Water Resources Data for Hawaii and other Pacific Areas

Volume 2. Trust Territory of the Pacific Islands, Guam, American Samoa, and Northern Mariana Islands

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-79-2

WATER YEAR 1979

Prepared in cooperation with the Trust Territory of the Pacific Islands, the Governments of Guam, American Samoa, and Northern Mariana Islands, and with other agencies

CALENDAR FOR WATER YEAR 1979

1978

OCTOBER

S	M	T	W	T	F	S
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NOVEMBER

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1979

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AUGUST

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SEPTEMBER

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WATER YEAR 1979

Prepared in cooperation with the Trust Territory of the Pacific Islands, the Governments of Guam, American Samoa, and Northern Mariana Islands, and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

CECIL D. ANDRUS, Secretary

GEOLOGICAL SURVEY

H. William Menard, Director

For information on the water program in Hawaii
and other Pacific Areas write to
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Honolulu, Hawaii 96850

1980

PREFACE

This report was prepared by personnel of the Hawaii district of the Water Resources Division of the U.S. Geological Survey under the supervision of Benjamin L. Jones, District Chief, and W. H. Robinson, Regional Hydrologist, Western Region.

This report is one of a series issued by State. General direction for the series is by Philip Cohen, Chief Hydrologist, U.S. Geological Survey, and R. J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

Data for Hawaii and other Pacific Areas are in two volumes as follows:

Volume 1. State of Hawaii

Volume 2. Trust Territory of the Pacific Islands, Guam, Mariana Islands, Tutuila, American Samoa, and Saipan, Northern Mariana Islands

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16. Abstract (Limit: 200 words)

Volume 2 of water resources data for the 1979 water year for other Pacific areas consist of records of stage, discharge, and water quality of streams; stage of a reservoir; and water levels in wells and springs. This report contains discharge records for 41 gaging stations; stage only record for 1 gaging station; water quality for 1 gaging station, 20 partial-record stations; water temperature for 42 gaging stations; water levels for 13 observation wells; tide level for 1 tide station; and 7 water level less tide level tables. Also included are 26 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Governments and Federal agencies in other Pacific areas.

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(Letter after station name designates type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment)

WATER RESOURCES DATA FOR HAWAII AND OTHER PACIFIC AREAS, 1979

Volume 2

INTRODUCTION

Water resources data for the 1979 water year for Hawaii and other Pacific areas, Volume 2, consist of records of stage, discharge, and water quality of streams; stage of a reservoir; and water-levels of wells and springs. This report contains discharge records for 41 gaging stations; stage only records for 1 gaging station; water quality for 1 gaging station; 20 partial-record stations; water temperature for 42 stations; water levels for 13 observation wells; tide level for 1 tide station; and 7 water level less tide level tables. Also included are data for 26 low-flow partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Governments and Federal agencies in other Pacific areas.

Through September 30, 1960 (June 30, 1960, for Hawaii and other Pacific areas), the 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." The records for other Pacific areas were contained in one volume entitled, "Surface Water Supply of Mariana, Caroline, and Samoa Islands." Through water year 1960 these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Beginning with the 1961 water year and continuing through water year 1974, streamflow data have been released by the Geological Survey in annual reports on a State-boundary basis. Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

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 HI-79-2." For archiving and general distribution, the reports for water years 1971-74 are also identified as water-data reports. These water-data reports are for sale, in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information including current prices, for ordering specific reports may be obtained from the district chief at the address given on the back of the title page or by telephone (808) 546-8331.

COOPERATION

The U.S. Geological Survey have had cooperative agreements for the systematic collection of streamflow records with the Territory of Guam since 1953, with the Territory of American Samoa since 1957, and with the Trust Territory of the Pacific Islands since 1968. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Trust Territory of the Pacific Islands, Adrian Winkle, high commissioner.
Government of American Samoa, P. T. Coleman, governor.
Government of Guam, P. E. Calvo, governor.
Governor of Northern Mariana Islands, C. S. Camacho, governor.

HYDROLOGIC CONDITIONS

Based on available periods of record at selected streams, monthly mean runoff during the 1979 water year in the area covered by this volume indicated an excessive to normal trend throughout the year. Annual mean runoff was mostly in the normal range and was between 67 and 128 percent of the annual medians. Streamflow at the Middle Fork Talofofo Stream, Saipan, Mariana Islands, was excessive from October to April (flow in upper 75 percent of record) and normal during the remainder of the year. Annual mean runoff was excessive and was 160 percent of the annual median.

At selected gaged streams on Guam, Mariana Islands, monthly mean flows were predominantly in the normal range throughout the year. Streamflow during November was in the excessive range at all selected streams and June was the driest month when streamflow at most of the streams was in the deficient range (flow in lower 25 percent of record). At the Ylig River near Yona, streamflow was normal for 9 of the 12 months during the year and annual mean discharge was 67 percent of the annual median.

On the island of Babelthuap, Caroline Islands, streamflow at selected gaged streams was variable throughout the year. January and February were the driest months. Annual mean discharge was normal at all of the selected streams and ranged between 107 to 114 percent. At the Gaden River, monthly mean flow was normal for 6 of the 12 months and the annual mean discharge was in the normal range and was 107 percent of the annual median.

On the island of Yap, Caroline Islands, streamflow was also variable. At all of the selected streams, monthly mean flow was excessive in October, November, and June, and deficient in January and September. Annual mean runoff was normal at all stations and ranged between 101 to 120 percent of median. Streamflow at Pemgoy Stream was excessive for 4 months and deficient for 3 months of the 12 months. Annual mean flow was in the normal range and 120 percent of the median. On Moen, Truk, Caroline Islands, streamflow at the Wichen River at altitude 18 meters, was in the excessive range for 5 of the 12 months. The annual mean runoff was excessive and was 142 percentof the annual median.

Streamflow at selected streams on the island of Ponape, was mostly in the normal range. Annual mean runoff at these streams was also in the normal range and ranged between 112 and 129 percent of the median. Monthly mean flow at the Lupwor River was normal for 9 of the 12 months and yearly mean runoff was 129 percent of median.

On the island of Kosrae, streamflow at all gaged streams indicated a normal to excessive trend throughout the year. All gaged streams were in the excessive range in March and in the deficient range in September. Annual runoff was in the normal to excessive range and was between 106 to 157 percent of median. At the Tofol River, monthly mean flow was normal for 7 of the 12 months and excessive for 3 consecutive months during February to March. Annual mean discharge was in the excessive range and was 126 percent of the median.

At selected streams on the island of Tutuila, American Samoa, streamflow was mostly in the normal and excessive range. Annual mean runoff was also in the excessive range at most of the streams and ranged between 112 and 179 percent of the median. Streamflow at Aasu Stream at Aasu was in the normal range for 7 of the 12 months and excessive for 5 months. Annual mean runoff was in the excessive range and was 112 percent of the normal median.

Monthly and annual mean discharge is compared with medians at two representative streams on the islands of Guam, Mariana Islands, and Tutuila, American Samoa.

DEFINITION OF TERMS

Definition of terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined as follows:

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 325,851 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multi-celled 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.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rod-like, 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 all the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endomedium (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 intestine 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 which produce blue colonies within 24 hours when incubated at 44.5°C ± 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 intestine 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 ± 1.0°C on M-enterrococcus 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 time, expressed as the weight 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 g/m^3 (grams per cubic meter), and periphyton and benthic organisms in g/m^2 (grams per square meter).

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 ash and dry mass.

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

Cells/volume refers to the number of cells of any organism which is 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 mililiters (mL) of 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, 1.9835 acre-feet, or 646,317 gallons or 2,447 cubic meters.

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

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

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.

Continuing record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.

2. When water temperature records include observations taken one or more times daily.

3. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

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.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 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 average of individual daily mean discharges during a specified period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the table is "DISCHARGE (CFS)."

Dissolved is that material in a representative water sample which passes through a 0.45 micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate. It is recognized that certain kinds of samples cannot be filtered; to provide for this, procedures that are considered equivalent to filtering through a 0.45 micrometer membrane filter will be identified and announced at a later date.

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

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

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

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution

of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material".

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

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

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 river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

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.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Micrograms per gram (µg/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, µg/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.

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

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

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 by either 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.

Pesticides are chemical compounds used to control the growth of undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

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 additon to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

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

Green algae have chlorphyll 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 grazers in the aquatic environment, the zooplankton are a vital part of the aquatic feed 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.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^2•time) for periphyton and macrophytes and mg C/(m^3•time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O_2/(m^2• time) for periphyton and macrophytes and mg O_2/(m^3•time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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 volume, that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter 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 bedload 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-weight concentration of suspended sediment passing a stream section during a 24-hour day.

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 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.

Subtrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

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 multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglas 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 taxomony of a particular mayfly, Hexagenia limbata, is the following:

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

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

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

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed Jackson turbidity units (JTU).

WDR is used as an abbreviation for "Water-Data Reports" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

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 NUMBER

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all main-stream stations are listed before the first main-stream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations and water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality 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 continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial record stations have the same number as the gaging or partial-record station. 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 16884600 which appears just to the left of the station name includes the 2-digit number "16" plus the 6-digit downstream order number "884600." In this report, the records are listed in downstream order by islands.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

Miscellaneous downstream order station numbers are not assiged to wells and miscellaneous sites where only random water-quality samples of 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-digit number is a sequential number for a well or a miscellaneous site within a 1-second grid. In the event that there are more than one data site with the same latitude-longitude coordinates, different sequential numbers are assigned to each, "70," "71," etc., to obtain unique numbers. See figure 13.

The local well-numbering system for Guam was structured to contain seven digits based on a non-arbitrary, unique one-minute grid and 10-second subgrid system. One-minute parallel lines for both latitude and longitude are drawn on the map resulting in one-minute grids. Each grid is designated by a four-digit number. The first two digits represent minutes of latitude for the grid and the second two digits represent minutes of longitude for that grid. This establishes unique minute-grid numbers within Guam.

To distinguish wells within a minute grid, 10-second parallel lines for both latitude and longitude are drawn and 10-second subgrids are established within each one-minute grid. Each subgrid is designated by a two-digit number. The first represents 10 seconds of latitude for that subgrid and the second represents 10 seconds of longitude for that subgrid. This establishes unique 10-second-subgrid numbers within a minute grid. The fifth and sixth digits of the local number are these unique 2-digit subgrid numbers. The seventh digit is a sequential number used to distinguish different wells within a 10-second subgrid. It is assigned chronologically with the oldest or the only well within the subgrid having a sequential number of zero. See figure 14.

SPECIAL NETWORKS AND PROGRAMS

National stream-quality accounting network is an accounting 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 the river-basin accounting units 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 water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in stream quality.

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 text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

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 discharges 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 engineers 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 the 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.

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 bases 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.

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 and 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 for 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, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are 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 figures was first published is given.

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 "Sea Level Datum of 1929" 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 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.

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.

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 changes 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.

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 water-data sites not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

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.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbers of water-supply papers containing detailed information on major floods in the area. Records for stations in Hawaii and other Pacific areas for the period October 1959 to September 1965, are in Water-Supply Paper 1937.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the United States" have been published; the first series covers the entire period of record through September 1950 (June 1950, for Hawaii), and the second series covers the period October 1950 to September 1960 (July 1950 to June 1960, for Hawaii and other Pacific areas). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station. Records for stations in Hawaii and other Pacific areas are compiled in Water-Supply Paper 1319 through June 1950, in 1739 and 1751 for July 1950 to June 1960, in 1937 for October 1959 to September 1965, and in 2137 for October 1966 to September 1970.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

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

The descriptive heading for water-quality records gives periods of record for the various types of water-quality data (chemical, specific conductance, biological determination, water temperatures, sediment discharge), period of record, and extremes of pertinent data, 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 concentrations, 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.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Hawaii and other Pacific areas are listed below.

Water year	WSP No.	Water year	WSP No.	Water year	WSP No.
1964	1966	1967	2016	1970	2160
1965	1966	1968	2016		
1966	1996	1969	2150		

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection 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 and (2) a local number that is provided for local needs. See figures 13 and 14.

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 either for every fifth day and the end of each month (eom) or for each day. To show the intra-day variation in the ground-water levels caused by local pumping and tidal fluctuations, instantaneous maximum and minimum water levels are given with the mean water levels for the day.

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).

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-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.

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.

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.

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.

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.

3-A3. *Measurement of peak discharge at culverts by indirect methods,* by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

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.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

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.

3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

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.

3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

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.

3-C3. *Computation of fluvial-sediment discharge,* by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

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.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

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.

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.

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.

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.

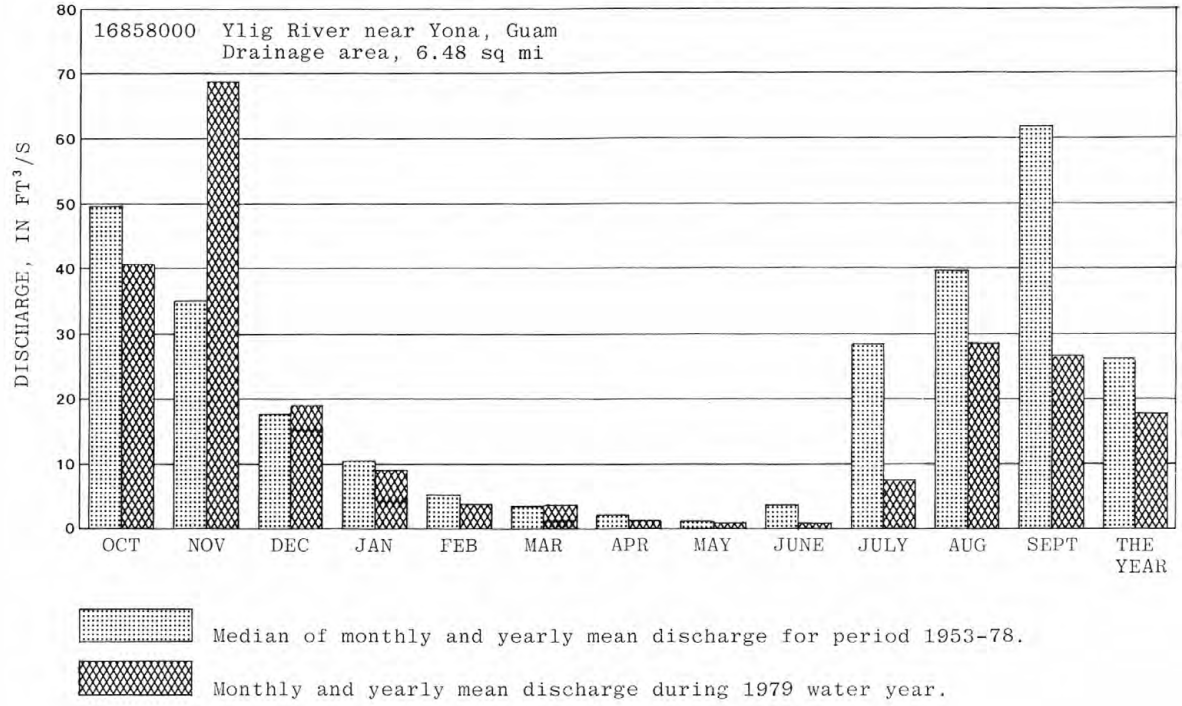
5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

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.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

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.

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.



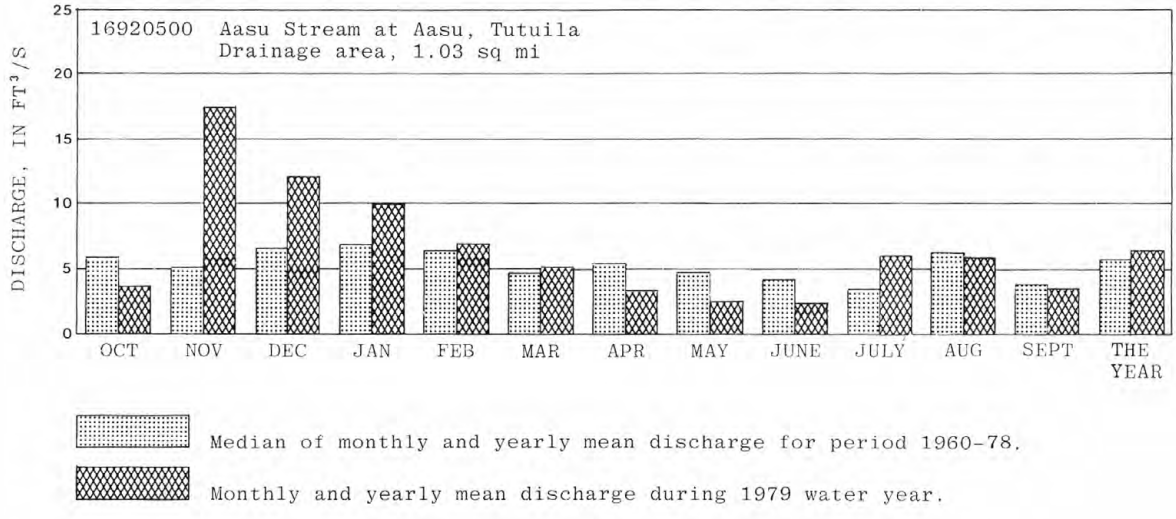


FIGURE 1.--DISCHARGE DURING 1979 WATER YEAR COMPARED WITH MEDIAN DISCHARGE FOR SELECTED PERIODS FOR TWO REPRESENTATIVE GAGING STATIONS.

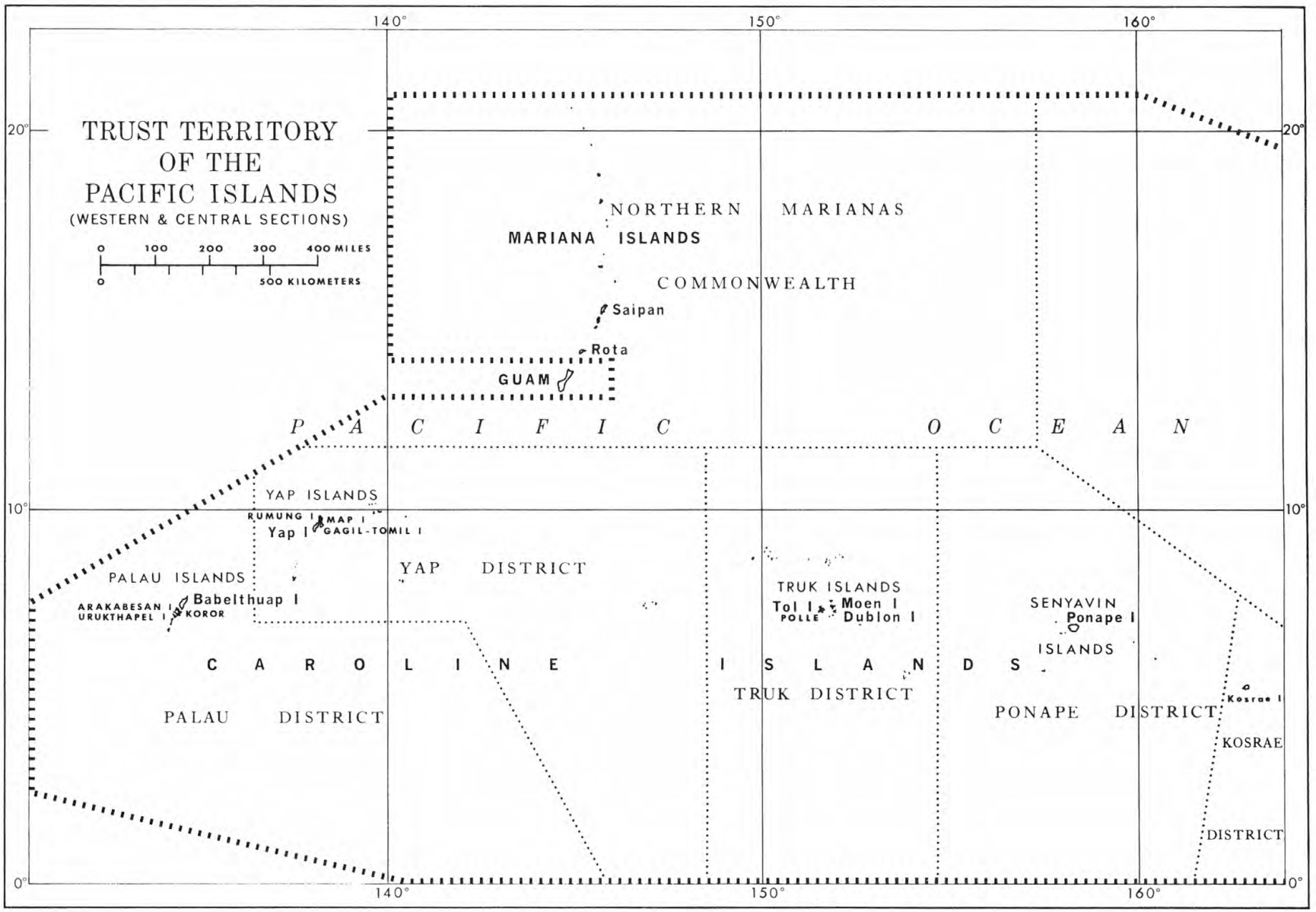


FIGURE 2. MAP SHOWING LOCATIONS OF THE TRUST TERRITORY PACIFIC ISLANDS

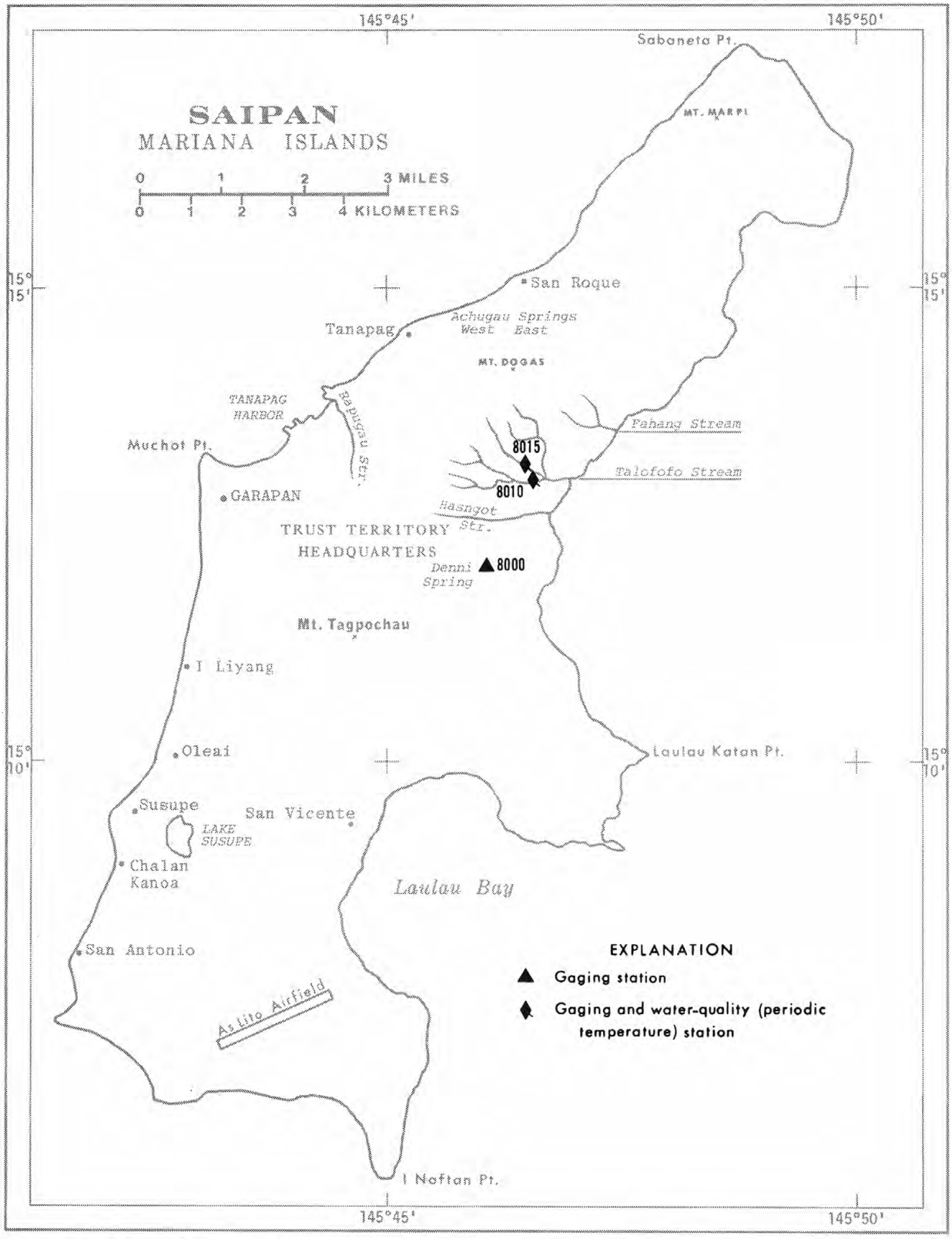


FIGURE 3.--MAP OF SAIPAN, MARIANA ISLANDS, SHOWING LOCATIONS OF GAGING AND WATER-QUALITY STATIONS.

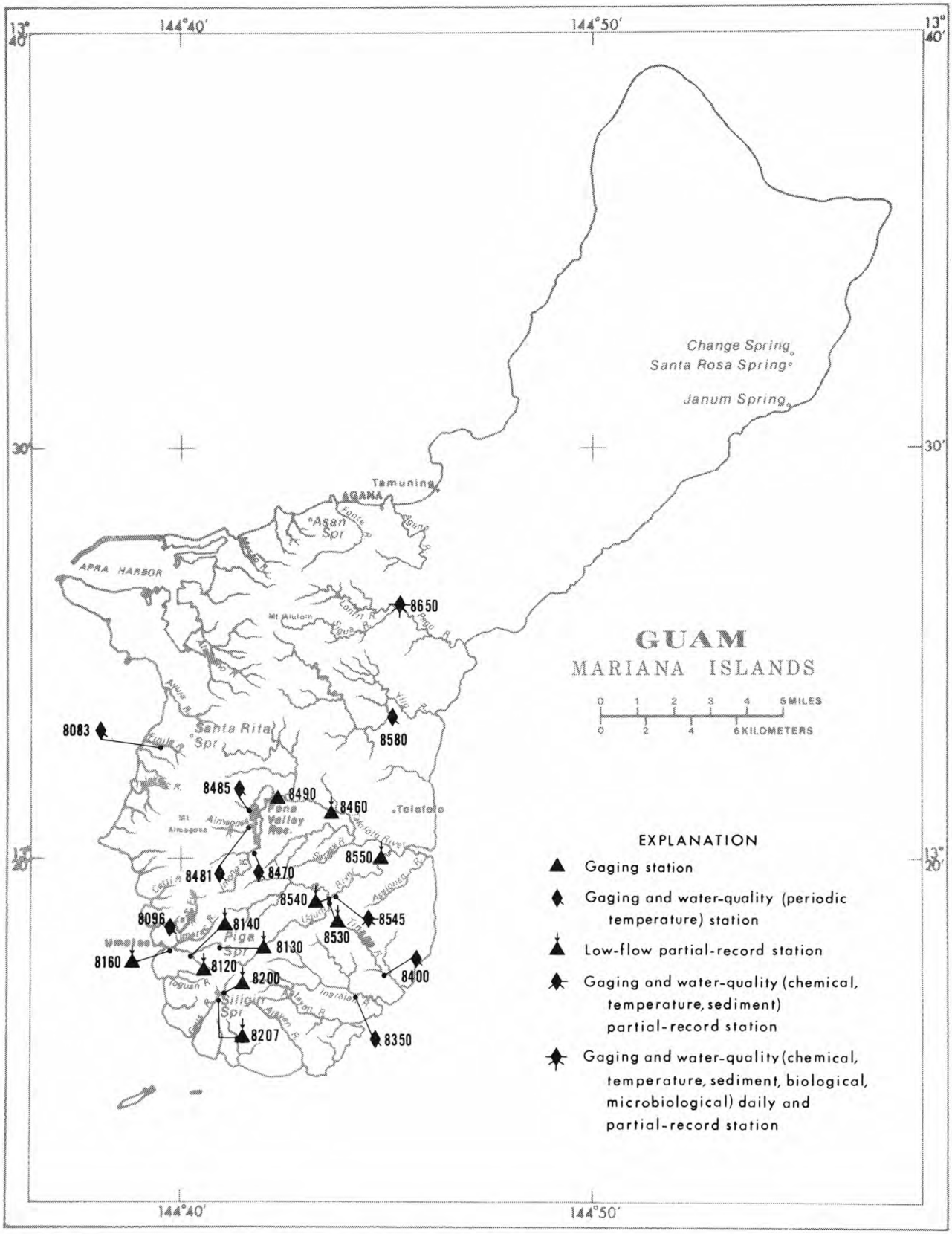


FIGURE 4.--MAP OF GUAM, MARIANA ISLANDS, SHOWING LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS.

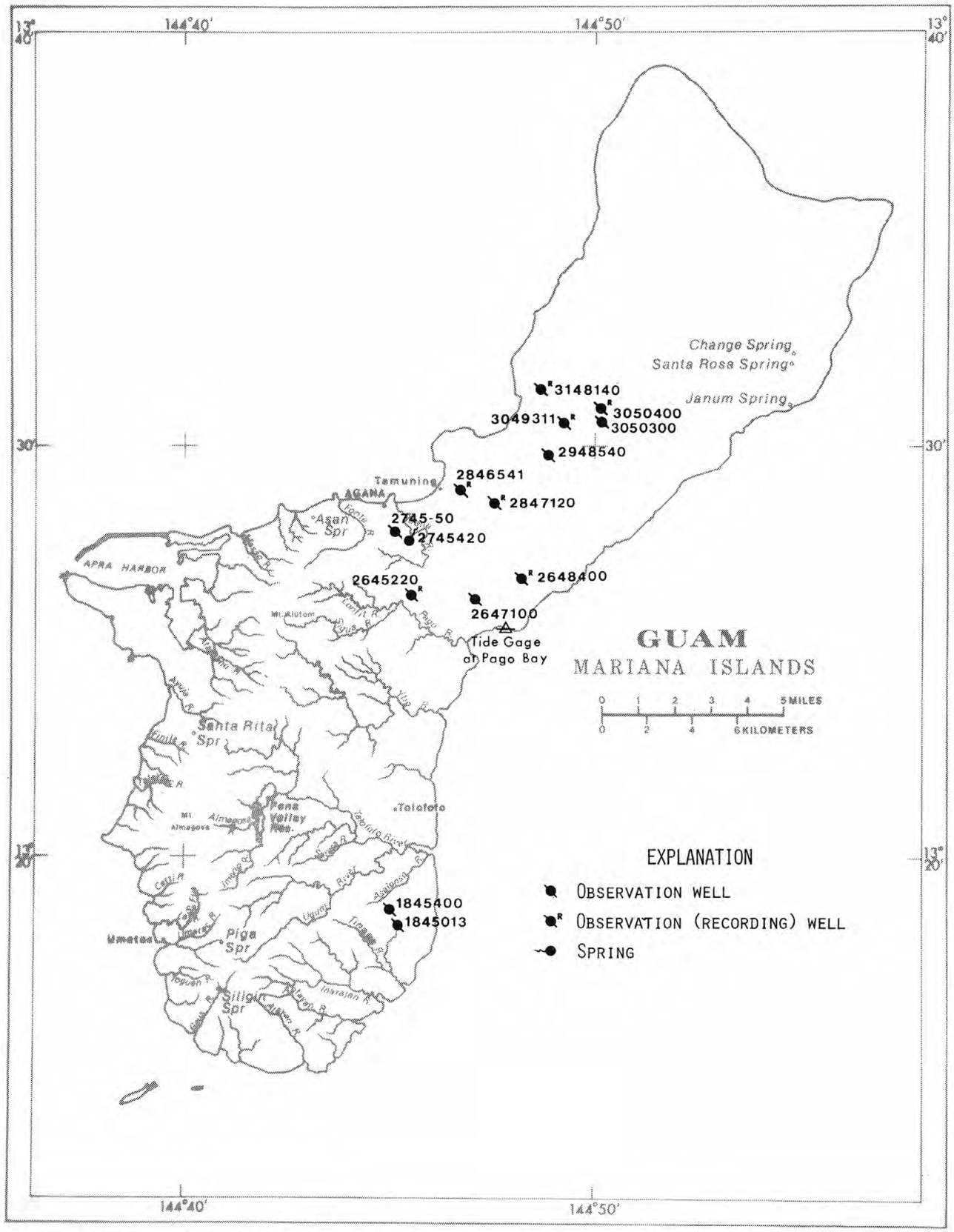


FIGURE 5.--MAP OF GUAM, MARIANA ISLANDS, SHOWING LOCATIONS OF OBSERVATION WELLS.

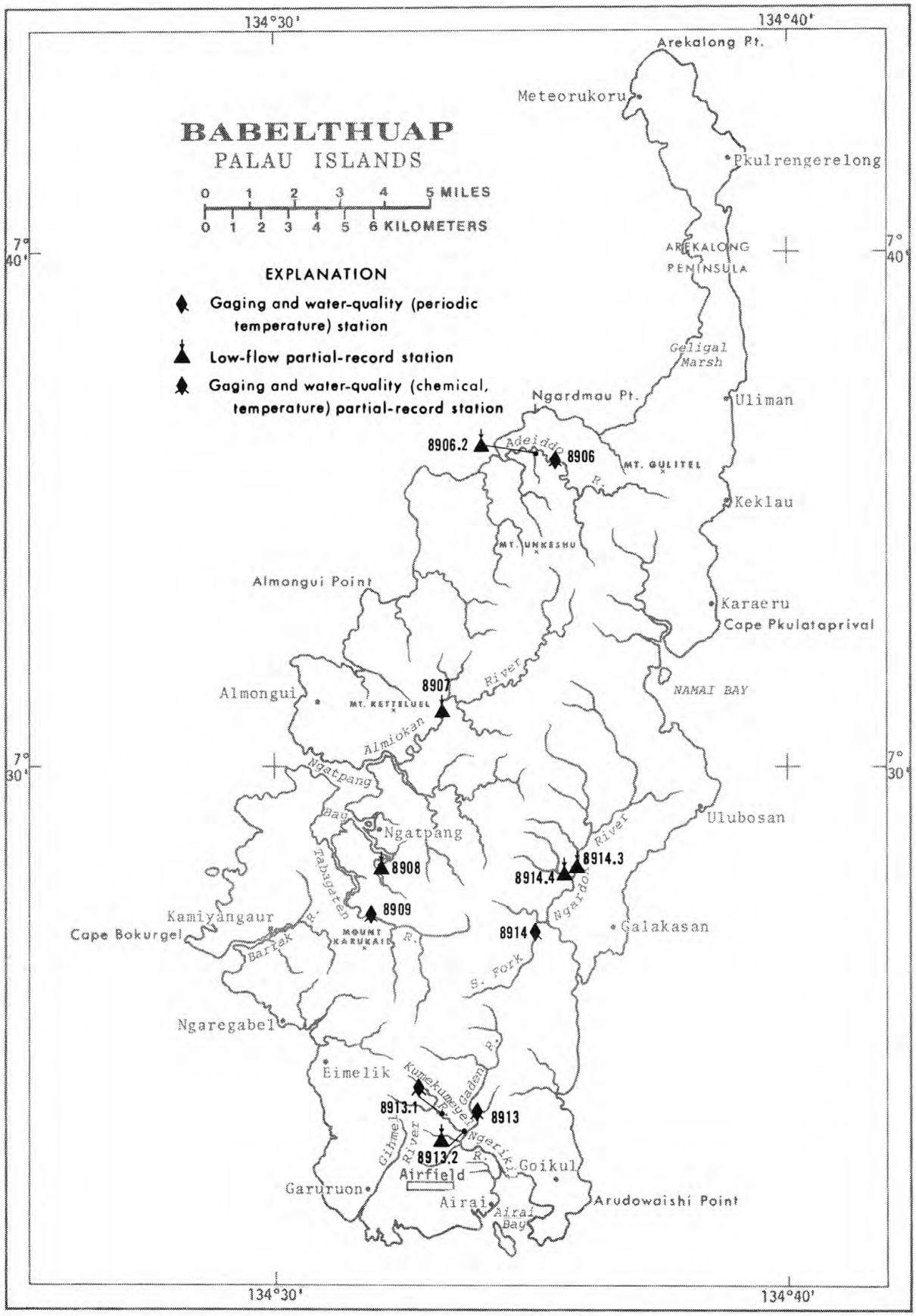


FIGURE 6.--MAP OF BABELTHUAP, PALAU ISLANDS, SHOWING LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS.

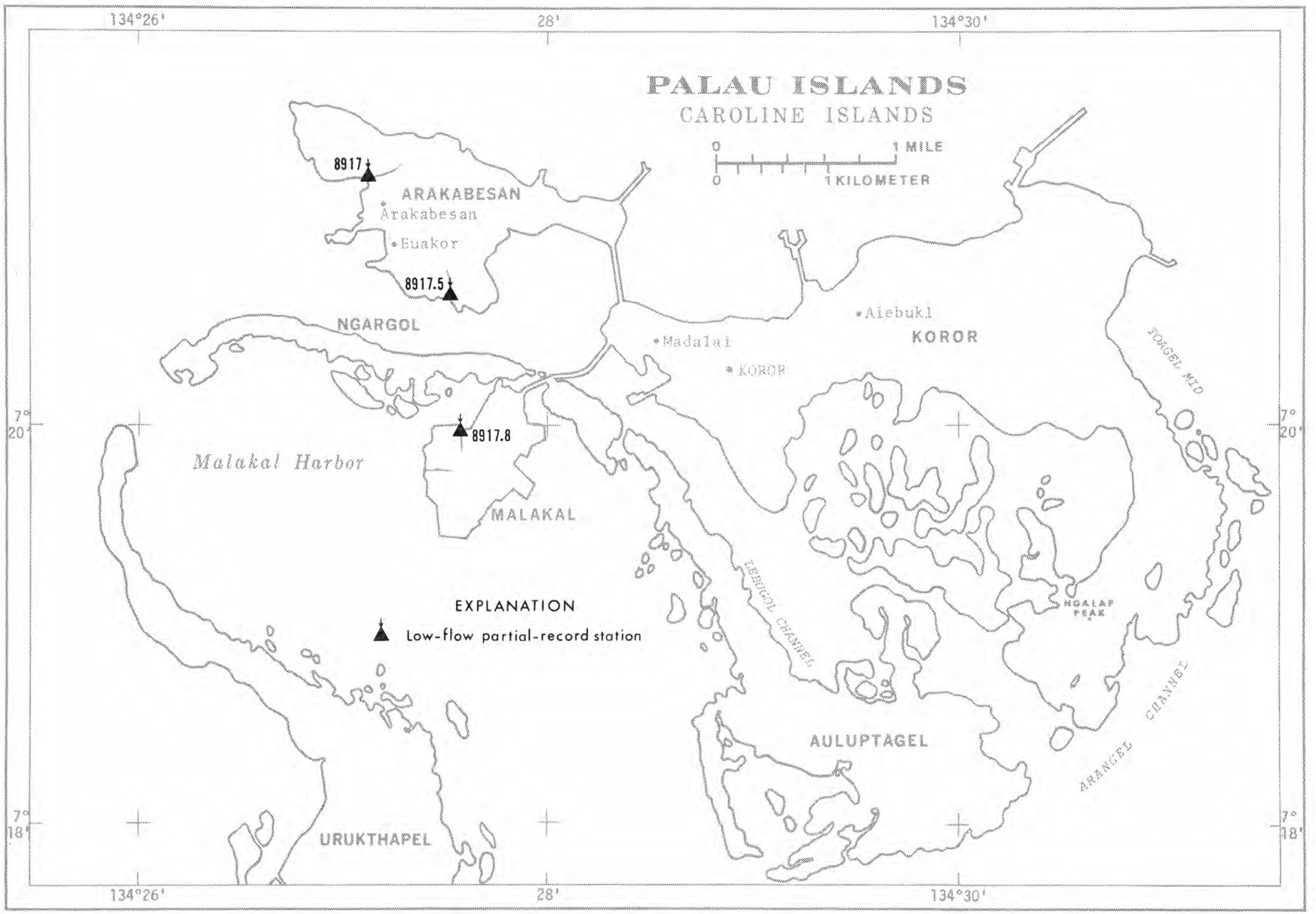


FIGURE 7.--MAP OF ARAKABESAN, MALAKAL, PALAU ISLANDS, SHOWING LOCATIONS OF PARTIAL-RECORD STATIONS.

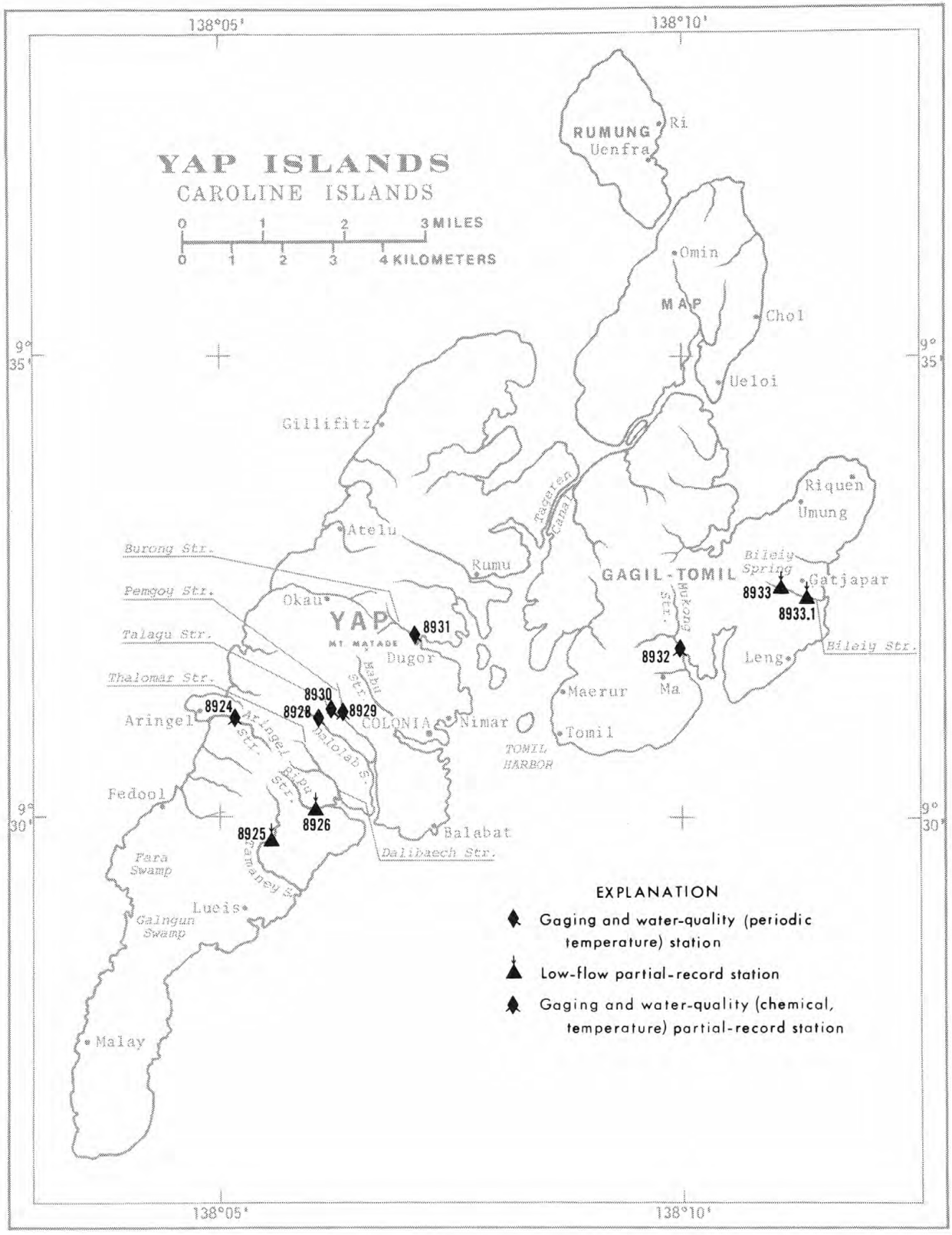


FIGURE 8. --MAP OF YAP ISLANDS, SHOWING LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS.

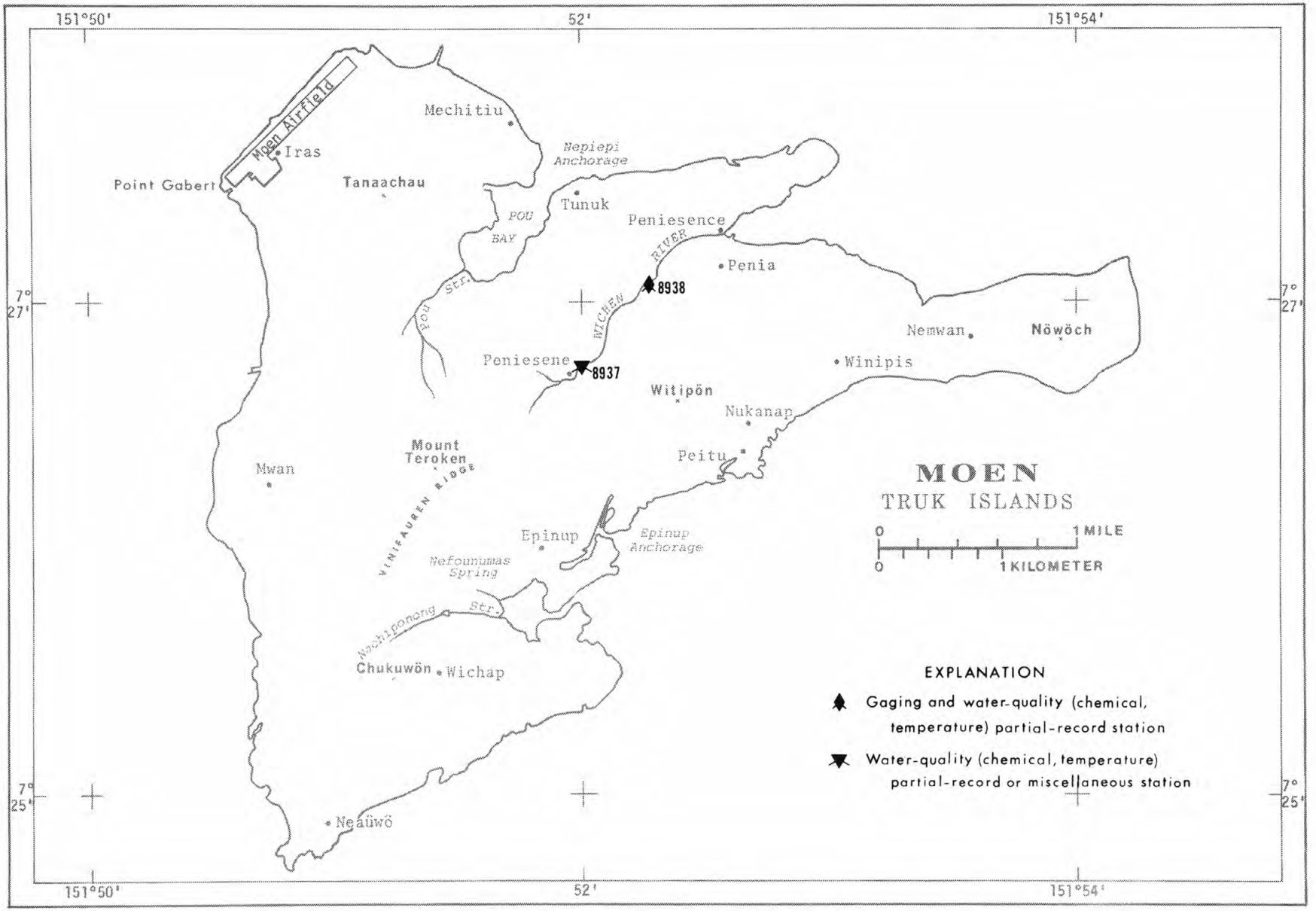


FIGURE 9. --MAP OF MOEN, TRUK ISLANDS, SHOWING LOCATIONS OF GAGING AND WATER-QUALITY STATIONS.

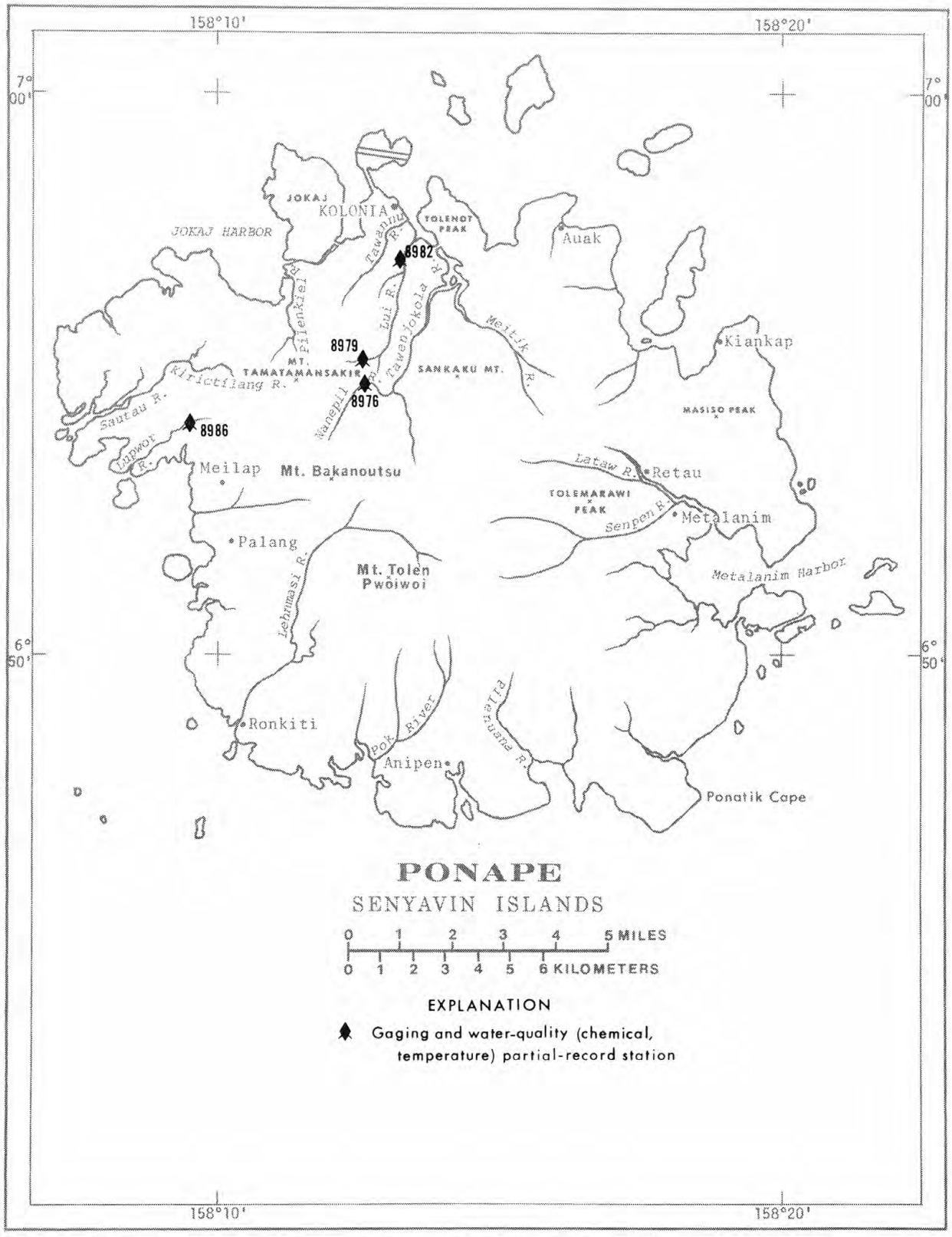


FIGURE 10.--MAP OF PONAPE, SHOWING LOCATIONS OF GAGING AND WATER-QUALITY STATIONS.

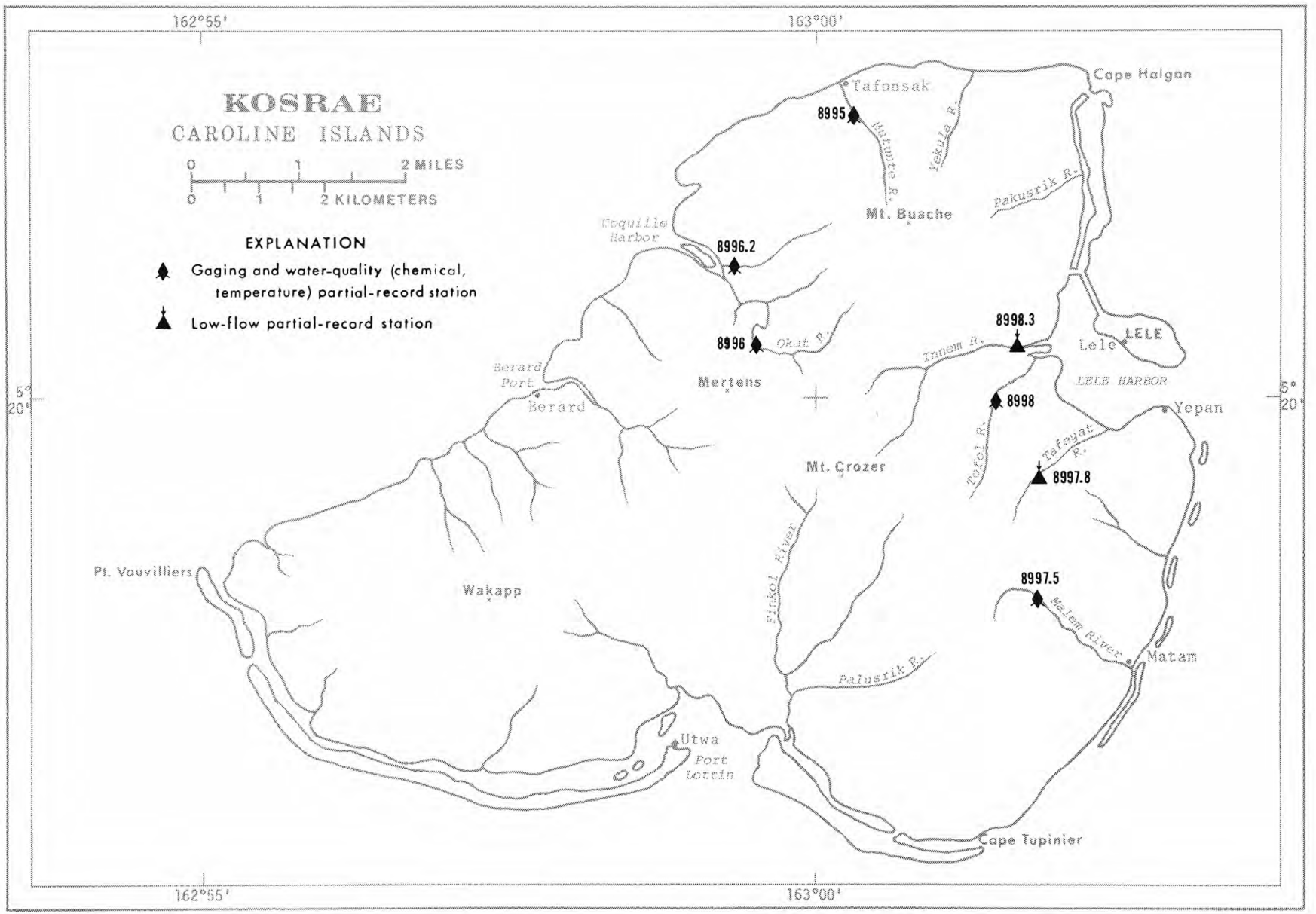


FIGURE 11.--MAP OF KOSRAE, SHOWING LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS.

