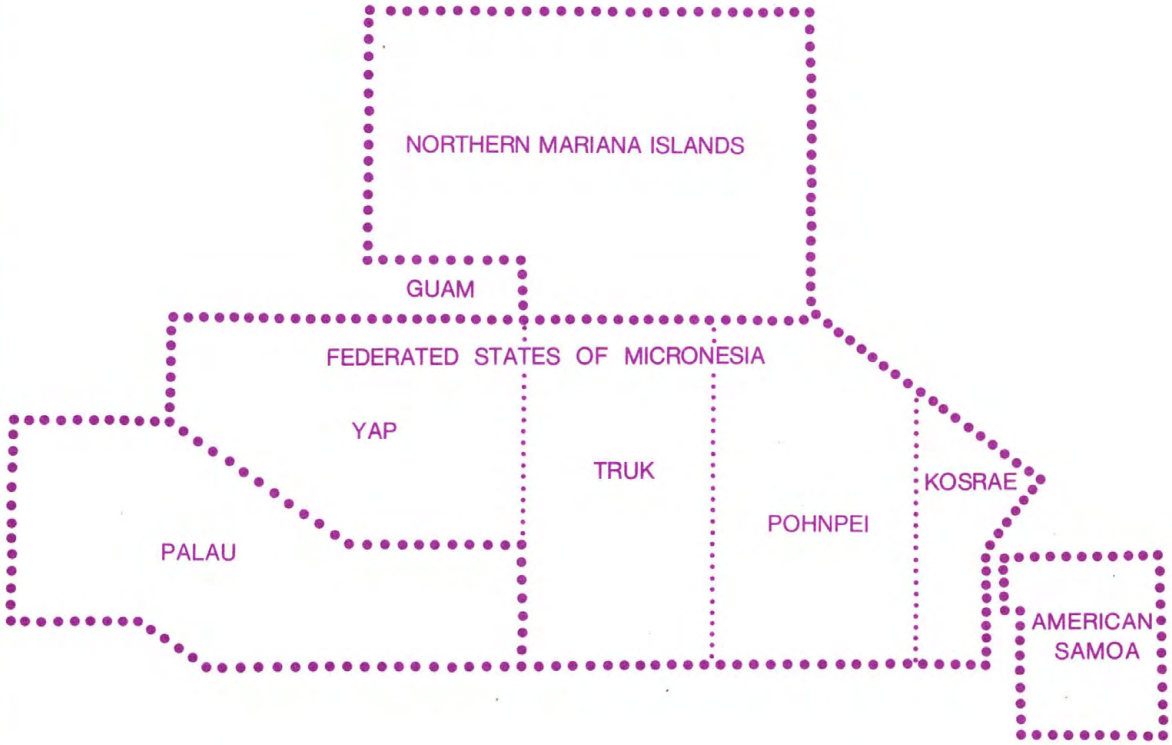
Water Resources Data Hawaii and other Pacific Areas Water Year 1989

Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-89-2
Prepared in cooperation with the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies

CALENDAR FOR WATER YEAR 1989

1988

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1989

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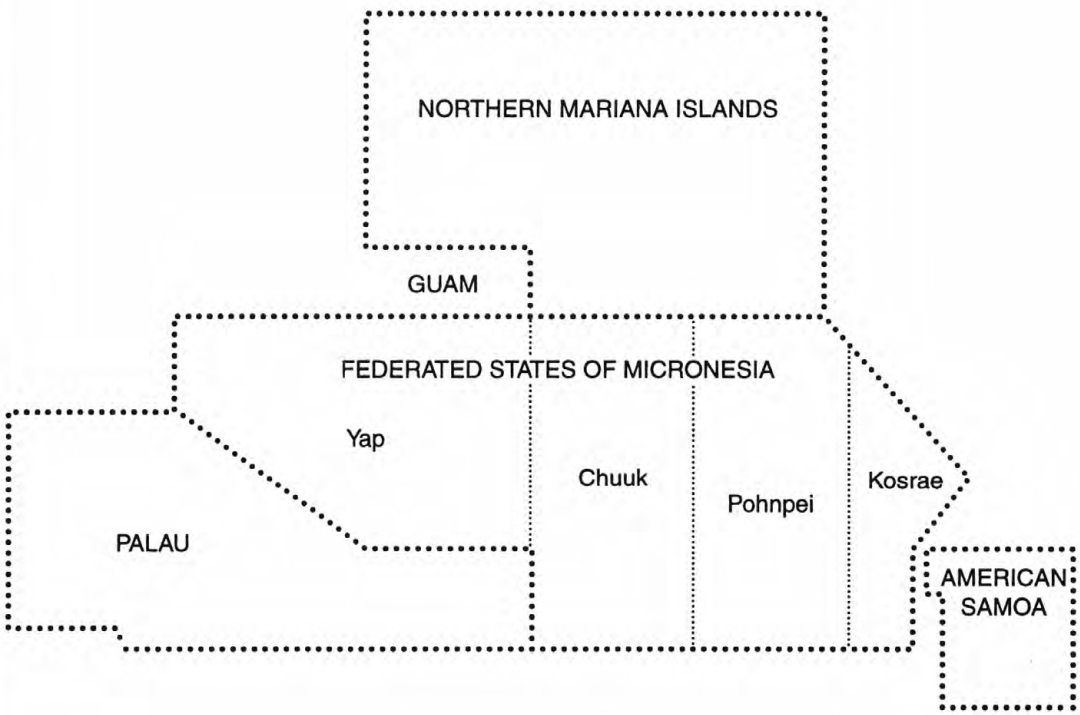
Water Resources Data Hawaii and other Pacific Areas Water Year 1989

Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa

by R.A. Fontaine, V.E. Kunishige, and M.G. Lum



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-89-2
Prepared in cooperation with the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

GORDON P. EATON, Director

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677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

1996

PREFACE

This volume of the annual hydrologic data report of Hawaii and other Pacific Areas is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Pacific Islands. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Hawaii and other Pacific Areas are contained in two volumes:

Volume 1. Hawaii
Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

Lodie P. Celebrado
Michael Enright
Leonora L. Fukuda
Gregg N. Ikehara
Thomas G. Kane III
Iwao Matsuoka
James P. Rounds
Leonard J. Thompson
Isao Yamashiro
Frank Taotoai (American Samoa)
Winner Alik (Kosrae)
Rebeto Issac (Palau)
Waltick Panuel (Pohnpei)
Adrian Gimed (Yap)

This report was prepared in cooperation with the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies under the general supervision of William Meyer, District Chief, Hawaii.

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13. ABSTRACT (Maximum 200 words)
Water-resources data for the 1989 water year for other Pacifc areas consist of records of discharge, and water quality of streams and stage of a lake and reservoir; water levels and water quality in wells; stage in a tide gage; and rainfall. This report volume 2 contains discharge records for 26 gaging stations; stage only for 2 gaging stations; water quality at 11 gaging stations, one streamflow partial record station, and 54 wells; water levels for 28 observation wells; and tide stages for one tide gage station. Also included are 2 crest-stage partial record stations, 4 miscellaneous partial-record stations, 15 low-flow partial-record stations, and 19 rainfall stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and other agencies in other Pacific areas.

14. SUBJECT TERMS)
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CONTENTS

ILLUSTRATIONS

GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

Letters after station name designate type of data:
(d) discharge, (e) stage or gage height, (t) temperature, (c) chemical

TIDE GAGE STATIONS FOR WHICH TIDE STAGE RECORDS ARE PUBLISHED

Letters after station number designate type of data:
(f) tide stage

Letters after well number designate type of data:
(c) chemical, (t) water temperature, (w) water level

Page

SAMOA ISLANDS

Letters after station number designate type of station:
(r) recording, and (n) non-recording

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WATER RESOURCES DATA FOR HAWAII AND OTHER PACIFIC AREAS, 1989

Volume 2

INTRODUCTION

Water resources data for the 1989 water year for Hawaii and other Pacific areas consist of records of stage, discharge, and water quality of streams, springs, and reservoir; water-levels and water quality of wells; and rainfall. This report, Volume 2, contains discharge records for 26 gaging stations; stage only records for 2 gaging stations; water quality for 11 gaging stations, one streamflow partial-record station, and 54 wells; water levels for 28 observation wells; and tide stages for one tide gage station. Also included are data for 15 low-flow partial-record stations, 2 crest-stage partial-record stations, 4 miscellaneous partial-record stations, and 19 accumulated rainfall stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Territorial, and Federal agencies in the 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 in Hawaii were contained in the series as "Surface Water Supply of Hawaii." 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. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or if out of print, may be purchased from the U.S. Geological Survey, Earth Sciences Information Center, Open-File Reports Section, Box 25286, mail stop 517, Denver Federal Center, Denver, Colorado, 80225-0046. For further ordering information, telephone (303) 236-7476.

Beginning with the 1961 water year (fiscal year for Hawaii) and continuing through water year 1974, streamflow data have been released by the Geological Survey in annual reports on a state-boundary basis. Water-quality records beginning with the 1964 water year, and ground-water data since the 1971 water year have been similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1975 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a state-boundary basis. These official Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report HI-89-2." 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. For further ordering information, the Customer Inquires telephone number is (703) 487-4650.

In this volume, the spelling of names, drainage areas, and locations for most stations in Palau, Yap, Pohnpei, and Kosrae differ from those used in "Water Resources Data for Hawaii and other Pacific Areas", 1968 to 1980. These had been based on 1954 U.S. Army Map Service series W 856 maps with a scale of 1:25,000 and 10-meter contours (International spheroid). The revised names and figures were based on the 1981 USGS maps with 1:10,000 scale and 5-meter contours (Clarke spheroid of 1866).

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) 522-8290.

COOPERATION

The U.S. Geological Survey has had cooperative agreements for the systematic collection of streamflow records with the Government of Guam since 1953, with the Government of American Samoa since 1957, and with the other 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:

Government of Guam, Joseph P. Ada, Governor.
Government of Northern Mariana Islands, P. P. Tenorio, Governor.
Federated States of Micronesia, J. Haglelgam, President.
  State of Yap, Petrus Tun, Governor.
  State of Pohnpei, Resio Moses, Governor.
  State of Kosrae, Yosiwo George, Governor.
Republic of Palau, Ngtratkel Etpison, President.
Government of American Samoa, Peter Coleman, Governor.

Assistance in the form of funds or services was given by the Public Works, U.S. Navy, and the Corps of Engineers, U.S. Army.

SUMMARY OF HYDROLOGIC CONDITIONS

Based on the records at six index streams in the area covered by this volume, as shown in figure 1; the annual mean runoff for 1989 water year was in the normal range at the index stations on Guam, Palau, Kosrae, and American Samoa, and excessive (flow in the upper 25 percent of record) at Yap, and Pohnpei. Monthly mean flow was normal at all of these stations for the month of July.

Streamflow at the Ylig River near Yona, Guam (fig. 2) was normal for October, November, March, and May through September; excessive (flow in the upper 25 percent of record) for February, and April; and deficient (flow in lower 25 percent of record) for December, and January. Annual mean runoff was 93 percent of the annual median.

At the Diongradid River (fig. 2) on the island of Babelthuap, Palau Islands, monthly mean was normal for October through April, and June through September; and excessive for May. Annual mean runoff was 102 percent of the annual median.

On the island of Yap, Caroline Islands, streamflow at the Qaringeel Stream (fig. 3) was normal for November through January, and April through August; excessive for October, February, and March; and deficient for September. Annual mean discharge was 117 percent of the annual median.

Streamflow at the Nanpil River in Pohnpei (fig. 3) was normal for October, November, March, and May through July; excessive for December through February, April, and August; and deficient for September. Annual mean discharge was 124 percent of the annual median.

On the island of Kosrae, streamflow at the Melo River (fig. 4) was normal for October, November, February through April, and June through September; excessive for January, and May; and deficient for December. Annual mean discharge was 100 percent of the annual median.

At Tutuila, American Samoa, streamflow at Aasu (fig. 4) was normal for October, April, May, and July; excessive for November through March; and deficient for June, August, and September. Annual mean runoff was 114 percent of the annual median.

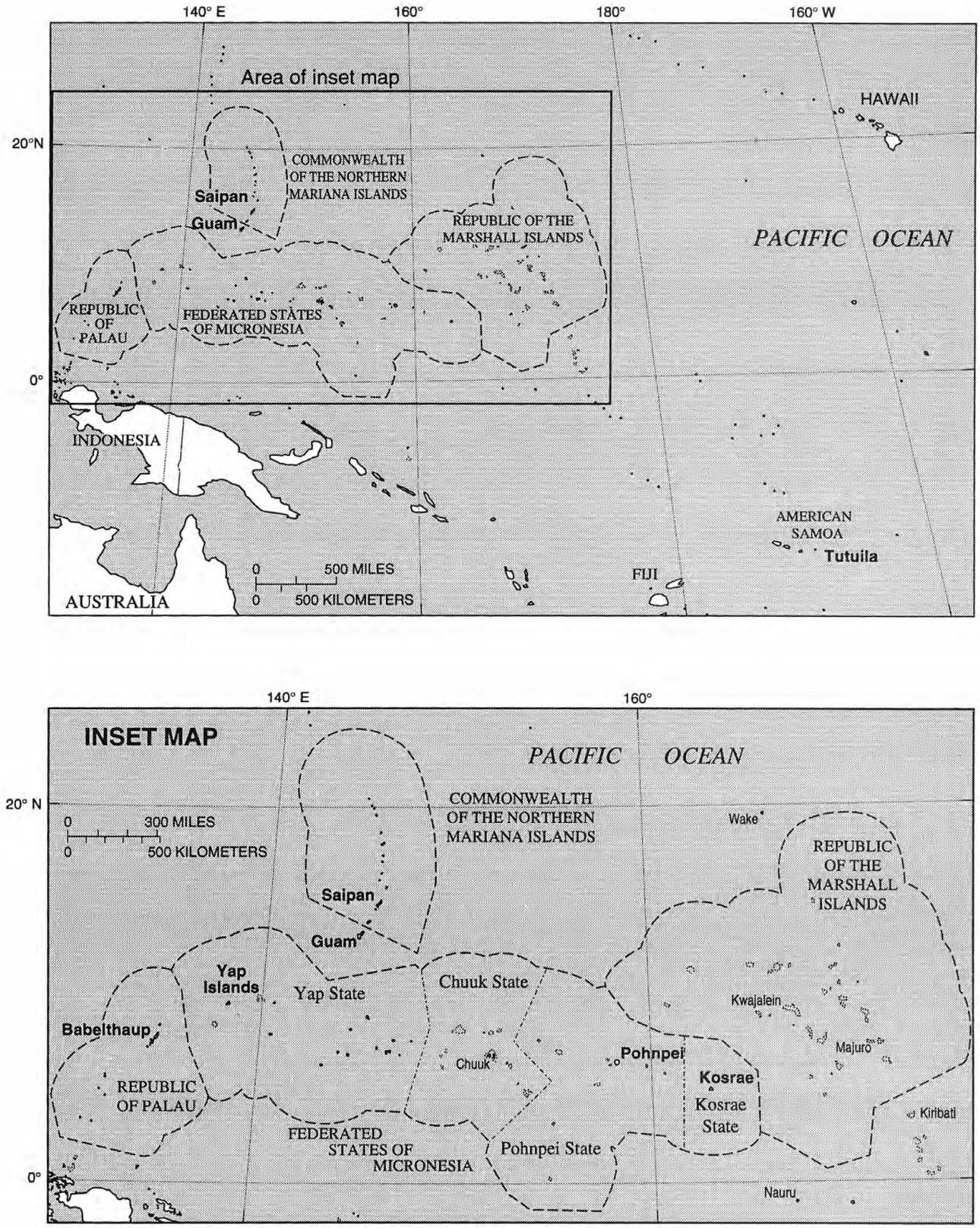

Figure 1. Locations of Western Pacific Islands.

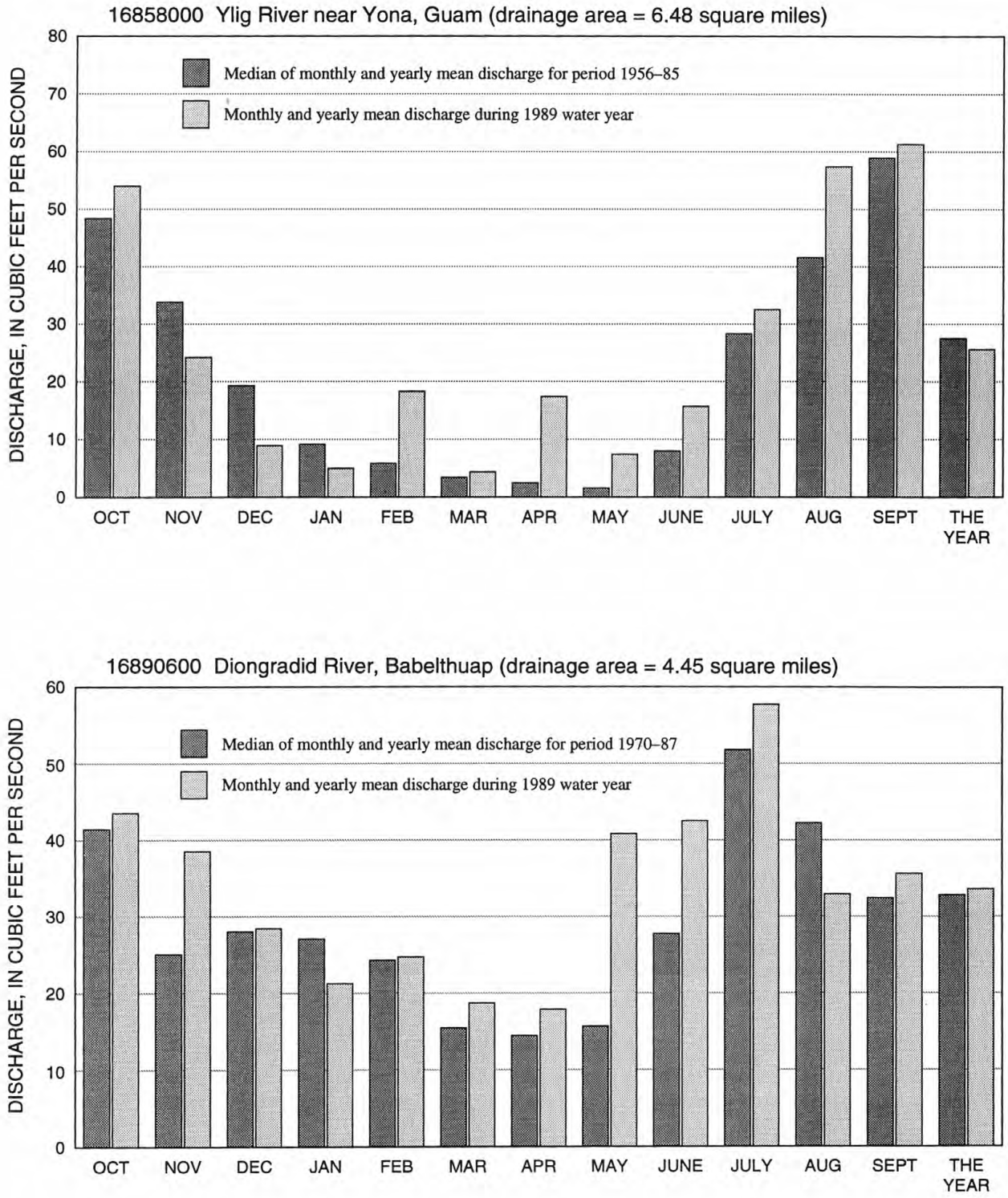

Figure 2. Discharge during 1989 water year compared with median discharge for representative streams on Guam and Babelthuap.

