7.7	14.0	860	560	200	87	860	13	8.6
28...	1205	235	5300	--	--	--	--	--	--	--	--	--
FEB												
08...	1330	236	5360	7.9	19.0	860	560	200	87	880	13	8.8
22...	1200	221	5300	--	--	--	--	--	--	--	--	--
MAR												
08...	1320	236	5150	7.9	19.0	820	530	190	85	870	13	9.5
22...	1515	20	3900	--	--	--	--	--	--	--	--	--
APR												
05...	1145	210	4960	--	--	--	--	--	--	--	--	--
12...	1215	186	5120	8.1	23.0	820	530	190	84	860	13	8.0
26...	1150	196	5100	--	24.0	--	--	--	--	--	--	--
MAY												
03...	1400	195	5110	8.1	27.0	850	560	200	86	850	13	8.8
17...	1255	168	5100	--	--	--	--	--	--	--	--	--
JUN												
07...	1215	195	5080	8.0	29.0	780	500	180	81	860	13	8.1
JUL												
12...	1230	.00	--	--	--	--	--	--	--	--	--	--
21...	1230	29	5220	--	--	--	--	--	--	--	--	--
AUG												
09...	1100	.00	--	--	--	--	--	--	--	--	--	--
18...	1620	4680	1210	--	30.5	--	--	--	--	--	--	--
23...	1300	250	1580	--	31.5	--	--	--	--	--	--	--
30...	1200	53	2920	--	--	--	--	--	--	--	--	--
SEP												
13...	1300	31	2900	--	33.0	--	--	--	--	--	--	--

09522200 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

[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. 456 for records of return surface flows below Imperial Dam.

See figure 6 on p. 424 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 6,065 acres (24.5 km²) in 1976, 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 64,684 acres (262 km²) in 1976, 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 9,912 acres (40.1 km²) in 1976, 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 21,753 acres (88.0 km²) in 1976, of which 18,452 acres (74.7 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 1976, 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.

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 09524000.

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. (Incorrectly noted as not used during 1976 water year in WDR, AZ-76-1).

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

Divisions at and below Imperial Dam, AZ-CA--Continued

MONTHLY DIVERSIONS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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	3,290	408	24,410	2,460	15,850
November	2,760	328	17,400	1,680	12,530
December	2,010	360	19,010	1,610	15,010
CAL YR 1976	46,320	6,320	472,800	32,730	244,400
January	1,450	135	13,590	1,280	6,960
February	5,330	819	32,740	2,930	11,700
March	2,800	341	37,130	3,210	17,900
April	3,490	657	46,990	3,770	20,520
May	4,490	645	41,640	3,190	23,460
June	5,190	483	50,220	3,420	30,530
July	5,290	671	57,560	4,920	33,030
August	4,290	527	44,100	3,340	23,230
September	3,290	402	37,390	3,160	25,110
WTR YR 1977	43,690	5,780	422,200	34,980	235,800

Month	Unit B Main Canal 09522900	Reservation Main Canal 09523200	Titsink Canal 09523400	Yaqui Canal 09523600	Pontiac Canal 09523800
October	2,310	4,320	6.2	620	558
November	2,190	3,530	0	505	559
December	1,920	2,150	0	476	321
CAL YR 1976	35,500	55,380	285	9,420	8,110
January	998	1,010	0	361	207
February	1,730	3,690	15	774	560
March	2,820	3,910	0	465	617
April	3,030	3,700	0	754	606
May	3,490	4,290	48	765	804
June	4,500	7,010	34	1,310	706
July	4,620	7,760	37	1,230	758
August	3,200	5,570	53	1,020	451
September	3,480	3,750	0	683	526
WTR YR 1977	34,350	50,710	193	8,970	6,670

Month	Walapai Canal 09523900	Divisions from Yuma Main Canal 09524500	Divisions from Yuma Main Canal for Yuma supply 09526000
October	1,040	701	1,026
November	808	559	841
December	320	126	818
CAL YR 1976	13,860	6,100	12,886
January	484	106	661
February	1,290	671	833
March	569	363	987
April	1,080	328	1,218
May	1,070	475	1,259
June	1,720	604	1,570
July	2,130	985	1,717
August	925	815	1,454
September	657	129	1,272
WTR YR 1977	12,080	5,860	13,656

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

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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) above mean sea level.

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 1976 calendar year, water was used for irrigation of 102,414 acres (414 km²) divided as follows: North and South Gila Valleys, 15,977 acres (64.7 km²); Yuma Mesa Division, 18,452 acres (74.7 km²); Wellton-Mohawk Division, 64,684 acres (262 km²); Yuma Mesa Auxiliary Division, 3,301 acres (13.4 km²).

AVERAGE DISCHARGE.--18 years (1959-77), 1,210 ft³/s (34.27 m³/s), 876,600 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	811	575	.00	41	1010	1170	1110	1160	1520	1940	2020	1890
2	634	819	.00	54	988	1150	848	1770	1700	1530	2070	1790
3	753	873	157	153	1010	1090	738	1810	1760	1120	2100	1580
4	1230	841	1010	216	922	920	1380	1660	1500	1550	2080	1250
5	1350	689	637	218	822	725	1450	1750	1220	1940	2070	1390
6	1340	577	1180	112	733	543	1560	1780	1640	2120	1750	1690
7	1280	466	1220	177	1160	1170	1390	1240	1830	2130	1480	1590
8	1140	910	1300	222	1450	1260	1290	947	1900	1820	1840	1720
9	1030	981	1090	351	1350	1200	832	1410	1930	1620	2050	1650
10	777	1210	906	464	1180	1390	722	1300	1680	1350	2060	1320
11	1050	1010	862	347	928	1170	1520	1350	1250	1690	2060	824
12	1160	816	774	198	833	905	1590	1270	920	1890	2050	1260
13	1180	590	1040	292	811	768	1680	842	1580	2000	1620	1410
14	1220	603	1060	352	1030	1210	1580	740	1660	2100	1100	1370
15	1200	966	1090	280	1340	1120	1280	644	1600	1880	1180	1430
16	1010	940	1040	202	1120	1110	1190	1390	1580	1640	180	1450
17	684	1030	819	689	1330	1120	843	1190	1510	1240	76	1020
18	956	920	513	866	1030	1040	1530	1210	1370	1830	235	657
19	976	913	426	698	939	871	1580	1300	1310	1730	214	1210
20	1200	742	784	628	835	550	1610	1160	1710	2040	140	1300
21	1090	464	801	341	1270	1030	1640	814	1770	1970	239	1240
22	660	626	699	209	1190	1130	1400	731	1820	1920	736	1180
23	294	744	508	216	1280	1210	1240	1530	1990	1610	960	1090
24	257	318	293	760	1230	1250	1000	1610	2020	1060	978	1010
25	549	2.0	98	795	1000	1120	1530	1540	1580	1860	1250	717
26	455	.00	203	882	991	991	1740	1360	1240	1980	1280	1180
27	420	.00	754	939	720	979	1730	1340	1750	2040	1350	1040
28	445	.00	758	621	1020	1150	1640	971	1980	2070	1150	1140
29	380	.00	606	433	---	1360	1660	843	1870	2060	1780	1060
30	303	.00	552	416	---	1490	1260	1300	2000	1640	2080	764
31	362	---	295	1000	---	1340	---	1530	---	1410	2020	---
TOTAL	26196	18625.00	21475.00	13172	29522	33532	40563	39492	44190	54780	42198	38222
MEAN	845	621	693	425	1054	1082	1352	1274	1640	1767	1361	1274
MAX	1350	1210	1300	1000	1450	1490	1740	1810	2020	2130	2100	1890
MIN	257	.00	.00	41	720	543	722	644	920	1060	76	657
AC-FT	51960	36940	42600	26130	58560	66510	80460	78330	97570	108700	83700	75810
CAL YR 1976	TOTAL	435021.00	MEAN	1189	MAX	2150	MIN	.00	AC-FT	862900		
WTR YR 1977	TOTAL	406967.00	MEAN	1115	MAX	2130	MIN	.00	AC-FT	807200		

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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.

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, 30.5°C Aug. 14, 15, 21, Sept. 5-10; minimum, 9.5°C Dec. 28, Jan. 12-18.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
OCT 27...	1255	448	1510	8.4	19.5	400	240	100	37	180	3.9	5.9
JAN 26...	1335	837	1340	8.2	13.0	380	240	98	34	140	3.1	5.0
APR 27...	1105	1730	1240	8.3	22.5	360	220	91	33	130	3.0	5.1
JUL 20...	1035	2140	1240	7.8	28.5	360	220	87	34	130	3.0	5.2

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT 27...	200	0	400	160	.5	11	990	994	1.35	.21	230	10
JAN 26...	174	0	330	130	.5	8.8	880	833	1.20	.25	190	0
APR 27...	180	0	310	120	.4	7.0	818	786	1.11	.05	170	20
JUL 20...	170	0	320	120	.4	9.4	810	790	1.10	.05	170	20

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	26.5	25.5	18.5	18.0	---	---	11.0	10.0	12.5	12.0	14.5	14.0
2	26.5	26.0	18.5	18.5	---	---	11.0	10.5	12.0	11.5	14.5	14.0
3	26.0	25.0	18.5	18.5	---	---	11.5	10.5	11.5	11.5	14.5	14.0
4	25.5	25.0	18.5	18.5	12.0	11.5	11.5	11.5	11.5	11.5	14.5	14.5
5	25.0	24.5	18.5	18.5	12.0	12.0	11.5	11.5	11.5	11.5	14.5	14.0
6	24.5	24.0	18.5	18.5	12.0	12.0	11.5	11.5	11.5	11.5	14.0	14.0
7	24.0	24.0	18.5	18.5	12.0	11.5	11.5	11.5	11.5	11.5	14.0	14.0
8	24.0	24.0	18.5	18.5	12.0	11.5	11.5	11.5	11.5	11.5	14.5	14.0
9	24.0	23.5	18.5	18.5	11.5	11.5	11.5	11.5	11.5	11.5	15.0	14.5
10	23.5	23.0	18.5	18.5	11.5	11.5	12.0	11.5	11.5	11.5	15.0	15.0
11	23.5	23.0	18.5	18.5	11.5	11.5	12.0	10.0	12.0	11.5	15.0	14.5
12	23.5	23.0	18.5	18.5	11.5	11.5	10.0	9.5	12.0	12.0	14.5	14.5
13	23.5	23.5	18.5	18.0	11.5	11.5	9.5	9.5	12.0	12.0	14.5	14.5
14	23.5	23.5	18.0	18.0	11.5	11.0	9.5	9.5	12.0	12.0	15.0	14.5
15	24.0	23.5	18.0	17.0	11.0	11.0	9.5	9.5	14.0	12.0	15.0	15.0
16	24.0	23.5	17.0	16.5	11.0	11.0	9.5	9.5	14.0	14.0	15.0	15.0
17	24.0	23.5	16.5	16.5	11.0	11.0	9.5	9.5	14.5	14.0	15.0	15.0
18	24.0	23.5	16.5	16.5	11.0	11.0	10.0	9.5	15.0	14.5	15.0	15.0
19	23.5	23.5	16.5	16.5	11.5	11.0	10.0	10.0	15.0	15.0	15.5	15.0
20	23.5	23.0	16.5	16.5	11.5	11.5	10.5	10.0	15.0	15.0	16.0	15.5
21	23.5	23.0	16.5	16.5	11.5	11.5	11.5	10.5	15.0	15.0	16.0	16.0
22	23.0	21.5	16.5	16.5	11.5	11.0	12.5	11.5	15.0	15.0	17.0	16.0
23	21.5	21.0	16.5	16.5	11.0	11.0	13.5	12.5	15.0	15.0	18.0	17.0
24	21.0	21.0	16.5	16.5	11.0	11.0	13.5	13.5	15.0	15.0	18.0	18.0
25	21.5	21.0	---	---	11.0	10.5	13.5	13.0	15.0	14.0	18.0	17.0
26	21.5	21.0	---	---	10.5	10.0	13.0	12.5	14.0	13.5	17.0	16.0
27	21.0	19.5	---	---	10.0	10.0	12.5	12.5	14.0	14.0	16.0	16.0
28	19.5	19.0	---	---	10.0	9.5	12.5	12.5	14.0	14.0	16.0	16.0
29	19.0	18.5	---	---	10.0	10.0	12.5	12.5	---	---	16.0	16.0
30	18.5	18.0	---	---	10.0	10.0	12.5	12.5	---	---	16.0	16.0
31	18.0	18.0	---	---	10.0	10.0	12.5	12.5	---	---	16.0	16.0
MONTH	26.5	18.0	18.5	16.5	12.0	9.5	13.5	9.5	15.0	11.5	18.0	14.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	16.0	16.0	23.0	22.0	27.0	26.0	29.0	28.5	29.0	28.5	28.5	28.5
2	16.0	16.0	23.0	22.0	27.0	26.5	29.5	29.0	29.5	28.5	29.0	28.5
3	16.0	15.5	23.0	22.0	27.0	26.0	29.5	29.0	29.5	29.0	29.5	29.0
4	15.5	15.5	22.0	22.0	28.0	26.5	29.5	28.5	30.0	29.0	30.0	29.5
5	16.5	15.5	22.0	22.0	28.0	27.0	29.5	28.5	30.0	29.0	30.5	30.0
6	18.5	16.5	22.0	21.5	28.0	26.5	29.5	28.5	30.0	29.5	30.5	30.5
7	19.5	18.5	21.5	21.5	27.0	26.5	30.0	29.5	30.0	29.0	30.5	30.5
8	20.0	19.5	21.5	21.0	27.0	26.5	29.5	29.0	29.5	29.0	30.5	30.5
9	20.0	20.0	21.0	21.0	27.0	26.5	29.5	29.0	29.5	29.0	30.5	30.5
10	20.0	20.0	21.0	21.0	26.5	26.0	29.5	29.0	30.0	29.0	30.5	29.5
11	20.0	19.5	21.5	21.0	26.5	26.0	29.5	29.0	30.0	29.0	29.5	29.0
12	19.5	19.5	21.5	21.5	27.0	26.0	29.5	29.0	30.0	29.0	29.0	28.0
13	19.5	19.5	21.5	21.0	27.0	26.0	29.0	28.5	30.0	29.5	29.0	28.0
14	20.0	19.5	21.5	21.0	27.0	26.0	28.5	28.0	30.5	29.5	29.0	29.0
15	20.5	20.0	22.0	21.5	27.0	26.5	29.0	28.5	30.5	29.5	29.0	28.0
16	20.5	20.0	22.0	22.0	28.0	27.0	30.0	29.0	29.5	28.5	28.0	26.5
17	21.0	20.5	22.0	21.0	28.0	28.0	30.0	29.5	28.5	27.5	26.5	25.0
18	21.0	21.0	21.5	21.5	28.0	26.5	30.0	29.0	28.5	27.5	25.0	25.0
19	21.0	21.0	23.0	21.5	27.0	26.5	29.5	29.0	29.5	28.5	25.0	25.0
20	21.0	20.5	23.5	23.0	26.5	26.5	29.0	28.5	30.0	29.5	25.0	25.0
21	20.5	20.5	24.0	23.0	26.5	26.5	29.0	28.5	30.5	29.5	25.0	25.0
22	20.5	20.5	24.5	24.0	27.0	26.5	29.5	28.5	30.0	30.0	25.0	25.0
23	21.0	20.5	24.5	24.0	27.0	27.0	29.5	29.0	30.0	30.0	25.0	25.0
24	22.0	21.0	24.0	23.0	28.0	27.0	29.5	28.5	30.0	29.5	25.0	25.0
25	23.0	21.5	23.0	22.0	28.0	28.0	29.5	29.0	30.0	30.0	25.5	25.0
26	23.0	22.0	23.0	22.0	28.0	27.5	29.5	29.0	30.0	29.0	25.5	25.0
27	23.0	23.0	23.5	22.5	28.0	27.5	29.5	29.0	29.0	28.5	25.5	25.5
28	23.0	22.0	25.0	23.5	28.0	27.5	30.0	29.5	29.0	28.5	26.0	25.0
29	23.0	22.0	25.0	24.5	28.5	28.0	30.0	30.0	29.0	28.5	26.0	26.0
30	23.0	22.0	25.5	24.5	28.5	28.5	30.0	30.0	29.0	28.5	26.0	26.0
31	---	---	26.0	25.0	---	---	30.0	29.0	28.5	28.5	---	---
MONTH	23.0	15.5	26.0	21.0	28.5	26.0	30.0	28.0	30.5	27.5	30.5	25.0
YEAR	30.5	9.5										

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) above mean sea level (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.--Gage-height record furnished by Imperial Irrigation District. After Apr. 3, daily discharge figures furnished by Imperial Irrigation District (discharge figures reviewed in accordance with Geological Survey standard practice).

AVERAGE DISCHARGE.--36 years (1941-77), 6,920 ft³/s (196.0 m³/s), 5,014,000 acre-ft/yr (6,180 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 13,500 ft³/s (382 m³/s), Apr. 16, 1938; no flow at times.

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	4700	3080	4520	3110	4210	7090	8560	7600	7040	9560	10200	7610
2	4700	3170	4950	3070	4250	7040	8660	7540	7410	9390	10300	7600
3	4790	3560	5030	3370	4340	7010	8320	7920	7550	9550	10400	7360
4	4730	4240	4660	3530	4620	6630	8610	8150	7950	9620	10200	6290
5	4910	4320	4420	2880	4160	6390	8920	8010	7360	9690	10200	5890
6	5350	3990	4610	2950	4030	5750	9280	8120	7470	9970	10000	5710
7	5630	3750	4540	3200	4090	6340	9560	7230	7730	9780	9860	5690
8	5860	4120	4750	3100	4560	6950	9640	6550	7850	9790	10000	5580
9	5710	4250	5150	2490	4920	7400	9670	6680	7900	9400	10200	5180
10	5710	4100	5200	2350	5390	7860	9340	6620	7520	9230	10300	4980
11	6390	4120	4950	2690	5460	7820	9510	6640	6880	9430	10100	4130
12	6140	2920	4920	2820	5130	8090	10100	6590	6390	9820	9640	3800
13	5970	1910	5220	3290	5220	7980	10200	6240	6580	9800	9610	4060
14	5500	1650	5220	3230	5860	8090	10200	5680	6760	9380	9620	4340
15	5430	1650	5090	2750	6310	8630	10100	5020	7210	9490	8850	4360
16	5310	1990	5100	2730	6430	8840	10100	5120	7830	9460	9070	4410
17	4870	2420	5380	2760	6000	8560	9850	5490	7550	9320	7930	4660
18	4750	2490	5190	3180	6130	8310	10000	6000	7800	9780	8020	4580
19	4750	2590	4870	3380	5850	7850	10300	6580	7170	9900	3370	4800
20	4790	2750	5220	3790	5380	7120	10500	6410	7450	10000	2630	4910
21	4660	2630	5520	3660	6000	7550	10800	6830	7730	10200	2670	4960
22	4330	2960	5370	3390	6040	7890	10700	7120	7890	10200	3200	5050
23	4050	3000	5080	3340	6460	8420	10300	7460	8310	9890	3690	4940
24	3480	3290	4210	3060	7110	8950	9680	7300	8290	9680	4030	4970
25	3670	3300	3330	3340	6920	8970	10100	7240	8540	9630	4250	4510
26	3640	3590	3250	3710	6650	8970	10100	6640	8450	9990	4820	4770
27	3670	3970	4460	4050	6720	7860	10300	6230	8730	10200	5410	4820
28	3440	3880	4980	3980	6650	8690	9820	6170	9160	10300	5250	4990
29	3560	4080	5180	3720	---	8720	9320	5540	9440	9890	5580	4780
30	3460	4550	5390	3630	---	8890	8710	5920	9440	10300	6320	4790
31	3060	---	4170	4090	---	8580	---	6360	---	10200	7100	---
TOTAL	147010	98320	149930	100640	154890	243240	291250	207000	233380	302840	232820	154520
MEAN	4742	3277	4836	3246	5532	7846	9708	6677	7779	9769	7510	5151
MAX	6390	4550	5520	4090	7110	8970	10800	8150	9440	10300	10400	7610
MIN	3060	1650	3250	2350	4030	5750	8320	5020	6390	9230	2630	3800
AC-FT	291600	195000	297400	199600	307200	482500	577700	410600	462900	600700	461800	306500

CAL YR 1976 TOTAL 2366480 MEAN 6466 MAX 10600 MTN 1650 AC-FT 4694000
WTR YR 1977 TOTAL 2315840 MEAN 6345 MAX 10800 MTN 1650 AC-FT 4593000

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) above mean sea level, datum of 1929, or 150.3 ft (45.81 m) above mean sea level, 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.

EXTREMES.--1930 to current year: Maximum daily discharge, 2,040 ft³/s (57.8 m³/s) Nov. 11, 1943; no flow for several days in 1937-39, 1945.

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1	754	30	1180	108	915	838	404	238	924	779	625	496
2	689	30	1200	108	878	479	363	750	1040	673	763	781
3	567	221	1210	176	862	463	142	632	1110	572	869	623
4	513	673	1120	238	1060	548	184	620	1260	588	833	561
5	622	706	814	610	705	472	235	563	878	698	803	531
6	677	558	121	566	548	222	287	620	923	738	723	553
7	560	350	177	470	555	207	645	1040	1080	770	521	535
8	575	409	209	354	617	246	697	746	1070	783	561	630
9	630	492	477	348	696	333	561	726	1450	687	719	628
10	642	482	326	298	983	642	313	590	1500	528	821	570
11	990	449	200	320	1110	682	426	577	1440	619	836	396
12	953	348	106	308	1010	580	605	600	1370	753	689	348
13	933	175	221	359	404	879	694	560	591	728	514	477
14	904	146	293	386	506	482	743	493	625	759	449	477
15	933	167	287	292	549	578	652	765	684	758	372	489
16	904	178	230	256	684	617	507	234	742	700	30	634
17	793	257	205	392	730	592	154	598	757	598	30	603
18	933	439	208	533	660	539	221	645	740	727	30	553
19	1110	608	106	583	576	489	380	797	424	822	30	645
20	1020	699	151	562	211	267	457	1080	381	867	70	703
21	953	625	234	531	247	186	711	1240	482	851	124	649
22	501	934	272	424	340	181	779	1220	572	819	151	582
23	297	1000	330	297	428	293	718	1000	863	670	149	486
24	252	1040	196	308	685	578	560	1070	872	533	124	476
25	342	1000	102	463	630	599	471	968	794	575	160	457
26	433	1040	110	579	571	447	619	864	641	739	161	547
27	474	533	293	612	432	354	772	747	693	856	163	558
28	478	146	307	575	352	503	756	644	812	910	134	464
29	591	242	388	539	---	562	609	482	786	847	199	389
30	353	418	280	540	---	559	346	835	789	795	357	355
31	30	---	157	720	---	569	---	769	---	686	429	---
TOTAL	20411	14387	11432	12851	18034	14178	15101	21840	26253	22412	12439	16196
MEAN	658	480	369	415	644	457	503	705	875	723	401	540
MAX	1110	1040	1210	720	1110	682	779	1000	1500	910	869	781
MIN	30	30	102	108	211	181	142	234	381	524	30	348
AC-FT	40490	28540	22680	25490	35770	28120	29950	43320	52070	44450	24670	32120
WAT YR 1974	TOTAL	244134	MEAN	667	MAX	1500	MIN	30	AC-FT			

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) above mean sea level. 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	347	2.4	892	36	387	26	13	18	220	19	12	128
2	294	2.4	892	33	347	27	15	22	269	14	12	452
3	211	3.4	878	26	363	22	14	15	349	19	12	255
4	96	70	835	94	615	19	14	15	571	15	12	216
5	142	132	739	512	372	19	14	17	609	15	11	218
6	196	128	15	489	309	20	14	117	635	15	11	220
7	114	129	15	395	340	22	14	634	736	16	10	157
8	155	94	15	291	403	18	14	476	628	16	10	239
9	210	111	15	286	408	21	14	361	619	13	11	233
10	223	121	15	111	380	15	17	137	647	23	12	235
11	488	126	15	94	472	13	16	142	664	15	11	109
12	460	88	15	118	459	13	17	187	759	13	11	15
13	469	44	21	141	23	14	17	216	18	16	11	12
14	460	38	21	144	23	13	18	183	19	12	15	12
15	509	22	21	105	23	14	18	173	22	12	26	40
16	550	37	21	106	25	14	18	27	21	12	11	193
17	533	32	21	110	31	14	16	232	22	17	14	219
18	520	137	20	141	26	15	16	158	23	12	15	232
19	572	337	19	192	26	15	15	276	22	13	14	214
20	492	555	19	181	24	15	15	565	21	12	14	217
21	538	563	20	239	25	14	16	735	21	12	16	164
22	213	765	20	173	26	14	16	732	22	12	16	180
23	7.0	734	21	153	28	14	15	777	21	15	14	193
24	11	846	30	151	29	13	15	423	19	12	14	201
25	45	925	29	175	25	13	15	286	18	16	15	209
26	48	862	26	187	25	13	15	288	26	15	15	233
27	101	338	23	272	27	13	15	192	19	22	15	246
28	98	24	28	269	27	12	21	208	19	15	14	190
29	103	20	29	226	---	12	18	247	19	12	14	138
30	11	134	34	236	---	12	16	244	19	12	15	128
31	100	---	36	351	---	12	---	274	---	12	14	---
TOTAL	8316.0	7420.2	4800	6037	5268	491	471	8377	7077	454	417	5498
MEAN	268	247	155	195	188	15.8	15.7	270	236	14.6	13.5	183
MAX	572	925	892	512	615	27	21	777	759	23	26	452
MIN	7.0	2.4	15	26	23	12	13	15	18	12	10	12
AC-FT	16490	14720	9520	11970	10450	974	934	16620	14040	901	827	10910
CAL YR 1976	TOTAL	77940.2	MEAN 213	MAX 958	MIN 2.4	AC-FT 154600						
WTR YR 1977	TOTAL	54626.2	MEAN 150	MAX 925	MIN 2.4	AC-FT 108400						

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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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) above mean sea level, datum of 1929, or 100.08 ft (30.504 m) above mean sea level, 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) above mean sea level. 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 45,800 acres (185 km²) in 1976, in the Valley Division of the Yuma Project and for supplementary municipal supply for city of Yuma (see sta 09526000).

AVERAGE DISCHARGE.--53 years, 467 ft³/s (13.23 m³/s), 338,300 acre-ft/yr (417 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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	20	281	42	527	393	455	241	704	727	600	368
2	395	20	302	26	531	444	368	348	771	636	748	329
3	356	30	326	122	490	450	133	592	761	544	837	368
4	415	582	285	144	445	513	191	586	688	550	797	345
5	480	547	74	98	423	452	244	540	263	657	758	313
6	466	400	104	77	239	197	297	503	288	708	699	322
7	433	194	138	75	215	182	634	406	344	748	525	363
8	407	293	224	63	214	225	655	270	402	768	547	387
9	413	358	438	62	288	322	512	354	831	665	687	395
10	404	336	322	182	595	601	334	456	849	505	799	335
11	484	298	210	216	628	632	437	435	776	597	812	287
12	483	244	85	179	537	561	632	406	611	718	681	318
13	449	144	206	218	416	464	673	337	545	697	514	435
14	432	114	300	242	475	470	708	300	584	722	443	442
15	414	144	242	184	536	550	624	182	625	731	321	426
16	347	162	246	150	630	595	480	207	688	666	27	441
17	260	250	227	268	657	577	141	363	726	602	27	384
18	398	302	216	392	598	521	232	472	689	722	27	321
19	518	263	70	391	516	449	355	511	359	810	44	420
20	508	144	113	381	186	239	440	513	360	851	29	482
21	394	62	225	292	212	172	668	505	464	816	104	485
22	266	162	277	251	335	161	716	481	563	749	127	402
23	258	259	314	144	384	284	664	506	817	629	118	293
24	228	194	186	157	617	559	523	635	837	517	97	275
25	262	75	75	288	582	594	457	664	756	565	129	248
26	343	172	46	390	519	422	582	561	626	715	117	314
27	365	195	272	340	358	340	718	540	672	848	135	312
28	374	131	344	306	294	514	694	416	788	883	96	274
29	483	208	374	301	---	546	577	220	793	824	157	251
30	377	279	267	304	---	555	336	179	768	760	324	227
31	49	---	113	369	---	542	---	495	---	645	380	---
TOTAL	11866	6584	6902	6654	12447	13526	14480	13224	18948	21575	11706	10562
MEAN	383	219	223	215	445	436	483	427	632	696	378	352
MAX	518	582	438	392	657	632	718	664	849	883	837	485
MIN	49	20	46	26	186	161	133	179	263	505	27	227
AC-FT	23540	13060	13690	13200	24690	26830	28720	26230	37580	42790	23220	20950
CAL YR 1976 TOTAL	162174			MEAN 443	MAX 881	MIN 20	AC-FT 321700					
WTR YR 1977 TOTAL	148474			MEAN 407	MAX 883	MIN 20	AC-FT 294500					

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) above mean sea level.

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 1976 TO SEPTEMBER 1977
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1760	.00	1780	2640	1750	.00	1660	2100	847
2	.00	.00	.00	1540	.00	1700	2740	1450	.00	1490	2120	.00
3	.00	.00	.00	1310	.00	1750	2730	1370	.00	1730	2050	.00
4	.00	.00	.00	980	.00	1810	2850	1260	.00	1830	2040	.00
5	.00	.00	44	.00	.00	1550	2850	1210	.00	1810	1970	.00
6	.00	.00	1050	.00	.00	1590	2920	1070	.00	1900	1980	.00
7	.00	.00	1080	.00	.00	1620	2840	.00	.00	1870	1960	.00
8	.00	.00	1240	.00	.00	1890	2580	.00	.00	1850	1940	.00
9	.00	.00	1400	.00	.00	1890	2810	.00	.00	1870	1910	.00
10	.00	.00	1430	.00	.00	1960	2940	.00	.00	1910	1920	.00
11	.00	.00	1430	.00	.00	1920	3020	.00	.00	1920	1800	.00
12	.00	.00	1540	.00	42	1870	3020	.00	.00	2000	1740	.00
13	.00	.00	1740	.00	1010	1960	3020	.00	1140	2000	1640	.00
14	.00	.00	1740	.00	1060	2080	3020	.00	1280	1680	1790	.00
15	.00	.00	1700	.00	1170	2050	3050	.00	1250	1740	3490	.00
16	.00	.00	1710	.00	1250	2080	3070	.00	1360	1850	7780	.00
17	.00	.00	1850	.00	1240	2080	3030	.00	1350	1920	6450	.00
18	.00	.00	1800	.00	1310	2080	3070	.00	1400	1960	7000	.00
19	.00	.00	1770	.00	1300	2110	3060	.00	1100	1940	2210	.00
20	.00	.00	1970	.00	1290	2180	3050	.00	1240	2020	985	.00
21	.00	.00	2160	.00	1460	2180	3080	.00	1440	2030	1000	.00
22	.00	.00	2120	.00	1360	2150	2660	.00	1500	1990	1070	.00
23	.00	.00	2040	.00	1400	2300	2700	.00	1550	2040	1200	.00
24	.00	.00	1990	.00	1460	2390	2880	.00	1600	2010	1310	.00
25	.00	.00	1770	.00	1560	2390	2880	.00	1540	1990	1400	.00
26	.00	.00	1770	.00	1570	2400	2850	.00	1500	2040	1460	.00
27	.00	601	1860	.00	1580	2400	2770	.00	1420	2050	1480	.00
28	.00	989	2040	.00	1480	2430	2640	.00	1530	1970	1500	.00
29	.00	999	2070	.00	---	2420	2460	.00	1550	1690	1500	.00
30	.00	993	2050	.00	---	2440	2230	.00	1520	1810	1400	.00
31	.00	---	2080	.00	---	2540	---	.00	---	1940	1210	---
TOTAL	.00	3582.00	45444.00	5590.00	21542.00	63990	85460	8110.00	25270.00	58510	69405	847.00
MEAN	.000	119	1466	180	769	2064	2849	262	842	1887	2239	28.2
MAX	.00	999	2160	1760	1580	2540	3080	1750	1600	2050	7780	847
MIN	.00	.00	.00	.00	.00	1550	2230	.00	.00	1490	985	.00
AC=FT	.00	7100	90140	11090	42730	126900	169500	16090	50120	116100	137700	1680

CAL YR 1976 TOTAL 345968.00 MEAN 945 MAX 5920 MIN .00 AC=FT 686200
WTR YR 1977 TOTAL 387750.00 MEAN 1062 MAX 7780 MIN .00 AC=FT 769100

LOCATION.--Lat 32°44'07", long 116°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.