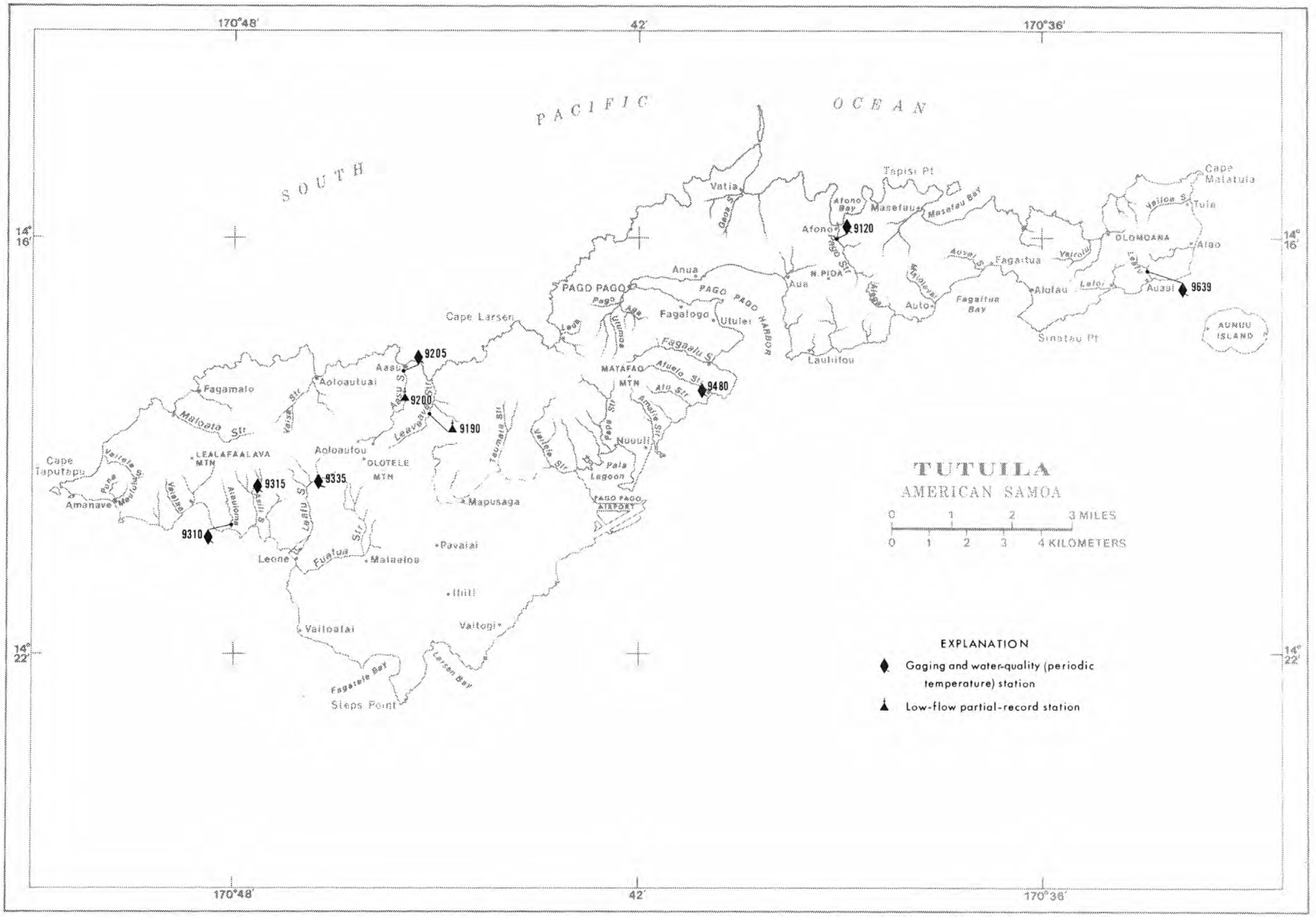


FIGURE 12.--MAP OF TUTUILA, SAMOA ISLANDS, SHOWING LOCATIONS OF GAGING, WATER-QUALITY, AND PARTIAL-RECORD STATIONS.

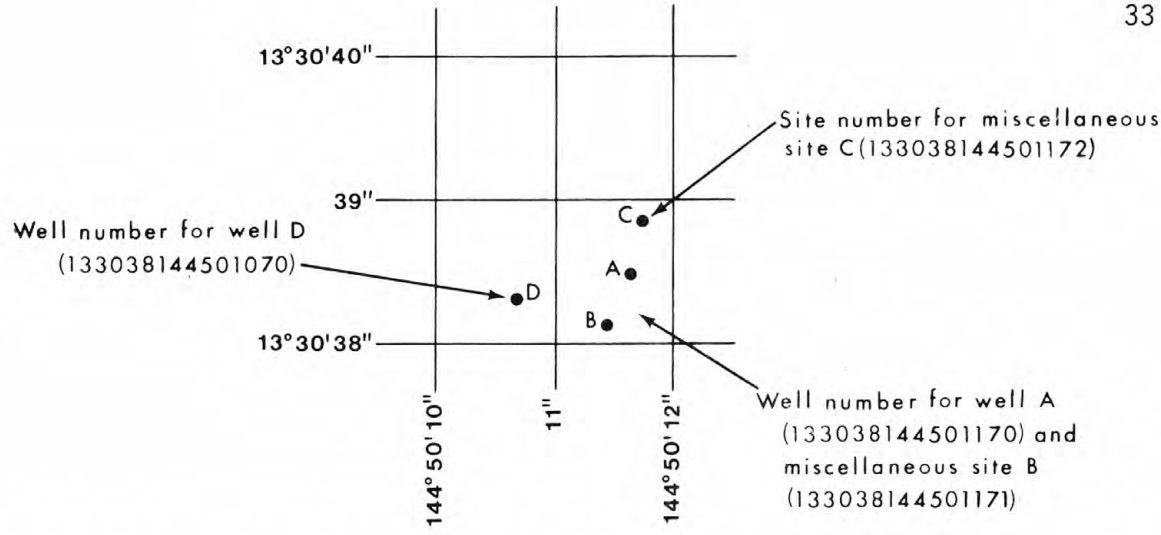


Figure 13. Sketch showing system for numbering wells and miscellaneous sites.

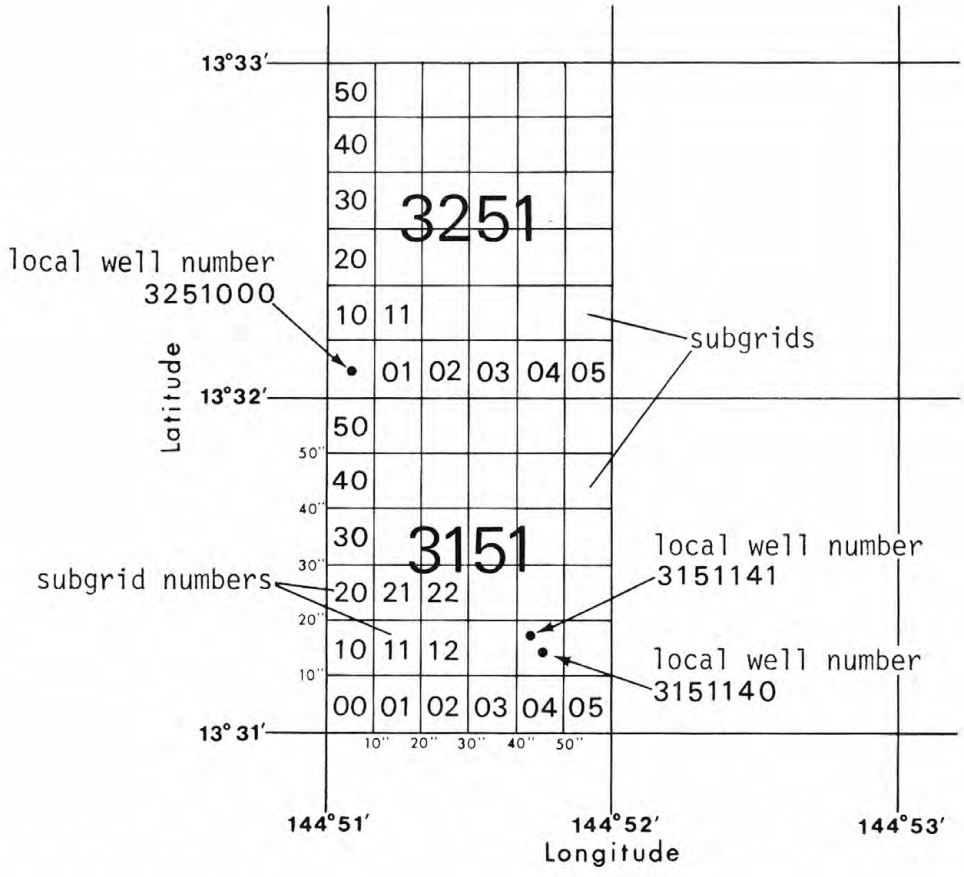


Figure 14. Sketch showing local well numbering system.

GAGING-STATION RECORDS

MARIANA ISLANDS, ISLAND OF SAIPAN

16800000 DENNI SPRING

LOCATION.--Lat 15°11'57" N., long 145°46'05" E., 2.8 mi (4.5 km) southeast of Tanapag, 3.1 mi (5.0 km) east of Garapan, and 5.6 mi (9.0 km) northeast of Chalan Kanoa.

PERIOD OF RECORD.--August 1952 to June 1954 (published as Donni Spring near Garapan), March 1968, January 1969 to current year.

GAGE.--Water-stage recorder and metal plus concrete control. Altitude of gage is 261 ft (79.6 m) from U.S. Navy.

REMARKS.--Records good except those above 2 ft^3/s (0.057 m^3/s), which are poor.

AVERAGE DISCHARGE.--11 years (water years, 1953, 1970-79), 0.618 ft^3/s (0.018 m^3/s), 448 acre-ft/yr (552,000 m^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8.5 ft^3/s (0.24 m^3/s) Aug. 13, 1978; minimum daily, 0.02 ft^3/s (0.001 m^3/s) Sept. 16, 17, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 7.0 ft^3/s (0.20 m^3/s) Nov. 9, 10; minimum daily, 0.20 ft^3/s (0.006 m^3/s) July 25-29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1.1	4.5	.95	.73	.57	.45	.37	.29	.23	.23	.33
2	2.0	1.3	4.5	.90	.69	.57	.45	.37	.29	.23	.23	.37
3	3.0	3.5	3.5	.90	.69	.57	.45	.37	.29	.23	.23	.41
4	2.5	5.5	3.5	.90	.69	.57	.45	.37	.29	.23	.23	.41
5	2.5	5.5	3.5	.90	.69	.57	.45	.37	.29	.23	.23	.41
6	2.0	5.5	3.5	.85	.69	.61	.45	.37	.29	.23	.23	.41
7	2.0	5.5	2.0	.85	.69	.61	.45	.37	.29	.23	.23	.41
8	2.0	5.5	2.0	.85	.69	.57	.45	.37	.29	.23	.26	.41
9	2.0	7.0	2.0	.85	.69	.57	.45	.33	.29	.23	.33	.37
10	2.0	7.0	1.8	.85	.65	.57	.45	.33	.26	.23	.37	.37
11	2.0	5.5	1.8	.85	.65	.57	.45	.33	.26	.23	.37	.37
12	2.0	4.5	1.8	.85	.65	.53	.41	.33	.26	.23	.33	.37
13	2.0	3.5	1.6	.85	.65	.53	.41	.33	.26	.23	.33	.37
14	1.8	2.0	1.6	.85	.65	.53	.41	.33	.26	.23	.33	.37
15	1.8	2.0	1.5	.81	.65	.53	.41	.33	.26	.23	.33	.33
16	1.8	2.0	1.5	.81	.65	.53	.41	.33	.26	.23	.29	.33
17	1.6	2.0	1.4	.81	.65	.53	.41	.33	.29	.23	.29	.33
18	1.6	1.8	1.4	.81	.65	.53	.41	.33	.29	.23	.33	.33
19	1.6	1.8	1.3	.81	.65	.53	.41	.33	.29	.23	.37	.37
20	1.6	1.8	1.2	.77	.65	.49	.41	.33	.29	.23	.37	.37
21	1.5	1.7	1.1	.77	.60	.49	.41	.37	.29	.23	.33	.37
22	1.4	1.7	1.1	.77	.60	.45	.41	.37	.29	.23	.33	.45
23	1.4	1.7	1.1	.77	.60	.45	.41	.33	.29	.23	.33	.65
24	1.3	1.6	1.0	.77	.60	.45	.37	.33	.29	.23	.29	.69
25	1.2	1.6	1.0	.73	.60	.45	.37	.33	.29	.20	.29	.69
26	1.2	1.6	1.0	.73	.60	.45	.37	.33	.26	.20	.33	.61
27	1.2	1.5	1.0	.73	.60	.45	.37	.33	.23	.20	.33	.61
28	1.1	1.5	.95	.73	.60	.45	.37	.33	.23	.20	.33	.61
29	1.1	3.5	.95	.73	---	.45	.37	.33	.23	.20	.33	.65
30	1.1	4.5	.95	.73	---	.45	.37	.29	.23	.23	.33	.77
31	1.1	---	.95	.73	---	.45	---	.29	---	.23	.33	---
TOTAL	53.4	95.2	57.00	25.21	18.20	16.07	12.46	10.55	8.22	6.98	9.46	13.54
MEAN	1.72	3.17	1.84	.81	.65	.52	.42	.34	.27	.23	.31	.45
MAX	3.0	7.0	4.5	.95	.73	.61	.45	.37	.29	.23	.37	.77
MIN	1.1	1.1	.95	.73	.60	.45	.37	.29	.23	.20	.23	.33
AC-FT	106	189	113	50	36	32	25	21	16	14	19	27

CAL YR 1978 TOTAL 488.45 MEAN 1.34 MAX 8.5 MIN .20 AC-FT 969
WTR YR 1979 TOTAL 326.29 MEAN .89 MAX 7.0 MIN .20 AC-FT 647

16801000 SOUTH FORK TALOFOFO STREAM

LOCATION.--Lat 15°12'58" N., long 145°46'31" E., on left bank 0.3 mi (0.5 km) upstream from confluence with Middle and North Forks, 1.4 mi (2.3 km) south of Ogso Dogas, and 2.2 mi (3.5 km) southeast of Tanapag.

DRAINAGE AREA.--0.69 mi² (1.79 km²). Area at site used prior to Mar. 31, 1971, 0.73 mi² (1.89 km²).

PERIOD OF RECORD.--October 1968 to current year. Low-flow records not equivalent prior to Mar. 31, 1971, due to undetermined amount of underflow between sites.

REVISED RECORDS.--WDR HI-78-2: 1976-77(M).

GAGE.--Water-stage recorder. Concrete control since Mar. 31, 1971. Altitude of gage is 30 ft (9.1 m), from topographic map. Prior to Mar. 31, 1971, at site 0.2 mi (0.3 km) downstream at different datum.

REMARKS.--Records fair. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 1.46 ft³/s (0.041 m³/s), 1,060 acre-ft/yr (1.31 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,100 ft³/s (116 m³/s), Aug. 4, 1976, gage height, 8.15 ft (2.484 m), from rating curve extended above 59 ft³/s (1.67 m³/s) on basis of slope-area measurements at gage heights 7.30 and 8.15 ft (2.225 and 2.484 m); no flow at times prior to Mar. 31, 1971, at site then in use, and at present site, July 16, 17, 19, 20, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 400 ft³/s (11.3 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 2	0530	*1270	36.0	*5.96	1.817
Nov. 3	0400	736	20.8	5.21	1.588

Minimum discharge, 0.03 ft³/s (0.001 m³/s) July 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.0	6.9	.70	.42	.22	.16	.08	.08	.07	.34	5.6
2	4.7	115	4.4	.70	.42	.22	.14	.10	.07	.08	1.7	1.1
3	6.5	154	6.9	.70	.38	.20	.12	.07	.07	.07	1.2	.66
4	4.2	16	4.1	.66	.38	.20	.12	.07	.07	.14	.70	.82
5	3.9	5.0	3.2	.66	.38	.24	.12	.07	.07	.12	.50	.50
6	5.7	4.0	2.7	.62	.38	.24	.14	.07	.07	.07	.46	.42
7	5.1	3.5	2.3	.62	.46	.22	.14	.10	.08	.07	.38	.42
8	4.6	3.0	2.1	.62	.38	.20	.12	.08	.07	.06	6.1	.34
9	3.7	2.5	2.0	.58	.34	.18	.11	.07	.08	.06	1.2	.30
10	3.6	2.5	1.8	.82	.42	.18	.11	.07	.08	.06	.76	.27
11	2.7	2.3	1.8	.76	.38	.16	.11	.07	.10	.05	.58	1.1
12	2.3	2.1	1.6	.82	.34	.30	.11	.06	.08	.05	.46	.54
13	2.1	2.0	1.5	.76	.38	.20	.11	.06	.08	.05	.38	.69
14	1.9	2.0	1.5	.66	.30	.18	.11	.06	.07	.05	.30	.42
15	2.1	2.4	1.4	.58	.30	.20	.10	.05	.08	.04	.30	.34
16	2.6	1.8	1.2	.54	.30	.18	.10	.07	.08	.04	.34	.38
17	1.9	1.7	1.2	.54	.30	.18	.12	.06	.09	.04	.76	.34
18	1.7	1.8	1.1	.55	.27	.20	.11	.06	.08	.08	.58	3.7
19	1.6	3.1	1.1	.50	.27	.16	.11	.08	.07	.06	.62	1.2
20	1.4	2.3	1.1	.55	.27	.16	.11	.06	.07	.04	.46	.76
21	1.3	2.1	1.1	.50	.24	.13	.11	.05	.06	.08	.38	.62
22	1.2	1.8	1.0	.46	.24	.14	.12	.07	.06	.10	.30	7.8
23	1.2	1.7	1.1	.54	.22	.14	.14	.06	.05	.12	.27	1.3
24	1.2	1.6	1.4	.50	.22	.12	.12	.05	.08	1.6	.34	.94
25	1.1	1.5	1.1	.54	.22	.12	.11	.08	.14	.81	.38	1.1
26	1.1	1.4	1.2	.50	.20	.12	.10	.68	.08	.66	1.4	1.2
27	.94	1.7	.94	.46	.20	.12	.10	.58	.06	.34	.54	6.9
28	1.2	41	.88	.42	.20	.12	.08	.16	.06	.24	.42	1.6
29	1.2	23	.88	.42	---	.11	.07	.11	.08	.27	.34	14
30	1.7	5.1	.82	.42	---	.11	.07	.08	.06	.42	.38	18
31	2.1	---	.76	.42	---	.11	---	.08	---	.58	.30	---
TOTAL	79.34	409.9	61.08	18.12	8.81	5.36	3.39	3.41	2.27	6.52	23.17	73.36
MEAN	2.56	13.7	1.97	.58	.31	.17	.11	.11	.076	.21	.75	2.45
MAX	6.5	154	6.9	.82	.46	.30	.16	.68	.14	1.6	6.1	18
MIN	.94	1.4	.76	.42	.20	.11	.07	.05	.05	.04	.27	.27
AC-FT	157	813	121	36	17	11	6.7	6.8	4.5	13	46	146

CAL YR 1978 TOTAL 1601.98 MEAN 4.39 MAX 303 MIN .02 AC-FT 3180
WTR YR 1979 TOTAL 694.73 MEAN 1.90 MAX 154 MIN .04 AC-FT 1380

MARIANA ISLANDS, ISLAND OF SAIPAN

16801500 MIDDLE FORK TALOFOFO STREAM

LOCATION.--Lat 15°13'05" N., long 145°46'36" E., on left bank 700 ft (213 m) upstream from confluence with South and North Forks, 2.2 mi (3.5 km) southeast of Tanapag, and 3.7 mi (6.0 km) east of Garapan.

DRAINAGE AREA.--0.35 mi² (0.91 km²).

PERIOD OF RECORD.--March 1968 to current year.

REVISED RECORDS.--WDR HI-76-1: 1968-69(P), 1970-71(M), 1972(P), 1973-75(M).

GAGE.--Water-stage recorder. Concrete control since Feb. 28, 1971. Altitude of gage is 25 ft (7.6 m), from topographic map.

REMARKS.--Records fair except those for periods of no gage-height record, which are poor. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 0.682 ft³/s (0.019 m³/s), 494 acre-ft/yr (609,000 m³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 840 ft³/s (23.8 m³/s) Aug. 12, 1978, gage height, 6.58 ft (2.006 m), from rating curve extended above 5.3 ft³/s (0.150 m³/s) on basis of slope-area measurements at gage heights 5.38 ft (1.640 m) and 6.58 ft (2.006 m); minimum, 0.05 ft³/s (0.001 m³/s) July 5, 6, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*) from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 2	0615	*322	9.12	*4.85	1.478
Nov. 3	0445	197	5.58	4.22	1.286

Minimum discharge, 0.14 ft³/s (0.004 m³/s) July 14, 15, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.2	3.0	.80	.60	.50	.41	.27	.30	.27	.37	1.9
2	2.0	30	2.1	.80	.60	.50	.33	.27	.27	.30	1.1	.45
3	3.0	51	3.0	.80	.58	.50	.33	.27	.27	.24	.78	.33
4	2.0	9.0	1.9	.75	.58	.50	.33	.33	.27	.30	.50	.33
5	2.0	2.6	1.7	.75	.58	.55	.33	.33	.33	.27	.37	.27
6	3.0	1.9	1.7	.70	.58	.55	.37	.33	.30	.21	.37	.27
7	2.5	1.5	1.6	.70	.60	.55	.37	.33	.30	.23	.33	.30
8	1.9	1.4	1.6	.70	.58	.50	.30	.27	.27	.21	2.5	.27
9	1.6	1.4	1.5	.70	.55	.45	.30	.30	.27	.18	.72	.30
10	1.9	1.3	1.4	.90	.60	.45	.30	.27	.27	.18	.45	.27
11	1.5	1.3	1.4	.85	.58	.45	.30	.27	.24	.21	.33	.54
12	1.5	1.2	1.3	.90	.55	.60	.30	.30	.24	.18	.30	.33
13	1.4	1.1	1.3	.85	.58	.41	.30	.33	.21	.18	.27	.41
14	1.4	1.1	1.3	.75	.55	.41	.37	.24	.24	.16	.27	.30
15	1.5	1.4	1.2	.70	.55	.41	.37	.24	.27	.16	.27	.27
16	1.7	1.1	1.2	.65	.55	.41	.37	.24	.21	.18	.33	.27
17	1.3	1.1	1.2	.65	.55	.41	.41	.21	.27	.18	.50	.24
18	1.2	1.2	1.1	.65	.55	.41	.37	.24	.27	.21	.37	2.4
19	1.2	1.5	1.1	.60	.55	.41	.33	.23	.24	.18	.45	.72
20	1.1	1.3	1.1	.80	.55	.41	.30	.21	.21	.21	.30	.41
21	1.1	1.4	1.1	.60	.52	.37	.37	.21	.21	.27	.27	.37
22	1.1	1.2	1.0	.55	.52	.37	.33	.27	.21	.33	.30	2.0
23	1.1	1.2	1.0	.60	.52	.37	.40	.24	.27	.68	.24	.55
24	1.1	1.2	1.2	.60	.52	.33	.35	.24	.30	1.8	.24	.41
25	1.1	1.1	1.1	.72	.52	.33	.32	.33	.30	.78	.25	.41
26	1.1	1.1	1.1	.60	.50	.33	.30	1.3	.24	.60	.70	.50
27	1.1	1.2	1.0	.60	.50	.33	.30	.85	.21	.45	.27	1.6
28	1.4	7.3	1.0	.60	.50	.33	.27	.33	.27	.37	.24	.55
29	1.2	6.9	1.0	.60	---	.30	.27	.30	.27	.37	.22	4.9
30	1.3	2.0	.90	.60	---	.30	.27	.27	.18	.45	.25	8.1
31	1.4	---	.85	.60	---	.33	---	.30	---	.55	.22	---
TOTAL	48.2	138.2	42.95	21.67	15.51	13.07	9.97	10.12	7.71	10.89	14.08	29.97
MEAN	1.55	4.61	1.39	.70	.55	.42	.33	.33	.26	.35	.45	1.00
MAX	3.0	51	3.0	.90	.60	.60	.41	1.3	.33	1.8	2.5	8.1
MIN	1.1	1.1	.85	.55	.50	.30	.27	.21	.18	.16	.22	.24
AC-FT	96	274	85	43	31	26	20	20	15	22	28	59

CAL YR 1978 TOTAL 581.17 MEAN 1.59 MAX 84 MIN .13 AC-FT 1150
WTR YR 1979 TOTAL 362.34 MEAN .99 MAX 51 MIN .16 AC-FT 719

NOTE.--No gage-height record Dec. 8 to Jan. 20, Jan. 28 to Mar. 3.

16808300 FINILE CREEK AT AGAT

LOCATION.--Lat 13°22'39" N., long 144°39'26" E., on right bank 0.4 mi (0.6 km) upstream from estuary and 0.4 mi (0.6 km) south of Agat School.

DRAINAGE AREA.--0.28 mi^2 (0.73 km^2).

PERIOD OF RECORD.--April 1960 to current year. Prior to October 1969, published as Finile River at Agat.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (6.1 m), from topographic map.

REMARKS.--Records good. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--19 years, 1.40 ft^3/s (0.040 m^3/s), 1,010 acre-ft/yr (1.25 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 326 ft^3/s (9.23 m^3/s) May 21, 1976, gage height, 3.88 ft (1.183 m), from rating curve extended above 80 ft^3/s (2.27 m^3/s) on basis of slope-area measurement at gage height 3.66 ft (1.116 m); minimum, 0.04 ft^3/s (0.001 m^3/s) July 2-4, 6, 8, 9, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 208 ft^3/s (5.89 m^3/s) Sept. 26, gage height, 2.77 ft (0.844 m), from rating curve extended as explained above, no other peak above base of 170 ft^3/s (4.81 m^3/s); minimum, 0.07 ft^3/s (0.002 m^3/s) July 10, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	2.0	2.3	1.1	.74	.43	.27	.16	.18	.15	1.8	.81
2	2.6	8.6	1.9	1.1	.70	.37	.22	.15	.15	.15	.98	.77
3	2.2	15	1.8	1.1	.70	.37	.22	.15	.13	.15	.64	.70
4	2.1	3.6	1.7	1.0	.67	.43	.22	.15	.14	.15	.47	.70
5	2.1	2.8	4.6	1.0	.65	.37	.22	.14	.14	.15	.39	.70
6	2.1	4.1	1.9	.97	.63	.37	.29	.15	.15	.12	.33	.70
7	2.8	2.7	1.8	.97	.64	.43	.25	.15	.15	.15	.31	.67
8	3.3	2.4	1.7	.96	.87	.37	.24	.17	.15	.15	.40	.73
9	2.2	2.3	1.6	.92	.60	.37	.25	.30	.15	.12	.71	.66
10	3.4	3.1	1.6	1.7	.51	.37	.24	.20	.15	.12	.32	.73
11	2.3	2.2	1.6	2.2	.51	.37	.23	.23	.15	.12	.62	.97
12	5.1	2.0	1.5	1.3	.51	.43	.22	.25	.15	.15	.81	1.1
13	6.4	2.1	1.5	1.7	.43	.37	.21	.25	.15	.12	.89	.97
14	3.1	7.8	1.5	1.1	.43	.32	.21	.65	.12	.12	.54	1.0
15	2.4	3.2	1.5	1.0	.43	.32	.24	.19	.12	.12	.95	.98
16	2.2	2.3	1.4	1.0	.43	.32	.21	.16	.15	.18	3.8	.91
17	2.0	2.1	1.4	.96	.51	.32	.21	.15	.15	.12	10	1.3
18	1.9	5.2	1.4	.91	.51	.32	.21	.17	.15	.09	2.4	1.4
19	2.2	6.5	1.3	.90	.43	.51	.20	.16	.15	.12	1.2	1.5
20	1.9	3.8	1.3	.90	.43	.37	.20	.15	.15	.22	1.0	2.2
21	1.8	3.1	1.3	.87	.43	.32	.22	.15	.12	.12	.97	2.2
22	1.6	2.7	1.3	.86	.37	.27	.21	.14	.15	.60	.88	2.8
23	1.9	2.4	1.2	.85	.37	.27	.21	.14	.12	.18	.83	6.1
24	2.2	2.3	1.2	.82	.37	.27	.20	.14	.12	.27	.75	4.1
25	1.6	2.2	1.2	.82	.37	.27	.18	.14	.15	.81	.64	4.8
26	1.6	2.1	1.1	.79	.37	.27	.17	.14	.15	.27	1.2	15
27	1.6	2.0	1.1	.81	.37	.27	.17	.17	.15	.37	.66	3.4
28	1.5	2.4	1.3	.83	.37	.22	.25	.18	.15	4.1	.70	2.5
29	2.0	1.9	1.3	.77	---	.22	.20	.16	.15	.50	.81	2.2
30	8.6	1.9	1.1	.77	---	.22	.17	.14	.15	1.1	.81	2.1
31	2.0	---	1.1	.76	---	.27	---	.14	---	.71	.81	---
TOTAL	81.2	106.8	48.5	31.74	14.35	10.40	6.54	5.72	4.34	11.80	37.62	64.70
MEAN	2.62	3.56	1.56	1.02	.51	.34	.22	.18	.14	.38	1.21	2.16
MAX	8.6	15	4.6	2.2	.87	.51	.29	.65	.18	4.1	10	15
MIN	1.5	1.9	1.1	.76	.37	.22	.17	.14	.12	.09	.31	.66
AC-FT	161	212	96	63	28	21	13	11	8.6	23	75	128

CAL YR 1978 TOTAL 510.11 MEAN 1.40 MAX 15 MIN .12 AC-FT 1010
WTR YR 1979 TOTAL 423.71 MEAN 1.16 MAX 15 MIN .09 AC-FT 840

16809600 LA SA FUA RIVER NEAR UMATAC

LOCATION.--Lat 13°18'23" N., long 144°39'45" E., on left bank 0.6 mi (1.0 km) north of Sanchez School in Umatac and 0.8 mi (1.3 km) upstream from mouth.

DRAINAGE AREA.--1.06 mi² (2.75 km²).

PERIOD OF RECORD.--April 1953 to July 1960, October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 120 ft (36.6 m), from topographic map.

REMARKS.--Records good. Water is diverted through 2-in (5.1-cm) pipe at coast highway above station for consumption in nearby homes. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years (water years 1954-59, 1977-79), 3.98 ft³/s (0.113 m³/s), 2,880 acre-ft/yr (3.55 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s (40.8 m³/s) Sept. 27, 1978, gage height, 6.05 ft (1.844 m), from rating curve extended above 109 ft³/s (3.09 m³/s) by test on model of station site; minimum, 0.12 ft³/s (0.003 m³/s) June 13, 1979, during short regulation of flow at diversion upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 13	0130	519	14.7	4.34	1.323	Sept. 15	1300	785	22.2	5.01	1.527
July 28	1400	795	22.5	5.03	1.533	Sept. 25	1200	*870	24.6	*5.18	1.579
Aug. 26	0400	568	16.1	4.48	1.366						

Minimum discharge, 0.12 ft³/s (0.003 m³/s) June 13, during short regulation of flow at diversion upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	4.2	8.1	1.2	1.0	.67	.51	.35	.33	.31	22	1.6
2	3.6	25	2.9	1.1	.97	.67	.45	.31	.30	.31	11	1.4
3	5.0	66	2.3	1.1	.97	.79	.44	.33	.28	.33	7.6	1.3
4	5.0	9.2	2.1	1.1	.97	.84	.62	.29	.28	.55	3.7	1.2
5	3.9	5.5	38	1.1	.89	.68	.42	.29	.37	.40	2.7	1.1
6	4.5	15	3.6	.79	.89	.59	.54	.29	.31	.30	2.1	1.2
7	4.4	5.0	2.6	.40	.93	.75	.41	.31	.26	.28	1.8	.97
8	8.7	3.7	2.7	.53	.97	.60	.39	.41	.26	.26	1.7	1.4
9	4.3	3.5	2.2	.40	.82	.56	.40	.76	.30	.23	3.1	.97
10	14	3.2	2.1	36	.82	.58	.38	.36	.26	.35	1.7	1.1
11	4.0	2.7	2.6	16	.79	.53	.37	.29	.25	.31	3.3	2.1
12	18	2.5	2.0	5.5	.76	.72	.36	.29	.31	.33	4.9	1.5
13	26	5.1	1.9	10	.73	.56	.36	.27	.30	.26	9.7	1.0
14	5.4	48	3.9	3.0	.73	.53	.35	3.3	.23	.25	3.5	4.4
15	3.6	12	2.3	2.2	.70	.52	.41	.42	.25	.79	2.6	39
16	3.0	3.8	1.9	2.4	.70	.52	.35	.33	.28	.31	7.8	3.8
17	2.6	5.5	1.8	1.8	.79	.51	.34	.29	.28	.35	87	14
18	2.4	33	1.8	1.7	.76	.50	.34	.33	.33	.35	14	3.0
19	3.0	32	1.7	1.6	.67	1.3	.35	.33	.40	.28	5.5	2.4
20	2.3	17	1.6	1.5	.70	2.0	.33	.31	.37	.51	3.7	12
21	2.0	5.5	1.6	1.5	.64	.65	.39	.31	.28	.40	3.2	5.2
22	2.9	4.1	1.6	1.4	.64	.54	.38	.30	.31	6.0	2.4	22
23	4.6	3.3	1.5	1.3	.64	.55	.41	.30	.30	1.2	2.0	33
24	6.0	3.0	1.5	1.2	.61	.52	.36	.31	.28	1.6	1.8	6.4
25	3.0	3.0	1.4	1.3	.64	.49	.31	.31	.53	4.5	1.7	55
26	2.6	2.6	1.3	1.1	.61	.48	.35	.33	.31	1.8	23	17
27	5.4	2.4	1.3	1.2	.58	.46	.32	.44	.26	3.6	3.2	6.4
28	3.2	4.0	1.4	1.1	.58	.47	1.0	.39	.44	58	13	4.2
29	5.6	2.2	1.7	1.1	---	.49	.44	.31	.31	5.9	3.9	3.8
30	34	3.5	1.3	1.1	---	.45	.36	.29	.31	23	2.4	3.3
31	5.1	---	1.2	1.1	---	.45	---	.34	---	13	1.9	---
TOTAL	202.0	335.5	103.9	102.82	21.50	19.97	12.44	13.49	9.28	126.06	257.9	251.74
MEAN	6.52	11.2	3.35	3.32	.77	.64	.41	.44	.31	4.07	8.32	8.39
MAX	34	66	38	36	1.0	2.0	1.0	3.3	.53	58	87	55
MIN	2.0	2.2	1.2	.40	.58	.45	.31	.27	.23	.23	1.7	.97
AC-FT	401	665	206	204	43	40	25	27	18	250	512	499

CAL YR 1978 TOTAL 1486.32 MEAN 4.07 MAX 133 MIN .20 AC-FT 2950
WTR YR 1979 TOTAL 1456.60 MEAN 3.99 MAX 87 MIN .23 AC-FT 2890

16835000 INARAJAN RIVER NEAR INARAJAN

LOCATION.--Lat 13°16'41" N., long 144°44'15" E., on right bank 0.6 mi (1.0 km) northwest of Inarajan and 4.9 mi (7.9 km) east of Merizo.

DRAINAGE AREA.--4.42 mi^2 (11.45 km^2).

PERIOD OF RECORD.--September 1952 to current year.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (4.6 m), from topographic map.

REMARKS.--Records fair. Stage-discharge relation not determined above gage height 11.0 ft (3.35 m) owing to ungaged overbank flow. Village of Inarajan diverted about 40,000 gallons (151 m^3) a day above station for domestic use until October 1973, and during dry periods about 250,000 gallons (946 m^3) a day for irrigation. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years, 17.0 ft^3/s (0.481 m^3/s), 12,320 acre-ft/yr (15.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 12.90 ft (3.932 m) Oct. 11, 1963 (discharge not determined); minimum discharge, 0.42 ft^3/s (0.012 m^3/s) June 21, 22, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 11.18 ft (3.408 m) Aug. 26 (0445), from floodmarks, discharge not determined, no other peak above base of 1,700 ft^3/s (48.1 m^3/s); minimum daily discharge, 1.0 ft^3/s (0.028 m^3/s) July 14, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	21	25	6.8	5.8	4.0	2.8	2.2	1.9	2.0	31	7.3
2	13	171	14	6.8	5.6	3.8	2.7	2.1	2.0	1.9	24	7.0
3	11	281	13	6.8	5.6	4.6	2.6	2.1	1.9	1.8	18	6.7
4	13	42	12	7.0	5.3	4.6	2.9	2.0	1.9	2.3	10	6.5
5	14	26	81	6.5	5.3	4.4	2.6	1.9	2.3	1.8	9.6	6.7
6	14	21	16	6.1	5.3	3.8	2.8	2.0	2.2	1.6	6.5	6.5
7	12	17	13	6.1	5.8	3.8	2.6	2.0	1.9	1.6	5.1	6.2
8	18	15	13	6.1	6.8	3.7	2.5	2.3	1.9	1.4	4.6	6.2
9	15	14	13	5.6	5.6	3.3	2.3	4.0	1.9	1.4	4.8	6.5
10	13	17	12	47	5.1	3.3	2.3	2.5	1.8	1.6	3.9	6.2
11	11	14	12	48	5.1	3.2	2.2	2.2	1.7	1.3	5.7	8.3
12	27	13	11	14	4.9	4.4	2.2	2.1	1.9	1.3	20	6.7
13	59	13	10	23	4.9	3.3	2.1	2.0	1.8	1.3	27	6.2
14	18	171	14	12	4.9	3.2	2.1	7.3	1.7	1.0	9.6	7.0
15	14	41	11	9.4	4.6	3.1	2.9	2.5	1.8	2.1	7.0	5.9
16	12	19	10	10	4.6	3.2	2.5	2.0	1.7	1.1	15	5.4
17	11	17	9.7	8.4	4.7	3.2	2.2	2.0	2.6	1.1	267	14
18	10	87	9.4	8.1	4.7	3.2	2.2	2.5	2.6	1.0	32	14
19	9.7	66	9.1	7.5	4.6	3.8	2.3	2.0	2.3	1.0	15	39
20	9.4	34	8.7	7.3	4.6	5.6	2.3	2.2	3.0	2.0	12	14
21	8.7	23	8.4	7.3	4.2	3.3	2.8	1.9	2.5	1.4	12	11
22	8.4	20	8.4	6.8	4.2	3.1	2.6	1.9	2.2	8.0	9.9	16
23	12	17	8.1	6.8	4.0	3.1	2.6	1.9	2.2	2.8	8.0	15
24	15	16	8.4	6.5	4.0	3.1	2.3	1.9	3.0	2.8	7.3	12
25	10	15	7.8	6.5	4.0	2.9	2.2	1.9	5.0	9.2	20	41
26	9.4	15	7.3	6.3	3.7	2.8	2.2	1.9	2.5	4.6	170	105
27	10	14	7.3	7.8	3.5	2.8	2.2	2.1	2.0	4.6	16	22
28	11	19	7.3	7.0	3.7	2.8	4.4	2.2	2.2	76	50	15
29	10	14	8.1	6.3	---	2.7	2.9	1.9	2.1	13	20	12
30	25	13	7.3	6.1	---	2.7	2.3	1.9	2.0	26	9.0	12
31	47	---	6.8	6.1	---	2.6	---	1.9	---	20	8.0	---
TOTAL	485.6	1266	402.1	326.0	135.1	107.4	75.6	71.3	66.5	199.0	858.0	447.3
MEAN	15.7	42.2	13.0	10.5	4.83	3.46	2.52	2.30	2.22	6.42	27.7	14.9
MAX	59	281	81	48	6.8	5.6	4.4	7.3	5.0	76	267	105
MIN	8.4	13	6.8	5.6	3.5	2.6	2.1	1.9	1.7	1.0	3.9	5.4
AC-FT	963	2510	798	647	268	213	150	141	132	395	1700	887

CAL YR 1978 TOTAL 4496.9 MEAN 12.3 MAX 281 MIN 1.4 AC-FT 8920
WTR YR 1979 TOTAL 4439.9 MEAN 12.2 MAX 281 MIN 1.0 AC-FT 8810

16840000 TINAGA RIVER NEAR INARAJAN

LOCATION.--Lat 13°17'10" N., long 144°45'04" E., on right bank 0.3 mi (0.5 km) upstream from mouth, 0.9 mi (1.4 km) northeast of Inarajan, and 4.5 mi (7.2 km) south of Talofofo.

DRAINAGE AREA.--1.89 mi^2 (4.90 km^2).

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1969, published as Pauliluc River near Inarajan.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (4.6 m), from topographic map.

REMARKS.--Records good. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years, 5.58 ft^3/s (0.158 m^3/s), 4,040 acre-ft/yr (4.98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,980 ft^3/s (84.4 m^3/s) Oct. 15, 1953, gage height, 13.11 ft (3.996 m), from rating curve extended above 210 ft^3/s (5.95 m^3/s); minimum, 0.15 ft^3/s (0.004 m^3/s) May 16, 21-23, 29, 1966, June 13, 29, 30, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 365 ft^3/s (10.3 m^3/s) Sept. 26, gage height, 3.90 ft (1.189 m), no peak above base of 400 ft^3/s (11.3 m^3/s); minimum, 0.18 ft^3/s (0.005 m^3/s) June 17, 21-23, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	5.3	9.4	2.8	1.9	.93	.51	.51	.39	.39	8.6	2.2
2	4.8	41	6.2	2.5	1.8	.91	.51	.44	.39	.36	7.4	2.0
3	4.5	88	5.3	2.3	1.7	.92	.47	.41	.36	.30	5.0	1.8
4	4.8	16	4.8	2.2	1.6	.84	.51	.39	.32	.32	3.2	1.7
5	4.5	12	19	2.1	1.5	.95	.44	.36	.41	.32	2.6	1.6
6	4.5	8.2	7.4	2.1	1.4	.90	.47	.36	.39	.26	2.2	1.7
7	4.8	6.8	5.6	2.0	1.4	.87	.44	.36	.34	.28	1.8	1.6
8	8.2	6.2	5.0	2.0	1.5	.85	.47	.41	.32	.28	1.7	1.7
9	6.5	5.9	5.0	1.9	1.2	.79	.44	.51	.32	.30	1.7	1.8
10	5.9	6.8	4.8	5.6	.95	.76	.44	.41	.30	.32	1.5	1.9
11	5.6	6.2	4.8	15	1.1	.74	.44	.39	.30	.32	2.6	2.1
12	11	5.3	4.5	5.3	1.1	1.1	.44	.41	.32	.34	9.4	2.0
13	32	5.3	3.9	6.8	1.0	.88	.41	.41	.28	.34	11	1.9
14	7.8	20	4.5	4.5	.98	.79	.41	.87	.28	.30	4.5	1.9
15	5.9	37	4.3	3.9	.91	.76	.51	.76	.28	.32	3.6	1.8
16	5.0	7.4	4.1	3.6	.87	.75	.41	.67	.26	.34	3.6	1.8
17	4.5	6.2	3.9	3.2	.87	.74	.39	.54	.32	.34	64	1.8
18	4.1	17	3.7	3.1	.85	.71	.36	.54	.30	.41	16	1.8
19	3.9	31	3.6	2.8	.81	.73	.51	.47	.29	.39	6.1	12
20	3.7	15	3.7	2.6	.84	.98	.51	.47	.27	.44	4.4	8.8
21	3.6	9.0	3.4	2.5	.85	.87	.58	.41	.22	.39	4.1	4.2
22	3.2	8.6	3.2	2.3	.81	.80	.54	.39	.24	.81	3.8	7.9
23	12	7.1	3.1	2.3	.79	.71	.39	.39	.24	.67	3.2	5.1
24	29	6.5	3.1	2.1	.76	.76	.36	.39	.26	.67	2.7	3.7
25	4.1	6.2	2.9	2.0	.98	.71	.36	.44	.30	1.1	2.8	5.3
26	3.9	5.9	2.8	1.9	.98	.71	.39	.39	.23	1.4	26	42
27	3.9	5.6	2.6	2.0	.91	.67	.36	.51	.24	1.1	5.7	9.8
28	3.9	6.8	2.5	2.0	.87	.62	.67	.51	.44	9.8	3.7	7.8
29	3.9	5.9	2.9	1.9	---	.58	.58	.41	.41	8.2	3.2	5.3
30	6.5	5.6	2.8	1.8	---	.54	.58	.39	.41	4.8	2.8	4.5
31	5.3	---	2.9	1.9	---	.51	---	.39	---	7.8	2.5	---
TOTAL	216.6	413.8	145.7	99.0	31.23	24.38	13.90	14.31	9.43	43.41	221.4	149.5
MEAN	6.99	13.8	4.70	3.19	1.12	.79	.46	.46	.31	1.40	7.14	4.98
MAX	32	88	19	15	1.9	1.1	.67	.87	.44	9.8	64	42
MIN	3.2	5.3	2.5	1.8	.76	.51	.36	.36	.22	.26	1.5	1.6
AC-FT	430	821	289	196	62	48	28	28	19	86	439	297

CAL YR 1978 TOTAL 1566.32 MEAN 4.29 MAX 88 MIN .26 AC-FT 3110
WTR YR 1979 TOTAL 1382.66 MEAN 3.79 MAX 88 MIN .22 AC-FT 2740

16847000 IMONG RIVER NEAR AGAT

LOCATION.--Lat 13°20'17" N., long 144°41'55" E., on left bank 500 ft (152 m) upstream from Fena Valley Reservoir, 1.4 mi (2.3 km) south of Fena Dam spillway, and 4.1 mi (6.6 km) southeast of Agat School.

DRAINAGE AREA.--1.95 mi^2 (5.05 km^2).

PERIOD OF RECORD.--March 1960 to March 1971. October 1971 to current year.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 120 ft (37 m), from topographic map.

REMARKS.--Records fair. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--18 years (water years, 1961-70, 1972-79), 10.2 ft^3/s (0.289 m^3/s), 7,390 acre-ft/yr (9.11 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft^3/s (173 m^3/s) Sept. 27, 1978, gage height, 11.3 ft (3.444 m), from outside floodmarks, and from rating curve extended above 110 ft^3/s (3.12 m^3/s) on basis of slope-area measurement of peak flow; minimum, 0.37 ft^3/s (0.010 m^3/s) May 21, 22, 26, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,030 ft^3/s (57.5 m^3/s) Sept. 15, gage height, 6.57 ft (2.003 m), no other peak above base of 1,400 ft^3/s (39.6 m^3/s); minimum, 0.43 ft^3/s (0.012 m^3/s) July 6, 7, 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	12	5.5	2.7	3.5	2.6	2.4	1.8	1.6	1.1	31	12
2	10	42	5.0	2.6	3.2	2.6	2.2	1.6	1.4	1.4	26	9.7
3	20	115	4.5	2.5	3.5	3.0	2.2	1.6	1.4	1.4	25	9.2
4	15	24	4.0	2.5	3.5	3.0	2.4	1.6	1.4	1.6	24	7.8
5	25	16	20	2.4	3.5	2.6	2.0	1.6	1.6	1.6	23	7.3
6	25	20	14	2.4	3.2	2.4	2.4	1.6	1.4	.71	20	6.3
7	20	15	6.0	2.3	3.5	2.8	2.0	1.6	1.4	.82	15	5.4
8	25	10	8.0	2.3	3.5	2.4	1.8	2.0	1.4	1.1	13	9.2
9	15	8.0	5.0	2.2	3.2	2.4	1.8	2.4	1.4	.52	15	5.4
10	10	7.0	4.5	43	3.2	2.4	1.8	1.6	1.2	1.2	11	9.7
11	8.0	6.0	4.5	28	3.2	2.4	1.8	1.6	1.2	1.2	13	5.4
12	20	5.5	4.0	9.8	3.2	3.0	1.8	1.6	1.6	1.2	17	4.1
13	35	10	3.5	16	3.0	2.4	1.8	1.4	1.4	1.2	16	3.5
14	11	40	4.5	6.8	2.8	2.4	1.8	6.0	1.2	1.2	18	4.1
15	8.0	20	5.0	6.0	2.8	2.2	1.8	2.0	1.2	1.8	15	87
16	7.2	10	4.0	5.4	2.8	2.2	1.8	1.8	1.2	1.2	18	47
17	6.4	7.0	3.5	5.1	3.0	2.2	1.8	1.6	1.4	1.6	80	36
18	6.1	32	5.0	4.8	2.8	2.2	1.6	1.6	1.6	1.4	31	68
19	5.8	34	3.5	4.5	2.8	4.5	1.8	1.6	1.6	1.4	24	50
20	6.1	16	3.0	4.2	2.8	3.8	1.8	1.6	1.4	2.0	20	56
21	5.8	11	3.0	4.5	2.6	2.6	2.0	1.6	1.4	1.8	20	18
22	5.8	10	3.0	4.2	2.6	2.4	1.8	1.4	1.4	9.8	15	17
23	6.4	8.8	2.8	3.8	2.6	2.4	1.8	1.6	1.6	2.6	13	22
24	7.2	7.8	2.8	3.8	2.6	2.4	1.8	1.4	1.4	2.4	10	16
25	6.4	9.2	2.7	3.8	2.6	2.2	1.6	1.4	2.0	5.1	10	75
26	6.1	7.3	2.6	3.8	2.6	2.2	1.6	1.4	1.4	3.0	32	34
27	6.4	6.8	2.5	3.8	2.4	2.2	1.6	2.0	1.4	4.8	19	15
28	5.8	15	3.0	3.8	2.4	2.2	3.0	1.8	2.4	69	31	11
29	7.5	8.3	3.5	3.8	---	2.4	2.2	1.6	1.4	24	24	9.3
30	47	5.0	3.0	3.5	---	2.2	1.8	1.4	1.2	28	17	9.8
31	11	---	2.8	3.5	---	2.2	---	1.6	---	29	14	---
TOTAL	409.0	538.7	148.7	197.8	83.4	78.9	58.0	55.4	43.6	205.15	660	670.2
MEAN	13.2	18.0	4.80	6.38	2.98	2.55	1.93	1.79	1.45	6.62	21.3	22.3
MAX	47	115	20	43	3.5	4.5	3.0	6.0	2.4	69	80	87
MIN	5.8	5.0	2.5	2.2	2.4	2.2	1.6	1.4	1.2	.52	10	3.5
AC-FT	811	1070	295	392	165	156	115	110	86	407	1310	1330

CAL YR 1978 TOTAL 2712.10 MEAN 7.43 MAX 250 MIN 1.2 AC-FT 5380
WTR YR 1979 TOTAL 3148.85 MEAN 8.63 MAX 115 MIN .52 AC-FT 6250

NOTE.--No gage-height record Dec. 6 to Jan. 9, Aug. 8 to Sept. 11.

16848100 ALMAGOSA RIVER NEAR AGAT

LOCATION.--Lat 13°20'43" N., long 144°41'36" E., on right bank 400 ft (122 m) upstream from Fena Valley Reservoir and 3.5 mi (5.6 km) southeast of Agat.

DRAINAGE AREA.--1.32 mi² (3.42 km²).

PERIOD OF RECORD.--April 1972 to current year.

REVISED RECORD.--WDR HI-75-1: Drainage area. WDR HI-76-1: 1972(P), 1973(M), 1974-75(P).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 155 ft (47 m), from topographic map.