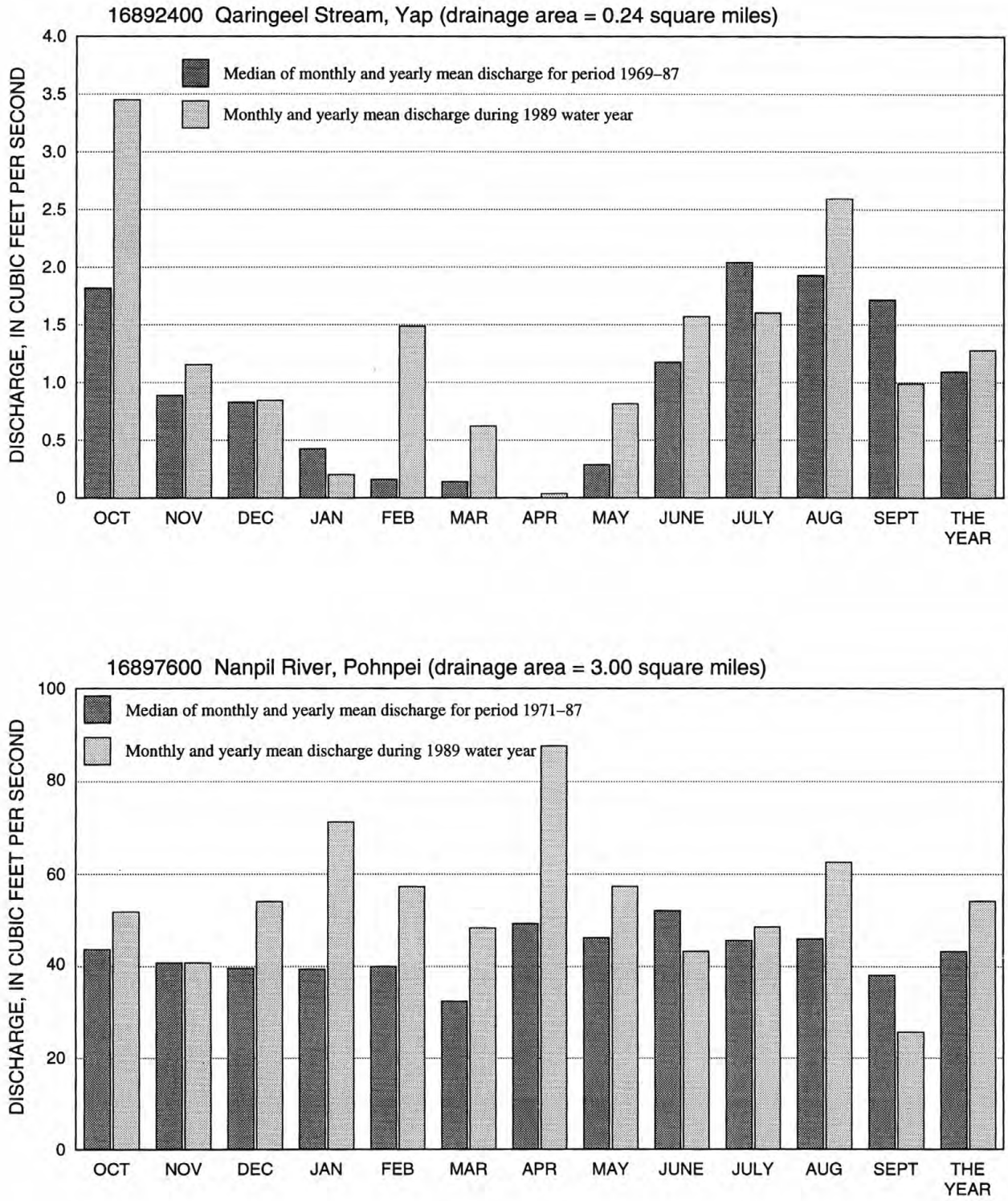

Figure 3. Discharge during 1989 water year compared with median discharge for representative streams on Yap and Pohnpei.

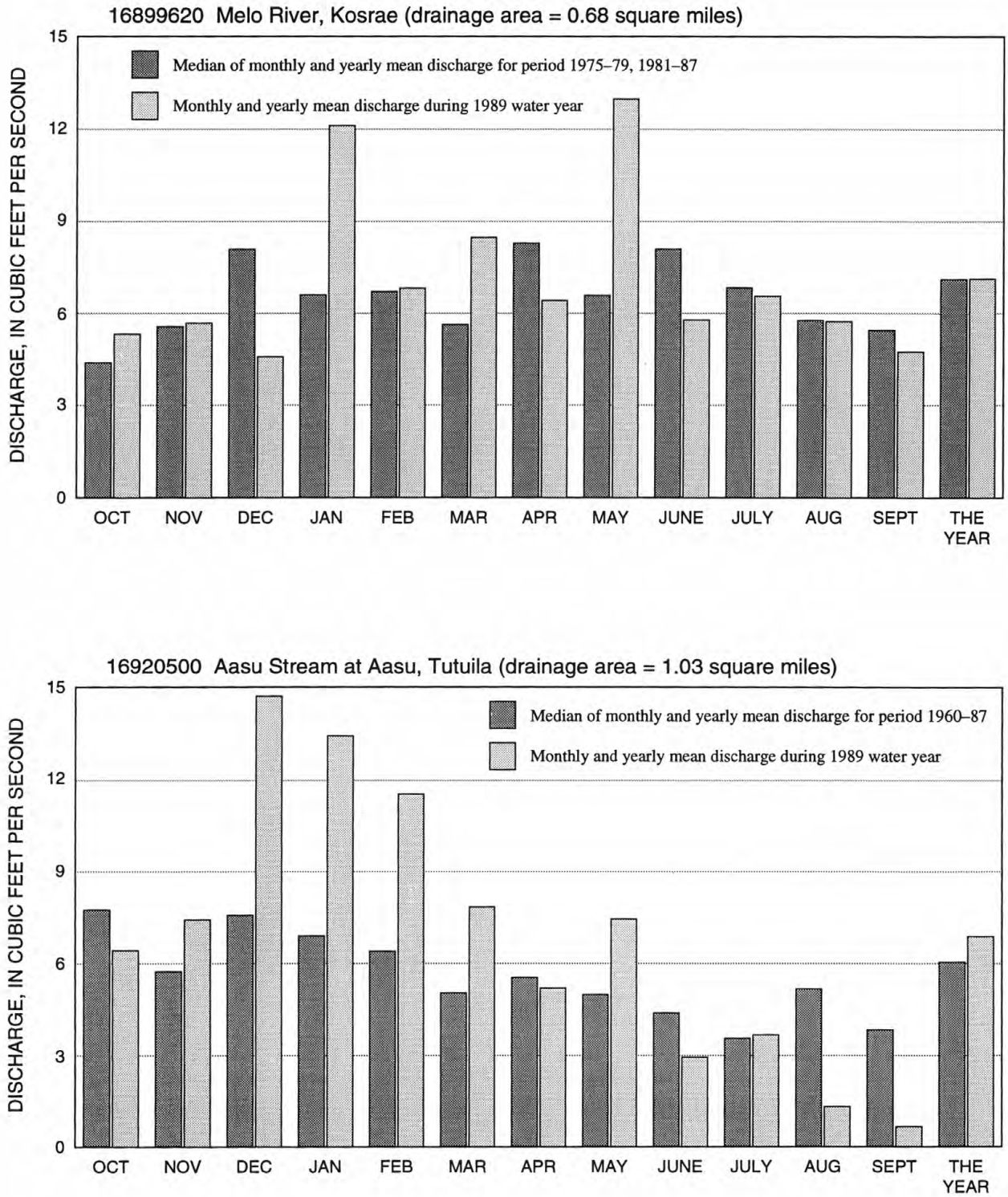

Figure 4. Discharge during 1989 water year compared with median discharge for representative streams on Kosrae and Tutuila.

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 16858000 which appears just to the left of the station name includes the 2-digit number "16" plus the 6-digit downstream order number "858000." In this report, the records are listed in downstream order by islands. Locations of the stations are shown in figures 5-11.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

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

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 12.

The local well-numbering system for Pacific Areas was restructured to contain eight digits based on a non-arbitrary, unique one-minute grid 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.

To distinguish wells within a minute grid, two digits are added following the 4-digit minute-grid numbers with a dash separator. These two-digit numbers are assigned with the oldest well dug within the grid as 01 and increase chronologically, with few exceptions, to the latest dug.

Since it is possible to have a same 6-digit number for wells on different islands, a 2-digit number distinguishing each of the islands or geographic areas is added in front of the 6-digit number with a dash separator. For example, in the number 18-2647-01, the first two digits designate an island of geographic area, then the 4-digit minute-grid numbers followed by a 2-digit sequential number. See figure 13.

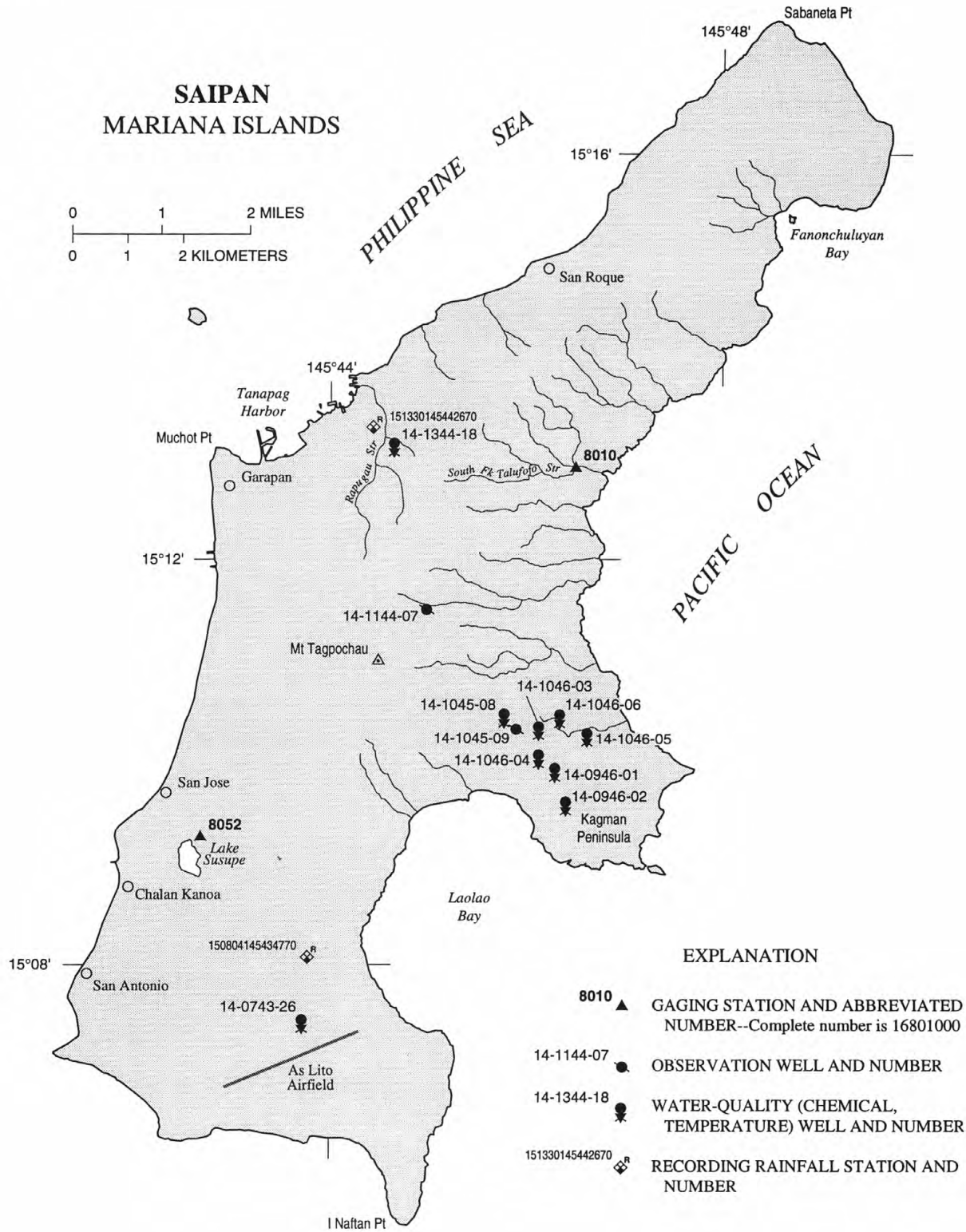

Figure 5. Locations of gaging stations, observation wells, and water-quality sampling sites on Saipan.

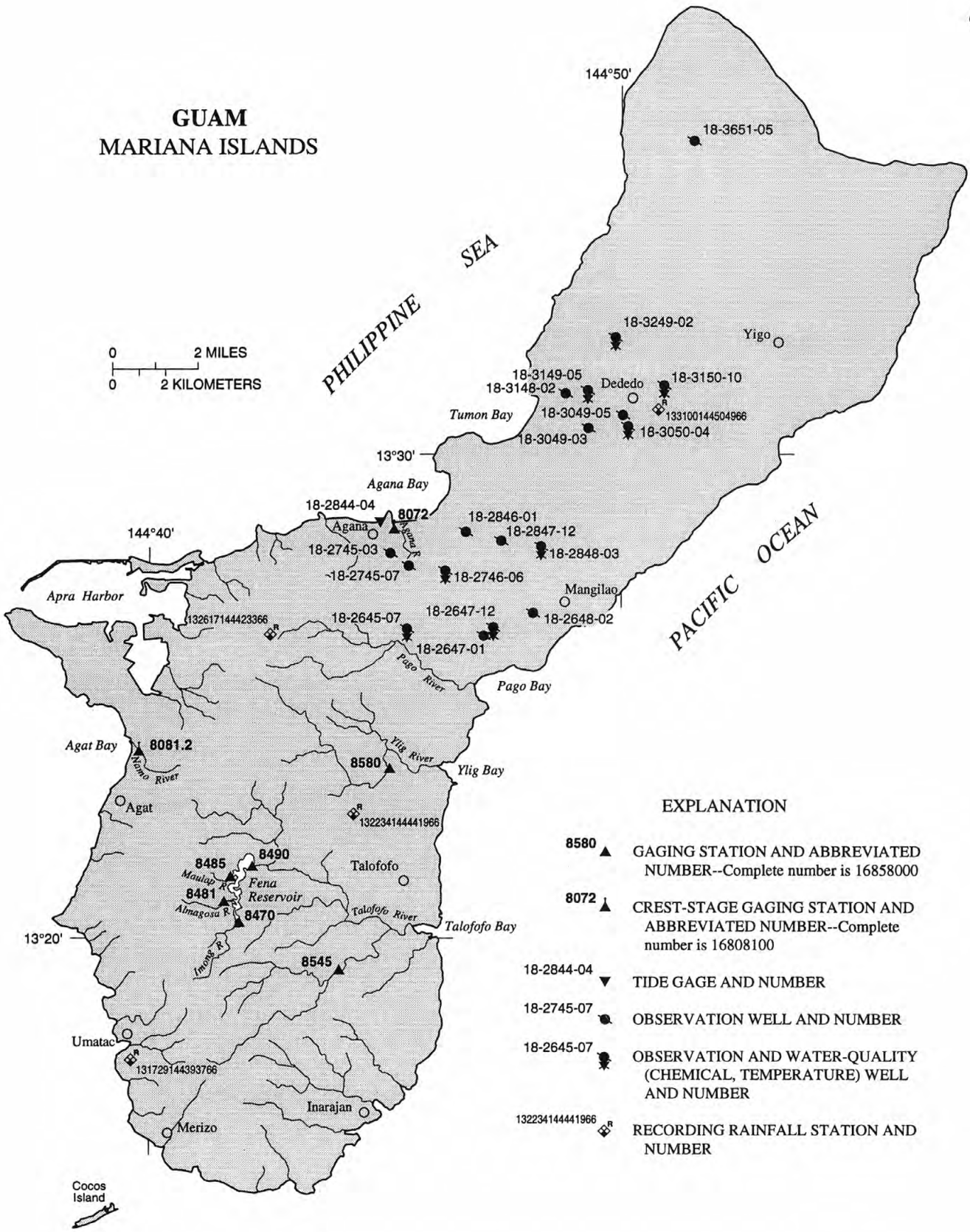

Figure 6. Locations of gaging stations, observation wells, and water-quality sampling sites on Guam.

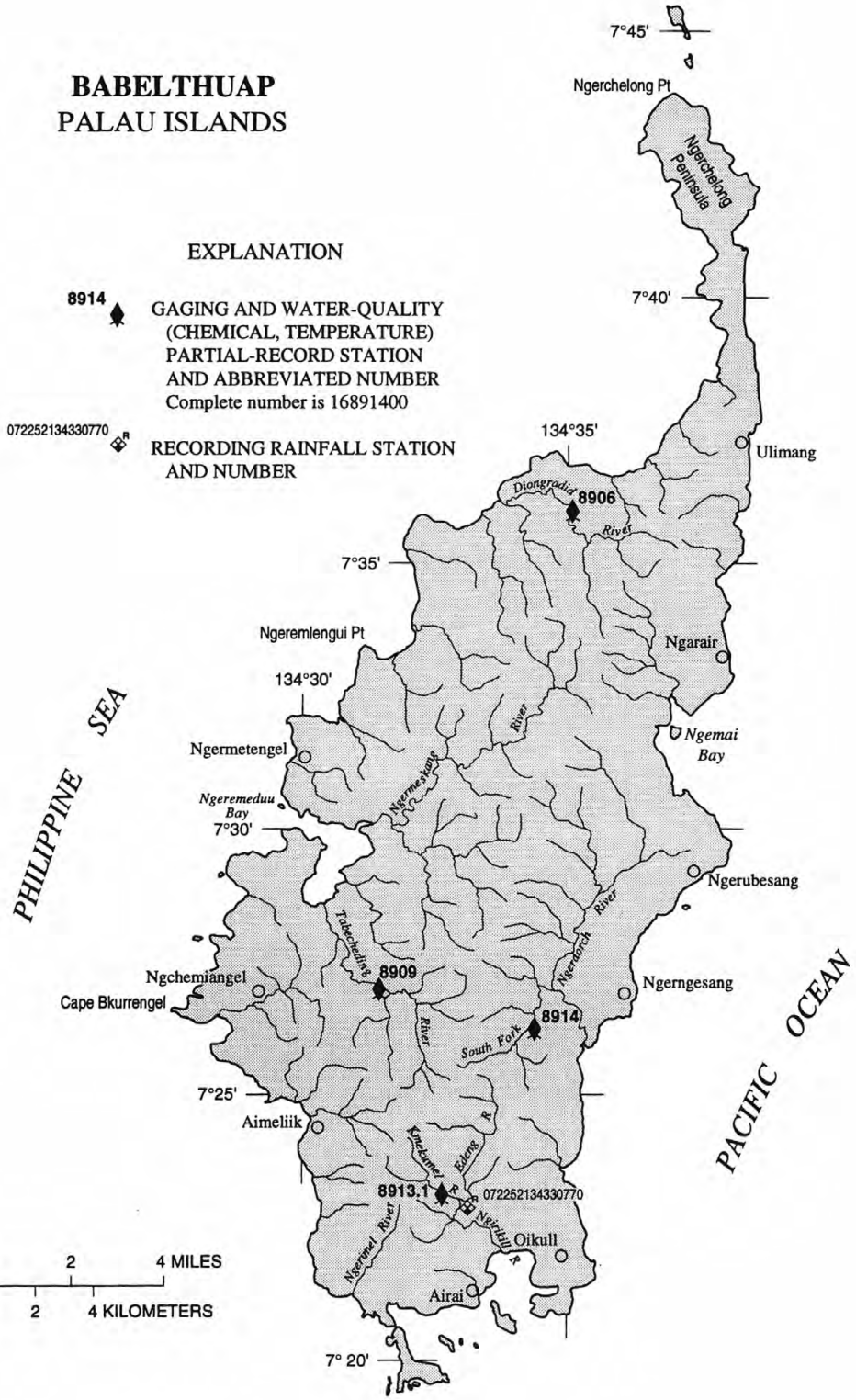

Figure 7. Locations of gaging stations, well, and water-quality sampling sites on Babelthuap.

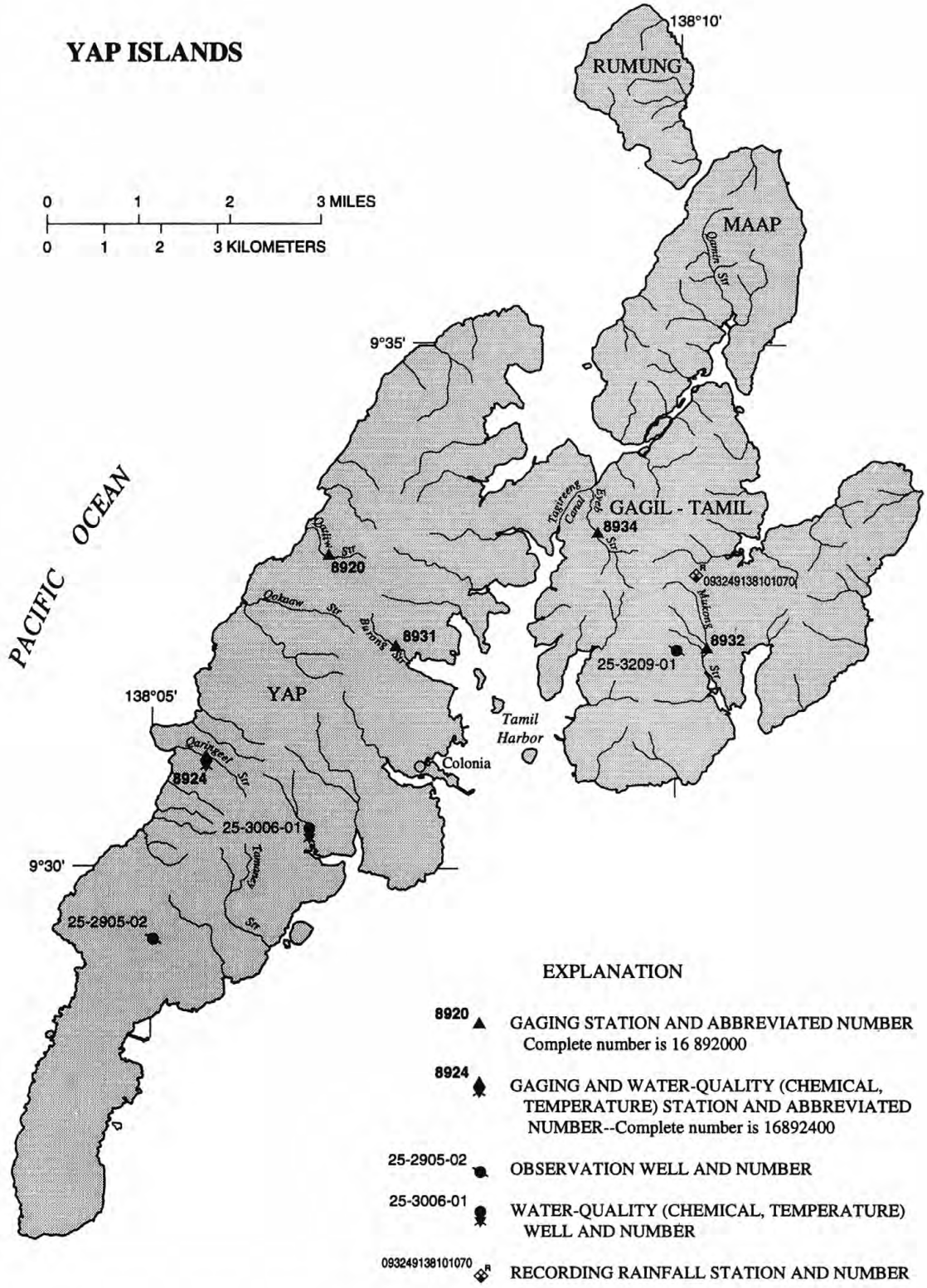

Figure 8. Locations of gaging stations, observation wells, and water-quality sampling sites on Yap Islands.