GAGE.--Water-stage recorder. Datum of gage is 150.00 ft (45.720 m) above mean sea level. 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 09S27000, Pilot Knob powerplant and wastewater). Datum of auxiliary gage is 150.00 ft (45.720 m) above mean sea level.

COOPERATION.--Gage-height record and log of gate operation furnished by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 7,610 ft³/s (216 m³/s) April 27, 28, 1976; no flow Jan. 4, 1967.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3670	2890	3150	1050	3190	4500	5080	5380	5880	6660	7100	5920
2	3710	2940	3550	1250	3300	4560	5300	5380	6130	6730	7140	6480
3	3960	3010	3660	1680	3390	4500	5140	5560	6200	6840	7200	6460
4	3880	3230	3480	2100	3420	4000	5310	5930	6490	6910	7070	5590
5	3950	3350	3510	2090	3230	4070	5580	5890	6380	6920	7080	5130
6	4310	3150	3310	2270	3300	3620	5830	6070	6380	7020	7050	4970
7	4690	3120	3020	2570	3310	4080	5870	6000	6520	6840	7080	4930
8	4960	3370	3020	2530	3680	4390	6110	5640	6610	6830	7300	4700
9	4840	3460	3130	2050	3930	4620	6020	5720	6310	6530	7360	4280
10	4880	3400	3210	1840	4170	4780	5760	5770	5910	6470	7330	4140
11	5200	3450	3100	2170	4160	4840	5790	5800	5440	6600	7200	3570
12	4980	2340	3030	2350	3870	5230	6130	5710	4960	6770	7010	3370
13	4860	1440	2990	2760	3560	5190	6180	5420	4730	6830	7140	3460
14	4420	1210	2990	2740	3990	5240	6130	5000	4740	6730	7080	3630
15	4290	1230	2920	2340	4350	5620	6080	4400	5070	6730	4990	3580
16	4280	1580	2900	2310	4330	5770	6200	4560	5430	6690	1020	3530
17	3940	1920	3080	2270	3930	5620	6250	4660	5160	6550	1290	3830
18	3630	1840	2960	2490	3920	5410	6330	5150	5290	6790	943	3840
19	3470	1820	2770	2670	3770	5110	6530	5560	5290	6850	1030	3980
20	3570	1920	2810	3040	3580	4520	6680	5230	5440	6860	1440	4070
21	3450	1870	2820	2970	3870	4960	6740	5440	5500	6960	1310	4180
22	3560	1820	2720	2800	3900	5270	6830	5740	5520	6960	1680	4290
23	3520	1870	2420	2820	4170	5440	6500	5910	5620	6830	2050	4270
24	3050	2100	1770	2550	4550	5610	6040	5990	5550	6800	2290	4290
25	3090	2150	1310	2690	4360	5680	6440	6060	5830	6780	2380	3890
26	3020	2340	1220	2900	4250	5820	6430	5640	5970	6910	2790	4030
27	3020	2610	2010	3190	4440	4860	6470	5360	6200	6980	3460	4120
28	2770	2360	2340	3240	4520	5440	6180	5340	6370	7100	3400	4350
29	2780	2410	2510	3040	---	5500	5980	4860	6620	6980	3560	4200
30	2920	2740	2840	2980	---	5650	5830	5280	6650	7220	4210	4210
31	2850	---	1750	3240	---	5220	---	5370	---	7190	5080	---
TOTAL	119520	72940	86300	76990	108440	155120	181740	169820	174190	211860	143063	131290
MEAN	3855	2431	2784	2484	3873	5004	6058	5478	5806	6834	4615	4376
MAX	5200	3460	3660	3240	4550	5820	6830	6070	6650	7220	7	

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. 444 for records of diversions.

See figure 6 on p. 424 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. For water year 1977, 29 acre-ft (35,800 m³) 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 monthly.

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.

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 NE¼NE¼ 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 NW¼SE¼ 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 SE¼NW¼ 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 NE¼NW¼ 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 NW¼NE¼ 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. (First flow June 23).

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 SE¼NE¼ 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 NW¼NE¼ 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 NW¼SW¼ 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 1976 to SEPTEMBER 1977

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	764	33	219	507	0	45
November	601	16	151	432	0	45
December	700	7.8	197	336	0	58
CAL YR 1976	9,950	72	2,050	5,670	0.6	488
January	787	8.2	99	268	0	43
February	702	2.7	149	393	0	42
March	685	0	153	345	0	46
April	605	4.1	143	273	0	62
May	551	0	141	348	0	92
June	405	0	187	351	0	78
July	592	0	267	340	0	101
August	789	7.9	185	342	0	83
September	622	6.8	137	502	0	13
WTR YR 1977	7,800	87	2,030	4,440	0	707

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	66	3.5	52	201	8.0
November	72	7.4	41	543	22
December	51	7.1	14	1,950	6.5
CAL YR 1976	641	6,580	520	17,510	104
January	83	9.1	.4	1,310	1.5
February	80	813	18	1,490	1.7
March	69	1,380	35	1,720	2.7
April	70	1,810	36	2,130	1.0
May	66	1.5	33	1,730	2.1
June	82	677	33	1,380	8.5
July	161	1,410	28	2,080	22
August	130	1,040	12	1,740	8.8
September	119	1.8	.2	1,160	0
WTR YR 1977	1,050	7,160	303	17,430	85

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	18,880	2,170	35	32	0.6
November	17,910	2,190	36	33	1.3
December	18,850	2,330	35	13	273
CAL YR 1976	203,200	29,490	208	467	1,560
January	18,520	2,130	26	17	40
February	816,710	2,310	22	22	135
March	10,580	2,510	45	16	3.8
April	17,540	2,580	54	53	235
May	16,870	2,590	51	39	3.6
June	17,600	2,180	48	65	410
July	18,080	2,210	40	62	956
August	17,820	2,430	22	69	240
September	17,380	2,520	5	65	2.4
WTR YR 1977	206,700	28,130	419	487	2,300

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

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Return surface flows below Imperial Dam, AZ-CA--Continued

MONTHLY RETURN FLOWS, IN ACRE-FEET, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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.....	112	1,100	20	305	3,730	4,180
November.....	100	952	24	249	3,370	3,860
December.....	68	938	8.1	206	3,180	4,320
CAL YR 1976	1,180	12,510	187	3,150	43,210	46,990
January.....	44	734	6.1	145	2,790	4,370
February.....	53	742	5.6	167	2,650	3,820
March.....	68	879	6.1	215	3,000	4,140
April.....	85	912	6.0	226	2,890	3,850
May.....	106	966	4.0	239	3,220	3,650
June.....	106	952	4.6	242	3,240	3,880
July.....	130	1,120	6.1	321	3,570	3,660
August.....	112	1,160	6.1	299	3,210	2,540
September.....	71	982	6.0	244	2,990	2,830
WTR YR 1977	1,060	11,440	103	2,860	37,840	45,090

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.....	52	224	0	91	19,200	107
November.....	36	211	0	108	18,220	115
December.....	27	141	0	73	19,040	218
CAL YR 1976	575	2,470	0	964	205,400	1,227
January.....	13	93	0	65	18,600	0
February.....	11	76	0	89	16,510	205
March.....	11	104	0	91	10,660	223
April.....	6.0	100	0	71	17,950	212
May.....	11	88	0	104	16,880	18
June.....	18	104	0	84	16,170	71
July.....	14	161	0	72	1,300	17
August.....	6.5	154	0	70	223	193
September.....	6.0	117	0	14	420	16
WTR YR 1977	212	1,570	0	932	155,200	1,400

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.....	2	--	8,620	606	644
November.....	0	--	7,250	429	704
December.....	0	--	7,400	610	482
CAL YR 1976	30	--	93,850	6,230	6,750
January.....	0	--	6,200	523	516
February.....	0	--	6,520	681	461
March.....	0	--	7,340	849	601
April.....	0	--	7,190	539	584
May.....	0	--	7,330	148	391
June.....	0	1,610	6,750	107	371
July.....	0	17,020	7,400	132	319
August.....	0	18,200	7,780	98	290
September.....	0	17,420	7,280	208	524
WTR YR 1977	32	54,250	87,060	4,930	5,890

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DISSOLVED POTASSIUM (K) (MG/L)
OCT 04...	0215	15	1860	7.9	25.0	390	220	95	38	240	5.3	8.8
NOV 01...	0230	10	1890	8.3	20.5	400	220	95	39	260	5.7	8.5
DEC 06...	0205	8.2	1870	8.1	14.0	410	230	100	39	250	5.4	8.2
JAN 03...	0245	12	1840	8.2	18.5	420	220	99	41	240	5.1	8.0
FEB 07...	0205	12	1880	8.2	14.5	440	240	110	41	250	5.2	7.8
MAR 07...	0205	7.0	1900	8.3	15.5	440	230	110	41	250	5.2	7.9
APR 04...	0200	11	1910	8.3	19.0	440	230	110	40	250	5.2	8.2
MAY 02...	0200	10	1930	8.2	23.0	480	260	120	43	250	5.0	8.5
JUN 06...	0220	8.2	1900	8.2	27.0	460	270	110	46	250	5.1	8.6
JUL 04...	0155	12	1920	8.3	28.0	430	230	100	43	250	5.3	8.0
AUG 01...	0250	10	1870	7.9	29.0	430	250	100	43	260	5.5	8.0
SEP 05...	0230	10	1790	7.9	30.0	400	240	90	42	240	5.2	8.0

	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLOR- IDE (CL) (MG/L)	DTS- SOLVED FLUOR- IDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (REST- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTIT- UTENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED NITRATE PLUS NITRATE (N) (MG/L)	DTS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
OCT 04...	212	0	430	210	2.1	22	1210	1150	1.65	.03	390	20
NOV 01...	214	0	460	240	2.2	19	1240	1230	1.69	.09	390	0
DEC 06...	223	0	460	210	2.0	16	1200	1200	1.63	.04	370	10
JAN 03...	243	0	430	210	1.8	17	1170	1170	1.59	.04	330	10
FEB 07...	254	0	440	210	1.9	14	1210	1200	1.65	.07	330	0
MAR 07...	255	0	460	230	1.6	13	1220	1240	1.66	.02	330	0
APR 04...	260	0	440	220	1.3	13	1230	1210	1.67	.04	340	10
MAY 02...	260	0	470	210	1.8	13	1210	1250	1.65	.00	330	10
JUN 06...	240	0	450	210	1.7	15	1200	1210	1.63	.01	340	20
JUL 04...	240	0	460	220	1.7	18	1260	1220	1.71	--	350	10
AUG 01...	220	0	480	210	1.8	23	1220	1230	1.66	--	350	10
SEP 05...	190	0	490	210	1.8	25	1200	1200	1.63	--	360	10

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09529000 NORTH GILA DRAIN NO. 1 NEAR YUMA, AZ

LOCATION.--Lat 32°45'29", long 114°27'18", in NE¼NW¼ 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TTMF	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DIS-SOLVED POTASSIUM (K) (MG/L)
OCT 18...	1215	8.4	1990	8.3	23.5	490	290	120	45	270	5.3	5.2
NOV 23...	1340	11	1780	8.5	--	440	260	110	41	220	4.5	5.6
DEC 20...	1350	5.5	1760	8.4	18.5	390	230	93	39	230	5.1	4.6
JAN 24...	1145	3.5	1740	8.4	17.0	410	240	100	40	220	4.7	4.4
FEB 22...	1325	7.7	1970	8.3	22.0	450	250	110	43	260	5.3	5.6
MAR 24...	1430	4.3	1790	8.6	24.5	440	270	110	39	230	4.8	4.4
APR 26...	1315	.50	1190	8.6	26.0	350	220	89	31	120	2.8	5.3
MAY 24...	1440	7.0	1740	7.9	28.0	410	250	99	40	230	4.9	4.9
JUN 29...	0940	5.9	1840	8.3	25.0	470	270	120	41	250	5.0	4.7
JUL 26...	1015	5.0	1880	7.8	27.0	480	260	120	44	250	5.0	5.0
AUG 29...	1035	5.4	1790	7.9	25.5	420	210	110	35	230	4.9	5.1
SEP 27...	1100	10	1750	7.5	24.0	440	250	110	41	200	4.1	5.7
DATE	RICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO2) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS PER AC-FT	DIS-SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT 18...	237	0	470	250	.6	21	1340	1300	1.82	.18	310	0
NOV 23...	223	0	450	200	.6	15	1200	1150	1.63	.21	270	0
DEC 20...	200	0	430	210	.6	19	1180	1130	1.60	.23	280	10
JAN 24...	208	0	400	200	.6	19	1130	1090	1.54	.21	260	10
FEB 22...	249	0	500	220	.7	21	1340	1290	1.82	.48	310	0
MAR 24...	198	0	430	210	.6	19	1180	1140	1.60	.20	270	0
APR 26...	160	3	310	110	.5	6.8	792	755	1.08	.07	130	0
MAY 24...	200	0	440	190	.7	18	1160	1120	1.58	.16	250	10
JUN 29...	240	0	460	230	.7	20	1230	1250	1.67	--	280	10
JUL 26...	270	0	460	210	.7	21	1250	1250	1.70	.25	290	10
AUG 29...	250	0	440	210	.7	21	1190	1180	1.62	.12	290	60
SEP 27...	230	0	440	200	.6	18	1160	1130	1.58	.18	280	20

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 most each year. Unpublished chemical analyses (partial record) for water years 1965-68 available from district office in Tucson, Ariz.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DTS- CHARGE (CFS)
OCT		
19...	1135	.00
NOV		
22...	1130	.00
DEC		
20...	1600	.00
JAN		
24...	1300	.00
FEB		
22...	1330	.00
MAR		
21...	1350	.00
APR		
26...	1315	.00
MAY		
24...	1400	.00
JUN		
29...	1240	.00
JUL		
26...	1220	.00
AUG		
29...	1105	.00
SEP		
26...	1300	.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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS	DIS- SOLVED CAL- CIUM (CA)	DTS- SOLVDF MAG- NESIUM (MG)	DIS- SOLVED SODIUM (NA)	SODIUM AD- SORP- TION RATIO	
DATE	TIME	(CFS)	(MHOS)	(UNITS)	(DEG C)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)		
FEB												
14...	0230	29	4810	7.7	20.0	1000	659	242	96	660	9.1	
21...	0320	29	4920	7.9	--	1020	670	232	107	670	9.1	
MAR												
07...	0310	24	5340	7.9	23.0	1070	711	242	113	765	10	
14...	0230	25	5340	7.7	21.5	1070	712	242	113	770	10	
21...	0305	22	5380	7.9	22.0	1070	706	244	112	775	10	
28...	0220	22	5390	7.9	18.5	1060	698	244	110	775	10	
APR												
04...	0255	29	5920	7.7	22.0	1160	810	276	115	875	11	
11...	0310	29	5900	7.8	21.5	1150	800	274	113	875	11	
18...	0300	39	5340	7.7	21.5	1100	748	258	111	765	10	
25...	0120	29	5750	8.0	21.5	1120	770	258	116	840	11	
JUN												
20...	0230	21	4470	7.6	24.0	930	598	220	93	625	8.9	
27...	0320	20	4500	7.7	25.0	930	596	228	88	625	8.9	
JUL												
04...	0220	22	5680	7.5	23.0	1110	778	264	110	825	11	
11...	0305	22	5640	7.7	26.5	1110	780	262	111	820	11	
18...	0400	22	5600	7.6	28.5	1100	769	260	110	820	11	
25...	0155	22	5580	7.5	22.0	1100	770	254	113	815	11	
AUG												
01...	0200	21	5560	7.5	26.5	1110	776	258	113	810	11	
08...	0145	21	5520	7.5	29.5	1110	778	258	113	805	11	
15...	0040	13	5630	7.5	22.0	1130	862	282	104	770	10	
22...	0320	21	6300	7.4	28.5	1200	803	282	121	945	12	
		DIS- SOLVED PO- TAS- SIUM (K)	BICAR- BONATE (HCO3)	CAR- BONATE (CO3)	DIS- SOLVED SULFATE (SO4)	DTS- SOLVED CHLO- RIDE (CL)	DIS- SOLVED FLUO- RIDE (F)	DTS- SOLVED SILICA (STDP)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C)	DTS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED NITRATE (N)
DATE		(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)	(MG/L)		(MG/L)
FEB												
14...	9.4	416	0	540	1090	.5	23	3090	2870	4.20	.90	
21...	9.2	426	0	550	1110	1.4	22	3160	2920	4.30	.77	
MAR												
07...	9.2	438	0	630	1230	.4	23	3400	3230	4.62	1.2	
14...	9.4	436	0	630	1230	.7	24	3400	3240	4.62	1.0	
21...	9.6	444	0	640	1230	.7	22	3460	3260	4.71	1.3	
28...	9.8	442	0	640	1230	.7	23	3460	3260	4.71	1.0	
APR												
04...	11	426	0	670	1425	1.0	21	3800	3610	5.17	1.5	
11...	10	426	0	670	1420	.5	21	3830	3600	5.21	.68	
18...	9.9	430	0	625	1250	.5	24	3510	3260	4.77	.68	
25...	10	426	0	655	1350	.6	20	3700	3460	5.03	1.1	
JUN												
20...	8.2	404	0	525	1000	.6	24	2910	2700	3.96	.95	
27...	8.8	408	0	525	1010	.7	23	2950	2710	4.01	1.1	
JUL												
04...	9.9	404	0	645	1340	.4	22	3760	3420	5.11	.95	
11...	9.9	402	0	645	1340	.8	22	3740	3410	5.09	.97	
18...	9.9	404	0	640	1330	.9	23	3720	3400	5.06	.99	
25...	9.9	402	0	635	1330	.8	22	3750	3380	5.10	.90	
AUG												
01...	9.8	408	0	635	1330	.6	22	3660	3380	4.98	.99	
08...	9.8	404	0	630	1320	.8	24	3700	3360	5.03	.99	
15...	10	326	0	505	1430	.9	20	3570	3280	4.86	.11	
22...	12	484	0	800	1450	1.0	24	4060	3880	5.52	1.3	

LOCATION.--Lat 32°43'26", long 114°31'07", in NW¼ 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.

REMARKS.--No flow Jan. 3-31; Feb. 1; Sept. 9-26. Unpublished chemical analyses (partial record) for water years 1965-68 available from district office in Tucson, Ariz.

[illegible]

09529200 BRUCE CHURCH DRAIN NEAR YUMA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

[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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO
OCT											
04...	0330	4.0	2090	8.1	23.0	300	66	75	27	345	8.7
11...	0115	3.5	2090	8.1	23.5	305	69	77	27	345	8.6
18...	0430	3.4	2090	8.1	24.0	305	72	74	29	340	8.5
25...	0320	3.4	2090	8.1	23.0	305	70	74	29	340	8.5
NOV											
01...	0120	3.6	2090	8.1	21.0	305	72	74	29	340	8.5
08...	0315	3.4	2090	8.2	20.0	300	64	75	27	340	8.6
15...	0330	3.2	2090	8.2	22.0	300	67	77	26	340	8.6
22...	0115	11	2180	8.2	19.5	340	109	84	32	345	8.1
29...	0425	19	2680	8.0	15.5	435	196	109	40	405	8.4
DEC											
06...	0325	20	2680	8.0	23.5	435	196	110	39	415	8.7
13...	0105	36	2980	8.0	20.0	495	252	117	49	450	8.8
20...	0040	35	2950	8.0	20.0	490	249	116	49	445	8.7
27...	0315	34	2940	8.0	23.5	485	244	117	47	445	8.8
JAN											
03...	0140	34	2930	8.0	20.5	480	240	115	47	445	8.8
10...	0320	20	2680	8.0	19.5	430	192	106	40	405	8.5
17...	0320	20	2660	7.9	23.5	425	189	102	41	405	8.6
24...	0110	21	2660	8.0	19.5	425	187	103	41	405	8.5
31...	0320	20	2660	8.0	21.0	430	190	104	41	405	8.5
FEB											
07...	0320	29	3110	8.0	24.0	505	258	118	51	475	9.2
14...	0245	29	3090	8.0	19.5	500	254	116	51	470	9.2
21...	0500	27	3090	8.0	22.0	500	254	117	51	470	9.1
28...	0310	28	3060	7.9	24.0	490	246	115	49	465	9.2
MAR											
07...	0325	28	3110	7.9	24.5	495	249	116	50	475	9.3
14...	0240	28	3090	7.9	21.0	500	254	116	51	470	9.2
21...	0320	28	3090	7.8	22.0	495	252	118	49	470	9.2
28...	0235	28	3090	7.8	17.0	495	254	121	47	470	9.2
APR											
04...	0305	38	2970	7.9	21.5	505	276	119	51	445	8.6
11...	0330	38	2980	8.0	21.5	510	280	119	52	445	8.6
18...	0320	34	3070	8.1	21.5	525	296	123	53	455	8.6
25...	0100	34	3080	8.1	23.0	525	294	126	51	460	8.7
MAY											
02...	0310	38	3010	8.0	23.5	510	280	120	51	450	8.7
09...	0400	30	3120	8.0	--	510	268	117	53	475	9.2
16...	0330	29	3120	7.9	25.5	500	259	117	51	485	9.4
23...	0345	28	3100	8.0	28.0	495	254	115	51	475	9.3
30...	0340	25	3090	8.0	21.5	495	254	114	51	470	9.2
JUN											
06...	0340	25	3090	8.0	25.5	495	254	117	49	470	9.2
13...	0330	26	3070	8.0	23.0	495	254	115	51	470	9.2
20...	0245	19	3480	7.9	24.0	555	310	126	58	530	9.8
27...	0505	19	3470	8.0	25.5	555	309	128	57	530	9.8
JUL											
04...	0330	29	3190	7.9	23.5	550	324	130	55	470	8.7
11...	0330	36	3040	7.9	26.5	535	310	126	54	445	8.4
18...	0410	38	2960	7.8	27.0	525	305	124	52	430	8.2
25...	0200	36	3030	7.6	24.5	535	308	128	52	445	8.4
AUG											
01...	0140	37	2970	7.8	27.0	530	304	126	52	430	8.1
08...	0135	23	3320	7.9	29.0	555	312	132	55	500	9.2
15...	0115	43	2980	7.9	23.5	530	302	124	54	435	8.2
22...	0300	38	3020	7.8	28.0	530	300	127	52	445	8.4
29...	0330	22	3430	7.8	26.0	545	296	125	57	530	9.9
SEP											
05...	0330	22	3410	7.8	29.0	545	294	125	57	530	9.9
12...	0240	23	3400	7.8	27.0	545	292	123	58	530	9.9
19...	0340	25	3390	7.9	24.5	540	289	123	57	525	9.8
26...	0155	21	3390	7.6	22.0	540	296	124	56	525	9.8

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, 3,530 micromhos June 16; minimum daily, 2,080 micromhos Oct. 14, 16, 17, 25, 31, Nov. 4.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)
OCT											
04...	5.2	286	0	430	255	1.3	24	1310	1320	1.78	2.9
11...	5.4	288	0	430	255	1.6	22	1310	1330	1.78	5.0
18...	5.8	284	0	430	252	1.0	24	1310	1310	1.78	4.3
25...	5.3	286	0	425	255	1.3	21	1300	1310	1.77	3.4
NOV											
01...	5.2	284	0	425	255	1.4	24	1300	1310	1.77	3.8
08...	5.2	288	0	420	255	1.0	21	1290	1300	1.75	3.6
15...	5.3	284	0	425	255	.8	24	1300	1310	1.77	4.5
22...	5.8	282	0	435	282	1.2	22	1360	1360	1.85	3.6
29...	6.5	292	0	430	440	1.0	20	1640	1610	2.23	2.7
DEC											
06...	6.4	292	0	445	445	1.0	20	1660	1630	2.26	2.0
13...	6.6	296	0	415	565	.7	24	1830	1780	2.49	.72
20...	6.9	294	0	415	560	.9	22	1800	1770	2.45	1.4
27...	7.6	294	0	415	555	.8	22	1800	1760	2.45	1.6
JAN											
03...	6.4	292	0	415	555	.9	22	1770	1760	2.41	1.3
10...	5.9	290	0	430	445	.9	22	1630	1610	2.22	2.0
17...	6.4	288	0	430	445	1.0	22	1620	1600	2.20	2.1
24...	6.4	290	0	430	445	1.0	21	1640	1610	2.23	2.3
31...	6.0	292	0	430	445	1.0	21	1630	1610	2.22	2.5
FEB											
07...	5.9	302	0	425	605	.8	18	1890	1860	2.57	1.7
14...	6.4	300	0	420	595	.9	22	1900	1840	2.58	1.8
21...	6.8	300	0	420	600	1.0	20	1890	1840	2.57	1.3
28...	6.6	298	0	415	590	.9	21	1860	1820	2.53	1.8
MAR											
07...	6.4	300	0	425	600	.9	18	1870	1850	2.54	1.8
14...	6.4	300	0	420	595	1.0	21	1880	1840	2.56	1.9
21...	6.5	296	0	420	595	.9	22	1890	1830	2.57	1.6
28...	6.4	294	0	420	595	1.0	20	1890	1830	2.57	1.5
APR											
04...	6.6	280	0	420	570	1.0	21	1800	1780	2.45	1.1
11...	6.4	280	0	420	575	1.0	20	1820	1780	2.48	1.1
18...	6.6	280	0	415	600	1.0	20	1850	1820	2.52	1.0
25...	6.4	282	0	420	605	1.1	21	1860	1840	2.53	1.5
MAY											
02...	6.6	280	0	415	585	1.0	22	1810	1790	2.46	1.3
09...	6.6	296	0	425	610	.9	21	1900	1860	2.58	1.7
16...	6.2	294	0	425	615	1.0	22	1900	1880	2.58	2.1
23...	6.6	294	0	420	605	1.0	20	1880	1850	2.56	1.6
30...	6.6	294	0	420	600	1.0	21	1880	1840	2.56	1.6
JUN											
06...	6.2	294	0	420	600	1.0	20	1850	1840	2.52	1.8
13...	6.7	294	0	420	600	1.0	22	1870	1840	2.54	1.6
20...	6.8	298	0	415	735	.9	22	2080	2040	2.83	.95
27...	6.4	300	0	415	735	1.0	20	2080	2040	2.83	.95
JUL											
04...	6.6	276	0	410	655	.9	22	1910	1890	2.60	.68
11...	6.7	274	0	410	610	1.0	20	1820	1810	2.48	.59
18...	6.4	268	0	405	585	.9	19	1800	1760	2.45	.56
25...	6.8	276	0	405	610	.9	21	1840	1810	2.50	.63
AUG											
01...	6.6	276	0	405	585	.9	20	1790	1760	2.43	.59
08...	6.7	296	0	410	700	1.0	22	1970	1970	2.68	.23
15...	6.2	278	0	405	590	1.0	22	1820	1780	2.48	.63
22...	6.0	280	0	405	605	1.0	22	1820	1800	2.48	.66
29...	6.4	304	0	415	730	.9	23	2080	2040	2.83	.95
SEP											
05...	6.5	306	0	415	725	1.0	20	2050	2040	2.79	1.1
12...	6.6	308	0	415	725	1.0	22	2030	2040	2.76	1.1
19...	6.7	306	0	410	720	.8	22	2030	2020	2.76	.95
26...	6.4	298	0	410	720	1.1	22	2050	2020	2.79	1.1

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529240 SOUTH GILA PUMP OUTLET CHANNEL NO. 2 NEAR YUMA, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2110	2090	2680	2940	2700	3090	2970	3040	3110	3220	3000	3440
2	2100	2090	2690	2940	2670	3110	2980	3040	3120	3230	3060	3430
3	2100	---	2690	2940	2650	3120	2980	3150	3120	3220	3050	3450
4	2100	2080	2670	2940	3140	3110	2980	3150	3130	3220	3060	3440
5	2100	2090	2680	2760	3110	3130	2970	3140	3120	3230	3340	3440
6	2100	2090	2680	2690	3120	3130	2980	3140	3120	3230	3330	3450
7	2100	2090	2670	2690	3120	3120	2990	3130	3110	3250	3340	3440
8	2090	2090	2560	2680	3120	3110	2980	3130	3120	3060	3340	3440
9	2090	2090	3020	2690	3110	3110	2990	3140	3100	3070	3340	3440
10	2090	2090	3000	2680	3100	3110	2990	3130	3110	3080	3340	3440
11	2090	2090	2990	2680	3110	3100	2990	3120	3110	3080	3340	3440
12	2090	2090	2980	2690	3100	3110	3090	3140	3110	3070	3330	3440
13	2090	2090	2980	2680	3090	3120	3090	3130	3110	3070	3340	3440
14	2080	2090	2970	2680	3080	3110	3080	3140	3510	3070	3050	3410
15	2090	2090	2960	2660	3110	3100	3110	3130	3500	3060	3010	3410
16	2080	2100	2960	2700	3110	3100	3100	3130	3530	2970	3050	3410
17	2080	2160	2970	2680	3120	3100	3100	3140	3490	2980	3050	3470
18	2090	2190	2960	2670	3120	3100	3110	3130	3490	2980	3050	3450
19	2090	2180	2960	2660	3120	3130	3080	3120	3490	2970	3040	3450
20	2090	2180	2950	2690	3120	3120	3090	3130	3490	3080	3070	3410
21	2090	2180	2930	2660	3100	3110	3090	3140	3500	3050	3060	3400
22	2090	2180	2950	2670	3110	3120	3090	3120	3480	3050	3060	3430
23	2090	2540	2950	2680	3100	3110	3110	3120	3510	3050	3040	3400
24	2090	2610	2940	2660	3090	3100	3090	3120	3510	3050	3490	3400
25	2080	2630	2940	2660	3090	3100	3100	3120	3490	3050	3470	3400
26	2090	2650	2940	2660	3090	3100	3020	3130	3490	3080	3470	3400
27	2090	2660	2940	2670	3070	3100	3060	3110	3490	3060	3500	3400
28	2090	2660	2920	2660	3080	3120	3050	3120	3490	2970	3460	3390
29	2090	2670	2930	2650	---	3100	3040	3120	3200	3050	3470	3400
30	2090	2680	2940	2660	---	3130	3040	3110	3230	3010	3450	3410
31	2080	---	2940	2670	---	3100	---	3110	---	3020	3500	---