REMARKS.--Records good. Up to 3.9 ft³/s (0.11 m³/s) diverted above upstream station for domestic use. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 6.04 ft³/s (0.171 m³/s), 4,380 acre-ft/yr (5.40 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,650 ft³/s (75.0 m³/s) Sept. 27, 1978, gage height, 7.78 ft (2.371 m), from rating curve extended above 81 ft³/s (2.29 m³/s) on basis of slope-area measurement at gage height 7.32 ft (2.231 m); minimum, 0.13 ft³/s (0.004 m³/s) June 27, July 11, 12, 14, 16, 17, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s (19.8 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 3	0330	915	25.9	5.51	1.679
Sept. 15	1200	*1120	31.7	*5.86	1.786

Minimum discharge, 0.13 ft³/s (0.004 m³/s) June 27, July 11, 12, 14, 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	12	4.3	1.1	.68	.58	.35	.24	.21	.23	12	1.2
2	7.1	39	3.9	1.1	.74	.52	.31	.24	.18	.30	12	.95
3	15	109	3.5	.94	.79	.63	.31	.24	.18	.24	8.2	.74
4	9.3	29	3.4	.90	.79	.63	.43	.21	.15	.29	4.7	.63
5	20	15	17	.90	.79	.58	.31	.21	.18	.27	3.0	.58
6	20	11	8.2	.79	.79	.47	.39	.21	.21	.20	1.7	.52
7	16	9.4	5.8	.73	.79	.68	.31	.21	.18	.27	1.2	.68
8	20	7.8	5.3	.73	.89	.52	.27	.27	.20	.20	1.2	1.0
9	14	7.3	4.4	.68	.74	.47	.27	.43	.20	.17	1.8	.74
10	12	6.1	3.9	16	.68	.47	.24	.24	.18	.17	.95	1.4
11	8.7	5.5	3.9	19	.68	.43	.27	.21	.19	.14	.89	1.0
12	18	5.1	3.3	6.5	.63	.58	.27	.21	.27	.27	2.4	1.1
13	39	7.4	3.1	10	.63	.47	.21	.21	.21	.21	3.8	.84
14	16	25	3.6	5.3	.63	.44	.21	1.7	.17	.14	3.6	.86
15	11	28	3.8	3.9	.58	.41	.27	.35	.18	.31	2.8	33
16	8.5	10	2.9	3.3	.63	.42	.21	.27	.18	.16	6.5	7.3
17	7.1	6.2	2.6	2.7	.68	.41	.21	.24	.20	.57	70	9.4
18	5.8	18	2.7	2.2	.63	.40	.21	.24	.30	.27	35	12
19	5.5	28	2.3	1.9	.58	.98	.21	.21	.29	.28	12	5.4
20	4.8	19	2.1	1.6	.58	.82	.21	.24	.23	.66	6.2	27
21	4.4	12	2.0	1.5	.52	.52	.27	.21	.17	.97	4.5	20
22	4.1	11	1.9	1.3	.52	.45	.24	.18	.18	5.9	3.3	12
23	4.2	7.4	1.8	1.2	.52	.43	.24	.18	.15	.80	2.4	14
24	5.3	6.2	1.8	1.1	.52	.41	.21	.18	.19	.59	1.7	14
25	4.1	6.2	1.6	1.0	.52	.39	.18	.18	.35	1.4	1.3	24
26	3.8	4.9	1.5	.89	.52	.37	.21	.18	.21	.89	13	18
27	3.9	4.4	1.3	.84	.47	.37	.18	.31	.20	1.1	3.9	12
28	3.6	7.9	1.6	.84	.47	.31	.47	.31	.51	40	4.4	7.9
29	3.9	4.1	2.3	.79	---	.35	.35	.21	.23	5.1	3.2	5.8
30	47	3.8	1.5	.74	---	.31	.27	.21	.22	7.1	2.2	5.2
31	14	---	1.2	.74	---	.31	---	.21	---	11	1.6	---
TOTAL	364.8	465.7	108.5	91.21	17.99	15.13	8.09	8.74	6.50	80.20	231.39	239.24
MEAN	11.8	15.5	3.50	2.94	.64	.49	.27	.28	.22	2.59	7.46	7.97
MAX	47	109	17	19	.89	.98	.47	1.7	.51	40	70	33
MIN	3.6	3.8	1.2	.68	.47	.31	.18	.18	.15	.14	.84	.52
AC-FT	724	924	215	181	36	30	16	17	13	159	459	475

CAL YR 1978 TOTAL 2029.03 MEAN 5.56 MAX 167 MIN .21 AC-FT 4020
WTR YR 1979 TOTAL 1637.49 MEAN 4.49 MAX 109 MIN .14 AC-FT 3250

16848500 MAULAP RIVER NEAR AGAT

LOCATION.--Lat 13°21'14" N., long 144°41'44" E., on right bank 100 ft (30 m), from Fena Valley Reservoir and 3.2 mi (5.1 km) southeast of Agat.

DRAINAGE AREA.--1.15 mi^2 (2.98 km^2).

PERIOD OF RECORD.--January 1972 to current year.

REVISED RECORDS.--WRD Hawaii 1973: 1972. WRD HI-75-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 130 ft (40 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 4.96 ft^3/s (0.141 m^3/s), 3,590 acre-ft/yr (4.43 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft^3/s (68.5 m^3/s) Sept. 27, 1978, gage height, 9.2 ft (2.804 m), from rating curve extended above 23 ft^3/s (0.65 m^3/s), on basis of slope-area measurements at gage heights 8.21 ft (2.502 m) and 9.2 ft (2.804 m); minimum, 0.33 ft^3/s (0.009 m^3/s) June 10-12, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft^3/s (17.0 m^3/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Nov. 3	0330	624	17.7	5.38	1.640
Sept. 15	1200	*690	19.5	*5.60	1.707

Minimum discharge, 0.34 ft^3/s (0.010 m^3/s) July 10, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	7.0	5.6	2.6	1.8	1.3	1.0	.62	.54	.55	6.1	1.6
2	5.5	51	4.1	2.4	1.8	1.2	.89	.59	.52	.57	5.6	1.4
3	12	85	3.6	2.4	1.8	1.3	.86	.58	.50	.54	4.0	1.4
4	7.0	11	3.6	2.3	1.8	1.4	.97	.57	.47	.54	2.7	1.3
5	15	7.2	29	2.3	1.9	1.3	.82	.56	.55	.54	2.1	1.2
6	15	8.3	5.0	2.2	1.8	1.2	1.1	.57	.55	.45	1.6	1.2
7	12	5.6	4.1	2.2	1.8	1.9	.79	.57	.59	.61	1.4	1.4
8	15	5.0	4.3	2.2	2.3	1.3	.75	.66	.62	.49	1.5	1.4
9	9.0	5.0	4.0	2.1	1.7	1.2	.74	1.2	.60	.42	2.1	1.4
10	9.0	5.6	3.8	19	1.6	1.2	.72	.80	.57	.42	1.3	1.9
11	6.0	4.3	3.8	16	1.6	1.2	.71	.89	.56	.39	1.4	1.8
12	14	4.0	3.4	4.8	1.5	1.3	.70	.95	.64	.59	2.4	1.7
13	30	7.2	3.2	7.6	1.4	1.2	.70	.97	.52	.51	3.1	1.4
14	12	39	3.6	3.6	1.4	1.1	.68	2.5	.48	.43	2.6	3.0
15	9.0	9.5	4.8	3.1	1.4	1.1	.84	.73	.49	.64	2.3	23
16	6.0	4.8	3.2	2.9	1.4	1.1	.71	.60	.46	.49	6.1	2.5
17	5.0	4.5	3.1	2.6	1.7	1.1	.66	.57	.51	.57	46	12
18	4.5	27	4.3	2.4	1.5	1.1	.67	.66	.71	.45	12	5.0
19	4.2	34	3.1	2.3	1.3	1.9	.67	.63	.67	.50	5.6	3.6
20	4.0	9.9	2.9	2.3	1.3	1.5	.64	.71	.62	.80	3.8	25
21	3.8	6.9	2.7	2.2	1.3	1.1	.79	.59	.54	1.3	3.1	5.6
22	3.7	6.4	2.7	2.1	1.2	.99	.71	.59	.46	5.7	2.6	6.7
23	3.7	5.0	2.7	2.1	1.2	1.0	.74	.54	.45	1.2	2.3	12
24	4.1	4.8	2.7	2.1	1.3	1.0	.68	.52	.43	.86	2.2	5.4
25	3.7	5.0	2.6	2.1	1.3	.95	.63	.51	.55	3.0	1.9	21
26	3.6	4.3	2.6	1.9	1.3	.90	.64	.51	.47	1.6	6.7	15
27	3.6	4.1	2.4	1.9	1.3	.89	.60	.65	.47	1.9	2.7	5.8
28	3.5	8.7	3.2	1.9	1.3	.89	1.0	.80	.71	30	2.4	4.3
29	3.6	4.0	3.4	1.9	---	.94	.80	.57	.57	3.8	2.1	3.7
30	40	4.0	2.6	1.9	---	.87	.64	.52	.58	6.3	1.8	3.8
31	8.0	---	2.4	1.9	---	.88	---	.57	---	5.1	1.7	---
TOTAL	281.5	388.1	132.5	109.3	43.0	36.31	22.85	22.30	16.40	71.26	143.2	176.5
MEAN	9.08	12.9	4.27	3.53	1.54	1.17	.76	.72	.55	2.30	4.62	5.88
MAX	40	85	29	19	2.3	1.9	1.1	2.5	.71	30	46	25
MIN	3.5	4.0	2.4	1.9	1.2	.87	.60	.51	.43	.39	1.3	1.2
AC-FT	558	770	263	217	85	72	45	44	33	141	284	350

CAL YR 1978 TOTAL 1915.97 MEAN 5.25 MAX 150 MIN .43 AC-FT 3800
WTR YR 1979 TOTAL 1443.22 MEAN 3.95 MAX 85 MIN .39 AC-FT 2860

NOTE.--No gage-height record Oct. 1 to Nov. 1.

MARIANA ISLANDS, ISLAND OF GUAM

16849000 FENA DAM SPILLWAY NEAR AGAT

LOCATION.--Lat 13°21'28" N., long 144°42'12" E., on left bank 3.5 mi (5.6 km) southeast of Agat and 5.8 mi (9.3 km) southwest of Yona.

DRAINAGE AREA.--5.88 mi² (15.23 km²).

PERIOD OF RECORD.--September 1951 to July 1952, November 1952 to current year. Daily mean gage heights published since October 1973.

REVISED RECORDS.--WSP 2137: Drainage area. WDR HI-78-2: 1977(M, m).

GAGE.--Water-stage recorder and concrete-dam control. Datum of gage is 111.35 ft (33.939 m) above mean sea level (from U.S. Navy construction plans).

REMARKS.--Gage-height records good. About 10 ft³/s (0.28 m³/s) is diverted from Fena Valley Reservoir and tributary springs for military and civilian use. Discharge records represent flow over spillway only.

AVERAGE DISCHARGE.--20 years (1953-73), 17.9 ft³/s (0.507 m³/s), 12,970 acre-ft/yr (16.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined, occurred Oct. 15, 1953 (gage height, at least 4.5 ft or 1.37 m); no flow for many days each year. Minimum recorded gage height, -21.36 ft (-6.51 m), Aug. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 1.67 ft (0.509 m), Nov. 3; minimum, -16.82 ft (-5.127 m) July 21.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.17	.15	-.09	-.41	-2.02	-4.63	-7.89	-11.13	-14.57	-13.33	-7.26
2	.15	.43	.12	-.11	-.46	-2.08	-4.75	-8.02	-11.25	-14.68	-12.83	-7.33
3	.18	.94	.10	-.15	-.50	-2.15	-4.87	-8.14	-11.36	-14.78	-12.52	-7.43
4	.26	.32	.08	-.20	-.54	-2.18	-4.96	-8.27	-11.49	-14.88	-12.44	-7.52
5	.28	.20	.33	-.23	-.58	-2.24	-5.08	-8.39	-11.60	-14.98	-12.42	-7.58
6	.29	.18	.28	-.26	-.63	-2.33	-5.16	-8.52	-11.72	-15.15	-12.47	-7.66
7	.25	.17	.12	-.30	-.66	-2.38	-5.28	-8.64	-11.84	-15.25	-12.53	-7.73
8	.29	.15	.13	-.34	-.66	-2.46	-5.38	-8.73	-11.96	-15.33	-12.59	-7.78
9	.20	.13	.11	-.42	-.71	-2.53	-5.50	-8.79	-12.07	-15.47	-12.58	-7.84
10	.23	.14	.10	.07	-.75	-2.62	-5.62	-8.88	-12.20	-15.60	-12.64	-7.86
11	.17	.12	.10	.34	-.81	-2.72	-5.73	-9.01	-12.32	-15.73	-12.73	-7.84
12	.27	.11	.08	.14	-.86	-2.78	-5.86	-9.13	-12.42	-15.85	-12.72	-7.83
13	.49	.16	.07	.19	-.92	-2.84	-5.98	-9.24	-12.54	-15.94	-12.60	-7.87
14	.23	.24	.09	.12	-.99	-3.00	-6.10	-9.20	-12.66	-16.08	-12.55	-7.87
15	.17	.46	.10	.09	-1.05	-3.06	-6.19	-9.24	-12.79	-16.15	-12.53	-7.19
16	.14	.18	.08	.07	-1.12	-3.17	-6.31	-9.36	-12.90	-16.28	-12.41	-6.27
17	.12	.14	.07	.04	-1.18	-3.29	-6.42	-9.48	-13.03	-16.40	-10.40	-6.07
18	.11	.30	.08	.02	-1.20	-3.38	-6.53	-9.58	-13.13	-16.48	-8.74	-5.65
19	.10	.49	.06	.01	-1.25	-3.45	-6.64	-9.69	-13.23	-16.60	-8.34	-5.07
20	.09	.30	.04	-.01	-1.29	-3.42	-6.76	-9.79	-13.32	-16.67	-8.12	-4.62
21	.08	.20	.01	-.03	-1.37	-3.49	-6.87	-9.90	-13.44	-16.76	-8.00	-3.83
22	.07	.19	-.02	-.06	-1.45	-3.59	-6.97	-10.05	-13.57	-16.59	-8.00	-3.51
23	.08	.14	-.03	-.09	-1.52	-3.70	-7.08	-10.18	-13.69	-16.49	-8.01	-3.25
24	.13	.13	-.02	-.14	-1.59	-3.81	-7.19	-10.30	-13.81	-16.59	-8.04	-2.82
25	.10	.14	-.03	-.17	-1.66	-3.91	-7.31	-10.42	-13.89	-16.58	-8.04	-2.00
26	.10	.13	-.05	-.21	-1.73	-4.02	-7.43	-10.54	-14.04	-16.59	-7.68	-.90
27	.09	.12	-.07	-.24	-1.81	-4.12	-7.54	-10.63	-14.15	-16.63	-7.47	-.38
28	.08	.20	-.08	-.28	-1.90	-4.23	-7.62	-10.71	-14.25	-15.68	-7.45	-.19
29	.11	.13	-.01	-.30	---	-4.33	-7.69	-10.79	-14.35	-14.24	-7.24	-.09
30	.52	.11	-.02	-.34	---	-4.45	-7.78	-10.91	-14.45	-14.13	-7.25	-.04
31	.24	---	-.06	-.37	---	-4.55	---	-11.02	---	-13.62	-7.25	---
MEAN	.19	.23	.06	-.10	-1.06	-3.17	-6.24	-9.47	-12.82	-15.70	-10.38	-5.31
MAX	.52	.94	.33	.34	-.41	-2.02	-4.63	-7.89	-11.13	-13.62	-7.24	-.04
MIN	.07	.11	-.08	-.42	-1.90	-4.55	-7.78	-11.02	-14.45	-16.76	-13.33	-7.87

WTR YR 1979 MEAN -5.34 MAX .94 MIN -16.76

16854500 UGUM RIVER ABOVE TALOFOFO FALLS, NEAR TALOFOFO, GUAM

LOCATION.--Lat 13°19'16" N., long 144°44'01" E., about 300 ft (91 m) upstream from Talofofo Falls, 0.9 mi (1.4 km) north of NASA Tracking Station, and 3.5 mi (5.6 km) southwest of main intersection in Talofofo village.

DRAINAGE AREA.--5.76 mi² (14.92 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 130 ft (40 m), from topographic map.

REMARKS.--Records good. No diversion above station. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,020 ft³/s (114 m³/s) Sept. 27, 1978, gage height, 12.31 ft (3.752 m), from floodmarks, from rating curve extended above 250 ft³/s (7.08 m³/s); minimum, 3.4 ft³/s (0.10 m³/s), June 27, 1978, July 14, 18, 19, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 850 ft³/s (24.1 m³/s) and maximum (*), from rating curve extended above 250 ft³/s (7.08 m³/s):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 14	2330	1090	30.9	6.92	2.109
July 28	1430	*1980	56.1	*9.00	2.743

Minimum discharge, 3.4 ft³/s (0.10 m³/s), July 14, 18, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	73	63	14	11	7.7	6.4	5.2	4.8	3.9	55	11
2	20	105	26	13	10	7.6	6.0	5.0	4.8	4.3	32	11
3	19	244	22	13	11	9.0	5.8	4.8	4.6	4.2	26	11
4	20	54	20	13	10	9.8	7.0	4.8	4.4	4.4	16	11
5	20	36	97	13	9.9	8.6	6.0	4.8	4.6	4.5	14	11
6	20	31	28	12	10	7.9	6.7	4.8	5.0	3.9	11	11
7	20	28	23	12	10	8.9	6.0	4.8	4.4	4.4	11	11
8	35	25	23	12	11	8.1	5.8	5.1	4.4	3.8	11	11
9	30	24	21	12	10	7.7	5.8	7.3	4.3	3.7	11	11
10	25	27	20	82	9.9	7.5	5.8	5.4	4.1	4.0	11	12
11	20	23	21	76	9.6	7.4	5.7	4.8	3.9	3.7	11	12
12	50	22	19	22	9.6	9.9	5.7	4.8	4.0	3.6	15	11
13	90	26	18	43	9.6	7.8	5.6	4.8	4.0	3.6	30	10
14	25	131	29	19	9.3	7.4	5.4	12	3.9	3.5	17	11
15	22	82	20	16	9.0	7.3	5.8	5.8	3.9	7.3	12	14
16	20	29	18	16	9.0	7.1	5.6	5.0	4.1	4.0	13	10
17	19	26	18	14	9.0	7.2	5.4	4.8	3.9	3.6	190	37
18	19	95	18	13	9.0	7.2	5.5	4.9	4.1	3.5	50	32
19	18	109	17	13	8.5	10	5.5	4.8	4.5	3.5	23	35
20	17	54	16	13	8.5	12	5.4	4.8	4.6	4.5	17	21
21	16	35	16	13	8.5	7.9	5.8	4.8	4.0	4.3	16	17
22	16	31	16	12	8.0	7.0	5.8	4.8	4.3	15	14	26
23	20	26	15	12	7.9	6.9	5.7	4.8	4.5	7.0	12	26
24	25	25	15	12	7.9	6.8	5.5	4.8	3.9	5.5	12	22
25	18	24	15	12	8.0	6.5	5.2	4.8	5.2	17	12	86
26	16	23	14	12	7.9	6.3	5.1	4.8	4.3	9.0	80	64
27	17	23	14	12	7.6	6.3	5.2	5.3	4.0	8.4	19	26
28	18	34	14	12	7.5	6.3	9.7	5.4	4.9	170	22	19
29	17	22	17	11	---	6.1	6.5	4.8	4.1	25	14	17
30	90	23	14	11	---	6.1	5.4	4.8	4.1	33	13	16
31	60	---	14	11	---	6.0	---	4.8	---	35	13	---
TOTAL	844	1510	701	571	257.2	238.3	176.8	162.4	129.6	411.1	803	623
MEAN	27.2	50.3	22.6	18.4	9.19	7.69	5.89	5.24	4.32	13.3	25.9	20.8
MAX	90	244	97	82	11	12	9.7	12	5.2	170	190	86
MIN	16	22	14	11	7.5	6.0	5.1	4.8	3.9	3.5	11	10
AC-FT	1670	3000	1390	1130	510	473	351	322	257	815	1590	1240

CAL YR 1978 TOTAL 6761.3 MEAN 18.5 MAX 306 MIN 3.7 AC-FT 13410
WTR YR 1979 TOTAL 6427.4 MEAN 17.6 MAX 244 MIN 3.5 AC-FT 12750

MARIANA ISLANDS, ISLAND OF GUAM

16858000 YLIG RIVER NEAR YONA

LOCATION.--Lat 13°23'28" N., long 144°45'06" E., on right bank 2.2 mi (3.5 km) upstream from mouth, 1.9 mi (3.1 km) southwest of Yona, and 5.6 mi (9.0 km) south of Agana.

DRAINAGE AREA.--6.48 mi² (16.78 km²).

PERIOD OF RECORD.--June 1952 to current year.

REVISED RECORDS.--WSP 1937: 1957-58. WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (6.1 m), from topographic map.

REMARKS.--Records fair. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years, 28.4 ft³/s (0.804 m³/s), 20,580 acre-ft/yr (25.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft³/s (139 m³/s) Sept. 9, 1963, gage height, 19.77 ft (6.026 m), from floodmarks, from rating curve extended above 620 ft³/s (17.6 m³/s) on basis of slope-area measurements at gage heights 11.24 ft (3.426 m) and 15.87 ft (4.837 m), maximum gage height, 20.63 ft (6.288 m) May 21, 1976; minimum, 0.07 ft³/s (0.002 m³/s) May 20, 1973, but may have been less during period of diversion from gage pool May 15 to June 20, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,260 ft³/s (64.0 m³/s) Nov. 14, gage height, 14.36 ft (4.377 m), from rating curve extended above 160 ft³/s (4.53 m³/s), no other peak above base of 2,000 ft³/s (56.6 m³/s); minimum, 0.35 ft³/s (0.010 m³/s) July 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	26	53	9.0	4.7	3.5	2.3	.91	1.1	1.1	51	9.1
2	30	180	23	8.7	4.5	3.4	2.3	.82	.94	.94	30	8.6
3	40	499	21	8.4	4.3	3.1	1.7	.76	.86	.86	29	8.0
4	38	55	21	7.9	4.3	4.5	1.7	.78	.86	.94	18	7.8
5	100	41	92	8.6	4.3	3.9	1.7	.71	.78	1.2	14	7.8
6	36	34	26	7.6	4.1	3.3	2.4	.68	.78	1.1	11	8.3
7	41	30	22	7.2	4.1	3.7	2.1	.64	.78	.86	9.7	7.3
8	85	27	22	7.1	6.6	3.7	1.6	.83	.71	.78	9.3	7.0
9	65	25	20	6.7	5.1	2.8	1.5	2.0	.64	.71	12	7.0
10	48	26	18	22	4.4	2.7	1.4	1.6	.64	.58	8.6	8.3
11	60	22	17	13	4.4	2.6	1.3	1.0	.58	.52	16	30
12	45	20	15	14	4.2	9.4	1.2	.81	.78	.46	18	21
13	60	23	15	39	4.2	4.3	1.2	.75	1.0	.64	23	14
14	45	295	15	11	3.9	3.0	1.2	1.7	.78	.71	16	13
15	31	153	20	10	3.7	2.7	1.2	1.6	.64	1.0	19	17
16	28	28	14	9.1	4.6	2.5	1.2	.95	.58	.94	72	15
17	25	24	13	8.0	5.0	2.4	1.1	.94	.58	1.0	253	18
18	23	110	13	7.3	5.1	2.4	1.1	.86	.71	.71	50	30
19	21	106	12	7.0	3.9	8.5	1.1	.86	.78	.94	32	39
20	19	41	12	6.8	3.7	6.5	1.0	.94	.94	1.8	24	30
21	18	34	11	6.6	3.6	3.7	1.1	.86	.94	1.5	21	24
22	18	32	11	6.1	3.3	2.8	1.4	.86	.78	2.6	17	33
23	19	26	11	6.1	3.2	2.7	1.2	.86	1.5	10	15	31
24	28	24	10	5.9	3.2	2.6	1.1	.94	1.2	8.8	14	28
25	17	23	10	6.3	3.2	2.3	.99	.86	1.4	26	13	54
26	15	21	9.4	5.5	3.0	2.1	.90	.86	1.4	13	17	156
27	18	20	9.1	5.5	2.9	2.0	.91	.94	1.0	6.6	13	41
28	22	77	16	5.5	2.8	2.0	1.1	1.4	.86	75	11	30
29	23	22	19	5.3	---	1.9	1.4	1.3	.86	21	17	26
30	184	21	11	4.9	---	1.8	1.2	1.1	1.2	26	13	67
31	27	---	9.3	4.9	---	1.8	---	1.0	---	31	10	---
TOTAL	1261	2065	590.8	281.0	114.3	104.6	41.60	31.12	26.60	239.29	876.6	796.2
MEAN	40.7	68.8	19.1	9.06	4.08	3.37	1.39	1.00	.89	7.72	28.3	26.5
MAX	184	499	92	39	6.6	9.4	2.4	2.0	1.5	75	253	156
MIN	15	20	9.1	4.9	2.8	1.8	.90	.64	.58	.46	8.6	7.0
AC-FT	2500	4100	1170	557	227	207	83	62	53	475	1740	1580

CAL YR 1978 TOTAL 8667.98 MEAN 23.7 MAX 499 MIN .40 AC-FT 17190
WTR YR 1979 TOTAL 6428.11 MEAN 17.6 MAX 499 MIN .46 AC-FT 12750

16865000 PAGO RIVER NEAR ORDOT
(National stream-quality accounting network station)

LOCATION.--Lat 13°26'08" N., long 144°45'14" E., on left bank 0.8 mi (1.3 km) south of Ordot, 2.6 mi (4.2 km) south of Agana, and 3.6 mi (5.8 km) southeast of Asan.

DRAINAGE AREA.--5.67 mi² (14.69 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1951 to current year.

REVISED RECORDS.--WSP 1937: 1954(M), 1958(M). WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 25 ft (7.6 m), from topographic map. Prior to Apr. 10, 1972, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records fair. No diversion above station.

AVERAGE DISCHARGE.--28 years, 25.4 ft³/s (0.719 m³/s), 18,400 acre-ft/yr (22.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,090 ft³/s (286 m³/s) May 21, 1976, gage height, 20.15 ft (6.142 m), from floodmarks, from rating curve extended above 320 ft³/s (9.06 m³/s) on basis of slope-area measurements at gage heights 13.22 ft (4.029 m), 15.07 ft (4.593 m), and 18.87 ft (5.752 m); no flow for many days in 1959 and 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,700 ft³/s (76.5 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 3	0600	3180	90.0	12.85	3.917
Nov. 14	2300	3040	86.0	12.46	3.798
Sept. 26	1630	*3880	110	*14.63	4.459

Minimum discharge, about 0.3 ft³/s (0.008 m³/s) on or about July 12, during period of leaking control.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	29	70	6.1	3.7	2.9	1.8	.88	1.1	.88	36	9.9
2	21	308	22	5.7	3.7	2.7	1.6	.88	.88	.79	36	8.8
3	36	714	17	5.7	3.5	2.7	1.5	.79	.88	.61	166	8.3
4	33	68	15	5.4	3.3	3.5	1.3	.79	.79	.88	33	7.8
5	22	41	143	5.0	3.3	3.1	1.5	.79	.69	.98	19	7.1
6	28	32	26	5.0	3.1	2.5	1.6	.70	.64	.88	12	6.8
7	52	26	19	4.7	3.1	2.5	1.6	.70	.64	.70	10	6.8
8	59	22	16	5.0	5.7	2.5	1.3	.79	.58	.62	9.4	6.4
9	31	19	15	4.7	3.5	2.1	1.2	1.6	.54	.58	9.9	6.0
10	31	26	14	16	3.3	1.9	1.2	1.3	.54	.48	7.4	6.0
11	23	16	13	10	3.1	1.9	1.2	.98	.48	.41	17	11
12	22	14	11	7.1	3.1	3.1	1.1	.79	.54	.37	101	7.8
13	52	23	11	70	2.9	2.7	1.1	.70	.65	.43	52	6.8
14	39	266	11	11	2.7	2.1	1.1	.88	.88	.50	28	6.4
15	24	96	16	9.9	3.1	1.9	.98	1.2	.65	.75	25	9.9
16	22	27	11	7.8	3.9	1.8	1.1	.79	.52	.65	132	7.4
17	18	22	9.9	7.1	3.9	1.8	1.1	.75	.47	1.6	299	6.8
18	16	210	9.4	6.8	3.3	1.8	1.1	.72	.56	3.7	75	21
19	14	134	8.8	6.1	2.7	7.1	1.1	.72	.64	1.2	38	24
20	13	47	8.3	5.7	2.5	4.6	1.1	.75	.78	1.2	27	19
21	11	64	7.8	5.7	2.9	2.9	1.3	.70	.70	1.1	22	14
22	11	38	8.8	5.4	2.7	2.1	1.3	.70	.61	1.4	19	29
23	17	26	7.5	5.4	2.5	2.1	1.3	.70	.88	23	15	19
24	42	22	7.1	4.3	2.3	2.3	1.2	.72	.70	7.4	13	18
25	13	20	7.1	4.3	2.1	1.9	1.1	.70	.98	41	12	26
26	12	17	6.8	4.3	2.1	1.6	.98	.70	1.2	12	30	361
27	11	16	6.8	4.1	2.1	1.6	.98	.79	.76	5.3	14	98
28	36	158	22	4.1	2.1	1.5	.98	1.2	.71	58	12	27
29	14	22	19	3.9	---	1.5	1.1	1.1	.88	19	39	21
30	232	18	7.8	3.7	---	1.5	.98	.88	1.2	10	16	36
31	26	---	6.8	3.7	---	1.5	---	.88	---	21	12	---
TOTAL	1007	2541	573.9	253.7	86.2	75.7	36.80	26.57	22.07	217.41	1336.7	793.0
MEAN	32.5	84.7	18.5	8.18	3.08	2.44	1.23	.86	.74	7.01	43.1	26.4
MAX	232	714	143	70	5.7	7.1	1.8	1.6	1.2	58	299	361
MIN	11	14	6.8	3.7	2.1	1.5	.98	.70	.47	.37	7.4	6.0
AC-FT	2000	5040	1140	503	171	150	73	53	44	431	2650	1570

CAL YR 1978 TOTAL 9966.53 MEAN 27.3 MAX 714 MIN .28 AC-FT 19770
WTR YR 1979 TOTAL 6970.05 MEAN 19.1 MAX 714 MIN .37 AC-FT 13830

16865000 PAGO RIVER NEAR ORDOT--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV										
02...	1430	216	188	7.7	26.0	5.0	7.5	1100	22000	71
DEC										
08...	1400	17	--	--	29.0	--	--	--	--	--
18...	1100	10	370	8.0	25.5	.50	7.9	40	750	160
JAN										
23...	1200	4.8	380	8.1	26.0	.40	8.0	11	740	150
FEB										
27...	1030	2.2	385	7.9	25.5	.40	6.4	7	180	160
MAR										
27...	1030	1.5	375	7.9	26.0	.80	6.0	7	170	160
27...	1115	1.6	--	--	26.0	--	--	--	--	--
APR										
24...	1030	1.3	365	7.9	28.0	1.0	6.1	22	190	130
MAY										
23...	1000	.40	330	7.9	27.0	.60	6.2	42	59	150
JUN										
26...	1100	.90	352	--	27.5	1.0	5.8	26	390	0
JUL										
31...	1230	16	235	8.2	27.5	12	7.7	140	2000	--
SEP										
05...	1100	6.8	350	8.2	27.0	.60	8.8	27	290	150
05...	1120	7.8	--	--	27.0	--	--	--	--	--
25...	1030	12	310	8.2	27.0	--	--	--	--	--

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)
NOV										
02...	0	21	4.4	8.5	20	.4	--	1.5	71	3.4
DEC										
08...	--	--	--	--	--	--	--	--	--	--
18...	0	49	8.8	18	20	.6	--	1.9	160	3.5
JAN										
23...	0	46	8.9	18	20	.6	--	1.6	160	4.1
FEB										
27...	0	50	9.4	17	18	.6	--	1.5	170	4.0
MAR										
27...	0	49	8.9	19	20	.7	--	1.8	160	5.7
27...	--	--	--	--	--	--	--	--	--	--
APR										
24...	0	40	8.4	19	23	.7	--	1.9	150	3.3
MAY										
23...	0	45	8.7	21	23	.8	23	2.1	160	4.6
JUN										
26...	0	--	--	--	--	--	--	--	160	6.2
JUL										
31...	--	--	--	--	--	--	--	--	88	2.4
SEP										
05...	0	42	10	18	21	.6	19	1.3	150	5.9
05...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

16865000 PAGO RIVER NEAR ORDOT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4)
NOV										
02...	11	.1	24	121	117	.16	70.6	.04	.02	--
DEC										
08...	--	--	--	--	--	--	--	--	--	--
18...	17	.1	37	229	232	.31	6.18	.06	.00	--
JAN										
23...	17	.1	38	228	230	.31	2.95	.01	.00	--
FEB										
27...	12	.1	36	236	232	.32	1.40	.03	.01	--
MAR										
27...	16	.1	34	229	231	.31	.93	.00	.01	--
27...	--	--	--	--	--	--	--	--	--	--
APR										
24...	15	.2	39	223	217	.30	.78	.01	.01	.01
MAY										
23...	18	.1	39	226	235	.31	.24	.01	.00	.00
JUN										
26...	14	.1	--	--	--	--	--	.03	.03	.04
JUL										
31...	15	.1	31	153	--	.21	6.61	.01	.01	.01
SEP										
05...	13	.1	38	218	219	.30	4.00	.00	.01	.01
05...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS PO4)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHATE, TOTAL (MG/L AS PO4)	PHOSPHORUS, DISSOLVED (MG/L AS P)
NOV										
02...	1.7	1.7	1.5	.18	1.7	7.7	--	.02	--	.00
DEC										
08...	--	--	--	--	--	--	--	--	--	--
18...	.00	.00	.00	.00	.06	.27	--	.00	--	.00
JAN										
23...	3.3	3.3	3.1	.20	3.3	15	--	.02	--	.00
FEB										
27...	.10	.11	.03	.08	.14	.62	--	.02	--	.00
MAR										
27...	.06	.07	.03	.04	.07	.31	--	.00	--	.00
27...	--	--	--	--	--	--	--	--	--	--
APR										
24...	.08	.09	.00	.09	.10	.44	.03	.01	.03	.00
MAY										
23...	.13	.13	.00	.13	.14	.62	.06	.02	--	.01
JUN										
26...	.09	.12	--	--	.15	.66	.03	.01	--	--
JUL										
31...	.42	.43	.00	.43	.44	1.9	.03	.01	--	.00
SEP										
05...	.69	.70	.45	.25	.70	3.1	.03	.01	--	.01
05...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--

16865000 PAGO RIVER NEAR ORDOT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	BARIUM, SUS-PENDED RECOV-ERABLE (UG/L AS BA)	BARIUM, DIS-SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)
DEC										
18...	1100	1	1	0	0	0	4	0	4	10
MAR										
27...	1030	0	0	0	0	0	1	0	1	20
JUN										
26...	1100	1	--	0	--	--	1	--	--	10
SEP										
05...	1100	1	1	0	0	0	0	0	0	30

DATE	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, SUS-PENDED RECOV-ERABLE (UG/L AS FE)
DEC										
18...	0	10	<3	0	<3	3	2	1	130	120
MAR										
27...	20	0	0	0	0	1	1	0	80	70
JUN										
26...	--	--	3	--	--	7	--	--	70	--
SEP										
05...	0	30	0	0	0	1	1	0	110	110

DATE	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG)	MERCURY DIS-SOLVED (UG/L AS HG)
DEC										
18...	10	44	39	5	40	20	20	.0	.0	.0
MAR										
27...	10	25	0	25	70	30	40	.0	.0	.0
JUN										
26...	--	30	--	--	120	--	--	.0	--	--
SEP										
05...	0	0	0	0	10	0	10	.0	.0	.0

DATE	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	SILVER, SUS-PENDED RECOV-ERABLE (UG/L AS AG)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN)	ZINC, DIS-SOLVED (UG/L AS ZN)
DEC									
18...	0	0	0	1	1	0	10	<7	<3
MAR									
27...	0	0	0	0	0	0	10	0	10
JUN									
26...	0	--	--	0	--	--	20	--	--
SEP									
05...	0	0	0	0	0	0	0	0	0

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

16865000 PAGO RIVER NEAR ORDOT--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C)
NOV				
02...	1430	8.7	--	--
DEC				
18...	1100	--	1.5	.0
JAN				
23...	1200	1.3	--	--
FEB				
27...	1030	1.0	--	--
MAR				
27...	1030	--	1.5	.0
APR				
24...	1030	1.7	--	--
MAY				
23...	1000	3.1	--	--
JUN				
26...	1100	--	2.3	.0
JUL				
31...	1230	5.0	--	--
SEP				
05...	1100	--	13	.1

DATE	TIME	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)	PERI-PHYTON BIOMASS TOTAL DRY WEIGHT G/SQ M	PERI-PHYTON BIOMASS ASH WEIGHT G/SQ M	CHLOR-A PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	CHLOR-B PERI-PHYTON CHROMO-GRAPHIC FLUOROM (MG/M2)	BIOMASS CHLORO-PHYLL RATIO PERI-PHYTON (UNITS)	LENGTH OF EXPO-SURE (DAYS)
NOV								
02...	1430	420	--	--	--	--	--	--
DEC								
18...	1100	14	4.73	2.55	4.12	.699	--	46
JAN								
23...	1200	250	--	--	--	--	--	--
FEB								
27...	1030	110	--	--	--	--	--	--
MAR								
27...	1030	110	2.36	1.73	3.70	.640	--	28
APR								
24...	1030	4200	--	--	--	--	--	--
MAY								
23...	1000	1200	--	--	--	--	--	--
JUN								
26...	1100	1600	.160	.160	.150	.120	.00	34
JUL								
31...	1230	0	--	--	--	--	--	--
SEP								
05...	1100	71	--	--	--	--	--	--
25...	1030	--	1.34	1.10	1.07	.000	224	20

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV					
02...	1430	216	110	64	100
DEC					
18...	1100	10	7	.19	100
JAN					
23...	1200	4.8	6	.08	100
FEB					
27...	1030	1.9	7	.04	100
MAR					
27...	1030	1.5	8	.03	--
APR					
24...	1030	1.3	6	.02	100
MAY					
23...	1000	.40	9	.01	100
JUN					
26...	1100	.90	11	.03	100
JUL					
31...	1230	17	10	.46	100
SEP					
05...	1100	6.8	1	.02	100
25...	1030	12	--	--	--

MARIANA ISLANDS, ISLAND OF GUAM

16865000 PAGO RIVER NEAR ORDOT

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA

PHYTOPLANKTON ANALYSES, AUGUST 1978 TO SEPTEMBER 1978

DATE	AUG 8,78	SEP 12,78	SEP 27,78
TIME	1030	1230	1530
TOTAL CELLS/ML	560	67	680
DIVERSITY: DIVISION	0.9	0.0	0.4
.CLASS	0.9	0.0	0.4
..ORDER	1.6	0.0	0.4
...FAMILY	1.8	0.9	0.4
....GENUS	1.9	0.9	0.4

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	22	4	--	-	--	-
....SELENASTRUM	--	-	--	-	32	5
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	--	-
..CLADOPHORALES						
...CLADOPHORACEAE						
....RHIZOCLONIUM	--	-	--	-	--	-
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	--	-
..ZYGNEMATALES						
...DESMIDIACEAE						
....COSMARIUM	--	-	--	-	--	-
...ZYGNEMATACEAE						
....MOUGEOTIA	--	-	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	--	-	11	2
..PENNALES						
...ACHNANTHACEAE						
....COCCONEIS	--	-	--	-	--	-
...CYMBELLACEAE						
....CYMBELLA	22	4	--	-	--	-
....RHOPALODIA	22	4	--	-	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	22	4	45#	67	--	-
....PINNULARIA	--	-	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	22	4	22#	33	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	310#	56	--	-	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	--	-
....OSCILLATORIA	130#	24	--	-	640#	94

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

NOTE: DATA FOR OCTOBER 1977 TO JULY 1978 PUBLISHED IN 1978 REPORT.

16865000 PAGO RIVER NEAR ORDOT

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	NOV 2,78		DEC 18,78		JAN 23,79		FEB 27,79		MAR 27,79	
TIME	1430		1100		1200		1030		1030	
TOTAL CELLS/ML	420		14		250		110		110	
DIVERSITY: DIVISION	1.0		0.0		1.3		1.4		1.5	
.CLASS	1.0		0.0		1.3		1.4		1.5	
..ORDER	1.0		0.0		1.5		1.7		2.0	
...FAMILY	1.0		0.0		1.8		2.6		2.7	
....GENUS	1.0		0.0		1.8		2.6		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										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	23	9	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-	5	5
..CLADOPHORALES										
...CLADOPHORACEAE										
....RHIZOCLONIUM	--	-	--	-	--	-	--	-	25#	23
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	--	-	--	-	15	6	--	-	--	-
..ULOTRICHALES										
...ULOTRICHACEAE										
....ULOTHRIX	290#	69	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	5	5	10	9
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..PENNALES										
...ACHNANTHACEAE										
....RHOICOSPHENIA	14	3	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	25#	24	--	-
....RHOPALODIA	--	-	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	5	5
....SYNEDRA	--	-	--	-	23	9	--	-	15	14
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	--	-
...NAVICULACEAE										
....NAVICULA	--	-	14#	100	23	9	15	14	25#	23
....PINNULARIA	--	-	--	-	--	-	--	-	5	5
...NITZSCHIACEAE										
....NITZSCHIA	--	-	--	-	8	3	20#	19	5	5
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	--	-	--	-	--	-	5	5
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	120#	28	--	-	--	-	--	-	10	9
....COCCOCHLORIS	--	-	--	-	--	-	15	14	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	20#	19	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	--	-	150#	63	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES	--	-	--	-	--	-	--	-	--	-
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	5	5	--	-

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

MARIANA ISLANDS, ISLAND OF GUAM

16865000 PAGO RIVER NEAR ORDOT

QUALITATIVE AND ASSOCIATED QUANTITATIVE ANALYSES OF BIOLOGICAL DATA

PHYTOPLANKTON ANALYSES, OCTOBER 1978 TO SEPTEMBER 1979

DATE	APR 24,79	MAY 23,79	JUN 26,79	JUL 31,79	SEP 5,79
TIME	1030	1000	1100	1230	1100
TOTAL CELLS/ML	4200	1200	1600	0	71
DIVERSITY: DIVISION	0.2	0.0	0.1	0.0	0.6
.CLASS	0.2	0.0	0.1	0.0	0.9
..ORDER	0.2	0.0	0.1	0.0	0.9
...FAMILY	0.0	0.0	0.1	0.0	2.6
....GENUS	0.0	0.0	0.1	0.0	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										
...CHLOROCOCCACEAE										
....CHLOROCOCCUM	--	-	--	-	--	-	--	-	5	7
...OOCYSTACEAE										
....ANKISTRODESMUS	--	-	--	-	--	-	--	-	5	7
....TREUBARIA	--	-	--	-	--	-	--	-	--	-
..CLADOPHORALES										
...CLADOPHORACEAE										
....RHIZOCLONIUM	--	-	--	-	--	-	--	-	--	-
..TETRASPORALES										
...COCCOMYXACEAE										
....ELAKATOTHRIX	--	-	--	-	--	-	--	-	--	-
..ULOTRICHALES										
...ULOTRICHACEAE										
....ULOTHRIX	--	-	--	-	--	-	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	--	-	--	-	--	-	--	-	--	-
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..PENNALES										
...ACHNANTHACEAE										
....RHOICOSPHENIA	--	-	--	-	--	-	--	-	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	--	-	--	-	--	-	--	-
....RHOPALODIA	56	1	--	-	--	-	--	-	--	-
...FRAGILARIACEAE										
....FRAGILARIA	--	-	--	-	--	-	--	-	--	-
....SYNEDRA	*	0	--	-	--	-	--	-	15#	21
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	--	-	--	-	--	-	20#	29
...NAVICULACEAE										
....NAVICULA	--	-	--	-	--	-	--	-	15#	21
....PINNULARIA	--	-	--	-	--	-	--	-	--	-
...NITZSCHIACEAE										
....NITZSCHIA	--	-	--	-	13	1	--	-	5	7
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....DINOBRYON	--	-	--	-	--	-	--	-	5	7
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOMONADACEAE										
....CRYPTOMONAS	42	1	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	--	-	--	-	13	1	--	-	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
..HORMOGONALES										
...NOSTOCACEAE										
....ANABAENA	--	-	--	-	--	-	--	-	--	-
...OSCILLATORIACEAE										
....OSCILLATORIA	4100#	97	1200#	100	1500#	98	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
.DINOPHYCEAE										
..PERIDINIALES	*	0	--	-	--	-	--	-	--	-
...GLENODINIACEAE										
....GLENODINIUM	--	-	--	-	--	-	--	-	--	-

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

16890600 ADEIDDO RIVER, BABELTHUAP

LOCATION.--Lat 07°36'01" N., long 134°35'38" E., on right bank at Ngardmau, 0.3 mi (0.5 km) upstream from left-bank tributary, and 0.6 mi (1.0 km) northwest of Mount Megilon.

DRAINAGE AREA.--4.43 mi² (11.47 km²).

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

REVISED RECORDS.--WDR HI-75-1: 1970(M), 1972-73(P).

GAGE.--Water-stage recorder. Altitude of gage is 15 ft (4.6 km), from topographic map.

REMARKS.--Records good. No diversion above station. Water-quality analyses and periodic determinations of water temperatures for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years, 33.2 ft³/s (0.940 m³/s), 24,050 acre-ft/yr (29.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,310 ft³/s (65.4 m³/s) Jan. 22, 1975, gage height, 15.44 ft (4.706 m), from rating curve extended above 410 ft³/s (11.6 m³/s) on basis of field estimate at gage height 15.44 ft (4.706 m); minimum, 2.7 ft³/s (0.076 m³/s) Mar. 24, 25, 31, Apr. 1, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 600 ft³/s (17.0 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 4	0300	*1890	53.5	*13.73	4.185	June 29	1830	1030	29.2	9.47	2.886
Apr. 12	2200	1840	52.1	13.50	4.115	July 22	1330	738	20.9	7.97	2.429

Minimum discharge, 5.9 ft³/s (0.17 m³/s) Feb. 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	18	22	24	9.2	7.3	12	19	28	204	45	23
2	36	19	22	14	9.0	41	12	17	29	155	46	20
3	34	17	24	13	8.8	12	12	16	25	114	43	20
4	35	18	19	13	8.6	300	37	15	24	100	36	18
5	82	29	19	13	8.4	41	16	19	25	88	32	17
6	155	20	17	15	8.2	25	12	15	24	78	30	19
7	108	17	20	12	8.2	21	12	14	22	74	28	22
8	136	17	29	13	8.6	27	11	15	46	63	27	17
9	122	19	20	12	11	34	10	16	31	53	29	16
10	98	20	28	12	13	24	10	16	32	65	31	16
11	78	23	78	11	8.2	21	43	13	29	51	34	16
12	75	18	44	10	7.5	19	344	29	68	46	24	15
13	85	16	34	10	7.3	18	604	68	43	52	22	15
14	64	28	30	15	7.1	17	164	34	50	49	21	16
15	54	19	27	16	6.9	17	104	27	43	43	20	25
16	49	21	25	11	6.9	16	78	23	88	38	24	33
17	44	17	24	9.9	7.1	16	62	20	63	36	58	20
18	43	55	24	9.7	7.3	16	52	19	54	34	68	17
19	38	27	23	9.5	7.5	15	44	19	49	31	35	21
20	36	22	22	9.5	7.8	15	41	17	53	30	30	18
21	33	21	22	9.5	8.0	15	35	19	77	40	31	17
22	42	21	22	12	7.1	16	31	17	60	179	28	21
23	30	43	21	10	6.7	16	28	17	57	72	30	50
24	27	32	21	9.7	6.3	15	26	18	48	74	25	32
25	26	24	22	9.0	6.1	14	24	19	60	86	23	27
26	24	22	20	17	6.1	14	23	26	74	64	35	25
27	25	21	18	14	8.6	13	21	20	126	82	27	22
28	23	22	23	18	7.5	13	20	42	106	68	23	26
29	24	23	20	12	---	14	19	27	288	63	22	26
30	20	22	18	11	---	13	20	27	210	65	21	22
31	19	---	17	9.9	---	12	---	29	---	50	21	---
TOTAL	1703	691	775	384.7	223.0	857.3	1927	692	1932	2247	969	652
MEAN	54.9	23.0	25.0	12.4	7.96	27.7	64.2	22.3	64.4	72.5	31.3	21.7
MAX	155	55	78	24	13	300	604	68	288	204	68	50
MIN	19	16	17	9.0	6.1	7.3	10	13	22	30	20	15
AC-FT	3380	1370	1540	763	442	1700	3820	1370	3830	4460	1920	1290

CAL YR 1978 TOTAL 12505.0 MEAN 34.3 MAX 175 MIN 10 AC-FT 24800
WTR YR 1979 TOTAL 13053.0 MEAN 35.8 MAX 604 MIN 6.1 AC-FT 25890

CAROLINE ISLANDS, PALAU ISLANDS

16890900 TABAGATEN RIVER, BABELTHUAP

LOCATION.--Lat 07°27'00" N., long 134°32'05" E., on left bank 0.3 mi (0.5 km) downstream from unnamed tributary, 0.7 mi (1.1 km) northeast of Mount Karukail, and 1.0 mi (1.6 km) south of Ngatpang.

DRAINAGE AREA.--6.34 mi^2 (16.42 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6.1 m), from topographic map.

REMARKS.--Records good except those above 150 ft^3/s (4.25 m^3/s), which are poor. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years, 48.4 ft^3/s (1.371 m^3/s), 35,070 acre-ft/yr (43.2 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,580 ft^3/s (101 m^3/s) Dec. 23, 1973, gage height, 8.79 ft (2.679 m), from rating curve extended above 124 ft^3/s (3.51 m^3/s); minimum, 0.80 ft^3/s (0.023 m^3/s) Mar. 23, 24, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft^3/s (25.5 m^3/s), revised, and maximum (*), from rating curve extended above 124 ft^3/s (3.51 m^3/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)
Oct. 7	2200	975	27.6	6.15	1.875	July 22	1500	1040	29.5	6.27	1.911
Apr. 13	0430	2810	79.6	8.25	2.515	Sept. 23	0100	*3090	87.5	*8.47	2.582

Minimum discharge, 5.8 ft^3/s (0.16 m^3/s) Apr. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	41	28	15	13	11	7.6	20	42	180	54	22
2	48	35	46	14	27	150	6.8	18	52	153	67	22
3	75	32	31	14	18	24	6.5	17	39	93	49	24
4	90	30	26	14	14	158	99	16	34	107	50	22
5	86	78	24	14	12	39	28	34	46	87	50	20
6	244	57	25	15	11	24	15	27	36	72	38	22
7	307	39	22	12	10	22	12	18	30	58	34	33
8	446	135	44	16	10	30	11	16	80	51	32	22
9	225	100	31	15	17	41	9.7	15	45	45	33	20
10	137	71	82	12	14	26	9.1	19	50	161	28	23
11	96	65	199	11	11	21	40	15	38	138	57	20
12	96	56	86	10	9.4	18	370	17	131	62	31	17
13	104	45	56	9.4	9.1	17	1280	69	59	51	27	16
14	82	60	44	11	8.8	16	290	35	63	58	25	16
15	57	40	39	29	8.2	16	130	30	69	48	23	20
16	48	36	35	13	7.9	14	87	24	254	43	90	42
17	62	34	32	11	7.6	14	64	20	115	43	70	22
18	50	61	30	10	7.3	14	50	18	85	37	90	38
19	56	38	27	9.4	7.9	13	42	18	65	33	50	35
20	54	34	25	9.7	9.1	13	42	16	62	31	40	106
21	42	33	24	9.4	10	12	60	15	106	32	40	40
22	86	28	22	23	8.2	11	37	24	65	305	35	62
23	43	30	20	14	7.6	13	32	18	62	116	35	513
24	97	31	27	18	7.6	13	28	34	49	81	30	140
25	50	27	26	11	7.3	11	27	32	46	95	52	89
26	41	34	20	14	7.9	9.7	26	56	43	59	37	64
27	39	26	18	31	11	9.1	23	38	133	58	43	50
28	45	23	26	68	12	8.5	21	38	203	59	27	129
29	81	27	18	24	---	12	21	30	116	85	46	183
30	42	47	16	17	---	8.5	22	25	88	61	30	111
31	36	---	15	15	---	7.9	---	102	---	50	25	---
TOTAL	3027	1389	1164	508.9	303.9	796.7	2896.7	874	2306	2552	1338	1943
MEAN	97.6	46.3	37.5	16.4	10.9	25.7	96.6	28.2	76.9	82.3	43.2	64.8
MAX	446	135	199	68	27	158	1280	102	254	305	90	513
MIN	36	23	15	9.4	7.3	7.9	6.5	15	30	31	23	16
AC-FT	6000	2760	2310	1010	603	1580	5750	1730	4570	5060	2650	3850

CAL YR 1978 TOTAL 18375.7 MEAN 50.3 MAX 458 MIN 9.7 AC-FT 36450
WTR YR 1979 TOTAL 19099.2 MEAN 52.3 MAX 1280 MIN 6.5 AC-FT 37880

16891300 GADEN RIVER, BABELTHUAP

LOCATION.--Lat 07°22'56" N., long 134°33'42" E., on left bank 1,000 ft (305 m) upstream from confluence with Kumekumeyel River, 1.0 mi (1.6 km) southwest of Mount Kabekobekushi, and 1.8 mi (2.9 km) north of Airai.

DRAINAGE AREA.--4.23 mi² (10.96 km²).

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

REVISED RECORDS.--WDR HI-75-1: 1970-72(P), 1973(M), 1974(P).

GAGE.--Water-stage recorder. Altitude of gage is 2 ft (0.6 m), from stadia survey. Prior to Dec. 9, 1974, at site 300 ft (91 m) downstream at datum 0.30 ft (0.09 m) lower.

REMARKS.--Records good. Small amount of water is pumped from site 300 ft (91 m) upstream from station for irrigation 0.5 mi (0.8 km) downstream. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report. Continuous record of rainfall is obtained near station.

AVERAGE DISCHARGE.--10 years, 32.6 ft³/s (0.923 m³/s), 23,620 acre-ft/yr (29.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft³/s (52.4 m³/s) Apr. 13, 1979, gage height, 18.2 ft (5.54 m), from rating curve extended above 118 ft³/s (3.34 m³/s) on basis of measurement at gage height 13.0 ft (3.962 m); minimum, 1.6 ft³/s (0.045 m³/s) Mar. 23, 24, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 800 ft³/s (22.7 m³/s), revised, and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 7	2100	1070	30.3	13.03	3.972	Apr. 13	1200	*1850	52.4	*18.2	5.54
Dec. 2	0930	963	27.3	12.28	3.743	July 1	2000	908	25.7	11.87	3.618
Dec. 11	1330	1090	30.9	13.15	4.008	Sept. 23	0700	859	24.3	11.49	3.502
Mar. 2	0130	929	26.3	12.03	3.667						

Minimum discharge, 4.6 ft³/s (0.13 m³/s) Feb. 25, 26.