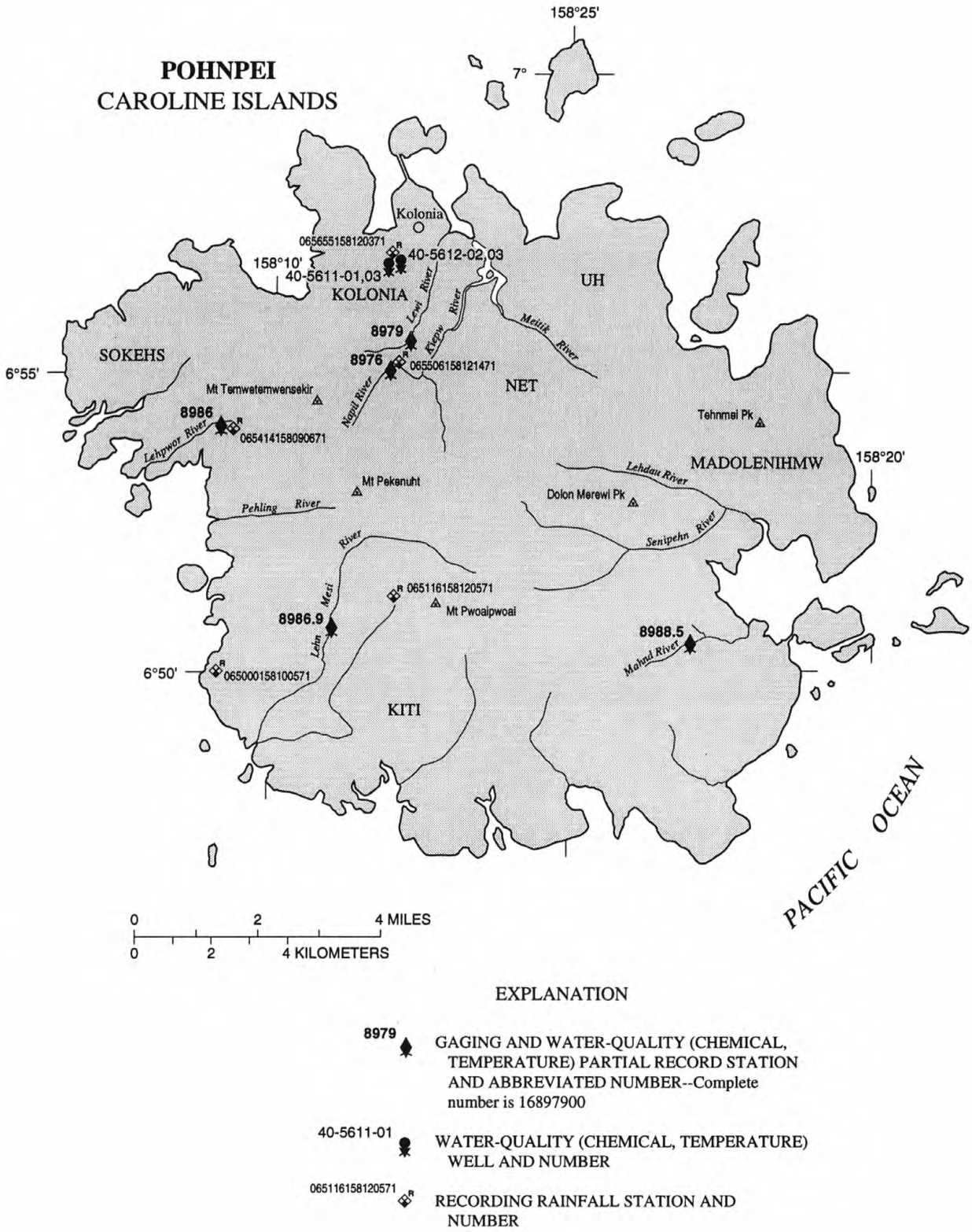

Figure 9. Locations of gaging stations and water-quality sampling sites on Pohnpei.

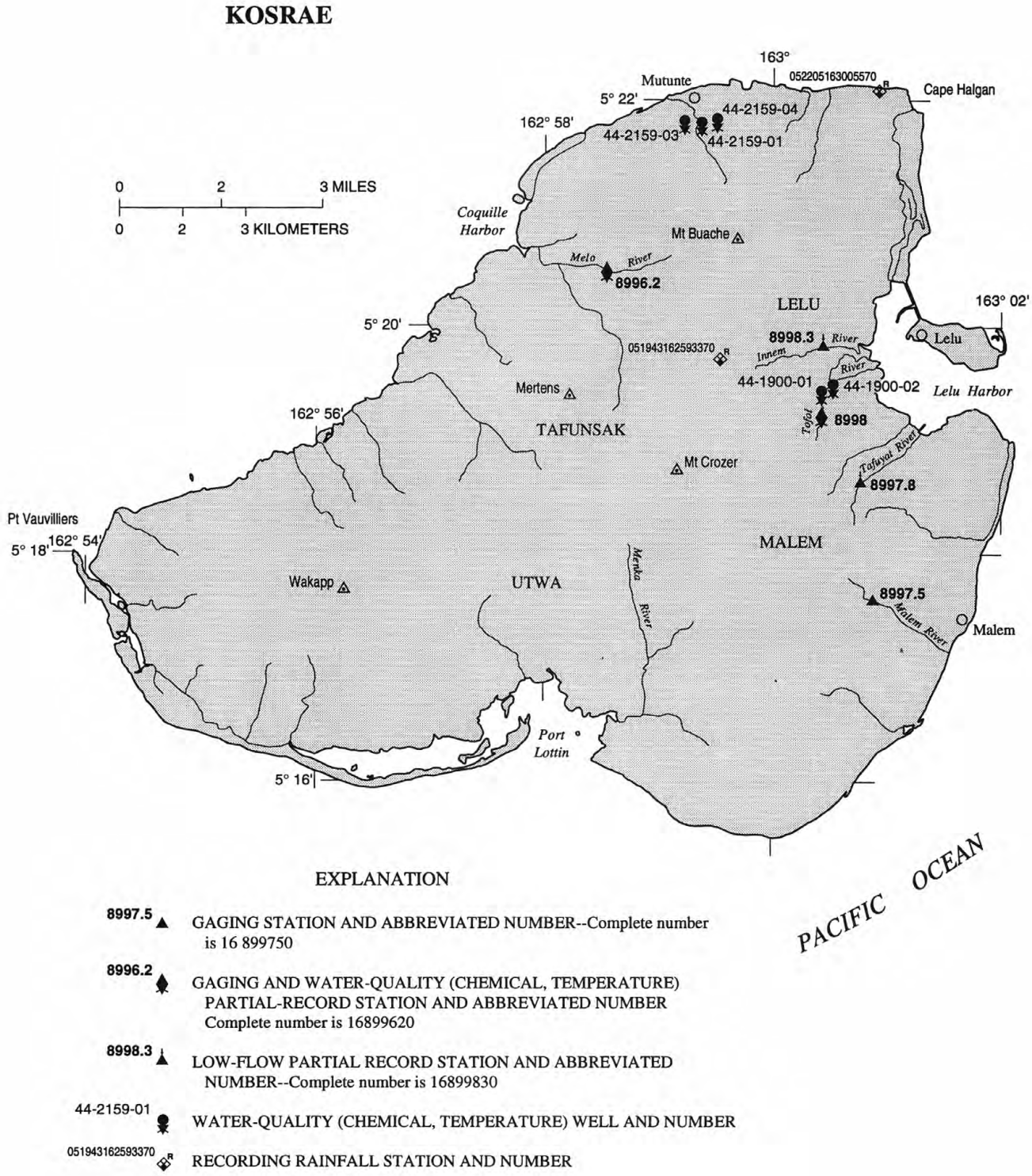

Figure 10. Locations of gaging stations and water-quality sampling sites on Kosrae.

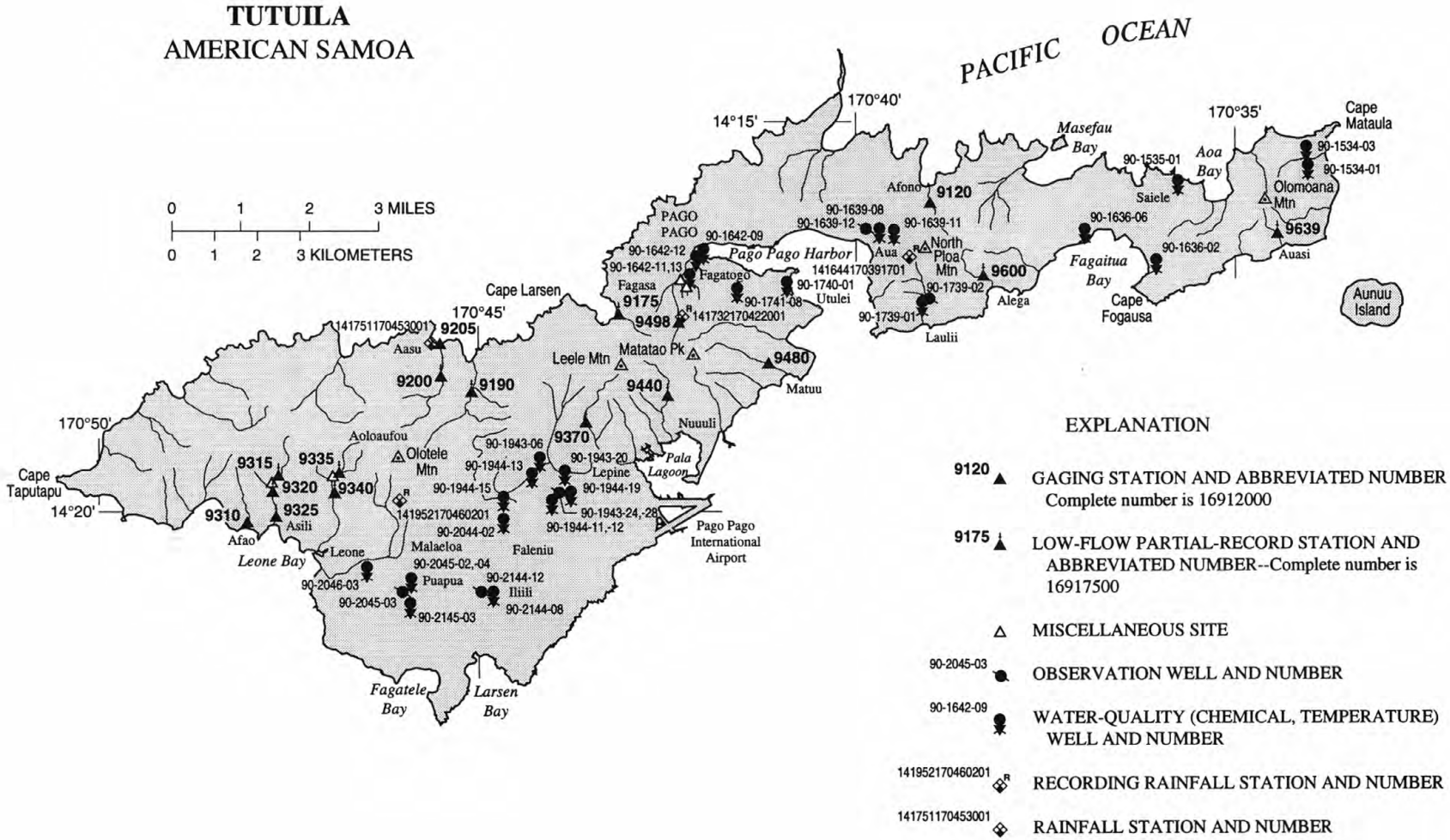

Figure 11. Locations of gaging, low-flow partial-record stations, observation wells, and water-quality sampling sites on Tutuila.

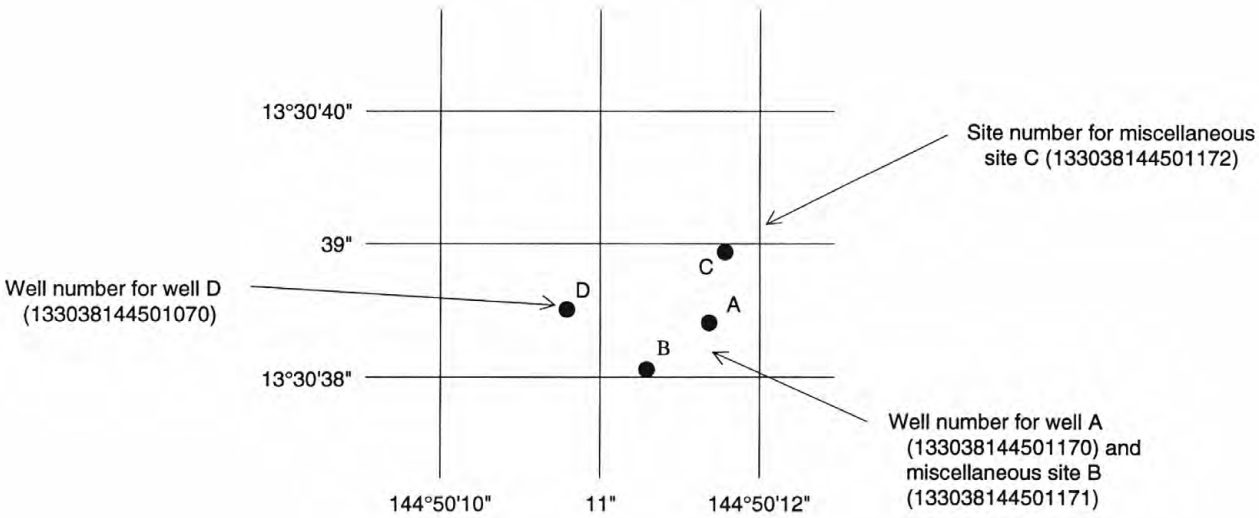

Figure 12. Sketch showing system for numbering wells and miscellaneous sites.

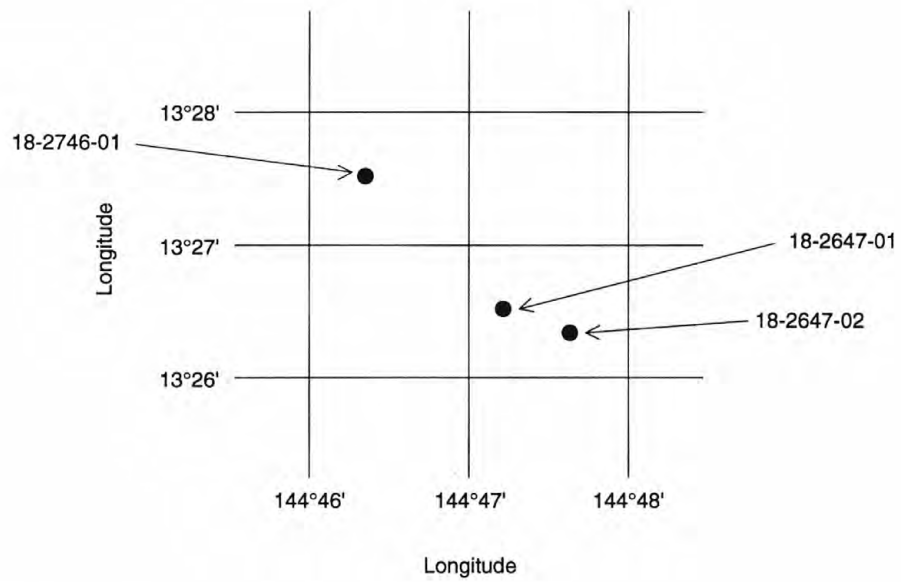

Figure 13. Sketch showing local well-numbering system.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard textbooks, Water-Supply Paper 2175, and the U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI), Book 3, Chapter A1 to A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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 technicians 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 computed daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations, in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

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 discharge 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 station 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.

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 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.

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 some water-discharge stations. Large streams have a small diurnal 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 section.

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

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

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

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 12 and 13.

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

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of the month (eom). To show the intraday 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 of 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.

ACCESS TO WATSTORE DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National WATer Data STOrage and REtrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia, and consists of related files and data bases.

* Station Header File - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.

* Daily Values File - Contains more than 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.

* Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.

* Water Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of both surface and ground water.

* Ground-Water Site Inventory Data Base - Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requester will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

DEFINITION OF TERMS

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

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

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

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies within 24 hours when incubated at 35°C ± 0.5°C on M-Endo agar (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 warm-blooded 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 agar (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 warm-blooded 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 ± 0.5°C on KF Streptococcus agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Benthic organisms (invertebrates) are the group of animals living in or on the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

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.

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

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."

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 mL or liters (L).

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

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.

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.

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) 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.

Cubic foot per second-day [$(ft^3/s)/d$] 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.

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 "STREAMFLOW INSTANTANEOUS (CFS)."

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

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.

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 Bench-Mark Network is a network of 53 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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.

Microgram per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element per unit mass (gram) of sediment.

Microgram per liter (µG/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.

Milligram 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.

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

National Stream-Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in national or regional water-quality planning and management. The 284 sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objective of NASQAN is to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting. The design of the network is intended to provide data for (1) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (2) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (3) a nationally consistent data base useful for water-quality assessment and hydrologic research.

Parameter code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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.

Periphyton is the assemblage of micro-organisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, the periphyton also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

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} radio-active disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

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

Phytoplankton compose the plant part of the plankton. They are usually microscopic, and their movement is subject to water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials into the surrounding water, the phytoplankton have a profound effect on 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 phytoplankton organisms having a blue pigment in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

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

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

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

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

Sea level refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)-- a geodetic datum derived from a general adjustment of the first-order level nets of both the United Stated and Canada, formerly called Sea Level Datum of 1929.

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).

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

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 suspended-sediment concentration in 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.

Solute is any substance 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 microsiemens 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 microsiemens). 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.

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

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 constituents.

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

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

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-foot 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 period.

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

Total 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.

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.

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

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends. Thus the year ending September 30, 1989, is called the "1989 water year".

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.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting 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) pertains to 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, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for 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-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 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.

2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 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-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 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-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.

3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F. A. Kilpatrick, R. E. Rathbun, N. Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 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 programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. *Regression modeling of ground-water flow*, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.

3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 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. J. Fishman and L. C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 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 the determination of organic substances in water and fluvial sediments*, edited by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 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-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

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

6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 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.

7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 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-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 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.

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MARIANA ISLANDS, ISLAND OF SAIPAN

16801000 SOUTH FORK TALOFOFO STREAM

LOCATION.--Lat 15°12'48" N., long 145°46'17" E., Hydrologic Unit 20100006, on left bank 0.4 mi upstream from confluence with Middle and North Forks, 1.4 mi south of Ogso Dogas, and 2.2 mi southeast of Tanapag.

DRAINAGE AREA.--0.64 mi^2. Area at site used prior to Mar. 31, 1971, 0.73 mi^2.

PERIOD OF RECORD.--October 1968 to November 1986, October 1987 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), WDR HI-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Mar. 31, 1971. Elevation of gage is 60 ft, from topographic map. Prior to Mar. 31, 1971, at site 0.2 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges which are poor. No diversion upstream.