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
OCT											
04...	0250	304	5500	7.9	24.0	940	582	238	84	895	13
11...	0135	312	5450	8.0	23.5	920	564	232	83	890	13
18...	0230	302	5480	7.9	23.5	930	574	236	83	895	13
25...	0240	302	5550	8.0	23.5	940	582	232	88	905	13
NOV											
01...	0140	302	5450	8.0	--	920	566	232	83	885	13
08...	0240	298	5430	8.0	19.0	910	552	232	80	885	13
15...	0240	291	5630	8.0	23.0	940	582	232	88	915	13
22...	0830	308	5480	8.0	20.0	930	572	230	87	895	13
29...	0245	302	5370	8.0	14.5	900	541	232	78	880	13
DEC											
06...	0225	294	5550	8.0	20.5	920	562	236	80	910	13
13...	0135	309	5590	7.9	19.0	940	578	232	88	915	13
20...	0015	308	5520	8.0	19.0	930	568	232	85	910	13
27...	0230	303	5520	7.9	19.0	930	569	234	84	905	13
JAN											
03...	0210	302	5510	8.1	20.0	930	569	230	87	900	13
10...	0245	302	5470	7.9	--	920	566	222	89	885	13
17...	0225	302	5490	7.9	21.0	920	562	230	84	895	13
24...	0150	302	5570	8.0	20.5	920	561	236	80	915	13
31...	0240	300	5580	8.0	20.0	930	569	236	83	915	13
FEB											
07...	0240	308	5590	8.0	22.0	930	569	232	85	915	13
14...	0200	303	5430	8.0	20.5	900	539	222	84	890	13
21...	0255	303	5430	8.1	21.0	900	539	222	84	890	13
28...	0230	294	5390	7.9	21.0	900	539	230	79	885	13
MAR											
07...	0235	302	5380	8.0	21.5	890	531	218	84	885	13
14...	0200	296	5480	8.0	19.5	920	562	222	89	895	13
21...	--	.00	--	--	--	--	--	--	--	--	--
28...	--	.00	--	--	--	--	--	--	--	--	--
APR											
04...	0220	306	5170	8.1	21.0	870	516	210	84	850	13
11...	0230	294	5280	8.1	22.0	880	534	208	88	865	13
18...	0230	304	5250	8.2	21.0	870	516	208	85	860	13
25...	0140	296	5250	8.2	24.0	870	512	206	87	860	13
MAY											
02...	0230	302	5250	8.2	24.0	870	512	206	87	860	13
09...	0250	284	5410	8.2	23.5	910	548	216	90	880	13
16...	0240	266	5260	8.2	24.5	870	519	206	87	865	13
23...	0255	279	5310	8.2	27.0	880	526	208	88	870	13
30...	0300	264	5200	8.2	22.0	860	508	204	85	855	13
JUN											
06...	0300	291	5190	8.1	24.5	860	504	204	85	850	13
13...	0245	284	5150	8.1	25.0	850	492	202	84	850	13
20...	0200	300	5190	8.0	25.0	860	506	208	83	850	13
27...	0240	306	5270	8.0	25.0	880	529	212	85	865	13
JUL											
04...	0210	306	5310	8.0	25.5	880	530	218	82	870	13
11...	0240	294	5260	8.0	28.0	880	526	210	87	865	13
18...	0340	280	5300	7.7	28.0	880	521	218	82	870	13
25...	0415	279	5270	7.9	26.0	880	524	216	83	870	13
AUG											
01...	0210	298	5340	7.9	28.0	890	536	216	85	875	13
08...	0205	302	5290	7.8	28.5	880	521	214	84	870	13
15...	0005	321	5160	7.9	26.5	860	512	214	79	850	13
22...	0005	288	5240	7.8	28.0	880	524	218	82	860	13
29...	0255	297	5320	7.9	27.0	890	532	222	82	870	13
SEP											
05...	0245	291	5330	7.8	28.0	910	548	224	85	870	13
12...	0210	280	5370	7.8	27.5	910	554	220	88	875	13
19...	0300	292	5260	7.8	24.0	890	540	216	85	860	13
26...	0230	298	5260	7.9	24.5	880	526	212	85	860	13

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, 6,130 micromhos Mar. 20, minimum daily, 4,890 micromhos Aug. 17.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED POT- TAS- STUM (K) (MG/L)	BICAR- BONATE (HCN3) (MG/L)	CAR- BONATE (CON3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (STO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED NITRATE (N) (MG/L)
OCT											
04...	8.6	436	0	920	1110	2.0	28	3610	3510	4.91	2.9
11...	8.4	434	0	915	1090	2.2	25	3590	3470	4.88	3.4
18...	8.6	434	0	915	1110	2.6	24	3580	3500	4.87	2.7
25...	8.8	436	0	920	1130	2.3	24	3660	3540	4.98	2.3
NOV											
01...	8.4	432	0	915	1090	2.6	24	3600	3460	4.90	2.7
08...	8.6	436	0	910	1090	2.6	23	3600	3460	4.90	2.5
15...	8.8	436	0	930	1140	2.2	26	3690	3570	5.02	3.4
22...	8.6	436	0	915	1110	2.6	24	3650	3500	4.96	2.9
29...	8.4	438	0	900	1080	2.5	25	3580	3430	4.87	2.9
DEC											
06...	8.4	436	0	920	1120	2.3	24	3610	3530	4.91	2.1
13...	8.7	442	0	925	1130	2.5	25	3690	3560	5.02	2.7
20...	8.6	442	0	920	1110	2.4	26	3670	3520	4.99	2.9
27...	9.2	440	0	920	1110	2.4	25	3660	3520	4.98	2.9
JAN											
03...	8.5	440	0	920	1110	2.5	26	3610	3520	4.91	3.2
10...	8.4	432	0	910	1090	2.5	25	3570	3460	4.86	2.7
17...	8.4	436	0	920	1100	2.2	26	3550	3490	4.83	2.5
24...	9.5	438	0	930	1110	2.1	24	3620	3540	4.92	2.9
31...	9.0	440	0	925	1120	2.3	24	3700	3540	5.03	2.7
FEB											
07...	9.1	440	0	930	1120	2.3	23	3640	3550	4.95	2.7
14...	9.2	440	0	915	1070	2.4	25	3560	3450	4.84	2.5
21...	9.0	440	0	915	1070	2.4	25	3550	3440	4.83	2.3
28...	8.8	440	0	910	1060	2.5	25	3530	3430	4.80	3.2
MAR											
07...	8.5	438	0	910	1060	2.6	25	3500	3420	4.76	2.7
14...	8.9	436	0	920	1090	2.5	23	3540	3480	4.81	2.3
21...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
APR											
04...	8.8	432	0	900	1000	2.6	24	3350	3300	4.56	2.3
11...	8.7	422	0	930	1020	2.5	25	3490	3370	4.75	2.3
18...	8.7	432	0	920	1020	2.2	25	3430	3350	4.66	2.9
25...	8.8	436	0	920	1010	2.5	25	3440	3350	4.68	3.8
MAY											
02...	9.3	436	0	920	1010	2.5	25	3410	3350	4.64	3.2
09...	8.5	442	0	950	1050	2.5	24	3520	3450	4.79	2.9
16...	8.3	428	0	925	1020	2.5	25	3400	3360	4.62	3.4
23...	8.2	432	0	935	1030	2.5	24	3440	3390	4.68	2.9
30...	8.7	430	0	920	990	3.0	24	3380	3310	4.60	2.5
JUN											
06...	8.2	434	0	920	990	2.6	25	3430	3310	4.66	3.2
13...	8.7	436	0	920	980	2.4	25	3350	3300	4.56	2.7
20...	8.5	432	0	920	990	2.0	26	3370	3310	4.58	3.2
27...	8.3	428	0	930	1020	2.6	25	3480	3370	4.73	3.2
JUL											
04...	8.5	426	0	935	1030	2.4	25	3450	3390	4.69	2.7
11...	8.5	432	0	930	1010	2.0	24	3430	3360	4.66	2.7
18...	8.4	438	0	935	1020	2.5	24	3480	3390	4.73	2.9
25...	8.4	434	0	935	1010	2.4	25	3510	3380	4.77	2.9
AUG											
01...	8.4	432	0	935	1030	2.2	26	3510	3400	4.77	2.7
08...	8.7	438	0	935	1020	2.6	26	3500	3390	4.76	3.6
15...	8.7	424	0	920	990	2.3	24	3350	3310	4.56	2.5
22...	8.5	434	0	935	1000	2.5	26	3480	3360	4.73	3.2
29...	8.7	436	0	935	1020	2.4	25	3530	3390	4.80	2.5
SEP											
05...	8.6	442	0	945	1020	2.6	24	3500	3410	4.76	2.3
12...	8.8	434	0	935	1040	2.6	24	3510	3420	4.77	2.7
19...	8.3	426	0	930	1010	2.5	25	3470	3360	4.72	2.5
26...	8.5	432	0	935	1010	2.5	24	3500	3360	4.76	2.7

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529300 WELLTON-MOHAWK MAIN OUTLET DRAIN NEAR YUMA, AZ--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
UNCF-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5440	5460	5430	5440	5650	5460	5660	5310	5410	5310	5390	5310
2	5480	5500	5470	5520	5600	5400	5490	5290	5350	5310	5380	5320
3	5510	5490	5460	5500	5530	5490	5280	5220	5420	5400	5400	5330
4	5500	5500	5470	5500	5560	5530	5200	5270	5360	5340	5310	5440
5	5550	5460	5530	5620	5540	5520	5260	5390	5260	5430	5420	5420
6	5480	5540	5550	5570	5610	5420	5310	5450	5310	5380	5430	5400
7	5500	5510	5610	5550	5620	5400	5400	5360	5290	5500	5400	5320
8	5360	5470	5560	5510	5560	5430	5320	5350	5320	5470	5370	5340
9	5460	5420	5620	5510	5580	5500	5350	5440	5170	5290	5330	5340
10	5470	5460	5510	5510	5490	5530	5350	5390	5230	5370	5350	5290
11	5460	5460	5570	5480	5440	5530	5350	5440	5210	5330	5380	5350
12	5470	5440	5630	5500	5500	5580	5210	5360	5180	5320	5330	5450
13	5490	5520	5590	5490	5550	5460	5310	5370	5200	5300	5300	5430
14	5480	5520	5590	5480	5470	5540	5360	5300	5180	5250	5250	5410
15	5380	5660	5580	5620	5460	5490	5110	5290	5240	5350	5230	5260
16	5580	5610	5590	5520	5440	5500	5310	5330	5380	5380	5170	5220
17	5480	5570	5560	5520	5200	5480	5310	5360	5280	5370	4890	5280
18	5530	5560	5560	5520	5390	5470	5320	5460	5320	5360	5360	5310
19	5460	5560	5540	5540	5400	5580	5260	5380	5360	5350	5430	5310
20	5550	5620	5540	5580	5450	6130	5290	5430	5310	5400	5390	5260
21	5520	5550	5490	5580	5450	---	5280	5380	5310	5400	5290	5320
22	5520	5560	5530	5570	5430	---	5180	5340	5440	5360	5290	5310
23	5500	5610	5590	5560	5460	---	5070	5380	5520	5330	5370	5340
24	5530	5630	5550	5600	5470	---	5170	5410	5420	5360	5390	5420
25	5580	5540	5580	5540	5460	---	5290	5350	5410	5360	5280	5430
26	5560	5530	5580	5530	5450	---	5370	5350	5370	5280	5360	5410
27	5570	5480	5490	5520	5480	---	5310	5360	5380	5310	5440	5360
28	5610	5400	5520	5510	5410	---	5340	5320	5330	5310	5360	5310
29	5530	5400	5460	5570	---	---	5360	5310	5370	5300	5380	5300
30	5440	5490	5490	5570	---	---	5300	5280	5310	5370	5340	5250
31	5550	---	5510	5610	---	5320	---	5370	---	5420	5370	---

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09529360 SOUTH GILA PUMP OUTLET CHANNEL NO. 1 NEAR YUMA, AZ

LOCATION.--Lat 32°42'24", long 114°33'19", in SW¼NE¼ sec.30, T.8 S., R.22 W., Yuma County, Hydrologic Unit 15070201, at gaging station, 0.2 mi (0.3 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (MG/L)	DISSOLVED MAGNESIUM (MG/L)	DISSOLVED SODIUM (MG/L)	SODIUM ADSORPTION RATIO
OCT											
04...	0355	35	2890	8.0	23.5	510	276	131	45	425	8.2
11...	0105	36	2880	8.0	23.5	510	274	129	46	420	8.1
18...	0420	36	2890	8.0	24.0	510	276	125	48	420	8.1
25...	0345	36	2900	8.0	23.5	515	280	128	48	420	8.0
NOV											
01...	0110	36	2890	8.0	21.0	510	276	124	49	420	8.1
08...	0325	34	2910	8.2	19.5	515	279	127	48	425	8.2
15...	0355	36	2910	8.1	23.0	515	279	126	49	425	8.1
22...	0105	34	2910	8.2	19.5	515	280	128	48	425	8.1
29...	0415	41	3160	8.0	15.0	575	332	139	55	460	8.4
DEC											
06...	0345	33	2910	8.0	23.5	515	279	126	49	425	8.1
13...	0055	36	2900	8.0	20.0	515	279	125	49	425	8.2
20...	0050	40	3070	8.0	19.5	545	307	129	54	445	8.3
27...	0340	37	3030	8.0	24.0	540	304	131	52	440	8.2
JAN											
03...	0130	35	2980	8.0	20.5	535	299	132	50	440	8.3
10...	0330	33	2850	8.0	19.0	500	264	126	45	420	8.2
17...	0340	32	2880	8.0	24.0	505	269	120	50	420	8.1
24...	0100	34	2820	8.0	19.5	500	267	121	48	420	8.2
31...	0330	38	2910	8.0	21.0	520	286	126	50	425	8.1
FEB											
07...	0345	45	3130	8.0	24.5	575	334	138	56	455	8.3
14...	0250	41	3130	8.1	19.5	580	339	140	56	455	8.2
21...	0450	40	3130	8.0	21.5	580	339	140	56	455	8.2
28...	0340	42	3150	7.9	24.5	580	338	141	55	460	8.3
MAR											
07...	0350	44	3140	7.9	25.0	585	342	140	57	455	8.2
14...	0250	39	3140	7.9	21.0	585	342	143	55	455	8.2
21...	0340	39	3140	8.0	23.0	585	342	140	57	455	8.2
28...	0250	40	3140	8.0	18.0	585	344	142	56	455	8.2
APR											
04...	0315	41	3140	8.0	21.5	585	342	143	55	455	8.2
11...	0345	43	3070	8.1	22.0	570	334	134	57	445	8.1
18...	0335	46	3220	8.1	22.0	580	338	140	56	470	8.5
25...	0110	45	3210	8.1	23.0	580	336	140	56	470	8.5
MAY											
02...	0325	40	3220	8.1	23.5	595	350	140	60	470	8.4
09...	0430	45	3150	8.0	--	585	342	141	57	455	8.2
16...	0340	45	3150	8.0	25.5	585	344	140	57	455	8.2
23...	0400	43	3140	8.0	28.0	585	344	139	58	455	8.2
30...	0350	41	3140	8.0	21.0	585	344	141	57	455	8.2
JUN											
06...	0350	43	3150	8.0	25.5	590	348	142	57	460	8.2
13...	0345	42	3010	8.0	23.5	550	314	134	52	445	8.3
20...	0255	36	2990	8.0	24.5	540	306	134	50	440	8.2
27...	0450	36	2990	8.0	25.5	540	306	134	50	440	8.2
JUL											
04...	0320	36	2990	7.8	23.5	540	307	133	51	440	8.2
11...	0340	36	2980	7.9	27.0	540	306	131	52	440	8.2
18...	0420	37	2990	7.8	29.0	540	307	134	50	440	8.2
25...	0350	35	2910	7.6	23.5	515	287	123	51	435	8.3
AUG											
01...	0125	39	3160	7.8	27.0	595	349	143	58	455	8.1
08...	0125	38	3160	7.9	29.0	595	349	145	57	455	8.1
15...	0105	25	3440	7.8	23.5	660	404	165	60	500	8.5
22...	0250	40	3150	7.8	28.0	595	349	145	57	455	8.1
29...	0340	40	3160	7.7	28.5	595	349	144	57	455	8.1
SEP											
05...	0345	40	3150	7.7	28.5	595	349	144	57	455	8.1
12...	0250	43	3150	7.9	27.0	595	349	144	57	455	8.1
19...	0350	40	3150	7.8	24.5	595	346	144	57	455	8.1
26...	0210	45	3210	7.7	23.0	580	339	141	55	470	8.5

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, 3,470 micromhos Aug. 15, minimum daily, 2,810 micromhos Jan. 24.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED PO- TAS- SUM (K) (MG/L)	BICAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO ₂) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)
OCT											
04...	6.3	286	0	455	510	1.0	22	1790	1740	2.43	.77
11...	6.7	288	0	455	505	1.2	21	1800	1730	2.45	.81
18...	7.0	286	0	460	510	1.0	22	1810	1740	2.46	.72
25...	6.5	286	0	460	510	.9	18	1810	1740	2.46	.90
NOV											
01...	6.4	286	0	460	510	.9	20	1820	1730	2.48	.72
08...	6.4	288	0	460	510	.7	20	1810	1740	2.46	.72
15...	6.7	288	0	460	515	1.0	23	1790	1750	2.43	.81
22...	6.4	286	0	460	515	1.1	21	1820	1760	2.48	3.2
29...	7.2	296	0	470	605	.8	22	1960	1910	2.67	.90
DEC											
06...	6.6	288	0	460	515	1.0	20	1820	1750	2.48	.68
13...	6.4	288	0	460	515	1.2	22	1800	1760	2.45	3.6
20...	6.9	290	0	460	570	1.2	20	1920	1830	2.61	1.2
27...	7.6	288	0	450	560	.9	21	1890	1810	2.57	1.0
JAN											
03...	6.6	288	0	465	545	.9	22	1860	1810	2.53	.90
10...	6.3	288	0	450	505	.9	20	1780	1720	2.42	1.4
17...	6.4	288	0	455	505	.9	21	1790	1730	2.43	1.1
24...	6.2	284	0	455	500	1.0	17	1760	1710	2.39	.90
31...	6.4	286	0	460	515	1.0	20	1810	1750	2.46	.72
FEB											
07...	6.4	294	0	465	600	.9	17	1930	1890	2.62	.68
14...	6.6	294	0	465	600	.9	20	1930	1890	2.62	.63
21...	7.0	294	0	465	600	1.0	21	1950	1890	2.65	.59
28...	6.9	296	0	465	605	1.0	21	1950	1900	2.65	.77
MAR											
07...	7.0	296	0	465	600	.9	20	1950	1890	2.65	.72
14...	6.7	296	0	465	600	1.0	20	1920	1900	2.61	.81
21...	7.2	296	0	465	600	1.0	18	1950	1890	2.65	.63
28...	6.6	294	0	465	600	1.0	20	1950	1890	2.65	.61
APR											
04...	7.0	296	0	465	600	1.1	20	1930	1890	2.62	.59
11...	6.8	288	0	460	585	1.0	22	1890	1860	2.57	.63
18...	6.6	296	0	490	600	1.0	22	2000	1940	2.72	.90
25...	6.6	298	0	490	600	1.0	21	1970	1940	2.68	1.3
MAY											
02...	7.0	298	0	480	625	1.0	21	1990	1960	2.71	1.1
09...	6.6	296	0	470	605	1.0	20	1960	1900	2.67	.77
16...	6.8	294	0	470	605	1.1	20	1940	1900	2.64	.75
23...	6.4	294	0	470	600	1.0	21	1940	1900	2.64	.72
30...	6.9	294	0	470	605	1.1	20	1940	1900	2.64	.68
JUN											
06...	6.4	296	0	470	605	1.0	21	1900	1910	2.58	.68
13...	6.7	288	0	475	560	1.0	19	1880	1840	2.56	.68
20...	6.6	286	0	475	545	1.0	22	1840	1820	2.50	.72
27...	6.6	286	0	475	545	1.0	20	1880	1820	2.56	.79
JUL											
04...	6.2	284	0	475	545	.9	20	1850	1810	2.52	.77
11...	6.7	286	0	470	545	1.0	20	1830	1810	2.49	.63
18...	6.6	284	0	475	545	1.0	20	1850	1820	2.52	.81
25...	6.5	278	0	475	520	.9	20	1830	1770	2.49	.72
AUG											
01...	6.7	300	0	470	610	.9	22	1960	1920	2.67	.56
08...	6.6	300	0	470	610	.9	22	1950	1920	2.65	.72
15...	7.0	312	0	470	715	.9	22	2130	2100	2.90	.72
22...	6.3	300	0	470	610	1.1	22	1960	1920	2.67	.72
29...	6.4	300	0	470	610	1.0	23	1970	1920	2.68	.50
SEP											
05...	6.2	300	0	470	610	1.0	21	1950	1910	2.65	.56
12...	6.4	300	0	470	610	1.0	20	1930	1910	2.62	.56
19...	6.4	304	0	470	610	.7	24	1950	1920	2.65	.68
26...	6.0	294	0	490	605	1.0	22	1990	1940	2.71	.90

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 1976 TO SEPTEMBER 1977
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2900	2910	2930	2980	2920	3150	3160	3110	3170	3040	3190	3170
2	2940	2900	2940	2980	3170	3150	3170	3260	3170	3000	3180	3180
3	2920	2900	2910	2960	3170	3170	3160	3160	3180	2980	3190	3170
4	2920	2890	2920	3000	3150	3160	3150	3160	3180	2990	3200	3170
5	2930	2910	2900	2950	3140	3190	3160	3170	3180	3030	3180	3170
6	2900	2900	2900	2880	3140	3180	3150	3150	3180	3060	3180	3180
7	2860	2910	2900	2870	3140	3180	3150	3160	3180	3010	3190	3200
8	2850	2910	2890	2890	3160	3180	3170	3160	3190	3010	3180	3200
9	2890	2900	2900	2890	3130	3150	3150	3160	3020	3040	3190	3150
10	2890	2900	2900	2870	3130	3160	3140	3160	3060	3030	3220	3170
11	2890	2900	2910	2870	3140	3160	3110	3170	3070	3020	3200	3170
12	2860	2920	2900	2880	3170	3180	3140	3180	3060	3010	3180	3180
13	2910	2920	2900	2870	3120	3170	3150	3160	3060	3050	3180	3170
14	2890	2930	2900	2890	3120	3170	3310	3170	3000	3070	3180	3190
15	2910	2910	2890	2880	3160	3150	3260	3170	3160	3030	3470	3060
16	2900	2910	3140	2890	3140	3150	3260	3160	3050	3020	3320	3180
17	2910	2930	3060	2900	3170	3150	3250	3180	3060	3060	3310	3170
18	2900	2920	3090	2910	3120	3160	3250	3160	3000	3050	3170	3180
19	2900	2910	3080	2880	3150	3180	3220	3150	3000	2920	3170	3170
20	2900	2920	3070	2890	3150	3170	3220	3170	2990	2930	3170	3180
21	2910	2910	3070	2890	3150	3170	3240	3180	3040	2920	3170	3180
22	2900	2940	3060	2840	3150	3150	3210	3160	3030	2910	3170	3170
23	2910	3290	3050	2900	3130	3160	3220	3170	3020	2930	3180	3190
24	2920	3250	3060	2810	3140	3150	3210	3190	3020	2930	3180	3220
25	2910	3210	3040	2900	3120	3150	3210	3160	2940	2920	3170	3140
26	2910	3210	3040	2910	3140	3150	3240	3180	3030	3200	3210	3230
27	2910	3190	3030	2930	3150	3150	3220	3170	3010	3170	3190	3230
28	2910	3160	2930	2910	3150	3140	3220	3170	3040	3190	3170	3220
29	2910	3160	2970	2920	---	3150	3200	3160	3020	3180	3180	3240
30	2920	3160	3010	2920	---	3150	3210	3160	3050	3130	3180	3240
31	2930	---	2960	2930	---	3150	---	3170	---	3180	3180	---

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09529440 SOUTH GILA PUMP OUTLET CHANNEL NO. 4 NEAR YUMA, AZ

LOCATION.--Lat 32°42'46", long 114°35'50", in NW¼NW¼ sec.76, 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		INSTAN- TANEOUS DIS- CHARGE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	
DATE	TIME	(CFS)		(UNITS)								
DEC												
13...	0040	6.2	4480	7.7	19.5	950	716	238	87	625	8.8	
20...	0105	5.7	4620	7.8	20.0	960	718	254	79	665	9.3	
27...	0355	5.3	4660	7.7	24.0	960	714	262	75	675	9.5	
JAN												
03...	0115	5.7	4710	7.7	21.0	960	712	250	82	685	9.6	
FEB												
07...	0400	3.8	8990	7.5	24.5	2230	1910	516	229	1120	10	
14...	0330	3.6	8870	7.5	20.0	2160	1840	544	195	1100	10	
21...	0435	3.1	8660	7.6	23.0	2110	1790	532	190	1080	10	
APR												
04...	0335	5.3	4550	7.9	22.0	935	697	234	85	660	9.4	
11...	0400	5.1	4660	7.8	22.0	960	719	242	87	675	9.5	
18...	0350	5.3	4710	8.0	21.5	970	720	238	91	680	9.5	
JUN												
13...	0400	8.5	6740	7.7	23.0	1390	1060	336	134	950	11	
20...	0320	8.5	6500	7.6	24.5	1340	1020	330	126	930	11	
27...	0430	8.5	6360	7.6	26.0	1310	988	314	128	885	11	
JUL												
04...	0245	9.0	6160	7.7	25.0	1400	1140	350	128	835	9.7	
11...	0400	8.8	6210	7.6	27.0	1440	1170	344	141	830	9.5	
18...	0435	15	6250	7.6	28.5	1380	1090	332	134	860	10	
25...	0330	21	6760	7.4	25.5	1440	1130	342	143	945	11	
AUG												
01...	0110	13	6910	7.4	27.0	1520	1215	364	149	960	11	
DATE		DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)
DEC												
13...	7.3	236	0	815	880	.4	22	2980	2820	4.05	.68	
20...	7.6	296	0	835	930	.4	21	3060	2940	4.16	.27	
27...	8.1	300	0	840	940	.6	21	3090	2970	4.20	.32	
JAN												
03...	7.6	302	0	845	950	.6	22	3100	2990	4.22	.41	
FEB												
07...	12	390	0	630	2625	.3	20	5930	5340	8.06	.09	
14...	12	396	0	620	2540	.3	23	5920	5230	8.05	.27	
21...	12	396	0	615	2475	.3	20	5630	5120	7.66	.23	
APR												
04...	7.9	290	0	835	900	1.0	21	3010	2890	4.09	.18	
11...	7.6	294	0	840	930	1.5	24	3080	2950	4.19	.27	
18...	7.9	304	0	845	940	.5	22	3110	2980	4.23	.36	
JUN												
13...	10	400	0	580	1780	.5	19	4380	4010	5.96	.14	
20...	10	390	0	575	1725	.6	22	4180	3910	5.68	.11	
27...	9.9	392	0	560	1650	.4	20	4160	3760	5.66	.14	
JUL												
04...	9.3	320	0	795	1510	.3	22	4250	3810	5.78	.23	
11...	9.2	326	0	810	1520	.4	20	4180	3840	5.68	.32	
18...	9.4	356	0	705	1570	.8	22	4300	3810	5.85	.27	
25...	9.7	380	0	705	1730	.7	24	4690	4090	6.38	.18	
AUG												
01...	9.8	372	0	770	1770	.5	23	4650	4230	6.32	.27	

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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	DIS- SOLVED OXYGEN (MG/L)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)
OCT								
26...	1435	53	2070	7.9	21.5	--	560	330
NOV								
17...	0815	--	--	7.9	19.7	--	--	--
22...	1020	58	2030	8.0	19.0	--	570	340
DEC								
20...	0925	49	2030	7.9	16.5	--	580	340
JAN								
24...	1030	44	2020	8.0	17.0	--	580	390
26...	0815	--	--	7.9	15.0	--	--	--
FEB								
23...	1055	54	2060	7.9	18.0	--	570	340
MAR								
09...	0830	--	--	7.8	18.5	--	--	--
21...	0915	51	1650	8.1	18.0	--	400	220
APR								
25...	1110	44	2030	8.2	23.0	--	600	380
27...	0700	--	1950	7.9	22.0	6.0	--	--
27...	0701	--	1950	7.9	22.0	6.0	--	--
MAY								
23...	1220	45	2040	7.9	23.0	--	600	380
JUN								
27...	0845	57	2070	8.0	24.0	--	620	390
JUL								
20...	0815	--	2050	7.4	25.5	--	--	--
25...	0915	60	1930	7.6	25.5	--	560	340
AUG								
29...	0930	59	2050	7.8	24.0	--	600	370
SEPT								
26...	1130	45	2040	7.7	25.0	--	570	370

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09530000 RESERVATION MAIN DRAIN NO. 4 AT YUMA, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SURP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
OCT 26...	150	45	230	4.2	5.6	283	0	490	270
NOV 17...	--	--	--	--	5.6	--	--	--	--
22...	150	47	220	4.0	5.6	275	0	490	240
DEC 20...	150	49	220	4.0	5.4	284	0	490	250
JAN 24...	150	50	220	4.0	5.3	228	0	470	240
26...	--	--	--	--	5.2	--	--	--	--
FEB 23...	150	48	220	4.0	5.4	280	0	480	240
MAR 09...	--	--	--	--	5.6	--	--	--	--
21...	100	36	200	4.4	4.6	220	0	400	180
APR 25...	160	48	220	3.9	5.2	270	0	490	240
27...	--	--	--	--	5.6	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
MAY 23...	160	49	220	3.9	5.5	270	0	490	240
JUN 27...	170	48	240	4.2	5.4	280	0	500	250
JUL 20...	--	--	--	--	--	--	--	--	--
25...	150	46	220	4.0	5.5	270	0	470	220
AUG 29...	160	49	230	4.1	6.0	280	0	520	260
SEP 26...	150	48	210	3.8	5.4	250	0	500	250

DATE	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (FEST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT 26...	.4	21	1300	1350	1.77	.36	270	20
NOV 17...	--	--	--	--	--	--	--	--
22...	.5	21	1350	1310	1.84	.65	250	0
DEC 20...	.4	22	1370	1330	1.86	.31	240	10
JAN 24...	.5	21	1270	1270	1.73	.35	240	20
26...	--	--	--	--	--	--	--	--
FEB 23...	.4	22	1390	1310	1.89	.26	240	10
MAR 09...	--	--	--	--	--	--	--	--
21...	.7	22	1080	1050	1.47	.20	220	10
APR 25...	.6	21	1360	1320	1.80	.22	210	10
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
MAY 23...	.5	21	1320	1320	1.80	.25	230	10
JUN 27...	.5	21	1380	1370	1.88	--	250	20
JUL 20...	--	--	--	--	--	--	--	--
25...	.4	20	1290	1270	1.75	.32	240	10
AUG 29...	.5	22	1400	1390	1.90	.28	250	60
SEP 26...	.4	21	1360	1310	1.85	.22	250	10

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09530000 RESERVATION MAIN DRAIN NO. 4 AT YUMA, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	DT- ELDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ENDRIN (UG/L)	ENDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ETHION (UG/L)	ETHION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR (UG/L)	HEPTA- CHLOR IN BOTTOM MA- TERIAL (UG/KG)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	HEPTA- CHLOR EPOXIDE IN BOT- TOM MA- TERIAL (UG/KG)
NOV 17...	0815	--	.00	--	.00	--	.00	--	.00	--
JAN 26...	0815	--	.00	--	.00	--	.00	--	.00	--
MAR 09...	0830	--	.00	--	.00	--	.00	--	.00	--
APR 27...	0700	--	.00	--	.00	--	.00	--	.00	--
JUL 20...	0815	--	.00	--	.00	--	.00	--	.00	--
SEP 14...	0800	.0	.00	.0	.00	.0	.00	.0	.00	.0

DATE	TOTAL LINDANE (UG/L)	LINDANE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL MALA- THION (UG/L)	MALA- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL METHYL PARA- THION (UG/L)	METHYL PARA- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL METHYL TRI- THION (UG/L)	METHYL TRI- THION IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL PARA- THION (UG/L)	PARA- THION IN BOTTOM MA- TERIAL (UG/KG)
NOV 17...	.00	--	.00	--	.00	--	.00	--	.00	--
JAN 26...	.00	--	.00	--	.00	--	.00	--	.00	--
MAR 09...	.00	--	.00	--	.00	--	.00	--	.00	--
APR 27...	.00	--	.00	--	.00	--	.00	--	.00	--
JUL 20...	.00	--	.00	--	.01	--	.00	--	.00	--
SEP 14...	.00	.0	.00	.0	.02	.0	.00	.0	.02	.0