REVISIONS.--The peak discharges and annual maximum (*) for water years 1970-78 have been revised as shown in the following table. They supersede figures published in WSP 2137, WDR HI-75,76-1 and WDR HI-77,78-2.

Water Year	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Water Year	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
1970	July 12, 1970	1200	*769	21.8	*10.74	3.274	1974	Jan. 8, 1974	0800	*1500	42.5	*15.87	4.837
	July 14, 1970	1530	643	18.2	9.62	2.932		Jan. 16, 1974	1100	1450	41.1	15.56	4.743
	Sept. 16, 1970	1930	465	13.2	7.90	2.408		Mar. 10, 1974	1430	711	20.1	10.24	3.121
								Aug. 4, 1974	2030	1490	42.2	15.81	4.819
1971	Oct. 23, 1970	2300	632	18.0	9.52	2.902							
	Feb. 14, 1971	1100	960	27.2	12.26	3.737	1975	Dec. 13, 1974	1800	1030	29.2	12.73	3.880
	Mar. 6, 1971	0730	786	22.2	10.88	3.316		Dec. 29, 1974	2400	909	25.7	11.88	3.621
	May 8, 1971	1600	495	14.0	8.20	2.499		Jan. 22, 1975	a1400	*1710	48.4	*17.24	5.255
	May 28, 1971	1500	*1230	34.8	*14.05	4.282		July 15, 1975	1130	848	24.0	11.40	3.475
	July 7, 1971	2230	663	18.8	9.80	2.987							
	July 12, 1971	0530	432	12.2	7.57	2.307	1976	Nov. 27, 1975	1330	789	22.3	10.91	3.325
								Dec. 9, 1975	0530	878	24.9	11.64	3.548
1972	Dec. 28, 1971	2000	792	22.4	10.90	3.322		Dec. 20, 1975	1930	678	19.2	9.94	3.030
	May 1, 1972	0230	*1480	41.9	*15.70	4.785		Apr. 8, 1976	a0200	*1450	41.1	/*15.56	4.743
	July 2, 1972	1130	642	18.2	9.58	2.920		Aug. 1, 1976	1500	866	24.5	11.55	3.520
	Aug. 24, 1972	2000	1340	37.9	14.79	4.508							
	Sept. 2, 1972	1400	687	19.5	9.98	3.042	1977	Dec. 28, 1976	1200	a1000	28.3	--	--
	Sept. 29, 1972	0430	1080	30.6	13.03	3.972		July 4, 1977	1230	*1050	29.7	*12.87	3.923
1973	Dec. 2, 1972	0230	*596	16.9	*9.16	2.792	1978	Aug. 3, 1978	0530	792	22.4	10.93	3.331
								Aug. 22, 1978	0330	*973	27.6	*12.35	3.764

/ From floodmarks.
a About.

16891300 GADEN RIVER, BABELTHUAP--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	28	17	12	8.5	10	6.6	17	34	185	28	21
2	25	26	147	12	8.1	228	6.2	15	28	110	50	19
3	73	23	27	11	8.1	20	5.8	14	24	63	35	19
4	65	32	20	10	7.7	139	56	13	25	61	29	17
5	68	46	19	10	7.3	28	20	25	26	53	32	16
6	144	35	18	12	7.5	20	11	16	22	44	25	18
7	270	26	17	9.4	7.5	16	9.6	14	20	38	23	20
8	372	71	26	14	7.1	22	9.0	13	57	33	25	15
9	156	37	19	11	9.2	21	8.1	14	38	30	26	14
10	104	30	34	9.2	10	16	7.9	18	39	102	26	38
11	70	30	234	8.5	6.8	14	20	14	31	58	41	20
12	82	28	50	8.1	6.2	13	269	17	68	41	25	16
13	84	26	34	7.9	5.8	12	1000	54	37	36	22	15
14	63	27	29	10	5.7	12	250	27	38	43	20	23
15	46	23	26	15	5.7	11	100	23	44	33	19	20
16	40	23	24	8.5	5.5	11	57	20	107	30	56	23
17	37	20	22	7.7	5.4	10	50	17	55	27	50	19
18	33	35	21	7.3	5.0	9.8	37	15	54	25	56	24
19	33	22	19	7.0	7.3	9.4	32	18	46	23	37	19
20	32	20	18	7.3	6.6	9.2	30	14	46	21	29	20
21	28	21	17	7.0	7.1	9.0	38	14	58	22	26	20
22	70	18	17	14	5.5	8.5	27	20	44	168	25	28
23	29	18	16	14	5.0	8.7	24	15	38	52	23	295
24	72	26	19	10	4.9	8.3	21	20	35	53	22	70
25	32	18	16	7.3	4.7	7.9	20	25	33	80	44	46
26	32	21	14	16	4.7	7.5	20	37	32	45	36	39
27	26	18	14	19	9.6	7.1	18	36	78	37	44	32
28	27	17	15	30	6.8	6.8	17	31	78	33	26	44
29	84	17	13	14	---	19.4	16	24	56	45	31	49
30	30	24	12	11	---	6.8	20	21	49	33	25	39
31	26	---	11	9.4	---	6.6	---	45	---	29	22	---
TOTAL	2282	806	985	349.6	189.3	718.0	2206.2	666	1340	1653	978	1058
MEAN	73.6	26.9	31.8	11.3	6.76	23.2	73.5	21.5	44.7	53.3	31.5	35.3
MAX	372	71	234	30	10	228	1000	54	107	185	56	295
MIN	25	17	11	7.0	4.7	6.6	5.8	13	20	21	19	14
AC-FT	4530	1600	1950	693	375	1420	4380	1320	2660	3280	1940	2100

CAL YR 1978 TOTAL 12772.7 MEAN 35.0 MAX 380 MIN 7.8 AC-FT 25330
WTR YR 1979 TOTAL 13231.1 MEAN 36.2 MAX 1000 MIN 4.7 AC-FT 26240

16891310 KUMEKUMEYEL RIVER, BABELTHUAP

LOCATION.--Lat 7°23'15" N., long 134°33'05" E., 0.75 mi (1.2 km) upstream from confluence with Gaden River and 1.6 mi (2.6 km) west of Mount Kabekobekushi.
DRAINAGE AREA.--1.27 mi^2 (3.29 km^2).
PERIOD OF RECORD.--September 1978 to current year. Low-flow partial-record station operated "at mouth" 1970-78.
GAGE.--Water-stage recorder. Altitude of gage is 96.44 ft (29.39 m), from stadia survey.
REMARKS.--Records good. No diversion above gage. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.
EXTREMES FOR CURRENT PERIOD.--September 1978: Maximum discharge, 104 ft^3/s (2.95 m^3/s) Sept. 6, gage height, 3.70 ft (1.128 m), no peak above base of 350 ft^3/s (9.91 m^3/s); minimum, 4.8 ft^3/s (0.14 m^3/s) Sept. 16, 17.
Water year 1979: Peak discharges above base of 350 ft^3/s (99.1 m^3/s) and maximum (*), from rating curve extended above 48 ft^3/s (1.36 m^3/s) on basis of slope-area measurement at gage height 10.53 ft (3.210 m):

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)
Oct. 7	2000	a600	a17.0	-	-	Mar. 2	0200	468	13.3	6.4	1.95
Oct. 22	1530	401	11.4	6.03	1.838	Apr. 13	1200	*1560	44.2	10.53	3.210
Oct. 24	1200	352	9.97	5.75	1.753	July 1	2000	371	10.5	5.86	1.786
Dec. 2	1000	a550	a15.6	-	-	Sept. 23	a0800	a500	a14.2	-	-
Dec. 11	1400	a600	a17.0	-	-						

Minimum discharge, 1.1 ft^3/s (0.031 m^3/s) Feb. 26.

a About.

DISCHARGE, IN CUBIC FEET PER SECOND, SEPTEMBER 1978

DAY	SEP	DAY	SEP	DAY	SEP	DAY	SEP	DAY	SEP	DAY	SEP
1	9.0	6	19	11	5.4	16	5.0	21	11	26	11
2	11	7	8.9	12	5.0	17	8.6	22	9.1	27	8.9
3	8.0	8	6.6	13	5.8	18	13	23	12	28	7.5
4	7.5	9	5.8	14	12	19	22	24	10	29	7.5
5	7.0	10	6.0	15	5.8	20	15	25	13	30	13

TOTAL	289.4
MEAN	9.6
MAX	22
MIN	5.0
AC-FT	574

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	8.9	4.6	4.1	2.6	3.0	1.4	4.4	7.3	46	8.3	6.4
2	6.0	7.7	65	3.5	2.2	59	1.4	3.9	5.8	35	20	5.6
3	15	6.8	9.1	3.4	2.1	6.2	1.3	3.5	4.8	21	12	5.2
4	14	9.6	6.4	3.4	2.0	42	14	3.2	6.4	17	9.4	4.6
5	22	14	6.0	3.2	2.0	8.2	4.3	6.5	6.0	16	9.8	4.4
6	42	8.6	5.6	3.2	2.0	5.6	2.4	4.1	5.0	13	7.5	4.8
7	66	7.0	5.4	2.8	2.0	4.6	2.1	4.3	4.3	11	6.6	5.0
8	82	17	7.7	4.3	1.8	6.8	1.8	3.0	20	8.9	7.2	4.1
9	50	11	6.0	3.2	2.1	6.4	1.6	3.0	13	8.2	6.6	3.9
10	30	8.6	25	2.6	2.8	4.4	1.5	3.9	13	25	6.6	4.4
11	20	9.1	86	2.1	1.6	3.9	4.3	3.0	15	17	8.6	3.5
12	25	8.0	18	1.8	1.4	3.5	70	4.0	24	12	5.8	3.4
13	25	7.5	12	1.8	1.3	3.4	397	24	14	9.8	5.0	3.0
14	20	10	9.6	3.2	1.3	3.4	35	9.8	13	20	4.3	5.0
15	15	6.4	8.2	3.7	1.3	3.2	23	8.0	14	12	4.1	3.7
16	13	5.6	7.5	2.1	1.3	2.8	17	5.6	29	9.6	13	5.0
17	11	5.2	6.8	2.0	1.3	2.7	20	4.6	21	8.4	9.3	3.5
18	10	10	6.4	1.8	1.3	2.7	13	4.3	20	7.3	10	5.0
19	10	5.6	6.2	1.6	1.5	2.6	9.4	4.1	17	6.4	8.5	3.5
20	10	5.2	6.0	1.8	1.5	2.6	9.1	3.5	16	5.8	6.6	3.7
21	9.0	5.4	5.8	1.6	1.5	2.4	8.0	3.4	20	7.8	6.2	4.0
22	20	4.8	5.4	4.9	1.3	2.2	6.4	4.6	14	49	5.6	6.0
23	10	5.2	5.0	3.7	1.3	2.2	5.8	4.3	12	21	4.8	100
24	31	8.0	5.8	2.6	1.2	2.2	5.2	6.5	11	21	4.6	20
25	12	5.2	5.0	1.6	1.2	2.1	5.0	6.3	9.8	21	9.5	13
26	12	4.6	4.6	7.2	1.2	2.0	4.8	4.4	8.9	14	9.7	11
27	8.9	4.3	4.3	7.4	2.5	2.0	4.3	4.1	34	12	12	8.2
28	8.6	4.1	4.4	9.6	1.5	1.8	4.1	3.9	31	7.5	7.0	12
29	49	4.9	4.1	4.3	---	2.4	4.1	3.5	21	9.1	11	15
30	11	9.7	3.9	3.4	---	1.8	5.1	6.2	18	10	7.7	12
31	9.1	---	3.7	2.7	---	1.5	---	20	---	7.5	6.8	---
TOTAL	673.6	228.0	359.5	104.6	47.1	199.6	682.4	177.9	448.3	489.3	254.1	288.9
MEAN	21.7	7.60	11.6	3.37	1.68	6.44	22.7	5.74	14.9	15.8	8.20	9.63
MAX	82	17	86	9.6	2.8	59	397	24	34	49	20	100
MIN	6.0	4.1	3.7	1.6	1.2	1.5	1.3	3.0	4.3	5.8	4.1	3.0
AC-FT	1340	452	713	207	93	396	1350	353	889	971	504	573

WTR YR 1979 TOTAL 3953.3 MEAN 10.8 MAX 397 MIN 1.2 AC-FT 7840

16891400 SOUTH FORK NGARDOK RIVER, BABELTHUAP

LOCATION.--Lat 07°26'15" N., long 134°35'03" E., on right bank 0.3 mi (0.5 km) from left-bank tributary, 0.6 mi (1.0 km) northwest of Garasho Mountain, and 1.3 mi (2.1 km) west of village of Ngarsul.

DRAINAGE AREA.--2.26 mi² (5.85 km²).

PERIOD OF RECORD.--March 1971 to current year.

REVISED RECORDS.--WDR HI-75-1: 1971(M), 1972, 1973(P), 1974.

GAGE.-- Water-stage recorder. Altitude of gage is 65 ft (20 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 19.4 ft³/s (0.549 m³/s), 14,060 acre-ft/yr (17.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft³/s (163 m³/s), Dec. 13, 1974, gage height, 9.19 ft (2.801 m), from rating curve extended above 65 ft³/s (1.84 m³/s) on basis of field estimate at gage height 7.57 ft (2.307 m); minimum, 0.55 ft³/s (0.016 m³/s) Mar. 8, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,000 ft³/s (28.3 m³/s), and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 7	2130	1130	32.0	4.62	1.408
Mar. 4	0500	1360	38.5	4.95	1.509
Apr. 13	1200	*3470	98.3	*7.28	2.219

Minimum discharge, 2.0 ft³/s (0.057 m³/s) Feb. 17-19, 24-26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	14	10	4.8	3.6	4.4	2.3	4.0	28	103	14	9.0
2	17	11	16	4.4	3.6	108	2.3	4.0	20	56	22	8.5
3	62	10	10	4.0	3.6	9.9	2.3	4.0	17	34	16	8.0
4	43	15	9.3	4.0	3.2	119	53	4.4	17	40	14	7.5
5	36	31	8.7	4.0	2.9	14	7.4	12	17	30	14	7.0
6	124	21	8.7	4.8	2.9	9.3	4.4	7.4	14	25	11	7.5
7	199	16	7.4	4.0	2.9	6.8	3.2	5.7	12	20	10	12
8	277	25	12	6.8	2.9	12	2.9	5.7	33	18	9.3	8.0
9	100	26	9.3	4.4	4.8	12	2.6	8.0	22	15	10	7.0
10	62	20	22	3.6	4.4	7.4	2.3	19	21	60	9.0	10
11	39	50	88	3.2	2.9	6.2	14	8.7	19	50	20	8.0
12	45	24	26	3.2	2.6	5.7	287	10	63	20	10	7.0
13	62	18	18	2.9	2.6	5.2	923	40	24	18	9.0	6.0
14	38	16	14	5.2	2.3	5.2	122	18	23	20	8.0	10
15	27	14	12	8.0	2.3	4.8	45	14	26	15	7.5	8.0
16	20	29	10	4.0	2.3	4.4	28	13	84	13	30	15
17	23	14	9.9	3.2	2.3	4.0	20	11	36	13	25	9.0
18	17	33	9.3	2.9	2.0	3.6	17	10	29	12	30	14
19	18	18	8.0	2.9	3.6	3.6	14	12	24	11	20	13
20	15	14	7.4	3.2	3.6	3.2	12	10	23	10	18	40
21	22	14	6.8	2.9	3.2	3.2	18	8.7	44	10	18	15
22	23	12	6.8	6.2	2.9	2.9	12	12	26	125	16	30
23	15	12	6.2	4.8	2.6	2.9	9.3	10	21	45	16	180
24	70	12	8.0	4.4	2.3	2.9	7.4	10	20	30	13	50
25	22	11	6.8	2.9	2.3	2.9	6.2	13	18	40	20	30
26	17	20	5.7	4.8	2.6	2.6	6.2	22	18	26	15	20
27	15	12	5.2	9.2	4.4	2.3	4.8	27	59	21	20	17
28	20	9.9	7.4	16	4.0	2.3	4.4	25	64	18	12	40
29	19	11	5.2	6.2	---	3.6	4.4	18	38	30	15	50
30	14	14	4.8	4.4	---	2.6	5.2	14	30	18	12	30
31	12	---	4.4	4.0	---	2.3	---	40	---	15	10	---
TOTAL	1494	546.9	383.3	149.3	85.6	379.2	1642.6	420.6	890	961	473.8	676.5
MEAN	48.2	18.2	12.4	4.82	3.06	12.2	54.8	13.6	29.7	31.0	15.3	22.6
MAX	277	50	88	16	4.8	119	923	40	84	125	30	180
MIN	12	9.9	4.4	2.9	2.0	2.3	2.3	4.0	12	10	7.5	6.0
AC-FT	2960	1080	760	296	170	752	3260	834	1770	1910	940	1340

CAL YR 1978 TOTAL 7015.9 MEAN 19.2 MAX 306 MIN 2.9 AC-FT 13920
WTR YR 1979 TOTAL 8102.8 MEAN 22.2 MAX 923 MIN 2.0 AC-FT 16070

NOTE.--No gage-height record Aug. 25 to Sept. 30.

16892400 ARINGEL STREAM, YAP

LOCATION.--Lat 09°31'01" N., long 138°05'11" E., on right bank at Aringel and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.24 mi^2 (0.62 km^2).

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 35 ft (10.7 m), from topographic map.

REMARKS.--Records poor. No diversion above station. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 1.08 ft^3/s (0.031 m^3/s), 782 acre-ft/yr (965,000 m^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 520 ft^3/s (14.7 m^3/s) Sept. 14, 1978, gage height, 7.05 ft (2.149 m), from floodmark in well, from rating curve extended above 20 ft^3/s (0.57 m^3/s); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft^3/s (5.66 m^3/s) and maximum (*), from rating curve extended above 20 ft^3/s (0.57 m^3/s):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 26	1300	242	6.85	5.25	1.600
Aug. 17	0830	*334	9.46	*5.86	1.786

No flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	2.5	7.2	.02	.00	.00	.00	.00	.01	3.1	.14	.21
2	.14	2.3	2.1	.02	.00	.10	.00	.00	.01	.50	.17	.13
3	.08	1.5	.20	.01	.00	.40	.00	.00	.01	10	.16	.07
4	.07	4.0	.15	.01	.00	.15	.00	.00	.00	15	.14	.04
5	4.5	1.5	.10	.01	.00	.08	.00	.00	.01	2.3	.41	.03
6	11	.60	.08	.01	.00	.05	.00	.00	.01	2.9	3.4	.02
7	5.3	.15	.15	.01	.00	.03	.00	.00	.02	.93	11	.02
8	5.8	.15	.10	.00	.00	.02	.00	.00	.46	.33	1.2	.01
9	13	2.0	3.0	.00	.00	.01	.00	.00	.16	.25	7.0	.01
10	2.7	1.8	1.1	.00	.00	.01	.00	.00	.16	1.7	7.6	.01
11	.97	.80	4.2	.00	.00	.01	.00	.00	.60	3.2	1.3	.02
12	3.3	.50	6.4	.00	.00	.00	.00	.00	2.7	.60	.57	.01
13	2.0	1.0	4.0	.00	.00	.00	.00	2.0	1.0	.30	.27	.02
14	.65	4.0	8.1	.00	.00	4.0	.00	.20	3.2	.15	.14	.03
15	.29	.40	.50	.01	.00	.30	.00	.15	1.7	.08	1.2	.07
16	.14	3.0	.20	.01	.00	.15	.00	.04	1.1	.06	2.2	.04
17	.28	1.0	.20	.01	.00	.10	.00	.03	1.2	.05	26	.02
18	.23	.70	.20	.01	.00	.05	.00	.02	.60	.04	1.6	.01
19	.21	1.0	.15	.00	.00	.03	.00	.01	.40	.04	.50	.01
20	1.4	2.0	.10	.00	.00	.02	.00	.01	.30	.03	.23	.01
21	7.6	.90	.05	.00	.00	.01	.00	.01	.20	.03	.11	.01
22	1.2	.80	.04	.00	.00	.01	.00	5.0	.64	2.5	.08	1.9
23	.41	.70	.03	.00	.00	.01	.00	.50	1.2	.60	6.0	2.0
24	.25	.40	.02	.00	.00	.01	.00	.10	1.3	.20	2.4	5.0
25	.20	.30	.02	.00	.00	.00	.00	.05	6.0	.40	.57	3.0
26	.17	.25	.02	.00	.00	.00	.00	.03	11	4.0	.35	7.0
27	.15	.20	.01	.00	.00	.00	.00	.02	7.0	11	1.4	.89
28	.10	.17	.01	.03	.00	.00	.00	.02	12	1.5	.39	1.8
29	.08	.15	.02	.02	---	.00	.00	.01	2.1	.81	.25	1.3
30	.07	.10	.03	.01	---	.00	.00	.01	9.6	.31	2.0	5.2
31	.06	---	.03	.01	---	.00	---	.01	---	.17	.35	---
TOTAL	62.60	34.87	38.51	.20	.00	5.55	.00	8.22	64.69	63.08	79.13	28.89
MEAN	2.02	1.16	1.24	.006	.000	.18	.000	.27	2.16	2.03	2.55	.96
MAX	13	4.0	8.1	.03	.00	4.0	.00	5.0	12	15	26	7.0
MIN	.06	.10	.01	.00	.00	.00	.00	.00	.00	.03	.08	.01
AC-FT	124	69	76	.4	.00	11	.00	16	128	125	157	57

CAL YR 1978 TOTAL 409.10 MEAN 1.12 MAX 40 MIN .00 AC-FT 811
WTR YR 1979 TOTAL 385.74 MEAN 1.06 MAX 26 MIN .00 AC-FT 765

NOTE.--No gage-height record Dec. 15 to Jan. 31, Feb. 28 to Mar. 30.

CAROLINE ISLANDS, YAP ISLANDS

16892800 DALOLAB STREAM, YAP

LOCATION.--Lat 09°31'04" N., long 138°06'04" E., on left bank at Talagu and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--0.07 mi² (0.18 km²), revised.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 150 ft (46 m), from topographic map.

REMARKS.--Records fair. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 0.362 ft³/s (0.010 m³/s), 262 acre-ft/yr (323,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180 ft³/s (5.10 m³/s) Sept. 15, 1973, gage height, 4.80 ft (1.463 m), from floodmark in well, from rating curve extended above 17 ft³/s (0.48 m³/s); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 75 ft³/s (2.12 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 26	1300	110	3.12	4.02	1.225
Aug. 17	a0900	*116	3.29	*4.10	1.250

No flow for many months.

a About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	2.0	1.7	.00	.00	.00	.00	.00	.00	1.5	.10	.04
2	.08	.51	.70	.00	.00	.02	.00	.00	.00	.20	.12	.03
3	.05	.87	.04	.00	.00	.10	.00	.00	.00	3.0	.04	.01
4	.04	1.2	.02	.00	.00	.01	.00	.00	.00	5.0	.05	.01
5	3.8	.56	.01	.00	.00	.00	.00	.00	.00	1.0	.35	.00
6	9.7	.19	.01	.00	.00	.00	.00	.00	.00	1.5	1.9	.00
7	2.4	.04	.01	.00	.00	.00	.00	.00	.04	.45	3.5	.00
8	2.5	.04	.01	.00	.00	.00	.00	.00	.22	.08	.50	.00
9	5.3	.40	.63	.00	.00	.00	.00	.00	.02	.05	.25	.00
10	1.2	.33	.44	.00	.00	.00	.00	.00	.01	.25	3.0	.00
11	.33	.19	1.2	.00	.00	.00	.00	.00	.06	1.0	.54	.00
12	1.5	.10	1.8	.00	.00	.00	.00	.00	1.0	.14	.15	.00
13	.98	.41	1.6	.00	.00	.00	.00	.57	.22	.10	.05	.00
14	.22	1.4	2.1	.00	.00	1.7	.00	.01	.99	.02	.03	.01
15	.06	.08	.06	.00	.00	.03	.00	.00	.44	.01	.10	.04
16	.04	2.0	.02	.00	.00	.00	.00	.00	.17	.01	.85	.01
17	.61	.36	.03	.00	.00	.00	.00	.00	.19	.00	9.0	.01
18	.19	.22	.02	.00	.00	.00	.00	.00	.10	.00	1.0	.00
19	.10	.40	.01	.00	.00	.00	.00	.00	.02	.00	.20	.00
20	3.3	.76	.01	.00	.00	.00	.00	.00	.01	.00	.07	.00
21	1.9	.24	.01	.00	.00	.00	.00	.00	.01	.00	.05	.00
22	.59	.22	.00	.00	.00	.00	.00	1.5	.32	.99	.03	.70
23	.08	.27	.00	.00	.00	.00	.00	.15	.67	.19	2.2	.50
24	.04	.10	.00	.00	.00	.00	.00	.01	.78	.05	.36	1.2
25	.05	.03	.00	.00	.00	.00	.00	.00	.43	.06	.08	.64
26	.03	.02	.00	.00	.00	.00	.00	.00	3.2	1.5	.03	2.4
27	.01	.01	.00	.00	.00	.00	.00	.00	1.4	3.3	.17	.17
28	.01	.01	.00	.00	.00	.00	.00	.00	4.0	.22	.10	.90
29	.01	.01	.00	.00	---	.00	.00	.00	1.4	.24	.14	.36
30	.01	.01	.00	.00	---	.00	.00	.00	3.0	.04	.59	1.5
31	.01	---	.00	.00	---	.00	---	.00	---	.01	.08	---
TOTAL	35.24	12.98	10.43	.00	.00	1.86	.00	2.24	18.70	20.91	25.63	8.53
MEAN	1.14	.43	.34	.000	.000	.060	.000	.072	.62	.67	.83	.28
MAX	9.7	2.0	2.1	.00	.00	1.7	.00	1.5	4.0	5.0	9.0	2.4
MIN	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
AC-FT	70	26	21	.00	.00	3.7	.00	4.4	37	41	51	17

CAL YR 1978 TOTAL 151.39 MEAN .41 MAX 12 MIN .00 AC-FT 300
WTR YR 1979 TOTAL 136.52 MEAN .37 MAX 9.7 MIN .00 AC-FT 271

NOTE.--No gage-height record Aug. 5-21.

16892900 PEMGOY STREAM, YAP

LOCATION.--Lat 09°31'07" N., long 138°06'18" E., on right bank at Talagu, 100 ft (30 m) upstream from Talagu Stream, and 0.8 mi (1.3 km) upstream from mouth.

DRAINAGE AREA.--0.14 mi² (0.36 km²), revised.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Concrete control since Mar. 30, 1974. Altitude of gage is 100 ft (30 m), from topographic map.

REMARKS.--Records fair. No diversion above station. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 0.583 ft³/s (0.017 m³/s), 422 acre-ft/yr (520,000 m³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 314 ft³/s (8.89 m³/s) Sept. 14, 1978, gage height, 5.26 ft (1.603 m), from floodmarks, from rating curve extended above 15 ft³/s (0.42 m³/s); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 70 ft³/s (1.98 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 26	1230	86	2.44	3.22	0.981
Aug. 17	0900	*165	4.67	*4.10	1.250

No flow Feb. 16, Mar. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	1.6	2.0	.02	.01	.01	.01	.02	.01	2.8	.43	.08
2	.20	1.7	1.7	.03	.01	.07	.01	.02	.01	.38	.38	.04
3	.10	.83	.18	.02	.01	.42	.01	.02	.01	5.0	.12	.02
4	.07	2.8	.11	.02	.01	.12	.01	.01	.01	8.7	.12	.02
5	6.0	1.3	.07	.01	.01	.04	.01	.01	.01	1.7	.62	.01
6	15	.52	.05	.02	.01	.01	.01	.02	.01	2.4	3.3	.01
7	4.5	.14	.07	.02	.01	.01	.01	.02	.10	.75	5.9	.01
8	4.0	.11	.06	.02	.01	.01	.01	.02	.50	.14	.88	.01
9	10	.69	1.0	.02	.01	.01	.01	.01	.05	.09	4.4	.01
10	2.5	.81	.39	.02	.01	.01	.01	.14	.03	.47	5.0	.01
11	.70	.58	2.2	.01	.01	.01	.01	.05	.15	1.8	.93	.03
12	2.5	.42	2.8	.01	.01	.01	.02	.02	1.7	.34	.24	.02
13	2.0	.76	2.8	.01	.01	.03	.02	1.9	.50	.16	.09	.02
14	.50	3.0	3.8	.02	.01	2.3	.01	.08	1.7	.07	.04	.03
15	.20	.30	.30	.01	.01	.11	.02	.11	1.3	.04	.19	.09
16	.15	1.8	.18	.01	.00	.03	.01	.04	.42	.03	1.5	.03
17	.50	.98	.14	.01	.01	.01	.01	.02	.64	.03	15	.02
18	.40	.42	.16	.01	.01	.01	.01	.02	.38	.02	1.8	.01
19	.20	.98	.08	.01	.02	.01	.01	.01	.11	.02	.38	.01
20	5.0	1.4	.06	.01	.01	.01	.01	.01	.08	.02	.12	.01
21	2.5	.69	.04	.01	.01	.01	.01	.01	.07	.03	.07	.01
22	1.0	.58	.03	.01	.01	.01	.01	3.0	.60	1.3	.06	.62
23	.20	.42	.02	.01	.01	.01	.01	.30	1.6	.34	3.7	.81
24	.15	.27	.02	.01	.01	.01	.01	.05	2.2	.09	.99	1.1
25	.10	.14	.03	.01	.01	.01	.01	.03	.58	.27	.24	.98
26	.07	.08	.03	.01	.01	.01	.01	.02	5.2	2.2	.11	3.4
27	.05	.06	.02	.02	.01	.01	.01	.02	2.4	5.5	.21	.64
28	.06	.05	.02	.01	.01	.01	.01	.01	6.0	.52	.16	1.4
29	.07	.04	.04	.01	---	.01	.01	.01	2.4	.16	.18	1.3
30	.05	.04	.03	.01	---	.00	.02	.01	4.9	.08	.78	2.8
31	.03	---	.03	.01	---	.01	---	.01	---	.04	.21	---
TOTAL	59.00	23.51	18.46	.43	.28	3.34	.34	6.02	33.67	35.49	48.15	13.55
MEAN	1.90	.78	.60	.014	.010	.11	.011	.19	1.12	1.14	1.55	.45
MAX	15	3.0	3.8	.03	.02	2.3	.02	3.0	6.0	8.7	15	3.4
MIN	.03	.04	.02	.01	.00	.00	.01	.01	.01	.02	.04	.01
AC-FT	117	47	37	.9	.6	6.6	.7	12	67	70	96	27

CAL YR 1978 TOTAL 255.08 MEAN .70 MAX 22 MIN .00 AC-FT 506
WTR YR 1979 TOTAL 242.24 MEAN .66 MAX 15 MIN .00 AC-FT 480

NOTE.--No gage-height record Oct. 1-31.

CAROLINE ISLANDS, YAP ISLANDS

16893000 TALAGU STREAM, YAP

LOCATION.--Lat 09°31'08" N., long 138°06'13" E., on left bank at Talagu, 300 ft (91 m) upstream from mouth, and 0.9 mi (1.4 km) upstream from mouth of Pemgoy Stream.

DRAINAGE AREA.--0.08 mi^2 (0.21 km^2), revised.

PERIOD OF RECORD.--April 1968 to April 1979 (discontinued).

GAGE.--Water-stage recorder and concrete control since Apr. 3, 1975. Altitude of gage is 130 ft (40 m), from topographic map.

REMARKS.--Records good. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--10 years, 0.341 ft^3/s (0.010 m^3/s), 247 acre-ft/yr (305,000 m^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 330 ft^3/s (9.35 m^3/s) Sept. 14, 1978, gage height, 3.98 ft (1.213 m), from rating curve extended above 9.0 ft^3/s (0.25 m^3/s); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge during period October 1978 to April 1979: 31 ft^3/s (0.88 m^3/s) Oct. 6, gage height, 1.96 ft (0.597 m), no peak above base of 50 ft^3/s (1.42 m^3/s); no flow for several months.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.90	.88	.01	.00	.00	.00	---	---	---	---	---
2	.09	.73	.78	.01	.00	.00	.00	---	---	---	---	---
3	.05	.50	.08	.01	.00	.10	.00	---	---	---	---	---
4	.03	1.1	.06	.01	.00	.05	.00	---	---	---	---	---
5	2.7	.56	.04	.01	.00	.01	.00	---	---	---	---	/ .01
6	7.0	.26	.03	.01	.00	.00	.00	---	---	---	---	---
7	1.8	.08	.08	.00	.00	.00	.00	---	---	---	---	---
8	1.5	.07	.06	.00	.00	.00	.00	---	---	---	/ .14	---
9	4.0	.34	.37	.00	.00	.00	.00	---	---	---	---	---
10	1.0	.37	.14	.00	.00	.00	.00	---	---	---	---	---
11	.32	.24	1.0	.00	.00	.00	.00	---	---	/ 1.8	---	---
12	.92	.19	1.5	.00	.00	.00	.00	---	---	---	---	---
13	.90	.38	1.3	.00	.00	.00	.00	---	/ .23	---	---	---
14	.26	1.5	2.0	.00	.00	1.4	.00	---	---	---	---	---
15	.09	.14	.12	.00	.00	.08	.00	---	---	---	---	---
16	.07	1.1	.05	.00	.00	.02	.00	---	---	---	---	---
17	.22	.42	.06	.00	.00	.01	.00	/ .00	---	---	---	---
18	.16	.24	.04	.00	.00	.01	.00	---	---	---	---	---
19	.09	.39	.03	.00	.00	.00	.00	---	---	---	---	/ .01
20	2.2	.56	.02	.00	.00	.00	.00	---	---	---	---	---
21	1.3	.29	.02	.00	.00	.00	.00	---	---	---	/ .06	---
22	.47	.21	.01	.00	.00	.00	.00	---	---	---	---	---
23	.10	.21	.01	.00	.00	.00	.00	---	---	---	---	---
24	.06	.14	.01	.00	.00	.00	.00	---	---	---	---	---
25	.04	.07	.01	.00	.00	.00	.00	---	---	---	---	---
26	.02	.03	.01	.00	.00	.00	.00	---	---	/ .63	---	---
27	.02	.02	.01	.00	.00	.00	.00	---	---	---	---	---
28	.03	.02	.01	.00	.00	.00	.00	---	---	---	---	---
29	.04	.02	.02	.00	---	.00	.00	---	/ .72	---	---	---
30	.04	.02	.02	.00	---	.00	.00	---	---	---	---	---
31	.03	---	.01	.00	---	.00	---	/ .00	---	---	---	---
TOTAL	25.64	11.10	8.78	.06	.00	1.68	.00	---	---	---	---	---
MEAN	.83	.37	.28	.002	.000	.054	.000	---	---	---	---	---
MAX	7.0	1.5	2.0	.01	.00	1.4	.00	---	---	---	---	---
MIN	.02	.02	.01	.00	.00	.00	.00	---	---	---	---	---
AC-FT	51	22	17	.1	.00	3.3	.00	---	---	---	---	---

CAL YR 1978 TOTAL 132.79 MEAN .36 MAX 16 MIN .00 AC-FT 263

/ Discharge measurement, field estimate or observation of no flow made on this day.

16893100 BURONG STREAM, YAP

LOCATION.--Lat 09°31'59" N., long 138°07'05" E., on left bank at Dugor and 0.1 mi (0.2 km) upstream from mouth.
DRAINAGE AREA.--0.23 mi² (0.60 km²), revised.
PERIOD OF RECORD.--April 1968 to current year.
GAGE.--Water-stage recorder and concrete control. Altitude of gage is 15 ft (4.6 m), from topographic map.
REMARKS.--Records good. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.
AVERAGE DISCHARGE.--11 years, 0.913 ft³/s (0.026 m³/s), 661 acre-ft/yr (815,000 m³/yr).
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 445 ft³/s (12.6 m³/s) Sept. 14, 1978, gage height, 5.10 ft (1.554 m), from rating curve extended above 15 ft³/s (0.42 m³/s); no flow for many days most years.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 232 ft³/s (6.57 m³/s) Aug. 17, gage height, 4.24 ft (1.292 m), from rating curve extended above 15 ft³/s (0.42 m³/s); no other peak above base of 100 ft³/s (2.83 m³/s); no flow for several months.
REVISIONS.--The peak discharges and annual maximum (*) for the water years 1968-78 have been revised as shown in the following table. They supersede figures published in WSP 2137, WDR Hawaii 1971-76, WRD HI-77,78-2.

Water Year	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
1968	Sept. 22, 1968	0700	*58	1.64	*2.96	0.902
1969	Oct. 13, 1968	1300	91	2.58	3.32	1.012
1969	July 23, 1969	0500	*220	6.23	*4.18	1.274
1969	Aug. 5, 1969	0700	133	3.77	3.66	1.116
1970	Aug. 15, 1970	0700	173	4.90	3.92	1.195
1970	Aug. 21, 1970	0130	120	3.40	3.56	1.085
1970	Aug. 26, 1970	1830	91	2.58	3.32	1.012
1970	Sept. 19, 1970	1630	*250	7.08	*4.33	1.320
1971	Oct. 3, 1970	1130	102	2.89	3.42	1.042
1971	Oct. 14, 1970	0200	91	2.58	3.32	1.012
1971	July 22, 1971	0800	98	2.78	3.38	1.030
1971	Sept. 6, 1971	0800	136	3.85	3.68	1.122
1971	Sept. 15, 1971	1400	*261	7.39	*4.38	1.335
1971	Sept. 26, 1971	1100	102	2.89	3.42	1.042
1972	Mar. 6, 1972	1030	236	6.68	4.26	1.298
1972	Sept. 5, 1972	1230	287	8.13	4.50	1.372
1972	Sept. 8, 1972	0130	*338	9.57	*4.71	1.436
1973	Sept. 15, 1973	2300	*442	12.5	*5.09	1.551
1974	Apr. 20, 1974	1200	*368	10.4	*4.83	1.472
1974	Aug. 12, 1974	1800	122	3.46	3.58	1.091
1975	Oct. 10, 1974	0030	154	4.36	3.80	1.158
1975	Oct. 25, 1974	1600	263	7.45	4.39	1.338
1975	Nov. 4, 1974	0900	*285	8.07	*4.49	1.369
1975	Jan. 21, 1975	0330	191	5.41	4.02	1.225
1976	Oct. 17, 1975	1730	*201	5.69	*4.08	1.244
1976	May 12, 1976	0700	152	4.30	3.79	1.155
1976	Aug. 19, 1976	1300	194	5.49	4.04	1.231
1977	Sept. 3, 1977	1130	*240	6.80	*4.28	1.305
1978	June 21, 1978	1900	154	4.36	/3.80	1.158
1978	Sept. 14, 1978	0300	*445	12.6	*5.10	1.554
1978	Sept. 17, 1978	1230	201	5.69	4.08	1.244

/ From floodmarks.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	1.3	.90	.02	.00	.00	.00	.00	.00	4.6	.09	.11
2	.08	2.6	1.4	.02	.00	.00	.00	.00	.00	1.2	.09	.07
3	.06	.47	.24	.02	.00	.24	.00	.00	.00	8.2	.08	.02
4	.93	.65	.13	.01	.00	.24	.00	.00	.00	16	.07	.02
5	9.4	2.4	.10	.01	.00	.06	.00	.00	2.2	2.9	.20	.02
6	19	1.2	.09	.01	.00	.00	.00	.00	.13	3.2	4.0	.01
7	9.0	.27	.22	.01	.00	.00	.00	.00	1.5	1.1	10	.01
8	4.8	.13	.13	.00	.00	.00	.00	.00	.65	.34	1.7	.01
9	16	1.3	1.5	.00	.00	.00	.00	.00	.20	.24	6.2	.01
10	3.3	1.0	.70	.00	.00	.00	.00	.01	.07	2.5	7.6	.00
11	.85	.47	2.5	.00	.00	.00	.00	.00	1.2	3.7	1.2	.00
12	3.1	.37	2.2	.00	.00	.00	.00	.00	4.4	.57	.47	.00
13	3.2	.39	4.0	.00	.00	.00	.00	.21	1.8	.24	.24	.01
14	.95	3.8	6.9	.00	.00	2.2	.00	.01	1.6	.16	.14	.06
15	.37	.50	.44	.00	.00	.20	.00	.16	2.2	.09	.26	.11
16	.18	.69	.18	.00	.00	.05	.00	.01	.57	.06	1.4	.04
17	.22	.75	.20	.00	.00	.01	.00	.00	.53	.04	20	.02
18	.16	.37	.18	.00	.00	.00	.00	.00	.53	.01	2.5	.02
19	.10	.30	.10	.00	.00	.00	.00	.00	.34	.01	1.2	.06
20	6.1	.91	.07	.00	.00	.00	.00	.00	.58	.01	.44	.09
21	1.0	.75	.05	.00	.00	.00	.00	.00	.34	.01	.22	.05
22	.50	.37	.04	.00	.00	.00	.00	2.3	.34	2.4	.20	1.9
23	.16	.37	.02	.00	.00	.00	.00	.38	1.8	.85	6.5	1.8
24	.11	.37	.02	.00	.00	.00	.00	.04	2.8	.40	3.2	4.0
25	.10	.18	.03	.00	.00	.00	.00	.00	.50	.47	.60	1.9
26	.09	.11	.03	.00	.00	.00	.00	.00	2.4	2.2	.30	4.4
27	.08	.09	.02	.00	.00	.00	.00	.00	3.6	9.2	.80	1.2
28	.08	.06	.02	.02	.00	.00	.00	.00	10	.85	.48	1.7
29	.08	.08	.03	.02	---	.00	.00	.00	3.8	.53	.34	3.5
30	.07	.10	.03	.01	---	.00	.00	.00	7.0	.20	.75	7.5
31	.06	---	.03	.01	---	.00	---	.00	---	.10	.27	---
TOTAL	80.22	22.35	22.50	.16	.00	3.00	.00	3.12	51.08	62.38	71.50	28.64
MEAN	2.59	.75	.73	.005	.000	.097	.000	.10	1.70	2.01	2.31	.95
MAX	19	3.8	6.9	.02	.00	2.2	.00	2.3	10	16	20	7.5
MIN	.06	.06	.02	.00	.00	.00	.00	.00	.00	.01	.07	.00
AC-FT	159	44	45	.3	.00	6.0	.00	6.2	101	124	142	57

CAL YR 1978 TOTAL 349.32 MEAN .96 MAX 31 MIN .00 AC-FT 693
WTR YR 1979 TOTAL 344.95 MEAN .95 MAX 20 MIN .00 AC-FT 684

16893200 MUKONG STREAM, GAGIL-TOMIL

LOCATION.--Lat 09°32'06" N., long 138°09'59" E., on right bank 0.2 mi (0.3 km) upstream from mouth and 1.6 mi (2.6 km) southwest of Gatjapar.

DRAINAGE AREA.--0.50 mi^2 (1.29 km^2), revised.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1972-75, December 1974 to June 1978, July to September 1978, stage-discharge relation indefinite due to blocked control. Current year.

GAGE.--Water-stage recorder. Altitude of gage is 5 ft (1.5 m), from topographic map.

REMARKS.--Records good, except those for October to December, which are poor. At times some water is pumped from above station for village use. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39 ft^3/s (1.10 m^3/s) Jan. 22, 1975, gage height, 2.69 ft (0.820 m), from rating curve extended above 11 ft^3/s (0.31 m^3/s); maximum gage height, 3.40 ft (1.036 m), from floodmark, Sept. 14, 1978; minimum daily discharge, 0.07 ft^3/s (0.002 m^3/s) Apr. 9, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s), and maximum (*), from rating curve extended above 11 ft^3/s (0.31 m^3/s):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 5	1530	*32	0.91	*2.81	0.856
Dec. 14	0700	32	.91	2.62	.799

Minimum daily discharge, 0.07 ft^3/s (0.002 m^3/s) Apr. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	1.4	1.7	.65	.40	.36	.17	.13	.15	4.3	2.0	1.5
2	1.3	3.4	2.0	.77	.40	.68	.15	.11	.15	2.4	2.2	1.5
3	.83	.65	.96	.65	.40	1.9	.15	.09	.15	4.0	2.1	1.4
4	.91	.74	.89	.60	.40	.96	.13	.09	.13	10	1.8	1.4
5	17	1.0	.83	.55	.40	.65	.15	.11	.20	5.1	2.4	1.3
6	17	.83	.77	.55	.36	.55	.15	.13	.18	4.2	4.4	1.1
7	15	.77	1.7	.50	.36	.45	.15	.09	1.1	3.0	8.1	1.1
8	13	.83	.96	.50	.36	.40	.15	.23	.87	2.3	3.9	1.1
9	17	1.7	3.7	.45	.32	.40	.15	.32	.39	2.5	5.6	1.2
10	12	2.1	1.8	.45	.29	.36	.15	1.0	.28	3.3	7.7	1.1
11	8.2	1.7	3.7	.50	.26	.26	.15	.50	.47	2.6	3.8	.99
12	8.7	1.3	3.5	.50	.26	.26	.26	.29	1.7	2.2	2.9	1.9
13	8.7	2.2	3.9	.50	.23	.40	.71	.26	2.4	2.1	2.4	2.7
14	6.2	5.6	11	.60	.20	2.4	.55	.23	2.4	1.8	2.2	1.9
15	5.1	1.6	2.1	.55	.17	.77	.89	.26	3.1	1.5	2.6	1.6
16	4.4	3.0	1.5	.50	.15	.60	.96	.20	2.3	1.4	2.7	1.9
17	4.2	3.1	2.4	.50	.17	.50	.65	.17	1.5	.87	11	5.1
18	2.7	2.4	1.9	.50	.17	.50	.40	.15	1.5	.75	4.1	1.7
19	2.5	2.5	1.3	.45	.32	.45	.26	.15	1.8	.67	2.6	1.4
20	3.3	3.5	1.2	.40	.60	.40	.15	.15	1.4	.71	2.0	1.2
21	3.9	3.0	1.2	.50	.40	.36	.15	.15	1.1	.93	1.7	1.1
22	2.0	2.5	1.1	.50	.29	.32	.13	1.1	1.4	3.5	1.8	3.3
23	1.7	2.0	1.1	.40	.26	.29	.13	1.7	3.4	3.0	5.7	3.4
24	1.5	1.6	1.1	.40	.26	.26	.13	.60	7.4	2.0	3.0	2.9
25	1.3	1.3	1.3	.40	.29	.29	.13	.36	2.6	2.4	2.7	2.8
26	1.2	1.2	1.7	.40	.26	.26	.13	.29	2.3	3.4	2.6	2.3
27	1.2	1.1	1.2	.71	.20	.23	.11	.23	2.9	6.1	2.2	2.2
28	1.1	1.1	1.2	.65	.20	.17	.11	.20	5.1	3.3	1.9	3.5
29	.96	1.1	1.3	.55	---	.17	.11	.17	5.6	2.7	1.6	4.9
30	.93	1.0	.89	.45	---	.15	.13	.17	4.2	2.3	1.8	6.0
31	.83	---	.77	.40	---	.15	---	.15	---	2.0	1.6	---
TOTAL	166.86	56.22	80.67	16.03	8.38	15.90	7.74	9.78	58.17	87.33	103.1	65.49
MEAN	5.38	1.87	1.96	.52	.30	.51	.26	.32	1.94	2.82	3.33	2.18
MAX	17	5.6	11	.77	.60	2.4	.96	1.7	7.4	10	11	6.0
MIN	.83	.65	.77	.40	.15	.15	.11	.09	.13	.67	1.6	.99
AC-FT	331	112	120	32	17	32	15	19	115	173	204	130

WTR YR 1979 TOTAL 655.67 MEAN 1.80 MAX 17 MIN .09 AC-FT 1300

16893800 WICHEN RIVER AT ALTITUDE 18 M, MOEN

LOCATION.--Lat 07°27'05" N., long 151°52'18" E., on left bank at Peniesence and 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--0.57 mi² (1.48 km²), revised.

PERIOD OF RECORD.--April 1955 to March 1956 (published as "at Peniesence"), June 1968 to current year. All figures of discharge above 3 ft³/s (0.085 m³/s) prior to April 1956, published in WSP 1751, are unreliable and should not be used.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control since Mar. 29, 1973. Altitude of gage is 60 ft (18 m), from topographic map. Prior to Apr. 1, 1956, nonrecording gage at site 100 ft (30 m) downstream at different datum.

REMARKS.--Records poor. No diversion above station. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 2.98 ft³/s (0.084 m³/s), 2,160 acre-ft/yr (2.66 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 910 ft³/s (25.8 m³/s) June 4, 1972, gage height, 6.80 ft (2.073 m), from rating curve extended above 20 ft³/s (0.57 m³/s); minimum, 0.01 ft³/s (<0.001 m³/s) Apr. 16-19, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*), from rating curve extended above 20 ft³/s (0.57 m³/s):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 2	1800	246	6.97	3.54	1.079	Apr. 9	a0700	256	7.25	3.61	1.100
Oct. 8	0930	206	5.83	3.27	.997	June 8	1030	234	6.63	3.46	1.055
Oct. 10	1830	350	9.91	4.23	1.289	Aug. 10	a0900	*488	13.8	/*5.14	1.567

Minimum discharge, 0.08 ft³/s (0.002 m³/s) sometime during Apr. 3-8.

/ From floodmarks.
a About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	8.0	6.5	1.0	.45	.45	.19	1.0	2.4	11	.40	1.0
2	19	4.8	4.3	.65	.37	.30	.18	.80	2.3	12	.30	1.0
3	10	3.1	3.5	.45	.30	.19	.16	1.0	1.6	21	1.0	.76
4	7.4	2.3	3.5	.37	.30	.19	.14	1.0	1.8	8.8	1.0	1.3
5	6.2	2.0	10	.30	.30	.11	.12	2.0	1.5	8.9	5.0	1.3
6	4.3	2.4	5.0	.55	.30	.11	.10	1.0	1.2	5.0	10	.88
7	4.5	3.6	2.0	.37	.30	.15	.09	10	1.0	2.0	5.0	.76
8	26	2.1	10	.76	.30	.24	10	4.0	31	1.5	6.0	.65
9	8.0	1.6	8.0	.65	.30	.24	50	8.0	16	1.5	3.0	.65
10	34	1.5	8.0	.86	.30	1.5	5.0	4.0	9.6	1.0	30	.65
11	19	1.6	3.0	4.9	.24	4.3	8.3	5.0	5.6	.80	15	.65
12	8.8	1.6	10	5.7	.24	2.0	39	3.0	4.3	.60	20	.76
13	7.4	1.3	3.0	2.1	.24	2.0	13	6.5	4.3	.50	20	.45
14	5.0	1.7	2.0	1.3	.19	3.6	5.3	6.8	3.6	.40	15	.45
15	3.6	6.2	7.0	.88	.19	8.6	7.3	4.8	2.6	.35	15	.37
16	3.1	2.4	2.5	.55	.15	3.1	5.0	26	7.8	.30	10	.45
17	2.3	10	2.0	.37	.30	2.1	3.3	11	5.3	.25	7.0	.37
18	5.0	6.5	1.5	.30	.45	1.6	3.6	11	3.6	.20	5.0	.30
19	4.5	5.6	1.2	.24	.24	4.9	20	5.0	2.6	.25	3.0	.37
20	3.3	5.0	1.1	.19	.19	3.3	13	3.8	2.3	.50	5.0	.30
21	3.3	4.5	1.0	.15	.15	2.1	5.6	2.8	2.0	.60	5.0	.30
22	2.3	3.3	.76	.24	.11	1.2	3.6	2.1	8.8	.40	3.0	.76
23	2.1	2.4	.65	.15	.11	.88	2.4	1.8	4.3	.30	15	.88
24	1.6	1.8	.55	3.4	.19	.55	1.8	1.6	3.8	.40	7.3	6.5
25	1.6	2.0	.65	13	2.3	.37	1.3	2.1	10	.60	4.8	5.0
26	1.8	1.6	9.0	4.3	3.8	.30	1.2	1.8	6.8	.60	3.3	2.4
27	1.6	3.3	4.5	2.3	1.3	.30	.76	1.3	6.2	.50	2.8	2.8
28	1.5	3.1	2.1	1.6	.76	.30	.65	4.5	23	.40	2.3	2.1
29	1.2	4.0	1.5	1.2	---	.24	.45	3.6	8.8	.30	1.6	7.6
30	6.8	20	1.2	.88	---	.19	1.0	3.3	6.5	.60	1.5	7.1
31	20	---	.88	.65	---	.19	---	2.4	---	.50	1.2	---
TOTAL	234.4	119.3	116.89	50.36	14.37	45.60	202.54	143.00	190.6	82.05	224.50	48.86
MEAN	7.56	3.98	3.77	1.62	.51	1.47	6.75	4.61	6.35	2.65	7.24	1.63
MAX	34	20	10	13	3.8	8.6	50	26	31	21	30	7.6
MIN	1.2	1.3	.55	.15	.11	.11	.09	.80	1.0	.20	.30	.30
AC-FT	465	237	232	100	29	90	402	284	378	163	445	97

CAL YR 1978 TOTAL 1006.25 MEAN 2.76 MAX 41 MIN .02 AC-FT 2000
WTR YR 1979 TOTAL 1472.47 MEAN 4.03 MAX 50 MIN .09 AC-FT 2920

NOTE.--No gage-height record July 6 to Aug. 23.

CAROLINE ISLANDS, ISLAND OF PONAPE

16897600 NANEPIL RIVER

LOCATION.--Lat 06°55'11" N., long 158°12'36" E., on left bank 1.4 mi (2.3 km) northeast of Mount Tamatamansakir and 1.4 mi (2.3 km) southeast of Rekisau.

DRAINAGE AREA.--2.93 mi^2 (7.59 km^2).

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

REVISED RECORDS.--WDR HI-76-1: 1970(M), 1971-72(P), 1973(M), 1974(P), 1975(M).

GAGE.--Water-stage recorder. Altitude of gage is 390 ft (119 m), from topographic map.