AVERAGE DISCHARGE.--17 years (water years 1972-86, 1988-89), 1.33 ft^3/s (964 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,100 ft^3/s, Aug. 4, 1976, gage height, 8.15 ft, from rating curve extended above 59 ft^3/s on basis of slope-area measurements at gage heights 7.30 and 8.15 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
July 30	2245	496	4.74	Aug. 3	0415	*645	*5.05

Minimum recorded discharge, 0.13 ft^3/s, June 18-24, but many have been less during period June 1-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.52	.93	e.58	.19	.32	e.42	e.12	e.12	e.08	e.14	39	1.9
2	.86	.98	e.54	.26	.29	e.54	e.12	e.11	e.07	e.13	26	1.9
3	.61	1.2	e.50	.23	.23	e.45	e.11	e.10	e.06	e.12	58	1.9
4	2.2	1.3	e.48	.23	.19	e.40	e.11	e.10	e.06	e.14	12	1.8
5	5.8	1.0	e.45	.21	.35	e.35	e.11	e.10	e.06	e.13	6.6	1.8
6	13	.98	e.42	.23	.32	e.30	e.11	e.09	e.05	e.12	4.4	1.8
7	8.8	.93	e.56	.23	.32	e.28	e.10	e.09	e.04	e.11	3.4	3.5
8	3.8	.87	e.49	.19	.32	e.26	e.10	e.09	e.04	e.10	2.7	9.0
9	3.3	.81	e.43	.21	.23	e.24	e.09	e.08	e.04	e.12	2.3	4.6
10	2.3	e.77	e.38	.21	e.23	e.23	e.10	e.08	e.03	e.12	2.3	5.4
11	1.8	e.74	e.35	.35	e.32	e.22	e.10	e.28	e.03	e.12	5.7	16
12	1.4	e.80	e.32	.26	e.31	e.21	e.09	e.23	e.04	e.12	28	7.3
13	1.1	e.98	e.29	.23	e.35	e.20	e.10	e.19	e.03	e.11	30	3.9
14	1.0	e.76	e.27	.23	e.32	e.20	e.09	e.16	e.03	e.12	8.0	3.0
15	.92	e.64	e.25	.23	e.26	e.19	e.09	e.14	e.04	.15	18	2.5
16	2.0	e.60	e.24	.21	e.23	e.19	e.09	e.13	e.09	.24	6.3	2.2
17	1.6	e.56	e.23	.23	e.50	e.18	e.08	e.11	e.15	.24	4.7	e2.1
18	1.2	e.53	e.22	.23	e13	e.18	e.08	e.09	e.14	.19	4.1	e2.0
19	1.1	e.52	e.21	3.1	e3.0	e.17	e.15	e.09	e.13	.19	3.3	e1.9
20	2.8	e2.5	e.20	.75	e1.0	e.17	e.39	e.08	e.13	.19	8.5	e1.7
21	2.6	e1.2	e.19	.47	e.70	e.17	e.23	e.08	e.14	.32	4.1	e1.5
22	4.9	e1.4	e.18	.39	e.64	e.16	e.20	e.07	e.13	.27	3.1	e1.4
23	3.1	e1.2	e.17	.29	e.70	e.15	e.17	e.07	e.13	.22	2.5	e1.3
24	2.5	e1.0	e.17	.29	e.60	e.15	e.14	e.07	e.16	9.0	2.2	e1.2
25	2.0	e.88	e.16	.32	e.70	e.14	e.12	e.07	e.15	4.8	2.1	e1.1
26	1.7	e.80	e.16	.29	e.60	e.14	e.11	e.07	e.15	12	2.0	e1.0
27	1.4	e1.0	e.16	.26	e.54	e.13	e.12	e.07	e.16	2.5	2.0	e1.0
28	1.2	e.80	e.15	.23	e.48	e.13	e.19	e.06	e.18	9.7	2.0	e1.0
29	1.1	e.70	e.15	.23	---	e.12	e.15	e.06	e.17	20	1.9	e.90
30	1.3	e.63	.14	.32	---	e.13	e.13	e.06	e.17	29	1.9	e.90
31	1.1	---	.14	.35	---	e.12	---	e.10	---	14	2.1	---
TOTAL	79.01	28.01	9.18	11.45	27.05	6.92	3.89	3.24	2.88	104.71	299.2	87.50
MEAN	2.55	.93	.30	.37	.97	.22	.13	.10	.096	3.38	9.65	2.92
MAX	13	2.5	.58	3.1	13	.54	.39	.28	.18	29	58	16
MIN	.52	.52	.14	.19	.19	.12	.08	.06	.03	.10	1.9	.90
AC-FT	157	56	18	23	54	14	7.7	6.4	5.7	208	593	174

CAL YR 1988 TOTAL 222.73 MEAN .61 MAX 22 MIN .03 AC-FT 442
WTR YR 1989 TOTAL 663.04 MEAN 1.82 MAX 58 MIN .03 AC-FT 1320

e Estimated

16805200 LAKE SUSUPE

LOCATION.--Lat 15°09'15" N., long 145°42'42" E., Hydrologic Unit 20100006, on west shore, at the end of Sugar Mill Road, 0.5 mi southeast from the Administration building, Northern Marianas Government.

PERIOD OF RECORD.--February 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

REMARKS.--Water-level records good, except for those estimated which are poor.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.89 ft, Dec. 4, 1986; lowest, 0.70 ft, June 13, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 12, 1978, reached a stage of 7.6 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Highest water level, 4.7 ft (estimated), about July 31; lowest, 1.87 ft, June 17.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.87	2.86	2.58	2.39	2.45	2.48	2.09	2.27	2.04	2.02	e4.50	2.87
2	3.03	2.82	2.59	2.41	2.46	2.45	2.08	2.25	2.03	2.00	e4.40	2.85
3	3.06	2.79	2.57	2.40	2.45	2.44	2.08	2.24	2.04	1.98	e4.30	2.84
4	3.08	2.77	2.56	2.41	2.43	2.42	2.07	2.23	2.07	2.03	e4.20	2.84
5	e3.30	2.75	2.54	2.40	2.49	2.41	2.05	2.25	2.07	2.01	4.14	2.81
6	e3.50	2.75	2.53	2.41	2.52	2.40	2.03	2.24	2.05	2.00	4.05	2.81
7	e3.40	2.72	2.53	2.42	2.54	2.39	2.02	2.23	2.03	2.00	3.95	2.84
8	e3.30	2.68	2.57	2.41	2.53	2.39	2.01	2.22	2.01	1.99	3.84	2.91
9	e3.30	2.66	2.59	2.42	2.52	2.38	1.99	2.20	1.99	1.98	3.73	3.03
10	e3.20	2.64	2.57	2.42	2.53	2.38	2.02	2.22	1.97	1.97	3.64	3.06
11	e3.20	2.63	2.56	2.46	2.59	2.37	2.01	2.21	1.95	1.98	3.61	3.17
12	e3.20	2.60	2.54	2.48	2.70	2.35	1.98	2.22	1.94	1.98	3.72	3.26
13	3.14	2.58	2.52	2.48	2.79	2.33	1.99	2.21	1.93	1.98	4.12	3.23
14	3.09	2.55	2.51	2.47	2.76	2.32	1.98	2.22	1.91	1.98	4.13	3.18
15	3.05	2.53	2.49	2.46	2.73	2.29	1.97	2.21	1.89	1.99	4.04	3.13
16	3.07	2.51	2.48	2.46	2.71	2.27	1.95	2.22	1.88	2.06	3.96	3.08
17	3.08	2.49	e2.40	2.47	2.69	2.25	1.93	2.23	1.87	2.12	3.86	3.04
18	3.08	2.47	e2.40	2.51	2.68	2.23	1.91	2.22	1.89	2.13	3.78	2.97
19	2.98	2.49	e2.40	2.56	2.67	2.21	1.90	2.22	1.88	2.13	3.66	2.92
20	2.94	2.70	e2.40	2.60	2.65	2.19	1.98	2.23	1.89	2.13	3.56	2.88
21	2.93	2.74	e2.40	2.59	2.63	2.19	2.08	2.23	1.91	2.16	3.46	2.84
22	2.97	2.75	e2.40	2.57	2.59	2.18	2.17	2.23	1.90	2.22	3.36	2.82
23	3.01	2.75	e2.40	2.55	2.58	2.18	2.21	2.23	1.92	2.24	3.25	2.78
24	3.02	2.74	e2.40	2.53	2.55	2.18	2.22	2.21	1.93	2.25	3.18	2.75
25	3.00	2.72	e2.40	2.53	2.53	2.17	2.25	2.18	1.97	2.29	3.09	2.73
26	2.97	2.69	e2.40	2.52	2.50	2.16	2.30	2.16	2.01	2.43	3.03	2.68
27	2.94	2.68	e2.40	2.50	2.50	2.16	2.29	e2.20	2.00	e2.70	2.94	2.66
28	2.95	2.66	e2.40	2.49	2.49	2.15	2.30	e2.20	2.03	e2.90	2.88	2.66
29	2.92	2.64	e2.40	2.48	---	2.13	2.30	e2.10	2.04	e3.80	2.85	2.64
30	2.90	2.61	2.40	2.45	---	2.11	2.28	e2.10	2.03	e4.60	2.84	2.61
31	2.90	---	2.40	2.45	---	2.10	---	2.03	---	e4.70	2.87	---
TOTAL	95.38	79.97	76.73	76.70	72.26	70.66	62.44	68.41	59.07	72.75	112.94	86.89
MEAN	3.08	2.67	2.48	2.47	2.58	2.28	2.08	2.21	1.97	2.35	3.64	2.90
MAX	3.50	2.86	2.59	2.60	2.79	2.48	2.30	2.27	2.07	4.70	4.50	3.26
MIN	2.87	2.47	2.40	2.39	2.43	2.10	1.90	2.03	1.87	1.97	2.84	2.61

CAL YR 1988 TOTAL 778.86 MEAN 2.13 MAX 3.50 MIN 1.11
WTR YR 1989 TOTAL 934.20 MEAN 2.56 MAX 4.70 MIN 1.87

e Estimated

16847000 IMONG RIVER NEAR AGAT

LOCATION.--Lat 13°20'17" N., long 144°41'55" E., Hydrologic Unit 20100003, on left bank 500 ft upstream from Fena Valley Reservoir, 1.4 mi south of Fena Dam spillway, and 4.1 mi southeast of Agat School.

DRAINAGE AREA.--1.95 mi^2.

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

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorders and concrete control. Elevation of gage is 120 ft, from topographic map.

REMARKS.--Records good. No diversion upstream.

AVERAGE DISCHARGE.--28 years (water years 1961-70, 1972-89), 9.86 ft^3/s (7,140 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft^3/s, Sept. 27, 1978, gage height, 11.3 ft, from outside floodmarks, and from rating curve extended above 58 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.37 ft^3/s,May 21, 22, 26, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 28	1600	1,470	5.58	Aug. 3	0300	*2,220	6.91

Minimum discharge, 2.2 ft^3/s, June 8, 11-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	11	5.5	3.7	2.8	3.9	3.3	4.5	3.2	3.0	41	5.1
2	12	9.5	5.3	3.9	2.7	5.5	2.9	4.0	3.0	2.8	13	5.0
3	16	8.6	5.3	3.6	2.7	4.0	2.9	3.6	3.2	3.1	101	5.1
4	11	8.8	5.1	3.4	2.7	3.9	2.9	3.4	2.8	3.2	13	5.1
5	39	12	8.7	3.4	2.8	3.8	2.8	3.1	2.6	9.7	16	6.3
6	19	8.7	5.6	3.5	2.7	3.7	2.8	3.3	2.4	4.0	9.3	29
7	13	7.5	5.8	3.4	2.7	3.4	2.8	3.0	2.3	3.1	8.6	10
8	11	8.0	6.0	3.7	2.7	3.4	2.7	3.0	2.2	3.0	11	8.8
9	9.9	8.2	5.2	3.4	2.7	3.3	2.8	3.1	2.5	2.9	16	50
10	9.8	7.1	5.0	3.3	2.6	3.3	2.7	2.9	2.3	2.7	12	40
11	8.7	7.9	5.0	4.8	2.7	3.1	2.7	2.8	2.2	2.6	11	28
12	8.2	8.6	4.7	4.7	2.7	3.1	3.0	2.7	2.2	2.7	9.0	40
13	7.8	9.9	4.6	3.5	2.9	3.1	2.8	2.7	2.2	2.5	64	17
14	7.7	7.6	4.6	3.7	2.7	3.1	2.8	3.6	2.2	2.5	23	32
15	8.1	6.9	4.6	5.2	2.5	3.0	2.8	2.9	2.2	21	58	13
16	13	6.5	4.7	4.2	3.0	3.0	2.7	2.7	2.2	7.6	25	11
17	11	6.2	4.4	4.0	8.6	3.1	2.7	2.6	17	4.6	15	10
18	14	6.2	4.4	3.6	118	3.0	2.8	2.6	4.1	3.8	15	57
19	9.7	6.9	4.3	3.7	11	2.9	4.4	2.6	2.9	3.2	11	14
20	9.7	6.5	4.5	3.2	6.3	2.9	31	2.5	7.8	3.9	17	10
21	8.4	6.3	4.5	3.1	5.2	2.9	67	2.5	4.5	10	8.5	11
22	14	12	4.3	18	6.5	2.9	16	2.5	3.1	5.4	7.4	9.7
23	8.6	7.6	4.1	7.6	5.2	2.8	7.1	2.6	2.8	4.3	6.7	9.5
24	10	6.4	4.1	4.3	5.9	2.8	5.5	2.4	2.7	3.8	21	9.3
25	52	5.9	4.0	3.7	6.6	2.7	5.1	2.3	5.0	5.3	7.2	8.0
26	15	9.5	3.9	3.4	4.8	2.7	4.5	2.5	7.8	6.3	6.2	8.0
27	13	8.1	3.9	3.1	4.4	3.9	6.8	2.3	10	4.2	6.0	8.4
28	10	6.7	3.7	3.2	4.0	3.0	72	2.7	7.0	16	6.3	8.1
29	28	6.4	3.7	3.0	---	2.9	13	2.7	4.4	15	5.7	7.5
30	17	5.8	3.7	3.0	---	3.1	5.9	2.4	3.3	16	11	7.1
31	14	---	4.1	2.9	---	3.0	---	5.0	---	27	5.4	---
TOTAL	478.6	237.3	147.3	131.2	230.1	101.2	289.2	91.5	122.1	205.2	580.3	483.0
MEAN	15.4	7.91	4.75	4.23	8.22	3.26	9.64	2.95	4.07	6.62	18.7	16.1
MAX	52	12	8.7	18	118	5.5	72	5.0	17	27	101	57
MIN	7.7	5.8	3.7	2.9	2.5	2.7	2.7	2.3	2.2	2.5	5.4	5.0
AC-FT	949	471	292	260	456	201	574	181	242	407	1150	958

CAL YR 1988 TOTAL 2766.1 MEAN 7.56 MAX 93 MIN 1.6 AC-FT 5490
WTR YR 1989 TOTAL 3097.0 MEAN 8.48 MAX 118 MIN 2.2 AC-FT 6140

16848100 ALMAGOSA RIVER NEAR AGAT

LOCATION.--Lat 13°20'43" N., long 144°41'36" E., Hydrologic Unit 20100003, on right bank 400 ft upstream from Fena Valley Reservoir, and 3.5 mi southeast of Agat.

DRAINAGE AREA.--1.32 mi^2.

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. Elevation of gage is 155 ft, from topographic map.

REMARKS.--Records fair. Up to 3.9 ft^3/s diverted upstream for domestic use.

AVERAGE DISCHARGE.--17 years, 5.87 ft^3/s (4,250 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,650 ft^3/s, Sept. 27, 1978, gage height, 7.78 ft, from rating curve extended above 46 ft^3/s on basis of slope-area measurement at gage height 7.32 ft; minimum, 0.13 ft^3/s, June 27, July 11, 12, 14, 16, 17, 1979, June 3-9, 1984, June 23, 24, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 3	0315	*810	*5.30	No other peak greater than base discharge.			

Minimum discharge, 0.76 ft^3/s, Feb. 10, 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	8.3	1.7	.93	.92	2.2	1.2	6.3	1.4	3.6	32	3.6
2	9.9	6.8	1.5	1.2	.87	2.5	1.0	4.6	1.3	3.0	22	3.4
3	13	5.6	1.4	.89	.83	2.4	1.0	3.5	1.3	2.7	72	3.4
4	11	5.9	1.4	.84	.83	2.3	.96	3.0	1.3	2.8	24	4.7
5	30	7.2	4.0	.83	.88	2.0	.94	2.6	1.3	6.6	20	5.2
6	18	4.7	1.8	.85	.85	1.8	.94	2.7	1.1	3.3	13	28
7	12	4.0	2.2	.83	.78	1.7	.97	2.1	1.1	3.0	11	9.6
8	8.2	3.7	1.8	.95	.77	1.7	.97	2.0	1.2	2.9	11	6.4
9	6.0	3.8	1.5	.84	.82	1.7	.90	2.0	1.3	3.1	14	43
10	5.0	2.8	1.5	.81	.76	1.6	.89	1.8	1.2	2.8	14	43
11	4.0	2.7	1.5	1.3	.94	1.6	.87	1.7	1.1	2.6	12	33
12	3.4	2.8	1.3	1.4	.87	1.5	1.0	1.7	1.1	2.7	10	39
13	3.0	3.9	1.3	.92	1.0	1.5	.93	1.6	1.1	2.6	42	20
14	3.0	2.3	1.2	.98	.87	1.5	1.1	2.4	1.3	2.7	27	18
15	2.8	1.9	1.2	1.6	.76	1.4	.97	1.8	1.2	9.7	42	12
16	4.9	1.7	1.3	1.4	.90	1.5	.90	1.6	1.4	4.8	e20	10
17	3.9	1.6	1.1	1.2	2.8	1.5	.92	1.5	9.2	3.5	e17	8.8
18	3.7	1.7	1.1	1.1	82	1.4	.90	1.5	2.4	3.1	e16	17
19	3.1	2.2	1.2	1.1	18	1.3	2.1	1.4	1.6	3.1	14	13
20	2.8	1.8	1.2	.91	8.1	1.3	20	1.3	6.0	3.8	15	9.4
21	3.0	1.8	1.1	.89	4.9	1.3	62	1.3	3.1	8.6	8.8	8.6
22	5.9	7.8	1.1	9.3	4.6	1.2	21	1.3	2.1	4.6	7.6	8.2
23	4.0	3.7	1.0	6.0	3.4	1.2	8.3	1.3	2.1	3.7	6.3	6.8
24	4.7	2.8	1.1	1.5	3.4	1.2	4.6	1.3	1.7	3.2	20	7.6
25	45	2.3	.98	1.3	3.6	1.2	3.2	1.2	4.4	6.1	8.2	5.8
26	21	2.3	.96	1.1	2.9	1.1	2.4	1.4	22	6.7	6.5	5.8
27	14	2.0	.99	1.1	2.6	1.7	3.0	1.3	17	3.5	5.8	5.7
28	8.6	2.2	.92	1.1	2.3	1.1	37	1.4	12	9.5	5.2	5.8
29	22	2.3	.91	1.0	---	1.0	26	1.4	7.0	13	4.6	5.1
30	14	1.8	.91	.95	---	1.1	11	1.3	4.6	19	7.7	4.8
31	11	---	1.1	.92	---	1.0	---	1.9	---	43	3.9	---
TOTAL	334.9	104.4	42.27	46.04	152.25	47.5	217.96	62.2	114.9	193.3	532.6	394.7
MEAN	10.8	3.48	1.36	1.49	5.44	1.53	7.27	2.01	3.83	6.24	17.2	13.2
MAX	45	8.3	4.0	9.3	82	2.5	62	6.3	22	43	72	43
MIN	2.8	1.6	.91	.81	.76	1.0	.87	1.2	1.1	2.6	3.9	3.4
AC-FT	664	207	84	91	302	94	432	123	228	383	1060	783

CAL YR 1988 TOTAL 1314.84 MEAN 3.59 MAX 49 MIN .18 AC-FT 2610
WTR YR 1989 TOTAL 2243.02 MEAN 6.15 MAX 82 MIN .76 AC-FT 4450

e Estimated

16848500 MAULAP RIVER NEAR AGAT

LOCATION.--Lat 13°21'14" N., long 144°41'44" E., Hydrologic Unit 20100003, on right bank 100 ft from Fena Valley Reservoir, and 3.2 mi southeast of Agat.

DRAINAGE AREA.--1.15 mi^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. Elevation of gage is 130 ft, from topographic map.

REMARKS.--Records good except for periods of estimated discharge which are fair. No diversion upstream.

AVERAGE DISCHARGE.--17 years, 5.12 ft^3/s (3,710 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft^3/s, Sept. 27, 1978, gage height, 9.2 ft, from rating curve extended above 23 ft^3/s, on basis of slope-area measurements at gage heights 8.21 ft and 9.2 ft; minimum, 0.31 ft^3/s, June 28 to July 1, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 3	unknown	*654	5.48	No other peak greater than base discharge.			