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09530000 RESERVATION MAIN DRAIN NO. 4 AT YUMA, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	PHENDLS (UG/L)	TOTAL PCB (UG/L)	PCB IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ALDRIN (UG/L)	ALDRIN IN BOTTOM MA- TERIAL (UG/KG)	TOTAL ATRA- ZINE (UG/L)	TOTAL CHLOR- DANE (UG/L)	CHLOR- DANE IN BOTTOM MA- TERIAL (UG/KG)
NOV 17...	0815	0	.0	--	.00	--	--	.0	--
JAN 26...	0815	0	.0	--	.00	--	--	.0	--
MAR 09...	0830	0	.0	--	.00	--	.00	.0	--
APR 27...	0700	0	.0	--	.00	--	.00	.0	--
JUL 20...	0815	--	.0	--	.00	--	.00	.0	--
SEP 14...	0800	--	.0	0	.00	.0	--	.0	0
14...	0802	--	--	--	--	--	.00	--	--

DATE	TOTAL DDD (UG/L)	DDD IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDE (UG/L)	DDE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DDT (UG/L)	DDT IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- AZINON (UG/L)	DI- AZINON IN BOTTOM MA- TERIAL (UG/KG)	TOTAL DI- ELDRIN (UG/L)
NOV 17...	.00	--	.00	--	.00	--	.00	--	.00
JAN 26...	.00	--	.00	--	.00	--	.00	--	.00
MAR 09...	.00	--	.00	--	.00	--	.00	--	.00
APR 27...	.00	--	.00	--	.00	--	.00	--	.00
JUL 20...	.00	--	.00	--	.00	--	.00	--	.00
SEP 14...	.00	.3	.00	1.6	.00	.0	.01	.0	.00
14...	--	--	--	--	--	--	--	--	--

DATE	TOTAL TOX- APHENE (UG/L)	TOX- APHENE IN BOTTOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	TRI- THION IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4-D (UG/L)	2,4-D IN BOTTOM MA- TERIAL (UG/KG)	TOTAL 2,4,5-T (UG/L)	2,4,5-T IN BOTTOM MA- TERIAL (UG/KG)	TOTAL SILVEX (UG/L)	SILVEX IN BOTTOM MA- TERIAL (UG/KG)
NOV 17...	0	--	.00	--	.00	--	.00	--	.00	--
JAN 26...	0	--	.00	--	.00	--	.00	--	.00	--
MAR 09...	0	--	.00	--	.05	--	.00	--	.00	--
APR 27...	0	--	.00	--	.05	--	.00	--	.00	--
JUL 20...	0	--	.00	--	.16	--	.00	--	.00	--
SEP 14...	0	0	.00	.0	.01	0	.00	0	.00	0

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

	RICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED STLCA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (RFST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE PLUS NITRATE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT												
04...	236	0	380	340	.7	24	1360	1330	1.81	1.0	460	10
12...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
01...	236	0	400	360	.7	24	1360	1360	1.85	1.0	460	0
08...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
06...	235	0	420	340	.8	24	1360	1370	1.85	.91	460	0
13...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	250	0	390	360	.7	26	1370	1360	1.86	.98	460	10
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
FFB												
07...	245	0	410	340	.8	24	1380	1360	1.88	.97	460	0
14...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
08...	241	0	420	350	.9	24	1380	1380	1.88	.88	460	20
14...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
04...	240	0	390	340	.7	25	1370	1340	1.86	.89	480	10
11...	240	0	400	330	.8	24	1360	1350	1.85	.90	460	0
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
02...	240	0	410	340	.8	24	1360	1370	1.85	.86	460	20
09...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
06...	240	0	410	340	.8	24	1340	1370	1.82	.96	450	10
13...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
05...	240	0	410	360	.8	24	1400	1390	1.90	--	470	10
11...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
01...	240	0	420	360	.8	25	1380	1400	1.88	--	470	20
08...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
06...	--	--	--	--	--	--	--	--	--	--	--	--
12...	250	0	430	330	.9	26	1370	1390	1.86	--	510	10
19...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09530500 DRAIN 8-B NEAR YUMA, AZ

LOCATION.--Lat 32°44'39", long 114°41'45", in NE¼NW¼ sec.30, T.16 S., R.22 E., San Bernardino meridian, in California, Imperial County, Hydrologic Unit 15030107, 0.5 mi (0.8 km) upstream from outlet to Colorado River, and 4 mi (6 km) west 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	DIS-SOLVED POTASSIUM (K) (MG/L)
OCT 26...	1200	3.3	1740	8.2	20.0	430	230	110	37	220	4.6	5.2
NOV 22...	0900	3.7	1740	8.0	16.0	410	220	100	39	220	4.7	4.9
DEC 20...	1000	1.8	1620	8.0	14.0	380	200	98	34	200	4.4	4.4
JAN 24...	0900	1.3	1570	7.9	14.0	390	210	97	35	190	4.2	4.3
FEB 23...	0915	1.4	1690	7.9	14.5	400	220	100	37	210	4.6	5.1
MAR 21...	1020	1.8	2060	8.0	19.0	610	380	160	50	230	4.1	5.3
APR 25...	1230	1.6	1590	9.2	28.5	390	180	99	34	200	4.4	4.5
MAY 23...	0920	1.4	1570	8.0	21.5	390	220	98	36	190	4.2	4.5
JUN 27...	0940	2.0	1540	8.3	23.0	390	220	100	33	200	4.4	4.3
JUL 25...	1015	2.7	1550	8.5	28.0	390	230	100	33	200	4.4	4.2
AUG 29...	1100	2.2	1570	7.8	27.0	390	210	99	34	200	4.4	5.1
SEP 26...	0940	1.9	1520	7.6	23.5	370	200	97	32	200	4.5	4.4

DATE	RICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO2) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED NITRATE PLUS NITRITE (N) (MG/L)	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
OCT 26...	243	0	450	200	.5	21	1200	1170	1.63	.40	270	20
NOV 22...	230	0	440	180	.5	21	1180	1120	1.60	.38	250	0
DEC 20...	228	0	410	170	.5	20	1090	1050	1.48	.16	220	10
JAN 24...	216	0	380	160	.5	21	1030	995	1.40	.14	200	10
FEB 23...	220	0	440	180	.4	21	1090	1100	1.48	.18	230	0
MAR 21...	281	0	480	250	.6	21	1400	1340	1.90	.24	240	10
APR 25...	200	25	400	160	.7	22	1070	1040	1.46	.07	190	10
MAY 23...	210	0	390	160	.6	22	1060	1010	1.44	.05	190	20
JUN 27...	200	0	400	160	.5	22	1020	1020	1.39	--	210	10
JUL 25...	190	0	400	160	.3	19	1010	1010	1.37	.08	210	20
AUG 29...	220	0	420	170	.5	22	1050	1060	1.43	.10	220	60
SEP 26...	210	0	390	160	.4	20	996	1010	1.35	.04	200	20

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 SE4NE4 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)
OCT												
05...	1135	148	2390	8.0	24.0	20	8.2	83	520	310	130	47
19...	1030	146	2550	8.1	23.5	--	--	--	590	370	150	53
NOV												
09...	1250	75	2540	8.0	20.5	10	8.9	280	610	370	150	57
23...	0905	136	2520	8.2	18.0	--	--	--	580	350	150	50
DEC												
07...	1135	125	2430	8.0	14.5	--	9.7	90	560	337	154	43
21...	1050	129	2290	8.1	15.5	--	--	--	530	312	139	45
JAN												
11...	1230	83	2480	8.0	14.0	20	9.6	320	560	330	140	51
25...	1005	78	2530	8.1	18.0	--	--	--	580	350	150	51
FEB												
08...	1335	138	2380	8.0	17.5	15	9.3	220	560	340	140	50
22...	0930	78	2270	8.2	18.5	--	--	--	520	310	130	47
MAR												
08...	1130	138	2480	8.3	18.0	20	8.6	1200	590	360	150	52
24...	1600	130	2620	8.2	19.5	--	--	--	620	400	160	54
APR												
12...	1130	155	2620	7.9	22.5	15	7.4	8400	590	360	150	53
26...	0900	80	2270	8.2	23.0	--	--	--	540	330	140	47
MAY												
03...	1325	210	2670	7.8	24.5	20	6.6	1000	630	390	160	56
17...	0925	78	2600	8.2	19.0	--	--	--	590	350	150	52
JUN												
07...	1145	125	2490	7.8	27.5	30	--	200	590	370	150	53
21...	0905	84	2520	8.2	25.0	--	--	--	590	360	150	52
JUL												
12...	1140	134	2410	7.8	29.0	25	7.8	200	550	330	140	48
26...	1215	136	2520	7.9	30.5	--	--	--	560	330	140	51
AUG												
09...	1145	139	2490	7.8	30.0	20	7.8	120	560	320	140	51
12...	1000	138	2490	7.9	29.0	--	--	--	580	347	147	52
23...	1055	140	2570	7.8	31.5	--	--	--	600	360	150	55
SEP												
13...	1255	136	2530	7.7	29.0	55	6.9	460	580	340	150	50
30...	0910	140	2430	8.1	24.5	--	--	--	540	310	140	47

B Results based on non-ideal colony count.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)
OCT												
05...	310	5.9	6.9	256	0	460	360	.6	21	1590	1480	2.16
19...	330	5.9	6.0	266	0	520	410	.5	22	1590	1630	2.16
NOV												
09...	320	5.6	6.0	294	0	500	360	.5	21	1670	1590	2.27
23...	330	6.0	6.2	280	0	500	390	.5	22	1600	1590	2.18
DEC												
07...	320	5.9	6.6	272	0	485	380	.6	17	1560	1540	2.12
21...	300	5.7	6.9	266	0	470	340	.8	17	1480	1450	2.01
JAN												
11...	330	6.1	5.7	275	0	470	400	.6	23	1620	1560	2.20
25...	330	5.9	5.8	281	0	490	390	.6	23	1590	1580	2.16
FEB												
08...	300	5.5	5.7	266	0	480	360	.6	21	1560	1490	2.12
22...	290	5.5	6.0	249	0	480	340	.4	18	1480	1440	2.01
MAR												
08...	320	5.7	6.6	273	0	520	370	.6	20	1630	1580	2.22
24...	350	6.1	5.9	273	0	530	410	.5	22	1690	1670	2.30
APR												
12...	350	6.3	5.9	280	0	530	400	.2	22	1710	1650	2.33
26...	290	5.4	5.8	260	0	460	330	.6	17	1470	1420	2.00
MAY												
03...	360	6.2	6.5	290	0	540	410	.6	22	1750	1700	2.38
17...	340	6.1	6.6	290	0	520	420	.6	21	1650	1660	2.24
JUN												
07...	330	5.9	6.1	270	0	500	380	.5	20	1660	1580	2.26
21...	340	6.1	6.4	280	0	520	380	.6	24	1630	1610	2.22
JUL												
12...	330	6.1	5.6	260	0	470	370	.6	21	1590	1520	2.16
26...	360	6.6	6.0	280	0	510	390	.6	24	1650	1620	2.24
AUG												
09...	320	5.9	5.9	290	0	510	370	.5	25	1650	1570	2.24
12...	325	5.9	6.2	284	0	510	375	.7	20	1620	1580	2.20
23...	320	5.7	7.0	300	0	520	430	.6	25	1680	1660	2.28
SEP												
13...	320	5.8	6.0	290	0	510	400	.6	26	1670	1610	2.27
30...	310	5.8	5.7	280	0	490	370	.6	23	1570	1520	2.14

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

09534000 MAIN DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DTS- SOLVED NITRATE (N) (MG/L)	TOTAL NITRATE PLUS NITRATE (N) (MG/L)	DTS- SOLVED NITRATE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DTS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
OCT							
05...	--	.66	.57	.42	1.1	.07	3.5
19...	--	--	.65	--	--	--	--
NOV							
09...	--	.98	1.0	.40	1.4	.04	.03
23...	--	--	.63	--	--	--	--
DEC							
07...	.27	.61	.60	.29	.90	.03	.02
21...	.63	--	--	--	--	--	--
JAN							
11...	--	.64	.78	.42	1.1	.08	.04
25...	--	--	.56	--	--	--	--
FEB							
08...	--	.49	.52	.45	.94	.07	.01
22...	--	--	.58	--	--	--	--
MAR							
08...	--	.64	.58	.61	1.3	.09	.01
24...	--	--	.56	--	--	--	--
APR							
12...	--	.62	.63	.34	.96	.05	.00
26...	--	--	.36	--	--	--	--
MAY							
03...	--	.66	.68	.49	1.2	.08	.03
17...	--	--	.62	--	--	--	--
JUN							
07...	--	.43	.49	1.3	1.7	.06	.10
21...	--	--	.43	--	--	--	--
JUL							
12...	--	.43	.48	.46	.89	.08	--
AUG							
09...	--	.55	--	.67	1.2	.07	--
12...	.47	--	--	--	--	--	--
SEP							
13...	--	.58	.54	.10	.68	.15	.06

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)	TOTAL PCB (UG/L)	TOTAL ALDRIN (UG/L)	TOTAL CHLOR- DANE (UG/L)	TOTAL DDD (UG/L)	TOTAL DDE (UG/L)	TOTAL DDT (UG/L)	TOTAL DI- AZINON (UG/L)	TOTAL DI- ELDRIN (UG/L)
OCT												
05...	1135	3.3	.00	2	--	--	--	--	--	--	--	--
NOV												
09...	1250	2.3	1.0	1	--	--	--	--	--	--	--	--
DEC												
07...	1135	2.5	.00	0	.0	.00	.0	.00	.00	.00	.00	.00
JAN												
11...	1230	2.2	.00	0	--	--	--	--	--	--	--	--
FEB												
08...	1335	2.4	.00	0	.0	.00	.0	.00	.00	.00	.00	.00
MAR												
08...	1130	3.2	.00	1	--	--	--	--	--	--	--	--
APR												
12...	1130	3.3	.00	2	--	--	--	--	--	--	--	--
MAY												
03...	1325	--	.00	2	.0	.00	.0	.00	.01	.00	.00	.00
JUN												
07...	1145	2.3	.00	0	--	--	--	--	--	--	--	--
JUL												
12...	1140	3.7	.00	2	--	--	--	--	--	--	--	--
AUG												
09...	1145	2.8	.00	0	.0	.00	.0	.00	.01	.00	.00	.00
SEP												
13...	1255	3.1	.00	0	--	--	--	--	--	--	--	--

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

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09534000 MAIN DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY, NEAR SAN LUIS, AZ--Continued

PESTICIDE ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	TOTAL ENDRIN (UG/L)	TOTAL FTHION (UG/L)	TOTAL HEPTA- CHLOR (UG/L)	TOTAL HEPTA- CHLOR EPOXIDE (UG/L)	TOTAL LINDANE (UG/L)	TOTAL MALA- THION (UG/L)	TOTAL METHYL PARA- THION (UG/L)
DEC 07...	1135	.00	.00	.00	.00	.00	.00	.00
FEB 08...	1335	.00	.00	.00	.00	.00	.00	.00
MAY 03...	1325	.00	.00	.00	.00	.00	.00	.00
AUG 09...	1145	.00	.00	.00	.00	.00	.00	.15

DATE	TOTAL METHYL TRI- THION (UG/L)	TOTAL PARA- THION (UG/L)	TOTAL TOX- APHENE (UG/L)	TOTAL TRI- THION (UG/L)	TOTAL 2,4-D (UG/L)	TOTAL 2,4,5-T (UG/L)	TOTAL SILVEX (UG/L)
DEC 07...	.00	.00	0	.00	.10	.00	.00
FEB 08...	.00	.00	0	.00	.00	.00	.00
MAY 03...	.00	.00	0	.00	.40	.00	.00
AUG 09...	.00	.00	0	.00	.01	.00	.00

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 June 10, Aug. 2.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
OCT								
05...	0920	40	1450	8.2	24.0	390	230	97
19...	1030	2.4	1330	8.3	23.5	340	210	84
NOV								
09...	0920	1.4	1350	8.4	16.0	370	250	90
23...	0855	4.0	1590	8.4	14.5	400	250	100
DEC								
10...	0900	1.2	1370	8.4	9.0	360	250	85
28...	0900	14	1300	8.3	8.0	350	219	90
JAN								
11...	0910	2.0	1430	8.0	6.0	370	240	91
28...	0845	10	1380	8.2	13.5	380	230	95
FEB								
08...	0915	2.7	1350	8.4	13.0	350	210	86
22...	0910	13	1310	8.4	16.0	350	210	85
MAR								
08...	0930	4.3	1320	8.3	13.0	360	230	89
22...	0910	11	1220	8.4	--	360	220	90
APR								
12...	0900	4.3	1270	8.3	19.0	350	210	88
26...	0850	9.2	1270	8.4	22.0	360	220	91
MAY								
03...	0850	3.1	1300	8.4	20.0	360	230	89
20...	1020	2.2	1350	8.4	23.0	380	230	95
JUN								
07...	0845	1.6	1370	8.1	23.0	380	220	94
21...	0845	4.0	1340	8.3	24.5	360	220	91
JUL								
12...	0930	2.1	1240	8.2	20.5	360	230	85
29...	0920	8.9	1260	8.1	29.5	350	210	84
AUG								
09...	0920	3.5	1260	8.1	28.5	340	200	83
23...	1045	1.8	1300	8.3	31.5	340	270	81
SEP								
16...	0910	2.1	1370	8.2	25.0	360	230	85
30...	0900	7.9	1310	7.9	25.0	340	200	85

09534300 WEST MAIN CANAL WASTEWAY AT ARIZONA-SONORA BOUNDARY--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)
OCT									
05...	35	170	3.8	6.4	193	0	350	170	.5
19...	31	150	3.6	5.6	159	0	350	150	.4
NOV									
09...	35	150	3.4	5.5	151	0	340	140	.4
23...	37	190	4.1	5.8	189	0	390	180	.5
DEC									
10...	36	160	3.7	5.1	134	0	380	150	.4
28...	31	140	3.2	5.2	160	0	345	122	.6
JAN									
11...	35	160	3.6	4.8	163	0	360	160	.4
28...	34	150	3.4	5.1	185	0	350	140	.5
FEB									
08...	34	150	3.5	4.9	172	0	360	140	.5
22...	33	140	3.3	5.2	164	0	340	130	.5
MAR									
08...	34	140	3.2	5.3	164	0	340	140	.5
22...	32	120	2.8	4.9	163	0	310	120	.4
APR									
12...	32	130	3.0	5.2	170	0	330	110	.1
26...	32	130	3.0	5.1	170	0	330	120	.4
MAY									
03...	33	140	3.2	5.5	160	0	340	130	.5
20...	34	150	3.4	5.7	180	0	350	130	.4
JUN									
07...	34	150	3.4	5.4	190	0	360	140	.5
21...	33	150	3.4	5.4	170	0	350	130	.5
JUL									
12...	36	130	3.0	5.2	160	0	330	120	.4
29...	33	140	3.3	5.2	170	0	320	120	.5
AUG									
09...	33	140	3.3	5.0	170	0	320	120	.4
23...	34	140	3.3	6.0	92	0	410	130	.5
SEP									
16...	36	130	3.0	5.5	160	0	340	140	.4
30...	31	140	3.3	5.2	170	0	340	130	.6

DATE	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
OCT								
05...	11	918	937	1.25	--	.36	220	20
19...	9.2	844	859	1.15	--	.06	190	10
NOV								
09...	8.1	856	844	1.16	--	.10	200	10
23...	10	1060	1010	1.44	--	.27	240	0
DEC								
10...	5.2	870	888	1.18	--	.09	200	0
28...	7.2	836	820	1.14	.09	--	--	--
JAN								
11...	7.0	912	899	1.24	--	.06	200	10
28...	8.5	892	876	1.21	--	.25	190	10
FEB								
08...	6.8	862	867	1.17	--	.06	190	10
22...	6.4	836	822	1.14	--	.14	180	0
MAR								
08...	6.1	848	836	1.15	--	.08	180	10
22...	7.2	782	765	1.06	--	.09	150	0
APR								
12...	6.5	808	786	1.10	--	.01	170	10
26...	5.7	816	798	1.11	--	.00	180	20
MAY								
03...	5.2	842	822	1.15	--	.05	170	10
20...	6.8	882	861	1.20	--	.02	170	10
JUN								
07...	9.6	880	888	1.20	--	.07	190	10
21...	10	870	854	1.18	--	.01	190	10
JUL								
12...	9.8	788	795	1.07	--	--	170	0
29...	9.6	818	796	1.11	--	--	170	0
AUG								
09...	9.9	870	795	1.18	--	--	180	0
23...	13	836	860	1.14	--	--	210	20
SEP								
16...	11	882	827	1.20	--	--	200	20
30...	11	836	827	1.14	--	--	190	10

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 Dec. 23, 24; June 22, 28, 29; July 30; Aug. 6, 7. 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.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
OCT								
05...	0930	5.7	1710	8.1	21.5	410	290	100
19...	1100	1.0	1530	8.2	23.5	370	260	86
NOV								
09...	0940	18	1760	8.3	16.0	440	300	110
23...	0925	2.6	1860	8.2	14.0	440	290	110
DEC								
10...	0930	19	1590	8.3	10.0	410	260	100
28...	0930	1.4	1610	8.1	7.0	415	272	108
JAN								
11...	0930	1.1	2110	8.0	5.0	470	320	120
25...	0955	9.4	1710	8.3	12.0	410	260	100
FEB								
08...	0930	20	1500	8.2	12.0	400	250	100
22...	0940	3.7	1270	8.2	15.0	320	220	77
MAR								
08...	1000	1.0	1480	8.2	13.5	400	270	95
22...	1015	5.4	1230	8.3	--	350	240	86
APR								
12...	0915	3.0	1410	8.1	18.0	370	260	87
26...	0910	16	1390	8.4	21.5	380	240	96
MAY								
03...	0915	8.0	1450	8.3	22.0	390	250	98
20...	1025	3.7	1480	8.2	20.5	350	260	75
JUN								
07...	0915	8.0	1550	8.3	24.0	390	240	94
21...	0855	2.0	1300	8.3	23.5	340	240	77
JUL								
12...	1015	30	1390	8.0	29.0	390	240	92
26...	0930	8.5	1370	8.1	29.0	370	250	88
AUG								
09...	0940	2.6	1320	8.0	29.0	360	240	88
23...	1100	5.0	1820	8.3	31.5	370	230	88
SEP								
13...	0950	34	1470	7.5	29.5	370	240	91
30...	0905	14	1590	8.1	25.0	390	260	96

09534500 EAST MAIN CANAL WASTEWAY AT ARIZONA-SONORA BOUNDARY--Continued

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

		DTS- SOLVED SILICA (SIO ₂) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DTS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DTS- SOLVED NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DTS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	
OCT										
05...		11	1080	1020	1.47	--	.13	250	30	
19...		7.3	966	952	1.31	--	.02	230	10	
NOV										
09...		9.6	1120	1060	1.52	--	.27	250	20	
23...		11	1220	1170	1.66	--	.72	310	0	
DEC										
10...		9.9	996	1010	1.35	--	.73	230	0	
28...		8.0	1030	1010	1.40	.09	--	--	--	
JAN										
11...		12	1340	1310	1.82	--	.61	310	20	
25...		8.3	1110	1060	1.51	--	.95	270	10	
FEB										
08...		8.7	952	952	1.29	--	.20	200	0	
22...		4.4	814	793	1.11	--	.03	180	10	
MAR										
08...		4.0	968	922	1.32	--	.01	200	10	
22...		3.3	788	757	1.07	--	.01	160	0	
APR										
12...		3.6	888	868	1.21	--	.02	200	30	
26...		7.7	888	858	1.21	--	.22	190	20	
MAY										
03...		6.1	928	899	1.26	--	.05	200	10	
20...		5.0	962	941	1.31	--	.02	230	20	
JUN										
07...		8.7	994	986	1.35	--	.02	230	60	
21...		7.6	838	815	1.14	--	.00	200	10	
JUL										
12...		10	880	884	1.20	--	--	200	0	
26...		9.9	872	884	1.19	--	--	190	10	
AUG										
09...		11	886	834	1.20	--	--	180	0	
23...		18	1180	1210	1.60	--	--	430	20	
SEP										
13...		13	950	925	1.29	--	--	240	10	
30...		10	1020	977	1.39	--	--	230	30	
DATE		DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SUM (K) (MG/L)	BTCAR- BONATE (HCO ₃) (MG/L)	CAR- BONATE (CO ₃) (MG/L)	DIS- SOLVED SULFATE (SO ₄) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)
OCT										
05...		39	200	4.3	6.7	152	0	360	230	.5
19...		37	180	4.1	5.7	132	0	380	190	.4
NOV										
09...		41	200	4.1	6.0	178	0	370	230	.5
23...		41	230	4.8	6.3	194	0	430	240	.6
DEC										
10...		38	180	3.9	5.5	181	0	380	200	.5
28...		35	185	4.0	5.8	174	0	380	200	.6
JAN										
11...		42	270	5.4	5.9	184	0	450	320	.6
25...		38	210	4.5	5.3	176	0	400	210	.7
FEB										
08...		37	170	3.7	5.2	181	0	360	180	.5
22...		32	140	3.4	5.5	128	0	340	130	.3
MAR										
08...		39	170	3.7	5.5	158	0	350	180	.4
22...		33	130	3.0	4.8	141	0	310	120	.4
APR										
12...		37	160	3.6	5.7	130	0	360	150	.1
26...		34	150	3.4	5.2	170	0	330	150	.5
MAY										
03...		35	160	3.5	5.4	170	0	340	170	.5
20...		39	180	4.2	6.7	110	0	410	170	.5
JUN										
07...		38	180	4.0	5.5	180	0	380	190	.6
21...		35	150	3.6	5.4	120	0	350	130	.4
JUL										
12...		37	160	3.6	5.1	180	0	340	150	.5
26...		36	160	3.6	5.2	150	0	350	160	.4
AUG										
09...		35	140	3.2	5.1	150	0	340	140	.4
23...		37	250	5.6	9.5	170	0	520	200	.9
SEP										
13...		35	160	3.6	6.7	160	0	370	170	.6
30...		36	190	4.2	5.4	160	0	370	190	.5

RIO SONOYTA BASIN

SAN SIMON WASH BASIN

09535100 SAN SIMON WASH NEAR PISINIMO, AZ

LOCATION.--Lat 32°02'42", long 112°22'12", in SE¼ sec.9, T.16 S., R.1 W. (unsurveyed), Pima County, Hydrologic Unit 15080101, in Papago Indian Reservation, in center of channel between two culverts at upstream side of road, just upstream from Gu Vo Wash, and 3.2 mi (5.1 km) west of Pisinimo.

DRAINAGE AREA.--About 600 mi² (about 1,600 km²).

PERIOD OF RECORD.--February 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,830 ft (558 m), from topographic map. Auxiliary crest-stage gage 40 ft (12 m) downstream at datum 2.97 ft (0.905 m) lower, to measure head through culverts.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years, 4.98 ft³/s (0.141 m³/s) 3,610 acre-ft/yr (4.45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s (354 m³/s) Sept. 24, 1976 (gage height, 10.82 ft or 3.298 m), from rating curve extended above 1,700 ft³/s (48 m³/s) on basis of slope-area measurement of peak flow; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 720 ft³/s (20.4 m³/s) Aug. 8, gage height, 7.81 ft (2.380 m), base discharge, 500 ft³/s (14 m³/s); no flow for most of year.

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	.00	.00	.00	6.7	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.33	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.53	.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	.81	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.173	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	2.3
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.0	1.3
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.66
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	14	.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	.36	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.9	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.41	.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	.04	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.2	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.43	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	5.4	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	14.00	5.40	7.74	.00	.00	.00	.00	.00	46.58	324.53	4.34
MEAN	.000	.47	.17	.25	.000	.000	.000	.000	.000	1.50	10.5	.14
MAX	.00	14	5.4	6.7	.00	.00	.00	.00	.00	36	173	2.3
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC=FT	.00	28	11	15	.00	.00	.00	.00	.00	92	644	8.6
CAL YR 1976	TOTAL	5566.83	MEAN	15.2	MAX	3320	MIN	.00	AC=FT	11040		
WTR YR 1977	TOTAL	402.59	MEAN	1.10	MAX	173	MIN	.00	AC=FT	799		

RIO SONOYTA BASIN

497

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 fair.

AVERAGE DISCHARGE.--5 years, 8.57 ft³/s (0.243 m³/s), 6,210 acre-ft/yr (7.66 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 or 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, 325 ft³/s (9.20 m³/s) Aug. 14, gage height, 6.30 ft (1.920 m), no peak above base of 500 ft³/s (14 m³/s); no flow for most of year.

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	.00	.00	.00	46	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	24	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	21	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	4.6	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	1.0	.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	4.3	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	5.9	7.7
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10	14
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	64	9.4
15	.00	5.2	.00	.00	.00	.00	.00	.00	.00	.00	.40	1.7
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	42	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	21	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.9	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.00
21	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.6	.00
22	1.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.9	.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	6.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	7.7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.70	.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	---	.90	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	17.60	5.20	.90	96.60	.00	.00	.00	.00	.00	.00	197.50	36.30
MEAN	.57	.17	.029	3.12	.000	.000	.000	.000	.000	.000	6.37	1.21
MAX	7.7	5.2	.90	46	.00	.00	.00	.00	.00	.00	64	14
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	35	10	1.8	192	.00	.00	.00	.00	.00	.00	392	72
CAL YR 1976 TOTAL	6185.70			MEAN 16.9	MAX 1260	MIN .00	AC-FT 12270					
WTR YR 1977 TOTAL	354.10			MEAN .97	MAX 64	MIN .00	AC-FT 702					

SULPHUR SPRING VALLEY

WHITewater DRAW BASIN

09537200 LESLIE CREEK NEAR McNEAL, AZ

LOCATION.--Lat 31°35'24", long 109°30'30", in SE¼ sec.20, T.21 S., R.28 E., Cochise County, Hydrologic Unit 15080301, on right bank 10 mi (16 km) east of McNeal.

DRAINAGE AREA.--79.1 mi² (204.9 km²).

PERIOD OF RECORD.--October 1969 to September 1977 (discontinued).

GAGE.--Water-stage recorder and concrete control with shallow sharp-crested V-notch weir. Altitude of gage is 4,620 ft (1,408 m), from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--8 years, 0.73 ft³/s (0.021 m³/s) 529 acre-ft/yr (652,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,760 ft³/s (49.8 m³/s) Aug. 12, 1971 (gage height, 5.78 ft or 1.762 m), from rating curve extended above 5.7 ft³/s (0.16 m³/s) on basis of slope-area measurement of peak flow; no flow for many days during 1976-77.

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)	
Aug. 8	2145	*563	15.9	4.87	1.484
Aug. 16	1815	105	2.97	4.05	1.234

No flow for many days.