REMARKS.--Records fair. No diversion above station. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years, 49.2 ft^3/s (1.393 m^3/s), 35,650 acre-ft/yr (44.0 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,820 ft^3/s (250 m^3/s) Aug. 4, 1976, gage height, 9.68 ft (2.950 m), from rating curve extended above 168 ft^3/s (4.76 m^3/s) on basis of slope-area measurement at gage height 9.68 ft (2.950 m); minimum, 1.6 ft^3/s (0.045 m^3/s) Nov. 17-23, 1972, Feb. 6, Oct. 21, 22, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft^3/s (90.6 m^3/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Feb. 22	1615	4520	128	8.37	2.551
Aug. 1	0630	*5130	145	*8.61	2.624
Aug. 13	a0500	a3500	99.1	--	--

Minimum discharge, 3.6 ft^3/s (0.102 m^3/s) Feb. 11-13.

a About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195	23	14	19	17	18	8.7	90	33	89	341	19
2	93	16	29	19	16	9.8	125	57	25	66	29	19
3	25	12	16	34	11	10	40	56	26	98	20	19
4	26	10	38	22	8.5	11	19	53	24	40	25	18
5	17	13	26	12	7.0	7.3	72	61	26	38	20	20
6	104	27	32	10	6.7	10	68	42	87	40	30	20
7	48	17	23	8.8	8.5	7.3	64	32	32	58	50	50
8	26	89	101	7.8	6.0	17	73	48	64	21	25	14
9	20	40	45	97	5.6	9.4	211	27	81	13	25	11
10	13	25	162	50	4.8	78	58	31	32	14	80	20
11	11	28	44	25	3.9	29	60	82	29	11	40	18
12	34	29	28	92	3.9	22	57	46	27	8.3	200	27
13	118	26	58	23	24	59	162	64	33	22	400	14
14	27	43	69	15	17	46	155	43	49	22	90	9.4
15	18	68	72	11	15	50	80	26	55	11	60	7.6
16	13	45	67	9.6	15	49	43	57	48	106	25	80
17	9.8	158	47	35	41	79	39	55	137	29	18	26
18	33	155	31	13	58	59	251	27	46	20	15	16
19	22	56	19	8.5	22	31	100	136	26	13	20	13
20	14	116	14	7.0	12	23	36	31	36	14	45	152
21	11	38	11	28	22	14	22	19	37	31	24	39
22	48	28	13	38	247	10	17	14	28	19	28	26
23	24	18	13	45	38	14	85	17	153	12	125	48
24	43	54	18	127	54	25	24	12	40	11	46	37
25	25	36	13	126	29	9.8	16	12	23	51	25	53
26	22	20	58	47	37	7.3	19	38	83	44	22	108
27	45	153	61	29	30	6.2	30	68	33	57	31	32
28	52	25	36	29	31	5.9	73	113	100	37	22	44
29	27	29	19	25	---	4.6	43	37	84	20	16	27
30	105	20	32	15	---	4.2	87	22	74	14	20	143
31	59	---	24	34	---	18	---	28	---	53	20	---
TOTAL	1327.8	1417	1233	1061.7	790.9	743.8	2137.7	1444	1571	1082.3	1937	1130.0
MEAN	42.8	47.2	39.8	34.2	28.2	24.0	71.3	46.6	52.4	34.9	62.5	37.7
MAX	195	158	162	127	247	79	251	136	153	106	400	152
MIN	9.8	10	11	7.0	3.9	4.2	8.7	12	23	8.3	15	7.6
AC-FT	2630	2810	2450	2110	1570	1480	4240	2860	3120	2150	3840	2240

CAL YR 1978 TOTAL 13587.9 MEAN 37.2 MAX 333 MIN 3.4 AC-FT 26950
WTR YR 1979 TOTAL 15876.2 MEAN 43.5 MAX 400 MIN 3.9 AC-FT 31490

16897900 LUI RIVER

LOCATION.--Lat 06°55'36" N., long 158°12'55" E., on right bank 300 ft (91 m) upstream from right-bank tributary and 1.3 mi (2.1 km) southeast of Rekisau.

DRAINAGE AREA.--0.47 mi² (1.22 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 270 ft (82 m), from topographic map.

REMARKS.--Records good. No diversion above station. Water-quality analysis for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years, 5.50 ft³/s (0.156 m³/s), 3,980 acre-ft/yr (4.91 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) Aug. 4, 1976, gage height, 5.92 ft (1.804 m), from rating curve extended above 37 ft³/s (1.05 m³/s), on basis of slope-area measurement at gage height 5.92 ft (1.804 m); minimum, 0.13 ft³/s (0.004 m³/s) Feb. 2-4, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 1	1630	508	14.4	4.14	1.262	Aug. 12	1600	519	14.7	4.18	1.274
Aug. 1	0600	*1180	33.4	*5.91	1.801	Aug. 13	0500	665	18.8	4.64	1.414

Minimum discharge, 0.43 ft³/s (0.012 m³/s) Jan. 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	2.4	1.4	1.3	1.6	2.4	.81	11	4.2	13	103	1.0
2	12	2.2	2.4	1.2	1.1	1.4	29	8.4	3.0	12	4.4	.97
3	3.1	2.0	1.4	1.5	.81	1.1	4.0	5.3	3.1	20	3.0	.89
4	3.0	1.8	3.7	1.0	.66	.97	1.8	6.4	2.3	7.6	3.4	.89
5	2.1	1.8	2.4	.66	.66	.81	7.8	11	2.4	6.0	3.0	.66
6	20	5.0	3.1	.60	.66	.81	6.6	5.9	8.7	8.3	4.5	.60
7	6.7	2.5	1.7	.54	.73	.73	6.3	3.9	4.0	14	7.0	.89
8	3.2	2.3	12	.48	.73	.89	7.0	6.4	9.4	4.0	3.6	.66
9	2.2	3.0	6.0	9.2	.81	.97	32	3.2	11	2.6	3.6	.60
10	1.3	2.6	25	7.0	.73	.97	7.8	4.3	4.6	2.8	13	.89
11	1.2	3.0	7.0	3.2	.66	.81	5.9	15	4.2	1.9	5.5	.66
12	3.8	2.7	4.0	13	1.1	.81	6.5	6.8	4.6	1.4	32	.89
13	12	2.5	5.0	3.0	2.1	.73	20	9.0	5.7	1.9	68	.72
14	3.8	2.4	9.0	1.5	.89	6.0	30	6.7	4.0	3.8	14	.54
15	2.3	7.3	10	1.0	.54	10	15	3.4	5.1	2.2	9.5	.48
16	1.4	5.9	6.0	.89	2.1	10	7.0	5.7	19	20	3.6	1.5
17	.97	19	5.0	1.1	3.9	17	5.3	7.6	7.0	5.5	2.5	.81
18	8.2	22	3.0	.73	4.4	9.7	49	3.4	3.9	2.8	1.8	.66
19	4.0	8.7	2.5	.60	1.4	5.4	14	30	4.0	1.7	2.6	.66
20	2.4	19	2.0	.54	.73	3.2	5.3	4.8	6.1	2.3	2.4	1.3
21	1.7	5.3	1.4	4.0	.73	2.0	3.1	2.5	4.0	2.1	1.7	.81
22	4.6	4.4	1.3	3.1	25	1.5	2.6	1.8	27	2.0	2.6	.54
23	2.3	2.5	1.2	2.1	6.4	1.3	4.8	1.6	12	1.3	17	1.2
24	4.8	4.8	1.2	15	11	1.5	2.4	1.8	6.7	1.1	4.8	4.6
25	3.2	3.6	1.1	16	4.2	.97	1.7	2.0	3.2	4.3	2.1	4.3
26	2.5	2.1	2.0	6.1	3.7	.81	2.5	5.3	21	3.6	1.5	10
27	8.0	18	3.0	3.9	3.7	.81	4.8	8.4	5.5	5.7	7.8	2.8
28	3.7	3.6	1.8	2.7	5.7	.73	7.8	17	13	4.4	3.1	4.0
29	2.3	3.1	1.5	2.1	---	.60	4.2	5.7	13	2.8	1.7	2.1
30	12	3.4	1.7	1.3	---	.54	7.6	3.4	9.1	2.0	1.1	7.7
31	5.9	---	1.5	4.0	---	2.7	---	4.6	---	7.9	.97	---
TOTAL	176.67	168.9	130.3	109.34	86.74	88.16	302.61	212.3	230.8	171.0	334.77	54.32
MEAN	5.70	5.63	4.20	3.53	3.10	2.84	10.1	6.85	7.69	5.52	10.8	1.81
MAX	32	22	25	16	25	17	49	30	27	20	103	10
MIN	.97	1.8	1.1	.48	.54	.54	.81	1.6	2.3	1.1	.97	.48
AC-FT	350	335	258	217	172	175	600	421	458	339	664	108

CAL YR 1978 TOTAL 1719.70 MEAN 4.71 MAX 75 MIN .38 AC-FT 3410
WTR YR 1979 TOTAL 2065.91 MEAN 5.66 MAX 103 MIN .48 AC-FT 4100

16898200 LUI RIVER AT MOUTH

LOCATION.--Lat 06°57'07" N., long 158°13'16" E., on right bank 0.4 mi (0.6 km) upstream from mouth and 1.3 mi (2.1 km) west of Tolenot Peak.

DRAINAGE AREA.--2.06 mi^2 (5.34 km^2).

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

REVISED RECORDS.--WDR HI-76-1: 1970(P), 1971-75.

GAGE.--Water-stage recorder. Altitude of gage is 40 ft (12 m), from topographic map.

REMARKS.--Records good. During dry periods, water is diverted from dam, 500 ft (152 m) upstream, to Tawannu River pump-station pool for domestic use in Kolonia. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--9 years, 25.4 ft^3/s (0.719 m^3/s), 18,400 acre-ft/yr (22.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,360 ft^3/s (180 m^3/s) Aug. 4, 1976, gage height, 8.91 ft (2.716 m), from rating curve extended above 288 ft^3/s (8.16 m^3/s) on basis of slope-area measurement at gage height 8.91 ft (2.716 m); minimum, 0.26 ft^3/s (0.007 m^3/s) Jan. 20, 1973, during short regulation of flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft^3/s (56.6 m^3/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 1	0645	*4840	137	*7.95	2.423
Aug. 13	0600	3150	89.2	6.70	2.042

Minimum discharge, 2.0 ft^3/s (0.057 m^3/s) Sept. 22 during short regulation of flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	13	8.8	5.4	6.8	9.9	5.4	41	17	61	394	7.4
2	54	10	9.4	5.2	5.7	7.1	95	41	14	87	26	7.1
3	20	8.1	7.7	6.5	5.0	6.2	22	28	13	91	19	5.9
4	15	7.3	13	5.1	4.4	5.4	11	34	12	35	18	6.1
5	12	7.3	10	4.5	4.1	4.8	26	52	14	28	16	5.3
6	79	19	11	4.4	3.9	4.6	22	34	39	32	22	6.0
7	40	10	9.0	3.9	3.7	4.5	22	22	23	53	35	6.3
8	22	9.4	49	3.6	3.4	4.6	25	28	36	22	22	5.4
9	15	15	25	19	3.3	4.2	141	18	50	16	16	4.7
10	11	12	106	17	3.1	41	40	19	26	15	40	5.9
11	9.9	14	28	10	2.9	14	24	53	23	12	29	4.7
12	13	12	18	39	2.8	9.2	25	27	23	9.6	109	5.8
13	33	10	22	13	6.0	14	77	33	27	17	291	5.0
14	18	10	41	8.8	4.7	17	119	28	21	19	60	4.2
15	12	20	45	6.8	3.5	32	55	18	23	12	48	3.8
16	9.2	23	25	6.0	4.7	26	35	23	63	50	22	5.2
17	7.9	62	22	6.0	8.8	64	23	30	34	24	17	4.8
18	19	74	15	5.1	11	54	232	19	21	17	13	4.1
19	12	37	12	4.5	5.8	28	59	99	18	13	14	3.9
20	9.4	78	9.7	4.2	4.2	18	27	26	21	14	12	4.5
21	8.8	25	8.1	9.2	4.2	13	19	17	17	13	9.8	4.4
22	13	20	7.9	8.9	45	9.6	15	13	85	11	13	3.2
23	9.7	14	7.0	6.0	22	8.1	20	11	57	9.1	62	4.6
24	12	18	6.8	35	28	7.6	13	10	45	8.2	28	8.0
25	11	15	6.3	40	15	6.3	10	11	21	12	15	13
26	10	11	10	19	14	5.7	13	16	127	13	12	20
27	25	48	15	13	13	5.4	17	27	33	15	22	9.9
28	18	18	7.7	9.8	16	5.1	28	61	44	15	16	14
29	11	14	6.2	8.3	---	4.4	18	27	50	12	10	10
30	36	11	7.5	6.6	---	4.1	35	18	36	9.4	8.4	25
31	23	---	6.3	11	---	9.7	---	20	---	27	7.3	---
TOTAL	667.9	645.1	575.4	348.8	255.0	447.5	1273.4	904	1033	732.3	1926.5	218.2
MEAN	21.5	21.5	18.6	11.1	9.11	14.4	42.4	29.2	34.4	23.6	46.0	7.27
MAX	79	78	106	40	45	64	232	99	127	91	394	25
MIN	7.9	7.3	6.2	3.6	2.8	4.1	5.4	10	12	8.2	7.3	3.2
AC-FT	1320	1280	1140	684	506	888	2530	1790	2050	1450	2830	433

CAL YR 1978 TOTAL 7104.0 MEAN 19.5 MAX 360 MIN 2.7 AC-FT 14090
WTR YR 1979 TOTAL 8523.1 MEAN 23.4 MAX 394 MIN 2.8 AC-FT 16910

16898600 LUPWOR RIVER

LOCATION.--Lat 06°54'15" N., long 158°09'45" E., on left bank about 300 ft (91 m) upstream from 50-ft (15-m) waterfall, 1.8 mi (2.9 km) above mouth, and 2.1 mi (3.4 km) west of Mount Tamatamansakir.

DRAINAGE AREA.--1.12 mi² (2.90 km²).

PERIOD OF RECORD.--September 1972 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 100 ft (30 m), from topographic map.

REMARKS.--Records good except those above 100 ft³/s (2.83 m³/s), which are fair, and those for period of no gage-height record, which are poor. Water-quality analyses for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 8.90 ft³/s (0.252 m³/s), 6,450 acre-ft/yr (7.95 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft³/s (87.5 m³/s) Aug. 4, 1976, gage height, 8.26 ft (2.518 m), from rating curve extended above 26 ft³/s (0.74 m³/s), on basis of estimate of peak flow; minimum, 0.40 ft³/s (0.011 m³/s) Feb. 18, 19, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 750 ft³/s (21.2 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 1	1600	755	21.4	5.63	1.716	Feb. 22	1630	1430	40.5	6.71	2.045
Nov. 17	1800	1220	34.6	6.42	1.957	Aug. 1	0615	*1450	41.1	*6.74	2.054
Nov. 27	0700	870	24.6	5.85	1.783	Aug. 12	1545	1070	30.3	6.18	1.884

Minimum discharge, 0.80 ft³/s (0.023 m³/s) Mar. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	5.0	3.6	2.1	2.8	3.7	1.8	18	6.8	29	135	2.5
2	19	3.6	4.0	1.9	2.4	2.0	27	13	5.2	18	9.4	2.3
3	6.5	2.9	3.5	2.3	2.1	2.3	8.4	12	5.4	29	15	2.1
4	15	2.5	6.0	1.7	1.9	2.5	4.0	10	5.0	11	12	2.0
5	6.2	2.3	4.0	1.6	1.8	2.0	15	13	5.4	8.9	11	1.8
6	11	3.0	4.5	1.5	1.7	2.4	10	8.4	19	14	12	3.4
7	7.1	2.3	2.8	1.4	1.6	2.1	13	6.4	6.8	15	38	12
8	5.0	12	13	1.4	1.4	3.7	16	10	12	6.7	9.5	5.2
9	4.6	4.7	6.7	27	1.4	2.8	45	5.6	16	5.2	6.7	3.0
10	3.4	2.8	43	7.0	1.3	20	13	6.3	7.4	5.0	48	3.7
11	2.9	3.2	9.1	4.0	1.2	4.2	14	16	5.8	4.0	11	3.7
12	3.0	3.4	5.3	16	1.2	13	12	9.4	6.9	3.5	111	3.7
13	10	2.6	9.8	4.3	2.2	9.4	35	14	6.7	4.6	73	3.0
14	4.1	3.0	11	3.0	1.7	10	17	8.5	8.4	4.6	28	2.4
15	3.2	7.6	11	2.6	1.5	11	8.4	5.2	9.1	4.1	20	2.1
16	2.6	5.0	9.4	2.3	1.6	9.6	7.4	13	41	20	8.0	20
17	2.3	64	6.7	3.2	5.3	16	8.2	12	11	6.7	6.4	6.5
18	4.2	21	5.0	2.1	7.5	14	58	6.3	6.9	17	5.0	4.6
19	3.2	11	3.8	1.8	3.1	6.4	22	33	7.9	7.1	4.7	3.4
20	2.7	24	3.0	1.6	2.7	4.8	7.6	6.3	7.1	5.7	9.0	51
21	2.6	7.2	2.6	4.2	2.6	2.9	4.6	4.2	5.7	6.7	6.0	7.0
22	3.3	5.2	2.6	3.9	92	2.1	3.5	2.9	39	6.2	4.6	4.5
23	2.6	3.9	2.3	3.2	8.8	2.9	19	3.5	14	5.2	11	4.9
24	3.9	7.3	2.1	17	9.0	5.2	5.0	2.5	10	4.9	6.7	4.5
25	2.9	5.0	2.1	28	6.9	1.9	3.3	2.5	6.4	42	4.7	7.9
26	3.3	3.4	4.9	7.8	9.0	1.4	4.0	8.2	14	9.8	4.0	19
27	8.5	57	5.3	4.9	5.0	1.2	6.3	15	6.9	12	4.1	6.9
28	13	6.2	2.7	4.4	6.2	1.0	16	24	24	8.4	3.4	8.2
29	5.2	6.0	2.5	3.9	---	.90	8.5	8.5	19	6.9	3.6	6.0
30	22	4.6	3.0	2.8	---	.80	20	4.2	20	5.4	3.2	58
31	12	---	2.6	4.9	---	3.7	---	6.0	---	12	2.7	---
TOTAL	253.3	291.7	197.9	173.8	185.9	165.90	433.0	307.9	358.8	338.6	626.7	265.3
MEAN	8.17	9.72	6.38	5.61	6.64	5.35	14.4	9.93	12.0	10.9	20.2	8.84
MAX	58	64	43	28	92	20	54	33	41	42	135	58
MIN	2.3	2.3	2.1	1.4	1.2	.80	1.8	2.5	5.0	3.5	2.7	1.8
AC-FT	502	579	393	345	369	329	859	611	712	672	1240	526

CAL YR 1978 TOTAL 2727.68 MEAN 7.47 MAX 119 MIN .92 AC-FT 5410
WTR YR 1979 TOTAL 3598.80 MEAN 9.86 MAX 135 MIN .80 AC-FT 7140

NOTE.--No gage-height record Feb. 28 to June 7.

16899500 MUTUNTE RIVER

LOCATION.--Lat 05°22'25" N., long 163°00'24" E., on left bank at dam, 0.3 mi (0.5 km) upstream from mouth, and 1.1 mi (1.8 km) northwest of Mount Buache.

DRAINAGE AREA.--0.60 mi^2 (1.55 km^2).

PERIOD OF RECORD.--May 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 46 ft (14.0 m) from stadia survey.

REMARKS.--Records fair. Water is diverted from diversion dam above station through a 4-in (0.10-m) pipe for domestic use in Tafunsak. Water-quality analyses for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 5.66 ft^3/s (0.160 m^3/s), 4,220 acre-ft/yr (5.20 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,430 ft^3/s (40.5 m^3/s) July 16, 1976, gage height, 2.94 ft (0.896 m), from rating curve extended above 140 ft^3/s (3.96 m^3/s); minimum, 0.40 ft^3/s (0.011 m^3/s) Jan. 10, 1979, during short regulation of flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 529 ft^3/s (15.0 m^3/s) July 24, gage height, 2.43 ft (0.741 m), no peak above base of 600 ft^3/s (17.0 m^3/s); minimum, 0.40 ft^3/s (0.011 m^3/s) Jan. 10, during short regulation of flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	3.6	3.2	2.7	.95	49	5.6	34	3.4	11	7.5	1.8
2	4.7	1.7	3.3	4.0	.95	7.0	11	7.0	4.0	9.3	3.5	5.3
3	2.3	1.3	7.0	2.1	.86	6.8	8.7	4.7	3.0	4.9	4.5	2.3
4	1.8	3.6	5.4	1.6	.78	4.7	8.1	4.0	2.7	8.6	4.5	1.8
5	1.5	1.3	11	1.5	.95	12	4.9	4.1	3.4	5.4	15	1.8
6	1.7	4.1	2.7	1.4	11	8.1	4.1	7.9	3.2	4.1	4.1	1.4
7	1.3	1.7	2.3	1.5	3.0	4.7	3.5	5.2	9.0	3.4	6.5	1.5
8	1.2	8.9	2.7	1.5	1.8	2.1	2.7	14	31	3.2	3.2	1.8
9	1.2	4.5	17	1.5	1.4	3.2	14	13	23	3.0	3.0	3.7
10	1.2	4.3	11	1.3	1.3	1.8	29	5.6	4.1	2.5	4.3	4.4
11	1.2	4.9	4.7	1.3	1.3	1.5	16	7.5	3.2	2.3	12	2.0
12	1.2	3.4	4.8	1.3	1.1	1.5	5.2	4.9	3.0	3.2	5.2	2.0
13	1.3	2.1	3.2	1.3	1.1	26	17	3.8	2.7	5.4	9.4	2.0
14	1.4	2.1	13	1.5	1.2	12	6.7	7.3	3.0	3.2	5.4	1.6
15	1.2	5.2	3.2	1.3	1.5	41	24	3.7	2.5	2.7	3.8	1.4
16	1.2	28	40	1.3	1.3	5.4	9.8	4.3	29	2.3	3.2	1.6
17	1.2	3.4	23	1.3	4.7	3.6	5.2	3.5	5.4	2.5	2.7	2.5
18	1.1	1.8	4.0	1.3	2.0	21	16	8.6	4.3	2.1	7.8	1.5
19	.98	3.8	3.2	1.2	1.3	7.0	7.3	5.6	5.6	2.5	4.0	1.4
20	1.0	2.3	2.5	1.2	16	3.8	5.2	3.5	3.8	2.5	10	1.4
21	1.3	1.3	2.1	1.3	5.4	2.7	3.6	3.0	3.4	2.3	4.0	1.3
22	1.1	4.5	4.0	1.2	36	2.3	3.4	3.5	5.6	2.1	4.0	1.2
23	1.4	2.3	8.7	1.2	9.2	2.1	2.7	14	9.9	1.8	3.0	1.2
24	2.2	25	2.3	1.4	8.1	2.1	2.7	3.8	12	15	2.3	2.1
25	1.3	5.8	2.1	7.2	4.0	16	14	3.2	4.9	4.3	4.8	1.8
26	1.2	9.0	18	11	2.0	35	4.0	3.0	3.7	3.7	3.0	18
27	1.2	4.1	3.4	2.0	14	4.5	3.6	3.2	3.2	3.5	2.5	5.5
28	1.1	4.1	2.3	1.3	4.7	7.0	12	24	12	2.5	2.1	1.8
29	1.0	5.2	2.3	1.0	---	4.3	7.6	5.2	27	2.3	2.0	9.3
30	1.1	2.0	2.3	1.0	---	16	7.0	3.8	6.6	2.1	3.4	10
31	1.0	---	1.8	.95	---	24	---	4.0	---	4.9	2.0	---
TOTAL	54.58	155.3	216.5	61.65	137.89	338.2	264.6	222.9	237.6	128.6	152.7	95.4
MEAN	1.76	5.18	6.98	1.99	4.92	10.9	8.82	7.19	7.92	4.15	4.93	3.18
MAX	12	28	40	11	36	49	29	34	31	15	15	18
MIN	.98	1.3	1.8	.95	.78	1.5	2.7	3.0	2.5	1.8	2.0	1.2
AC-FT	108	308	429	122	274	671	525	442	471	255	303	189

CAL YR 1978 TOTAL 1460.28 MEAN 4.00 MAX 40 MIN .98 AC-FT 2900
WTR YR 1979 TOTAL 2065.92 MEAN 5.66 MAX 49 MIN .78 AC-FT 4100

16899600 OKAT RIVER

LOCATION.--Lat 05°20'32" N., long 162°59'30" E., on left bank 1.6 mi (2.6 km) upstream from mouth and 1.9 mi (3.1 km) northwest of Mount Crozer.

DRAINAGE AREA.--1.60 mi² (4.14 km²).

PERIOD OF RECORD.--July 1971 to current year.

REVISED RECORDS.--WDR Hawaii 1974: 1971-72(P), 1973(M).

GAGE.--Water-stage recorder. Altitude of gage is 10 ft (3.0 m), from topographic map.

REMARKS.--Records good. No diversion above station. Water-quality analyses and periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 21.2 ft³/s (0.600 m³/s), 15,360 acre-ft/yr (18.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,060 ft³/s (30.0 m³/s) Aug. 2, 1976, gage height, 8.22 ft (2.505 m), from rating curve extended above 230 ft³/s (6.51 m³/s); minimum, 1.4 ft³/s (0.040 m³/s) Mar. 11, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 700 ft³/s (19.8 m³/s) and maximum (*), from rating curve extended above 230 ft³/s (6.51 m³/s):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 1	1630	766	21.7	6.28	1.914	May 1	1315	800	22.7	6.45	1.966
Dec. 16	0915	712	20.2	6.01	1.832	June 8	1200	796	22.5	6.43	1.960
Mar. 1	1430	834	23.6	6.62	2.018	June 24	1900	818	23.2	6.54	1.993
Mar. 15	0930	860	24.4	6.75	2.057	July 24	1100	*864	24.5	*6.77	2.063
Mar. 26	0730	768	21.7	6.29	1.917	July 27	1530	726	20.6	6.08	1.853
Apr. 10	0400	730	20.7	6.10	1.859	Aug. 20	1300	808	22.9	6.49	1.978

Minimum discharge, 4.8 ft³/s (0.136 m³/s) Jan. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	17	15	16	7.2	265	36	132	8.6	35	29	9.0
2	35	8.8	15	16	8.4	78	36	50	12	42	16	35
3	19	7.6	25	12	5.9	65	40	31	8.2	27	28	11
4	15	16	17	10	5.3	45	40	30	6.4	40	29	9.3
5	14	8.0	35	8.5	7.1	48	32	23	8.2	27	33	8.6
6	12	11	15	8.0	92	85	30	31	7.1	19	19	7.5
7	20	8.0	13	7.7	19	44	20	30	13	22	37	15
8	11	42	14	7.8	12	29	17	61	176	16	17	23
9	9.6	14	99	7.6	9.5	31	57	51	84	12	21	36
10	12	11	55	9.6	8.2	22	129	28	25	11	23	20
11	8.8	17	38	10	7.6	17	65	23	17	9.3	60	12
12	7.6	10	25	7.6	7.2	19	35	20	13	9.7	36	11
13	15	8.0	19	7.2	6.7	118	48	20	12	18	39	15
14	15	8.4	87	8.4	7.4	46	31	23	9.7	9.0	33	8.6
15	9.2	15	28	7.2	11	234	121	17	8.6	9.0	20	7.9
16	7.6	87	174	6.5	8.4	76	55	15	10	7.8	17	13
17	6.8	17	126	7.0	21	43	36	19	10	7.5	14	14
18	6.8	14	39	6.7	10	113	74	27	10	7.1	44	8.2
19	11	35	26	6.4	7.9	58	50	23	10	9.3	16	7.9
20	8.8	16	20	6.0	125	33	31	12	9.3	7.1	81	8.6
21	44	12	16	5.7	30	24	23	26	7.9	7.1	26	7.5
22	10	18	29	5.4	92	20	19	13	27	9.9	32	6.4
23	10	11	42	5.1	50	16	15	64	46	16	21	5.7
24	17	58	15	6.0	30	13	13	16	81	118	30	20
25	11	22	15	36	22	73	62	12	38	22	36	13
26	9.6	40	49	39	17	139	17	11	24	21	18	72
27	8.0	21	20	12	30	33	18	11	17	49	15	28
28	6.8	18	16	8.8	31	25	39	52	32	19	13	13
29	7.6	18	16	6.8	---	19	31	19	87	13	11	18
30	6.4	13	13	6.4	---	50	38	12	36	12	13	47
31	5.7	---	12	6.0	---	77	---	9.7	---	43	9.7	---
TOTAL	507.3	601.8	1128	313.4	688.8	1958	1258	911.7	854.0	674.8	836.7	511.2
MEAN	16.4	20.1	36.4	10.1	24.6	63.2	41.9	29.4	28.5	21.8	27.0	17.0
MAX	127	87	174	39	125	265	129	132	176	118	81	72
MIN	5.7	7.6	12	5.1	5.3	13	13	9.7	6.4	7.1	9.7	5.7
AC-FT	1010	1190	2240	622	1370	3880	2500	1810	1690	1340	1660	1010

CAL YR 1978 TOTAL 6880.9 MEAN 18.9 MAX 174 MIN 3.7 AC-FT 13650
WTR YR 1979 TOTAL 10243.7 MEAN 28.1 MAX 265 MIN 5.1 AC-FT 20320

16899620 MELO RIVER

LOCATION.--Lat 05°21'06" N., long 162°59'29" E., on left bank 0.35 mi (0.56 km) upstream from mouth and 1.7 mi (2.7 km) southwest of Mount Buache.

DRAINAGE AREA.--0.48 mi² (1.24 km²).

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

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 20 ft (6.1 m), from topographic map.

REMARKS.--Records good except those for period of no gage-height record, which are poor. Water-quality analyses for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--5 years, 7.01 ft³/s (0.199 m³/s), 5,080 acre-ft/yr (6.26 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 784 ft³/s (22.2 m³/s) Mar. 22, 1976, gage height, 5.78 ft (1.762 m), from rating curve extended above 17 ft³/s (0.48 m³/s); minimum, 0.65 ft³/s (0.018 m³/s) about Mar. 10, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 300 ft³/s (8.50 m³/s) and maximum (*), from rating curve extended above 17 ft³/s (0.48 m³/s):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 1	1600	316	8.95	3.63	1.106	May 1	1230	310	8.78	3.60	1.097
Dec. 16	0800	336	9.52	3.73	1.137	June 8	1030	368	10.4	3.89	1.186
Mar. 1	1330	*378	10.7	*3.94	1.201	June 16	1900	312	8.84	3.61	1.100
Mar. 15	0730	344	9.74	3.77	1.149	June 24	1630	304	8.61	3.57	1.088
Mar. 26	0700	314	8.89	3.62	1.103	July 24	1130	376	10.6	3.93	1.198

Minimum discharge, 0.80 ft³/s (0.023 m³/s) Jan. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	4.8	6.0	6.0	1.9	62	12	30	2.6	11	9.0	2.3
2	8.5	1.8	5.7	6.3	2.1	21	15	12	3.6	8.2	4.9	8.0
3	5.3	2.1	9.2	4.1	1.7	15	12	8.5	3.4	6.6	8.9	3.2
4	4.1	3.9	7.6	3.4	1.5	11	11	7.6	3.4	12	7.1	2.5
5	3.8	1.9	14	3.1	2.2	15	11	6.6	4.8	7.6	14	2.3
6	4.1	5.8	5.8	2.6	17	19	9.5	9.6	4.8	5.3	5.8	1.9
7	4.5	2.8	5.3	2.4	5.3	12	7.2	9.0	8.2	4.8	9.8	3.8
8	2.9	10	5.3	2.6	3.3	8.5	6.3	13	30	3.8	5.0	5.0
9	2.4	3.1	25	2.2	2.6	8.8	22	18	20	3.6	5.0	9.0
10	3.1	2.4	18	2.4	2.1	5.5	40	7.9	6.9	3.1	6.6	6.0
11	2.2	2.9	11	2.4	1.8	4.6	25	9.2	5.5	2.8	13	3.5
12	2.1	1.6	10	1.9	1.7	5.0	14	7.6	4.3	3.3	6.9	3.2
13	3.5	1.2	6.9	1.8	1.6	30	22	6.9	3.8	6.8	11	3.8
14	3.4	1.5	26	2.2	2.1	14	15	12	4.1	2.9	7.6	2.3
15	2.4	4.2	9.9	1.8	3.4	49	36	6.0	2.6	3.2	5.7	2.0
16	2.1	31	53	1.6	2.1	14	20	6.3	34	2.4	4.8	3.5
17	1.8	6.6	34	1.8	6.8	9.5	14	5.5	7.6	3.0	4.2	4.0
18	1.8	5.3	13	1.9	2.6	27	22	9.8	7.7	2.2	12	2.2
19	1.8	8.2	8.8	1.4	2.2	13	15	8.0	6.6	2.9	5.0	2.0
20	2.2	5.0	6.9	1.4	30	7.6	11	5.3	4.8	2.1	25	2.3
21	5.4	4.1	5.8	1.4	8.8	5.8	9.1	4.8	4.6	2.2	7.5	1.8
22	2.1	6.6	9.4	1.2	26	5.3	8.5	4.8	8.3	3.3	9.0	1.6
23	2.8	4.3	15	1.0	14	4.1	6.9	18	14	3.8	6.0	1.5
24	4.1	21	5.3	1.5	11	3.3	6.6	5.3	20	28	8.5	4.5
25	2.4	8.2	4.8	12	7.6	18	18	4.1	7.9	5.5	8.5	3.2
26	2.1	12	16	13	5.5	38	4.9	3.8	5.8	4.9	5.0	20
27	1.7	6.3	6.6	3.4	14	9.9	5.1	4.6	5.3	8.4	4.5	8.0
28	1.5	8.5	5.8	2.2	11	8.6	15	15	14	4.1	3.8	3.6
29	1.4	6.9	5.5	1.8	---	6.3	11	4.6	21	3.1	3.2	5.0
30	1.2	4.6	4.3	1.6	---	17	13	3.3	11	3.1	3.6	13
31	1.1	---	3.8	1.6	---	24	---	3.1	---	10	3.0	---
TOTAL	108.8	188.6	363.7	94.0	191.9	491.8	438.1	270.2	280.6	174.0	233.9	135.0
MEAN	3.51	6.29	11.7	3.03	6.85	15.9	14.6	8.72	9.35	5.61	7.55	4.50
MAX	21	31	53	13	30	62	40	30	34	28	25	20
MIN	1.1	1.2	3.8	1.0	1.5	3.3	4.9	3.1	2.6	2.1	3.0	1.5
AC-FT	216	374	721	186	381	975	869	536	557	345	464	268

CAL YR 1978 TOTAL 1992.7 MEAN 5.46 MAX 53 MIN 1.1 AC-FT 3950
WTR YR 1979 TOTAL 2970.6 MEAN 8.14 MAX 62 MIN 1.0 AC-FT 5890

NOTE.--No gage-height record Aug. 15 to Sept. 30.

16899750 MALEM RIVER

LOCATION.--Lat 05°18'21" N., long 163°01'46" E., on left bank 1.2 mi (1.9 km) upstream from mouth and 1.8 mi (2.9 km) southeast of Mount Crozer.

DRAINAGE AREA.--0.48 mi² (1.24 km²).

PERIOD OF RECORD.--July 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 95 ft (29 m) from stadia survey.

REMARKS.--Records good except those for Feb. 26 to Apr. 23, which are poor. Water is diverted through 6-in (0.2-m) pipe from dam above station for domestic use in village of Malem. Water-quality analyses for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 7.22 ft³/s (0.205 m³/s), 5,230 acre-ft/yr (6.45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft³/s (43.9 m³/s) Mar. 22, 1976, gage height, 6.20 ft (1.890 m), from rating curve extended above 110 ft³/s (3.12 m³/s); minimum, 0.14 ft³/s (0.004 m³/s) Nov. 20, 1974, during flushing at dam upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s), and maximum (*), from rating curve extended above 110 ft³/s (3.12 m³/s):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
July 24	1100	614	17.4	5.09	1.551
Aug. 20	1200	*662	18.7	*5.17	1.576

Minimum discharge, 0.19 ft³/s (0.005 m³/s) Nov. 3, during short regulation of flow.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	5.6	3.4	3.9	1.8	60	8.0	48	5.1	9.3	9.3	2.6
2	5.4	2.2	3.3	5.4	1.9	20	10	10	3.8	12	4.3	10
3	2.4	1.5	5.8	3.2	1.4	10	10	7.3	3.1	7.0	9.2	3.3
4	1.8	10	4.6	2.6	1.2	9.0	9.0	7.4	3.0	7.0	9.5	2.7
5	1.8	2.4	6.6	2.3	1.3	10	7.0	6.6	3.6	6.8	7.0	2.3
6	1.7	1.6	3.3	2.0	31	20	9.0	8.6	3.1	5.2	5.4	2.1
7	2.3	1.2	2.7	1.9	5.4	10	6.0	7.0	5.8	4.3	9.0	6.2
8	1.5	3.8	3.0	2.0	2.7	8.0	5.0	12	60	4.0	4.6	2.8
9	1.3	2.2	28	1.7	2.1	7.5	10	13	16	3.6	5.8	3.0
10	1.6	5.0	29	2.0	1.7	6.0	25	8.0	6.6	2.8	7.9	1.8
11	1.2	11	8.9	2.6	1.6	5.0	10	6.7	6.4	2.6	15	1.7
12	1.2	3.3	5.8	1.8	1.4	5.0	8.0	5.8	5.0	2.6	20	1.7
13	1.5	2.1	5.7	1.5	1.3	25	15	6.0	4.3	4.7	13	2.1
14	1.5	1.9	25	1.6	1.5	15	10	69	4.0	2.6	14	1.6
15	1.2	2.4	7.5	1.4	1.5	50	35	6.6	3.6	2.2	11	1.7
16	1.1	26	48	1.2	1.3	15	15	5.0	26	1.9	6.6	5.7
17	1.0	4.6	43	3.5	8.2	10	10	6.2	8.4	2.5	5.2	3.2
18	.95	3.8	11	1.5	2.7	20	25	6.9	6.3	1.8	13	1.8
19	1.1	9.8	7.9	1.4	1.8	10	15	6.6	8.5	2.2	7.0	1.9
20	2.4	5.0	6.2	1.3	19	8.0	10	3.6	6.2	2.2	38	1.7
21	3.2	3.1	5.0	1.3	7.6	7.0	7.0	4.0	4.3	1.9	11	1.5
22	3.2	6.4	6.3	1.1	26	5.5	6.0	3.4	8.0	1.6	14	1.4
23	1.5	3.6	12	1.2	14	4.5	5.4	12	13	1.9	7.8	1.3
24	2.1	12	4.8	1.4	7.4	4.0	4.8	4.3	13	39	5.8	1.8
25	1.2	10	4.3	18	7.6	15	12	3.4	7.9	5.2	5.8	1.5
26	1.2	8.3	19	18	4.5	30	5.8	3.1	5.6	5.6	4.6	8.7
27	1.0	5.6	6.7	4.3	10	8.0	4.6	3.6	4.5	3.8	3.8	5.4
28	2.5	4.5	4.8	2.6	10	6.0	4.1	18	10	2.6	3.6	2.2
29	5.4	3.6	4.3	1.8	---	5.0	3.8	7.0	24	2.4	3.1	1.7
30	1.5	2.8	3.6	1.5	---	9.0	4.1	4.6	10	2.3	3.0	8.8
31	1.1	---	3.1	1.3	---	10	---	4.6	---	15	2.6	---
TOTAL	66.65	165.3	332.6	97.3	177.9	427.5	309.6	318.3	289.1	168.6	279.9	94.2
MEAN	2.15	5.51	10.7	3.14	6.35	13.8	10.3	10.3	9.64	5.44	9.03	3.14
MAX	9.8	26	48	18	31	60	35	69	60	39	38	10
MIN	.95	1.2	2.7	1.1	1.2	4.0	3.8	3.1	3.0	1.6	2.6	1.3
AC-FT	132	328	660	193	353	848	614	631	573	334	555	187

CAL YR 1978 TOTAL 1986.77 MEAN 5.44 MAX 54 MIN .88 AC-FT 3940
WTR YR 1979 TOTAL 2726.95 MEAN 7.47 MAX 69 MIN .95 AC-FT 5410

NOTE.--No gage-height record Feb. 26 to Apr. 23.

16899800 TOFOL RIVER

LOCATION.--Lat 05°19'53" N., long 163°01'25" E., on left bank 25 ft (7.6 m) downstream from right-bank tributary, 0.7 mi (1.1 km) upstream from mouth, and 1.2 mi (1.9 km) northeast of Mount Crozer.

DRAINAGE AREA.--0.44 mi² (1.14 km²).

PERIOD OF RECORD.--June 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 98 ft (29.9 m) from stadia survey.

REMARKS.--Records fair. Water is diverted through 8-in (20-cm) pipe from dam above station for domestic use. Water-quality analyses for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--8 years, 5.94 ft³/s (0.168 m³/s), 4,300 acre-ft/yr (5.30 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,270 ft³/s (36.0 m³/s) Mar. 22, 1976, gage height, 5.56 ft (1.695 m), from rating curve extended above 79 ft³/s (2.24 m³/s); minimum, 0.70 ft³/s (0.020 m³/s) Aug. 21, 22, Dec. 12, 1977, during short regulation of flow at dam upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 450 ft³/s (12.7 m³/s), and maximum (*), from rating curve extended above 79 ft³/s (2.24 m³/s):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 1	1200	564	16.0	4.36	1.329	July 24	1130	670	19.0	4.58	1.396
May 1	1300	572	16.2	4.38	1.335	Aug. 20	1130	*715	20.2	*4.67	1.423

Minimum discharge, 1.2 ft³/s (0.03 m³/s), Feb. 5, Sept. 23, 24, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	3.3	3.6	3.8	1.6	57	7.9	32	3.6	9.5	9.0	2.7
2	6.4	2.1	3.6	4.8	1.9	17	11	12	3.8	8.7	4.7	8.0
3	3.5	1.9	5.5	3.5	1.5	11	10	8.1	2.8	7.3	7.8	2.6
4	2.9	4.4	4.5	3.1	1.4	8.6	9.2	6.2	2.5	7.6	8.9	2.1
5	2.8	2.2	6.2	2.7	2.7	12	6.6	8.1	3.3	7.3	7.8	2.0
6	2.7	1.9	3.5	2.5	21	20	8.6	11	2.7	5.7	5.5	1.9
7	2.8	1.6	2.9	2.2	5.5	10	5.7	8.2	3.9	4.7	8.9	3.5
8	2.1	3.0	2.9	2.2	3.2	7.3	5.1	12	38	4.3	5.0	2.3
9	1.9	2.2	19	2.0	2.5	7.3	13	15	14	4.3	5.2	2.9
10	2.0	1.9	14	2.2	2.0	6.2	24	7.3	6.2	3.3	6.8	2.0
11	1.7	4.7	8.8	2.8	1.9	4.8	12	6.8	4.7	2.9	14	1.8
12	1.5	2.3	5.7	2.1	1.8	5.5	8.0	6.1	4.2	3.5	21	1.7
13	5.0	1.8	4.8	1.9	1.6	27	15	6.6	3.6	4.8	13	8.3
14	3.2	1.8	16	2.1	1.8	15	10	15	3.1	3.2	11	2.9
15	2.1	3.8	7.1	1.9	1.9	53	35	5.7	2.8	2.8	7.8	1.9
16	1.7	20	38	1.8	1.6	16	15	5.0	19	2.5	6.4	5.1
17	1.5	4.3	28	2.0	6.3	10	10	5.5	6.5	2.2	5.5	2.8
18	1.5	3.5	11	1.8	2.5	21	25	7.6	4.9	2.1	11	2.0
19	1.6	8.7	8.4	1.7	1.9	12	15	5.5	5.5	4.2	5.9	1.8
20	3.1	4.7	6.6	1.6	22	7.7	10	4.0	4.9	2.2	23	2.1
21	6.4	3.3	5.2	1.5	6.6	6.3	7.0	3.8	3.5	2.2	8.1	1.6
22	4.7	4.7	7.5	1.4	19	5.5	6.0	3.3	6.9	1.9	9.3	1.4
23	2.6	3.6	9.7	1.5	10	4.6	5.0	8.2	11	3.2	6.4	1.3
24	5.8	11	6.8	1.7	7.9	4.0	4.5	3.8	15	37	5.2	1.6
25	2.8	6.4	4.3	12	6.4	17	15	3.3	7.3	5.1	5.9	1.4
26	5.5	8.7	17	11	4.5	27	5.2	3.5	5.9	7.8	4.5	9.9
27	2.9	5.5	6.2	3.6	11	7.4	4.8	3.1	5.2	6.2	4.0	3.5
28	2.3	4.5	6.4	2.3	9.1	6.0	8.5	9.8	10	4.0	3.5	1.9
29	2.5	3.8	4.8	1.9	---	5.1	5.2	4.7	20	3.1	3.1	1.9
30	2.0	3.2	4.2	1.8	---	8.8	5.9	3.3	8.7	2.8	3.5	10
31	1.7	---	3.6	1.7	---	11	---	2.8	---	12	2.8	---
TOTAL	104.2	134.8	275.8	89.1	161.1	431.1	319.2	237.3	233.5	178.4	244.5	94.9
MEAN	3.36	4.49	8.90	2.87	5.75	13.9	10.6	7.65	7.78	5.75	7.89	3.16
MAX	15	20	38	12	22	57	35	32	38	37	23	10
MIN	1.5	1.6	2.9	1.4	1.4	4.0	4.5	2.8	2.5	1.9	2.8	1.3
AC-FT	207	267	547	177	320	855	633	471	463	354	485	188

CAL YR 1978 TOTAL 1708.0 MEAN 4.68 MAX 38 MIN 1.2 AC-FT 3390
WTR YR 1979 TOTAL 2503.9 MEAN 6.86 MAX 57 MIN 1.3 AC-FT 4970

16912000 PAGO STREAM AT AFONO

LOCATION.--Lat 14°16'03" S., long 170°39'02" W., on left bank 0.2 mi (0.3 km) south of Afono and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.60 mi² (1.55 km²).

PERIOD OF RECORD.--October 1958 to current year. Prior to July 1960, published as Afono Stream at Afono.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 30 ft (9 m), from topographic map.

REMARKS.--Records fair except for periods of backwater and no gage-height record, which are poor. About 0.06 ft³/s (0.002 m³/s) is diverted above station for domestic use in Afono. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years (water years 1960-79), 3.35 ft³/s (0.095 m³/s), 2,430 acre-ft/yr (3.00 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,350 ft³/s (38.2 m³/s) July 5, 1969, gage height, 5.49 ft (1.673 m), from rating curve extended above 52 ft³/s (1.47 m³/s); minimum, 0.15 ft³/s (0.004 m³/s) Oct. 25, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 210 ft³/s (5.95 m³/s), from rating curve extended above 52 ft³/s (1.47 m³/s), and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 9	2200	285	8.07	3.55	1.082	Feb. 18	1300	249	7.05	3.43	1.045
Nov. 12	1530	*538	15.2	*4.22	1.286	July 23	1000	258	7.31	3.46	1.055

Minimum discharge, 0.31 ft³/s (0.009 m³/s) May 2, 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	1.1	8.0	7.6	.58	2.0	1.8	.47	.58	1.8	.87	.71
2	.64	1.6	4.3	7.6	.47	1.3	1.7	.40	.58	1.2	.71	.87
3	.52	33	1.6	10	.90	1.0	1.1	.36	.47	.95	22	.63
4	.93	13	3.5	20	.78	.85	.71	14	.47	.87	4.0	.50
5	.85	6.2	2.4	3.8	22	.70	.78	3.7	.42	.71	2.4	.50
6	.78	4.8	1.7	2.2	30	.64	.71	2.2	.42	.71	12	.44
7	.66	5.4	1.4	27	5.1	.58	.58	1.5	.42	1.0	15	.55
8	.52	8.4	14	18	1.8	.47	.93	1.3	.42	.71	16	.44
9	.58	35	35	5.4	1.5	.47	7.4	1.2	.42	.63	4.7	.44
10	.58	55	8.0	2.8	1.5	.47	6.2	1.2	.42	.55	3.1	.55
11	.52	13	3.8	2.8	.71	.42	3.0	1.1	.52	.63	2.4	15
12	.64	75	2.5	4.6	.71	.47	1.0	1.1	3.4	.55	2.2	5.8
13	3.8	22	1.9	22	.71	.47	.78	.93	1.5	.50	1.8	1.8
14	3.5	48	14	26	.58	.42	.47	.85	.85	.63	1.5	1.1
15	2.8	15	6.0	14	.58	5.9	.42	.78	.71	.50	1.3	.87
16	1.9	21	3.5	6.2	.47	11	.42	.93	.64	2.2	1.2	.79
17	1.4	20	5.0	2.8	4.3	6.8	.38	.93	.85	1.7	1.1	.79
18	1.5	33	1.8	1.5	56	2.6	.38	1.2	2.0	.87	1.0	.79
19	.93	27	1.6	1.3	25	1.8	.58	.85	1.2	.71	1.0	.71
20	.85	12	1.5	1.1	8.1	1.0	.47	.78	.93	.55	.95	.63
21	.93	8.4	1.4	1.1	5.4	1.1	.38	.93	.78	.71	.87	.55
22	.78	5.1	1.4	.85	2.3	.71	.34	.85	.78	1.7	.87	.55
23	.95	3.6	1.5	.85	1.5	20	.38	.71	.64	38	.79	.55
24	1.1	2.7	1.3	.78	1.0	6.8	.47	.58	.64	5.4	.71	.55
25	5.1	6.0	1.8	.78	1.3	47	.52	.64	.71	2.7	.71	1.6
26	11	3.6	6.5	.78	1.2	13	2.6	2.2	.85	1.9	.71	1.8
27	4.6	5.7	6.8	.71	2.2	6.2	4.7	.85	11	1.5	.63	.95
28	3.2	4.8	11	.64	8.0	3.8	1.0	.64	3.8	1.2	.79	1.9
29	1.2	31	3.8	.58	---	2.8	1.0	.58	2.2	1.1	.55	2.6
30	2.3	36	1.9	.52	---	1.9	.71	.52	1.5	1.0	.50	1.2
31	1.3	---	4.7	.52	---	1.8	---	.47	---	.87	.55	---
TOTAL	57.07	556.4	163.6	194.81	184.69	144.47	41.91	44.75	40.12	74.05	102.91	46.16
MEAN	1.84	18.5	5.28	6.28	6.60	4.66	1.40	1.44	1.34	2.39	3.32	1.54
MAX	11	75	35	27	56	47	7.4	14	11	38	22	15
MIN	.52	1.1	1.3	.52	.47	.42	.34	.36	.42	.50	.50	.44
AC-FT	113	1100	325	386	366	287	83	89	80	147	204	92

CAL YR 1978 TOTAL 2268.21 MEAN 6.21 MAX 80 MIN .34 AC-FT 4500
WTR YR 1979 TOTAL 1650.94 MEAN 4.52 MAX 75 MIN .34 AC-FT 3270

16920500 AASU STREAM AT AASU

LOCATION.--Lat 14°17'51" S., long 170°45'30" W., on right bank at Aasu and 200 ft (61 m) upstream from mouth.

DRAINAGE AREA.--1.03 mi² (2.67 km²).

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WSP 1937: Drainage area. WSP 2137: 1959-60(P), 1961(M), 1962-65(P).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 5 ft (1.5 m) by hand levels from high-tide mark.

REMARKS.--Records good. Small diversion above station for domestic use. Recording rain gage located at station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years (water years 1960-79), 6.01 ft³/s (0.170 m³/s), 4,350 acre-ft/yr (5.36 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 498 ft³/s (14.1 m³/s) Sept. 7, 1972, gage height, 5.16 ft (1.573 m), from rating curve extended above 20 ft³/s (0.57 m³/s) on basis of slope-area measurement at gage height 4.57 ft (1.393 m); minimum, 0.12 ft³/s (0.003 m³/s) Oct. 21, 23, 24, 27, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 180 ft³/s (5.10 m³/s), from rating curve extended as explained above and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 12	1700	195	5.52	3.60	1.097
Dec. 9	0500	*210	5.95	*3.70	1.128

Minimum discharge, 0.95 ft³/s (0.027 m³/s) June 9-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	3.0	11	5.8	2.8	6.7	5.2	2.7	1.4	2.7	4.3	2.0
2	1.7	3.0	9.5	9.7	2.7	5.2	4.6	2.7	1.7	2.2	3.8	2.7
3	1.6	19	9.2	13	5.9	4.6	4.0	3.4	1.4	2.1	19	1.9
4	1.7	11	9.7	13	5.2	4.3	3.6	6.0	1.3	2.1	8.8	1.4
5	1.6	7.8	8.6	9.2	9.9	3.8	3.9	3.8	1.2	1.9	6.7	1.2
6	1.5	6.4	7.0	9.0	13	3.6	3.2	3.0	1.1	2.1	8.3	1.5
7	1.4	9.4	6.1	16	8.1	3.4	2.8	2.7	1.1	2.7	12	1.4
8	1.4	13	10	17	5.2	3.0	3.4	2.4	1.0	2.1	19	1.1
9	1.4	24	59	12	4.6	3.0	4.3	3.4	1.0	1.9	13	1.0
10	1.3	36	24	11	5.2	3.0	3.4	3.6	.95	2.1	11	1.6
11	1.5	33	19	12	4.0	2.7	2.5	2.8	1.3	3.9	9.2	16
12	6.3	45	14	12	3.8	2.4	2.2	2.5	6.4	2.1	8.1	11
13	8.5	32	12	20	4.8	2.2	2.1	2.4	2.6	1.9	6.7	4.9
14	10	23	19	22	3.6	3.0	1.9	2.2	2.2	1.8	6.1	3.6
15	7.0	21	14	19	3.6	6.8	1.8	2.1	1.8	1.7	5.2	3.2
16	4.3	26	14	14	3.2	3.6	1.8	3.0	1.6	6.6	4.6	2.8
17	3.4	25	13	12	3.2	2.7	1.7	2.5	1.8	4.8	3.8	2.7
18	3.4	29	10	9.8	12	2.4	1.6	2.4	4.4	2.7	3.4	5.0
19	3.0	22	10	8.8	19	2.2	1.6	2.2	2.5	2.2	3.0	4.6
20	2.7	17	8.8	8.1	13	2.1	1.9	2.1	2.2	2.1	2.8	4.1
21	2.5	13	8.1	7.8	9.5	2.7	1.7	1.9	1.9	3.4	2.5	2.5
22	2.4	12	7.0	6.4	8.8	2.2	1.5	1.9	1.9	15	2.4	1.9
23	3.6	9.8	6.7	6.1	8.1	7.6	1.5	1.8	1.7	34	2.1	1.8
24	3.4	10	8.6	5.2	7.0	5.2	1.4	1.8	1.6	21	1.9	1.7
25	7.1	9.5	7.8	6.1	6.4	20	3.2	2.1	1.7	14	1.9	3.0
26	10	8.1	8.4	4.9	6.1	12	10	2.4	1.9	11	1.8	4.4
27	6.1	8.1	11	4.0	6.4	11	11	1.8	6.9	9.5	1.6	2.4
28	4.0	7.0	9.2	3.6	8.3	8.4	4.9	1.7	3.8	8.1	1.9	4.8
29	3.4	21	7.4	3.4	---	7.4	3.6	1.6	2.8	7.0	1.5	4.6
30	3.2	17	6.7	3.0	---	6.4	2.8	1.5	2.7	6.1	1.4	3.7
31	3.2	---	6.4	2.7	---	5.8	---	1.4	---	5.2	1.4	---
TOTAL	114.3	521.1	375.2	306.6	193.4	159.4	99.0	77.8	65.85	186.0	179.2	104.5
MEAN	3.69	17.4	12.1	9.89	6.91	5.14	3.30	2.51	2.20	6.00	5.78	3.48
MAX	10	45	59	22	19	20	11	6.0	6.9	34	19	16
MIN	1.3	3.0	6.1	2.7	2.7	2.1	1.4	1.4	.95	1.7	1.4	1.0
AC-FT	227	1030	744	608	384	316	196	154	131	369	355	207

CAL YR 1978 TOTAL 2774.96 MEAN 7.60 MAX 59 MIN .74 AC-FT 5500
WTR YR 1979 TOTAL 2382.35 MEAN 6.53 MAX 59 MIN .95 AC-FT 4730

SAMOA ISLANDS, ISLAND OF TUTUILA

16931000 ATAULOMA STREAM AT AFAO

LOCATION.--Lat 14°20'10" S., long 170°48'02" W., on left bank at Afao, 100 ft (30 m) upstream from highway bridge, and 300 ft (91 m) upstream from mouth.