Minimum discharge, 0.97 ft^3/s, Apr. 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	5.4	2.9	1.8	1.5	2.1	1.6	3.0	1.9	2.9	e35	e3.7
2	5.8	5.0	2.7	2.0	1.7	2.6	1.3	2.7	1.8	2.5	e8.8	e3.6
3	5.7	5.2	2.6	1.7	1.6	2.4	1.3	2.6	1.9	2.2	e38	e3.5
4	4.4	6.1	2.6	1.7	1.6	2.4	1.2	2.5	2.0	2.7	e9.0	e3.4
5	15	8.7	7.1	1.6	1.7	2.1	1.2	2.2	1.9	6.1	e10	e5.4
6	11	5.6	3.2	1.7	1.7	2.0	1.2	2.4	1.6	2.7	e7.5	e30
7	5.8	5.0	4.6	1.6	1.6	1.9	1.3	2.1	1.7	2.5	e6.0	e9.0
8	5.3	5.2	3.5	1.9	1.5	1.8	1.2	2.0	1.7	2.4	e7.0	e6.0
9	4.9	4.8	3.0	1.7	1.4	1.8	1.2	2.1	1.8	2.2	e11	e49
10	4.4	4.2	2.8	1.6	1.4	1.8	1.1	1.8	1.7	2.0	e9.0	e48
11	4.0	4.2	2.7	2.2	1.4	1.7	1.1	1.8	1.7	1.9	e8.0	e36
12	3.9	4.6	2.5	2.1	3.0	1.6	1.2	1.8	1.7	2.2	e7.0	e45
13	4.0	4.9	2.4	1.7	2.8	1.6	1.1	1.8	1.8	e1.9	e46	e22
14	6.8	3.9	2.4	1.8	1.9	1.5	1.3	2.6	1.6	e3.0	e16	e18
15	4.7	3.7	2.4	2.2	1.6	1.5	1.3	1.9	1.2	e10	e44	e10
16	12	3.6	2.4	2.2	1.7	1.5	1.1	1.7	1.5	e5.4	e12	e8.0
17	5.2	3.7	2.3	2.0	5.0	1.6	1.2	1.5	9.1	e3.2	e9.6	e6.6
18	4.9	4.1	2.3	1.7	50	1.5	1.2	1.5	2.2	e2.5	e9.2	e15
19	4.2	4.3	2.6	1.9	5.9	1.4	2.5	1.5	1.7	e2.4	12	e10
20	3.8	3.7	2.3	1.6	3.8	1.4	16	1.4	8.4	e2.5	16	e7.6
21	4.7	4.0	2.3	1.6	3.0	1.4	31	1.4	3.5	e6.0	6.1	e7.0
22	6.9	13	2.2	10	3.7	1.4	6.6	1.4	2.2	e3.9	5.5	e6.2
23	4.3	4.6	2.1	3.1	2.9	1.4	3.7	1.6	2.1	e2.9	5.0	e5.8
24	5.8	3.9	2.1	2.0	3.0	1.4	2.8	1.4	1.8	e2.6	21	e6.2
25	44	3.6	2.0	1.9	3.8	1.4	2.8	1.4	5.6	e3.3	4.8	e4.8
26	7.6	3.5	1.9	1.7	2.5	1.4	2.3	1.6	23	e4.4	4.5	e4.7
27	8.0	4.0	1.9	1.6	2.3	1.7	2.8	1.4	12	e2.9	4.5	e4.7
28	5.7	3.9	1.8	1.7	2.2	1.4	19	1.5	6.4	e12	4.4	e4.8
29	23	4.9	1.8	1.6	---	1.3	6.1	1.7	4.3	e9.3	4.3	e4.3
30	6.9	3.1	1.8	1.6	---	1.4	3.7	1.6	3.3	e11	10	e4.0
31	6.4	---	1.9	1.6	---	1.4	---	2.2	---	e20	e6.0	---
TOTAL	259.1	144.4	81.1	65.1	116.2	51.8	121.4	58.1	113.1	141.5	397.2	392.3
MEAN	8.36	4.81	2.62	2.10	4.15	1.67	4.05	1.87	3.77	4.56	12.8	13.1
MAX	44	13	7.1	10	50	2.6	31	3.0	23	20	46	49
MIN	3.8	3.1	1.8	1.6	1.4	1.3	1.1	1.4	1.2	1.9	4.3	3.4
AC-FT	514	286	161	129	230	103	241	115	224	281	788	778

CAL YR 1988 TOTAL 1340.39 MEAN 3.66 MAX 62 MIN .49 AC-FT 2660
WTR YR 1989 TOTAL 1941.3 MEAN 5.32 MAX 50 MIN 1.1 AC-FT 3850

e Estimated

16849000 FENA DAM SPILLWAY NEAR AGAT

LOCATION.--Lat 13°21'28" N., long 144°42'12" E., Hydrologic Unit 20100003, on left bank 3.5 mi southeast of Agat and 5.8 mi southwest of Yona.

DRAINAGE AREA.--5.88 mi^2.

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 above mean sea level (from U.S. Navy construction plans).

REMARKS.--Gage-height records good, except for estimated daily gage-heights which are fair. About 14 ft^3/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 ft^3/s (12,970 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined, occurred Oct. 15, 1953 (gage height, at least 4.5 ft); no flow for many days each year. Minimum recorded gage height, -21.86 ft, Aug. 4, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 1.37 ft, Aug. 3; minimum, -6.48 ft, Apr. 20.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.13	.02	e-1.34	-3.16	-1.18	-4.36	-.88	-3.19	-3.10	.22	.06
2	.14	.11	-.03	e-1.42	-3.27	-1.22	-4.49	-.88	-3.26	-3.15	.24	.04
3	.13	.08	-.07	e-1.49	-3.38	-1.30	-4.61	-.88	-3.34	-3.22	.60	.03
4	.13	.08	-.13	e-1.54	-3.49	-1.31	-4.75	-.88	-3.43	-3.26	.24	.07
5	.29	.14	-.05	-1.65	-3.59	-1.34	-4.87	-.94	-3.52	-3.14	.21	.08
6	.22	.11	-.04	-1.74	-3.69	-1.43	-5.01	-.97	-3.63	-3.08	.13	.31
7	.17	.06	-.04	-1.82	-3.83	-1.53	-5.12	-1.01	-3.74	-3.12	.10	.14
8	.12	.03	-.02	-1.89	-3.93	-1.62	-5.24	-1.08	-3.85	-3.17	.12	.09
9	.10	.04	-.06	-1.96	-4.04	-1.73	-5.37	-1.15	-3.94	-3.23	.18	.52
10	.08	.02	-.08	-2.05	-4.14	-1.83	-5.49	-1.23	-4.04	-3.30	.14	.48
11	.07	.01	-.12	-2.09	-4.26	-1.94	-5.63	-1.32	-4.15	-3.36	.12	.38
12	e.06	.03	-.16	-2.11	-4.35	-2.06	-5.73	-1.41	-4.28	-3.39	.09	.43
13	e.10	.05	-.22	-2.17	-4.39	-2.16	-5.85	-1.49	-4.38	-3.43	.45	.23
14	e.09	.04	-.26	-2.25	-4.47	-2.27	-5.96	-1.55	-4.46	-3.56	.30	.27
15	e.09	.01	-.31	-2.29	-4.58	-2.37	-6.05	-1.58	-4.57	-3.42	.47	.16
16	e.09	.00	-.35	-2.34	-4.68	-2.50	-6.16	-1.66	-4.65	-3.15	.38	.13
17	.09	.00	-.39	-2.38	-4.68	-2.64	-6.28	-1.76	-4.37	-3.12	.20	.12
18	.07	.02	-.45	-2.46	-2.27	-2.75	-6.38	-1.86	-4.22	-3.14	.18	e.53
19	.07	.04	-.49	-2.57	-1.15	-2.87	-6.43	-1.96	-4.28	-3.18	.19	.24
20	.03	.02	-.54	-2.65	-1.04	-2.99	-6.25	-2.07	-4.16	-3.21	.26	.14
21	.04	-.01	-.58	-2.74	-1.05	-3.11	-4.21	-2.18	-4.04	-3.03	.17	.12
22	.09	.08	-.65	-2.75	-1.02	-3.22	-3.05	-2.27	-4.08	-2.95	.11	.14
23	.06	.12	-.71	-2.31	-.98	-3.34	-2.95	-2.37	-4.15	-2.94	.10	.12
24	.08	.05	-.78	-2.36	-.99	-3.45	-2.95	-2.47	-4.24	-2.98	.25	.12
25	.46	.00	-.84	-2.44	-.95	-3.57	-2.96	-2.62	-4.27	-3.00	.09	.10
26	.26	-.01	-.92	-2.58	-.99	-3.70	-2.99	-2.73	-3.94	-2.68	.06	.09
27	.19	.02	e-.96	-2.67	-1.04	-3.80	-2.97	-2.82	-3.53	-2.66	.05	.09
28	.14	.04	e-1.04	-2.76	-1.11	-3.93	-2.59	-2.92	-3.19	-2.37	.06	.09
29	.31	.04	e-1.12	-2.85	---	-4.04	-1.13	-2.98	-3.08	-2.06	.05	.08
30	.20	.03	e-1.18	-2.95	---	-4.15	-.93	-3.08	-3.08	-1.53	.15	.06
31	.16	---	e-1.27	-3.05	---	-4.27	---	-3.11	---	-.37	.06	---
TOTAL	4.49	1.38	-13.84	-69.67	-80.52	-79.62	-136.76	-56.11	-117.06	-91.30	5.97	5.46
MEAN	.14	.05	-.45	-2.25	-2.88	-2.57	-4.56	-1.81	-3.90	-2.95	.19	.18
MAX	.46	.14	.02	-1.34	-.95	-1.18	-.93	-.88	-3.08	-.37	.60	.53
MIN	.03	-.01	-1.27	-3.05	-4.68	-4.27	-6.43	-3.11	-4.65	-3.56	.05	.03

CAL YR 1988 TOTAL -1440.57 MEAN -3.94 MAX .50 MIN -12.99
WTR YR 1989 TOTAL -627.58 MEAN -1.72 MAX .60 MIN -6.43

e Estimated

16854500 UGUM RIVER ABOVE TALOFOFO FALLS, NEAR TALOFOFO

LOCATION.--Lat 13°19'16" N., long 144°44'01" E., Hydrologic Unit 20100003, about 300 ft upstream from Talofofo Falls, 0.9 mi north of NASA Tracking Station, and 3.5 mi southwest of main intersection in Talofofo village.

DRAINAGE AREA.--5.76 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 130 ft, from topographic map.

REMARKS.--Records good. No diversion upstream.

AVERAGE DISCHARGE.--12 years, 24.6 ft^3/s (17,810 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,890 ft^3/s, Feb. 26, 1980, gage height, 14.2 ft, from flood-marks, from rating curve extended above 350 ft^3/s on basis of slope-area measurement at gage height 14.2 ft; minimum, 3.4 ft^3/s, June 27, 1978, July 14, 18, 19, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges, greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 18	0400	2,120	8.88	Sep. 12	0015	1,610	7.85
Aug. 3	0415	*2,720	*9.92				

Minimum discharge, 7.7 ft^3/s, Feb. 6-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	28	14	9.6	8.2	14	11	22	13	13	76	26
2	35	25	14	9.9	7.9	20	11	20	12	12	44	24
3	31	25	13	9.6	7.8	14	11	18	14	12	259	28
4	30	24	13	9.4	7.8	14	11	18	12	16	51	25
5	96	32	18	9.3	8.0	14	11	16	11	18	62	37
6	48	24	14	9.0	7.7	13	11	16	11	15	34	118
7	35	22	15	8.6	7.7	13	11	15	11	14	30	39
8	30	22	16	9.6	7.7	13	11	15	11	15	36	35
9	26	21	13	9.6	7.7	13	11	16	11	14	55	140
10	25	20	13	8.8	7.8	13	10	14	11	13	39	88
11	23	20	13	12	7.8	13	11	14	11	12	44	77
12	22	24	12	10	9.7	13	11	13	11	12	33	184
13	21	22	12	9.3	18	12	11	13	11	12	197	55
14	22	19	11	10	14	12	11	17	11	12	85	67
15	24	21	11	12	10	12	11	14	13	21	186	42
16	38	19	11	11	10	12	10	13	13	21	78	38
17	36	19	11	11	37	12	10	13	52	14	52	34
18	31	19	11	9.2	396	12	10	13	17	13	81	85
19	23	19	11	10	44	12	12	13	13	12	52	41
20	40	19	12	9.7	25	11	85	12	19	13	48	33
21	28	18	12	8.9	19	11	190	12	19	21	36	41
22	36	17	11	37	20	11	52	12	13	22	39	33
23	24	16	11	26	18	11	25	12	12	19	35	32
24	35	15	11	12	20	12	19	12	13	15	74	30
25	151	15	11	10	20	11	17	12	19	21	36	27
26	43	19	10	9.7	16	12	14	12	15	37	31	26
27	36	16	10	9.0	15	13	25	12	15	26	31	26
28	28	16	9.5	9.1	14	11	132	12	40	38	34	26
29	71	17	9.3	8.7	---	11	58	12	19	43	30	25
30	39	15	9.3	8.5	---	11	29	12	14	31	46	24
31	34	---	9.6	8.5	---	11	---	19	---	55	28	---
TOTAL	1305	608	371.7	345.0	791.8	387	852	444	467	612	1962	1506
MEAN	42.1	20.3	12.0	11.1	28.3	12.5	28.4	14.3	15.6	19.7	63.3	50.2
MAX	151	32	18	37	396	20	190	22	52	55	259	184
MIN	21	15	9.3	8.5	7.7	11	10	12	11	12	28	24
AC-FT	2590	1210	737	684	1570	768	1690	881	926	1210	3890	2990

CAL YR 1988 TOTAL 6990.6 MEAN 19.1 MAX 175 MIN 4.0 AC-FT 13870
WTR YR 1989 TOTAL 9651.5 MEAN 26.4 MAX 396 MIN 7.7 AC-FT 19140

16858000 YLIG RIVER NEAR YONA

LOCATION.--Lat 13°23'28" N., long 144°45'06" E., Hydrologic Unit 20100003, on right bank 2.2 mi upstream from mouth, 1.9 mi southwest of Yona, and 5.6 mi south of Agana.

DRAINAGE AREA.--6.48 mi^2.

PERIOD OF RECORD.--June 1952 to March 1986, April 1987 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, from topographic map.

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

AVERAGE DISCHARGE.--35 years, 27.8 ft^3/s (20,140 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft^3/s, Sep. 9, 1963, gage height, 19.77 ft, from flood-marks, from rating curve extended above 830 ft^3/s, on basis of slope-area measurements at gage heights 11.24 ft and 15.87 ft; maximum gage height, 22.80 ft, Feb. 26, 1980; minimum, 0.07 ft^3/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.--Peak discharge greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep. 9	1245	*1,810	*12.64				

Minimum discharge, 1.3 ft^3/s, Apr. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	36	13	4.6	2.7	6.5	3.4	13	4.8	9.3	50	16
2	60	31	12	5.0	2.6	7.5	3.1	12	5.2	8.0	34	15
3	62	26	11	4.8	2.4	6.7	2.5	11	5.9	7.7	144	14
4	33	24	11	4.4	2.2	9.4	2.5	10	5.3	17	56	13
5	58	33	14	4.1	2.4	7.4	2.4	9.2	6.3	32	41	26
6	183	41	20	3.7	2.4	6.1	2.1	8.4	5.2	19	31	124
7	51	26	17	3.7	2.2	5.6	2.1	7.9	4.7	15	28	24
8	42	35	14	4.0	2.1	5.3	2.1	7.6	4.2	18	25	20
9	38	25	11	4.1	2.2	5.0	1.8	9.2	8.2	14	71	427
10	34	23	10	3.6	2.2	4.9	1.7	6.9	8.1	11	33	386
11	29	21	10	4.5	2.8	5.0	1.5	6.4	5.6	11	39	97
12	27	28	10	6.1	4.2	4.3	1.4	6.1	5.7	11	28	111
13	34	21	8.8	4.5	4.5	4.0	2.1	5.7	4.9	13	251	56
14	32	18	8.2	4.7	6.6	3.8	1.9	10	4.6	11	68	148
15	26	17	7.9	6.3	3.0	3.8	2.5	9.2	4.6	14	251	42
16	96	15	7.7	5.9	2.6	3.7	2.2	6.9	48	14	98	36
17	44	15	7.4	6.8	16	4.0	1.7	6.1	149	13	66	31
18	34	15	7.0	4.6	323	3.7	1.8	5.5	23	18	49	28
19	29	28	7.9	4.8	25	3.5	3.6	5.8	15	19	82	25
20	25	15	6.9	4.9	15	3.3	40	5.1	20	30	47	22
21	24	24	7.8	3.9	11	3.3	239	4.8	20	47	35	21
22	31	49	7.0	11	14	3.6	32	4.6	12	37	33	20
23	23	26	6.2	12	13	3.3	17	5.1	11	22	29	19
24	22	32	5.8	5.6	11	2.9	13	4.8	9.5	18	44	28
25	139	20	5.8	5.3	13	2.9	11	4.3	11	19	26	19
26	35	17	5.3	4.4	9.3	2.7	9.4	6.2	9.3	33	22	16
27	30	18	5.0	3.8	7.9	3.0	12	5.0	13	72	21	15
28	47	16	4.6	3.7	7.1	2.9	64	4.8	23	86	22	15
29	176	16	4.5	3.9	---	2.6	26	15	13	101	19	13
30	43	14	4.3	3.1	---	2.5	16	7.3	10	111	21	12
31	60	---	4.4	3.1	---	2.9	---	5.6	---	158	16	---
TOTAL	1674	725	275.5	154.9	512.4	136.1	521.8	229.5	470.1	1009.0	1780	1839
MEAN	54.0	24.2	8.89	5.00	18.3	4.39	17.4	7.40	15.7	32.5	57.4	61.3
MAX	183	49	20	12	323	9.4	239	15	149	158	251	427
MIN	22	14	4.3	3.1	2.1	2.5	1.4	4.3	4.2	7.7	16	12
AC-FT	3320	1440	546	307	1020	270	1030	455	932	2000	3530	3650

CAL YR 1988 TOTAL 6530.51 MEAN 17.8 MAX 537 MIN .52 AC-FT 12950
WTR YR 1989 TOTAL 9327.3 MEAN 25.6 MAX 427 MIN 1.4 AC-FT 18500

16890600 DIONGRADID RIVER, BABELTHUAP

LOCATION.--Lat 07°36'04" N., long 134°35'02" E., Hydrologic Unit 20100006, on right bank 0.3 mi upstream from left-bank tributary, 0.9 mi southeast of Ngetbong village school, and 2.4 mi upstream from confluence with Ngerchetang River.

DRAINAGE AREA.--4.45 mi^2.

PERIOD OF RECORD.--October 1969 to current year. Prior to October 1980, published as Adeiddo River.

REVISED RECORDS.--WDR HI-75-1: 1970(M), 1972-73(P). WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 15 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--20 years, 32.0 ft^3/s (23,160 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,310 ft^3/s, Jan. 22, 1975, gage height, 15.44 ft, from rating curve extended above 410 ft^3/s on basis of field estimate at gage height 15.44 ft; minimum, 2.1 ft^3/s, Apr. 14-17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
July 26	0130	*769	*8.13	No other peak greater than base discharge.			

Minimum discharge recorded, 11.0 ft^3/s, Apr. 6, but may have been lower during period of no gage-height record, Apr. 7-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e34	40	16	e26	e22	e27	e12	e19	e50	34	44	e75
2	e32	49	19	e24	e20	e21	e12	e26	e52	39	30	e58
3	e32	46	32	e23	e21	e19	e12	e15	e41	71	26	e52
4	e31	41	20	e23	e50	e19	e12	e21	e47	102	e23	e68
5	e30	79	16	e22	e30	e37	e13	e18	e58	56	e23	e58
6	e28	97	16	e22	e26	e30	e13	e15	e55	64	e23	e52
7	e31	76	20	e21	e25	e16	e11	e19	e43	96	e22	e47
8	e28	61	16	e19	e22	e17	e11	e18	e58	65	e22	e43
9	e26	56	37	e19	e22	e17	e11	e16	e55	58	e22	e40
10	e40	51	33	e18	e21	e20	e11	e16	e59	92	e21	e41
11	e29	47	40	e18	e21	e19	e31	e16	e46	75	e21	e38
12	e33	43	27	e17	e19	e16	e23	e15	e41	62	e20	e34
13	e40	39	43	e17	e19	e17	e33	e27	e46	70	e19	e31
14	e41	36	26	e17	e34	e19	e24	e38	e40	66	e19	e29
15	e35	33	23	e16	e37	e19	e19	e39	e36	56	e18	e28
16	e31	32	22	e16	e23	e15	e18	e89	e28	58	e18	e27
17	e36	33	23	e15	e21	e13	e29	55	e30	53	e37	e26
18	e58	29	22	e21	e20	e13	e25	41	e36	50	e37	e25
19	30	29	24	e25	e20	e13	e23	47	e33	45	e62	e23
20	27	25	44	e19	e21	e13	e22	38	e32	45	e40	e22
21	83	23	30	e18	e41	e13	e25	41	e39	43	e46	e21
22	77	26	63	e17	e23	e44	e21	107	38	43	e34	e28
23	59	32	36	e16	e25	e18	e18	77	50	43	e31	e21
24	85	23	32	e20	e20	e14	e16	94	36	37	e30	e21
25	61	20	30	e28	e19	e18	e16	67	32	38	e45	e19
26	54	19	42	e31	e18	e15	e16	62	34	124	e32	19
27	55	19	e29	e20	e19	e14	e15	56	31	52	e31	20
28	57	19	e27	e16	e34	e18	e14	52	31	42	e64	28
29	61	18	e25	e42	---	e18	e16	45	48	39	e41	32
30	47	16	e25	e29	---	e14	e14	41	52	36	e52	24
31	42	---	e26	e25	---	e13	---	38	---	37	e71	---
TOTAL	1353	1157	884	660	693	579	536	1268	1277	1791	1024	1050
MEAN	43.6	38.6	28.5	21.3	24.7	18.7	17.9	40.9	42.6	57.8	33.0	35.0
MAX	85	97	63	42	50	44	33	107	59	124	71	75
MIN	26	16	16	15	18	13	11	15	28	34	18	19
AC-FT	2680	2290	1750	1310	1370	1150	1060	2520	2530	3550	2030	2080

CAL YR 1988 TOTAL 10046.8 MEAN 27.5 MAX 160 MIN 4.6 AC-FT 19930
WTR YR 1989 TOTAL 12272 MEAN 33.6 MAX 124 MIN 11 AC-FT 24340

e Estimated

16890600 DIONGRADID RIVER, BABELTHUAP--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979-82, 1984-86, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 25...	1115	59	7.2	24.5	18	3.5	2.2	3.3	29	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 25...	0.10	20	<1.0	3.9	<0.10	16	<0.100	100	6

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

16890900 TABECHEDING RIVER, BABELTHUAP

LOCATION.--Lat 07°27'03" N., long 134°31'29" E., Hydrologic Unit 20100006, on left bank 0.2 mi downstream from waterfall, 1.5 mi upstream from boat landing, and 1.6 mi east of forestry station.