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	.00	.00	.00	.02	.02	.02	.00	.00	.00	.00	.00	.14
2	.00	.00	.01	.00	.02	.02	.00	.00	.00	.00	.00	.14
3	.00	.00	.01	.00	.02	.02	.00	.00	.00	.00	.00	.14
4	.00	.00	.01	.02	.02	.02	.00	.00	.00	3.6	.00	.16
5	.00	.00	.01	.02	.02	.02	.00	.00	.00	.31	.00	.18
6	.00	.00	.01	.02	.02	.02	.00	.00	.00	.01	.00	7.8
7	.00	.00	.01	.02	.02	.02	.01	.00	.00	.01	.00	.27
8	.00	.00	.01	.02	.02	.02	.02	.00	.00	.01	4.8	.24
9	.00	.00	.01	.02	.03	.02	.00	.00	.00	.02	20	.24
10	.00	.00	.01	.02	.03	.02	.00	.00	.00	.02	.09	.24
11	.00	.00	.01	.02	.03	.02	.00	.00	.00	.02	.08	.36
12	.00	.00	.02	.02	.03	.02	.00	.00	.00	.01	.08	3.2
13	.00	.00	.02	.02	.03	.02	.00	.00	.00	1.3	.06	.08
14	.00	.00	.02	.02	.03	.02	.00	.00	.00	.02	.06	.06
15	.00	.00	.02	.02	.03	.02	.00	.00	.00	.03	.09	.06
16	.00	.00	.02	.02	.02	.02	.00	.00	.00	.04	9.2	.07
17	.00	.00	.02	.02	.02	.02	.00	.00	.00	.04	10	.08
18	.00	.00	.02	.02	.02	.02	.00	.00	.00	.03	.18	.09
19	.00	.00	.02	.00	.02	.02	.00	.00	.00	.03	.12	.10
20	.00	.00	.02	.00	.02	.02	.00	.00	.00	.03	.10	.10
21	.00	.00	.02	.03	.02	.02	.00	.00	.00	.03	.12	.14
22	.00	.00	.02	.02	.02	.02	.00	.00	.00	.02	.09	.16
23	.00	.00	.02	.02	.02	.02	.00	.00	.00	.04	.09	.18
24	.00	.00	.02	.02	.02	.02	.00	.00	.00	.05	.09	.18
25	.00	.00	.02	.02	.02	.02	.00	.00	.00	.04	.09	.18
26	.00	.00	.02	.02	.02	.03	.00	.00	.00	.03	.09	.22
27	.00	.00	.02	.01	.02	.02	.00	.00	.00	.01	.09	.24
28	.00	.00	.02	.02	.02	.02	.00	.00	.00	.00	.09	.27
29	.00	.00	.02	.01	---	.02	.00	.00	.00	.00	.10	.27
30	.00	.00	.03	.03	---	.02	.01	.00	.00	.00	.10	.27
31	.00	---	.02	.02	---	.00	---	.00	---	.00	.12	---
TOTAL	.00	.00	.51	.54	.63	.61	.04	.00	.00	5.75	89.13	15.86
MEAN	.000	.000	.016	.017	.023	.020	.001	.000	.000	.19	2.88	.53
MAX	.00	.00	.03	.03	.03	.03	.02	.00	.00	3.6	.48	7.8
MIN	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.06
AC-FT	.00	.00	1.0	1.1	1.2	1.2	.08	.00	.00	11	177	31
CAL YR 1976	TOTAL	11.49	MEAN	.031	MAX	.18	MIN	.00	AC-FT	23		
WTR YR 1977	TOTAL	113.07	MEAN	.31	MAX	48	MIN	.00	AC-FT	224		

WHITWATER DRAW BASIN

09537500 WHITWATER DRAW NEAR DOUGLAS, AZ

LOCATION.--Lat 31°21'08", long 109°35'04", in SW¼SE¼ sec.10, T.24 S., R.27 E., Cochise County, Hydrologic Unit 15080301, on downstream side of pier of bridge on U.S. Highway 80, 1.5 mi (2.4 km) upstream from international boundary and 2 mi (3 km) west of Douglas.

DRAINAGE AREA.--1,023 mi² (2,650 km²).

PERIOD OF RECORD.--August to October 1911 (gage heights and discharge measurements only), July to October 1912, January to June 1913, October 1913, December 1913 to June 1914, February to June 1915, October 1915 to September 1919, October 1919 to April 1922 (gage heights and discharge measurements only), June 1930 to December 1933, May 1935 to July 1947, October 1947 to current year. (July 1954 to March 1955 monthly discharge only.) Monthly discharge only for some periods, published in WSP 1313. Records for July to September, November 1913, July 1914 to January 1915, July to September 1915, published in WSP 359, 389, 409, and 1049 have been found to be unreliable and should not be used. Published as White River near Douglas 1911 and as White Water River near Douglas 1912.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 3,909.14 ft (1,191.506 m) above mean sea level. Prior to Apr. 30, 1922, nonrecording gages at various sites between 0.3 mi (0.5 km) upstream and 0.8 mi (1.3 km) downstream, at different datums. June 1, 1930, to Apr. 25, 1972, water-stage recorder at present site, at datum 2.17 ft (0.661 m) lower prior to May 14, 1938, and at datum 2.20 ft (0.671 m) lower May 14, 1938, to Apr. 25, 1972. Apr. 26, 1972, to Apr. 10, 1974, water-stage recorder at site 200 ft (61 m) upstream at datum 4.40 ft (1.341 m) higher.

REMARKS.--Records poor. Irrigation of about 40,000 acres (162 km²)—in 1967—above station, by pumping from ground water. Whitewater Draw discharges into Gulf of California through Rio Yaqui in Mexico. Records show flow at international boundary except for smelter waste water which enters stream below station.

AVERAGE DISCHARGE.--48 years (water years 1916-19, 1931-33, 1936-46, 1948-77), 10.0 ft³/s (0.283 m³/s), 7,240 acre-ft/yr (8.93 hm³/yr); median of yearly mean discharges, 8.3 ft³/s (0.24 m³/s), 6,010 acre-ft/yr (7.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,060 ft³/s (143 m³/s) Aug. 7, 1955; maximum gage height, 16.55 ft (5.044 m) July 29, 1966; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 625 ft³/s (17.7 m³/s) Aug. 19, gage height, 7.95 ft (2.423 m), no peak above base of 1,000 ft³/s (28 m³/s); no flow for most of year.

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	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	3.0
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	5.6
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	3.7
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	140	.02	.20
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	46	.02	1.7
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.4	.01	275
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.4	13
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	52	6.8
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	30	6.6
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	55	2.7	6.4
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	169	29	5.8
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	145	19
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.1	11	9.5
14	.00	.19	.00	.00	.00	.00	.00	.00	.00	6.0	2.0	5.2
15	.00	.18	.00	.00	.00	.00	.00	.00	.00	13	9.9	2.4
16	.00	.07	.00	.00	.00	.00	.00	.00	.00	3.5	375	.46
17	.00	.04	.00	.00	.00	.00	.00	.00	.00	.19	89	.32
18	.00	.01	.00	.00	.00	.00	.00	.00	.00	.22	6.5	.28
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.7	251	.26
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	31	.22
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	62	.09
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	30	26	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	135	17	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	36	11	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	16	9.3	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.8	8.4	9.9
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.4	7.8	23
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	7.2	8.4
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	7.3	1.4
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	5.8	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	4.9	.00
TOTAL	.00	.49	.00	.00	.00	.00	.00	.00	.00	681.95	1205.33	408.23
MEAN	.000	.016	.000	.000	.000	.000	.000	.000	.000	22.0	38.9	13.6
MAX	.00	.19	.00	.00	.00	.00	.00	.00	.00	169	375	275
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
AC-FT	.00	1.0	.00	.00	.00	.00	.00	.00	.00	1350	2390	810
CAL YR 1976	TOTAL	1160.15	MEAN	3.17	MAX	303	MIN	.00	AC-FT	2300		
WTR YR 1977	TOTAL	2296.00	MEAN	6.29	MAX	375	MIN	.00	AC-FT	4550		

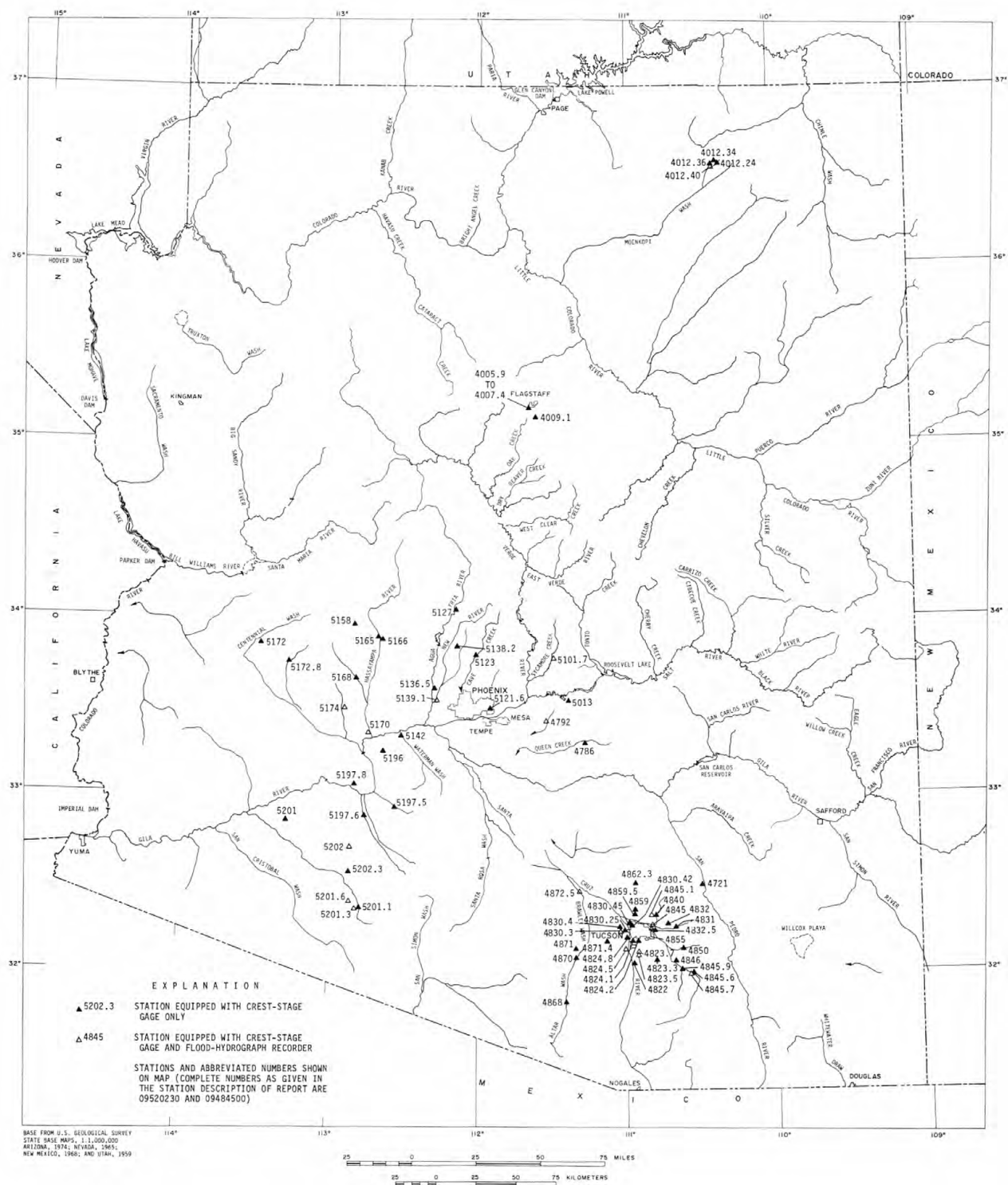


FIGURE 7.--MAP OF ARIZONA SHOWING LOCATION OF PARTIAL-RECORD GAGING STATIONS.

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 1977

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
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	1970-77	1977	-----	a<1
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	1970-77	1977	-----	a<3
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	1970-77	5-15-77	6.18	b8.5
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	1970-77	8- 9-77	5.01	23
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, 1976-77	1977	-----	a<3
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	1969-77	8- 9-77	5.33	24
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	1969-77	7-22-77	2.16	5.0
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.	c7.31	1968-77	8- 9-77	3.74	47
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	1969-77	8- 9-77	3.65	1.0
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	1969-77	8- 9-77	4.61	44
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	1974-77	8-11-77	d6.0	a800
09401226	Coal Mine Wash tributary near Kayenta, AZ	Lat 36°31'54", long 110°24'02", on the Navajo Indian Reservation 3 mi upstream from confluence of Coal Mine Wash and Yellow Water Canyon, 20 mi southwest of Kayenta in Navajo County.	0.62	1974-75, 1977	8- 4-74 7-10-75 7-22-77	1.42 ----- 2.76	63 772 33.9
09401232	Coal Mine Wash near Shonto, AZ	Lat 36°30'22", long 110°25'34", on the Navajo Indian Reservation 14 mi southeast of Shonto and 18 mi southwest of Kayenta in Navajo County.	44.6	1974-77	3- 2-74 9- 8-75 9-25-76 8-11-77	----- 4.3 ----- 3.63	12 1,480 a2 1,040

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 1977--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Little Colorado River basin--Continued							
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	1974-77	7-22-77	10.00	a2,000
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	1975-77	8-11-77	9.4	d600
09401240	Moenkopi Wash near Shonto, AZ	Lat 36°24'51", long 110°27'28", Navajo County, in Navajo-Hopi Indian joint use area, 16.5 mi southeast of Shonto.	e270	1974-77	Summer 1977	-----	a1,500
09401248	Begashibito Wash near Tonaalea, AZ	Lat 36°12'58", long 110°59'08", Coconino County, in Navajo-Hopi Indian joint use area, on right bank 5.7 mi upstream from mouth and 7.7 mi southwest of Tonaalea.	e611	1974-77	8- 4-74 9-13-75 9-25-76 7-24-77	3.19 3.65 2.52 d3.7	280 260 d100 400
Gila River basin							
09472100	Peck Canyon tributary near Redington, AZ	Lat 32°29'12", long 110°30'00", in SW¼SW¼ sec.10, T.11 S., R.18 E., Pima County, on left bank 0.2 mi upstream from mouth and 4 mi north of Redington.	8.02	1967-72†, 1973-77	8-14-77	7.15	58
09478600	Queen Creek tributary No. 3 at Whitlow Dam, AZ	Lat 33°17'30", long 111°16'50", in N¼ sec.1, T.2 S., R.10 E., Pinal County, 0.5 mi south of Whitlow Dam, and 4.5 mi northeast of Florence Junction.	.37	1966-77	10-23-76	5.18	115
09479200	Queen Creek tributary at Apache Junction, AZ	Lat 33°24'13", long 111°32'27", in NE¼SW¼ sec.21, T.1 N., R.8 E., Pinal County, at eastbound lane of U.S. Highway 60, 0.6 mi southeast of Apache Junction.	.51	1961-68†, 1973-77	1977	-----	(f)
09482200	Flato Wash near Sahuarita, AZ	Lat 32°02'43", long 110°57'00", in SW¼SE¼ sec.7, T.16 S., R.14 E., Pima County, at U.S. Highway 89, 6 mi north of Sahuarita.	8.25	1965-77	7-22-77	3.80	390
09482330	Pumping Wash near Vail, AZ	Lat 32°04'10", long 110°48'23", in SW¼NW¼ sec.3, T.16 S., R.15 E., Pima County, at road to pumping station 1.1 mi south of Interstate 10, and 5.7 mi west of Vail.	.54	1966-77	10-22-76	2.44	67
09482350	South Fork Airport Wash near Tucson, AZ	Lat 32°06'00", long 110°54'30", in SE¼NE¼ sec.28, T.15 S., R.14 E., Pima County, at Hughes Access Road, 3.25 mi south of U.S. Highway 80, and 1.5 mi southeast of Tucson city limits.	g9.78 (5.40)	1966-77	1-29-77	-----	69
09482370	North Fork Airport Wash near Tucson, AZ	Lat 32°06'40", long 110°54'30", in NE¼SE¼ sec.22 (revised), T.15 S., R.14 E., Pima County, at Hughes Access Road, 2.5 mi south of U.S. Highway 80, and 1 mi east of Tucson city limits.	g6.65 (1.37)	1961, 1965-77	11-11-76	3.90	70
09482410	Rodeo Wash at Tucson, AZ	Lat 32°10'20", long 110°58'35", in SW¼NW¼ sec.36, T.14 S., R.13 E., Pima County, at South 12th Avenue, 0.8 mi above mouth in Tucson city limits.	5.92	1970-77	8-15-77	2.50	32
09482420	Julian Wash at Tucson, AZ	Lat 32°10'15", long 110°56'25", in SW¼NW¼ sec.32, T.14 S., R.14 E., Pima County, 1,600 ft above confluence with Tucson diversion channel, and 0.5 mi south of Ajo Road in Tucson.	26.5	1970-77	9- 9-77	3.18	680
09482450	West Branch Santa Cruz River at Tucson, AZ	Lat 32°08'00", long 111°00'30", in NE¼NE¼ sec.16, T.15 S., R.13 E., Pima County, at Valencia Road, 0.4 mi east of Mission Road, and 0.8 mi west of Tucson city limits.	23.6	1966-77	9- 9-77	6.09	350
09482480	Big Wash at Tucson, AZ	Lat 32°11'10", long 111°00'07", in SW¼NE¼ sec.27, T.14 S., R.13 E., Pima County, at Mission Road, 0.6 mi north of State Highway 86, in Tucson.	2.75	1966-77	1977	-----	(f)

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations during water year 1977--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Gila River basin--Continued							
09483025	Silvercroft Wash at Tucson, AZ	Lat 32°13'53", long 111°00'10", in NW¼ sec.10, T.14 S., R.13 E., 0.1 mi west of Silverbell Road, 0.3 mi northwest of St. Mary's Hospital, and 0.4 mi north of Anklam Road at Tucson.	2.74	1969-77	1- 1-77	0.57	63
09483030	Anklam Wash at Tucson, AZ	Lat 32°13'30", long 111°01'50", in SE¼ sec.8, T.14 S., R.13 E., Pima County, at Anklam Road, 1 mi west of Tucson city limits, and 2 mi west of St. Mary's Hospital.	2.11	1965-77	1- 1-77	2.88	a5
09483040	West Speedway Wash near Tucson, AZ	Lat 32°14'20", long 111°02'43", in SE¼SE¼ sec.6, T.14 S., R.13 E., Pima County, at driveway to power substation off West Speedway Road, 2 mi west of Tucson city limits, and 3 mi northwest of St. Mary's Hospital.	.46	1965-77	1977	-----	a10
09483042	Cemetery Wash at Tucson, AZ	Lat 32°15'50", long 110°58'38", in NW¼NW¼ sec.36, T.13 S., R.13 E., Pima County, at U.S. Highway 89, 0.25 mi north of junction with State Highway 84 in Tucson.	1.3	1966-77	9-10-77	3.00	205
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.	(1)	1971-77	9-10-77	3.88	225
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	1959-74†, 1975-77	1- 1-77	2.61	420
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	1965-77	(i)	8.34	240
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	1971-77	8- 1-77	1.38	100
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	1932-74†, 1975-77	7-10-77	5.38	480
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	1940-45†, 1966-77	(i)	3.31	600
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	1965-77	(i)	10.88	145
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	1968-75†, 1976-77	9-11-77	5.39	3,800
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	1965-77	9-10-77	6.05	1,700
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	1968-75†, 1976-77	9-10-77	4.63	2,400

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations during water year 1977--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Gila River basin--Continued							
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	1959-74‡, 1975-77	9-10-77	7.31	2,470
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	1952-74‡, 1975-77	1- -77	4.15	127
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	1940‡, 1958, 1965-76	(j)		
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	1964-77	1- -77	d7.15	a10
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	1964-77	9-10-77	5.33	80
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‡, 1976-77	7- -77	6.80	4,500
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, 1966-77	7-26-77	4.88	a1,400
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	1968-77	1977	-----	(f)
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	1969-77	7-22-77	6.28	220
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, 1966-77	(i)	6.59	900
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	1966-77	8-16-77	9.48	3,800
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‡, 1967-77	8-16-77	3.90	260
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.	(h)	1961-66k, 1968-75‡, 1976-77	10-23-76	5.25	a60
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‡, 1968-77	1977	-----	(f)

See footnotes at end of the table.

Annual maximum discharge at crest-stage partial-record stations during water year 1977--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Gila River basin--Continued							
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	1963-77	9-27-77	1.67	46
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	1963-77	1977	-----	(f)
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	1960-77	1977	-----	(f)
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†, 1971-77	10-23-76	6.35	168
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	1964-77	10-23-76	4.25	740
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	1964-77	9-27-77	3.64	d320
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, 1964-77	8-15-77	8.08	a1,600
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	1963-77	1977	-----	(f)
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	1964-77	8-16-77	7.66	80
09517000	Hassayampa River near Arlington, AZ	Lat 33°20'50", long 112°43'30", in NW¼ sec.13, T.1 S., R.5 W., Maricopa County, at former U.S. Highway 80, 1.8 mi upstream from mouth, and 2.8 mi northeast of Arlington.	1,470	1961-77	10-24-76	2.65	4,300
09517200	Centennial Wash tributary near Wenden,	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	1963-77	1977	-----	(f)
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	1963-77	8-16-77	6.40	870
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	1962-77	8-16-77	-----	a60
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.	g3.45 (1.02)	1963-77	8-16-77	3.03	a80
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	1963-77	9-11-77	3.41	a45
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.	n126	1963-77	8-15-77	5.36	2,550
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	1964-77	9-27-77	5.94	a10

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 1977--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (cfs)
Gila River basin--Continued							
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	1963-77	8-15-77	2.17	d120
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	1966-77	9-11-77	5.74	155
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	1966-77	7- 4-77	7.54	780
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	1967-77	7- 4-77	2.27	50
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	1963-77	9-11-77	7.27	578
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	1963-77	11-15-76	2.97	370

‡ Operated as a continuous-record gaging station.

< Less than.

a Estimate.

b Flow from reservoir release.

c 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.

d About.

e Approximately.

f No flow.

g Portion of drainage basin is generally noncontributing because of a major stock pond. The noncontributing area is shown in parentheses.

h Not determined.

i July or August.

j Station temporarily discontinued.

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 Includes 20 square miles which also contributes to an adjoining basin.

Discharge measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by a dagger (†).

Discharge measurements made at miscellaneous sites during water year 1977

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Little Colorado River basin						
Little Colorado River	Colorado River	Lat 34°24'18", long 109°24'07", in NE¼SW¼ sec.20, T.12 N., R.28 E., Apache County, at road crossing 1.2 mi upstream from Salado Springs, 6.5 mi south of St. Johns.	—	1975-76	4- 6-77 9-20-77	*2.99 *1.72
Do-----	-----do-----	Lat 34°26'00", long 109°22'40", in SE¼SE¼ sec.16, T.12 N., R.28 E., Apache County, 2.0 mi downstream from Salado Springs, 5.0 mi southwest of St. Johns.	—	1940-41, 1975-76	4- 6-77 9-20-77	8.13 *6.75
Big Hollow Wash	Little Colorado River	Lat 34°32'29", long 109°25'29", in SW¼SE¼ sec.12, T.13 N., R.27 E., Apache County, below springs 3.5 mi northwest of St. Johns.	—	1976	4- 7-77 9-21-77	.22 .18
Concho Spring	-----do-----	Lat 34°25'51", long 109°37'45", in NW¼NE¼ sec.19, T.12 N., R.26 E., Apache County, 3 mi southwest of Concho.	—	1942, 1946-61, 1966-68, 1976	4- 6-77 9-19-77	1.95 1.97
Stinking Springs	-----do-----	Lat 34°37'25", long 109°34'35", in SE¼SW¼ sec.10, T.14 N., R.26 E., Apache County, 3 mi northeast of Hunt.	—	1976	4- 7-77 9-21-77	.0039 0
Virgin River basin						
Roger's Spring	Roger's Wash	Lat 36°22'39", long 114°26'36", in NE¼SE¼SE¼ sec.12, T.18 S., R.67 E., Clark County, NV.	—	—	5-18-77	.93
Blue Point Spring	Unnamed Wash	Lat 36°23'23", long 114°25'58", in SW¼SW¼SE¼ sec.6, T.18 S., R.68 E., Clark County, NV.	—	—	5-18-77	.55
Unnamed basin						
Hot Spring	Colorado River	Lat 36°00'46", long 114°44'31", in NW¼NW¼SE¼ sec.29, T.22 S., R.65 E., Clark County, NV. at pupfish refugium below Hoover Dam.	—	—	5-17-77	.38
Unnamed Spring	-----do-----	Lat 36°00'10", long 114°44'58", in NW¼SW¼NW¼ sec.32, T.22 S., R.65 E., Clark County, NV.	—	—	5-17-77	1.24
Do-----	-----do-----	Lat 35°59'01", long 114°44'50", in SE¼NW¼SW¼ sec.5, T.23 S., R.65 E., Clark County, NV.	—	—	5-17-77	.55
Do-----	-----do-----	Lat 35°57'56", long 114°44'34", in SE¼SE¼SW¼ sec.8, T.23 S., R.65 E., Clark County, NV.	—	—	5-19-77	.65
Gila River basin						
Granite Creek	Verde River	Lat 34°51'33", long 112°25'58", in NE¼SE¼NE¼ sec.14, T.17 N., R.2 W., Yavapai County, 0.25 mi above mouth near Paulden.	—	—	5- 2-77	*.55
Verde River	Salt River	Lat 34°51'48", long 112°25'50", in SW¼SW¼SW¼ sec.12, T.17 N., R.2 W., Yavapai County, 500 ft below Granite Creek near Paulden.	—	—	5- 2-77	.49
Do-----	-----do-----	Lat 34°52'01", long 112°25'18", in SE¼NE¼SW¼ sec.12, T.17 N., R.2 W., Yavapai County, 0.7 mi below Granite Creek near Paulden.	—	—	5- 2-77	*14.6
Do-----	-----do-----	Lat 34°52'03", long 112°24'05", in NW¼SE¼ sec.7, T.17 N., R.1 W., Yavapai County, at Stewart Ranch.	—	—	4-26-77	*20.3

See footnote at end of the table.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1977--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Gila River basin--Continued						
Verde River	Salt River	Lat 34°53'52", long 112°12'04", in NE¼SE¼ sec.36, T.18 N., R.1 E., Yavapai County, at Perkinsville.	—	—	4-26-77	*18.9
Do-----	-----do-----	Lat 34°53'44", long 112°10'39", in SW¼ sec.32, T.18 N., R.2 E., Yavapai County, below Perkinsville below Orchard Fault.	—	—	6- 8-77	27.2
Do-----	-----do-----	Lat 34°52'45", long 112°09'26", in sec.4, T.17 N., R.2 E., Yavapai County, above railroad tunnel near Clarkdale.	—	—	6- 8-77	28.0
Do-----	-----do-----	Lat 34°53'16", long 112°07'34", in sec.2, T.17 N., R.2 E., Yavapai County, at Mormon Packet near Clarkdale.	—	—	6- 8-77	50.5
Sycamore Creek	Verde River	Lat 34°51'47", long 112°04'35", in SE¼SE¼ sec.7, T.17 N., R.3 E., Yavapai County, at mouth near Clarkdale.	—	—	4-26-77	8.87
Verde River	Salt River	Lat 34°51'35", long 112°04'30", in NW¼ sec.17, T.17 N., R.3 E., Yavapai County, 2,000 ft below Sycamore Creek.	—	—	6-15-77	63.2
Do-----	-----do-----	Lat 34°40'58", long 111°57'28", in SE¼SE¼NE¼ sec.19, T.15 N., R.4 E., Yavapai County, 1.7 mi upstream from Oak Creek, 3.2 mi southwest of Cornville.	—	—	11- 4-76 12-10-76 1-14-77 2-24-77 3-23-77 4-27-77 5-25-77 6-21-77 7-22-77 8-18-77 9-29-77	69.5 85.2 84.5 74.4 65.7 53.4 73.5 43.3 61.0 91.7 79.6
Copper Canyon	Verde River	Lat 34°32'59", long 111°52'22", in SE¼NE¼ sec.1, T.13 N., R.4 E., Yavapai County, at Salt Mine Road near Camp Verde.	—	—	8- 3-77	+5,000
Verde River	Salt River	Lat 34°26'54", long 111°47'21", in NW¼ sec.11, T.12 N., R.5 E., Yavapai County, 600 ft upstream from Chasm Creek, 9.0 mi southeast of Camp Verde.	5,024	1934-45†, 1976	10- 6-76 11- 8-76 12- 9-76 1-25-77 4- 1-77 5-23-77 6-22-77 7-22-77 8-31-77	161 151 171 204 150 86.4 53.0 101 131
Santa Cruz River	Gila River	Lat 32°08'53", long 110°59'35", in SW¼SW¼ sec.2, T.15 S., R.13 E., Pima County, at Drexel Road at Tucson.	—	—	6-22-77	+400
Alamo Wash	Santa Cruz River	Lat 32°15'38", long 110°53'06", in NW¼ sec.35, T.13 S., R.14 E., Pima County, at Fort Lowell Road at Tucson.	—	—	9-10-77	+2,500

† Operated as a continuous-record gaging station.

LITTLE COLORADO RIVER BASIN

Upper Little Colorado River low-flow and water-quality investigations

Three series of base-flow discharge measurements and chemical-quality samples were collected in the upper Little Colorado River as part of a comprehensive investigation of the water quality in and around the town of Greer, Ariz. In cooperation with the Arizona Department of Health Services the first series were made on Aug. 23-25; the second series on Sept. 13-15; the third series on Sept. 27-29. The data collected in these series of measurements will provide a basis for determining the chemical quality of the base flow in various parts of the upper Little Colorado River basin.

Weather records indicate that only minor amounts of precipitation occurred prior to and during these periods, therefore, the data are considered to represent base-flow conditions.

The measurements are listed in order proceeding downstream, and each tributary is inserted in the order in which it enters the mainstream.