DRAINAGE AREA.--0.24 mi^2 (0.62 km^2).

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 20 ft (6 m) by hand levels from high-tide mark.

REMARKS.--Records fair. No diversion above station. Recording rain gage located at station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years (water years 1960-79), 1.43 ft^3/s (0.040 m^3/s), 1,040 acre-ft/yr (1.28 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 605 ft^3/s (17.1 m^3/s) Aug. 10, 1967, gage height, 3.99 ft (1.216 m), from rating curve extended 30 ft^3/s (0.85 m^3/s); minimum, 0.04 ft^3/s (0.001 m^3/s) Oct. 24-26, Oct. 28-31, Nov. 1, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 160 ft^3/s (4.53 m^3/s), from rating curve extended above 30 ft^3/s (0.85 m^3/s), and maximum (*):

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)
Nov. 12	1800	215	6.09	2.80	0.853	Feb. 18	1200	195	5.52	2.70	0.823
Nov. 29	1800	183	5.18	2.67	.814	Mar. 15	0600	215	6.09	2.80	.853
Dec. 9	0400	248	7.02	2.93	.893	Apr. 26	2000	*387	11.0	*3.42	1.042
Feb. 11	1500	283	8.01	3.07	.936						

Minimum discharge, 0.12 ft^3/s (0.003 m^3/s) Oct. 2,3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	.26	2.4	.80	.43	.93	.62	.62	.43	.57	.43	.23
2	.12	1.0	1.7	5.0	.43	.68	.57	2.1	.61	.39	.39	.71
3	.12	5.2	1.2	3.9	1.6	.57	.52	2.6	.39	.35	8.3	.39
4	.20	1.3	1.2	2.2	.76	.52	.52	4.0	.35	.35	1.2	.23
5	.16	.68	1.1	1.6	1.6	.48	.62	1.7	.35	.29	.80	.20
6	.16	.57	.87	1.2	4.8	.89	.48	1.2	.32	.29	3.2	.23
7	.18	.48	.87	5.3	1.2	.48	.35	.93	.29	.29	2.4	.18
8	.20	.74	5.9	5.7	.74	.43	2.7	.74	.26	.23	11	.16
9	.20	2.3	25	2.2	.52	.43	1.9	2.0	.26	.23	2.3	.16
10	.20	12	3.9	1.7	2.0	.43	1.2	1.5	.26	.32	1.3	.35
11	.20	7.6	4.3	1.6	7.0	.39	.62	.93	.29	1.1	1.0	3.4
12	.64	16	2.2	2.1	1.2	.35	.48	.74	2.6	.32	.80	1.6
13	2.0	5.2	1.6	7.5	.80	.32	.39	.62	.62	.29	.68	.57
14	4.7	3.5	18	6.7	.61	.35	.35	.57	.74	.26	.57	.39
15	1.3	4.4	3.9	4.3	.43	14	.32	.57	.48	.23	.52	.29
16	.52	10	3.0	2.3	.52	1.8	.32	3.0	.35	1.2	.48	.23
17	.39	8.2	2.6	1.7	.39	.87	.29	1.4	.39	.57	.43	.23
18	.39	11	1.7	1.3	23	.68	.29	1.2	.92	1.1	.39	.29
19	.29	4.5	1.4	1.1	13	.57	.35	.87	.43	.57	.32	.23
20	.26	2.4	1.2	.87	3.5	.52	.39	.68	.35	.35	.32	.20
21	.26	1.7	1.1	.87	1.8	.43	.29	.62	.29	.39	.32	.18
22	.23	1.3	1.0	.95	1.3	.39	.26	.52	.39	4.1	.29	.16
23	.29	1.3	.93	.68	1.1	4.9	.35	.48	.26	16	.26	.14
24	3.7	2.7	3.5	.62	.93	1.1	.23	.48	.26	3.9	.26	.14
25	4.0	2.8	2.3	.74	.80	10	.38	.59	.26	1.4	.26	.20
26	1.3	1.5	1.7	.80	.87	2.8	10	.83	.33	.93	.20	.20
27	.57	1.1	3.2	.68	.82	2.1	3.9	.48	5.5	.74	.20	.18
28	.62	.93	2.2	.57	2.4	1.4	1.3	.48	1.8	.62	.38	.68
29	.35	14	1.3	.57	---	.93	.93	.43	.87	.57	.23	.26
30	.32	5.8	1.1	.48	---	.80	.74	.39	.57	.52	.20	.18
31	.29	---	.87	.43	---	.68	---	.35	---	.48	.20	---
TOTAL	24.30	130.46	103.24	66.46	74.55	51.22	31.66	33.62	21.22	38.95	39.63	12.59
MEAN	.78	4.35	3.33	2.14	2.66	1.65	1.06	1.08	.71	1.26	1.28	.42
MAX	4.7	16	25	7.5	23	14	10	4.0	5.5	16	11	3.4
MIN	.12	.26	.87	.43	.39	.32	.23	.35	.26	.23	.20	.14
AC-FT	48	259	205	132	148	102	63	67	42	77	79	25

CAL YR 1978 TOTAL 769.90 MEAN 2.11 MAX 36 MIN .12 AC-FT 1530
WTR YR 1979 TOTAL 627.90 MEAN 1.72 MAX 25 MIN .12 AC-FT 1250

16931500 ASILI STREAM AT ALTITUDE 330 FT (100 M) NEAR ASILI

LOCATION.--Lat 14°19'34" S., long 170°47'38" W., on right bank 1.3 mi (2.1 km) northwest of Leone, 1.5 mi (2.4 km) southwest of Aoloaufou and 0.8 mi (1.2 km) upstream from mouth.

DRAINAGE AREA.--0.32 mi^2 (0.83 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 330 ft (100 m), from topographic map.

REMARKS.--Records fair. Periodic determinations of water temperature for the current year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 311 ft^3/s (8.81 m^3/s), Sept. 1, 1978, gage height, 3.92 ft (1.195 m), from rating curve extended above 14 ft^3/s (0.40 m^3/s); minimum, 0.48 ft^3/s (0.014 m^3/s) July 19, 20, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 110 ft^3/s (3.11 m^3/s), and maximum (*), from rating curve extended above 14 ft^3/s (0.40 m^3/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)
Nov. 12	1700	127	3.60	3.11	0.948	Dec. 13	0600	112	3.17	3.01	0.917
Nov. 29	1800	159	4.50	3.29	1.003	Feb. 18	2100	139	3.94	3.18	.969
Dec. 9	0400	*268	7.59	*3.75	1.143	Mar. 23	1400	146	4.13	3.22	.981

Minimum discharge, 0.58 ft^3/s (0.016 m^3/s) Sept. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	.91	5.2	1.7	.88	1.5	1.8	1.0	.92	1.3	1.4	1.0
2	.71	1.7	3.8	4.2	.95	1.3	1.6	1.4	1.1	1.1	1.2	1.7
3	.71	6.4	3.0	4.4	2.5	1.1	1.4	2.9	.98	1.0	7.1	.88
4	.91	2.9	2.7	3.5	1.1	1.0	1.3	3.9	.90	1.0	2.2	.71
5	.67	2.1	2.4	2.8	1.8	.95	1.5	2.2	.88	.95	2.8	.64
6	.64	1.8	1.8	2.5	4.9	1.6	1.2	1.8	.82	.90	5.5	.74
7	.64	1.9	1.6	7.2	2.0	.98	1.1	1.6	.78	.86	6.7	.64
8	.61	3.3	5.8	9.4	1.6	.88	2.6	1.4	.74	.82	8.8	.61
9	.64	9.0	34	5.4	1.4	.84	3.0	2.3	.72	.80	5.3	.58
10	.61	15	9.4	4.4	2.7	.94	1.7	1.9	.70	1.0	3.8	1.0
11	.64	12	7.3	3.9	2.3	.81	1.3	1.5	.78	1.5	2.9	5.7
12	2.3	16	4.9	4.1	1.6	.78	1.2	1.3	3.3	1.0	2.3	3.9
13	3.3	10	3.5	9.1	1.7	.74	1.1	1.2	1.6	.95	1.9	1.7
14	4.7	7.6	15	10	1.4	.81	1.1	1.1	1.7	.92	1.7	1.4
15	2.3	7.6	8.0	7.9	1.2	7.1	.98	1.0	1.4	.86	1.6	1.3
16	1.5	11	6.9	5.2	1.3	1.9	.95	3.7	1.2	1.6	1.4	1.2
17	1.3	11	5.7	4.0	1.1	1.4	.91	2.0	1.3	1.1	1.3	1.2
18	1.3	15	4.0	3.1	15	1.2	.88	1.8	1.8	1.3	1.2	1.3
19	1.1	10	3.6	2.5	15	1.1	.88	1.5	1.4	1.1	1.1	1.0
20	.98	6.7	2.6	2.2	8.4	1.0	.88	1.4	.95	1.0	1.0	.91
21	.91	4.8	2.2	1.9	5.4	.95	.78	1.3	.80	1.6	.95	.88
22	.88	3.5	1.9	2.0	3.8	.91	.74	1.2	.90	5.2	.91	.84
23	.95	2.8	1.9	1.5	2.8	5.7	.88	1.2	.80	14	.88	.81
24	1.3	3.4	3.7	1.4	2.4	2.0	.74	1.2	.75	9.5	.84	.78
25	3.7	3.5	2.5	1.6	1.9	10	1.1	1.2	.80	5.8	.84	.95
26	2.1	2.2	2.6	1.4	1.8	5.6	5.0	1.4	1.0	4.0	.78	.98
27	1.4	1.9	4.3	1.3	1.8	4.9	2.9	1.1	5.1	2.8	.74	.91
28	1.2	1.7	3.1	1.1	2.6	3.7	1.4	.98	2.0	2.3	1.1	1.7
29	1.1	10	2.5	1.2	---	2.8	1.2	.95	1.8	1.9	.74	1.4
30	1.0	8.2	2.2	.95	---	2.5	1.0	.91	1.3	1.7	.71	.91
31	.95	---	1.9	.88	---	2.0	---	.88	---	1.5	.71	---
TOTAL	41.76	193.91	160.0	112.73	91.33	68.99	43.12	49.22	39.22	71.36	70.40	38.27
MEAN	1.35	6.46	5.16	3.64	3.26	2.23	1.44	1.59	1.31	2.30	2.27	1.28
MAX	4.7	16	34	10	15	10	5.0	3.9	5.1	14	8.8	5.7
MIN	.61	.91	1.6	.88	.88	.74	.74	.88	.70	.80	.71	.58
AC-FT	83	385	317	224	181	137	86	98	78	142	140	76

CAL YR 1978 TOTAL 1215.94 MEAN 3.33 MAX 34 MIN .51 AC-FT 2410
WTR YR 1979 TOTAL 980.31 MEAN 2.69 MAX 34 MIN .58 AC-FT 1940

16933500 LEAFU STREAM AT ALTITUDE 370 FT (113 M) NEAR LEONE

LOCATION.--Lat 14°19'31" S., long 170°46'50" W., on left bank 900 ft (274 m) upstream from village stream intake, 1.1 mi (1.8 km) north of Leone, and 1.0 mi (1.6 km) southwest of Aoloaufou.

DRAINAGE AREA.--0.31 mi^2 (0.80 km^2).

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

GAGE.--Water-stage recorder. Altitude of gage is 370 ft (113 m), from topographic map.

REMARKS.--Records fair. Periodic determinations of water temperature for the current year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 188 ft^3/s (5.04 m^3/s) Sept. 1, 1978, gage height, 4.58 ft (1.396 m) revised, from rating curve extended above 48.0 ft^3/s (1.36 m^3/s); minimum, 0.71 ft^3/s (0.020 m^3/s) July 18-20, 1978.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 120 ft^3/s (3.40 m^3/s) revised, and maximum (*) from rating curve extended as explained above:

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)
Nov. 10	1830	130	3.68	3.98	1.213	Dec. 14	0630	146	4.13	4.16	1.268
Nov. 29	a1700	a150	4.25	a4.20	1.280	Mar. 23	1430	126	3.57	3.92	1.195
Dec. 9	a0330	a145	4.11	a4.15	1.265	Apr. 26	1900	*a165	4.67	*a4.35	1.326

Minimum discharge, 0.82 ft^3/s (0.023 m^3/s) Sept. 8-10.

a About.

REVISIONS.--Revised peak discharges and annual maximum (*) for 1978, superseding figures published in WDR HI-78-2.

Water Year	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Water Year	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
1978	Jan. 8, 1978	1600	118	3.34	3.82	1.164	1978	Aug. 30, 1978	2100	178	5.04	4.48	1.366
1978	Aug. 10, 1978	0630	118	3.34	3.82	1.164	1978	Sept. 1, 1978	0430	*188	5.32	*4.58	1.396

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.99	1.6	9.0	3.3	1.8	4.5	2.6	1.5	1.2	2.1	2.1	1.2
2	.96	1.8	7.0	5.9	1.3	3.2	2.3	2.1	1.6	1.8	1.9	2.3
3	.99	13	6.0	7.3	2.8	2.9	2.1	3.8	1.1	1.7	15	1.4
4	1.0	8.5	5.1	7.3	2.9	2.7	1.9	5.1	1.0	1.7	4.9	1.1
5	.92	5.0	4.4	5.3	2.8	2.3	2.4	3.1	.99	1.6	5.6	.96
6	.88	4.3	3.5	4.6	6.4	3.8	1.7	2.5	.96	1.7	9.4	1.1
7	.88	4.2	3.1	10	3.0	2.3	1.6	2.4	.92	2.1	12	.88
8	.85	5.5	10	13	2.3	2.1	3.1	2.1	.88	1.6	24	.85
9	.88	17	39	8.1	2.1	2.0	4.3	3.7	.88	1.5	13	.82
10	.85	30	19	6.6	2.8	2.0	2.7	2.9	.85	1.7	11	1.3
11	.96	30	14	6.6	2.6	1.8	2.1	2.3	.99	3.6	5.6	12
12	3.5	37	9.6	7.0	2.0	1.7	1.9	2.0	7.0	1.7	4.2	6.8
13	5.6	28	7.2	14	2.3	1.6	1.8	1.8	2.1	1.5	3.4	3.1
14	6.4	19	34	16	1.8	1.9	1.6	1.7	2.3	1.4	2.8	2.6
15	3.1	17	14	14	1.7	8.7	1.6	1.6	1.8	1.3	2.4	2.3
16	2.2	25	11	8.6	1.6	2.6	1.5	5.0	1.6	3.8	2.2	2.1
17	2.0	24	9.2	6.1	1.6	2.0	1.5	3.0	1.7	2.2	2.0	2.0
18	2.0	27	6.8	4.7	20	1.8	1.4	2.6	5.6	1.8	1.8	2.1
19	1.8	19	6.5	3.7	23	1.7	1.4	2.3	2.0	1.6	1.7	1.8
20	1.6	13	5.3	3.1	14	1.6	1.4	2.1	1.8	1.5	1.7	1.6
21	1.5	8.1	4.5	2.6	7.9	1.7	1.3	1.9	1.7	2.6	1.5	1.4
22	1.4	5.4	4.0	2.3	5.3	1.5	1.3	1.8	1.7	11	1.4	1.3
23	1.7	4.4	3.7	2.1	4.1	7.1	1.5	1.7	1.6	26	1.3	1.3
24	2.1	5.5	7.2	1.9	3.4	2.7	1.3	1.7	1.5	20	1.3	1.2
25	6.7	5.3	5.3	2.1	2.9	15	1.4	1.9	1.4	12	1.4	1.6
26	3.2	3.5	5.1	2.0	2.7	4.9	9.0	1.9	1.7	7.5	1.2	1.6
27	2.3	3.4	6.6	1.8	2.9	6.0	4.4	1.5	7.6	5.0	1.1	1.3
28	2.0	2.8	5.8	1.5	10	4.6	2.2	1.4	3.7	3.8	1.6	2.7
29	1.9	19	4.7	1.6	---	3.8	1.6	1.3	2.5	3.1	1.1	1.9
30	1.8	15	4.4	1.4	---	3.3	1.5	1.3	2.0	2.6	1.0	1.4
31	1.7	---	3.8	1.2	---	2.9	---	1.2	---	2.3	.99	---
TOTAL	64.66	402.3	278.8	175.7	137.6	106.7	66.4	71.2	62.67	133.8	140.59	64.01
MEAN	2.09	13.4	8.99	5.67	4.91	3.44	2.21	2.30	2.09	4.32	4.54	2.13
MAX	6.7	37	39	16	23	15	9.0	5.1	7.6	26	24	12
MIN	.85	1.6	3.1	1.2	1.3	1.5	1.3	1.2	.85	1.3	.99	.82
AC-FT	128	798	553	349	273	212	132	141	124	265	279	127

CAL YR 1978 TOTAL 1871.10 MEAN 5.13 MAX 39 MIN .71 AC-FT 3710
WTR YR 1979 TOTAL 1704.43 MEAN 4.67 MAX 39 MIN .82 AC-FT 3380

16948000 AFUELO STREAM AT MATUU

LOCATION.--Lat 14°18'07" S., long 170°41'07" W., on left bank 0.2 mi (0.3 km) northwest of Matuu and 0.3 mi (0.5 km) upstream from mouth.

DRAINAGE AREA.--0.25 mi² (0.65 km²).

PERIOD OF RECORD.--March 1958 to current year. Prior to July 1960, published as Matuu Stream at Matuu.

REVISED RECORDS.--WSP 1937: Drainage area. WSP 2137: 1958-65.

GAGE.--Water-stage recorder. Altitude of gage is 80 ft (24.4 m), from topographic map.

REMARKS.--Records good. Small diversion above station for domestic use since September 1972. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--21 years, 1.45 ft³/s (0.041 m³/s), 1,050 acre-ft/yr (1.29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 502 ft³/s (14.2 m³/s) Apr. 29, 1975, gage height, 4.59 ft (1.399 m), from rating curve extended above 26 ft³/s (0.74 m³/s) on basis of slope-area measurement of peak flow; minimum, 0.01 ft³/s (<0.001 m³/s) Sept. 16, 17, 20-26, 28, 29, 1975, Apr. 5-7, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 160 ft³/s (4.53 m³/s) and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 3	0900	198	5.61	3.14	0.957	Feb. 18	0100	*222	6.29	*3.28	1.000
Nov. 12	1600	183	5.18	3.05	.930	Apr. 9	1900	170	4.81	2.97	.905
Jan. 7	0300	164	4.64	2.93	.893	July 23	1100	183	5.18	3.05	.930

Minimum discharge, 0.07 ft³/s (0.002 m³/s) May 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.10	1.1	3.4	.25	1.1	.30	.22	.11	.58	.20	.11
2	.12	.09	.58	2.6	.18	.49	.25	.44	.12	.30	.20	.65
3	.12	24	.60	3.6	.67	.36	.22	.36	.10	.20	17	.15
4	.18	2.0	1.2	1.1	.70	.33	.17	4.4	.18	.17	1.2	.11
5	.15	.72	1.0	.63	7.4	.25	.40	1.2	.13	.15	.58	.09
6	.13	.45	.58	.45	13	.20	.20	.67	.12	1.2	6.4	.11
7	.12	.94	.53	13	1.6	.20	.15	.33	.12	1.1	5.9	.11
8	.11	3.3	3.4	5.7	.63	.20	.35	.22	.13	.49	9.6	.10
9	.15	8.0	17	1.2	.42	.18	6.6	.53	.12	.25	1.8	.11
10	.13	18	2.6	1.6	.39	.20	1.9	.79	.11	.18	.91	.17
11	.22	8.8	1.8	2.5	.33	.15	.58	.45	.12	.23	.63	15
12	.75	32	.98	1.8	.28	.13	.33	.28	2.7	.17	.42	3.0
13	4.4	5.7	.72	9.3	.30	.13	.20	.18	.53	.13	.33	.67
14	4.7	9.0	6.4	9.7	.20	.15	.18	.17	.53	.30	.28	.33
15	1.3	5.1	3.6	5.7	.20	1.4	.17	.15	.36	.18	.22	.22
16	.39	14	1.4	2.0	.18	.56	.15	.18	.20	3.4	.20	.18
17	.25	12	2.2	1.1	1.1	.74	.15	.17	.15	1.2	.20	.18
18	.20	8.3	.98	.84	32	.39	.13	.20	1.4	.39	.18	.22
19	.17	3.3	.72	.67	11	.25	.15	.12	.39	.25	.17	.22
20	.12	1.3	.49	.45	2.6	.20	.18	.11	.53	.17	.18	.13
21	.11	.78	.45	.63	1.2	.18	.13	.17	.45	.15	.17	.12
22	.11	.63	.39	.42	.78	.17	.11	.11	.22	2.4	.17	.12
23	1.4	.62	.42	.39	.63	5.4	.13	.11	.17	31	.13	.11
24	.45	.78	.45	.33	.42	1.2	.12	.10	.13	3.5	.12	.11
25	.36	1.8	1.1	.33	.36	17	1.5	.18	.13	1.4	.15	7.2
26	1.1	.67	1.9	.42	.43	2.8	3.3	1.5	.18	.72	.12	.45
27	.42	2.8	2.5	.28	1.0	1.4	2.8	.20	8.5	.53	.11	.18
28	.15	1.2	3.6	.22	3.2	.91	.91	.17	1.5	.36	.18	3.8
29	.12	5.0	.98	.22	---	.53	.53	.12	.75	.30	.11	16
30	.40	6.2	.63	.18	---	.42	.30	.12	.39	.28	.10	.45
31	.13	---	1.0	.18	---	.36	---	.11	---	.22	.09	---
TOTAL	18.68	177.58	61.30	70.94	81.45	37.98	22.59	14.06	20.57	51.90	48.05	50.40
MEAN	.60	5.92	1.98	2.29	2.91	1.23	.75	.45	.69	1.67	1.55	1.68
MAX	4.7	32	17	13	32	17	6.6	4.4	8.5	31	17	16
MIN	.11	.09	.39	.18	.18	.13	.11	.10	.10	.13	.09	.09
AC-FT	37	352	122	141	162	75	45	28	41	103	95	100

CAL YR 1978 TOTAL 736.91 MEAN 2.02 MAX 32 MIN .06 AC-FT 1460
WTR YR 1979 TOTAL 655.50 MEAN 1.80 MAX 32 MIN .09 AC-FT 1300

16963900 LEAFU STREAM NEAR AUASI

LOCATION.--Lat 14°16'27" S., long 170°34'26" W., on right bank 35 ft (11 m) upstream from upper village intake, 0.1 mi (0.2 km) north of Auasi, and 0.2 mi (0.3 km) upstream from mouth.

DRAINAGE AREA.--0.11 mi^2 (0.28 km^2).

PERIOD OF RECORD.--February 1972 to current year.

REVISED RECORDS.--WDR HI-75-1: 1972(P), 1973-74.

GAGE.--Water-stage recorder. Altitude of gage is 120 ft (37 m), from topographic map.

REMARKS.--Records fair. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--7 years, 0.32 ft^3/s (0.009 m^3/s), 232 acre-ft/yr (286,000 m^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 134 ft^3/s (3.79 m^3/s) Nov. 12, 1979, gage height, 3.71 ft (1.131 m), from recorded range in stage, from rating curve extended above 19 ft^3/s (0.54 m^3/s); minimum, 0.02 ft^3/s (0.001 m^3/s) Sept. 17-19, 26-30, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft^3/s (0.71 m^3/s), from rating curve extended above 19 ft^3/s (0.54 m^3/s), and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Nov. 12	a1600	*134	3.79	*3.71	1.131
July 23	1000	27	.76	2.18	.664
Sept. 11	1600	57	1.61	2.68	.817

Minimum discharge, 0.07 ft^3/s (0.002 m^3/s) Several days in October and September.

a About.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.80	.63	.16	.30	.50	.14	.22	.10	.26	.12	.10
2	.08	.90	.35	.24	.26	.30	.12	.22	.10	.22	.12	.14
3	.08	2.5	.26	.99	.26	.22	.12	.18	.10	.16	.35	.10
4	.09	1.0	.26	2.0	.22	.20	.12	1.1	.10	.14	.22	.10
5	.08	.60	.18	.30	.76	.18	.51	.75	.10	.12	.18	.09
6	.09	.40	.16	.18	2.9	.16	.22	.70	.12	.14	1.5	.09
7	.08	.50	.20	3.2	.83	.15	.14	.35	.14	.29	1.0	.10
8	.09	1.5	.38	2.0	.35	.14	.22	.30	.14	.14	1.4	.09
9	.09	3.0	.45	1.0	.26	.14	.59	.26	.14	.14	.35	.09
10	.09	6.0	.30	.30	.22	.13	2.2	.30	.14	.12	.18	.12
11	.08	2.0	.40	.57	.16	.13	1.1	.22	.14	.14	.16	4.4
12	.10	10	.22	.76	.16	.12	.26	.18	.63	.14	.16	1.5
13	.25	2.2	.18	3.0	.16	.12	.22	.16	.30	.14	.14	.18
14	.16	5.0	.64	3.0	.14	.12	.14	.14	.26	.16	.14	.10
15	.10	1.8	.26	2.3	.14	.50	.14	.14	.22	.14	.12	.07
16	.08	2.5	.18	1.1	.14	1.0	.10	.14	.22	.29	.12	.07
17	.07	3.0	.22	.76	.46	.60	.10	.14	.26	.18	.12	.07
18	.07	4.0	.16	.63	4.0	.30	.10	.14	.35	.12	.10	.08
19	.08	2.0	.14	.57	1.5	.20	.12	.14	.30	.10	.10	.10
20	.07	1.0	.14	.45	.80	.12	.14	.12	.35	.10	.14	.08
21	.07	.50	.12	.40	.50	.12	.12	.12	.51	.12	.14	.10
22	.07	.40	.14	.35	.38	.12	.10	.12	.30	.12	.12	.10
23	.12	.35	.12	.30	.30	.14	.27	.12	.26	3.3	.10	.10
24	.08	.30	.16	.30	.25	.12	.14	.12	.22	.51	.10	.08
25	.23	.45	.52	.30	.30	.92	.12	.14	.30	.22	.12	.16
26	.14	.35	.45	.30	.30	.51	.42	.32	.30	.14	.10	.12
27	.10	.35	.51	.30	.50	.22	1.9	.12	2.1	.12	.10	.07
28	.90	.30	.30	.30	1.8	.16	.70	.12	.57	.12	.10	.18
29	.90	2.0	.22	.30	---	.14	.57	.10	.30	.12	.09	.18
30	.80	4.0	.18	.30	---	.14	.30	.10	.30	.12	.09	.08
31	.80	---	.16	.30	---	.14	---	.09	---	.12	.09	---
TOTAL	6.12	59.70	8.59	26.96	18.35	8.06	11.44	7.37	9.37	8.25	7.87	8.84
MEAN	.20	1.99	.28	.87	.66	.26	.38	.24	.31	.27	.25	.29
MAX	.90	10	.64	3.2	4.0	1.0	2.2	1.1	2.1	3.3	1.5	4.4
MIN	.07	.30	.12	.16	.14	.12	.10	.09	.10	.10	.09	.07
AC-FT	12	118	17	53	36	16	23	15	19	16	16	18

CAL YR 1978 TOTAL 209.76 MEAN .57 MAX 10 MIN .07 AC-FT 416
WTR YR 1979 TOTAL 180.92 MEAN .50 MAX 10 MIN .07 AC-FT 359

NOTE.--No gage-height record Oct. 27 to Nov. 30, Feb. 17 to Mar. 20.

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.

Records collected at partial-record 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. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1979

Station No.	Station name	Location	Drainage area mi² (km²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
		Mariana Islands, Island of Guam				
16812000	Madog River near Umatac	Lat 13°17'24" N., long 144°40'30" E., 50 ft (15 m) downstream from right-bank tributary and 1.1 mi (1.8 km) southeast of Sanchez School in Umatac.	0.36 (.93)	1960-79	3- 1-79	0.15
16813000	Piga Spring near Umatac	Lat 13°17'56" N., long 144°40'49" E., on left bank of Astaban River right-bank tributary, 0.3 mi (0.5 km) west of Mount Bolanos, and 1.3 mi (2.1 km) east of Sanchez School in Umatac.	-	1955, 1961-65, 1967-79	10- 4-78 3- 1-79	.15 .18
16814000	Astaban River at Umatac	Lat 13°17'41" N., long 144°40'15" E., 200 ft (61 m) upstream from mouth and 0.7 mi (1.1 km) southeast of Sanchez School in Umatac.	.38 (.98)	1960-79	3- 1-79	.10
16816000	Umatac River at Umatac	Lat 13°17'48" N., long 144°39'46" E., on left bank 0.2 mi (0.3 km) upstream from mouth, 0.3 mi (0.5 km) southeast of Umatac, and 5.8 mi (9.3 km) northwest of Inarajan.	2.11 (5.46)	1952-76≠, 1977-79	10- 3-78 2-20-79 3-19-79 4-19-79 5-22-79 6-21-79 7-24-79 8-30-79	5.2 1.6 1.2 .48 .36 .30 .71 4.1
16820000	Geus River above Siligin Spring tributary, near Merizo	Lat 13°16'38" N., long 144°40'56" E., 100 ft (30 m) upstream from Siligin Spring tributary, 0.1 mi (0.2 km) upstream from dam, and 1.5 mi (2.4 km) northeast of Merizo School.	.51 (1.32)	1960-79	4- 9-79	.14
16820700	Geus River below Siligin Spring tributary, near Merizo	Lat 13°16'35" N., long 144°40'53" E., 100 ft (30 m) upstream from diversion dam, 300 ft (91 m) downstream from Siligin Spring tributary, and 1.4 mi (2.3 km) northeast of Merizo School.	.68 (1.76)	1962-79	4- 8-79	.16
16846000	Tolaeyuus River at mouth, near Agat	Lat 13°21'30" N., long 144°42'31" E., just above confluence with Fena River, 0.4 mi (0.6 km) downstream from Fena Dam spillway and 3.0 mi (4.8 km) west of Talofofo village.	7.42 (19.20)	1962-68, 1977-79	2- 6-79 3-14-79 5-22-79 6-25-79	4.0 2.7 1.0 1.1
16853000	Ugum River above Bubulao River, near Talofofo	Lat 13°19'08" N., long 144°43'46" E., 50 ft (15 m) upstream from Bubulao River, 0.8 mi (1.3 km) northwest of NASA Tracking Station, and 2.8 mi (4.5 km) southwest of Talofofo.	2.66 (6.89)	1961-70, 1973, 1975-79	4-18-79	2.0

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1979--Continued

Station No.	Station name	Location	Drainage area mi² (km²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
		Mariana Islands, Island of Guam--Continued				
16854000	Bubulao River near Talofofo	Lat 13°19'08" N., long 144°43'45" E., 50 ft (15 m) upstream from mouth, 0.8 mi (1.3 km) northwest of NASA Tracking Station, and 2.8 mi (4.5 km) southwest of Talofofo.	2.93 (7.59)	1961-70, 1973, 1975-79	4-18-79	3.1
16855000	Ugum River near Talofofo	Lat 13°20'02" N., long 144°44'55" E., 0.4 mi (0.6 km) upstream from confluence with Talofofo River, 1.3 mi (2.1 km) south of Talofofo, and 4.2 mi (6.8 km) north of Inarajan.	7.13 (18.47)	1952-71≠, 1973, 1975-79	4-18-79 6-28-79	6.5 6.5
		Caroline Islands, Palau Islands				
16890620	Ngechutrong River, Babelthuap	Lat 7°36'08" N., long 134°35'25" E., 300 ft (91 m) upstream from Adeiddo River and 0.9 mi (1.4 km) northwest of Mount Megilon.	.24 (.62)	1974-79	10-26-78 1- 9-79 2-20-79 3-20-79 4-11-79 5- 2-79 6-11-79 8- 9-79 9-10-79	1.4 .70 .46 1.1 3.4 1.4 2.2 1.6 1.1
16890700	Almiokan River, Babelthuap	Lat 7°31'12" N., long 134°33'51" E., 0.5 mi (0.8 km) upstream from unnamed tributary and 4.6 mi (7.4 km) northeast of Ngatpang village.	7.05 (18.26)	1973-79	10-16-78 11-16-78 1-19-79 3- 2-79 3-30-79 7-26-79 8-23-79 9-18-79	67 25 13 63 14 104 57 27
16890800	Ngatpang River, Babelthuap	Lat 7°27'40" N., long 134°32'15" E., 0.2 mi (0.3 km) upstream from unnamed tributary and 0.4 mi (0.6 km) southeast of Ngatpang village.	.35 (.91)	1973-79	10-16-78 11-16-78 3- 2-79 3-30-79 7-26-79 9- 7-79	1.8 1.3 1.2 .42 2.6 1.1
16891430	North Fork Ngardok River, Babelthuap	Lat 7°27'50" N., long 134°35'49" E., 500 ft (152 m) upstream from right-bank tributary, 1.4 mi (2.3 km) upstream from confluence with South Fork Ngardok River, and 2.5 mi (4.0 km) upstream from mouth.	9.37 (24.27)	1975-79	11-17-78 1-17-79 2-23-79 3-29-79 4-23-79 8-22-79	74 19 9.7 14 52 87
16891440	North Fork Ngardok River tributary, Babelthuap	Lat 7°27'49" N., long 134°35'47" E., 5 ft (1.5 m) upstream of North Fork Ngardok River and 2.4 mi (3.9 km) north of Ngarsol mountain.	1.73 (4.48)	1975-79	11-17-78 1-17-79 2-23-79 3-29-79 4-23-79 8-22-79	14 4.3 2.3 2.6 4.0 10
16891700	Unnamed west coast stream, Arakabesan	Lat 7°21'14" N., long 134°27'10" E., 0.1 mi (0.2 km) upstream from mouth and 0.15 mi (0.24 km) north of village of Arakabesan.	.03 (.08)	1970-79	12-15-78	.14
16891750	Unnamed south coast stream, Arakabesan	Lat 7°20'41" N., long 134°27'29" E., 0.1 mi (0.2 km) upstream from mouth and 0.6 mi (1.0 km) southeast of village of Arakabesan.	.03 (.08)	1970-79	12-15-78	.13
16891780	Unnamed north coast stream, Malakal	Lat 7°19'51" N., long 134°27'33" E., 200 ft (0.3 km) upstream from mouth and 1.3 mi (2.1 km) southwest of Madalai.	.02 (.05)	1971-79	12-15-78	.02

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1979--Continued

Station No.	Station name	Location	Drainage area mi² (km²)	Period of record	Measurements Date	Measurements Discharge (ft³/s)
		Caroline Islands, Yap Islands				
16892500	Tamaney Stream, Yap	Lat 9°29'45" N., long 138°05'34" E., at abandoned German dam, 0.5 mi (0.8 km) northwest of Inuf, and 2.3 mi (3.7 km) southwest of Colonia.	a.17 (.44)	1968-79	10-30-78 11-30-78 12-28-78 6-29-79 8-21-79	.10 .10 b.01 .81 .05
16892600	Ripu Stream, Yap	Lat 9°30'05" N., long 138°06'02" E., 1,000 ft (305 m) upstream from mouth and 1.6 mi (2.6 km) southwest of Colonia.	a.29 (.75)	1968-79	10-30-78 11-30-78 12-28-78 6-29-79 8-21-79	.11 .11 b.01 1.2 .14
16893300	Bileiy Spring, Gagil-Tomil	Lat 9°32'19" N., long 138°10'59" E., on right bank at Binau, 200 ft (61 m) downstream from main spring, and 0.6 mi (1.0 km) upstream from mouth.	-	1968-74≠, 1975-79	10-26-78 11-28-78 12-27-78	.02 .02 b.01
16893310	Bileiy Stream, Gagil-Tomil	Lat 9°32'15" N., long 138°11'11" E., 0.3 mi (0.5 km) downstream from Bileiy Spring, 0.4 mi (0.6 km) upstream from mouth, and 0.4 mi (0.6 km) south of Gatjapar.	.15 (.39)	1968-79	10-26-78 11-28-78 12-27-78	.06 .14 .30
		Caroline Islands, Island of Kosrae				
16899780	Tafeyat River	Lat 5°19'20" N., long 163°01'45" E., 100 ft (30 m) downstream from former Japanese dam, 1.0 mi (1.6 km) upstream from mouth, and 1.4 mi (2.2 km) east of Mount Crozer.	.47 (1.22)	1974-75, 1977-79	7-26-79	2.4
16899830	Innem River	Lat 5°20'25" N., long 163°01'43" E., at concrete road bridge, 0.3 mi (0.48 km) upstream from mouth, and 1.9 mi (3.1 km) northeast of Mount Crozer.	2.51 (6.50)	1971-74, 1978-79	7-25-79	17
		Samoa Islands, Island of Tutuila				
16919000	Leaveave Stream near Aasu	Lat 14°18'28" S., long 170°45'06" W., 0.6 mi (1.0 km) upstream from mouth and 0.9 mi (1.4 km) southeast of Aasu.	.60 (1.55)	1959-60, 1962-63, 1968, 1974-77, 1979	10-30-78	2.7
16920000	Aasu Stream near Aasu	Lat 14°18'16" S., long 170°45'29" E., 300 ft (91 m) downstream from 100 ft (30 m) waterfall, 0.5 mi (0.8 km) south of Aasu, and 0.5 mi (0.8 km) upstream from mouth.	.82 (2.12)	1959-63, 1968, 1974-76, 1978-79	10-30-78	2.9

≠ Operated as a continuous-record gaging station.
a Revised.
b Estimated.

DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1979

Stream	Tributary to	Location	Drainage area mi^2 (km^2)	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Mariana Islands, Island of Guam				
Alasi Spring	Madog River	Lat 13°17'19" N., long 144°40'29" E., 400 ft (122 m) south of confluence of Madog and Asdulili Rivers and 1.3 mi (2.1 km) north of Merizo Martyrs Memorial School. Altitude 200 ft (61 m), from topographic map.			3- 1-79	0.05
Alatgue Spring	La Sa Fua River	Lat 13°21'32" N., long 144°40'18" E., 0.1 mi (0.2 km) upstream of Coast Highway 2 and 1.1 mi (1.8 km) northeast of Sanchez School in Umatac.			5-16-79 5-29-79	.06 .07

Water-quality partial-record stations are particular sites where chemical-quality, biological and or sediment data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

MARIANA ISLANDS, ISLAND OF GUAM

16854500 UGUM RIVER ABOVE TALOFOFO FALLS, NEAR TALOFOFO (LAT 13°19'16" LONG 144°44'01")

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	TUR-BID-ITY (NTU)	FLUO-RIDE, TOTAL (MG/L AS F)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
NOV												
01...	1430	29	114	8.1	28.0	26	.1	3	.02	0	0	0
07...	1530	27	135	7.7	28.0	6.7	.1	15	.01	0	100	3
07...	1535	27	135	7.7	28.0	--	--	--	--	--	--	--
15...	1400	43	91	7.5	27.5	28	.1	38	.30	0	100	1
DEC												
19...	1100	17	142	7.9	26.0	3.4	.1	2	--	0	0	2

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90)
NOV											
01...	10	5	.1	0	0	<.8	<.4	3.2	<.4	3.0	<.4
07...	0	33	.0	0	0	--	--	--	--	--	--
07...	--	--	--	--	--	<.8	<.4	2.7	<.4	2.6	<.4
15...	0	8	.0	0	0	<.7	<.6	2.6	<.9	2.4	<.9
DEC											
19...	0	12	.0	0	0	<.8	<.4	2.8	<.4	2.7	<.4

DATE	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L)	CARBON, ORGANIC TOTAL (MG/L AS C)	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)
NOV											
01...	.06	5.5	--	--	--	--	--	--	--	--	--
07...	--	4.7	.0	.00	.0	.00	.00	.00	.00	.00	.00
07...	.02	--	--	--	--	--	--	--	--	--	--
15...	.05	4.7	.0	.00	.0	.00	.00	.00	.00	.00	.00
DEC											
19...	.03	--	.0	.00	.0	.00	.00	.00	.00	.00	.00

DATE	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
NOV											
01...	--	--	--	--	--	--	--	--	.00	.00	.00
07...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00
07...	--	--	--	--	--	--	--	--	--	--	--
15...	.00	.00	.00	.00	.00	.00	.00	0	.00	.00	.00
DEC											
19...	.00	.00	.00	.00	.00	.00	.00	0	--	--	--

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

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, PALAU ISLANDS

16890600 ADEIDDO RIVER, BABELTHUAP (LAT 07°36'01" LONG 134°35'38")

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR 11...	1100	16	57	7.1	25.0	8.0	19	6	3.7

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR 11...	2.4	3.3	27	.3	.3	13	1.3	4.6	.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR 11...	17	41	.06	1.83	.04	.00	50	5

16890900 TABAGATEN RIVER, BABELTHUAP (LAT 07°27'00" LONG 134°32'05")

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR 12...	1130	94	45	7.1	25.0	8.0	14	2	2.4

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR 12...	1.9	3.0	31	.4	.4	12	2.1	3.8	.0

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR 12...	13	34	.05	8.63	.00	.00	80	6

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, PALAU ISLANDS--Continued

16891200 GIHMEL RIVER, BABELTHUAP (LAT 07°21'59" N., LONG 134°32'06" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR 15...	1100	12	46	7.1	26.0	8.0	13	2	3.0

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR 15...	1.3	3.1	34	.4	.3	11	1.7	4.5	.0

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR 15...	11	32	.04	1.04	.00	.00	0	10

16891300 GADEN RIVER, BABELTHUAP (LAT 07°22'56" N., LONG 134°33'42" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR 13...	1130	2000	25	6.6	25.0	8.2	6	4	1.4

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR 13...	.7	2.0	39	.3	.3	2	2.1	3.3	.0

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR 13...	6.2	17	.02	91.8	.01	.00	20	5

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, PALAU ISLANDS--Continued

16891310 KUMEKUMEYEL RIVER, BABELTHUAP (LAT 07°23'01" N., LONG 134°33'34" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR 14...	1030	47	39	7.0	26.0	8.0	11	5	2.1

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR 14...	1.3	2.7	35	.4	.2	6	1.3	3.8	.0

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR 14...	12	27	.04	3.43	.00	.00	20	8

CAROLINE ISLANDS, YAP ISLANDS

16892400 ARINGEL STREAM, YAP (LAT 09°31'01" N., LONG 138°05'11" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR 06...	1530	.00	260	7.2	27.5	2.8	91	10	10

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR 06...	16	17	23	.6	1.2	81	3.3	25	.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR 06...	35	153	.21	.00	.00	.03	170	130

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, YAP ISLANDS--Continued

16892900 PEMGOY STREAM, YAP (LAT 09°31'07" N., LONG 138°06'18" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR									
07...	1100	.01	370	7.5	26.5	3.2	170	0	17

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR									
07...	30	14	15	.5	.4	170	3.3	12	.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR								
07...	61	241	.33	.01	.11	.01	130	50

16893200 MUKONG STREAM, GAGIL-TOMIL (LAT 09°32'06" N., LONG 138°09'59" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
APR									
07...	1400	.09	94	6.9	27.5	5.4	32	0	5.1

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
APR									
07...	4.6	6.3	30	.5	.1	35	2.2	7.9	.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR								
07...	11	59	.08	.01	.01	.00	140	80

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, TRUK ISLANDS

16893700 WICHEN RIVER AT ALTITUDE 55 M, MOEN (LAT 07°26'45" N., LONG 151°52'02" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	ALKA-LINITY (MG/L AS CACO3)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)
MAY									
13...	1200	3.0	44	6.7	25.0	8.0	12	.00	.04

16893800 WICHEN RIVER AT ALTITUDE 18 M, MOEN (LAT 07°27'05" N., LONG 151°52'18" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
MAY									
13...	0930	6.3	44	6.7	25.0	8.0	11	8	3.2

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
MAY									
13...	.7	4.9	50	.6	.0	3	2.3	6.9	.1

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
MAY								
13...	9.0	29	.04	.49	.00	.03	70	10

CAROLINE ISLANDS, ISLAND OF PONAPE

16897600 NANEPIL RIVER (LAT 06°55'11" N., LONG 158°12'36" E.)

DATE	TIME	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
MAY							
16...	1030	6	4	1.4	.7	2.2	41

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	IRON, DIS-SOLVED (UG/L AS FE)
MAY							
16...	.4	.5	5.3	19	.03	3.18	60

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, ISLAND OF PONAPE--Continued

16897900 LUI RIVER (LAT 06°55'36" N., LONG 158°12'55" E.)

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
MAY 16...	1300	14	4	2.7	1.7	2.5	28

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	IRON, DISSOLVED (UG/L AS FE)
MAY 16...	.3	.4	5.5	31	.04	.49	70

16898200 LUI RIVER AT MOUTH (LAT 06°57'07" N., LONG 158°13'16" E.)

DATE	TIME	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
MAY 15...	0930	20	5	3.9	2.4	2.3	20

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	IRON, DISSOLVED (UG/L AS FE)
MAY 15...	.2	.2	4.4	35	.05	1.61	120

16898600 LUPWOR RIVER (LAT 06°54'15" N., LONG 158°09'45" E.)

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)
MAY 17...	1000	13	43	7.2	26.0	7.6	14	7	2.9

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAY 17...	1.6	2.4	27	.3	.5	7	3.1	3.8	.1

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY 17...	8.6	28	.04	.98	.04	.01	120	10

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, ISLAND OF KOSRAE

16899500 MUTUNTE RIVER (LAT 05°22'25" N., LONG 163°00'24" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
SEP 19...	1130	1.4	83	7.6	25.5	8.3	33	5

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
SEP 19...	5.2	4.8	4.1	21	.3	.4	28	6.6	3.7

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 19...	.1	22	64	.09	.24	.00	30	2

16899600 OKAT RIVER (LAT 05°20'32" N., LONG 162°59'30" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
SEP 21...	1430	6.7	97	7.3	27.0	7.2	35	2

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
SEP 21...	7.4	4.0	3.7	18	.3	.6	33	11	3.3

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 21...	.1	18	69	.09	1.25	.00	670	20

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

16899620 MELO RIVER (LAT 05°21'06" N., LONG 162°59'29" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
SEP 21...	1630	1.8	131	7.7	30.0	8.0	53	3

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
SEP 21...	11	6.2	4.1	14	.2	.7	50	10	3.2

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 21...	.1	21	87	.12	.42	.00	340	7

16899750 MALEM RIVER (LAT 05°18'21" N., LONG 163°01'46" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
SEP 18...	1200	1.4	119	7.2	27.0	8.2	44	2

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
SEP 18...	8.8	5.3	4.5	18	.3	.7	42	7.6	4.4

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 18...	.1	25	82	.11	.31	.00	60	2

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued)

16899800 TOFOL RIVER (LAT 05°19'53" N., LONG 163°01'25" E.)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)
SEP 20...	1030	1.9	126	7.7	26.0	8.4	48	4

DATE	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
SEP 20...	10	5.6	4.5	17	.3	.8	44	12	3.8

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 20...	.1	27	90	.12	.46	.00	50	<1

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
MARIANA ISLANDS, ISLAND OF SAIPAN									
16801000 - SF TALOFOFO STREAM SAIPAN (LAT 15 12 58 LONG 145 46 31.70)									
NOV , 1978					MAY , 1979				
10...	1445	2.7	--	25.0	02...	0935	.09	27.0	25.0
MAR , 1979					JUN				
03...	1010	.22	--	25.0	02...	1330	.09	--	25.0
21...	1135	.14	--	26.0	16...	1315	.08	--	25.0
APR					JUL				
28...	1415	.09	--	25.0	17...	1340	.03	28.0	28.5
16801500 - MF TALOFOFO STREAM SAIPAN (LAT 15 13 05 LONG 145 46 36.70)									
OCT , 1978					APR , 1979				
07...	1400	2.0	--	25.0	28...	1315	.25	--	25.0
NOV					MAY				
10...	1300	1.3	--	25.0	02...	0845	.27	27.0	25.0
DEC					19...	1420	.21	--	25.0
02...	0900	2.1	--	25.0	JUN				
JAN , 1979					02...	1400	.22	--	25.0
20...	0950	.80	--	25.0	16...	1400	.23	--	25.0
MAR					JUL				
03...	1045	.33	--	25.0	07...	1410	.24	--	25.0
21...	1030	.35	28.0	25.0	17...	1430	.15	27.5	28.0
MARIANA ISLANDS, ISLAND OF GUAM									
16808300 - FINILE CREEK AT AGAT GUAM (LAT 13 22 39 LONG 144 39 26.70)									
NOV , 1978					JUL , 1979				
13...	1120	2.0	29.5	26.5	20...	0945	.20	--	26.0
DEC					AUG				
15...	1215	1.5	29.0	27.0	28...	1515	.74	29.0	27.0
16809600 - LA SA FUA RIVER NEAR UMATAC GUAM (LAT 13 18 23 LONG 144 39 45.70)									
NOV , 1978					JUL , 1979				
13...	1545	2.8	29.0	27.0	24...	1320	.65	29.0	27.0
DEC					AUG				
14...	1350	2.7	29.5	28.0	28...	1230	2.0	29.0	27.5
16835000 - INARAJAN RIVER NR INARAJAN GUAM (LAT 13 16 41 LONG 144 44 15.70)									
NOV , 1978					JUL , 1979				
07...	1500	16	29.0	27.0	23...	1425	2.5	29.0	27.0
DEC					AUG				
13...	1410	10	29.0	27.0	20...	1330	11	29.0	27.0
MAY , 1979									
15...	1245	2.5	29.0	27.0					
16840000 - TINAGA RIVER NR INARAJAN GUAM (LAT 13 17 10 LONG 144 45 04.70)									
NOV , 1978					MAY , 1979				
07...	1300	6.7	29.0	27.0	15...	1020	.82	29.0	27.0
DEC					JUL				
13...	1215	3.8	29.0	27.0	23...	1300	.68	29.0	27.0
FEB , 1979					AUG				
12...	1230	.92	29.0	27.0	20...	1245	4.4	29.5	28.0
16847000 - IMONG RIVER NR AGAT GUAM (LAT 13 20 17 LONG 144 41 55.70)									
OCT , 1978					JUN , 1979				
11...	1450	7.4	30.5	28.0	22...	1345	1.4	32.0	30.0
JAN , 1979					SEP				
11...	1425	11	29.0	26.5	11...	1600	4.6	--	25.5

PERIODIC DETERMINATIONS OF WATER TEMPERATURE

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
MARIANA ISLANDS, ISLAND OF GUAM--Continued									
16848100 - ALMAGOSA RIVER NEAR AGAT GUAM (LAT 13 20 43 LONG 144 41 36.70)									
OCT , 1978					JUN , 1979				
11...	1210	8.9	32.0	28.0	22...	1155	.26	29.0	28.0
JAN , 1979					AUG				
11...	1300	13	29.0	26.5	01...	1435	22	--	25.0
16848500 - MAULAP RIVER NEAR AGAT GUAM (LAT 13 21 14 LONG 144 41 44.70)									
JAN , 1979					AUG , 1979				
11...	1030	6.2	29.0	27.0	01...	1200	8.1	26.0	25.5
APR					SEP				
11...	1210	.69	29.0	27.0	11...	1350	1.9	--	26.5
JUN									
22...	1040	.52	28.0	28.0					
16854500 - UGUM RIVER AB TALOFOFO FALLS,NR TALOFOFO, GUAM (LAT 13 19 16 LONG 144 44 01.70)									
NOV , 1978					JUN , 1979				
01...	1430	29	--	28.0	28...	1235	4.9	29.0	27.0
07...	1530	27	27.5	28.0	JUL				
07...	1535	27	--	28.0	27...	1130	6.6	31.0	29.0
15...	1400	43	--	27.5	AUG				
DEC					30...	1155	14	29.0	27.0
19...	1100	17	--	26.0					
16858000 - YLIG RIVER NR YONA GUAM (LAT 13 23 28 LONG 144 45 06.70)									
NOV , 1978					AUG , 1979				
27...	1125	20	29.0	27.0	27...	1525	12	29.0	27.5
DEC									
26...	1225	9.7	29.0	27.0					
16865000 - PAGO RIVER NR ORDOT GUAM (LAT 13 26 08 LONG 144 45 14.70)									
NOV , 1978					APR , 1979				
02...	1430	216	27.0	26.0	24...	1030	1.3	--	28.0
DEC					MAY				
08...	1400	17	30.0	29.0	23...	1000	.40	--	27.0
18...	1100	10	--	25.5	JUN				
JAN , 1979					26...	1100	.90	--	27.5
23...	1200	4.8	26.5	26.0	JUL				
FEB					31...	1230	16	--	27.5
27...	1030	2.2	28.0	25.5	SEP				
MAR					05...	1100	6.8	--	27.0
27...	1030	1.5	--	26.0	05...	1120	7.8	29.5	27.0
27...	1115	1.6	28.0	26.0	25...	1030	12	--	27.0
CAROLINE ISLANDS, PALAU ISLANDS									
16890600 - ADEIDDO RIVER, BABELTHUAP, PALAU ISLANDS (LAT 07 36 01 LONG 134 35 38.70)									
JAN , 1979					JUN , 1979				
09...	1330	12	27.0	25.5	11...	1335	25	29.0	26.5
FEB					JUL				
20...	1420	7.6	27.5	26.0	10...	1320	69	27.0	26.0
MAR					AUG				
20...	1245	15	29.0	25.0	09...	1210	30	28.5	26.0
APR					SEP				
11...	1100	16	--	25.0	10...	1230	17	29.0	25.5
11...	1210	28	--	25.0					