DRAINAGE AREA.--6.07 mi^2.

PERIOD OF RECORD.--October 1970 to current year. Prior to October 1980, published as Tabagaten River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--19 years, 48.2 ft^3/s (34,920 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,580 ft^3/s, Dec. 23, 1973, gage height, 8.79 ft, from rating curve extended above 290 ft^3/s; minimum, 0.57 ft^3/s, Apr. 19, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 5	2230	930	5.90	Feb. 21	0100	1,140	6.42
Dec. 26	1200	*1,160	*6.45				

Minimum discharge, 13 ft^3/s, Sep. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	54	17	72	28	68	22	21	e68	59	115	e41
2	27	75	27	41	23	56	20	20	e76	47	52	e54
3	33	92	78	34	20	36	20	19	e64	53	42	e34
4	31	66	31	31	21	29	20	23	e60	102	36	e25
5	27	217	22	28	30	36	20	e200	e65	48	32	e27
6	25	275	19	38	23	51	81	e85	e60	46	30	e24
7	33	193	50	29	20	39	40	e52	e57	56	27	e21
8	25	121	25	29	18	34	42	e41	e70	42	27	e20
9	23	92	23	25	18	33	25	e38	e59	57	24	e19
10	46	73	41	23	20	71	26	e36	e54	76	34	e18
11	31	122	121	22	30	47	78	e36	e50	74	e25	e18
12	39	74	51	20	21	38	46	e50	e48	110	e22	e20
13	123	55	80	19	18	49	77	e54	e46	66	e20	e18
14	97	46	42	19	18	48	63	e58	e45	120	e18	e19
15	63	39	33	18	24	44	41	e80	e44	72	e17	e18
16	51	36	30	19	18	36	34	e290	e43	101	e21	e17
17	78	32	28	18	16	32	67	e110	e48	161	e28	e17
18	219	30	30	38	15	28	44	e63	e56	126	e40	e16
19	85	27	26	38	15	27	116	e91	e47	102	e200	16
20	64	24	73	19	31	25	54	e65	e42	82	e66	15
21	137	24	45	18	320	24	47	e58	e81	76	e75	15
22	206	29	231	17	58	30	40	e140	e63	58	e55	15
23	143	39	78	16	51	25	36	e70	68	50	e67	14
24	290	24	56	20	33	24	32	e290	50	45	e47	38
25	142	20	45	82	28	32	30	e130	43	49	e35	24
26	100	18	252	43	25	27	27	e88	43	79	e31	17
27	87	18	93	28	24	22	25	e70	34	77	e200	15
28	141	20	66	23	212	36	24	e58	30	51	e80	31
29	78	16	51	27	---	67	23	e55	160	45	e50	23
30	82	15	43	26	---	27	22	e50	86	37	e40	17
31	65	---	45	37	---	25	---	e60	---	39	e55	---
TOTAL	2625	1966	1852	917	1178	1166	1242	2501	1760	2206	1611	666
MEAN	84.7	65.5	59.7	29.6	42.1	37.6	41.4	80.7	58.7	71.2	52.0	22.2
MAX	290	275	252	82	320	71	116	290	160	161	200	54
MIN	23	15	17	16	15	22	20	19	30	37	17	14
AC-FT	5210	3900	3670	1820	2340	2310	2460	4960	3490	4380	3200	1320

CAL YR 1988 TOTAL 16451.2 MEAN 44.9 MAX 423 MIN 5.2 AC-FT 32630
WTR YR 1989 TOTAL 19690 MEAN 53.9 MAX 320 MIN 14 AC-FT 39060

e Estimated

16890900 TABECHEDING RIVER, BABELTHUAP--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979-82, 1984-86, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE LAB (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 27...	1355	60	7.6	24.5	21	3.6	2.9	3.9	28	0.4

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 27...	0.40	25	<1.0	3.4	0.10	18	<0.100	310	14

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

16891310 KMEKUMEL RIVER, BABELTHUAP

LOCATION.--Lat 07°23'14" N., long 134°32'42" E., Hydrologic Unit 20100006, 0.5 mi upstream from confluence with Edeng River and 1.1 mi north of Palau Mission Academy.

DRAINAGE AREA.--1.44 m^2.

PERIOD OF RECORD.--September 1978 to current year. Low-flow partial-record station operated "at mouth" 1970-78. Prior to October 1980, published as Kumekumeyel River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 96.44 ft, from stadia survey.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--11 years, 9.34 ft^3/s (6,770 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft^3/s, Apr. 13, 1979, gage height, 10.53 ft, from rating curve extended above 106 ft^3/s on basis of slope-area measurement at gage height 10.53 ft; minimum, 0.18 ft^3/s, Apr. 14-17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 450 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 11	0630	*647	*7.29	No other peak greater than base discharge.			

Minimum, 2.7 ft^3/s Sep. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6.3	12	5.2	9.5	5.0	8.6	e5.5	e6.5	e19	8.8	e23	e15
2	7.0	11	4.3	6.4	4.4	8.4	e5.2	e6.2	e22	7.5	e17	e17
3	e6.9	31	12	5.7	3.9	7.3	e4.9	e6.0	e14	7.3	e13	e12
4	e6.7	15	5.3	5.3	3.9	7.3	e4.9	e8.0	e15	12	e9.5	e9.3
5	7.0	48	4.3	5.2	6.0	7.5	e4.9	e50	e20	7.0	e8.3	e10
6	6.6	54	4.1	6.2	6.1	6.8	e20	e24	e18	6.6	e9.1	e9.1
7	6.6	39	13	5.7	5.2	6.2	e12	e14	e15	6.4	e7.2	e8.0
8	6.1	23	5.5	5.0	4.4	6.4	e9.1	e10	e21	5.9	e6.5	e7.0
9	6.1	18	7.3	4.6	5.2	6.2	e7.5	e9.4	e18	22	e6.2	e6.0
10	10	15	14	4.1	4.3	8.4	e6.7	e8.8	e14	15	e22	e5.3
11	6.6	71	27	3.7	e7.9	5.9	e15	e8.4	e12	6.2	e9.0	e5.0
12	6.2	20	11	3.9	4.4	5.2	e11	e10	e11	6.6	e7.0	e5.5
13	6.4	14	9.5	3.5	4.1	9.7	e14	e12	e14	7.7	e5.5	e4.8
14	e20	11	7.5	3.4	4.3	9.8	e10	e13	e12	15	e5.3	e5.4
15	4.6	9.7	6.6	3.9	4.4	6.4	e8.3	e15	e16	12	e5.1	e4.7
16	4.1	8.8	5.9	3.4	3.5	5.5	e7.0	e60	e12	9.9	e7.0	e4.0
17	3.9	8.8	6.8	3.4	3.7	5.3	e12	e20	e14	e14	e13	e3.4
18	e23	7.5	6.6	7.3	3.5	4.6	e9.0	e15	e21	e31	e15	e3.7
19	9.0	6.6	5.3	5.0	3.7	4.3	e25	e18	e16	e16	e50	4.4
20	7.0	6.1	11	3.2	4.4	4.3	e16	e16	e13	e14	e25	3.5
21	34	6.2	9.0	3.0	18	3.9	e14	e14	e25	e13	e35	3.4
22	35	5.7	59	3.4	10	3.9	e18	e22	e15	e12	e22	3.0
23	21	6.3	14	3.0	8.4	5.5	e14	e17	14	e11	e31	2.9
24	67	5.3	11	4.5	6.4	4.3	e12	e60	11	e9.3	e20	3.0
25	24	4.8	8.8	18	6.2	10	e10	e40	9.7	e8.7	e15	4.6
26	17	4.6	18	12	5.5	5.7	e9.0	e26	8.6	e11	e13	5.2
27	17	4.4	9.9	6.2	7.3	4.4	e8.2	e20	7.7	e13	e48	7.5
28	29	4.8	8.6	5.2	23	9.6	e7.7	e15	7.5	e8.5	e30	5.7
29	16	4.3	7.3	5.7	---	e13	e7.3	e11	13	e8.0	e20	5.2
30	14	4.3	6.8	5.0	---	e7.4	e7.0	e9.5	10	e7.7	e15	5.2
31	12	---	7.7	6.2	---	e6.0	---	e8.7	---	e14	e18	---
TOTAL	446.1	480.2	332.3	170.6	177.1	207.8	315.2	573.5	438.5	347.1	530.7	188.8
MEAN	14.4	16.0	10.7	5.50	6.32	6.70	10.5	18.5	14.6	11.2	17.1	6.29
MAX	67	71	59	18	23	13	25	60	25	31	50	17
MIN	3.9	4.3	4.1	3.0	3.5	3.9	4.9	6.0	7.5	5.9	5.1	2.9
AC-FT	885	952	659	338	351	412	625	1140	870	688	1050	374

CAL YR 1988 TOTAL 3755.1 MEAN 10.3 MAX 100 MIN 2.2 AC-FT 7450
WTR YR 1989 TOTAL 4207.9 MEAN 11.5 MAX 71 MIN 2.9 AC-FT 8350

e Estimated

16891310 KMEKUMEL RIVER, BABELTHUAP--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979-82, 1984-86, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 27...	1010	87	7.7	24.0	35	7.3	4.1	4.3	21	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 27...	0.30	38	<1.0	4.0	0.10	25	<0.100	160	8

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

16891400 SOUTH FORK NGERDORCH RIVER, BABELTHUAP

LOCATION.--Lat 07°26'19" N., long 134°34'28" E., Hydrologic Unit 20100006, on right bank 0.3 mi from left-bank tributary, 1.3 mi west of Rrai village, and 1.5 mi upstream from confluence with North Fork Ngerdorch River.

DRAINAGE AREA.--2.44 mi^2.

PERIOD OF RECORD.--March 1971 to current year. Prior to October 1980, published as South Fork Ngardok River.

REVISED RECORDS.--WDR HI-75-1: 1971(M), 1972, 1973(P), 1974. WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 25 ft, revised, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--18 years, 18.9 ft^3/s (13,690 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft^3/s, Dec. 13, 1974, gage height, 9.19 ft, from rating curve extended above 65 ft^3/s on basis of field estimate at gage height 7.57 ft; minimum, 0.48 ft^3/s, Apr. 16, 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 5	2130	800	4.04	May 16	1130	880	4.20
Feb. 21	0130	*976	*4.36	May 24	1330	780	4.00
May 5	0630	770	3.98	Aug. 27	2030	820	4.08

Minimum recorded discharge, 3.1 ft^3/s, Sep. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	21	7.0	e30	14	20	5.2	4.8	40	16	29	21
2	14	23	7.9	e20	9.6	15	4.1	4.8	45	12	12	28
3	15	27	14	e17	9.1	12	4.1	4.1	25	15	11	16
4	14	20	7.0	e15	8.6	10	4.1	6.6	27	23	9.1	15
5	15	121	6.1	e13	15	18	4.1	74	39	12	8.6	16
6	12	94	6.1	e14	11	14	42	13	35	10	11	14
7	12	58	7.5	e12	9.1	12	12	14	28	16	7.5	10
8	12	36	5.6	e11	8.0	8.6	8.6	20	42	12	7.5	9.1
9	12	29	5.2	e10	8.0	9.1	5.2	11	31	18	6.6	8.0
10	11	23	15	e9.1	10	15	4.8	10	25	36	43	7.5
11	9.1	65	30	e8.7	14	13	14	7.0	21	19	12	7.0
12	20	27	13	e8.2	9.1	9.6	11	22	19	20	9.1	8.0
13	27	20	15	e7.9	8.0	13	22	27	27	20	8.0	6.6
14	49	17	9.1	e7.7	8.0	16	14	29	23	31	6.6	7.5
15	20	16	9.6	e7.3	9.1	12	9.1	48	29	20	6.1	5.6
16	15	14	7.5	e7.1	7.5	9.1	7.5	135	20	27	8.6	5.2
17	23	14	9.1	e7.0	6.1	8.0	14	52	28	20	22	5.2
18	61	12	7.5	e20	5.6	6.6	9.6	35	43	59	29	4.5
19	26	10	6.6	e15	5.6	6.1	48	48	34	27	107	4.5
20	21	9.1	e17	e12	23	5.6	19	37	24	26	31	4.1
21	46	10	e14	e10	159	5.6	14	29	56	23	47	4.1
22	97	11	e100	e9.0	19	7.0	22	62	29	18	26	3.8
23	50	9.1	e46	e8.3	15	5.6	14	38	28	16	42	3.4
24	122	7.5	e27	e10	10	5.2	12	142	20	15	23	3.8
25	52	7.5	e22	e22	8.0	5.6	11	58	18	14	16	22
26	35	6.1	e50	e16	8.0	7.0	8.6	38	19	16	15	7.5
27	34	7.5	e37	e12	8.0	4.5	9.1	31	14	18	78	7.5
28	56	7.0	e30	9.1	79	8.0	7.5	26	15	13	41	7.0
29	30	5.6	e26	12	---	15	6.1	23	65	11	23	6.6
30	28	6.1	e23	12	---	5.2	6.1	20	21	10	20	4.8
31	20	---	e27	17	---	5.2	---	28	---	19	43	---
TOTAL	970.1	733.5	607.8	389.4	504.4	306.6	372.8	1097.3	890	612	758.7	273.3
MEAN	31.3	24.4	19.6	12.6	18.0	9.89	12.4	35.4	29.7	19.7	24.5	9.11
MAX	122	121	100	30	159	20	48	142	65	59	107	28
MIN	9.1	5.6	5.2	7.0	5.6	4.5	4.1	4.1	14	10	6.1	3.4
AC-FT	1920	1450	1210	772	1000	608	739	2180	1770	1210	1500	542

CAL YR 1988 TOTAL 6852.4 MEAN 18.7 MAX 186 MIN 2.6 AC-FT 13590
WTR YR 1989 TOTAL 7515.9 MEAN 20.6 MAX 159 MIN 3.4 AC-FT 14910

e Estimated

16891400 SOUTH FORK NGERDORCH RIVER, BABELTHUAP--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1980-82, 1984-86, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 26...	1300	46	7.2	26.0	15	2.9	2.0	3.0	29	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 26...	0.30	17	<1.0	3.2	<0.10	13	<0.100	130	5

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

16892000 QATLIW STREAM, YAP

LOCATION.--Lat 09°32'58" N., long 138°06'41" E., Hydrologic Unit 20100006, on right bank 90 ft below confluence with major tributary, 0.5 mi upstream from mouth, and 2.6 mi northwest of Colonia.

DRAINAGE AREA.--0.31 mi^2.

PERIOD OF RECORD.--January 1982 to September 1989 (discontinued).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 40 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--7 years (1983-89), 1.13 ft^3/s (819 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 874 ft^3/s, June 21, 1982, gage height, 5.96 ft, from rating curve extended above 10 ft^3/s; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 251 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 17	1900	269	3.74	Feb. 1	0915	280	3.80
Oct. 20	2300	460	4.60	Aug. 9	1215	*520	*4.84
Oct. 24	2000	324	4.02	Aug. 28	0900	292	3.86
Nov. 8	0115	292	3.86				

Minimum discharge, No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	.42	.04	.04	26	.01	.00	1.7	.09	.07	1.8	.91
2	.63	.24	.07	.03	1.3	.00	.00	.09	4.1	3.5	.36	4.9
3	.34	2.4	.26	.02	.15	.00	.00	.00	.41	1.0	.12	.57
4	.57	6.3	.07	.03	.04	.00	.00	.00	4.9	.35	.07	.35
5	3.1	4.9	.05	.07	14	.00	.00	.00	10	6.4	.04	14
6	3.0	2.6	.05	e.00	1.2	.00	.01	.00	13	4.1	.02	3.3
7	2.3	2.2	.04	e.00	.12	.00	.00	.00	2.1	12	1.9	6.3
8	10	17	.45	e.10	.03	.00	.00	.00	.93	1.2	6.1	1.1
9	2.6	.65	.21	e.00	.01	.00	.00	.00	.68	.29	30	.32
10	.70	.14	1.6	e.00	.72	.00	.00	.00	.18	1.3	4.0	.12
11	.39	2.0	1.5	e.00	.16	.00	.01	.00	.10	4.3	1.0	.06
12	.27	1.6	.12	e.00	.07	.00	1.0	.00	.05	1.5	.24	.05
13	.23	.24	.30	e.00	.01	.54	.06	.00	.03	.61	.08	.05
14	.27	.08	.14	e.00	.01	.16	.00	.05	.02	7.6	.06	.03
15	.34	.09	.08	e.00	.01	2.6	.00	25	.25	1.2	.05	.03
16	.34	.07	.04	e.00	.00	.71	.00	3.6	.23	.30	.04	.03
17	15	.28	.03	e.00	.00	.04	.01	.34	.06	.15	.09	.02
18	18	.13	.03	e.00	.01	.01	.00	.06	2.2	3.2	.87	.01
19	9.3	.05	.07	e.00	.00	.00	.00	.03	7.5	.86	10	.02
20	35	.04	.14	e.00	.00	2.1	.00	.02	.63	.25	1.1	.02
21	33	.04	2.3	e.01	.00	.25	.00	.08	.21	4.0	.27	.01
22	5.7	.03	13	e.02	.00	.09	.00	.06	.48	4.9	.29	.04
23	1.1	.03	1.0	e.03	.00	.04	.00	.04	.09	1.0	1.6	.03
24	15	.10	6.4	e.07	.00	.01	.00	.14	.06	.52	11	.04
25	3.6	.05	.61	e.12	.57	.03	.00	.26	2.9	.20	7.2	.03
26	.43	.05	.26	e.30	8.0	.00	.00	.06	1.1	.72	1.8	.02
27	.57	.11	.15	e.23	3.7	.00	.00	.25	.60	.21	3.2	.02
28	1.7	.30	.05	e.15	.12	.00	.00	1.9	.63	.22	17	2.9
29	.76	.15	.36	e.09	---	.00	.02	1.7	.52	.24	1.7	2.8
30	.41	.05	.28	e.05	---	.00	.00	.27	.16	2.3	6.0	2.6
31	.57	---	.06	1.3	---	.00	---	.08	---	6.6	1.2	---
TOTAL	167.62	42.34	29.76	2.66	56.23	6.59	1.11	35.73	54.21	71.09	109.20	40.68
MEAN	5.41	1.41	.96	.086	2.01	.21	.037	1.15	1.81	2.29	3.52	1.36
MAX	35	17	13	1.3	26	2.6	1.0	25	13	12	30	14
MIN	.23	.03	.03	.00	.00	.00	.00	.00	.02	.07	.02	.01
AC-FT	332	84	59	5.3	112	13	2.2	71	108	141	217	81

CAL YR 1988 TOTAL 400.53 MEAN 1.09 MAX 35 MIN .00 AC-FT 794
WTR YR 1989 TOTAL 617.22 MEAN 1.69 MAX 35 MIN .00 AC-FT 1220

e Estimated

16892400 QARINGEEL STREAM, YAP

LOCATION.--Lat 09°31'02" N., long 138°05'31" E., Hydrologic Unit 20100006, on right bank at Qaringeel and 0.3 mi southwest of Dalipeebinaew School.

DRAINAGE AREA.--0.24 mi^2.