STATION	NUMRER	STATION NAME	DATE OF SAMPLE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)
335926	109270900	E FK LCR AB MONTLURE CHURCH CAMP NR GREER AZ	77-08-23	1350	1.9	95	7.5
		E FK LCR AB MONTLURE CHURCH CAMP NR GREER AZ	77-09-13	1050	1.1	115	7.6
		E FK LCR AB MONTLURE CHURCH CAMP NR GREER AZ	77-09-27	1020	1.0	110	7.6
335942	109271600	E FK LCR BL CH CAMP SEWAGE PIPE XING NR GREER AZ	77-08-24	0830	2.4	100	7.5
		E FK LCR BL CH CAMP SEWAGE PIPE XING NR GREER AZ	77-09-13	1130	1.3	115	7.7
		E FK LCR BL CH CAMP SEWAGE PIPE XING NR GREER AZ	77-09-27	1050	1.2	120	7.7
340008	109272500	E FK LCR 500 FT AB W FK LCR NR GREER AZ	77-08-24	0950	2.1	110	7.5
		E FK LCR 500 FT AB W FK LCR NR GREER AZ	77-09-14	0820	1.2	130	7.6
		E FK LCR 500 FT AB W FK LCR NR GREER AZ	77-09-28	0830	1.2	130	7.8
335935	109275200	W FK LCR AB GOVT SPRNG FOREST CAMP NR GREER AZ	77-08-23	0900	14	65	7.7
		W FK LCR AB GOVT SPRNG FOREST CAMP NR GREER AZ	77-09-13	0800	8.2	70	7.6
		W FK LCR AB GOVT SPRNG FOREST CAMP NR GREER AZ	77-09-27	0820	5.9	80	7.7
340006	109273600	W FK LCR 100 FT BL PETROFFS POND NR GREER AZ	77-08-23	1050	11	65	7.6
		W FK LCR 100 FT BL PETROFFS POND NR GREER AZ	77-09-13	0850	8.2	70	7.5
		W FK LCR 100 FT BL PETROFFS POND NR GREER AZ	77-09-27	0910	5.8	78	7.6
340013	109272500	W FK LCR 50 FT AB E FK LCR NR GREER AZ	77-08-23	1200	13	65	7.3
		W FK LCR 50 FT AB E FK LCR NR GREER AZ	77-09-13	0940	8.5	70	7.6
		W FK LCR 50 FT AB E FK LCR NR GREER AZ	77-09-27	0940	5.6	75	7.5
340020	109271500	LCR 0.3 MI BL CONFLUENCE OF E&W FKS NR GREER AZ	77-08-23	1220	15	65	7.6
		LCR 0.3 MI BL CONFLUENCE OF E&W FKS NR GREER AZ	77-09-14	0900	9.9	80	7.4
		LCR 0.3 MI BL CONFLUENCE OF E&W FKS NR GREER AZ	77-09-28	0910	7.8	85	7.6
340046	109272200	UNNAMED TRIBUTARY TO LCR AT MOUTH AT GREER AZ	77-08-24	1120	E.01	285	7.2
		UNNAMED TRIBUTARY TO LCR AT MOUTH AT GREER AZ	77-09-14	1100	.00	--	--
		UNNAMED TRIBUTARY TO LCR AT MOUTH AT GREER AZ	77-09-28	0940	E.01	210	7.2
340049	109272500	BRANCH OF LCR AT DIV TO FILLER DITCH AT GREER AZ	77-08-24	1200	1.4	75	7.3
		BRANCH OF LCR AT DIV TO FILLER DITCH AT GREER AZ	77-09-14	0950	.14	85	7.5
		BRANCH OF LCR AT DIV TO FILLER DITCH AT GREER AZ	77-09-28	1000	7.4	85	7.5
0938	3400	LITTLE COLORADO RIVER AT GREER, ARIZ.	77-08-24	1240	13	78	7.6
		LITTLE COLORADO RIVER AT GREER, ARIZ.	77-09-14	1100	8.7	85	7.7
		LITTLE COLORADO RIVER AT GREER, ARIZ.	77-09-28	1045	1.4	105	7.7
340059	109273200	FILLER DITCH AT BRIDGE 0.2 MI BL DIV AT GREER AZ	77-08-25	0850	.19	150	7.6
		FILLER DITCH AT BRIDGE 0.2 MI BL DIV AT GREER AZ	77-09-14	1030	.15	145	7.3
		FILLER DITCH AT BRIDGE 0.2 MI BL DIV AT GREER AZ	77-09-28	1020	6.4	90	7.6
340124	109270000	LCR AT HWY 373 XING AB RIVER RES NR GREER AZ	77-08-25	0930	14	80	7.5
		LCR AT HWY 373 XING AB RIVER RES NR GREER AZ	77-09-15	0800	9.0	85	7.5
		LCR AT HWY 373 XING AB RIVER RES NR GREER AZ	77-09-29	0900	1.8	110	7.7
340146	109270100	FILLER DITCH AT HWY 373 XING NR GREER AZ	77-08-25	1200	.00	--	--
		FILLER DITCH AT HWY 373 XING NR GREER AZ	77-09-15	1030	.00	--	--
		FILLER DITCH AT HWY 373 XING NR GREER AZ	77-09-29	0830	4.0	90	7.9
340203	109253700	FLOW INTO RIVER RES BL WONDERLAND PK NR GREER AZ	77-08-25	1030	.04	300	7.4
		FLOW INTO RIVER RES BL WONDERLAND PK NR GREER AZ	77-09-15	0900	.04	270	7.3
		FLOW INTO RIVER RES BL WONDERLAND PK NR GREER AZ	77-09-29	0930	.07	240	7.3
340248	109270000	BENNY C 10 FT AB BUNCH RES OUTLET CH NR GREER AZ	77-08-25	1140	1.4	185	7.5
		BENNY C 10 FT AB BUNCH RES OUTLET CH NR GREER AZ	77-09-15	1000	.11	290	7.2
		BENNY C 10 FT AB BUNCH RES OUTLET CH NR GREER AZ	77-09-29	1030	.21	290	7.2
340400	109270800	LCR 200 FT BL HALL CK BL RIVER RES NR GREER AZ	77-08-25	1300	7.4	135	7.6
		LCR 200 FT BL HALL CK BL RIVER RES NR GREER AZ	77-09-15	1100	7.0	120	7.6
		LCR 200 FT BL HALL CK BL RIVER RES NR GREER AZ	77-09-29	1150	2.4	170	7.9

E Estimated.

LITTLE COLORADO RIVER BASIN

Upper Little Colorado River low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DTS- SOLVED OXYGEN (MG/L)	RIO- CHEM- TCAL OXYGEN DEMAND 5 DAY (MG/L)	FECAL COLI- FORM 7UM-MF (COL./ 100 ML)	IMMF- DIAFE CULI- FORM (COL. PER 100 ML)	FECAL STREP- TOCNCI KF AGAR (COL. PER 100 ML)	HARD- NFSS (CA, MG/ L)	NON- CAR- BUNATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)
335926109270900		77-08-23	16.5	6	7.3	1.0	140	350	1100	41	0	11
		77-09-13	13.0	--	7.7	.8	22	24	190	--	--	--
		77-09-27	11.5	--	8.2	.6	25	56	100	--	--	--
335942109271600		77-08-24	12.0	5	8.0	.8	79	200	320	26	1	7.0
		77-09-13	14.0	--	7.5	.9	32	42	79	--	--	--
		77-09-27	12.0	--	8.1	.6	25	52	51	--	--	--
340008109272500		77-08-24	14.5	3	7.6	.7	70	210	170	50	2	14
		77-09-14	9.0	--	8.5	.6	27	120	76	--	--	--
		77-09-28	9.5	--	8.5	.5	140	260	370	--	--	--
335935109275200		77-08-23	10.5	3	8.7	.8	100	110	96	22	0	5.6
		77-09-13	8.0	--	8.8	.5	19	33	62	--	--	--
		77-09-27	9.5	--	8.6	.3	4	22	49	--	--	--
340006109273600		77-08-23	12.5	3	8.4	.4	100	160	200	22	0	5.8
		77-09-13	8.5	--	8.6	.4	89	110	160	--	--	--
		77-09-27	9.5	--	8.7	.4	16	60	33	--	--	--
340013109272500		77-08-23	13.0	4	8.2	.5	61	96	290	24	1	6.0
		77-09-13	9.5	--	8.5	.6	17	47	72	--	--	--
		77-09-27	10.0	--	8.2	.3	14	36	60	--	--	--
340020109271500		77-08-23	14.0	5	8.0	.4	49	100	290	39	0	10
		77-09-14	9.0	--	8.4	.4	16	89	41	--	--	--
		77-09-28	9.5	--	8.7	.5	42	76	140	--	--	--
340046109272200		77-08-24	23.0	5	5.5	3.7	300	1400	760	120	0	32
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	13.0	--	5.7	4.1	1300	2200	4500	--	--	--
340049109272500		77-08-24	15.0	2	7.6	.5	73	240	190	26	0	6.8
		77-09-14	14.5	--	7.6	.5	24	57	62	--	--	--
		77-09-28	10.5	--	8.4	.7	140	370	370	--	--	--
09383400		77-08-24	16.0	3	7.7	.3	69	160	320	28	0	7.2
		77-09-14	13.0	--	8.0	.4	38	--	57	--	--	--
		77-09-28	13.0	--	7.8	.4	43	120	260	--	--	--
340059109273200		77-08-25	12.0	7	7.8	2.2	130	1400	1200	56	0	15
		77-09-14	12.0	--	7.8	1.4	190	410	680	--	--	--
		77-09-28	10.5	--	8.5	.8	140	250	420	--	--	--
340124109270000		77-08-25	12.5	2	8.1	.6	28	460	150	28	0	7.4
		77-09-15	9.0	--	8.7	.5	44	100	160	--	--	--
		77-09-29	10.0	--	8.7	.6	23	26	150	--	--	--
340146109270100		77-08-25	--	--	--	--	--	--	--	--	--	--
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	8.0	2	8.9	.5	33	80	180	31	0	7.8
340203109253700		77-08-25	17.0	10	7.0	.9	610	1700	380	130	0	36
		77-09-15	11.0	--	8.1	1.0	420	360	650	--	--	--
		77-09-29	10.0	--	8.2	1.2	160	190	650	--	--	--
340248109270000		77-08-25	18.0	4	6.8	1.3	29	210	730	81	0	19
		77-09-15	13.0	--	7.3	1.6	56	820	370	--	--	--
		77-09-29	12.0	--	8.0	2.1	510	730	1000	--	--	--
340400109270800		77-08-25	19.5	3	7.4	1.4	13	630	290	51	0	13
		77-09-15	16.0	--	7.4	.6	76	866	860	--	--	--
		77-09-29	14.5	--	7.4	.6	46	52	80	--	--	--

Upper Little Colorado River low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	DTS- SOLVED	DIS- SOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	DTS- SOLVED	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LITY AS CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DTS- SOLVED
			MAG- NE- SIUM (MG/L)				PO- TAS- SIUM (K) (MG/L)					CHLO- RIDE (CL) (MG/L)
335926109270900		77-08-23	3.2	4.1	17	.3	1.6	49	0	40	2.5	.8
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
335942109271600		77-08-24	2.0	3.1	19	.3	1.8	30	0	25	1.5	.9
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340008109272500		77-08-24	3.7	4.8	17	.3	1.5	59	0	48	3.0	.9
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
335935109275200		77-08-23	1.9	2.9	21	.3	1.8	27	0	22	.9	.8
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340006109273600		77-08-23	1.9	3.0	21	.3	1.8	29	0	24	1.8	1.0
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340013109272500		77-08-23	2.2	3.0	20	.3	1.8	28	0	23	2.2	.9
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340020109271500		77-08-23	3.5	4.3	18	.3	1.5	52	0	43	3.3	.9
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340046109272200		77-08-24	9.4	14	19	.6	5.7	180	0	150	18	3.5
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340049109272500		77-08-24	2.3	3.4	20	.3	1.8	36	0	30	2.9	.9
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
09383400		77-08-24	2.4	3.4	20	.3	1.8	36	0	30	1.4	.9
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340059109273200		77-08-25	4.6	7.2	21	.4	2.3	87	0	71	3.5	1.5
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340124109270000		77-08-25	2.4	3.4	19	.3	1.8	38	0	31	1.9	3.2
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--
340146109270100		77-08-25	--	--	--	--	--	--	--	--	--	--
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	2.7	3.8	20	.3	2.0	47	0	39	.9	1.1
340203109253700		77-08-25	9.2	14	19	.5	1.2	190	0	160	12	2.1
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--
340248109270000		77-08-25	8.1	5.0	12	.2	1.4	100	0	82	5.1	1.6
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--
340400109270800		77-08-25	4.6	5.4	18	.3	2.0	70	0	57	2.8	1.4
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--

LOW-FLOW INVESTIGATIONS

LITTLE COLORADO RIVER BASIN

Upper Little Colorado River low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED FLUOR- IDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	TOTAL NITRIF- PLUS NITRATE (N) (MG/L)	DTS- SOLVED NITRIF- PLUS NITRATE (N) (MG/L)	TOTAL NITRIF- PLUS NITRATE (N) (MG/L)
335926109270900		77-08-23	6.3	.1	25	61	77	.10	.41	.12	.14	.35
		77-09-13	--	--	--	--	--	--	--	.02	.01	.37
		77-09-27	--	--	--	--	--	--	--	.01	.01	.37
335942109271600		77-08-24	4.4	.1	17	54	51	.07	.34	.02	.01	.32
		77-09-13	--	--	--	--	--	--	--	.01	.01	.47
		77-09-27	--	--	--	--	--	--	--	.01	.01	.75
340008109272500		77-08-24	6.9	.1	19	69	80	.11	.47	.01	.02	.24
		77-09-14	--	--	--	--	--	--	--	.00	.01	.00
		77-09-28	--	--	--	--	--	--	--	.05	.01	1.2
335935109275200		77-08-23	5.8	.1	25	49	57	.08	2.28	.01	.02	.21
		77-09-13	--	--	--	--	--	--	--	.03	.01	.20
		77-09-27	--	--	--	--	--	--	--	.03	.09	.03
340006109273600		77-08-23	4.5	.1	24	52	57	.08	1.75	.02	.01	.21
		77-09-13	--	--	--	--	--	--	--	.01	.01	.22
		77-09-27	--	--	--	--	--	--	--	.02	.01	.06
340013109272500		77-08-23	5.5	.1	23	49	56	.08	1.97	.01	.01	.20
		77-09-13	--	--	--	--	--	--	--	.02	.01	.05
		77-09-27	--	--	--	--	--	--	--	.01	.01	.98
340020109271500		77-08-23	4.1	.1	23	61	73	.10	3.00	.01	.01	.19
		77-09-14	--	--	--	--	--	--	--	.01	.03	.15
		77-09-28	--	--	--	--	--	--	--	.01	.02	.11
340046109272200		77-08-24	3.9	.1	30	189	188	.26	.01	.01	.01	1.4
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	.16	.02	.78
340049109272500		77-08-24	4.1	.1	23	57	60	.08	.23	.01	.00	.13
		77-09-14	--	--	--	--	--	--	--	.01	.01	.39
		77-09-28	--	--	--	--	--	--	--	.03	.02	.33
09383400		77-08-24	4.5	.1	22	54	60	.08	2.17	.01	.01	.23
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	.02	.01	.54
340059109273200		77-08-25	1.9	.1	35	96	111	.15	.06	.03	.01	.31
		77-09-14	--	--	--	--	--	--	--	.01	.01	.56
		77-09-28	--	--	--	--	--	--	--	.03	.05	.56
340124109270000		77-08-25	4.2	.1	25	57	67	.09	2.57	.02	.01	.17
		77-09-15	--	--	--	--	--	--	--	.03	.01	.15
		77-09-29	--	--	--	--	--	--	--	.01	.01	.02
340146109270100		77-08-25	--	--	--	--	--	--	--	--	--	--
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	6.2	.1	29	58	76	.10	.83	.01	.01	.08
340203109253700		77-08-25	5.2	.2	17	161	179	.24	.02	.01	.01	.53
		77-09-15	--	--	--	--	--	--	--	.01	.01	.37
		77-09-29	--	--	--	--	--	--	--	.01	.01	.15
340248109270000		77-08-25	7.2	.1	23	111	115	.16	.44	.01	.01	.48
		77-09-15	--	--	--	--	--	--	--	.01	.01	.53
		77-09-29	--	--	--	--	--	--	--	.04	.01	.87
340400109270800		77-08-25	5.2	.1	22	82	89	.12	1.79	.12	.12	.51
		77-09-15	--	--	--	--	--	--	--	.20	.20	.05
		77-09-29	--	--	--	--	--	--	--	.04	.02	.10

LITTLE COLORADO RIVER BASIN

Upper Little Colorado River low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	TOTAL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (NO3) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (P) (MG/L)	DTS- SOLVED ORTHO- PHOS- PHATE (PO4) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)
335926109270900		77-08-23	.47	2.1	.12	.07	.21	0	0	80	20	<10
		77-09-13	.39	1.7	.05	.04	.12	--	--	--	--	--
		77-09-27	.38	1.7	.15	.01	.03	--	--	--	--	--
335942109271600		77-08-24	.34	1.5	.05	.01	.03	0	0	90	20	<10
		77-09-13	.48	2.1	.02	.03	.09	--	--	--	--	--
		77-09-27	.76	3.4	.06	.01	.03	--	--	--	--	--
340008109272500		77-08-24	.25	1.1	.05	.01	.03	0	100	80	20	<10
		77-09-14	.00	.00	.02	.03	.09	--	--	--	--	--
		77-09-28	1.3	5.5	.05	.04	.12	--	--	--	--	--
335935109275200		77-08-23	.22	.97	.06	.01	.03	0	0	80	20	10
		77-09-13	.23	1.0	.02	.04	.12	--	--	--	--	--
		77-09-27	.06	.27	.05	.09	.28	--	--	--	--	--
340006109273600		77-08-23	.23	1.0	.07	.02	.06	0	0	70	20	<10
		77-09-13	.23	1.0	.04	.04	.12	--	--	--	--	--
		77-09-27	.08	.35	.05	.05	.15	--	--	--	--	--
340013109272500		77-08-23	.30	1.3	.06	.01	.03	0	0	90	20	10
		77-09-13	.07	.31	.02	.04	.12	--	--	--	--	--
		77-09-27	.99	4.4	.06	.01	.03	--	--	--	--	--
340020109271500		77-08-23	.20	.89	.07	.01	.03	0	0	70	30	10
		77-09-14	.16	.71	.07	.05	.15	--	--	--	--	--
		77-09-28	.12	.53	.05	.05	.15	--	--	--	--	--
340046109272200		77-08-24	1.4	6.2	.27	.13	.40	1	100	60	80	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	.94	4.2	.32	.17	.52	--	--	--	--	--
340049109272500		77-08-24	.14	.62	.06	.01	.03	0	0	80	30	<10
		77-09-14	.40	1.8	.03	.04	.12	--	--	--	--	--
		77-09-28	.36	1.6	.07	.01	.03	--	--	--	--	--
09383400		77-08-24	.24	1.1	.08	.03	.09	0	0	80	20	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	.56	2.5	.09	.03	.09	--	--	--	--	--
340059109273200		77-08-25	.34	1.5	.08	.01	.03	1	0	100	10	10
		77-09-14	.57	2.5	.08	.05	.15	--	--	--	--	--
		77-09-28	.59	2.6	.09	.02	.06	--	--	--	--	--
340124109270000		77-08-25	.19	.84	.16	.09	.28	0	0	80	20	<10
		77-09-15	.18	.80	.04	.04	.12	--	--	--	--	--
		77-09-29	.03	.13	.09	.03	.09	--	--	--	--	--
340146109270100		77-08-25	--	--	--	--	--	--	--	--	--	--
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	.09	.40	.04	.01	.03	--	300	20	9	<10
340203109253700		77-08-25	.54	2.4	.15	.07	.21	4	0	70	40	<10
		77-09-15	.38	1.7	.09	.06	.18	--	--	--	--	--
		77-09-29	.16	.71	.10	.04	.12	--	--	--	--	--
340248109270000		77-08-25	.49	2.2	.12	.05	.15	0	0	60	30	10
		77-09-15	.54	2.4	.08	.04	.12	--	--	--	--	--
		77-09-29	.91	4.0	.08	.02	.06	--	--	--	--	--
340400109270800		77-08-25	.63	2.8	.18	.10	.31	0	0	100	20	<10
		77-09-15	.25	1.1	.11	.06	.18	--	--	--	--	--
		77-09-29	.23	1.0	.07	.02	.06	--	--	--	--	--

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

LITTLE COLORADO RIVER BASIN

Upper Little Colorado River low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	TOTAL CHROMIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	TOTAL MANGANESE (MN) (UG/L)	DIS- SOLVED MANGANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELENIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)
335926109270900		77-08-23	0	<10	550	180	<100	20	0	.0	0	<10
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
335942109271600		77-08-24	0	<10	430	130	<100	30	0	.0	0	<10
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340008109272500		77-08-24	0	10	390	190	<100	20	0	.0	1	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
335935109275200		77-08-23	0	<10	290	120	<100	20	0	.0	0	<10
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340006109273600		77-08-23	0	<10	340	90	<100	20	0	.0	0	<10
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340013109272500		77-08-23	10	<10	410	80	<100	20	0	.0	0	<10
		77-09-13	--	--	--	--	--	--	--	--	--	--
		77-09-27	--	--	--	--	--	--	--	--	--	--
340020109271500		77-08-23	0	<10	530	220	<100	30	0	.0	1	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340046109272200		77-08-24	0	10	350	80	<100	40	0	.0	0	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340049109272500		77-08-24	0	<10	270	140	<100	20	0	.0	0	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
09383400		77-08-24	0	<10	440	220	<100	30	0	.0	0	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340059109273200		77-08-25	0	<10	1000	140	<100	100	0	.0	0	<10
		77-09-14	--	--	--	--	--	--	--	--	--	--
		77-09-28	--	--	--	--	--	--	--	--	--	--
340124109270000		77-08-25	0	<10	510	280	<100	40	0	.0	0	<10
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--
340146109270100		77-08-25	--	--	--	--	--	--	--	--	--	--
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	0	<10	290	120	<100	10	10	.0	--	<10
340203109253700		77-08-25	0	<10	960	50	<100	30	0	.0	0	<10
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--
340248109270000		77-08-25	0	<10	730	260	<100	100	0	.0	1	<10
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--
340400109270800		77-08-25	10	<10	400	160	<100	30	0	.0	0	<10
		77-09-15	--	--	--	--	--	--	--	--	--	--
		77-09-29	--	--	--	--	--	--	--	--	--	--

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

LITTLE COLORADO RIVER BASIN

Upper Little Colorado River low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
335926109270900		77-08-23	60	3.4	.00	6
		77-09-13	--	--	--	--
		77-09-27	--	--	--	--
335942109271600		77-08-24	30	2.8	.00	5
		77-09-13	--	--	--	--
		77-09-27	--	--	--	--
340008109272500		77-08-24	30	3.5	.00	2
		77-09-14	--	--	--	--
		77-09-28	--	--	--	--
335935109275200		77-08-23	20	3.0	.00	36
		77-09-13	--	--	--	--
		77-09-27	--	--	--	--
340006109273600		77-08-23	30	--	.00	2
		77-09-13	--	--	--	--
		77-09-27	--	--	--	--
340013109272500		77-08-23	20	3.0	.00	4
		77-09-13	--	--	--	--
		77-09-27	--	--	--	--
340020109271500		77-08-23	20	4.3	.00	7
		77-09-14	--	--	--	--
		77-09-28	--	--	--	--
340046109272200		77-08-24	20	12	.00	1
		77-09-14	--	--	--	--
		77-09-28	--	--	--	--
340049109272500		77-08-24	40	2.2	.00	9
		77-09-14	--	--	--	--
		77-09-28	--	--	--	--
09383400		77-08-24	60	3.0	.00	2
		77-09-14	--	--	--	--
		77-09-28	--	--	--	--
340059109273200		77-08-25	30	1.7	.00	7
		77-09-14	--	--	--	--
		77-09-28	--	--	--	--
340124109270000		77-08-25	10	2.0	.00	1
		77-09-15	--	--	--	--
		77-09-29	--	--	--	--
340146109270100		77-08-25	--	--	--	--
		77-09-15	--	--	--	--
		77-09-29	--	--	--	--
340146109270100		77-08-25	--	--	--	--
		77-09-15	--	--	--	--
		77-09-29	10	2.7	.00	1
340203109253700		77-08-25	30	5.3	.00	2
		77-09-15	--	--	--	--
		77-09-29	--	--	--	--
340248109270000		77-08-25	20	5.2	.00	0
		77-09-15	--	--	--	--
		77-09-29	--	--	--	--
340400109270800		77-08-25	40	1.4	.00	0
		77-09-15	--	--	--	--
		77-09-29	--	--	--	--

GILA RIVER BASIN

White, Black, and Salt Rivers low-flow and water-quality investigations

A series of base-flow discharge measurements and chemical-quality samples were collected on the Black, White, and Salt Rivers, in cooperation with the Arizona Department of Health Services, during the period June 17-29, 1977. The data collected in this series of measurements will provide a basis for determining the chemical quality of the base flow in various parts of the upper Salt River system. Weather records indicate that no precipitation occurred 8 days prior to June 17, and only a minor amount of precipitation was recorded during an 18-day period prior to June 28; therefore, these data are considered to represent base-flow conditions.

The measurements on each stream are listed in order proceeding downstream, and each tributary is inserted in the order in which it enters the main stream. River miles are measured upstream or downstream using the confluence of the White and Black Rivers as the arbitrary zero point.

STATION	NUMRER	STATION NAME	DATE OF SAMPLE	TIME	INSTANTANEOUS DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)
09494000		WHITE RIVER NEAR FORT APACHE, ARIZ. MILE 4.5	77-06-17	0930	31	275	8.5
334352110103A00		WHITE R MILE 3.8	77-06-28	1200	22	370	8.5
334400110120000		WHITE R SPRING NORTH BANK MILE 1.8	77-06-28	1320	--	3300	6.9
334358110120400		WHITE R SPRING SOUTH BANK MILE 1.8	77-06-28	1340	--	3100	7.1
334400110120600		WHITE R MILE 1.8	77-06-28	1400	25	670	7.6
334407110123400		WHITE R MILE 1.2	77-06-29	1440	27	1140	7.4
334403110125200		WHITE R GB SPRING SB 3 MILE 0.8	77-06-29	1100	--	7500	6.7
334405110125100		WHITE R GB SPRING NB 1 MILE 0.8	77-06-29	1115	--	8100	6.8
334404110125500		WHITE R GB SPRING NB 2 MILE 0.8	77-06-29	1130	--	14300	6.4
334404110130000		WHITE R MILE 0.7	77-06-29	1335	54	4400	6.9
334421110135800		WHITE R ABV CONFLUENCE MILE 0.0	77-06-18	0730	58	3710	7.3
09490500		BLACK RIVER NEAR FORT APACHE, ARIZ. MILE 5.0	77-06-18	0800	22	148	8.2
334411110134000		BLACK R ABV CONFLUENCE MILE 0.0	77-06-18	0700	26	737	7.6
334518110141000		SALT R MILE 2.2	77-06-18	0830	84	3200	7.9
334516110160000		SALT R MILE 5.0	77-06-18	0930	94	3550	8.1
334637110173500		SALT R MILE 8.5	77-06-18	1015	94	3700	8.1
334648110190200		WARM SPRING SALT MILE 10.5	77-06-18	1200	2.4	234	7.9
334703110192800		SALT R MILE 11.0	77-06-18	1130	86	3590	8.2
334707110193200		CARRIZO CR SALT MILE 11.2	77-06-18	1145	5.1	31000	8.1
334755110203000		SALT R MILE 12.8	77-06-19	0845	101	4750	8.2
334801110203200		SPRING SOUTH BANK MILE 13.0	77-06-19	0900	--	28500	6.2
334805110203600		SPRING NORTH BANK MILE 13.1	77-06-19	0905	--	24500	7.2
334800110213500		SALT R MILE 17.1	77-06-19	0940	101	6000	7.9
334832110235500		SALT MILE 22.4	77-06-19	1030	100	6500	8.1
334745110241900		SALT R MILE 25.2	77-06-19	1115	106	6000	8.1
334812110270900		SALT R MILE 29.8	77-06-19	1230	103	5800	8.3
09497500		SALT RIVER NEAR CHRYSOTILE, ARIZ. MILE 34.8	77-06-17	1830	111	4800	8.2

STATION	NUMRER	DATE OF SAMPLE	TEMPERATURE (DEG C)	TURBIDITY (JTU)	HARDNESS (CA, MG/L)	NON-CARBONATE HARDNESS (MG/L)	TOTAL CALCIUM (CA) (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	TOTAL MAGNESIUM (MG/L)	DIS-SOLVED MAGNESIUM (MG/L)	TOTAL SODIUM (NA) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)
09494000		77-06-17	18.5	1	180	46	58	51	12	12	8.0	8.0
334352110103A00		77-06-28	25.5	8	170	54	46	46	12	13	9.0	9.0
334400110120000		77-06-28	23.0	--	250	34	--	38	--	37	--	470
334358110120400		77-06-28	24.0	--	530	340	--	150	--	37	--	450
334400110120600		77-06-28	26.0	4	200	51	58	55	14	15	57	58
334407110123400		77-06-29	28.0	2	250	73	67	70	17	19	130	130
334403110125200		77-06-29	27.0	--	740	420	--	200	--	58	--	1200
334405110125100		77-06-29	29.0	--	500	340	--	95	--	64	--	1500
334404110125500		77-06-29	29.0	--	1200	960	--	340	--	85	--	2800
334404110130000		77-06-29	28.0	1	510	180	140	140	38	38	740	720
334421110135800		77-06-18	22.0	1	470	150	140	130	35	36	640	640
09490500		77-06-17	21.5	1	64	0	16	16	5.9	5.8	7.0	7.0
334411110134000		77-06-18	20.0	1	140	20	34	36	12	13	100	98
334518110141000		77-06-18	22.0	2	370	130	100	100	28	29	500	480
334516110160000		77-06-18	22.0	1	370	140	93	100	27	28	490	460
334637110173500		77-06-18	23.0	3	370	160	95	99	27	30	490	470
334648110190200		77-06-18	23.5	1	240	30	48	53	23	25	8.9	6.9
334703110192800		77-06-18	25.0	5	340	120	97	93	27	27	470	450
334707110193200		77-06-18	26.0	0	1300	910	280	290	120	130	6400	6200
334755110203000		77-06-19	24.0	1	260	57	110	100	33	3.0	750	760
334801110203200		77-06-19	25.0	--	1800	1300	--	520	--	130	--	5700
334805110203600		77-06-19	24.0	--	1200	1000	--	290	--	120	--	5700
334800110213500		77-06-19	22.0	1	480	220	120	130	34	38	1000	930
334832110235500		77-06-19	22.0	0	420	190	110	110	37	36	1000	1000
334745110241900		77-06-19	23.0	1	420	190	110	110	36	36	990	960
334812110270900		77-06-19	25.0	0	380	170	100	95	35	35	1000	950
09497500		77-06-17	24.8	2	320	140	91	77	32	32	900	850

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

GILA RIVER BASIN

White, Black, and Salt Rivers low-flow and water-quality investigations--Continued

STATION	NUMBER	DATE OF SAMPLE	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	TOTAL PO- TAS- SIUM (K) (MG/L)	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AS CaCO3 (MG/L)	CARRON DIOXIDE (CO2) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)
09494000	77-06-17	9	.3	2.5	2.5	160	0	130	.8	59	2.8	
334352110103800	77-06-28	10	.3	2.7	2.5	140	0	110	.7	66	3.4	
334400110120000	77-06-28	80	13	--	12	260	0	210	52	53	720	
334358110120400	77-06-28	64	8.5	--	12	230	0	190	29	54	700	
334400110120600	77-06-28	38	1.8	3.6	3.6	180	0	150	7.2	65	81	
334407110123400	77-06-29	52	3.6	4.8	5.3	220	0	180	14	68	200	
334403110125200	77-06-29	77	19	--	26	390	0	320	125	110	2000	
334405110125100	77-06-29	86	29	--	32	200	0	160	51	150	2400	
334404110125500	77-06-29	80	30	--	54	290	0	240	185	240	3900	
334404110130000	77-06-29	75	14	18	16	400	0	330	81	93	1100	
334421110135800	77-06-18	74	13	17	15	390	0	320	31	92	1100	
09490500	77-06-17	19	.4	1.5	1.6	89	0	73	.9	3.0	1.4	
334411110134000	77-06-18	59	3.6	2.8	3.3	150	0	120	6.0	10	160	
334518110141000	77-06-18	73	11	10	11	290	0	240	5.8	65	760	
334516110160000	77-06-18	72	10	11	12	280	0	230	3.6	65	780	
334637110173500	77-06-18	73	11	10	11	260	0	210	3.3	64	770	
334648110190200	77-06-18	6	.2	1.2	1.1	250	0	210	5.0	9.0	3.7	
334703110192800	77-06-18	73	11	9.9	11	270	0	220	2.7	54	730	
334707110193200	77-06-18	91	76	150	120	430	0	350	5.5	800	9800	
334755110203000	77-06-19	85	20	19	17	250	0	210	2.5	41	1200	
334801110203200	77-06-19	86	58	--	120	600	0	490	606	620	9200	
334805110203600	77-06-19	90	71	--	120	230	0	190	23	590	8800	
334800110213500	77-06-19	80	18	23	21	320	0	260	6.4	120	1500	
334832110235500	77-06-19	83	21	23	22	280	0	230	3.6	97	1600	
334745110241900	77-06-19	82	20	23	21	290	0	240	3.7	110	1500	
334812110270900	77-06-19	84	21	23	20	260	0	210	2.1	110	1500	
09497500	77-06-17	84	21	21	19	220	0	180	2.2	100	1300	