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, PALAU ISLANDS--Continued

16890900 - TABAGATEN RIVER, BABELTHUAP, PALAU ISLANDS (LAT 07 27 00 LONG 134 32 05.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
DEC , 1978				
05...	1120	23	27.5	25.0
JAN , 1979				
08...	1435	19	25.5	25.0
FEB				
09...	1135	15	28.5	25.0
MAR				
22...	1300	11	28.0	25.5
APR				
12...	1130	94	--	25.0
12...	1140	94	26.0	25.0
MAY , 1979				
08...	1155	14	28.0	26.0
JUN				
15...	1050	58	27.0	26.0
JUL				
11...	1045	93	27.0	26.0
AUG				
10...	0910	27	26.0	26.0
SEP				
07...	0830	27	25.0	25.0

16891200 - GITHMEL RIVER, BABELTHUAP, PALAU ISLANDS (LAT 07 21 59 LONG 134 32 06.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
APR , 1979				
15...	1100	12	--	26.0

16891300 - GADEN RIVER, BABELTHUAP, PALAU ISLANDS (LAT 07 22 56 LONG 134 33 42.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
NOV , 1978				
08...	1130	23	27.0	25.0
DEC				
01...	1055	17	27.0	25.0
JAN , 1979				
11...	1115	8.8	28.0	24.5
FEB				
01...	1115	9.0	28.5	26.0
MAR				
08...	1340	16	29.0	26.0
APR				
13...	1130	2000	--	25.0
MAY , 1979				
04...	1510	13	29.5	27.5
JUN				
05...	1300	27	29.0	26.0
29...	1200	61	27.5	26.0
AUG				
06...	1520	23	29.0	27.0
SEP				
05...	1340	17	30.0	26.5

16891310 - KUMEKUMEYEL RIVER, BABELTHUAP, PALAU ISLANDS (LAT 07 23 15 LONG 134 33 05.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
NOV , 1978				
09...	1310	9.7	28.0	26.0
DEC				
06...	1225	5.1	28.0	26.0
JAN , 1979				
12...	1320	1.6	27.0	25.5
FEB				
05...	1125	2.0	29.0	25.5
MAR				
13...	1135	3.5	29.0	25.5
MAY , 1979				
14...	1240	6.6	28.0	26.0
JUN				
13...	1230	13	27.5	26.0
JUL				
27...	1355	12	26.5	25.5
AUG				
29...	1400	6.7	26.5	25.5
SEP				
24...	1230	17	28.5	26.0

16891400 - SOUTH FORK NGARDOK RIVER, BABELTHUAP,PALAU IS (LAT 07 26 15 LONG 134 35 03.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
DEC , 1978				
21...	1310	6.9	29.5	27.0
JAN , 1979				
30...	1030	4.6	28.5	26.0
MAR				
14...	1220	5.2	27.0	26.0
APR				
20...	1430	11	28.5	27.0
JUL , 1979				
25...	1350	64	27.0	26.0
AUG				
20...	1245	18	31.0	27.0
SEP				
14...	1445	9.7	27.5	26.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, YAP ISLANDS

16892400 - ARINGEL STREAM, YAP, YAP ISLANDS (LAT 09 31 01 LONG 138 05 11.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
26...	1505	.17	32.0	26.5
NOV				
09...	1440	.49	30.0	26.0
28...	1410	.07	30.5	26.0
DEC				
13...	0935	3.7	26.5	25.5
MAR , 1979				
15...	1330	.29	35.0	26.5
APR				
06...	1530	.00	--	27.5
MAY				
15...	1505	.16	32.0	27.0
JUN , 1979				
13...	0855	.53	26.5	25.5
27...	0915	1.1	26.5	26.0
JUL				
11...	1200	2.3	29.0	26.5
26...	1020	1.7	26.5	25.5
AUG				
08...	0917	.54	27.5	25.5
21...	0945	.16	28.5	25.5
SEP				
05...	1040	.02	30.0	27.0

16892800 - DALOLAB STREAM, YAP, YAP ISLANDS (LAT 09 31 04 LONG 138 06 04.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
30...	0905	.02	27.5	26.0
NOV				
15...	0900	.13	28.0	25.5
DEC				
13...	1125	1.1	26.5	25.5
MAR , 1979				
15...	1450	.02	29.5	26.0
JUN				
13...	0940	.12	27.0	25.5
JUN , 1979				
29...	1007	.61	29.0	26.0
JUL				
11...	1055	.84	28.0	26.0
26...	1115	1.1	26.5	25.5
AUG				
08...	1110	.08	26.0	25.5
21...	1135	.02	32.0	26.0

16892900 - PEMGOY STREAM, YAP, YAP ISLANDS (LAT 09 31 07 LONG 138 06 18.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
31...	0935	.03	27.0	25.5
NOV				
15...	0955	.34	28.0	25.5
30...	0905	.04	27.5	25.0
DEC				
13...	1245	3.2	27.0	25.5
MAR , 1979				
16...	0910	.03	28.0	25.0
APR				
07...	1100	.01	--	26.5
JUN , 1979				
13...	1440	.27	25.5	25.5
29...	1140	.68	27.5	26.0
JUL				
11...	0920	4.6	27.0	25.5
26...	1240	2.0	27.0	25.5
AUG				
08...	1315	.61	27.0	25.5
21...	1235	.11	28.0	26.0
SEP				
05...	0915	.01	29.0	25.5

16893000 - TALAGU STREAM, YAP, YAP ISLANDS (LAT 09 31 08 LONG 138 06 13.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
31...	1015	.03	27.0	25.5
NOV				
15...	1040	.13	30.5	26.0
MAR , 1979				
16...	0955	.02	25.5	25.0
JUN				
13...	1520	.23	27.0	26.0
29...	1100	.72	28.0	26.0
JUL , 1979				
11...	1000	1.3	26.0	25.0
26...	1210	.63	26.5	25.5
AUG				
08...	1350	.14	27.0	25.5
21...	1315	.06	32.0	26.0

16893100 - BURONG STREAM, YAP, YAP ISLANDS (LAT 09 31 59 LONG 138 07 05.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
26...	1055	1.1	28.5	26.0
NOV				
09...	0915	2.9	28.5	26.0
28...	1320	.06	30.0	26.5
DEC				
12...	1030	1.0	27.5	26.0
27...	1340	.04	30.5	26.5
MAR , 1979				
15...	1055	.21	24.0	25.0
JUN				
12...	1340	2.5	28.0	25.5
JUN , 1979				
27...	1045	1.2	28.0	26.0
JUL				
11...	1350	2.4	32.0	26.5
30...	1040	.12	28.0	25.5
AUG				
09...	0915	3.6	27.0	25.5
21...	1430	.21	32.0	26.5
SEP				
05...	1200	.02	30.0	27.0
20...	1235	.07	30.0	27.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, YAP ISLANDS--Continued

16893200 - MUKONG STREAM, GAGIL-TOMIL, YAP ISLANDS (LAT 09 32 06 LONG 138 09 59.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
26...	1005	1.3	27.5	27.0
NOV				
08...	0940	.98	29.5	26.0
28...	0930	1.1	28.5	25.5
DEC				
12...	0920	2.4	28.0	26.0
27...	0930	1.1	28.0	25.0
JAN , 1979				
12...	1410	.48	31.0	26.5
31...	0935	.37	28.0	25.5
FEB				
13...	0930	.22	27.5	25.5
27...	1355	.20	32.0	27.0
MAR				
15...	0855	1.0	28.0	26.0
30...	1535	.18	32.5	28.0
APR				
07...	1355	.09	31.0	27.5
07...	1400	.09	--	27.5
APR , 1979				
25...	0900	.13	29.0	26.5
MAY				
17...	1710	.18	33.0	27.0
31...	1620	.15	35.5	28.5
JUN				
14...	1400	1.7	30.0	27.0
29...	1420	3.7	30.0	28.0
JUL				
13...	0925	2.2	32.0	26.0
AUG				
09...	1025	6.2	27.5	25.5
22...	0915	1.6	29.0	26.0
SEP				
06...	1410	.90	34.5	28.0
20...	1135	1.2	33.0	26.5

CAROLINE ISLANDS, TRUK ISLANDS

16893700 - WICHEN R AT ALTITUDE 55M, MOEN, TRUK ISLANDS (LAT 07 26 45 LONG 151 52 02.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
MAY , 1979				
13...	1200	3.0	--	25.0

16893800 - WICHEN RIVER AT ALT 18M, MOEN, TRUK ISLANDS (LAT 07 27 05 LONG 151 52 18.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
13...	0905	2.8	28.0	26.0
MAY , 1979				
13...	0925	6.3	25.5	25.0
MAY , 1979				
13...	0930	6.3	--	25.0

CAROLINE ISLANDS, ISLAND OF PONAPE

16897600 - NANEPIL RIVER, PONAPE (LAT 06 55 11 LONG 158 12 36.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
03...	1140	25	27.0	24.5
26...	1205	16	27.0	25.0
NOV				
14...	1335	59	27.0	25.5
22...	1225	31	26.0	24.5
DEC				
07...	1250	17	30.0	25.0
21...	1250	11	28.0	25.0
JAN , 1979				
04...	1320	15	27.0	24.5
18...	1250	12	28.0	25.0
FEB				
01...	1320	17	28.0	26.0
FEB , 1979				
14...	1350	16	28.0	24.0
MAR				
02...	1310	9.4	28.0	26.0
14...	1230	46	28.0	26.0
MAY				
16...	1045	62	26.0	24.0
JUN				
11...	1320	27	29.0	26.0
AUG				
20...	1145	29	29.0	25.5
SEP				
13...	1120	11	28.5	24.5

16897900 - LUI RIVER, PONAPE (LAT 06 55 36 LONG 158 12 55.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
03...	1000	3.1	27.0	24.0
NOV				
14...	1100	2.4	27.0	25.0
DEC				
07...	1030	1.7	28.0	25.0
21...	1100	1.3	29.0	25.5
JAN , 1979				
04...	1030	1.2	28.0	25.0
FEB				
14...	1100	.91	26.0	24.5
MAR				
02...	1030	1.5	26.0	24.0
29...	1030	.62	29.0	25.0
APR				
24...	1015	2.5	28.0	26.0
MAY , 1979				
16...	1225	5.9	26.0	24.5
30...	1015	3.5	27.0	25.0
JUN				
11...	1005	4.1	28.0	25.0
28...	1105	7.8	28.0	26.0
JUL				
16...	0950	1.6	29.0	27.0
AUG				
02...	1045	4.6	28.0	25.0
17...	1015	2.4	28.0	26.0
SEP				
13...	0950	.72	28.0	24.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

CAROLINE ISLANDS, ISLAND OF PONAPE--Continued

16898200 - LUI RIVER AT MOUTH, PONAPE (LAT 06 57 07 LONG 158 13 16.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
05...	1050	13	29.0	26.5
27...	0945	9.8	27.5	25.0
NOV				
08...	1115	8.2	27.0	25.5
30...	1410	11	31.0	28.0
DEC				
12...	1345	16	29.0	26.0
22...	0950	8.5	28.5	26.0
JAN , 1979				
05...	1035	4.9	28.0	26.0
19...	0950	4.6	27.0	24.0
FEB				
16...	1015	3.3	29.0	26.0
MAR				
05...	1355	4.9	30.0	28.0
30...	1015	4.7	29.0	26.0
APR , 1979				
23...	0940	2.4	28.0	26.0
MAY				
15...	0930	17	29.0	26.0
JUN				
01...	0940	18	28.0	26.0
29...	1350	34	28.0	26.0
JUL				
17...	1405	19	27.0	26.0
AUG				
03...	1105	21	30.0	26.0
16...	1520	20	27.0	25.0
SEP				
14...	1020	4.6	28.0	26.0

16898600 - LUPWOR RIVER, PONAPE (LAT 06 54 15 LONG 158 09 45.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
04...	1140	4.9	28.0	26.0
25...	1245	2.9	29.0	27.0
NOV				
07...	1150	2.6	27.0	25.0
21...	1155	7.0	30.5	27.0
DEC				
06...	1245	4.4	30.5	27.0
19...	1145	3.8	29.0	26.0
JAN , 1979				
03...	1415	2.5	30.0	27.0
16...	1230	2.3	28.0	26.0
29...	1415	3.4	29.0	27.0
FEB				
13...	1440	3.7	27.0	25.5
27...	1140	5.1	30.0	26.0
MAR , 1979				
13...	1220	9.4	28.0	26.0
27...	1315	2.4	29.0	27.0
MAY				
17...	1000	13	28.0	26.0
JUN				
07...	1250	5.6	30.0	27.0
12...	1555	7.3	29.0	26.0
27...	1530	6.1	28.0	26.0
JUL				
11...	1330	3.8	29.0	27.0
31...	1430	12	28.0	26.0
AUG				
14...	1150	15	28.5	26.0
SEP				
11...	1150	3.7	28.0	26.0

CAROLINE ISLANDS, ISLAND OF KOSRAE

16899500 - MUTUNTE RIVER KOSRAE (LAT 05 22 25 LONG 163 00 24.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
SEP , 1979				
19...	1130	1.4	--	25.5

16899600 - OKAT RIVER KOSRAE (LAT 05 20 32 LONG 162 59 30.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
SEP , 1979				
21...	1430	6.7	--	27.0

16899620 - MELO RIVER KOSRAE (LAT 05 21 06 LONG 162 59 29.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
SEP , 1979				
21...	1630	1.8	--	30.0

16899750 - MALEM RIVER KOSRAE (LAT 05 18 21 LONG 163 01 46.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
SEP , 1979				
18...	1200	1.4	--	27.0

16899800 - TOFOL RIVER KOSRAE (LAT 05 19 53 LONG 163 01 25.70)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
SEP , 1979				
20...	1030	1.9	--	26.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

SAMOA ISLANDS, ISLAND OF TUTUILA

16912000 - PAGO STREAM AT AFONO, TUTUILA (LAT 14 16 03 LONG 170 39 02.90)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
23...	1050	.91	27.0	25.0
DEC				
20...	0940	1.5	26.5	25.0
JAN , 1979				
23...	1230	1.5	30.0	26.0
MAR				
06...	1300	1.0	30.0	25.5
21...	0715	1.7	26.0	25.0
30...	0725	2.0	25.0	25.0
APR				
03...	0730	1.3	25.5	25.0
06...	1155	1.2	25.5	25.0
12...	0820	1.7	25.5	25.0
25...	0850	.83	27.5	25.5
MAY , 1979				
01...	1455	1.6	30.0	27.0
09...	0855	1.2	26.0	25.5
16...	1305	.78	30.0	28.5
30...	0920	.58	27.0	26.0
JUN				
15...	0810	.73	25.5	25.0
20...	0835	.81	27.0	25.5
JUL				
03...	1230	.83	28.0	26.0
24...	0825	6.2	24.0	24.0
AUG				
29...	0845	.62	26.5	26.0
SEP				
11...	1110	18	24.5	23.5

16920500 - AASU STREAM AT AASU, TUTUILA (LAT 14 17 51 LONG 170 45 30.90)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
30...	1005	3.4	26.0	24.0
DEC				
08...	0910	5.8	25.5	25.0
FEB , 1979				
16...	1000	3.3	25.5	25.0
APR , 1979				
09...	0900	2.6	25.5	25.5
JUN				
13...	0930	2.4	26.0	25.0
AUG				
21...	0820	2.8	26.0	24.0

16931000 - ATAULOMA STREAM AT AFAO, TUTUILA (LAT 14 20 10 LONG 170 48 02.90)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
11...	0935	.20	27.0	26.0
JAN , 1979				
09...	0925	2.5	30.0	25.0
FEB				
13...	0815	.81	25.5	24.0
MAR				
30...	1035	1.2	26.5	25.0
APR				
20...	1035	.85	29.0	27.0
MAY , 1979				
24...	0915	.51	26.0	25.5
JUN				
25...	0935	.30	26.0	25.0
JUL				
26...	0815	.87	26.0	24.0
SEP				
21...	0845	.15	26.5	25.0

16931500 - ASILI STREAM AT ALT 330 FT (100M) NR ASILI TU (LAT 14 19 34 LONG 170 47 38.90)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
03...	1030	.18	26.0	25.0
17...	0935	1.2	25.0	23.0
NOV				
13...	0900	12	25.0	24.0
DEC				
13...	1015	3.4	27.0	25.0
MAR , 1979				
13...	0845	.76	26.5	25.0
22...	0815	.93	24.0	25.0
APR				
04...	0830	1.2	25.5	25.0
11...	0930	1.1	28.0	26.0
MAY , 1979				
11...	0935	1.3	25.5	26.0
22...	0935	1.3	25.5	25.0
JUN				
26...	1125	.83	26.0	25.0
28...	0920	1.6	25.5	25.0
JUL				
18...	1015	1.1	25.5	25.0
AUG				
14...	0915	1.8	23.5	22.0
SEP				
14...	0835	1.4	23.0	22.5

16933500 - LEAFU STREAM AT ALT 370FT (113M) NR LEONE TU (LAT 14 19 31 LONG 170 46 50.90)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978				
02...	0935	1.1	25.0	24.0
16...	0955	2.3	25.0	23.0
18...	0900	2.6	24.0	23.0
NOV				
06...	0900	4.7	25.0	24.0
14...	0920	18	24.0	23.0
DEC				
12...	0945	9.2	25.0	25.0
JAN , 1979				
04...	0740	7.0	25.0	24.0
31...	0910	1.2	26.0	24.0
FEB				
22...	0900	5.6	27.0	24.0
MAR				
08...	0900	2.3	27.0	24.0
MAR , 1979				
16...	0815	3.6	25.0	24.0
APR				
10...	0820	2.9	26.0	25.5
MAY				
11...	0915	2.3	25.5	24.0
22...	0920	2.0	25.0	24.0
31...	0845	1.1	24.0	24.0
JUL				
11...	0945	2.9	24.0	23.0
18...	0940	1.6	24.0	24.0
AUG				
08...	1010	47	25.0	24.5
SEP				
05...	0955	.97	25.0	24.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

16948000 - AFUELO STREAM AT MAILU, TUTUILA (LAT 14 18 07 LONG 170 41 07.90)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)	DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE (DEG C)
OCT , 1978					APR , 1979				
25...	0950	.37	26.0	25.0	24...	0930	.07	27.0	25.0
DEC					MAY				
05...	0950	1.3	26.0	25.5	25...	0935	.08	27.0	26.0
JAN , 1979					AUG				
11...	0820	2.2	25.0	24.0	01...	0945	.13	26.5	25.0
MAR									
19...	0820	.25	26.0	25.0					

16963900 - LEAFU STREAM NEAR AUASI, TUTUILA (LAT 14 16 27 LONG 170 34 26.90)

DEC , 1978					APR , 1979				
07...	0740	.18	25.5	25.0	23...	1005	.09	27.0	27.0
JAN , 1979					MAY				
10...	0910	.26	26.0	26.0	29...	0930	.09	26.0	25.0
FEB					JUN				
14...	0930	.13	25.5	25.0	27...	0945	5.4	26.0	25.0
MAR					JUL				
20...	0910	.09	25.5	24.5	30...	0920	.11	24.0	24.0

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MARIANA ISLANDS, ISLAND OF GUAM

132534144474871. Local number, 2547340 Tide Gage, Pago Bay.
LOCATION.--Lat 13°25'34" N., long 144°47'48" E., at University of Guam Marine Laboratory, Pago Bay, Mangilao, Guam. Owner: University of Guam Marine Laboratory.
WELL CHARACTERISTICS.--Concrete wet pit, 18 ft (5.5 m) deep.
DATUM.--Altitude of land-surface datum is 7.70 ft (2.347 m). Measuring point: Edge of wet pit manhole, 8.80 ft (2.682 m) above mean sea level.
REMARKS.--The wet pit is connected to the open ocean through an inlet pipe which terminates at the edge of the reef.
PERIOD OF RECORD.--April to September 1976 records available in subdistrict office. October 1976 to current year.
EXTREMES FOR CURRENT YEAR.--Highest recorded tide level, 0.72 ft (0.219 m) above mean sea level, July 3; lowest recorded, -0.59 ft (-0.180 m) Feb. 11.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29			---	-.24	-.44	-.04	-.17	-.05	.38	.39	-.05
2	.36			---	-.38	-.46	-.04	-.11	-.05	.43	.39	-.13
3	.28			---	-.36	-.38	-.01	-.15	-.09	.72	.20	-.13
4	.26			---	-.39	-.35	.13	-.02	-.05	.58	.19	-.16
5	.36			---	-.40	-.31	-.04	.00	-.02	.35	.27	-.13
6	.37			---	-.43	-.30	.09	-.01	-.02	.30	.28	-.06
7	.37			---	-.47	-.20	.10	-.04	-.03	.27	.21	-.04
8	.27			---	-.47	-.13	.20	.00	-.07	.23	.21	-.12
9	.23			---	-.51	-.15	.07	-.01	-.06	.18	.26	-.08
10	.11			---	-.58	-.19	.11	.00	.02	.15	.24	-.05
11	.15			---	-.59	-.17	.07	-.04	.03	.18	.26	-.14
12	.11			---	-.52	-.20	.03	-.02	.09	.15	.23	-.17
13	.16			---	-.52	-.30	-.07	-.01	.07	---	.15	-.14
14	.04			---	-.47	-.37	-.12	.00	.14	---	.15	-.11
15	.05			---	-.49	-.40	-.15	-.10	.16	---	.13	-.14
16	.06			---	-.41	-.40	-.22	-.05	.16	---	.14	-.14
17	-.04			---	-.33	-.42	-.22	-.05	.16	.33	.33	-.01
18	-.06			---	-.33	-.26	-.17	.02	.15	.33	.32	-.06
19	-.09			---	-.45	-.08	-.06	.04	.18	.29	.12	-.14
20	-.08			-.55	-.35	.07	.02	.02	.22	.26	.03	-.09
21	-.12			-.50	-.41	-.06	.01	.00	.26	.29	.05	-.10
22	-.17			-.47	-.43	-.21	-.11	.04	.27	.29	.05	-.01
23	---			-.40	-.35	-.20	-.08	.06	.28	.24	.07	-.10
24	---			-.34	-.34	-.13	-.09	-.05	.29	.21	.02	-.06
25	---			-.29	-.40	-.12	-.05	-.08	.30	.37	-.02	-.18
26	---			-.24	-.41	-.09	-.12	-.10	.30	.47	.03	-.03
27	---			-.17	-.39	-.07	-.18	-.08	.33	.38	.00	.01
28	---			-.19	-.36	-.08	-.21	-.07	.36	.26	.01	-.02
29	---			-.21	---	-.05	-.20	-.04	.33	.34	-.05	-.14
30	---			-.05	---	-.04	-.22	-.03	.30	.38	-.09	.04
31	---			-.15	---	-.07	---	-.06	---	.39	-.07	---
MEAN	---	---	---	---	-.42	-.21	-.05	-.04	.13	---	.15	-.09
MAX	---	---	---	---	-.24	.07	.20	.06	.36	---	.39	.04
MIN	---	---	---	---	-.59	-.46	-.22	-.17	-.09	---	-.09	-.18

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

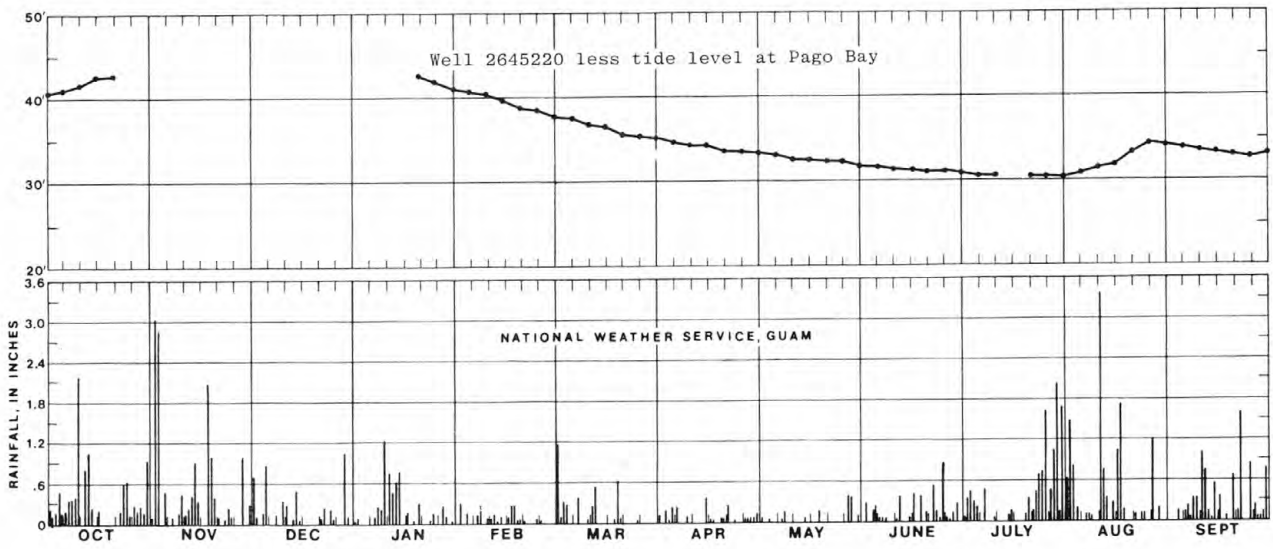
MARIANA ISLANDS, ISLAND OF GUAM

132624144452771. Local number, 2645220. Formerly published as (2645-22).
LOCATION.--Lat 13°26'24" N., long 144°45'27" E., at Ordot School, 1.4 mi (2.3 km) west of junction of Routes 4 and 10, Ordot, Guam. Owner: Government of Guam.
AQUIFER.--Mariana Limestone and Alutom formation.
WELL CHARACTERISTICS.--Drilled parabasal water-table well, diameter 6 in (0.2 m), depth reported 120 ft (36.6 m).
DATUM.--Altitude of land-surface datum is 137 ft (41.8 m). Measuring point: Top of casing, 139.00 ft (42.367 m) above land-surface datum.
REMARKS.-- Recording gage installed January 1974.
PERIOD OF RECORD.--January 1974 to September 1976 records available in files of district office; October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 50.41 ft (15.365 m) above mean sea level, Aug. 25 and 26, 1976; lowest, 30.29 ft (9.232 m) above mean sea level, July 30, 1975, June 14-16, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.96	42.32	46.02	44.43	40.81	37.54	35.03	33.28	31.85	31.11	30.74	33.95
2	41.14	42.35	46.05	44.31	40.69	37.43	34.94	33.23	31.82	31.08	30.80	33.90
3	41.27	42.38	46.10	44.21	40.56	37.34	34.89	33.18	31.79	31.07	30.91	33.85
4	41.40	42.57	46.15	44.11	40.44	37.25	34.83	33.13	31.76	31.05	31.05	33.80
5	41.58	42.79	46.20	44.00	40.32	37.14	34.78	33.08	31.73	31.03	31.20	33.72
6	41.68	42.97	46.23	43.81	40.21	37.04	34.71	33.03	31.70	31.01	31.33	33.65
7	41.79	43.18	46.25	43.69	40.09	36.93	34.63	32.98	31.67	31.00	31.48	33.59
8	41.88	43.39	46.30	43.57	39.96	36.84	34.57	32.91	31.64	30.99	31.56	33.54
9	41.98	43.58	46.33	43.45	39.86	36.77	34.50	32.83	31.62	30.97	31.65	33.48
10	42.07	43.78	46.34	43.32	39.71	36.67	34.44	32.77	31.59	30.96	31.70	33.43
11	42.18	44.00	46.33	43.18	39.60	36.58	34.37	32.73	31.57	30.94	31.73	33.37
12	42.27	44.17	46.31	43.06	39.48	36.48	34.30	32.68	31.54	30.93	31.75	33.33
13	42.35	44.31	46.27	42.89	39.36	36.38	34.26	32.62	31.51	30.91	31.78	33.28
14	42.40	44.43	46.23	42.76	39.22	36.31	34.19	32.57	31.48	30.90	31.84	33.21
15	42.48	44.54	46.17	42.61	39.11	36.24	34.13	32.52	31.46	30.88	31.97	33.14
16	42.53	44.65	46.09	42.49	38.99	36.14	34.08	32.48	31.43	30.87	32.11	33.09
17	42.57	44.80	46.02	42.41	38.86	36.06	34.02	32.44	31.41	30.85	32.32	33.04
18	42.61	44.97	45.94	42.33	38.75	35.98	33.97	32.39	31.38	30.84	32.58	32.97
19	42.61	45.10	45.85	42.24	38.63	35.90	33.92	32.34	31.35	30.82	32.97	32.88
20	42.60	45.20	45.75	42.13	38.53	35.84	33.87	32.31	31.33	30.81	33.34	32.82
21	42.58	45.35	45.67	42.02	38.41	35.77	33.82	32.27	31.32	30.79	33.60	32.75
22	42.53	45.47	45.57	41.93	38.32	35.69	33.77	32.23	31.29	30.78	33.80	32.69
23	42.50	45.62	45.47	41.83	38.22	35.62	33.72	32.18	31.27	30.76	33.90	32.65
24	42.40	45.75	45.37	41.73	38.12	35.54	33.65	32.13	31.25	30.75	34.00	32.65
25	42.35	45.85	45.26	41.62	38.00	35.48	33.59	32.10	31.23	30.74	34.10	32.68
26	42.33	45.92	45.15	41.52	37.87	35.42	33.53	32.06	31.22	30.73	34.13	32.73
27	42.33	45.98	45.03	41.43	37.76	35.34	33.48	32.02	31.19	30.72	34.15	32.78
28	42.32	46.02	44.92	41.33	37.64	35.29	33.42	31.98	31.16	30.71	34.13	32.89
29	42.28	46.01	44.80	41.19	---	35.23	33.36	31.94	31.14	30.70	34.10	32.93
30	42.25	46.00	44.67	41.06	---	35.14	33.32	31.91	31.13	30.69	34.05	33.26
31	42.27	---	44.56	40.92	---	35.09	---	31.88	---	30.70	34.00	---
MEAN	42.14	44.45	45.79	42.63	39.20	36.21	34.14	32.52	31.46	30.87	32.54	33.20
MAX	42.61	46.02	46.34	44.43	40.81	37.54	35.03	33.28	31.85	31.11	34.15	33.95
MIN	40.96	42.32	44.56	40.92	37.64	35.09	33.32	31.88	31.13	30.69	30.74	32.65

WTR YR 1979 MEAN 37.09 MAX 46.34 MIN 30.69



MARIANA ISLANDS, ISLAND OF GUAM

132624144452773. Well 2645220 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.67			---	41.05	37.98	35.07	33.45	31.90	30.73	30.35	34.00
2	40.78			---	41.07	37.89	34.98	33.34	31.87	30.65	30.41	34.03
3	40.99			---	40.92	37.72	34.90	33.33	31.88	30.35	30.71	33.98
4	41.14			---	40.83	37.60	34.70	33.15	31.81	30.47	30.86	33.96
5	41.22			---	40.72	37.45	34.82	33.08	31.75	30.68	30.93	33.85
6	41.31			---	40.64	37.34	34.62	33.04	31.72	30.71	31.05	33.71
7	41.42			---	40.56	37.13	34.53	33.02	31.70	30.73	31.27	33.63
8	41.61			---	40.43	36.97	34.37	32.91	31.71	30.76	31.35	33.66
9	41.75			---	40.37	36.92	34.43	32.84	31.68	30.79	31.39	33.56
10	41.96			---	40.29	36.86	34.33	32.77	31.57	30.81	31.46	33.48
11	42.03			---	40.19	36.75	34.30	32.77	31.54	30.76	31.47	33.51
12	42.16			---	40.00	36.68	34.27	32.70	31.45	30.78	31.52	33.50
13	42.19			---	39.88	36.68	34.33	32.63	31.44	---	31.63	33.42
14	42.36			---	39.69	36.68	34.31	32.57	31.34	---	31.69	33.32
15	42.43			---	39.60	36.64	34.28	32.62	31.30	---	31.84	33.28
16	42.47			---	39.40	36.54	34.30	32.53	31.27	---	31.97	33.23
17	42.61			---	39.19	36.48	34.24	32.49	31.25	30.52	31.99	33.05
18	42.67			---	39.08	36.24	34.14	32.37	31.23	30.51	32.26	33.03
19	42.70			---	39.08	35.98	33.98	32.30	31.17	30.53	32.85	33.02
20	42.68			42.68	38.88	35.77	33.85	32.29	31.11	30.55	33.31	32.91
21	42.70			42.52	38.82	35.83	33.81	32.27	31.06	30.50	33.55	32.85
22	42.70			42.40	38.75	35.90	33.88	32.19	31.02	30.49	33.75	32.70
23	---			42.23	38.57	35.82	33.80	32.12	30.99	30.52	33.83	32.75
24	---			42.07	38.46	35.67	33.74	32.18	30.96	30.54	33.98	32.71
25	---			41.91	38.40	35.60	33.64	32.18	30.93	30.37	34.12	32.86
26	---			41.76	38.28	35.51	33.65	32.16	30.92	30.26	34.10	32.76
27	---			41.60	38.15	35.41	33.66	32.10	30.86	30.34	34.15	32.77
28	---			41.52	38.00	35.37	33.63	32.05	30.80	30.45	34.12	32.91
29	---			41.40	---	35.28	33.56	31.98	30.81	30.36	34.15	33.07
30	---			41.11	---	35.18	33.54	31.94	30.83	30.31	34.14	33.22
31	---			41.07	---	35.16	---	31.94	---	30.31	34.07	---
MEAN	---	---	---	---	39.62	36.42	34.19	32.56	31.33	---	32.40	33.29
MAX	---	---	---	---	41.07	37.98	35.07	33.45	31.90	---	34.15	34.03
MIN	---	---	---	---	38.00	35.16	33.54	31.94	30.80	---	30.35	32.70

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

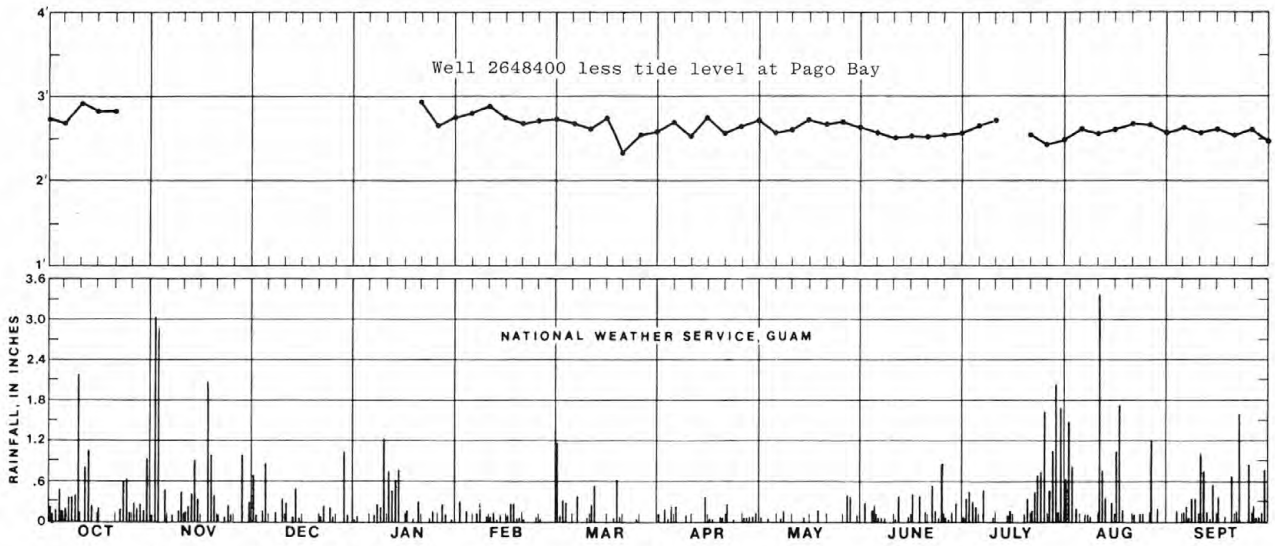
MARIANA ISLANDS, ISLAND OF GUAM

132644144480871. Local number, 2648400 (BPM Well 1). Formerly published as (2648-40).
LOCATION.--Lat 13°26'44" N., long 144°48'08" E., on lot number 2287, 0.2 mi (0.3 km) southeast of junction of Routes 15 and 10, Mangilao, Guam. Owner: Ana P. Diaz.
AQUIFER.--Coralline Limestone, probably Miocene age.
WELL CHARACTERISTICS.--Drilled basal water-table well, diameter 12 in (0.30 m), depth reported 235 ft (71.6 m).
DATUM.--Altitude of land-surface datum is 210 ft (64.0 m). Measuring point: Top edge of casing, 209.90 ft (63.978 m) above mean sea level.
REMARKS.--Recording gage installed January 1974.
PERIOD OF RECORD.--February 1972 to September 1977 records available in files of district office; October 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.45 ft (1.356 m) above mean sea level, May 22, 1976; lowest recorded, 2.25 ft (0.686 m) above mean sea level, part of each day Feb. 12-19, 23-25, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.04	2.95	3.02	2.58	2.51	2.30	2.55	2.54	2.57	2.93	2.85	2.53
2	3.07	3.03	2.97	2.60	2.49	2.29	2.56	2.54	2.57	2.95	2.88	2.51
3	3.08	3.03	2.93	2.63	2.44	2.29	2.58	2.54	2.56	2.97	2.88	2.49
4	3.06	3.04	2.93	2.61	2.41	2.33	2.60	2.55	2.54	3.01	2.87	2.49
5	3.06	3.04	2.91	2.61	2.40	2.36	2.63	2.57	2.54	2.99	2.87	2.48
6	3.08	3.04	2.90	2.59	2.38	2.37	2.65	2.59	2.55	2.96	2.87	2.49
7	3.09	3.06	2.86	2.57	2.35	2.38	2.64	2.60	2.55	2.96	2.83	2.50
8	3.08	3.06	2.81	2.56	2.36	2.40	2.66	2.60	2.57	2.95	2.80	2.53
9	3.06	3.03	2.78	2.61	2.33	2.42	2.67	2.60	2.53	2.89	2.79	2.53
10	3.04	2.99	2.78	2.70	2.30	2.42	2.64	2.60	2.53	2.86	2.79	2.51
11	3.01	2.95	2.77	2.66	2.29	2.42	2.64	2.60	2.55	2.83	2.78	2.49
12	2.98	2.91	2.73	2.66	2.27	2.43	2.63	2.61	2.58	2.83	2.80	2.48
13	2.95	2.88	2.71	2.63	2.27	2.43	2.62	2.62	2.61	2.82	2.76	2.46
14	2.89	2.89	2.69	2.57	2.26	2.39	2.62	2.62	2.64	2.81	2.75	2.46
15	2.88	2.88	2.68	2.50	2.26	2.35	2.60	2.62	2.68	2.79	2.73	2.46
16	2.86	2.90	2.66	2.47	2.26	2.35	2.57	2.62	2.70	2.78	2.74	2.46
17	2.84	2.91	2.65	2.46	2.27	2.33	2.57	2.62	2.71	2.77	2.81	2.46
18	2.79	2.98	2.63	2.44	2.27	2.33	2.57	2.63	2.71	2.79	2.78	2.46
19	2.76	3.09	2.60	2.41	2.28	2.36	2.55	2.65	2.71	2.79	2.75	2.45
20	2.75	3.11	2.59	2.39	2.32	2.40	2.57	2.68	2.74	2.79	2.72	2.44
21	2.74	3.12	2.56	2.36	2.33	2.42	2.60	2.69	2.74	2.78	2.69	2.44
22	2.72	3.09	2.51	2.34	2.32	2.42	2.60	2.69	2.75	2.80	2.68	2.42
23	2.70	3.08	2.48	2.34	2.28	2.42	2.60	2.70	2.77	2.79	2.67	2.42
24	2.99	3.06	2.47	2.35	2.29	2.42	2.60	2.66	2.81	2.77	2.66	2.42
25	2.90	3.06	2.48	2.36	2.31	2.43	2.58	2.62	2.83	2.79	2.64	2.42
26	2.84	3.05	2.48	2.36	2.30	2.44	2.58	2.60	2.85	2.84	2.62	2.42
27	2.78	3.06	2.49	2.39	2.29	2.47	2.56	2.59	2.88	2.85	2.59	2.44
28	2.81	3.09	2.51	2.42	2.29	2.48	2.56	2.58	2.90	2.84	2.58	2.48
29	2.83	3.11	2.55	2.45	---	2.50	2.55	2.58	2.92	2.80	2.57	2.49
30	2.84	3.07	2.55	2.47	---	2.53	2.55	2.58	2.93	2.82	2.56	2.52
31	2.89	---	2.55	2.51	---	2.54	---	2.58	---	2.84	2.54	---
MEAN	2.92	3.02	2.68	2.50	2.33	2.40	2.60	2.61	2.68	2.85	2.74	2.47
MAX	3.09	3.12	3.02	2.70	2.51	2.54	2.67	2.70	2.93	3.01	2.88	2.53
MIN	2.70	2.88	2.47	2.34	2.26	2.29	2.55	2.54	2.53	2.77	2.54	2.42

WTR YR 1979 MEAN 2.65 MAX 3.12 MIN 2.26



NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

132644144480873. Well 2648400 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.75			---	2.75	2.74	2.59	2.71	2.62	2.55	2.46	2.58
2	2.71			---	2.87	2.75	2.60	2.65	2.62	2.52	2.49	2.64
3	2.80			---	2.80	2.67	2.59	2.69	2.65	2.25	2.68	2.62
4	2.80			---	2.80	2.68	2.47	2.57	2.59	2.43	2.68	2.65
5	2.70			---	2.80	2.67	2.67	2.57	2.56	2.64	2.60	2.61
6	2.71			---	2.81	2.67	2.56	2.60	2.57	2.66	2.59	2.55
7	2.72			---	2.82	2.58	2.54	2.64	2.58	2.69	2.62	2.54
8	2.81			---	2.83	2.53	2.46	2.60	2.64	2.72	2.59	2.65
9	2.83			---	2.84	2.57	2.60	2.61	2.59	2.71	2.53	2.61
10	2.93			---	2.88	2.61	2.53	2.60	2.51	2.71	2.55	2.56
11	2.86			---	2.88	2.59	2.57	2.64	2.52	2.65	2.52	2.63
12	2.87			---	2.79	2.63	2.60	2.63	2.49	2.68	2.57	2.65
13	2.79			---	2.79	2.73	2.69	2.63	2.54	---	2.61	2.60
14	2.85			---	2.73	2.76	2.74	2.62	2.50	---	2.60	2.57
15	2.83			---	2.75	2.75	2.75	2.72	2.52	---	2.60	2.60
16	2.80			---	2.67	2.75	2.79	2.67	2.54	---	2.60	2.60
17	2.88			---	2.60	2.75	2.79	2.67	2.55	2.44	2.48	2.47
18	2.85			---	2.60	2.59	2.74	2.61	2.56	2.46	2.46	2.52
19	2.85			---	2.73	2.44	2.61	2.61	2.53	2.50	2.63	2.59
20	2.83			2.94	2.67	2.33	2.55	2.66	2.52	2.53	2.69	2.53
21	2.86			2.86	2.74	2.48	2.59	2.69	2.48	2.49	2.64	2.54
22	2.89			2.81	2.75	2.63	2.71	2.65	2.48	2.51	2.63	2.43
23	---			2.74	2.63	2.62	2.68	2.64	2.49	2.55	2.60	2.52
24	---			2.69	2.63	2.55	2.69	2.71	2.52	2.56	2.64	2.48
25	---			2.65	2.71	2.55	2.63	2.70	2.53	2.42	2.66	2.60
26	---			2.60	2.71	2.53	2.70	2.70	2.55	2.37	2.59	2.45
27	---			2.56	2.68	2.54	2.74	2.67	2.55	2.47	2.59	2.43
28	---			2.61	2.65	2.56	2.77	2.65	2.54	2.58	2.57	2.50
29	---			2.66	---	2.55	2.75	2.62	2.59	2.46	2.62	2.63
30	---			2.52	---	2.57	2.77	2.61	2.63	2.44	2.65	2.48
31	---			2.66	---	2.61	---	2.64	---	2.45	2.61	---
MEAN	---	---	---	---	2.75	2.61	2.65	2.64	2.55	---	2.59	2.56
MAX	---	---	---	---	2.88	2.76	2.79	2.72	2.65	---	2.69	2.65
MIN	---	---	---	---	2.60	2.33	2.46	2.57	2.48	---	2.46	2.43

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

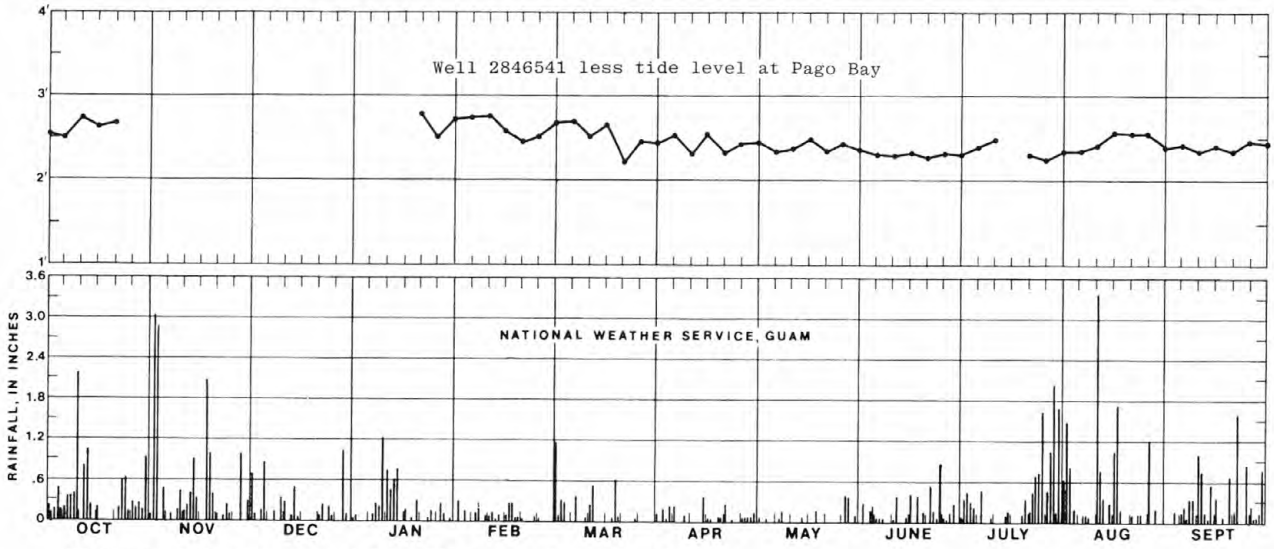
MARIANA ISLANDS, ISLAND OF GUAM

132824144464271. Local number, 2846541 (ACEORP Tunnel). Formerly published as (2846-54A).
LOCATION.--Lat 13°28'24" N., long 144°46'42" E., behind Navy Telephone Exchange, 0.35 mi (0.56 km) southwest of junction of Routes 1 and 14, Tamuning, Guam. Owner: U. S. Navy, Public Works Department.
AQUIFER.--Mariana Limestone.
WELL CHARACTERISTICS.--Dug basal water-table well consisting of an inclined shaft, three skimming tunnels, and a large pump room. Tunnels 1 and 2 are 150 ft (45.7 m) each and tunnel 3 is 700 ft (213 m) in length.
REMARKS.--Recording gage installed October 1954.
PERIOD OF RECORD.--October 1954 to December 1959, September 1960 to May 1965, March 1973 to September 1977 records available in files of district office; October 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.95 ft (1.509 m) above mean sea level, May 22, 1976; lowest recorded, 1.98 ft (0.604 m) above mean sea level, Feb. 23, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.85	2.78	2.96	2.53	2.47	2.22	2.41	2.30	2.33	2.70	2.74	2.36
2	2.87	2.83	2.92	2.58	2.39	2.23	2.42	2.32	2.32	2.72	2.73	2.34
3	2.87	3.15	2.86	2.55	2.33	2.34	2.43	2.32	2.31	2.73	2.71	2.32
4	2.84	3.15	2.80	2.51	2.32	2.42	2.47	2.32	2.29	2.76	2.64	2.31
5	2.86	3.08	2.76	2.48	2.34	2.40	2.49	2.36	2.30	2.76	2.63	2.30
6	2.88	3.08	2.65	2.45	2.29	2.33	2.47	2.39	2.29	2.73	2.65	2.32
7	2.89	2.98	2.57	2.42	2.25	2.44	2.46	2.42	2.29	2.74	2.66	2.32
8	2.89	2.84	2.52	2.43	2.21	2.47	2.48	2.44	2.30	2.69	2.65	2.32
9	2.86	2.75	2.52	2.45	2.20	2.39	2.47	2.42	2.30	2.69	2.67	2.33
10	2.86	2.68	2.53	2.56	2.17	2.33	2.45	2.39	2.32	2.65	2.66	2.31
11	2.84	2.65	2.50	2.58	2.16	2.32	2.44	2.36	2.35	2.64	2.65	2.29
12	2.82	2.59	2.46	2.54	2.15	2.32	2.44	2.36	2.40	2.64	2.66	2.25
13	2.78	2.62	2.43	2.52	2.12	2.30	2.43	2.38	2.43	2.62	2.70	2.24
14	2.72	2.63	2.45	2.42	2.10	2.25	2.42	2.40	2.47	2.62	2.71	2.26
15	2.68	2.67	2.48	2.36	2.10	2.25	2.41	2.40	2.50	2.60	2.70	2.27
16	2.66	2.64	2.44	2.37	2.10	2.27	2.38	2.40	2.52	2.57	2.65	2.29
17	2.65	2.67	2.35	2.36	2.11	2.23	2.36	2.41	2.52	2.58	2.73	2.31
18	2.61	2.74	2.34	2.30	2.10	2.21	2.34	2.41	2.51	2.58	2.75	2.32
19	2.60	2.86	2.34	2.27	2.10	2.26	2.35	2.40	2.50	2.58	2.69	2.28
20	2.59	2.90	2.31	2.24	2.11	2.28	2.38	2.39	2.50	2.58	2.60	2.28
21	2.60	2.90	2.28	2.19	2.15	2.29	2.42	2.36	2.52	2.59	2.59	2.27
22	2.56	2.87	2.26	2.25	2.11	2.28	2.40	2.36	2.54	2.61	2.56	2.26
23	2.54	2.83	2.28	2.25	2.11	2.30	2.39	2.37	2.56	2.61	2.56	2.28
24	2.59	2.85	2.31	2.26	2.15	2.30	2.37	2.37	2.60	2.57	2.58	2.26
25	2.66	2.86	2.29	2.24	2.15	2.35	2.39	2.36	2.64	2.62	2.55	2.28
26	2.62	2.88	2.31	2.27	2.14	2.37	2.38	2.35	2.66	2.70	2.53	2.31
27	2.61	2.91	2.36	2.31	2.13	2.37	2.36	2.35	2.67	2.71	2.49	2.42
28	2.60	2.99	2.45	2.34	2.20	2.37	2.33	2.34	2.70	2.66	2.44	2.43
29	2.61	2.99	2.50	2.35	---	2.40	2.32	2.33	2.71	2.66	2.43	2.43
30	2.65	2.95	2.46	2.39	---	2.41	2.30	2.32	2.70	2.70	2.38	2.47
31	2.70	---	2.46	2.47	---	2.40	---	2.32	---	2.73	2.35	---
MEAN	2.72	2.84	2.49	2.39	2.19	2.33	2.41	2.37	2.47	2.66	2.61	2.31
MAX	2.89	3.15	2.96	2.58	2.47	2.47	2.49	2.44	2.71	2.76	2.75	2.47
MIN	2.54	2.59	2.26	2.19	2.10	2.21	2.30	2.30	2.29	2.57	2.35	2.24