PERIOD OF RECORD.--April 1968 to current year. Prior to October 1980, published as Aringel Stream.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 15 ft, from topographic map.

REMARKS.--Records fair. No diversion upstream.

AVERAGE DISCHARGE.--21 years, 1.08 ft^3/s (785 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 674 ft^3/s, July 13, 1981, gage height, 7.82 ft, from rating curve extended above 20 ft^3/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 20	unknown	*306	*5.67	May 15	0615	201	4.92
Oct 24	1945	235	5.20	Jun 5	0515	276	5.47
Feb 5	1115	225	5.12				

Minimum discharge, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	.36	.03	.03	19	.07	.01	.02	1.7	.03	e.15	e.50
2	.56	.85	.08	.02	.73	.04	.01	.02	2.9	1.1	e.16	e2.2
3	.23	2.3	.07	.02	.27	.03	.01	.01	.38	.78	e.09	e.30
4	4.0	3.6	.05	.01	.14	.02	.01	.01	5.8	1.6	e.09	e.20
5	1.4	2.9	.04	e.02	14	.01	.03	.01	13	3.2	e.08	e7.0
6	2.4	8.0	.03	e.02	.72	.01	.05	.01	5.2	1.5	e.03	e.80
7	1.2	1.5	.03	e.01	.25	.01	.03	.01	1.1	7.4	e2.0	e4.0
8	3.6	8.5	.03	e.05	.13	.01	.01	.01	.76	.82	e4.0	e.50
9	1.1	.50	.03	e.04	.07	.01	.01	.01	.69	.75	e28	e.25
10	.47	.23	1.2	e.03	.06	.01	.01	.01	.28	1.8	e5.0	.15
11	.30	2.6	1.2	e.02	.07	.02	.01	.01	.18	2.5	e.80	.09
12	.19	.52	.28	e.02	.04	.02	.40	.01	.10	2.9	e.29	.19
13	.13	.23	.17	e.02	.03	.47	.16	.02	.08	1.1	e.15	.16
14	6.2	.13	.10	e.02	.03	.25	.05	.97	.12	9.9	e.09	.08
15	.98	.09	.07	e.02	.03	3.8	.03	19	.72	e2.0	e.04	.06
16	1.1	.06	.04	e.01	.02	.83	.03	.48	.19	e.70	e.03	.05
17	e12	.15	.03	e.00	.02	.17	.03	.16	.12	e.15	e.20	.03
18	e12	.39	.04	e.00	.02	.08	.03	.06	5.8	e2.6	e.70	.03
19	e3.7	.16	.40	e.00	.01	.04	.02	.03	7.0	e.90	e7.0	.03
20	e13	.23	.21	e.00	.02	9.6	.02	.03	.50	e.40	e1.0	.04
21	e22	.38	6.6	e.00	.02	1.2	.02	.03	.25	e2.2	e.60	.03
22	2.3	.15	12	e.00	.01	1.4	.01	.37	.12	e1.0	e.40	.04
23	.66	.14	.84	e.01	.01	.62	.01	.11	.06	e.40	e1.5	.03
24	12	.11	1.1	e.06	.01	.24	.01	2.5	.03	e.25	e6.0	.04
25	1.8	.08	.65	e.20	.02	.11	.01	.51	.02	e.20	e4.0	.03
26	.43	.07	.36	e1.0	3.9	.05	.01	.19	.05	e.50	e.90	.02
27	.24	.04	.21	e.14	1.5	.03	.00	.11	.04	e.25	e.90	.12
28	.38	.03	.05	e.07	.19	.03	.01	.10	.18	e.13	e12	4.4
29	.21	.03	.05	e.04	---	.03	.02	.09	.13	e.10	e1.0	6.3
30	.16	.03	.05	e2.0	---	.02	.02	.13	.04	e.54	e2.0	2.0
31	.28	---	.04	e2.2	---	.02	---	.06	---	e1.9	e.80	---
TOTAL	107.02	34.36	26.08	6.08	41.32	19.25	1.08	25.09	47.54	49.60	80.00	29.67
MEAN	3.45	1.15	.84	.20	1.48	.62	.036	.81	1.58	1.60	2.58	.99
MAX	22	8.5	12	2.2	19	9.6	.40	19	13	9.9	28	7.0
MIN	.13	.03	.03	.00	.01	.01	.00	.01	.02	.03	.03	.02
AC-FT	212	68	52	12	82	38	2.1	50	94	98	159	59

CAL YR 1988 TOTAL 341.83 MEAN .93 MAX 22 MIN .00 AC-FT 678
WTR YR 1989 TOTAL 467.09 MEAN 1.28 MAX 28 MIN .00 AC-FT 926

e Estimated

16892400 QARINGEEL STREAM, YAP--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979-82, 1984, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
SEP 30...	1100	78	7.5	26.0	32	4.2	5.3	4.1	22	0.3	0.10

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 30...	32	2.0	5.3	<0.10	17	58	0.08	<0.100	520	13

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

16893100 BURONG STREAM, YAP

LOCATION.--Lat 09°32'05" N., long 138°07'19" E., Hydrologic Unit 20100006, on left bank at Dugor, 0.25 mi upstream from mouth, and 0.5 mi northeast of Mount Gamuw.

DRAINAGE AREA.--0.23 mi^2.

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

REVISED RECORDS.--WDR HI-79-2: Drainage area, 1968-78(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 15 ft, from topographic map.

REMARKS.--Records up to 10.0 ft^3/s are good. Records greater than 10.0 ft^3/s are fair. No diversion upstream.

AVERAGE DISCHARGE.--21 years, 0.923 ft^3/s (669 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 550 ft^3/s, June 21, 1982, gage height, 5.45 ft, from rating curve extended above 15 ft^3/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 17	1930	214	4.15	Feb. 1	0915	170	3.90
Oct. 20	2330	*442	*5.09	May 15	0700	146	3.75
Oct. 24	2000	203	4.09	Aug. 9	1200	350	4.76
Nov. 8	0115	159	3.83	Aug. 28	0930	157	3.82

Minimum discharge, No flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	.23	e.04	.04	18	.09	.01	.65	.08	.09	1.5	.82
2	.70	.18	e.09	.03	1.0	.05	.00	.08	.17	1.1	.40	3.6
3	.34	.75	e.08	.02	.25	.03	.00	.02	.63	.46	.18	.62
4	.75	3.0	e.06	.02	.12	.02	.00	.01	1.9	.18	.18	.58
5	.50	2.8	e.05	.03	9.9	.02	.01	.01	.89	.62	.12	9.0
6	.80	1.8	.03	.03	.99	.01	.01	.01	6.2	1.9	.07	1.8
7	.60	1.7	.03	.02	.24	.01	.01	.00	1.5	9.1	2.4	5.9
8	4.7	12	.02	.08	.12	.00	.01	.00	.38	.95	5.4	.66
9	2.1	.68	.02	.05	.10	.00	.01	.00	.27	.30	26	.32
10	.47	.30	.08	.04	.07	.00	.00	.00	.13	.88	3.1	.22
11	.24	1.5	.26	.03	.04	.01	.00	.00	.09	1.1	.97	.14
12	.14	.62	.08	.03	.02	.03	.07	.00	.06	.59	.39	.17
13	.09	.28	.23	.03	.02	.39	.06	.00	.05	.26	.20	.18
14	.64	.16	.16	.03	.02	.24	.02	.85	.06	6.2	.13	.12
15	.40	e.12	.09	.03	.02	2.7	.01	19	.82	.90	.09	.10
16	.18	e.09	.06	.02	.01	.86	.01	.86	.80	.30	.07	.10
17	17	e.20	.04	.01	.01	.16	.01	.24	.26	.16	.26	.07
18	12	e.35	.04	.00	.01	.08	.02	.11	4.1	2.0	1.2	.06
19	6.1	e.21	.16	.00	.01	.06	.01	.07	8.0	.82	8.7	.05
20	18	e.28	.11	.00	.01	1.4	.00	.04	.62	.32	1.9	.04
21	29	e.34	2.2	.00	.00	.42	.00	.03	.25	3.6	.78	.05
22	2.9	e.20	8.9	.01	.00	.15	.00	.10	.39	1.9	.55	.06
23	.72	e.15	.89	.02	.00	.12	.00	.10	.16	.63	2.2	.07
24	11	e.12	5.1	.07	.00	.08	.00	.17	.09	.26	7.4	.08
25	2.9	e.10	.65	.32	.04	.06	.00	.12	.08	.18	5.2	.05
26	.57	e.08	.23	1.4	3.6	.05	.00	.08	.11	.37	1.5	.05
27	.28	e.05	.13	.19	2.8	.04	.00	.06	.07	.17	1.5	.09
28	.37	e.04	.09	.09	.23	.04	.00	.16	.77	.12	13	.11
29	.23	e.04	.11	.05	---	.03	.00	.39	.39	.10	1.3	.11
30	.16	e.04	.11	2.3	---	.03	.00	.18	.14	2.1	3.2	.10
31	.17	---	.06	2.4	---	.02	---	.12	---	5.3	1.0	---
TOTAL	116.35	28.41	20.20	7.39	37.63	7.20	0.27	23.46	29.46	42.96	90.89	25.32
MEAN	3.75	.95	.65	.24	1.34	.23	.009	.76	.98	1.39	2.93	.84
MAX	29	12	8.9	2.4	18	2.7	.07	19	8.0	9.1	26	9.0
MIN	.09	.04	.02	.00	.00	.00	.00	.00	.05	.09	.07	.04
AC-FT	231	56	40	15	75	14	.5	47	58	85	180	50

CAL YR 1988 TOTAL 274.48 MEAN .75 MAX 29 MIN .00 AC-FT 544
WTR YR 1989 TOTAL 429.54 MEAN 1.18 MAX 29 MIN .00 AC-FT 852

e Estimated

16893200 MUKONG STREAM, GAGIL-TAMIL

LOCATION.--Lat 09°32'05" N., long 138°10'18" E., Hydrologic Unit 20100006, on right bank 0.2 mi upstream from mouth and 0.9 mi south of U.S. Coast Guard LORAN station.

DRAINAGE AREA.--0.50 mi^2.

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. October 1978 to September 1989 (discontinued).

REVISED RECORDS.--WDR HI-79-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5 ft, from topographic map.

REMARKS.--Records good. At times some water is pumped from upstream for village use.

AVERAGE DISCHARGE.--13 years (water years 1976-78, 1979-89), 1.96 ft^3/s (1,420 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153 ft^3/s, June 21, 1982, gage height, 4.10 ft, from rating curve extended above 18 ft^3/s; minimum, 0.02 ft^3/s, May 17-23, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 14	2200	*69	*2.92	Aug. 9	1430	64	2.84
Feb. 1	1115	*69	2.91	Aug. 28	1145	60	2.77

Minimum discharge 0.19 ft^3/s, May 6-12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10	1.8	.82	.95	21	1.0	.37	.35	1.2	1.0	5.0	4.2
2	e3.8	1.8	1.2	.90	4.1	.89	.39	.30	2.7	3.7	4.5	5.7
3	e2.9	3.4	2.2	.82	2.1	.76	.38	.28	1.3	2.4	2.0	4.3
4	e11	5.6	1.2	.84	1.6	.69	.38	.26	6.2	3.2	1.6	3.9
5	4.4	5.4	1.0	1.2	11	.65	.60	.25	5.6	6.5	1.2	16
6	5.9	3.5	.95	.85	5.0	.60	.77	.21	5.4	9.5	1.3	6.3
7	19	2.6	.99	.76	3.1	.55	.70	.21	3.7	8.7	4.2	11
8	8.8	13	1.1	1.3	2.6	.54	.64	.22	2.3	3.4	4.8	4.2
9	4.4	3.4	.92	.82	2.3	.54	.49	.24	1.7	2.1	23	3.1
10	3.3	2.2	1.6	.72	3.2	.65	.44	.21	1.5	3.3	7.4	2.2
11	2.3	4.2	2.4	.64	1.9	1.4	.53	.20	1.2	2.1	4.0	1.9
12	1.9	3.7	1.1	.60	.99	1.1	1.1	.22	1.3	2.1	2.5	7.8
13	1.6	2.1	1.6	.56	.89	1.9	.63	.31	.93	1.6	1.8	3.6
14	1.6	1.7	1.0	.51	1.2	1.2	.46	1.2	.83	6.5	1.6	2.0
15	1.6	1.8	.87	.56	.90	2.4	.38	15	3.4	2.8	1.3	2.8
16	1.6	1.5	.77	.51	.75	1.3	.44	2.8	2.3	1.8	1.2	2.0
17	7.5	2.1	.75	.49	.74	.79	.50	1.4	5.3	1.7	3.2	1.5
18	22	1.4	.70	.61	.79	.64	.55	.90	3.9	3.0	4.5	1.2
19	14	1.1	2.3	.62	.77	.54	.37	.67	9.5	2.1	8.4	1.6
20	16	1.0	1.1	.51	.74	.90	.34	.96	3.5	1.6	3.9	1.2
21	39	1.3	2.4	.69	.63	.68	.32	.83	2.1	7.3	2.3	1.0
22	7.5	.98	10	1.1	.55	.57	.33	1.0	1.5	2.9	1.8	1.3
23	4.1	1.1	3.0	1.1	.56	.59	.34	.68	1.2	1.7	1.9	1.1
24	14	1.7	5.5	2.0	.58	.49	.27	.90	1.1	1.3	9.1	1.1
25	10	1.1	2.5	2.1	1.4	1.3	.25	.74	1.2	1.1	10	1.0
26	3.5	.95	1.7	3.5	6.0	.53	.22	.65	3.6	4.2	4.5	.86
27	3.4	2.2	1.4	2.0	4.2	.45	.22	1.3	2.9	1.5	3.2	.76
28	2.9	1.4	1.1	1.3	1.4	.53	.28	2.3	1.8	1.2	18	3.9
29	2.1	1.1	1.9	1.1	---	.46	.50	1.3	1.7	1.0	5.2	7.0
30	1.8	.89	1.5	2.0	---	.42	.46	.95	1.2	1.8	5.4	4.7
31	2.4	---	1.1	4.2	---	.41	---	.78	---	5.4	3.5	---
TOTAL	234.3	76.02	56.67	35.86	80.99	25.47	13.65	37.62	82.06	98.5	152.3	109.22
MEAN	7.56	2.53	1.83	1.16	2.89	.82	.45	1.21	2.74	3.18	4.91	3.64
MAX	39	13	10	4.2	21	2.4	1.1	15	9.5	9.5	23	16
MIN	1.6	.89	.70	.49	.55	.41	.22	.20	.83	1.0	1.2	.76
AC-FT	465	151	112	71	161	51	27	75	163	195	302	217

CAL YR 1988 TOTAL 617.00 MEAN 1.69 MAX 39 MIN .15 AC-FT 1220
WTR YR 1989 TOTAL 1002.66 MEAN 2.75 MAX 39 MIN .20 AC-FT 1990

e Estimated

16893400 EYEB STREAM, GAGIL-TAMIL

LOCATION.--Lat 09°33'02" N., long 138°09'03" E., Hydrologic Unit 20100006, on left bank 0.6 mi southeast of the Tagireeng Canal bridge and 1.2 mi northwest of the Coast Guard LORAN Station.

DRAINAGE AREA.--0.32 mi^2.

PERIOD OF RECORD.--January 1982 to September 1989 (discontinued).

REVISED RECORDS.--WDR HI-85-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 15 ft, from topographic map.

AVERAGE DISCHARGE.--7 years, 1.60 ft^3/s (1,160 acre-ft/yr).

REMARKS.--Records good. No diversion upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 490 ft^3/s June 21, 1982, gage height, 6.22 ft, from rating curve extended above 14 ft^3/s; minimum, 0.01 ft^3/s on many days in May 1983 and Apr. 24-28, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 106 ft^3/s Aug. 9, gage height, 5.12 ft, no peak greater than base discharge of 150 ft^3/s; minimum, 0.13 ft^3/s Apr. 27, 28.

REVISIONS.--The maximum discharge for water year 1987 has been revised to 112 ft^3/s Aug. 12, gage height, 5.33 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	1.5	.76	.77	18	.89	.29	.30	.96	.78	2.1	3.4
2	3.2	1.5	1.1	.72	4.0	.74	.32	.25	2.3	3.5	1.9	4.2
3	2.5	2.6	1.9	.69	2.0	.64	.28	.24	1.0	1.6	1.2	3.9
4	8.3	3.8	1.1	.73	1.5	.60	.26	.22	4.8	2.4	1.1	2.9
5	4.3	4.2	.86	.94	8.7	.56	.36	.21	5.0	3.6	.93	17
6	4.3	2.6	.84	.69	3.1	.49	.46	.19	6.2	5.4	.88	6.3
7	9.8	2.3	.79	.66	1.8	.46	.35	.19	3.2	7.2	3.3	8.5
8	9.5	10	.75	1.2	1.4	.46	.28	.19	2.1	2.8	3.7	3.7
9	5.2	3.4	.73	.69	1.2	.44	.26	.19	1.6	1.8	22	2.6
10	3.5	2.1	1.1	.56	1.3	.40	.27	.19	1.4	2.5	6.8	1.9
11	2.7	3.2	1.7	.55	1.1	.76	.34	.16	1.2	1.9	3.3	3.1
12	2.2	3.6	.88	.61	.98	.83	1.2	.16	1.0	2.7	2.1	7.3
13	1.9	1.8	.98	.52	.82	1.1	.58	.24	.85	1.5	1.7	3.1
14	1.9	1.5	.87	.49	.86	.93	.36	2.0	.81	4.4	1.4	1.9
15	1.7	1.6	.69	.43	.72	1.6	.29	14	2.4	1.9	1.3	2.0
16	1.4	1.4	.62	.40	.58	1.0	.40	2.7	1.5	1.5	1.1	1.5
17	7.0	1.7	.58	.40	.66	.64	.41	1.5	3.1	1.4	1.6	1.3
18	12	1.3	.55	.54	.83	.50	.34	1.0	2.1	3.4	3.7	1.1
19	10	1.1	1.1	.43	.64	.46	.29	.75	6.5	1.7	6.0	1.3
20	16	1.0	.89	.38	.62	.72	.27	.76	2.5	1.3	2.4	1.1
21	30	1.1	1.5	.41	.54	.60	.24	.74	1.5	4.7	1.6	.99
22	8.0	.96	6.9	.65	.44	.52	.19	.95	1.3	2.3	1.9	1.1
23	4.5	1.0	2.0	.67	.57	.50	.19	.69	1.1	1.5	2.2	.98
24	13	1.3	3.8	1.2	.52	.47	.19	.77	1.0	1.2	7.9	1.0
25	7.4	1.0	1.7	1.2	.97	1.1	.19	.69	.95	1.0	9.4	.99
26	3.3	.93	1.3	2.3	5.3	.52	.19	.67	2.5	1.3	5.3	.83
27	2.7	1.4	1.1	1.1	2.7	.43	.18	.91	1.6	1.0	3.5	.69
28	2.4	1.2	1.0	.82	1.1	.43	.19	1.4	1.2	.99	16	2.4
29	1.9	1.2	1.4	.73	---	.40	.47	1.1	1.2	.97	6.2	3.4
30	1.6	.86	1.2	1.4	---	.33	.39	.74	.94	1.4	5.4	2.0
31	1.7	---	.90	2.5	---	.32	---	.62	---	3.9	3.0	---
TOTAL	192.3	63.15	41.59	25.38	62.95	19.84	10.03	34.72	63.81	73.54	130.91	92.48
MEAN	6.20	2.10	1.34	.82	2.25	.64	.33	1.12	2.13	2.37	4.22	3.08
MAX	30	10	6.9	2.5	18	1.6	1.2	14	6.5	7.2	22	17
MIN	1.4	.86	.55	.38	.44	.32	.18	.16	.81	.78	.88	.69
AC-FT	381	125	82	50	125	39	20	69	127	146	260	183

CAL YR 1988 TOTAL 493.53 MEAN 1.35 MAX 30 MIN .04 AC-FT 979
WTR YR 1989 TOTAL 810.70 MEAN 2.22 MAX 30 MIN .16 AC-FT 1610

16897600 NANPIL RIVER

LOCATION.--Lat 06°55'09" N., long 158°11'59" E., Hydrologic Unit 20100006, on left bank 0.1 mi upstream from diversion dam and 1.3 mi upstream from Kiepw River.

DRAINAGE AREA.--3.00 mi^2.

PERIOD OF RECORD.--March 1970 to current year. Prior to October 1980, published as Nanepil River.

REVISED RECORDS.--WDR HI-76-1: 1970(M), 1971-72(P), 1973(M), 1974(P), 1975(M). WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 370 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--19 years, 45.0 ft^3/s (32,620 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,820 ft^3/s, Aug. 4, 1976, gage height, 9.68 ft, from rating curve extended above 168 ft^3/s on basis of slope-area measurement at gage height 9.68 ft; minimum, 0.54 ft^3/s, Apr. 19, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 4	0315	*4,250	*7.73	No other peak greater than base discharge.			