STATION	NUMBER	DATE OF SAMPLE	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOL- VEN- PHOS- PHORUS (P) (MG/L)	TOTAL ARSENIC (AS) (UG/L)	DIS- SOLVED ARSENIC (AS) (UG/L)
09494000	77-06-17	.1	17	243	231	.31	19.3	.02	.01	2	2	
334352110103800	77-06-28	.1	19	232	228	.31	13.5	.01	.01	2	1	
334400110120000	77-06-28	.4	37	--	1500	2.04	--	--	--	--	--	
334358110120400	77-06-28	.3	32	--	1550	2.11	--	--	--	--	--	
334400110120600	77-06-28	.2	20	384	387	.53	26.3	.02	.00	3	3	
334407110123400	77-06-29	.2	20	618	621	.84	45.4	.02	.01	3	2	
334403110125200	77-06-29	.0	42	--	3830	5.21	--	--	--	--	--	
334405110125100	77-06-29	.0	43	--	4380	5.96	--	--	--	--	--	
334404110125500	77-06-29	.2	47	--	7210	9.81	--	--	--	--	--	
334404110130000	77-06-29	.2	24	2340	2330	3.17	342	.16	.00	6	4	
334421110135800	77-06-18	.1	17	2150	2220	3.02	348	.09	.01	6	3	
09490500	77-06-17	.0	14	103	93	.13	37.2	.00	.00	0	0	
334411110134000	77-06-18	.1	19	416	414	.56	29.3	.08	.01	2	1	
334518110141000	77-06-18	.1	14	1650	1600	2.18	364	.07	.01	5	3	
334516110160000	77-06-18	.1	21	1610	1600	2.18	407	.01	.10	5	4	
334637110173500	77-06-18	.1	18	1660	1590	2.16	404	.01	.01	5	4	
334648110190200	77-06-18	.1	28	219	251	.34	1.63	.18	.02	4	3	
334703110192800	77-06-18	.1	21	1560	1520	2.07	356	.02	.01	4	3	
334707110193200	77-06-18	.4	7.0	17800	17600	23.9	242	.03	.01	26	23	
334755110203000	77-06-19	.1	21	2450	2270	3.09	619	.01	.01	5	4	
334801110203200	77-06-19	.4	38	--	16600	22.6	--	--	--	--	--	
334805110203600	77-06-19	.3	29	--	15800	21.5	--	--	--	--	--	
334800110213500	77-06-19	.1	14	3040	2910	3.96	794	.01	.01	5	4	
334832110235500	77-06-19	.2	21	2840	3030	4.12	818	.04	.00	7	2	
334745110241900	77-06-19	.1	21	2890	2900	3.94	830	.01	.01	5	6	
334812110270900	77-06-19	.1	20	2860	2860	3.89	795	.01	.00	5	5	
09497500	77-06-17	.1	20	2540	2510	3.41	752	.02	.02	5	4	

GILA RIVER BASIN

White, Black, and Salt Rivers low-flow and water-quality investigations--Continued

STATION	NUMBR	DATE OF SAMPLE	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (R) (UG/L)	TOTAL CAD- MIUM (C) (UG/L)	SUS- PENDE D CAD- MIUM (C) (UG/L)	DTS- SOLV D CAD- MIUM (C) (UG/L)	TOTAL CHRO- MIUM (C) (UG/L)	SUS- PENDE D CHRO- MIUM (C) (UG/L)	DIS- SOLVED CHRO- MIUM (C) (UG/L)	TOTAL COBALT (C) (UG/L)	SUS- PENDE D COBALT (C) (UG/L)
09494000	77-06-17		80	20	10	10	0	0	0	0	<50	<50
334352110103800	77-06-28		90	20	<10	<7	3	0	0	0	<50	<50
334400110120000	77-06-28		--	--	--	--	--	--	--	--	--	--
334358110120400	77-06-28		--	--	--	--	--	--	--	--	--	--
334400110120600	77-06-28		90	40	<10	<7	3	0	0	0	<50	<50
334407110123400	77-06-29		120	70	10	0	13	0	0	0	<50	<50
334403110125200	77-06-29		--	--	--	--	--	--	--	--	--	--
334405110125100	77-06-29		--	--	--	--	--	--	--	--	--	--
334404110125500	77-06-29		--	--	--	--	--	--	--	--	--	--
334404110130000	77-06-29		340	290	10	6	4	20	20	0	<50	<50
334421110135800	77-06-18		320	280	<10	<8	2	0	0	0	<50	<50
09490500	77-06-17		60	9	<10	<9	1	10	10	0	<50	<50
334411110134000	77-06-18		100	50	<10	<9	1	0	0	0	<50	<50
334518110141000	77-06-18		250	200	<10	<8	2	0	0	10	<50	<50
334516110160000	77-06-18		260	210	10	6	4	0	0	10	<50	<50
334637110173500	77-06-18		250	200	<10	<6	4	0	0	10	<50	<50
334648110190200	77-06-18		80	10	<10	<7	3	0	0	0	<50	<50
334703110192800	77-06-18		240	180	<10	<9	1	10	10	0	<50	<50
334707110193200	77-06-18		250	3300	10	8	2	40	30	10	50	50
334755110203000	77-06-19		390	350	<10	<8	2	0	0	0	<50	<50
334801110203200	77-06-19		--	--	--	--	--	--	--	--	--	--
334805110203600	77-06-19		--	--	--	--	--	--	--	--	--	--
334800110213500	77-06-19		500	440	10	5	5	10	10	0	<50	<50
334832110235500	77-06-19		520	450	<10	<9	1	0	0	0	<50	<50
334745110241900	77-06-19		480	440	<10	<4	6	0	0	0	<50	<50
334812110270900	77-06-19		500	440	<10	<9	1	10	10	0	<50	<50
09497500	77-06-17		440	390	<10	<6	4	0	0	0	<50	<50
STATION	NUMBR	DATE OF SAMPLE	DIS- SOLVED COBALT (C) (UG/L)	TOTAL COPPER (CU) (UG/L)	SUS- PENDE D COPPER (CU) (UG/L)	DIS- SOLVED COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)	SUS- PENDE D LEAD (PB) (UG/L)	DTS- SOLVED LEAD (PB) (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)
09494000	77-06-17		0	<10	<10	0	20	10	100	96	4	0
334352110103800	77-06-28		0	<10	<10	0	210	10	<100	<74	26	20
334400110120000	77-06-28		--	--	--	--	--	--	--	--	--	--
334358110120400	77-06-28		--	--	--	--	--	--	--	--	--	--
334400110120600	77-06-28		0	<10	<9	1	200	10	<100	<84	16	20
334407110123400	77-06-29		0	<10	<10	0	60	10	<100	<80	20	8
334403110125200	77-06-29		--	--	--	--	--	--	--	--	--	--
334405110125100	77-06-29		--	--	--	--	--	--	--	--	--	--
334404110125500	77-06-29		--	--	--	--	--	--	--	--	--	--
334404110130000	77-06-29		0	10	10	0	30	0	<100	<63	37	4
334421110135800	77-06-18		0	<10	<10	0	10	0	<100	<86	14	4
09490500	77-06-17		0	<10	<9	1	100	20	<100	<96	4	10
334411110134000	77-06-18		0	<10	<10	0	10	10	<100	<96	4	0
334518110141000	77-06-18		0	<10	<10	0	60	20	<100	<88	12	8
334516110160000	77-06-18		0	<10	<10	0	70	0	<100	<87	13	4
334637110173500	77-06-18		0	<10	<10	0	90	0	<100	<90	10	8
334648110190200	77-06-18		0	10	10	0	360	0	<100	<82	18	20
334703110192800	77-06-18		0	10	10	0	40	0	<100	<96	4	8
334707110193200	77-06-18		0	40	40	0	23000	0	100	95	5	1300
334755110203000	77-06-19		0	10	10	0	90	10	<100	<90	10	10
334801110203200	77-06-19		--	--	--	--	--	--	--	--	--	--
334805110203600	77-06-19		--	--	--	--	--	--	--	--	--	--
334800110213500	77-06-19		0	<10	<10	0	60	0	<100	<94	6	10
334832110235500	77-06-19		0	<10	<10	0	10	10	<100	<89	11	8
334745110241900	77-06-19		0	10	10	0	10	0	<100	<71	29	4
334812110270900	77-06-19		0	<10	<10	0	80	10	<100	<83	17	4
09497500	77-06-17		0	<10	<10	0	40	10	<100	<79	21	0

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

LOW-FLOW INVESTIGATIONS

519

GILA RIVER BASIN

White, Black, and Salt Rivers low-flow and water-quality investigations--Continued

STATION NUMBER	DATE OF SAMPLE	SUS- PENDE D MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	SUS- PENDE D MERCURY (HG) (UG/L)	DTS- SOLVED MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	DIS- SOLVED SELE- NIUM (SE) (UG/L)	SUS- PENDE D ZINC (ZN) (UG/L)	DIS- SOLVED ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)
09494000	77-06-17	0	0	.1	.0	.1	0	0	2	2	1.6
334352110103800	77-06-28	20	0	.0	.0	.0	0	0	0	2	1.7
334400110120000	77-06-28	--	--	--	--	--	--	--	--	--	--
334358110120400	77-06-28	--	--	--	--	--	--	--	--	--	--
334400110120600	77-06-28	20	0	.0	.0	.0	2	0	0	4	1.6
334407110123400	77-06-29	8	0	.0	.0	.1	1	1	0	4	1.8
334403110125200	77-06-29	--	--	--	--	--	--	--	--	--	--
334405110125100	77-06-29	--	--	--	--	--	--	--	--	--	--
334404110125500	77-06-29	--	--	--	--	--	--	--	--	--	--
334404110130000	77-06-29	0	4	.0	.0	.0	1	0	0	10	1.1
334421110135800	77-06-18	4	0	.0	.0	.4	0	0	2	8	.9
09490500	77-06-17	0	10	.0	.0	.0	0	0	2	2	1.4
334411110134000	77-06-18	0	0	.0	.0	.0	0	0	4	0	1.4
334518110141000	77-06-18	8	0	.0	.0	.0	0	0	4	4	1.1
334516110160000	77-06-18	4	0	.0	.0	.3	1	1	0	6	1.1
334637110173500	77-06-18	8	0	.0	.0	.4	0	0	0	4	1.4
334648110190200	77-06-18	20	0	.0	.0	.0	0	0	10	0	--
334703110192800	77-06-18	8	0	.0	.0	.2	0	0	0	2	1.2
334707110193200	77-06-18	1300	20	.0	.0	.0	0	0	90	30	1.9
334755110203000	77-06-19	6	4	.0	.0	.0	0	0	4	4	1.1
334801110203200	77-06-19	--	--	--	--	--	--	--	--	--	--
334805110203600	77-06-19	--	--	--	--	--	--	--	--	--	--
334800110213500	77-06-19	10	0	.0	.0	.0	0	0	2	8	1.1
334832110235500	77-06-19	4	4	.0	.0	.0	1	0	4	6	1.1
334745110241900	77-06-19	0	4	.0	.0	.0	1	0	0	4	1.2
334812110270900	77-06-19	0	4	.0	.0	.0	1	1	4	4	1.2
09497500	77-06-17	0	0	.0	.0	.6	1	1	0	10	2.0

GILA RIVER BASIN

Upper Verde River and tributaries low-flow and water-quality investigations

A series of base-flow discharge measurements and chemical-quality samples were collected on the upper Verde River and tributaries, in cooperation with the Arizona Department of Health Services, during the period June 20-22, 1977. The data collected in this series of measurements will provide a basis for determining the chemical quality of the base flow in various parts of the upper Verde River basin.

Weather records indicate that no precipitation occurred 10 days prior to June 20, therefore, the data are considered to represent base-flow conditions.

The measurements on each stream 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	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)
09503700	VERDE RIVER NEAR PAULDEN, ARIZ.	77-06-22	1130	21	630	8.2
09504000	VERDE RIVER NR CLARKDALE, ARIZ.	77-06-20	1700	73	490	8.2
34457112014600	VERDE RIVER AT TUZIGOOT BRIDGE NR CLARKDALE, ARIZ	77-06-21	1500	46	520	8.4
344318111592400	VERDE RIVER AT HIGHWAY 89A NR COTTONWOOD, ARIZ	77-06-22	1000	32	560	8.0
09504200	VERDE R NR CORNVILLE, ARIZ.	77-06-21	1200	43	600	8.1
345954111441800	OAK CREEK AT CAVE SPRINGS CAMPGROUND NR SEDONA	77-06-20	1030	4.2	270	8.3
345436111434000	OAK CREEK BELOW INDIAN GARDENS	77-06-20	1130	30	280	8.4
344928111482000	OAK CREEK AT RED ROCK CROSSING NR SEDONA, ARIZ	77-06-20	1330	18	310	8.4
09504500	OAK CREEK NEAR CORNVILLE, ARIZ.	77-06-20	1430	16	410	8.4
344052111561200	OAK CREEK AB CON WITH VERDE R. NR CORNVILLE, ARIZ	77-06-21	1000	33	430	8.0
343513111524600	VERDE RIVER AT I-17 BRIDGE NR CAMP VERDE, ARIZ	77-06-21	1000	13	620	8.2
343424111512200	VERDE RIVER 600 FT AB BEAVER CR AT CAMP VERDE	77-06-21	1500	27	680	8.3
09505200	WET BEAVER CREEK NEAR RIMROCK, ARIZONA	77-06-21	0900	6.7	260	8.2
343752111473500	WET BEAVER AT RUSTY SPUR FORD NR RIMROCK, ARIZ	77-06-21	0900	3.5	570	8.1
343428111511600	BEAVER CREEK AB CON WITH VERDE R. AT CAMP VERDE	77-06-21	1530	10	520	8.6
09505550	VERDE RIVER BELOW CAMP VERDE, ARIZ	77-06-21	1130	27	630	8.1
343016111494600	VERDE RIVER AB WEST CLEAR CR NR CAMP VERDE, ARIZ	77-06-21	1630	51	780	8.4
09505800	WEST CLEAR CREEK NEAR CAMP VERDE, ARIZ.	77-06-21	1030	14	375	8.6
09506000	VERDE RIVER NEAR CAMP VERDE, ARIZ.	77-06-22	1200	53	870	8.3

DATE OF SAMPLE	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLI- FORM .7UM-MF (COL./ 100 L)	FECAL STREP- TOCOC KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NESIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO
77-06-22	22.5	8	10.9	220	160	220	0	49	24	56	35	1.6
77-06-20	24.5	9	9.8	810	2600	220	0	49	24	25	20	.7
77-06-21	24.0	25	7.9	78	150	230	0	48	26	26	20	.8
77-06-22	21.0	45	8.6	730	83300	280	9	56	34	28	18	.7
77-06-21	21.0	30	8.1	80	100	290	8	57	35	29	18	.7
77-06-20	13.0	1	12.7	88	190	150	3	34	16	3.8	5	.1
77-06-20	15.0	1	9.4	86	720	150	0	33	17	5.2	7	.2
77-06-20	22.0	4	9.1	88	160	150	0	33	17	5.5	7	.2
77-06-20	25.0	6	9.4	84	380	190	5	43	21	10	10	.3
77-06-21	21.0	10	7.7	812	40	230	5	51	24	14	12	.4
77-06-21	20.0	30	10.0	818	80	280	18	53	36	28	18	.7
77-06-21	24.0	30	8.8	34	160	300	21	54	40	43	24	1.1
77-06-21	18.0	1	8.3	83	880	120	0	25	15	6.7	10	.3
77-06-21	18.0	3	7.9	26	330	290	0	60	35	36	21	.9
77-06-21	24.0	15	13.4	480	81300	260	0	50	33	25	17	.7
77-06-21	22.0	30	10.2	56	190	290	15	55	38	40	23	1.0
77-06-21	26.0	20	10.4	88	70	350	64	60	49	60	27	1.4
77-06-21	19.5	2	--	82	460	190	0	38	23	6.4	7	.2
77-06-22	22.0	15	8.2	82	824	350	83	61	49	65	28	1.5

R - BASED ON NON-IDEAL COLONY COUNT

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

GILA RIVER BASIN

Upper Verde River and tributaries low-flow and water-quality investigations--Continued

DATE OF SAMPLE	DIS- SOLVED PO- TAS- SUM (K) (MG/L)	CAR- BONATE (CO3) (MG/L)	ALKA- LINITY AZ CACO3 (MG/L)	CARBON DIOXIDE (CO2) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED FREST- DUE AT 180 C (MG/L)	DIS- SOLVED SOLIDS (SUMS OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED SOLIDS (TONS PER DAY)
77-06-22	3.3	0	270	3.3	20	23	.6	35	351	377	.51	21.8
77-06-20	2.2	0	230	2.8	9.3	15	.2	19	271	282	.38	55.6
77-06-21	2.3	0	240	1.8	23	21	.2	20	287	310	.42	38.5
77-06-22	2.9	0	270	5.3	43	19	.2	23	362	370	.50	32.3
77-06-21	2.7	0	280	4.3	39	21	.2	23	344	375	.51	43.8
77-06-20	.8	0	150	1.4	3.6	1.9	.1	13	163	167	.22	1.85
77-06-20	1.0	0	160	1.2	2.6	3.0	.1	16	155	172	.23	13.9
77-06-20	1.0	0	160	1.2	1.1	3.1	.1	15	171	170	.23	8.26
77-06-20	1.3	0	190	1.5	2.5	14	.1	15	223	221	.30	9.73
77-06-21	1.9	0	220	4.3	5.7	14	.1	17	252	261	.36	23.6
77-06-21	2.6	0	260	3.2	50	22	.2	24	347	374	.51	13.1
77-06-21	3.2	0	280	2.7	76	27	.4	38	431	451	.61	33.2
77-06-21	1.5	0	130	1.6	2.5	3.1	.1	22	136	158	.21	2.86
77-06-21	3.3	0	310	4.8	8.2	26	.1	24	330	381	.52	3.60
77-06-21	2.8	0	260	1.3	27	20	.2	34	333	352	.48	9.50
77-06-21	3.3	0	280	4.3	63	26	.3	35	409	429	.58	31.9
77-06-21	4.3	0	290	2.2	140	37	.4	34	570	588	.80	81.6
77-06-21	1.5	1	190	.9	3.8	3.9	.1	14	192	208	.28	7.86
77-06-22	4.4	0	270	2.6	140	42	.4	34	566	559	.76	80.0
DATE OF SAMPLE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL NITRO- GEN (N) (MG/L)	TOTAL KJEL- NITRO- GEN IN BOTTOM MAT. (MG/KG)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (NO3) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHORUS (PO4) (MG/L)	DIS- SOLVED ORTHO- PHOS- PHATE (AS) (MG/L)	TOTAL ARSENIC IN TERRIAL (UG/L)	TOTAL ARSENIC IN MA- (RA) (UG/G)	TOTAL BARIUM (UG/L)
77-06-22	.62	.67	.33	--	.95	4.2	.03	.01	.03	26	--	0
77-06-20	.28	.04	.19	--	.47	2.1	.04	.01	.03	12	--	300
77-06-21	.01	.02	.16	--	.17	.75	.11	.01	.03	18	--	600
77-06-22	.08	.10	.35	--	.43	1.9	.14	.02	.06	18	--	0
77-06-21	.07	.01	.13	103	.20	.89	.12	.02	.06	15	5	100
77-06-20	.05	.05	.05	--	.10	.44	.03	.01	.03	4	--	100
77-06-20	.08	.11	.06	--	.14	.62	.04	.01	.03	5	--	0
77-06-20	.01	.03	.10	--	.11	.49	.02	.03	.09	4	--	200
77-06-20	.05	.07	.18	--	.23	1.0	.03	.01	.03	9	--	200
77-06-21	.01	.02	.10	--	.11	.49	.05	.01	.03	19	--	200
77-06-21	.08	.07	.15	--	.23	1.0	.06	.01	.03	17	--	100
77-06-21	.19	.23	.13	--	.32	1.4	.10	.02	.06	23	--	1200
77-06-21	.17	.60	.05	--	.22	.97	.03	.01	.03	13	--	100
77-06-21	.05	.01	.00	--	.05	.22	.02	.01	.03	27	--	0
77-06-21	.12	.32	.13	--	.25	1.1	.07	.02	.06	24	--	700
77-06-21	.16	.19	.47	--	.63	2.8	.11	.02	.06	22	--	100
77-06-21	.08	6.9	.11	--	.19	.84	.17	.01	.03	28	--	100
77-06-21	.04	.08	.09	--	.13	.58	.03	.01	.03	2	--	800
77-06-22	.18	.07	.17	--	.35	1.6	.05	.02	.06	28	--	0
DATE OF SAMPLE	TOTAL BARIUM IN BOTTOM MA- TERRIAL (UG/G)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CADMIUM IN BOTTOM MA- TERRIAL (UG/G)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL CHROMIUM IN BOTTOM MA- TERRIAL (UG/G)	TOTAL COPPER (CU) (UG/L)	TOTAL COPPER IN BOTTOM MA- TERRIAL (UG/G)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)
77-06-22	--	280	230	<10	--	10	--	<10	--	200	30	<100
77-06-20	--	200	160	<10	--	10	--	<10	--	230	30	<100
77-06-21	--	200	160	<10	--	10	--	10	--	640	150	<100
77-06-22	--	210	170	<10	--	10	--	30	--	1800	40	<100
77-06-21	700	210	170	<10	<1	10	2	10	12	830	30	<100
77-06-20	--	50	9	<10	--	10	--	<10	--	40	30	<100
77-06-20	--	60	10	<10	--	10	--	<10	--	50	30	<100
77-06-20	--	70	10	<10	--	10	--	<10	--	130	50	<100
77-06-20	--	90	20	<10	--	10	--	10	--	150	40	<100
77-06-21	--	110	70	<10	--	10	--	<10	--	760	60	<100
77-06-21	--	240	170	<10	--	10	--	20	--	630	40	<100
77-06-21	--	200	200	<10	--	10	--	<10	--	860	40	<100
77-06-21	--	60	9	<10	--	10	--	<10	--	70	40	<100
77-06-21	--	400	380	<10	--	10	--	<10	--	110	100	<100
77-06-21	--	210	180	<10	--	10	--	340	--	460	130	<100
77-06-21	--	240	200	<10	--	10	--	10	--	1100	40	<100
77-06-21	--	280	280	<10	--	10	--	20	--	520	20	<100
77-06-21	--	70	10	<10	--	10	--	<10	--	40	40	<100
77-06-22	--	300	250	<10	--	10	--	10	--	480	110	<100

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

LOW-FLOW INVESTIGATIONS

GILA RIVER BASIN

Upper Verde River and tributaries low-flow and water-quality investigations--Continued

DATE OF SAMPLE	TOTAL LEAD IN BOTTOM MA- TERIAL (UG/L)	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL MERCURY IN BOTTOM MA- TERIAL (UG/G)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SELE- NIUM IN BOTTOM MA- TERIAL (UG/G)	TOTAL SILVER (AG) (UG/L)	TOTAL SILVER IN BOTTOM MA- TERIAL (UG/G)	TOTAL ZINC (ZN) (UG/L)	TOTAL ZINC IN BOTTOM MA- TERIAL (UG/G)	TOTAL ORGANIC CARBON (C) (MG/L)
77-06-22	--	8	8	.3	--	3	--	<10	--	30	--	1.1
77-06-20	--	20	4	.3	--	1	--	<10	--	30	--	1.3
77-06-21	--	50	10	.0	--	2	--	<10	--	50	--	2.1
77-06-22	--	110	20	.4	--	2	--	<10	--	80	--	5.4
77-06-21	10	70	20	.0	.0	2	0	<10	<1	60	20	2.2
77-06-20	--	0	0	.1	--	0	--	<10	--	20	--	.4
77-06-20	--	0	4	.2	--	0	--	<10	--	10	--	.8
77-06-20	--	20	8	.3	--	0	--	<10	--	10	--	1.0
77-06-20	--	20	20	.4	--	1	--	<10	--	6	--	1.4
77-06-21	--	40	20	.3	--	0	--	<10	--	20	--	1.8
77-06-21	--	50	20	.0	--	2	--	<10	--	20	--	1.3
77-06-21	--	60	20	.3	--	4	--	<10	--	20	--	2.4
77-06-21	--	10	8	.3	--	0	--	<10	--	20	--	11
77-06-21	--	20	20	.0	--	2	--	<10	--	20	--	.9
77-06-21	--	30	0	.0	--	3	--	<10	--	20	--	1.9
77-06-21	--	60	20	.0	--	3	--	<10	--	40	--	2.5
77-06-21	--	40	4	.0	--	4	--	<10	--	50	--	2.1
77-06-21	--	8	10	.3	--	1	--	<10	--	30	--	1.2
77-06-22	--	40	20	.3	--	3	--	<10	--	20	--	1.7

DATE OF SAMPLE	TOTAL CYANIDE IN BOTTOM MA- TERIAL (MG/L)	TOTAL CYANIDE (CN) (UG/L)	PHENOLS (UG/L)	SUSPENDED- SEDIMENT CONCENTRATION (MG/L)	SUSPENDED- SEDIMENT DISCHARGE (T/DAY)
77-06-22	.00	--	4	23	1.3
77-06-20	.00	--	3	35	6.9
77-06-21	.00	--	3	97	12.
77-06-22	.00	--	3	143	12.
77-06-21	.00	0	2	119	14.
77-06-20	.00	--	4	385	4.4
77-06-20	.00	--	4	9	0.7
77-06-20	.00	--	7	19	0.9
77-06-20	.00	--	4	24	1.0
77-06-21	.00	--	3	37	3.3
77-06-21	.00	--	2	59	2.1
77-06-21	.00	--	4	84	6.1
77-06-21	.00	--	2	6	0.1
77-06-21	.00	--	3	18	0.2
77-06-21	.00	--	--	163	4.4
77-06-21	.00	--	3	--	--
77-06-21	.00	--	3	74	10.
77-06-21	.00	--	3	16	0.6
77-06-22	.00	--	4	86	12.

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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Water-quality partial-record stations are particular sites where chemical-quality data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly.

LITTLE COLORADO RIVER BASIN

09401260 MOENKOPI WASH AT MOENKOPI, AZ (LAT 36°06'18", LONG 111°12'04')

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DISSOLVED CALCIUM (CA) (MG/L)	DTS-SOLVED MAGNESIUM (MG)	DTS-SOLVED SODIUM (NA) (MG/L)	SODIUM AD-SURP- TATION RATIO	DTS-SOLVED POTASSIUM (K) (MG/L)
NOV												
11...	1320	2.6	760	8.0	10.0	320	140	96	20	110	2.7	4.5
11...	1505	2.6	--	--	10.0	--	--	--	--	--	--	--
DEC												
10...	1240	4.6	820	8.1	1.5	300	120	88	20	110	2.8	3.8
JAN												
19...	1300	3.4	720	8.3	--	250	75	75	16	99	2.7	3.3
MAR												
15...	1430	1.5	920	8.4	8.5	260	79	74	19	120	3.2	4.4
JUN												
15...	1345	.04	1200	8.3	33.0	230	66	54	23	190	5.5	7.3
JUL												
13...	1330	2.7	2030	--	28.5	990	840	300	59	150	2.1	12
29...	1520	.89	1890	8.3	31.0	960	860	290	58	110	1.5	13
AUG												
19...	1220	18	2000	--	27.5	1000	910	300	60	100	1.4	12
SEP												
08...	1630	1.3	1930	8.4	29.0	970	870	290	60	120	1.7	10

DATE	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DTS-SOLVED SULFATE (SO4) (MG/L)	DTS-SOLVED CHLORIDE (CL) (MG/L)	DTS-SOLVED FLUORIDE (F) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)
NOV												
11...	217	0	350	12	.5	7.8	682	708	.93	80	10	
11...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
10...	226	0	320	15	.5	8.7	707	679	.96	70	30	
JAN												
19...	217	0	260	16	.4	8.8	619	588	.84	70	80	
MAR												
15...	220	2	310	18	.6	6.3	668	663	.91	80	20	
JUN												
15...	200	0	420	30	.9	1.6	831	826	1.13	180	20	
JUL												
13...	180	--	1100	17	.6	13	1970	1740	2.68	170	40	
29...	130	0	1100	14	.9	11	1720	1670	2.34	150	20	
AUG												
19...	110	--	1100	12	.6	8.6	1770	1660	2.41	140	30	
SEP												
08...	120	1	1100	13	.9	10	1760	1680	2.39	140	30	

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09423650 TOPOCK MARSH OUTLET NEAR TOPOCK, AZ (LAT 34°44'13", LONG 114°29'22")

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRON- MHOS)	TEMPER- ATURE (DEG C)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
NOV					
01...	1200	1560	18.0	1040	1.41
11...	1400	1540	21.0	1070	1.39
DEC					
01...	1220	1530	14.0	1000	1.36
14...	1135	1550	11.0	1020	1.39
JAN					
03...	1410	1540	17.0	1010	1.37
13...	1730	1550	10.5	1010	1.37
FEB					
01...	1300	1550	13.5	1010	1.37
17...	1410	1570	20.0	1030	1.40
MAR					
01...	1600	1600	15.0	1050	1.43
17...	1745	1630	13.0	1090	1.48
APR					
01...	1300	1660	16.0	1100	1.50
15...	1030	1670	22.0	1110	1.51
MAY					
02...	1030	1710	22.5	1160	1.58
13...	1155	1740	21.0	1170	1.59
JUN					
01...	1300	1730	26.0	1160	1.58
15...	1230	1750	21.0	1170	1.59
JUL					
01...	1600	1770	28.0	1200	1.63
12...	1200	1790	29.0	1210	1.65
AUG					
01...	0930	1790	31.0	1210	1.65
16...	1300	1790	21.0	1210	1.65
SEP					
01...	1120	1790	30.0	1190	1.62
15...	1125	1760	21.0	1170	1.59

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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DIVERSIONS AND RETURN FLOWS BETWEEN DAVIS DAM AND PARKER DAM

09424150 COLORADO RIVER AQUEDUCT NEAR PARKER DAM, AZ-CA
(LAT 34°18'58", LONG 114°09'23")

DATE	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
NOV 01...	1050	8.1	20.0	<1	310	200	78	29	100	2.5	5.0
DEC 12...	1080	8.0	12.2	<1	330	210	83	30	110	2.6	5.0
JAN 10...	1090	8.2	10.0	2	330	210	82	32	110	2.6	5.0
FEB 08...	1080	8.4	11.1	1	330	210	81	32	110	2.6	5.0
MAR 07...	1080	8.3	13.5	<1	330	200	83	30	100	2.4	5.0
APR 05...	1080	8.5	15.0	2	340	210	84	31	100	2.4	5.0
MAY 02...	1060	8.4	22.0	<1	330	200	82	30	100	2.4	5.0
JUN 06...	1060	8.5	.2	2	320	200	80	30	100	2.4	5.0
JUL 12...	1050	8.5	27.0	<1	320	200	79	30	100	2.4	5.0
AUG 15...	1040	8.4	28.0	<1	320	200	76	30	100	2.5	4.0
SEP 13...	1040	8.4	27.0	<1	310	200	76	30	100	2.5	5.0

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILTCA (SIO2) (MG/L)	DIS- SOLVED SOLIDS (REST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	TOTAL NON- FILTY RABLE RESIDUE (MG/L)	DIS- SOLVED NITRATE (N) (MG/L)
NOV 01...	140	0	290	89	.2	9.0	675	670	.92	1	.11
DEC 12...	150	0	300	94	.4	9.3	707	706	.96	2	.12
JAN 10...	160	0	290	93	.4	10	700	702	.95	14	.09
FEB 08...	150	2	300	91	.3	9.4	701	705	.95	2	.07
MAR 07...	160	0	300	90	.3	10	697	697	.95	--	.02
APR 05...	160	0	300	89	.3	9.5	702	698	.95	--	.03
MAY 02...	160	0	290	89	.3	7.4	686	683	.93	--	.07
JUN 06...	150	1	290	89	.4	8.2	681	678	.93	2	.05
JUL 12...	140	0	290	91	.4	8.0	682	673	.93	--	.05
AUG 15...	140	0	290	95	.3	7.7	678	672	.92	2	--
SEP 13...	130	5	280	95	.3	8.2	670	664	.91	--	.00

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

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
APR 06...	1830	10	2900	7.8	15.5	730	420	180	69	440	7.1	21
SFP 22...	0815	.90	3100	8.3	12.0	730	490	160	81	460	7.4	22

DATE	RICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED STLTCA (SIO2) (MG/L)	DTS- SOLVED SOLIDS (RFST- DUF AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
APR 06...	380	0	760	430	2.1	16	2210	2110	3.01	710	10
SFP 22...	300	0	750	490	1.6	17	2190	2130	2.98	760	30