WTR YR 1979 MEAN 2.48 MAX 3.15 MIN 2.10



NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

132824144464273. Well 2846541 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.56			---	2.71	2.66	2.45	2.47	2.38	2.32	2.35	2.41
2	2.51			---	2.77	2.69	2.46	2.43	2.37	2.29	2.34	2.47
3	2.59			---	2.69	2.72	2.44	2.47	2.40	2.01	2.51	2.45
4	2.58			---	2.71	2.77	2.34	2.34	2.34	2.18	2.45	2.47
5	2.50			---	2.74	2.71	2.53	2.36	2.32	2.41	2.36	2.43
6	2.51			---	2.72	2.63	2.38	2.40	2.31	2.43	2.37	2.38
7	2.52			---	2.72	2.64	2.36	2.46	2.32	2.47	2.45	2.36
8	2.62			---	2.68	2.60	2.28	2.44	2.37	2.46	2.44	2.44
9	2.63			---	2.71	2.54	2.40	2.43	2.36	2.51	2.41	2.41
10	2.75			---	2.75	2.52	2.34	2.39	2.30	2.50	2.42	2.36
11	2.69			---	2.75	2.49	2.37	2.40	2.32	2.46	2.39	2.43
12	2.71			---	2.67	2.52	2.41	2.38	2.31	2.49	2.43	2.42
13	2.62			---	2.64	2.60	2.50	2.39	2.36	---	2.55	2.38
14	2.68			---	2.57	2.62	2.54	2.40	2.33	---	2.56	2.37
15	2.63			---	2.59	2.65	2.56	2.50	2.34	---	2.57	2.41
16	2.60			---	2.51	2.67	2.60	2.45	2.36	---	2.51	2.43
17	2.69			---	2.44	2.65	2.58	2.46	2.36	2.25	2.40	2.32
18	2.67			---	2.43	2.47	2.51	2.39	2.36	2.25	2.43	2.38
19	2.69			---	2.55	2.34	2.41	2.36	2.32	2.29	2.57	2.42
20	2.67			2.79	2.46	2.21	2.36	2.37	2.28	2.32	2.57	2.37
21	2.72			2.69	2.56	2.35	2.41	2.36	2.26	2.30	2.54	2.37
22	2.73			2.72	2.54	2.49	2.51	2.32	2.27	2.32	2.51	2.27
23	---			2.65	2.46	2.50	2.47	2.31	2.28	2.37	2.49	2.38
24	---			2.60	2.49	2.43	2.46	2.42	2.31	2.36	2.56	2.32
25	---			2.53	2.55	2.47	2.44	2.44	2.34	2.25	2.57	2.46
26	---			2.51	2.55	2.46	2.50	2.45	2.36	2.23	2.50	2.34
27	---			2.48	2.52	2.44	2.54	2.43	2.34	2.33	2.49	2.41
28	---			2.53	2.56	2.45	2.54	2.41	2.34	2.40	2.43	2.45
29	---			2.56	---	2.45	2.52	2.37	2.38	2.32	2.48	2.57
30	---			2.44	---	2.45	2.52	2.35	2.40	2.32	2.47	2.43
31	---			2.62	---	2.47	---	2.38	---	2.34	2.42	---
MEAN	---	---	---	---	2.61	2.54	2.46	2.40	2.34	---	2.47	2.40
MAX	---	---	---	---	2.77	2.77	2.60	2.50	2.40	---	2.57	2.57
MIN	---	---	---	---	2.43	2.21	2.28	2.31	2.26	---	2.34	2.27

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

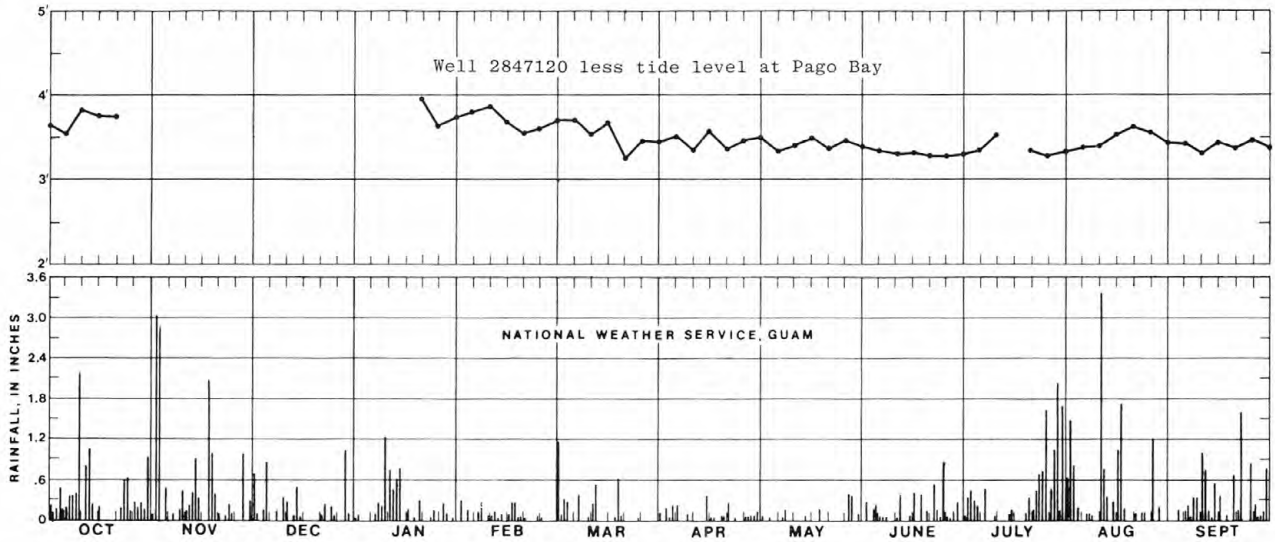
MARIANA ISLANDS, ISLAND OF GUAM

132813144472771. Local number, 2847120 (A-16). Formerly published as (2847-12).
LOCATION.--Lat 13°28'13" N., long 144°47'27" E., at Carbullido School, 0.60 mi (0.97 km) west of junction of Routes 8 and 10, Barrigada, Guam. Owner: Public Utility Agency of Guam.
AQUIFER.--Mariana Limestone, probably Pliocene age.
WELL CHARACTERISTICS.--Drilled basal water-table well, diameter 12 in (0.30 m), depth reported 215 ft (65.5 m).
DATUM.--Altitude of land-surface datum is 207 ft (63.1 m) above mean sea level. Measuring point: Top of casing, 208.00 ft (63.398 m) above mean sea level.
REMARKS.--Recording gage installed June 1974.
PERIOD OF RECORD.--June 1974 to September 1977 records available in files of district office; October 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.71 ft (2.045 m) May 22, 1976; lowest recorded, 3.09 ft (0.942 m) above mean sea level, Dec. 7, 8, 1974.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.96	3.85	4.11	3.55	3.50	3.26	3.42	3.34	3.35	3.67	3.72	3.39
2	3.97	3.91	4.08	3.61	3.46	3.26	3.43	3.33	3.34	3.68	3.73	3.37
3	3.97	4.27	4.03	3.63	3.41	3.32	3.44	3.33	3.33	3.68	3.72	3.35
4	3.93	4.57	3.99	3.62	3.39	3.38	3.47	3.33	3.33	3.71	3.67	3.32
5	3.92	4.40	3.94	3.58	3.39	3.40	3.49	3.35	3.33	3.71	3.66	3.29
6	3.94	4.42	3.88	3.57	3.37	3.35	3.50	3.38	3.33	3.71	3.65	3.28
7	3.95	4.34	3.83	3.52	3.35	3.39	3.49	3.41	3.33	3.71	3.65	3.28
8	3.95	4.17	3.78	3.51	3.33	3.45	3.49	3.43	3.33	3.70	3.64	3.28
9	3.94	4.09	3.76	3.52	3.30	3.42	3.49	3.42	3.32	3.69	3.65	3.28
10	3.93	4.02	3.76	3.61	3.29	3.36	3.48	3.41	3.33	3.67	3.64	3.27
11	3.92	3.96	3.74	3.59	3.28	3.33	3.47	3.38	3.34	3.67	3.63	3.26
12	3.91	3.89	3.70	3.62	3.26	3.33	3.46	3.37	3.37	3.66	3.64	3.27
13	3.89	3.85	3.65	3.58	3.24	3.33	3.45	3.39	3.43	3.65	3.66	3.29
14	3.83	3.85	3.62	3.55	3.23	3.31	3.45	3.40	3.46	3.64	3.66	3.29
15	3.80	3.86	3.62	3.47	3.20	3.28	3.43	3.40	3.49	3.63	3.67	3.30
16	3.78	3.86	3.61	3.47	3.19	3.28	3.41	3.40	3.50	3.61	3.64	3.31
17	3.77	3.87	3.59	3.46	3.19	3.26	3.39	3.41	3.51	3.61	3.69	3.32
18	3.72	3.91	3.55	3.44	3.19	3.24	3.37	3.42	3.51	3.62	3.75	3.31
19	3.69	4.04	3.53	3.44	3.19	3.27	3.37	3.42	3.51	3.62	3.70	3.30
20	3.66	4.10	3.50	3.42	3.19	3.30	3.40	3.41	3.50	3.62	3.64	3.30
21	3.65	4.11	3.49	3.37	3.20	3.31	3.43	3.40	3.51	3.62	3.59	3.29
22	3.65	4.09	3.48	3.35	3.19	3.31	3.43	3.39	3.53	3.64	3.56	3.28
23	3.63	4.06	3.47	3.35	3.19	3.31	3.42	3.40	3.54	3.64	3.55	3.30
24	3.67	4.04	3.47	3.35	3.20	3.31	3.40	3.40	3.55	3.62	3.55	3.29
25	3.71	4.05	3.47	3.34	3.20	3.34	3.41	3.39	3.58	3.65	3.54	3.28
26	3.69	4.07	3.43	3.35	3.19	3.35	3.42	3.37	3.62	3.70	3.53	3.29
27	3.67	4.09	3.48	3.36	3.19	3.35	3.39	3.37	3.64	3.70	3.52	3.34
28	3.68	4.12	3.50	3.37	3.23	3.36	3.38	3.36	3.65	3.68	3.50	3.41
29	3.68	4.14	3.55	3.37	---	3.39	3.37	3.35	3.67	3.68	3.49	3.41
30	3.71	4.12	3.55	3.41	---	3.41	3.37	3.35	3.67	3.68	3.45	3.43
31	3.82	---	3.54	3.46	---	3.41	---	3.35	---	3.70	3.40	---
MEAN	3.81	4.07	3.67	3.48	3.27	3.33	3.43	3.38	3.46	3.66	3.62	3.31
MAX	3.97	4.57	4.11	3.63	3.50	3.45	3.50	3.43	3.67	3.71	3.75	3.43
MIN	3.63	3.85	3.43	3.34	3.19	3.24	3.37	3.33	3.32	3.61	3.40	3.26

WTR YR 1979 MEAN 3.54 MAX 4.57 MIN 3.19



NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

132813144472773. Well 2847120 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.67			---	3.74	3.70	3.46	3.51	3.40	3.29	3.33	3.44
2	3.61			---	3.84	3.72	3.47	3.44	3.39	3.25	3.34	3.50
3	3.69			---	3.77	3.70	3.45	3.48	3.42	2.96	3.52	3.48
4	3.67			---	3.78	3.73	3.34	3.35	3.38	3.13	3.48	3.48
5	3.56			---	3.79	3.71	3.53	3.35	3.35	3.36	3.39	3.42
6	3.57			---	3.80	3.65	3.41	3.39	3.35	3.41	3.37	3.34
7	3.58			---	3.82	3.59	3.39	3.45	3.36	3.44	3.44	3.32
8	3.68			---	3.80	3.58	3.29	3.43	3.40	3.47	3.43	3.40
9	3.71			---	3.81	3.57	3.42	3.43	3.38	3.51	3.39	3.36
10	3.82			---	3.87	3.55	3.37	3.41	3.31	3.52	3.40	3.32
11	3.77			---	3.87	3.50	3.40	3.42	3.31	3.49	3.37	3.40
12	3.80			---	3.78	3.53	3.43	3.39	3.28	3.51	3.41	3.44
13	3.73			---	3.76	3.63	3.52	3.40	3.36	---	3.51	3.43
14	3.79			---	3.70	3.68	3.57	3.40	3.32	---	3.51	3.40
15	3.75			---	3.69	3.68	3.58	3.50	3.33	---	3.54	3.44
16	3.72			---	3.60	3.68	3.63	3.45	3.34	---	3.50	3.45
17	3.81			---	3.52	3.68	3.61	3.46	3.35	3.28	3.36	3.33
18	3.78			---	3.52	3.50	3.54	3.40	3.36	3.29	3.43	3.37
19	3.78			---	3.64	3.35	3.43	3.38	3.33	3.33	3.58	3.44
20	3.74			3.97	3.54	3.23	3.38	3.39	3.28	3.36	3.61	3.39
21	3.77			3.87	3.61	3.37	3.42	3.40	3.25	3.33	3.54	3.39
22	3.82			3.82	3.62	3.52	3.54	3.35	3.26	3.35	3.51	3.29
23	---			3.75	3.54	3.51	3.50	3.34	3.26	3.40	3.48	3.40
24	---			3.69	3.54	3.44	3.49	3.45	3.26	3.41	3.53	3.35
25	---			3.63	3.60	3.46	3.46	3.47	3.28	3.28	3.56	3.46
26	---			3.59	3.60	3.44	3.54	3.47	3.32	3.23	3.50	3.32
27	---			3.53	3.58	3.42	3.57	3.45	3.31	3.32	3.52	3.33
28	---			3.56	3.59	3.44	3.59	3.43	3.29	3.42	3.49	3.43
29	---			3.58	---	3.44	3.57	3.39	3.34	3.34	3.54	3.55
30	---			3.46	---	3.45	3.59	3.38	3.37	3.30	3.54	3.39
31	---			3.61	---	3.48	---	3.41	---	3.31	3.47	---
MEAN	---	---	---	---	3.69	3.55	3.48	3.42	3.33	---	3.47	3.40
MAX	---	---	---	---	3.87	3.73	3.63	3.51	3.42	---	3.61	3.55
MIN	---	---	---	---	3.52	3.23	3.29	3.34	3.25	---	3.33	3.29

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

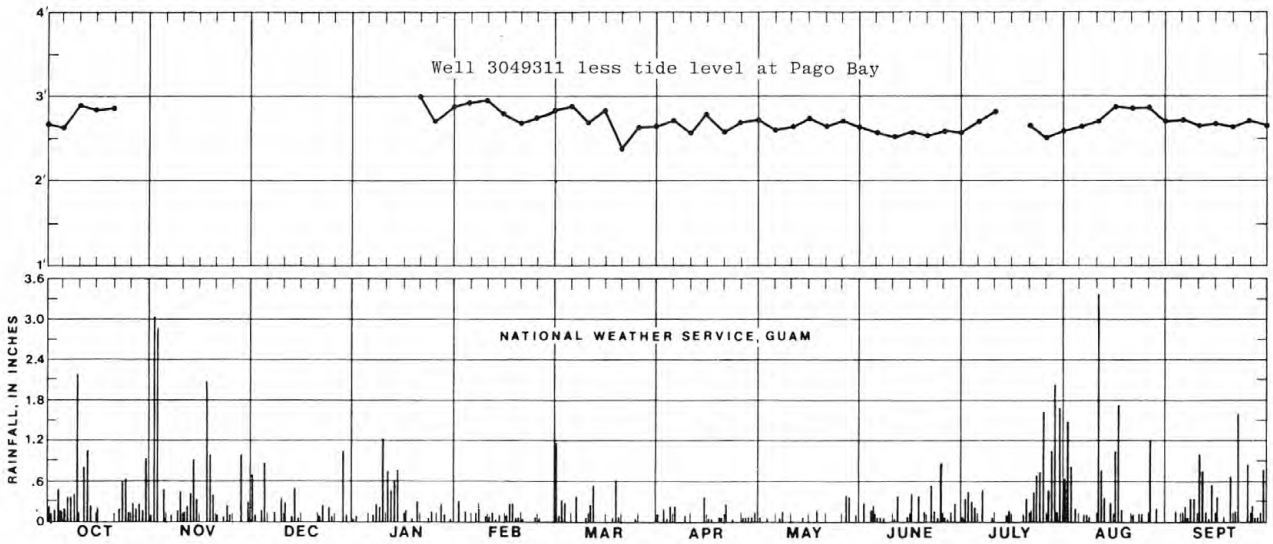
MARIANA ISLANDS, ISLAND OF GUAM

133032144491871. Local number, 3049311 (M-10A). Formerly published as (3049-31).
LOCATION.--Lat 13°30'32" N., long 144°49'18" E., at Harmon Loop School, Dededo, Guam. Owner: Public Utility Agency of Guam.
AQUIFER.--Mariana or Barrigada Limestone of Miocene or Pliocene age.
WELL CHARACTERISTICS.--Drilled basal water-table well, diameter 8 in (0.2 m), depth reported 288 ft (87.8 m).
DATUM.--Altitude of land-surface datum is 227 ft (69.2 m). Measuring point: Top edge of shelter floor, 228.70 ft (69.708 m) above mean sea level.
REMARKS.--Well was abandoned in 1973 because of oil taste and high iron content. Recording gage installed January 1974.
PERIOD OF RECORD.--January 1974 to September 1977 records available in files of district office; October 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.61 ft (1.405 m) above mean sea level, May 23, 1976; lowest recorded, 2.27 ft (0.692 m) above mean sea level, Feb. 23, 24, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.97	2.87	3.08	2.62	2.63	2.39	2.60	2.55	2.58	2.95	2.98	2.66
2	3.00	2.93	3.05	2.68	2.58	2.40	2.61	2.56	2.58	2.97	2.98	2.64
3	3.01	3.04	3.00	2.68	2.52	2.48	2.62	2.56	2.57	2.99	2.95	2.62
4	3.00	3.15	2.94	2.66	2.52	2.56	2.66	2.56	2.56	3.02	2.91	2.61
5	3.00	3.13	2.90	2.64	2.53	2.57	2.68	2.59	2.56	3.04	2.90	2.60
6	3.02	3.11	2.83	2.62	2.49	2.51	2.68	2.62	2.56	3.02	2.91	2.60
7	3.02	3.08	2.77	2.59	2.44	2.56	2.67	2.64	2.56	3.03	2.92	2.60
8	3.02	2.98	2.70	2.60	2.41	2.61	2.68	2.66	2.56	3.01	2.93	2.60
9	3.01	2.90	2.69	2.61	2.39	2.55	2.69	2.66	2.53	3.00	2.97	2.59
10	3.02	2.83	2.70	2.68	2.38	2.50	2.68	2.64	2.55	2.96	2.96	2.59
11	3.02	2.79	2.67	2.71	2.36	2.48	2.66	2.62	2.58	2.94	2.94	2.59
12	3.02	2.75	2.65	2.70	2.34	2.48	2.66	2.61	2.62	2.93	2.93	2.56
13	2.96	2.75	2.62	2.68	2.32	2.47	2.66	2.63	2.67	2.92	2.93	2.56
14	2.91	2.75	2.63	2.63	2.31	2.44	2.64	2.64	2.70	2.91	2.97	2.52
15	2.88	2.75	2.65	2.57	2.30	2.43	2.63	2.64	2.73	2.90	3.01	2.53
16	2.86	2.73	2.62	2.57	2.30	2.43	2.62	2.64	2.75	2.89	2.96	2.54
17	2.84	2.75	2.56	2.55	2.30	2.41	2.60	2.65	2.76	2.89	2.96	2.54
18	2.81	2.79	2.53	2.53	2.30	2.39	2.59	2.66	2.76	2.90	2.97	2.55
19	2.78	2.87	2.53	2.47	2.30	2.42	2.59	2.66	2.76	2.89	2.94	2.54
20	2.77	2.95	2.51	2.45	2.31	2.45	2.61	2.65	2.76	2.89	2.89	2.53
21	2.77	3.01	2.50	2.42	2.34	2.45	2.64	2.62	2.77	2.90	2.87	2.53
22	2.74	3.01	2.48	2.45	2.31	2.45	2.63	2.62	2.80	2.91	2.85	2.52
23	2.71	2.98	2.48	2.45	2.30	2.46	2.62	2.63	2.82	2.91	2.83	2.52
24	2.74	2.98	2.48	2.45	2.33	2.47	2.61	2.63	2.86	2.88	2.85	2.53
25	2.82	2.99	2.46	2.43	2.34	2.50	2.63	2.63	2.89	2.89	2.84	2.55
26	2.80	3.02	2.46	2.44	2.32	2.52	2.62	2.61	2.91	2.92	2.83	2.55
27	2.78	3.05	2.49	2.47	2.32	2.53	2.62	2.61	2.92	2.94	2.78	2.59
28	2.77	3.07	2.53	2.49	2.37	2.54	2.60	2.60	2.94	2.93	2.74	2.63
29	2.78	3.10	2.58	2.51	---	2.57	2.58	2.59	2.96	2.93	2.71	2.64
30	2.77	3.08	2.57	2.53	---	2.58	2.56	2.58	2.95	2.96	2.68	2.68
31	2.80	---	2.57	2.60	---	2.59	---	2.58	---	2.97	2.66	---
MEAN	2.88	2.94	2.65	2.56	2.38	2.49	2.63	2.62	2.72	2.94	2.89	2.58
MAX	3.02	3.15	3.08	2.71	2.63	2.61	2.69	2.66	2.96	3.04	3.01	2.68
MIN	2.71	2.73	2.46	2.42	2.30	2.39	2.56	2.55	2.53	2.88	2.66	2.52

WTR YR 1979 MEAN 2.69 MAX 3.15 MIN 2.30



NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

133032144491873. Well 3049311 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.68			---	2.87	2.83	2.64	2.72	2.63	2.57	2.59	2.71
2	2.64			---	2.96	2.86	2.65	2.67	2.63	2.54	2.59	2.77
3	2.73			---	2.88	2.86	2.63	2.71	2.66	2.27	2.75	2.75
4	2.74			---	2.91	2.91	2.53	2.58	2.61	2.44	2.72	2.77
5	2.64			---	2.93	2.88	2.72	2.59	2.58	2.69	2.63	2.73
6	2.65			---	2.92	2.81	2.59	2.63	2.58	2.72	2.63	2.66
7	2.65			---	2.91	2.76	2.57	2.68	2.59	2.76	2.71	2.64
8	2.75			---	2.88	2.74	2.48	2.66	2.63	2.78	2.72	2.72
9	2.78			---	2.90	2.70	2.62	2.67	2.59	2.82	2.71	2.67
10	2.91			---	2.96	2.69	2.57	2.64	2.53	2.81	2.72	2.64
11	2.87			---	2.95	2.65	2.59	2.66	2.55	2.76	2.68	2.73
12	2.91			---	2.86	2.68	2.63	2.63	2.53	2.78	2.70	2.73
13	2.80			---	2.84	2.77	2.73	2.64	2.60	---	2.78	2.70
14	2.87			---	2.78	2.81	2.76	2.64	2.56	---	2.82	2.63
15	2.83			---	2.79	2.83	2.78	2.74	2.57	---	2.88	2.67
16	2.80			---	2.71	2.83	2.84	2.69	2.59	---	2.82	2.68
17	2.88			---	2.63	2.83	2.82	2.70	2.60	2.56	2.63	2.55
18	2.87			---	2.63	2.65	2.76	2.64	2.61	2.57	2.65	2.61
19	2.87			---	2.75	2.50	2.65	2.62	2.58	2.60	2.82	2.68
20	2.85			3.00	2.66	2.38	2.59	2.63	2.54	2.63	2.86	2.62
21	2.89			2.92	2.75	2.51	2.63	2.62	2.51	2.61	2.82	2.63
22	2.91			2.92	2.74	2.66	2.74	2.58	2.53	2.62	2.80	2.53
23	---			2.85	2.65	2.66	2.70	2.57	2.54	2.67	2.76	2.62
24	---			2.79	2.67	2.60	2.70	2.68	2.57	2.67	2.83	2.59
25	---			2.72	2.74	2.62	2.68	2.71	2.59	2.52	2.86	2.73
26	---			2.68	2.73	2.61	2.74	2.71	2.61	2.45	2.80	2.58
27	---			2.64	2.71	2.60	2.80	2.69	2.59	2.56	2.78	2.58
28	---			2.68	2.73	2.62	2.81	2.67	2.58	2.67	2.73	2.65
29	---			2.72	---	2.62	2.78	2.63	2.63	2.59	2.76	2.78
30	---			2.58	---	2.62	2.78	2.61	2.65	2.58	2.77	2.64
31	---			2.75	---	2.66	---	2.64	---	2.58	2.73	---
MEAN	---			---	2.80	2.70	2.68	2.65	2.59	---	2.74	2.67
MAX	---			---	2.96	2.91	2.84	2.74	2.66	---	2.88	2.78
MIN	---			---	2.63	2.38	2.48	2.57	2.51	---	2.59	2.53

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

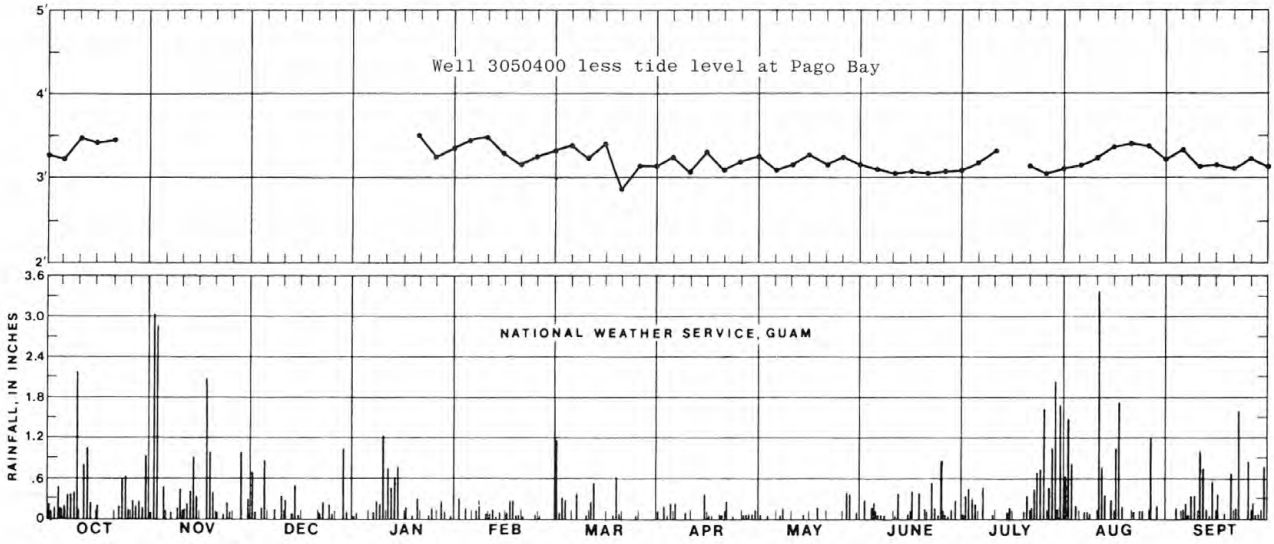
MARIANA ISLANDS, ISLAND OF GUAM

133047144500171. Local number, 3050400 (M-11). Formerly published as (3050-40).
LOCATION.--Lat 13°30'47" N., long 144°50'01" E., at intersection of Harmon Loop School Road and Route 1 at Dededo, Guam. Owner: Public Utility Agency of Guam.
AQUIFER.--Barrigada Limestone.
WELL CHARACTERISTICS.--Drilled basal water-table well, diameter 8 in (0.2 m), depth reported 325 ft (99.1 m).
DATUM.--Altitude of land-surface datum is 294 ft (89.6 m). Measuring point: Top of casing, 295.82 ft (90.166 m) above mean sea level.
REMARKS.--Recording gage installed July 1977.
PERIOD OF RECORD.--July 1977 to September 1977 records available in files of district office; October 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.40 ft (1.341 m) above mean sea level, Sept. 17, 1977; lowest recorded, 2.78 ft (0.847 m) above mean sea level, Feb. 19, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.58	3.43	3.62	3.12	3.12	2.89	3.10	3.08	3.11	3.47	3.51	3.17
2	3.60	3.50	3.60	3.18	3.08	2.90	3.12	3.10	3.12	3.49	3.51	3.15
3	3.61	3.60	3.56	3.19	3.03	2.97	3.14	3.09	3.10	3.50	3.50	3.13
4	3.60	3.89	3.51	3.18	3.02	3.05	3.18	3.09	3.09	3.52	3.48	3.12
5	3.59	3.86	3.47	3.15	3.03	3.08	3.20	3.11	3.08	3.54	3.44	3.11
6	3.61	3.80	3.42	3.13	3.01	3.04	3.20	3.14	3.08	3.53	3.42	3.11
7	3.61	3.78	3.37	3.11	2.97	3.06	3.19	3.16	3.08	3.55	3.43	3.10
8	3.61	3.69	3.32	3.10	2.93	3.12	3.19	3.18	3.09	3.54	3.45	3.10
9	3.59	3.61	3.21	3.11	2.91	3.08	3.21	3.19	3.06	3.53	3.48	3.10
10	3.60	3.53	3.22	3.17	2.89	3.04	3.20	3.18	3.07	3.49	3.47	3.10
11	3.60	3.47	3.20	3.20	2.86	3.02	3.19	3.16	3.09	3.48	3.46	3.09
12	3.59	3.40	3.17	3.20	2.85	3.01	3.18	3.15	3.13	3.46	3.44	3.08
13	3.54	3.38	3.14	3.19	2.84	3.01	3.18	3.15	3.18	3.45	3.43	3.05
14	3.49	3.37	3.16	3.14	2.83	3.00	3.18	3.17	3.21	3.44	3.47	3.03
15	3.47	3.35	3.16	3.08	2.81	3.00	3.17	3.17	3.24	3.42	3.51	3.04
16	3.45	3.33	3.14	3.06	2.81	3.00	3.15	3.17	3.26	3.40	3.51	3.05
17	3.44	3.34	3.12	3.06	2.81	3.00	3.13	3.19	3.27	3.40	3.48	3.05
18	3.41	3.37	3.08	3.03	2.81	2.94	3.11	3.19	3.27	3.41	3.48	3.06
19	3.38	3.44	3.06	2.99	2.80	2.94	3.10	3.20	3.27	3.41	3.46	3.05
20	3.37	3.51	3.04	2.97	2.81	2.95	3.13	3.19	3.27	3.41	3.44	3.04
21	3.35	3.58	3.02	2.94	2.83	2.97	3.15	3.18	3.28	3.42	3.40	3.04
22	3.34	3.61	2.99	2.95	2.83	2.97	3.15	3.16	3.31	3.43	3.37	3.03
23	3.32	3.59	2.97	2.96	2.82	2.98	3.13	3.17	3.33	3.43	3.34	3.02
24	3.32	3.59	2.99	2.96	2.83	2.99	3.13	3.17	3.36	3.41	3.35	3.03
25	3.37	3.60	2.98	2.95	2.85	3.02	3.14	3.16	3.39	3.41	3.36	3.04
26	3.37	3.60	2.97	2.94	2.84	3.04	3.16	3.15	3.42	3.45	3.35	3.05
27	3.35	3.61	3.00	2.98	2.83	3.06	3.14	3.15	3.44	3.47	3.32	3.07
28	3.34	3.63	3.03	3.01	2.86	3.06	3.12	3.14	3.46	3.46	3.28	3.13
29	3.34	3.65	3.09	3.01	---	3.08	3.10	3.11	3.48	3.47	3.24	3.15
30	3.34	3.62	3.09	3.03	---	3.10	3.09	3.11	3.48	3.50	3.21	3.18
31	3.36	---	3.08	3.08	---	3.10	---	3.11	---	3.51	3.18	---
MEAN	3.47	3.56	3.19	3.07	2.89	3.02	3.15	3.15	3.23	3.46	3.41	3.08
MAX	3.61	3.89	3.62	3.20	3.12	3.12	3.21	3.20	3.48	3.55	3.51	3.18
MIN	3.32	3.33	2.97	2.94	2.80	2.89	3.09	3.08	3.06	3.40	3.18	3.02

WTR YR 1979 MEAN 3.23 MAX 3.89 MIN 2.80



NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

133047144500173. Well 3050400 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.29			---	3.36	3.33	3.14	3.25	3.16	3.09	3.12	3.22
2	3.24			---	3.46	3.36	3.16	3.21	3.17	3.06	3.12	3.28
3	3.33			---	3.39	3.35	3.15	3.24	3.19	2.78	3.30	3.26
4	3.34			---	3.41	3.40	3.05	3.11	3.14	2.94	3.29	3.28
5	3.23			---	3.43	3.39	3.24	3.11	3.10	3.19	3.17	3.24
6	3.24			---	3.44	3.34	3.11	3.15	3.10	3.23	3.14	3.17
7	3.24			---	3.44	3.26	3.09	3.20	3.11	3.28	3.22	3.14
8	3.34			---	3.40	3.25	2.99	3.18	3.16	3.31	3.24	3.22
9	3.36			---	3.42	3.23	3.14	3.20	3.12	3.35	3.22	3.18
10	3.49			---	3.47	3.23	3.09	3.18	3.05	3.34	3.23	3.15
11	3.45			---	3.45	3.19	3.12	3.20	3.06	3.30	3.20	3.23
12	3.48			---	3.37	3.21	3.15	3.17	3.04	3.31	3.21	3.25
13	3.38			---	3.36	3.31	3.25	3.16	3.11	---	3.28	3.19
14	3.45			---	3.30	3.37	3.30	3.17	3.07	---	3.32	3.14
15	3.42			---	3.30	3.40	3.32	3.27	3.08	---	3.38	3.18
16	3.39			---	3.22	3.40	3.37	3.22	3.10	---	3.37	3.19
17	3.48			---	3.14	3.42	3.35	3.24	3.11	3.07	3.15	3.06
18	3.47			---	3.14	3.20	3.28	3.17	3.12	3.08	3.16	3.12
19	3.47			---	3.25	3.02	3.16	3.16	3.09	3.12	3.34	3.19
20	3.45			3.52	3.16	2.88	3.11	3.17	3.05	3.15	3.41	3.13
21	3.47			3.44	3.24	3.03	3.14	3.18	3.02	3.13	3.35	3.14
22	3.51			3.42	3.26	3.18	3.26	3.12	3.04	3.14	3.32	3.04
23	---			3.36	3.17	3.18	3.21	3.11	3.05	3.19	3.27	3.12
24	---			3.30	3.17	3.12	3.22	3.22	3.07	3.20	3.33	3.09
25	---			3.24	3.25	3.14	3.19	3.24	3.09	3.04	3.38	3.22
26	---			3.18	3.25	3.13	3.28	3.25	3.12	2.98	3.32	3.08
27	---			3.15	3.22	3.13	3.32	3.23	3.11	3.09	3.32	3.06
28	---			3.20	3.22	3.14	3.33	3.21	3.10	3.20	3.27	3.15
29	---			3.22	---	3.13	3.30	3.15	3.15	3.13	3.29	3.29
30	---			3.08	---	3.14	3.31	3.14	3.18	3.12	3.30	3.14
31	---			3.23	---	3.17	---	3.17	---	3.12	3.25	---
MEAN	---	---	---	---	3.31	3.23	3.20	3.19	3.10	---	3.27	3.17
MAX	---	---	---	---	3.47	3.42	3.37	3.27	3.19	---	3.41	3.29
MIN	---	---	---	---	3.14	2.88	2.99	3.11	3.02	---	3.12	3.04

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

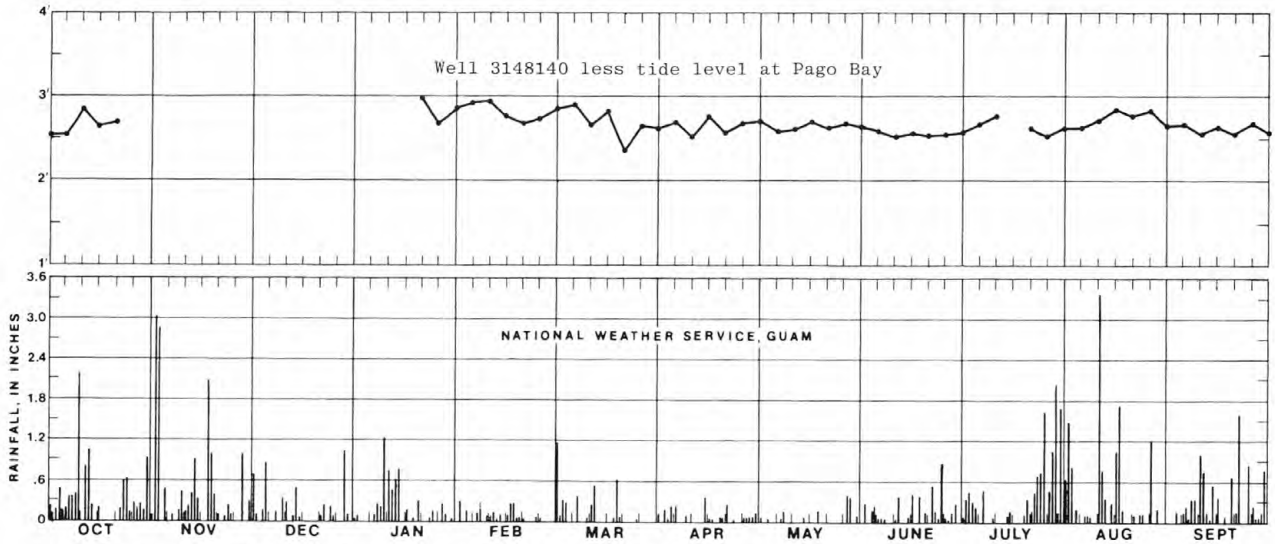
MARIANA ISLANDS, ISLAND OF GUAM

133115144484971. Local number, 3148140 (Harmon New Well 1). Formerly published as (3148-14).
LOCATION.--Lat 13°31'15" N., long 144°48'49" E., 500 ft (150 m) north of junction of Routes 1 and 16, Dededo, Guam. Owner: Government of Guam.
AQUIFER.--Mariana Limestone.
WELL CHARACTERISTICS.--Drilled basal water-table well, diameter 10 in (0.25 m), depth measured 289 ft (88.1 m).
DATUM.--Altitude of land-surface datum is 268 ft (81.7 m). Measuring point: Top of casing, 267.96 ft (81.674 m) above mean sea level.
REMARKS.--Recording gage installed March 1973.
PERIOD OF RECORD.--March 1973 to September 1977 records available in files of district office; October 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.34 ft (1.323 m) above mean sea level, May 22, 1976; lowest recorded, 2.17 ft (0.661 m) above mean sea level, Feb. 23, 24, 26, 27, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.86	2.70	3.00	2.58	2.61	2.41	2.58	2.53	2.59	2.97	3.00	2.60
2	2.93	2.80	2.96	2.62	2.54	2.42	2.59	2.54	2.58	2.99	2.97	2.58
3	2.93	2.90	2.87	2.66	2.48	2.55	2.61	2.54	2.57	3.00	2.93	2.56
4	2.93	3.06	2.81	2.64	2.52	2.63	2.65	2.55	2.56	3.02	2.88	2.54
5	2.94	3.04	2.78	2.61	2.53	2.59	2.66	2.59	2.57	3.01	2.89	2.53
6	2.96	3.00	2.68	2.59	2.50	2.50	2.65	2.62	2.56	3.00	2.90	2.53
7	2.94	2.94	2.62	2.58	2.46	2.61	2.64	2.64	2.55	3.00	2.93	2.53
8	2.98	2.80	2.56	2.59	2.43	2.63	2.66	2.65	2.55	2.98	2.94	2.53
9	2.94	2.73	2.58	2.61	2.40	2.54	2.66	2.64	2.54	2.97	2.98	2.52
10	2.96	2.69	2.59	2.65	2.36	2.48	2.64	2.61	2.56	2.93	2.96	2.52
11	2.98	2.66	2.56	2.70	2.33	2.47	2.63	2.59	2.60	2.92	2.94	2.51
12	2.96	2.60	2.53	2.68	2.32	2.47	2.63	2.59	2.64	2.91	2.92	2.50
13	2.82	2.62	2.50	2.64	2.30	2.44	2.64	2.61	2.67	2.92	2.93	2.47
14	2.81	2.62	2.54	2.60	2.29	2.41	2.62	2.61	2.70	2.91	3.00	2.46
15	2.70	2.64	2.51	2.58	2.28	2.42	2.61	2.61	2.74	2.90	2.98	2.48
16	2.78	2.60	2.49	2.57	2.28	2.41	2.58	2.62	2.76	2.88	2.92	2.49
17	2.70	2.65	2.48	2.55	2.30	2.38	2.57	2.63	2.77	2.90	2.93	2.50
18	2.63	2.71	2.47	2.52	2.29	2.35	2.55	2.64	2.77	2.90	2.91	2.49
19	2.62	2.80	2.46	2.47	2.29	2.41	2.57	2.65	2.76	2.89	2.87	2.48
20	2.62	2.87	2.45	2.44	2.33	2.43	2.60	2.64	2.77	2.88	2.82	2.48
21	2.61	2.91	2.44	2.42	2.35	2.43	2.63	2.61	2.78	2.89	2.82	2.47
22	2.60	2.93	2.43	2.43	2.32	2.43	2.61	2.62	2.80	2.91	2.79	2.47
23	2.59	2.89	2.42	2.43	2.31	2.45	2.60	2.63	2.82	2.90	2.79	2.47
24	2.61	2.91	2.43	2.43	2.35	2.46	2.59	2.61	2.85	2.88	2.82	2.48
25	2.67	2.93	2.42	2.40	2.34	2.52	2.62	2.61	2.86	2.91	2.81	2.50
26	2.66	2.98	2.42	2.43	2.33	2.52	2.61	2.60	2.88	2.95	2.80	2.51
27	2.65	2.99	2.44	2.46	2.32	2.53	2.58	2.60	2.93	2.96	2.74	2.53
28	2.64	3.01	2.47	2.48	2.40	2.53	2.56	2.59	2.96	2.94	2.70	2.55
29	2.63	3.03	2.50	2.49	---	2.56	2.54	2.58	2.97	2.96	2.67	2.59
30	2.63	2.98	2.56	2.53	---	2.57	2.53	2.58	2.96	3.00	2.62	2.63
31	2.65	---	2.58	2.61	---	2.57	---	2.58	---	3.00	2.60	---
MEAN	2.77	2.83	2.57	2.55	2.38	2.49	2.61	2.60	2.72	2.94	2.86	2.52
MAX	2.98	3.06	3.00	2.70	2.61	2.63	2.66	2.65	2.97	3.02	3.00	2.63
MIN	2.59	2.60	2.42	2.40	2.28	2.35	2.53	2.53	2.54	2.88	2.60	2.46

WTR YR 1979 MEAN 2.66 MAX 3.06 MIN 2.28



NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

133115144484973. Well 3148140 less Tide Gage, Pago Bay.
PERIOD OF RECORD.--Current year.

ELEVATION, IN FEET NGVD, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.57			---	2.85	2.85	2.62	2.70	2.64	2.59	2.61	2.65
2	2.57			---	2.92	2.88	2.63	2.65	2.63	2.56	2.58	2.71
3	2.65			---	2.84	2.93	2.62	2.69	2.66	2.28	2.73	2.69
4	2.67			---	2.91	2.98	2.52	2.57	2.61	2.44	2.69	2.70
5	2.58			---	2.93	2.90	2.70	2.59	2.59	2.66	2.62	2.66
6	2.59			---	2.93	2.80	2.56	2.63	2.58	2.70	2.62	2.59
7	2.57			---	2.93	2.81	2.54	2.68	2.58	2.73	2.72	2.57
8	2.71			---	2.90	2.76	2.46	2.65	2.62	2.75	2.73	2.65
9	2.71			---	2.91	2.69	2.59	2.65	2.60	2.79	2.72	2.60
10	2.85			---	2.94	2.67	2.53	2.61	2.54	2.78	2.72	2.57
11	2.83			---	2.92	2.64	2.56	2.63	2.57	2.74	2.68	2.65
12	2.85			---	2.84	2.67	2.60	2.61	2.55	2.76	2.69	2.67
13	2.66			---	2.82	2.74	2.71	2.62	2.60	---	2.78	2.61
14	2.77			---	2.76	2.78	2.74	2.61	2.56	---	2.85	2.57
15	2.65			---	2.77	2.82	2.76	2.71	2.58	---	2.85	2.62
16	2.72			---	2.69	2.81	2.80	2.67	2.60	---	2.78	2.63
17	2.74			---	2.63	2.80	2.79	2.68	2.61	2.57	2.60	2.51
18	2.69			---	2.62	2.61	2.72	2.62	2.62	2.57	2.59	2.55
19	2.71			---	2.74	2.49	2.63	2.61	2.58	2.60	2.75	2.62
20	2.70			2.99	2.68	2.36	2.58	2.62	2.55	2.62	2.79	2.57
21	2.73			2.92	2.76	2.49	2.62	2.61	2.52	2.60	2.77	2.57
22	2.77			2.90	2.75	2.64	2.72	2.58	2.53	2.62	2.74	2.48
23	---			2.83	2.66	2.65	2.68	2.57	2.54	2.66	2.72	2.57
24	---			2.77	2.69	2.59	2.68	2.66	2.56	2.67	2.80	2.54
25	---			2.69	2.74	2.64	2.67	2.69	2.56	2.54	2.83	2.68
26	---			2.67	2.74	2.61	2.73	2.70	2.58	2.48	2.77	2.54
27	---			2.63	2.71	2.60	2.76	2.68	2.60	2.58	2.74	2.52
28	---			2.67	2.76	2.61	2.77	2.66	2.60	2.68	2.69	2.57
29	---			2.70	---	2.61	2.74	2.62	2.64	2.62	2.72	2.73
30	---			2.58	---	2.61	2.75	2.61	2.66	2.62	2.71	2.59
31	---			2.76	---	2.64	---	2.64	---	2.61	2.67	---
MEAN	---			---	2.80	2.70	2.66	2.64	2.59	---	2.72	2.61
MAX	---			---	2.94	2.98	2.80	2.71	2.66	---	2.85	2.73
MIN	---			---	2.62	2.36	2.46	2.57	2.52	---	2.58	2.48

NOTE.--No Tide-Gage record Oct. 23 to Jan. 19, July 13-16.

MARIANA ISLANDS, ISLAND OF GUAM

131809144451671. (Formerly 131809144451670). Local number, 1845013. Formerly published as (1845-01C).
LOCATION.--Lat 13°18'09" N., long 144°45'16" E., at Malojlog well field, 1.7 mi (2.7 km) north of Inarajan Bay, Inarajan, Guam. Owner: Public Utility Agency of Guam.
AQUIFER.--Umatac Formation, Maemong limestone member.
WELL CHARACTERISTICS.--Drilled perched water-table well, diameter 8 in (0.2 m), depth 110 ft (33.5 m).
DATUM.--Altitude of land-surface datum is 253 ft (77.1 m). Measuring point: Top of casing 254.40 ft (77.541 m) above mean sea level.
PERIOD OF RECORD.--October 1972 to September 1976 records available in files of district office; October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 219.53 ft (66.913 m) above mean sea level, Nov. 4, 1978; lowest measured, 168.33 ft (51.307 m) above mean sea level, May 7, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	FEB 22	214.39	JUN 20	169.67	SEP 19	214.79
1979	NOV 4	219.53	MAR 2	193.76	MAY 7	168.33

131842144450571. (Formerly 131842144450570). Local number, 1845400. Formerly published as (1845-40).
LOCATION.--Lat 13°18'42" N., long 144°45'05" E., on road to N.A.S.A. Satellite Tracking Station, Inarajan, Guam.
AQUIFER.--Umatac Formation, probably the Bolanos pyroclastic member.
WELL CHARACTERISTICS.--Drilled water-table-test well, diameter 8 in (0.2 m), cased to 50 ft (15 m), drilled depth 365 ft (111 m), measured depth, 238.8 ft (72.79 m) in 1975.
DATUM--Altitude of land-surface datum is 314 ft (95.7 m). Measuring point: Top of casing 316.00 ft (96.317 m) above mean sea level.
REMARKS.--Well was abandoned because of extremely low yield.
PERIOD OF RECORD.--April 1972 to September 1976 records available in files of district office; October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 200.69 ft (61.170 m) above mean sea level, Oct. 7, 1976; lowest measured, 185.56 ft (56.559 m) above mean sea level, July 3, 1973.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	DEC 8	194.13	FEB 22	193.93	JUN 21	190.64	SEP 19	188.86
1979	MAR 2	194.12	MAY 7	193.48				

132615144470571. (Formerly 132615144470570). Local number, 2647100. Formerly published as (2647-10).
LOCATION.--Lat 13°26'15" N., long 144°47'05" E., at Father Duenas Memorial School, Chalan Pago-Ordot, Guam.
AQUIFER.--Mariana Limestone.
WELL CHARACTERISTICS.--Drilled parabasal water-table well, diameter 8 in (0.2 m).
DATUM.--Altitude of land-surface datum is 179 ft (54.6 m). Measuring point: Top of casing, 179.86 ft (54.821 m) above mean sea level.
PERIOD OF RECORD.--March 1973 to May 1976 records available in files of district office; June 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.0 ft (3.05 m) above mean sea level, Sept. 3, 1976; lowest measured, 6.37 ft (1.942 m) above mean sea level, Apr. 4, 1973.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	AUG 20	7.10	JUN 20	6.78	JUL 21	7.11	AUG 16	7.88	SEP 19	7.33
1979	DEC 21	8.07	JAN 9	7.98	JAN 30	7.55	FEB 26	7.13	APR 3	7.38
1979	MAY 7	7.12	JUN 22	6.99	JUL 26	7.13	SEP 5	6.77		

132742144452971. (Formerly 132742144452970). Local number, 2745420. Formerly published as (2745-42).
LOCATION.--Lat 13°27'42" N., long 144°45'29" E., near Sinajana on the edge of Agana Swamp.
AQUIFER.--Mariana Limestone.
WELL CHARACTERISTICS.--Basal ground water issues from an opening in the Mariana Limestone. The water level is measured in a pool with a concrete spillway.
DATUM.--Altitude of land-surface datum is 10 ft (3.0 m) above mean sea level. Measuring point: Edge of concrete spillway, 10.30 ft (3.139 m) above mean sea level.
REMARKS.--Spring supplied Agana with up to one million gallons per day. Not in use at present.
PERIOD OF RECORD.--April 1974 to September 1976 records available in files of district office; October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Lowest water level measured, 8.45 ft (2.576 m) above mean sea level, July 2, 1975.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	FEB 2	10.09	MAR 16	9.46	APR 20	8.86	JUN 20	8.61	JUL 21	9.34	AUG 16	j
1979	DEC 21	j	JAN 30	j	FEB 26	j	APR 3	10.02	MAY 7	9.38	JUN 22	8.54
1979	JUL 26	8.55	SEP 5	9.19								

j Water overflowing spillway.

MARIANA ISLANDS, ISLAND OF GUAM

132758144450571. (Formerly 132758144450570). Local number, 2745500. Formerly published as (2745-50).
LOCATION.--Lat 13°27'58" N., long 144°45'05" E., on Route 4, 0.65 mi (1.0 km) south of junction of Routes 1 and 4 in Agana, Guam.
AQUIFER. Mariana Limestone.
WELL CHARACTERISTICS.--Drilled basal water-table test well, casing diameter 6 in (0.2 m), depth when drilled, 186 ft (56.7 m), when measured in May 1973, 29 ft (8.8 m).
DATUM.--Altitude of land-surface datum is 33 ft (10 m). Measuring point: Top rim of casing, 33.22 ft (10.125 m) above mean sea level.
REMARKS.--Water levels in this well reflect changes in the regional fresh water head of the discharge area surrounding Agana Swamp.
PERIOD OF RECORD.--August 1955 to May 1960, January 1972 to September 1976 records available in files of district office; October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.42 ft (9.577 m) above mean sea level, Oct. 14, 1955; lowest measured, 6.83 ft (2.082 m) above mean sea level, June 20, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	FEB 2	8.05	MAR 16	7.67	APR 20	6.86	JUN 20	6.83	JUL 21	7.93	AUG 16	8.92
1979	OCT 23	8.61	DEC 21	9.25	JAN 9	9.17	JAN 30	9.12	FEB 26	8.83	APR 3	8.57
1979	MAY 7	8.09	JUN 22	7.30	JUL 26	7.02	SEP 5	8.13				

132958144484871. (Formerly 132958144484870). Local number, 2948540. Formerly published as (2948-54).
LOCATION.--Lat 13°29'58" N., long 144°48'48" E., in old Harmon Field area near Black Construction Camp. Owner: Black Construction Company.
AQUIFER.--Mariana Limestone.
WELL CHARACTERISTICS.--Drilled basal water-table well, casing diameter 10 in (0.25 m), depth reported 216 ft (65.8 m).
DATUM.--Altitude of land-surface datum is 204 ft (62.2 m). Measuring point: Top of one-inch steel air line pipe 208.21 ft (63.462 m) above mean sea level.
REMARKS.--Military supply well abandoned in 1950. Reactivated in 1968 for use as private supply well.
PERIOD OF RECORD.--April 1973 to September 1976 records available in files of district office; October 1976 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.88 ft (1.183 m) static water level above mean sea level, Feb. 4 and Apr. 14, 1977; lowest measured 2.82 ft (0.860 m) static water level above mean sea level, Apr. 4, 1973.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	MAR 16	3.25(S)	APR 25	3.19(S)	JUN 20	3.23(S)	JUL 21	3.51(S)	AUG 16	3.75(S)	SEP 19	3.25(P)
1978	MAR 16	3.18(P)										
1979	DEC 21	2.85(P)	JAN 30	2.96(S)	APR 3	3.02(P)	MAY 7	3.16(S)	SEP 5	3.06(S)		

(S) Static water level.
(P) Pumping water level.

133034144500871. Local number, 3050300.
LOCATION.--Lat 13°30'34" N., long 144°50'08" E., in Macheche area, Dededo.
AQUIFER.--Barrigada Limestone.
WELL CHARACTERISTICS.--Drilled basal ground-water test well. Uncased hole diameter 12 in (0.30 m). Sounded depth 407 ft (124 m).
DATUM.--Altitude of land-surface datum is 309 ft (94.2 m) above mean sea level. Measuring point: Top of wood slab on side of hole 309.00 ft (94.183 m) above mean sea level.
REMARKS.--Well yield insufficient for development.
PERIOD OF RECORD.--February 1978 to September 1979.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.59 ft (1.399 m) above mean sea level, Aug. 16, 1978; lowest measured 3.63 ft (1.106 m) above mean sea level, Feb. 26, 1979.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEARS OCTOBER 1977 TO SEPTEMBER 1979

WATER YEAR	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
1978	MAY 9	4.13	JUN 20	4.10	JUL 21	4.37	AUG 16	4.59	SEP 19	4.15
1979	FEB 26	3.63	APR 3	3.97	MAY 7	3.97				

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
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)
	Area	
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)
	Volume	
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)
	Flow	
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)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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