09401240 MOENKOPI WASH NEAR SHONTO, AZ
(LAT 36°24'51", LONG 110°27'28")

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS (MG/L)	DTS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
MAR 17...	0815	2800	8.0	.0	1300	1000	280	150	240	2.9	9.2

DATE	RICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED STLTCA (SIO2) (MG/L)	DTS- SOLVED SOLIDS (RFST- DUF AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
MAR 17...	345	0	1400	28	.4	13	2650	2290	3.60	110	50

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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LITTLE COLORADO RIVER BASIN

09401248 BEGASHIBITO WASH NEAR TONALEA, AZ
(LAT 36°12'58", LONG 110°58'36")

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
DFC 10...	0930	.02	1100	7.8	.5	430	210	120	31	97	2.0	2.7

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DTS- SOLVED (RFS)- DUE AT 180 C (MG/L)	DIS- SOLVED (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS PER AC-FT (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
DFC 10...	263	0	390	25	.5	9.3	854	805	1.16	130	30

342453109241000 LITTLE COLORADO RIVER ABOVE SALADO SPRINGS, AZ
(LAT 34°24'53", LONG 109°24'10")

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
APR 06...	1310	2.9	1990	7.5	14.5	610	250	160	52	250	4.4	15
SFP 20...	0730	1.7	3000	8.0	16.0	650	330	170	55	240	4.1	17

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DTS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SIO2) (MG/L)	DTS- SOLVED (RFS)- DUE AT 180 C (MG/L)	DIS- SOLVED (SUM OF CONSTI- TUENTS) (MG/L)	DTS- SOLVED SOLIDS PER AC-FT (UG/L)	DIS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
APR 06...	450	0	420	240	2.0	17	1460	1380	1.99	430	10
SFP 20...	390	0	400	250	1.9	17	1370	1340	1.86	450	30

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

LITTLE COLORADO RIVER BASIN

342600109224000 LITTLE COLORADO RIVER BELOW SALADO SPRINGS NEAR ST. JOHNS, AZ
(LAT 34°26'00", LONG 109°22'40")

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG)	DTS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DTS- SOLVED PO- TAS- SIUM (K) (MG/L)
APR 06...	1440	8.1	2750	7.4	15.0	790	420	220	58	360	5.6	22
SEP 20...	0900	6.7	3000	7.7	17.0	870	590	250	59	370	5.5	27

	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DTS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SILICA (SiO2) (MG/L)
DATE											
APR 06...	450	0	660	390	2.3	18	2000	1950	2.72	620	30
SEP 20...	340	0	800	400	2.3	18	1990	2090	2.71	680	30

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

BILL WILLIAMS RIVER BASIN

09424470 KIRKLAND CREEK NEAR KIRKLAND, AZ
(LAT 34°23'38", LONG 112°43'19")

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO- MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DIS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG)	DIS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO
OCT 13...	0930	2.4	460	8.2	22.0	220	16	61	16	19	.6
NOV 08...	1330	2.4	440	8.2	19.0	220	13	59	17	19	.6
DEC 08...	1300	2.9	570	7.5	14.0	210	7	61	15	19	.6
JAN 20...	1200	2.8	500	7.2	11.0	210	15	58	15	18	.5
FEB 16...	1030	2.9	525	7.5	10.0	210	14	59	16	18	.5
MAR 15...	1230	2.7	500	7.2	14.0	210	58	56	16	19	.6
APR 18...	1230	2.6	450	7.2	20.0	170	16	44	15	22	.7
MAY 11...	1130	2.2	450	7.1	21.0	210	36	57	16	19	.6
JUL 13...	0945	1.5	460	8.5	24.0	200	15	52	16	20	.6

DATE	DIS-SOLVED PO-TAS- SIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DIS-SOLVED SILICA (SiO2) (MG/L)	DIS-SOLVED SOLIDS (RESIDUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTITUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)
OCT 13...	3.2	246	0	20	23	.3	42	--	310	.42
NOV 08...	3.2	249	0	21	19	.3	42	--	308	.42
DEC 08...	2.6	252	0	21	26	.3	44	--	317	.43
JAN 20...	2.4	233	0	22	26	.4	40	--	300	.41
FEB 16...	2.3	243	0	22	20	.3	38	--	298	.41
MAR 15...	2.7	180	0	22	19	.2	42	--	266	.36
APR 18...	3.3	190	0	22	18	.3	42	--	261	.36
MAY 11...	2.6	210	0	20	19	.3	44	--	282	.38
JUL 13...	2.8	220	0	24	19	.3	42	294	285	.40

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

GILA RIVER BASIN

09486500 SANTA CRUZ RIVER AT CORTARO, AZ
(LAT 32°21'04", LONG 111°05'38")

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	HARDNESS (CA, MG) (MG/L)	NON-CARBONATE HARDNESS (MG/L)	DTS-SOLVED CALCIUM (CA) (MG/L)	DIS-SOLVED MAGNESIUM (MG) (MG/L)	DTS-SOLVED SODIUM (NA) (MG/L)	SODIUM ADSORPTION RATIO	
AUG 01...	1630	80	600	8.1	31.0	13000	160	0	52	7.5	40	1.4	
DATE	TIME	DTS-SOLVED POTASSIUM (K) (MG/L)	BICARBONATE (HCO3) (MG/L)	CARBONATE (CO3) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DTS-SOLVED CHLORIDE (CL) (MG/L)	DIS-SOLVED FLUORIDE (F) (MG/L)	DTS-SOLVED SILICA (SiO2) (MG/L)	DIS-SOLVED (RESIDUE AT 180 C) (MG/L)	DTS-SOLVED SOLIDS (SUM OF TONTS TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DTS-SOLVED BORON (B) (UG/L)	DIS-SOLVED IRON (FE) (UG/L)
AUG 01...	8.4	230	0	40	31	.3	22	335	315	.46	140	0	0

09502800 WILLIAMSON VALLEY WASH NEAR PAULDEN, AZ
(LAT 34°52'00", LONG 112°36'45")

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DTS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
JUL 19...	1050	.79	450	8.0	24.5	200	0	49	18	26	.8	5.5
DATE	TIME	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED BORON (B) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)
JUL 19...		270	0	13	19	.7	18	276	282	.38	70	20

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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GILA RIVER BASIN

09503700 VERDE RIVER NEAR PAULDEN, AZ
(LAT 34°53'42", LONG 112°20'26")

DATE	TIME	INSTANTANEOUS DIS- CHARGE (CFS)	SPF- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (JTU)	DIS- SOLVED OXYGEN (MG/L)	FECAL COLT- FORM .7UM-MF (COL./ 100 ML)
APR 26...	1310	29	600	8.3	21.5	--	--	--
JUN 22...	1130	21	630	8.2	22.5	8	10.9	220

DATE	FECAL STREP- TOCOCT KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
APR 26...	--	200	0	42	23	54	1.7	3.2	320
JUN 22...	160	220	0	49	24	56	1.6	3.3	330

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTITU- ENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
APR 26...	0	19	22	.6	32	323	357	.44
JUN 22...	0	20	23	.6	35	351	377	.48

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

GILA RIVER BASIN

09503700 VERDE RIVER NEAR PAULDEN, AZ--Continued
(LAT 34°53'42", LONG 112°20'26")

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DTS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DTS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
APR 26...	--	.75	--	--	--	.01
JUN 22...	.62	.67	.33	.95	.03	.01

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DTS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)
APR 26...	--	--	--	230	--	--	--	--	10	--
JUN 22...	26	0	280	230	<10	10	<10	200	30	<100

DATE	TOTAL MAN- GANESE (MN) (UG/L)	DTS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
APR 26...	--	--	--	--	--	--	--	--	--
JUN 22...	8	8	.3	3	<10	30	1.1	.00	4

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

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

533

GILA RIVER BASIN

09506000 VERDE RIVER NEAR CAMP VERDE, AZ
(LAT 34°27'00", LONG 111°47'00")

DATE	TIME	INSTANTANEOUS DIS-CHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	TURBIDITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	FECAL COLT-FORM .7MM-MF (COL./100 ML)
OCT 06...	1240	161	690	8.1	18.5	--	--	--
NOV 08...	1200	151	670	8.0	13.5	--	--	--
APR 01...	1450	150	650	8.2	13.5	--	--	--
JUN 22...	1200	53	870	8.3	22.0	15	8.2	B2

DATE	FECAL STREP- TOCUCCI KF AGAR (COL. PER 100 ML)	HARD- NESS (CA, MG) (MG/L)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG) (MG/L)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)	BICAR- BONATE (HCO3) (MG/L)
OCT 06...	--	290	57	53	38	40	1.0	3.2	282
NOV 08...	--	300	32	57	38	41	1.0	3.1	325
APR 01...	--	280	22	53	35	35	.9	2.7	310
JUN 22...	824	350	83	61	49	65	1.5	4.4	330

DATE	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DIS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DIS- SOLVED SOLIDS (RESI- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTI- TUENTS) (MG/L)	DIS- SOLVED SOLIDS (TONS PER AC-FT)
OCT 06...	0	80	24	.2	26	379	404	.52
NOV 08...	0	79	24	.4	24	440	427	.60
APR 01...	0	63	13	.5	22	395	377	.54
JUN 22...	0	140	42	.4	34	566	559	.77

B Results based on non-ideal colony count.

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

GILA RIVER BASIN

09506000 VERDE RIVER NEAR CAMP VERDE, AZ--Continued

DATE	TOTAL NITRITE PLUS NITRATE (N) (MG/L)	DIS- SOLVED NITRITE PLUS NITRATE (N) (MG/L)	TOTAL KJEL- DAHL- NITRO- GEN (N) (MG/L)	TOTAL NITRO- GEN (N) (MG/L)	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOLVED ORTHOPHOS- PHORUS (P) (MG/L)
OCT 06...	--	.00	--	--	--	.02
NOV 08...	--	.01	--	--	--	.02
APR 01...	--	.02	--	--	--	.01
JUN 22...	.18	.07	.17	.35	.05	.02

DATE	TOTAL ARSENIC (AS) (UG/L)	TOTAL BARIUM (BA) (UG/L)	TOTAL BORON (B) (UG/L)	DIS- SOLVED BORON (B) (UG/L)	TOTAL CAD- MIUM (CD) (UG/L)	TOTAL CHRO- MIUM (CR) (UG/L)	TOTAL COPPER (CU) (UG/L)	TOTAL IRON (FE) (UG/L)	DIS- SOLVED IRON (FE) (UG/L)	TOTAL LEAD (PB) (UG/L)
OCT 06...	--	--	--	180	--	--	--	--	10	--
NOV 08...	--	--	--	180	--	--	--	--	20	--
APR 01...	--	--	--	160	--	--	--	--	10	--
JUN 22...	28	0	300	250	<10	10	10	480	110	<100

DATE	TOTAL MAN- GANESE (MN) (UG/L)	DIS- SOLVED MAN- GANESE (MN) (UG/L)	TOTAL MERCURY (HG) (UG/L)	TOTAL SELE- NIUM (SE) (UG/L)	TOTAL SILVER (AG) (UG/L)	TOTAL ZINC (ZN) (UG/L)	TOTAL ORGANIC CARBON (C) (MG/L)	CYANIDE (CN) (MG/L)	PHENOLS (UG/L)
OCT 06...	--	--	--	--	--	--	--	--	--
NOV 08...	--	--	--	--	--	--	--	--	--
APR 01...	--	--	--	--	--	--	--	--	--
JUN 22...	40	20	.3	3	<10	20	1.7	.00	4

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

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS SITES
WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

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GILA RIVER BASIN

345147112043500 SYCAMORE CREEK AT MOUTH, AZ
(LAT 34°51'47", LONG 112°04'35")

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
APR 26...	1100	8.9	500	7.9	20.0	280	7	65	28	5.6	.1	1.3

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (REFST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
APR 26...	330	0	7.3	6.5	.1	14	278	291	.38	80	30

345203112240500 VERDE RIVER AT STEWART RANCH, AZ
(LAT 34°52'03" LONG 112°24'05")

DATE	TIME	INSTAN- TANEOUS DIS- CHARGE (CFS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	PH (UNITS)	TEMPER- ATURE (DEG C)	HARD- NESS (CA, MG)	NON- CAR- BONATE HARD- NESS (MG/L)	DIS- SOLVED CAL- CIUM (CA) (MG/L)	DIS- SOLVED MAG- NE- SIUM (MG)	DIS- SOLVED SODIUM (NA) (MG/L)	SODIUM AD- SORP- TION RATIO	DIS- SOLVED PO- TAS- SIUM (K) (MG/L)
APR 26...	1200	20	575	8.3	23.0	210	0	46	22	51	1.5	3.3

DATE	BICAR- BONATE (HCO3) (MG/L)	CAR- BONATE (CO3) (MG/L)	DIS- SOLVED SULFATE (SO4) (MG/L)	DIS- SOLVED CHLO- RIDE (CL) (MG/L)	DTS- SOLVED FLUO- RIDE (F) (MG/L)	DIS- SOLVED SILICA (SiO2) (MG/L)	DTS- SOLVED SOLIDS (REFST- DUE AT 180 C) (MG/L)	DIS- SOLVED SOLIDS (SUM OF CONSTIT- TUENTS) (MG/L)	DTS- SOLVED SOLIDS (TONS PER AC-FT)	DIS- SOLVED BORON (B) (UG/L)	DTS- SOLVED IRON (FE) (UG/L)
APR 26...	330	0	18	22	.7	37	339	367	.46	210	10

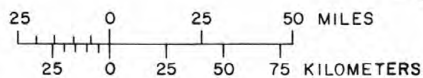


FIGURE 8.--INDEX MAP OF GROUND-WATER AREAS IN ARIZONA.

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	WMD	=	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 above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
AGUA FRIA BASIN											
341657N1124312.1 (15030203)	(B-11-4)19bcc	47	4,454	Unused	1946, 1948-49, 1951-57, 1959-60, 1962-66, 1968-72, 1974-77	16.5	7- 3-46	32.1	2- 5-65	26.0	1-19
ALTAR VALLEY											
312950N1113346.1 (15080200)	(D-22-8)19dbc	160	3,610	Domestic, Stock	1950-61, 1963-66, 1968-77	91.2	10-18-50	99.4	3- 9-65	98.0	1- 2
ARAVAIPA VALLEY											
324413N1091355.1 (15050203)	(D-8-21)18dad	140	3,880	Irrigation	1955-57, 1959, 1962, 1964-69, 1971-77	28.4	4-23-68	43.4	2- 2-77	43.4	2- 2
AVRA VALLEY											
320852N1111500.1 (15050304)	(D-15-11)5ccd	728	2,368.0	Unused	1953-57, 1959-60, 1962-77	281.1	3- 6-53	337.6	8-25-75	337.0	1-25
BIG CHINO VALLEY											
345338N1123118.1 (15060201)	(B-17-2)6bbb	342	4,200	Irrigation	1952-77	129.3	4-27-53	138.8	2- 5-63	132.3	1-18
345608N1123323.1 (15060201)	(B-18-3)23bbc	61	4,420	Unused	1952-67, 1969-77	8.9	2-10-66	18.5	5-31-55	17.0	1-18
BIG SANDY VALLEY											
344040N1133510.1 (15030201)	(B-16-13)36cc	15	1,880	Domestic	1945-77	9.7	1-12-45	13.6	10-20-56	11.1	1-24
BILL WILLIAMS											
342822N1125312.1 (15030203)	(B-13-6)9dd	52	2,500	Irrigation	1945-49, 1951-57, 1959-77	14.0	1-17-45	19.9	4-26-61, 1-19-77	19.9	1-19
BLACK MESA											
360055N1103040.1 (15020012)	(A-30-17)9dda	1,683	5,854	Unused	1972-77	323.9	2- 1-73	331.2	1-18-77	331.2	1-18
BUTLER VALLEY											
340058N1134047.1 (15030105)	(B-8-14)23ddd	1,000	1,618	Irrigation	1965, 1968, 1970-73, 1976-77	333.5	2-24-71	352.8	3- 6-72	342.9	2-11

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
CONCHO											
343716N1093857.1 (15020002)	(A-14-25)E12cdd3	630	5,420	Irrigation	1953-58, 1960-77	11.8	4- 6-60	32.6	1-11-77	32.6	1-11
DOUGLAS BASIN											
313826N1094023.1 (15080301)	(D-21-26)2baa	110	4,130	Unused	1947-77	36.6	8-26-47	102.1	7-23-75	101.8	1-25
313550N1093920.1 (15080301)	(D-21-26)24baa	196	4,195.8	Domestic	1946-58, 1960-62, 1964-77	112.0	1-31-46	180.0	1- 2-77	180.0	1- 2
312226N1093728.1 (15080301)	(D-24-27)5bdb	82	4,000.2	Stock	1942, 1944-57, 1959-77	54.3	5-26-42	71.9	1-17-74	69.9	1- 2
DUNCAN BASIN											
325114N1091058.1 (15040002)	(D-7-31)4bcc	75	3,544.4	Irrigation	1939-43, 1945-77	21.9	2-19-68	41.0	8- 8-56	28.0	1-18
GILA BEND BASIN											
325907N1125430.1 (15070101)	(C-5-6)18ddd	1,502	670	Irrigation	1966-77	35.7	1- 4-66	40.1	2-14-73	39.6	1-12
GILA RIVER DRAINAGE FROM PAINTED ROCK DAM TO TEXAS HILL											
330607N1131619.1 (15070201)	(C-4-10)10aaa	500	688	Unused	1957-77	198.4	2-14-57	248.8	2- 8-77	248.8	2- 8
325353N1133211.1 (15070201)	(C-6-12)19bba	1,352	383	Unused	1971-77	29.2	1- 8-75	39.8	1- 2-73	30.9	2- 8
GILA RIVER FROM HEAD OF SAN CARLOS RESERVOIR TO KELVIN											
332102N1102802.1 (15040007)	(D-1-18)11dcc	-	2,662	Domestic	1967-77	33.0	2-15-73	38.7	3- 2-67	35.8	1-19
330858N1104951.1 (15050100)	(D-3-15)29aba	300	2,740	Irrigation	1952-77	81.6	2-25-60	102.2	9-11-57	100.0	1- 2
330416N1105533.1	(D-4-14)21bcd	80	1,790	Unused	1952-55, 1957-64, 1966-76	5.5	3-26-69	8.3	12- 8-53	6.6	1- 2
GILA RIVER FROM TEXAS HILL TO DOME											
32348N1135711.1 (15070201)	(C-8-17)13add	100	262	Unused	1945-52, 1955-77	6.9	3-16-61	34.1	2-21-51	13.7	2- 9
HARQUAHALA PLAINS											
334326N1133034.1 (15070104)	(B-4-12)Saaa	730	1,638	Irrigation	1963, 1965-77	364.6	1-17-77	432.7	3- 6-73	364.6	1-17

WATER LEVELS IN SELECTED WELLS IN GROUND-WATER AREAS IN ARIZONA--Continued

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
HOLBROOK											
345310N1100625.1	(A-17-21)10cba	160	5,140	Unused	1952-58, 1960-77	52.1	4-23-65	53.6	4- 4-66	52.8	1-10
HUALAPAI VALLEY											
322740N1133555.1 (15010007)	(B-24-12)18daa	440	4,255	Irrigation	1953-64, 1967-77	142.9	4- 2-76	147.5	6-22-55	143.6	1-25
LITTLE CHINO VALLEY											
344846N1122714.1 (15060201)	(B-17-2)34acc	420	4,500	Unused	1950-77	4.0	3- 8-72	10.6	3-10-75	9.4	1-18
LOWER HASSAYAMPA											
332934N1125728.1 (15070104)	(B-2-7)27aab	350	1,146	Irrigation	1953, 1956, 1958-77	162.8	12- 3-53	268.4	1- 2-77	268.4	1- 2
LOWER SAN PEDRO BASIN											
325217N1104255.1 (15050203)	(D-6-16)33bad	60	2,100	Unused	1949-69, 1971-73, 1975-77	6.7	2-27-67	31.9	1- 2-77	31.9	1- 2
323644N1104612.1 (15050203)	(D-9-15)36bbc	92	4,500	Domestic	1949-77	32.7	2-13-74	82	8-16-54	35.6	1- 2
LOWER SANTA CRUZ BASIN											
330355N1120730.1 (15050303)	(D-4-2)23acc	800	1,187	Irrigation	1964-73, 1976-77	267.9	1- 9-64	454.1	1- 5-77	454.1	1- 5
325250N1113106.1	(D-6-8)21ddc	400	1,470	Irrigation	1952-56, 1960-62, 1964, 1966, 1968-73, 1976-77	117.3	2- 5-52	213.0	1- 2-72	181.2	1-10
324918N1113538.1 (15050303)	(D-7-7)11cdd	460	1,498.2	Irrigation	1942-57, 1959-64, 1967-77	85.9	3-11-42	299.1	3- 6-75	232.5	1-10
324102N1114528.1 (15050303)	(D-8-6)31add	280	1,518	Unused	1952, 1955-64, 1966-77	128.9	2-14-52	257.9	1- 2-76	214.4	1-22
324321N1113330.1 (15050303)	(D-8-8)18cdd1	600	1,596	Irrigation	1967-74, 1976-77	329.0	1-18-68	397.4	1-14-77	397.4	1-14
323753N1112046.1 (15050303)	(D-9-10)19aaa	600	1,830	Unused	1953-64, 1966-77	181.1	3-28-55	226.7	1-17-68	212.2	1- 5
323942N1110302.1 (15050100)	(D-9-13)7cbc	275	3,115	Stock	1952-77	43.0	9-23-55	111.5	1- 6-53	74.0	1- 2
McMULLEN VALLEY											
335727N1130451.1 (15070104)	(B-7-8)15baa	1,812	2,257	Irrigation	1962-65, 1967-77	479.4	1- 2-64	547.0	1-31-77	547.0	1-31

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
PUERCO-ZUNI											
345620N1091040.1 (15020004)	(A-18-30) 20cdd	420	6,450	Stock	1972-77	360.4	2-27-73	366.8	1-29-76	363.4	1-13
RANEGRAS PLAIN											
334840N1135141.1 (15030105)	(B-5-15) 6baal	910	1,156	Irrigation	1957-58, 1963-77	209.9	2-15-63	224.4	2- 3-76	224.3	2-11
SACRAMENTO VALLEY											
351109N1140300.1 (15030103)	(B-21-17) 24cdd1	120	3,310	Domestic	1944-77	101.5	8-14-44	120.0	2-12-63	110.4	1-20
SAFFORD BASIN											
330505N1100228.1 (15040005)	(D-4-22) 13acd	100	2,640	Irrigation	1953-77	8.9	3-13-68	29.0	8-31-53	18.8	1-17
330239N1100311.1 (15040005)	(D-4-22) 35ada	75	2,859.5	Stock	1939-44, 1946-77	17.1	2-11-43	39.4	3-29-40	25.1	1-17
325633N1095438.1 (15040005)	(D-6-24) 5aca	64	2,779.6	Irrigation	1940-77	37.7	3-13-68	57.7	6-28-55	43.4	1-14
325410N1094806.1 (15040005)	(D-6-25) 20aaa	46	2,821.6	Irrigation	1939-46, 1948-50, 1952-77	10.8	5-26-41	29.6	10-30-56	14.1	1-18
325224N1093050.1 (15040005)	(D-6-28) 31aab	540	3,150	Unused	1951-77	16.7	4-25-73	44.5	7-28-71	22.2	1-14
324849N1094035.1 (15040005)	(D-7-26) 22bab	90	2,950.3	Irrigation	1940-77	20.3	5-25-42	68.2	7- 1-57	34.2	1-18
324501N1094414.1 (15040005)	(D-8-25) 12dba	400	3,235	Irrigation	1950-67, 1969-77	55.6	3-13-50	139.2	7-31-67	79.8	1-18
324115N1094148.1 (15040005)	(D-8-26) 33ccc	400	3,340	Irrigation	1950-77	17.0	3-13-50	83.5	3-14-75	48.5	1-18
SALT RIVER VALLEY											
332453N1114111.1 (15050100)	(A-1-6) 24dab	585	1,408	Unused	1972-77	521.9	1-18-72	550.0	1-2-77	550.0	1- 2
333642N1115808.1 (15060106)	(A-3-4) 17baa	981	1,414	Irrigation	1969-74 1976-77	318.9	1-22-69	384.9	1- 4-77	384.9	1- 4
333916N1120557.1	(A-4-2) 36aaa	670	1,373	Unused	1948, 1954-55, 1957-61, 1963-64, 1966-71, 1973-77	273.1	12-20-48	544.5	1- 2-77	544.5	1- 2
331817N1114051.1 (15050100)	(D-1-7) 31bac1	500	1,334	Unused	1954-77	172.3	3-31-54	211.1	9-20-65	203.4	1- 2
333043N1113040.1	(D-2-8) 27ddd	614	1,556	Unused	1949-54, 1957, 1963-69, 1971-72, 1976-77	231.7	1-19-49	505.6	2- 2-76	492.7	1- 2

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
SAN BERNARDINO VALLEY											
312341N1091215.1 (15080302)	(D-23-31)29dca1	300	4,000	Stock	1968, 1970-77	157.3	9-18-68	168.8	1- 2-76	166.7	1-26
SAN FRANCISCO PEAKS											
350924N1114401.1 (15020015)	(A-21-6)35cba	1,600	7,136.7	Municipal	1954-56, 1958, 1960, 1962-64, 1966-77	1,221	4-13-70	1,241.5	1-26-73	1,232.4	2- 2
SAN SIMON BASIN											
322112N1093626.1 (15040006)	(D-12-27)32aab	250	3,980	Stock	1952-54, 1956-57, 1959-64, 1967-77	132.5	12-20-56	137.2	12-12-54	133.4	1-27
321932N1092554.1 (15040006)	(D-13-29)6ccc	835	3,675	Stock, irrigation	1941-42, 1944, 1946-47, 1949-52, 1954-57, 1959-77	9.5	5- 2-41	243.6	1-27-77	243.6	1-27
321200N1090945.1 (15040006)	(D-14-31)22adc	800	3,690	Irrigation	1973-77	100.0	1-24-73	128.2	2-25-76	122.3	1-25
314911N1090501.1 (15040006)	(D-18-32)33bca2	227	4,220	Domestic	1969-77	134.7	1-22-70	148.3	1- 2-75	145.6	1-27
SAN SIMON WASH											
315444N1115503.1 (15080101)	(D-17-4)34abd'	201	2,301.4	Irrigation	1968-77	123.4	2-23-72	126.9	3-13-75	124.3	1- 2
SNOWFLAKE											
343009N1100435.1 (15020005)	(A-13-21)24ccb	324	5,618	Irrigation	1952-58, 1960-61, 1963-77	60.2	5-13-57	97.3	3- 5-70	81.8	1-13
ST. JOHNS											
343018N1092353.1 (15020002)	(A-13-28)29bcd	50	5,800	Domestic	1944-58, 1960-72, 1975-77	7.4	3- 1-67	30.9	5- 3-56	14.1	1-13
TONTON BASIN											
334707N1111543.1 (15060105)	(A-5-11)7dda	-	2,149	Stock	1969, 1972-77	1.4	3- 1-73	14.4	1- 2-76	7.6	2- 3
UPPER SALT RIVER BASIN											
332658N1104932.1 (15060103)	(A-1-15)9aad2	-	3,237	Industrial	1970-77	43.8	3-15-74	65.5	1-19-77	65.5	1-19
332055N1104555.1 (15060103)	(D-1-15)13bda	105	3,800	Unused	1946-55, 1957, 1959-77	3.5	5- 5-49	39.5	2-14-61	33.0	1-19

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
UPPER SAN PEDRO BASIN											
320005N1101709.1 (15050202)	(D-16-20)34acd2	117	3,525	Irrigation	1969-77	79.0	3-18-69	90.1	1-26-76	85.0	1- 2
315500N1101322.1 (15050202)	(D-17-21)32bab	520	3,705	Domestic, stock	1944-77	16.9	12- 9-46	47.8	1-22-75	36.5	1- 2
315417N1101400.1 (15050202)	(D-18-21)6aaa2	60	3,620	Domestic	1944-58, 1960-77	25.1	1-22-76	39.7	5-28-54	25.5	1- 2
312250N1100639.1 (15050202)	(D-23-22)33dcd2	91.5	4,200	Observation	1954-63, 1966-77	11.5	8-24-55	18.5	7-15-61	15.6	1- 2
UPPER SANTA CRUZ BASIN											
320824N1105930.1 (15050301)	(D-15-13)11cba	224	2,457	Observation	1968-77	82.0	2-21-68	141.0	1- 2-77	141.0	1- 2
314718N1104139.1 (15050302)	(D-19-16)15aba	300	4,980	Stock	1952-77	203.7	4-10-69	222.4	1-22-70	215.1	1- 2
313225N1104533.1 (15050301)	(D-22-15)12aad	60	4,035	Domestic	1949, 1952-64, 1966-77	10.1	1-25-56	26.0	6- 8-54	24.8	1- 2
312419N1105412.1 (15050301)	(D-23-14)27baa	36	3,575	Unused	1939-57, 1959-61, 1963-77	12.6	1- 6-60	21.8	7-28-48	14.4	1- 2
312119N1103517.1 (15050301)	(D-24-17)11cda	23	4,650	Observation	1949-77	1.8	12-30-55	14.6	7-24-64	5.7	1- 2
UPPER VERDE RIVER											
344306N1115520.1 (15060202)	(A-15-4)4dd	250	3,375	Domestic	1959-77	36.8	8-18-59	60.4	1-25-77	60.4	1-25
350716N1113544.1	(A-20-8)18bbb	1,206	6,830	Unused	1962-63, 1965, 1967-77	571.7	3- 6-74	606.6	2- 6-65	585.0	2- 2
WATERMAN WASH											
331311N1122529.1 (15070101)	(C-2-2)25ccc	882	1,078	Irrigation	1956-77	222.8	2-28-57	345.3	1-13-77	345.3	1-13
WHITE MOUNTAINS											
341429N1100252.1 (15020005)	(A-10-22)30aba	750	6,485	Municipal	1969-77	523.2	3-27-69	532.0	2-13-74	525.4	1-11

LATITUDE-LONGITUDE (HYDROLOGIC UNIT)	LOCAL WELL NUMBER	DEPTH OF WELL (feet)	LAND- SURFACE ALTITUDE (feet above mean sea level)	TYPE OF WELL	RECORDS AVAILABLE (years)	WATER LEVEL, IN FEET BELOW LAND SURFACE					
						Highest	Date	Lowest	Date	1977	Date
WILCOX BASIN											
321838N1095431.1 (15050201)	(D-13-24)16bbb	1,356	4,210	Observation	1942, 1944-77	29.7	5-13-42	130.7	8-31-62	129.4	2- 2
321323N1095217.1 (15050201)	(D-14-24)14bba2	-	4,167	Domestic	1963-69 1971-77	9.0	2- 6-63	26.9	1- 2-77	26.9	1- 2
321115N1095552.1 (15050201)	(D-14-24)30dba	-	4,187	Stock	1942, 1944-57, 1963-77	16.0	10-21-55	33.9	1-14-74	26.3	1- 2
320235N1094750.1	(D-16-25)16add	65	4,190	Stock	1942, 1944-57, 1959-77	27.0	2-18-69	43.6	12-19-57	30.4	1- 2
YUMA											
323840N1143201.1 (15030108)	(C-9-22)17dca	195	205	Unused	1945-58, 1960-77	52.5	11-15-60	97.6	9- 5-46	59.6	2- 2

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FACTORS FOR CONVERTING U.S. CUSTOMARY UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the U.S. customary units published herein to the International System of Units (SI). Subsequent reports will contain both the U.S. customary and SI unit equivalents in the station manuscript descriptions until such time that all data will be published in SI units.

Multiply U.S. customary units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	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	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	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	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	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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