Minimum discharge, 6.8 ft^3/s, June 28, Sep. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	62	26	82	38	15	17	22	66	12	28	46
2	70	25	14	41	21	14	65	14	48	56	78	25
3	101	16	16	22	15	14	31	16	62	39	199	76
4	117	86	24	14	27	14	565	24	33	232	107	36
5	41	26	38	11	16	80	40	34	24	66	62	33
6	35	20	75	9.8	17	14	159	58	18	33	40	22
7	29	26	30	142	22	17	62	76	20	22	20	15
8	30	21	18	32	12	13	39	73	19	85	25	12
9	40	28	11	16	9.1	86	36	38	113	50	39	20
10	110	15	9.1	11	10	77	24	66	71	21	17	58
11	108	11	20	41	130	56	62	50	35	16	87	36
12	44	9.3	61	81	104	311	65	58	46	22	189	40
13	57	9.8	47	172	43	98	76	36	99	96	50	30
14	84	46	18	86	30	40	36	32	80	91	109	25
15	52	24	13	60	31	27	280	76	39	30	50	22
16	24	47	15	27	192	22	88	92	178	16	42	28
17	20	35	19	60	400	25	102	66	62	22	25	22
18	253	272	35	167	175	23	46	248	44	72	153	20
19	30	31	35	64	45	23	58	76	54	34	81	18
20	16	18	38	75	35	45	140	33	33	87	47	36
21	14	78	32	60	43	60	36	33	20	39	30	39
22	16	26	17	34	48	45	22	21	15	42	50	22
23	14	20	14	28	35	70	76	16	12	24	21	12
24	20	16	24	144	25	30	69	39	9.3	14	42	8.9
25	22	130	408	66	21	150	34	111	12	57	30	10
26	36	40	121	41	20	30	92	54	9.3	24	25	7.8
27	50	21	43	60	18	25	66	25	7.6	14	25	7.2
28	20	15	35	56	16	21	22	17	16	11	19	20
29	45	14	60	75	---	20	167	18	39	86	86	16
30	50	41	313	130	---	20	50	175	8.5	26	30	12
31	33	---	41	296	---	22	---	76	---	60	128	---
TOTAL	1616	1229.1	1670.1	2203.8	1598.1	1507	2625	1773	1292.7	1499	1934	774.9
MEAN	52.1	41.0	53.9	71.1	57.1	48.6	87.5	57.2	43.1	48.4	62.4	25.8
MAX	253	272	408	296	400	311	565	248	178	232	199	76
MIN	14	9.3	9.1	9.8	9.1	13	17	14	7.6	11	17	7.2
AC-FT	3210	2440	3310	4370	3170	2990	5210	3520	2560	2970	3840	1540

CAL YR 1988 TOTAL 13442.1 MEAN 36.7 MAX 408 MIN 4.5 AC-FT 26660
WTR YR 1989 TOTAL 19722.7 MEAN 54.0 MAX 565 MIN 7.2 AC-FT 39120

16897600 NANPIL RIVER--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978-81, 1983, 1984, 1986, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
SEP 03...	1530	300	18	6.9	23.5	4	0.68	0.50	1.5	45

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	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 03...	0.3	0.20	4.0	<1.0	1.9	<0.10	2.7	<0.100	100	2

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

16897900 LEWI RIVER

LOCATION.--Lat 06°55'32" N., long 158°12'18" E., Hydrologic Unit 20100006, on right bank at road and pipeline crossing, 300 ft upstream from right-bank tributary, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--0.46 mi^2.

PERIOD OF RECORD.--March 1970 to current year. Prior to October 1980, published as Lui River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 290 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--19 years, 5.26 ft^3/s (3,810 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft^3/s, July 24, 1986, gage height, 6.32 ft, from rating curve extended above 37 ft^3/s, on basis of slope-area measurement at gage height 5.92 ft; minimum, 0.02 ft^3/s, Apr. 18, 19, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 17	unknown	664	4.91	Apr. 4	0200	768	5.17
Apr. 29	1330	*946	*5.57				

Minimum discharge, 0.56 ft^3/s, Nov. 13, June 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	7.1	3.1	7.2	4.4	e1.5	1.9	2.7	8.8	1.5	2.5	6.2
2	9.3	3.2	1.7	3.6	2.7	e1.5	5.5	1.8	5.8	6.0	5.0	3.3
3	9.9	2.0	2.1	2.1	1.9	e1.0	3.1	1.9	5.3	3.3	24	6.4
4	12	e15	4.6	1.6	4.2	e.95	54	1.7	3.2	21	13	3.7
5	4.9	3.2	4.3	1.5	2.3	e10	3.6	1.8	2.3	6.6	6.6	5.6
6	3.4	2.2	e14	1.8	1.9	e1.0	8.1	2.7	2.2	2.3	3.6	3.3
7	2.5	2.3	4.7	11	1.7	e1.5	4.7	4.7	4.1	1.9	2.1	2.2
8	4.0	2.2	2.3	3.6	1.2	e.95	2.8	8.2	2.3	10	3.7	1.6
9	5.6	1.9	1.5	2.0	1.0	e12	2.3	4.3	14	5.1	4.1	3.4
10	5.3	1.2	1.2	1.6	1.5	10	1.5	9.0	7.8	2.1	2.0	7.0
11	8.4	.95	3.3	5.6	4.0	7.1	6.7	6.1	3.9	1.5	10	2.7
12	4.4	.74	8.3	8.6	22	42	5.6	4.3	3.3	1.7	11	2.5
13	4.1	1.0	6.0	14	5.6	13	8.9	2.6	21	7.3	4.6	1.9
14	8.5	e3.2	2.5	8.3	2.9	3.9	3.1	2.5	6.0	9.3	9.2	1.5
15	5.8	1.8	1.6	4.7	e3.0	2.1	22	4.7	2.7	2.6	5.5	1.2
16	2.7	3.2	1.5	2.7	e15	1.5	4.7	7.6	9.7	1.5	7.8	2.3
17	2.3	3.0	1.9	5.5	e40	1.5	7.1	6.8	4.7	2.6	3.7	1.5
18	28	23	3.5	8.2	e10	1.7	4.3	16	4.3	3.7	14	1.1
19	5.3	2.9	6.7	10	e5.0	4.0	3.7	5.3	5.6	6.0	7.6	.81
20	2.3	2.5	3.7	5.5	e4.0	12	21	2.3	3.6	6.7	5.1	2.9
21	1.9	10	3.3	5.1	e4.5	8.7	2.7	3.1	1.9	2.0	3.6	7.7
22	4.6	3.1	1.7	3.2	e5.0	9.9	1.7	1.7	2.5	2.1	6.1	2.9
23	3.9	1.9	1.5	3.7	e3.5	14	1.8	1.4	1.5	1.5	2.5	1.6
24	6.6	1.5	2.7	8.3	e3.0	5.6	3.8	4.7	1.2	1.2	2.7	1.2
25	3.4	e9.7	37	6.0	e2.5	18	2.6	11	1.0	1.5	2.5	1.1
26	6.3	4.4	10	5.6	e2.5	4.4	31	5.9	.81	1.2	2.1	.88
27	7.0	2.1	3.2	7.1	e2.0	3.3	6.8	2.1	.81	1.0	3.3	.81
28	2.5	1.7	1.9	4.3	e2.0	4.4	2.1	1.5	.74	.95	2.5	1.0
29	7.8	1.6	1.9	7.6	---	2.7	33	1.6	4.1	3.7	15	2.6
30	8.8	e14	16	17	---	2.2	8.5	16	1.5	2.1	4.1	1.6
31	4.6	---	2.9	30	---	2.0	---	9.7	---	6.7	29	---
TOTAL	190.7	132.59	160.6	207.0	159.3	204.40	268.6	155.7	136.66	126.65	218.5	82.50
MEAN	6.15	4.42	5.18	6.68	5.69	6.59	8.95	5.02	4.56	4.09	7.05	2.75
MAX	28	23	37	30	40	42	54	16	21	21	29	7.7
MIN	1.9	.74	1.2	1.5	1.0	.95	1.5	1.4	.74	.95	2.0	.81
AC-FT	378	263	319	411	316	405	533	309	271	251	433	164

CAL YR 1988 TOTAL 1389.09 MEAN 3.80 MAX 37 MIN .24 AC-FT 2760
WTR YR 1989 TOTAL 2043.20 MEAN 5.60 MAX 54 MIN .74 AC-FT 4050

e Estimated

16897900 LEWI RIVER--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978-81, 1984, 1986, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
SEP 01...	1255	8.2	42	7.0	25.0	10	1.7	1.4	2.4	34

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	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 01...	0.3	0.20	12	<1.0	3.0	<0.10	8.2	<0.100	110	4

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

16898600 LUHPWOR RIVER

LOCATION.--Lat 06°54'09" N., long 158°09'07" E., Hydrologic Unit 20100006, on left bank about 300 ft upstream from 50-ft waterfall, 0.2 mi downstream from highway bridge, and 0.2 mi west of Pwakorokot Hill.

DRAINAGE AREA.--0.72 mi^2.

PERIOD OF RECORD.--September 1972 to current year. Prior to October 1980, published as Lupwor River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 145 ft, from topographic map.

REMARKS.--Records fair. No diversion upstream.

AVERAGE DISCHARGE.--17 years, 8.85 ft^3/s (6,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft^3/s, Aug. 4, 1976, gage height, 8.26 ft, from rating curve extended above 47 ft^3/s, on basis of estimate of peak flow; minimum, 0.13 ft^3/s, May 4, 5, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 4	0330	*805	*5.73	No other peak greater than base discharge.			

Minimum discharge, 2.1 ft^3/s, July 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	14	4.7	14	9.3	2.4	3.6	5.1	11	2.6	5.6	17
2	9.0	7.1	3.7	11	6.2	2.3	6.6	4.3	7.8	7.4	19	9.0
3	21	6.0	3.4	7.6	5.1	2.2	4.7	4.2	8.8	6.0	46	53
4	23	27	4.7	5.8	5.1	3.0	76	4.2	6.6	31	17	14
5	14	8.5	4.7	4.5	4.0	6.2	8.3	4.3	5.2	17	13	11
6	9.9	6.4	7.3	4.0	3.7	4.2	18	7.1	4.7	5.6	8.8	6.6
7	8.5	5.6	5.8	23	3.4	2.8	11	8.8	4.3	4.7	6.0	5.4
8	6.8	5.4	4.3	9.3	2.8	2.6	6.8	6.0	4.0	9.9	8.2	4.5
9	6.6	5.1	3.4	6.2	2.6	8.7	6.2	5.4	13	6.8	7.8	14
10	9.0	3.7	3.1	4.7	2.4	10	5.1	11	9.9	5.1	5.2	14
11	18	3.2	3.7	8.0	4.9	8.7	6.6	7.8	6.2	4.0	17	6.4
12	11	3.0	8.8	13	e29	46	10	7.8	5.6	3.7	24	6.0
13	10	3.0	6.0	15	e7.9	17	16	6.4	6.9	8.5	15	5.1
14	11	4.2	4.2	13	e4.0	6.8	7.8	6.8	15	9.9	41	4.0
15	11	3.4	3.7	10	e4.0	4.9	29	11	19	5.4	17	3.8
16	6.4	4.2	3.7	7.6	e20	4.2	21	21	14	4.2	13	3.4
17	5.2	6.1	4.3	12	e50	4.7	20	16	8.8	4.7	7.1	3.0
18	13	27	6.4	23	12	3.8	11	42	7.3	10	21	2.7
19	6.8	6.4	6.2	16	7.8	4.9	7.1	16	9.3	6.0	17	2.4
20	5.1	5.2	6.0	16	6.2	17	25	6.8	6.6	14	9.9	5.0
21	4.5	9.9	6.0	14	5.1	13	6.6	7.3	5.4	6.6	7.2	4.5
22	6.2	5.6	4.3	9.9	5.6	15	6.0	5.1	4.3	9.3	14	3.8
23	5.6	4.2	3.7	9.0	5.1	17	7.0	4.3	3.7	6.0	7.8	3.0
24	6.6	4.0	4.5	19	4.3	8.8	13	6.0	3.2	4.7	10	2.7
25	5.2	23	50	15	3.6	33	7.1	13	3.0	15	7.8	4.3
26	6.2	9.3	28	11	3.3	8.8	24	6.6	2.7	5.4	7.8	3.4
27	8.8	6.0	13	12	3.0	6.2	12	5.1	2.6	4.2	7.1	4.0
28	5.4	5.1	8.5	12	2.8	5.6	6.2	4.3	3.0	3.8	6.4	5.3
29	11	4.3	9.9	13	---	4.5	13	4.0	2.6	11	33	4.0
30	11	5.6	51	31	---	5.1	6.2	21	2.2	12	9.3	3.2
31	7.1	---	13	56	---	3.8	---	12	---	22	54	---
TOTAL	289.3	231.5	290.0	425.6	223.2	283.2	400.9	290.7	206.7	266.5	483.0	228.5
MEAN	9.33	7.72	9.35	13.7	7.97	9.14	13.4	9.38	6.89	8.60	15.6	7.62
MAX	23	27	51	56	50	46	76	42	19	31	54	53
MIN	4.5	3.0	3.1	4.0	2.4	2.2	3.6	4.0	2.2	2.6	5.2	2.4
AC-FT	574	459	575	844	443	562	795	577	410	529	958	453

CAL YR 1988 TOTAL 2526.98 MEAN 6.90 MAX 53 MIN .86 AC-FT 5010
WTR YR 1989 TOTAL 3619.1 MEAN 9.92 MAX 76 MIN 2.2 AC-FT 7180

e Estimated

16898600 LUHPWOR RIVER--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978-81, 1983, 1984, 1986, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO
SEP 05...	1215	13	7.5	24.5	17	4.3	1.6	2.3	22	0.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	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 05...	0.10	19	<1.0	2.7	<0.10	11	<0.100	110	5

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

16898690 LEHN MESI RIVER

LOCATION.--Lat 06°50'41" N., long 158°11'02" E., Hydrologic Unit 20100006, on left bank 3.2 mi upstream from mouth, 1.7 mi southwest of Mount Tolenpwoaipwoai, and 4.5 mi south of Mount Temwetemwensekir.

DRAINAGE AREA.--2.31 mi^2.

PERIOD OF RECORD.--November 1981 to current year.

REVISED RECORDS.--WDR HI-85-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 260 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--7 years (water years 1983-89) 85.3 ft^3/s (61,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft^3/s, May 8, 1982, gage height, 10.14 ft, from rating curve extended above 126 ft^3/s; minimum, 4.5 ft^3/s for several days in April and May, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 18	1300	3,520	7.27	Apr. 4	0400	*5,140	*8.53

Minimum discharge, 18.6 ft^3/s, Nov. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	155	e62	e230	104	e31	61	67	133	54	92	85
2	164	e64	e48	122	74	e28	150	64	94	89	132	56
3	152	60	e47	e74	61	e28	80	71	157	84	306	55
4	195	220	e65	e59	99	e38	513	85	85	270	194	44
5	96	e61	e55	e48	61	e80	123	119	63	154	124	45
6	67	e46	161	44	59	e56	255	136	56	84	81	36
7	51	e50	72	e145	63	e34	167	164	63	67	62	30
8	43	e44	e38	76	53	30	104	106	72	114	97	28
9	52	83	e29	51	51	109	92	78	214	112	109	76
10	216	36	e28	41	56	203	70	119	156	63	62	138
11	197	28	e46	e106	114	161	179	134	110	66	114	76
12	84	23	e104	111	278	352	178	164	147	69	245	83
13	75	30	63	193	109	226	139	130	207	156	114	61
14	108	48	36	177	73	82	97	103	204	180	157	47
15	92	91	28	147	73	56	263	127	92	81	117	42
16	52	62	61	80	163	46	127	183	249	58	90	46
17	44	71	e40	e174	362	52	180	186	120	82	66	37
18	300	288	e72	231	151	46	131	266	86	166	211	33
19	80	56	e78	183	96	46	82	151	158	89	151	30
20	49	45	e61	146	74	74	352	82	96	130	133	106
21	44	158	e46	e126	80	172	129	92	68	70	92	147
22	55	e53	e44	85	100	128	89	62	67	101	148	69
23	51	48	e46	76	73	231	182	52	55	67	74	47
24	59	e41	e69	246	59	115	116	188	51	51	100	44
25	50	e321	442	149	46	308	97	168	55	120	96	42
26	97	94	201	103	e41	112	254	100	46	74	e93	34
27	146	e55	e99	133	e38	80	149	67	37	51	68	34
28	50	e45	e106	125	e38	e85	79	59	96	45	72	61
29	91	e41	e109	140	---	62	141	66	74	102	189	87
30	119	e122	e335	174	---	59	85	174	51	86	81	47
31	76	---	e100	394	---	62	---	132	---	123	282	---
TOTAL	3019	2539	2791	4189	2649	3192	4664	3695	3162	3058	3952	1766
MEAN	97.4	84.6	90.0	135	94.6	103	155	119	105	98.6	127	58.9
MAX	300	321	442	394	362	352	513	266	249	270	306	147
MIN	43	23	28	41	38	28	61	52	37	45	62	28
AC-FT	5990	5040	5540	8310	5250	6330	9250	7330	6270	6070	7840	3500

CAL YR 1988 TOTAL 28023 MEAN 76.6 MAX 442 MIN 16 AC-FT 55580
WTR YR 1989 TOTAL 38676 MEAN 106 MAX 513 MIN 23 AC-FT 76710

e Estimated

16898690 LEHN MESI RIVER--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983, 1984, 1986, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
SEP 04...	1215	41	43	7.4	24.5	12	2.1	1.7	2.2	28

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	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 04...	0.3	0.20	15	<1.0	2.5	<0.10	9.3	<0.100	49	2

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

16899620 MELO RIVER

LOCATION.--Lat 05°20'30" N., long 162°58'33" E., Hydrologic Unit 20100006, on left bank 0.5 mi upstream from mouth and 1.3 mi southwest of Mount Mutunte.

DRAINAGE AREA.--0.68 mi^2.

PERIOD OF RECORD.--October 1974 to September 1979, June 1980 to current year.

REVISED RECORDS.--WRD HI-81-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 20 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--14 years (water years 1975-79, 1981-89), 6.72 ft^3/s (4,870 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 784 ft^3/s Mar. 22, 1976, gage height, 5.78 ft, from rating curve extended above 17 ft^3/s; minimum, 0.11 ft^3/s for several days in April 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 8	0830	*340	*3.75	May 30	0900	306	3.58
Mar. 7	0200	324	3.67	July 15	0330	302	3.56

Minimum discharge, 1.3 ft^3/s, June 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	e3.2	5.0	4.1	28	3.6	4.3	4.3	13	11	3.6	5.8
2	10	e2.7	3.9	3.9	12	3.2	22	3.2	10	10	3.2	3.9
3	4.7	e2.6	2.5	2.8	22	3.0	11	6.6	8.4	6.0	3.4	7.0
4	15	e2.5	2.4	2.8	12	6.0	6.9	7.9	6.9	4.7	e10	3.8
5	7.2	e2.5	2.1	3.9	7.5	3.2	8.0	4.9	6.2	4.5	5.2	4.3
6	5.2	e5.0	1.8	10	5.7	39	7.5	3.4	5.7	3.8	e15	3.2
7	4.1	e17	1.7	7.7	4.3	51	5.0	3.2	5.7	2.8	9.7	3.0
8	5.0	e23	2.2	62	3.9	9.4	3.9	4.1	14	8.9	6.9	4.9
9	10	e7.0	1.7	11	3.2	11	3.4	8.1	6.9	4.3	4.5	4.1
10	11	e2.7	1.8	9.1	3.0	7.5	9.6	18	18	5.3	3.8	7.7
11	6.9	e3.3	2.2	11	3.7	13	3.8	5.0	9.4	3.8	3.6	5.0
12	5.2	e2.3	21	6.2	4.8	12	3.0	6.4	6.9	3.2	3.0	3.6
13	4.1	e8.0	6.4	5.5	3.6	9.2	2.8	4.3	7.5	3.8	2.6	3.6
14	5.2	e5.0	3.6	8.1	2.5	6.4	2.6	3.8	6.4	6.7	2.6	5.1
15	3.8	e3.4	3.0	15	6.1	6.9	7.3	31	5.0	28	3.0	3.4
16	3.4	e4.3	4.5	7.5	6.3	4.5	5.9	9.7	4.3	5.5	3.0	2.5
17	3.4	e8.0	5.3	9.7	2.8	3.8	5.8	9.4	3.8	3.9	2.5	2.5
18	4.4	e4.0	4.3	7.2	3.2	4.1	7.6	28	3.6	5.9	e15	2.2
19	3.0	e2.3	3.2	5.5	2.4	5.7	3.8	21	3.6	5.1	e5.0	14
20	2.6	e6.0	2.5	5.0	4.3	3.4	3.2	8.4	3.6	4.1	3.0	8.8
21	2.8	e3.4	5.7	4.1	11	3.0	3.0	6.7	3.9	7.5	e6.4	7.0
22	3.0	e4.4	6.6	4.3	3.6	3.2	2.6	5.5	3.2	5.9	e17	3.6
23	4.7	e2.2	3.6	16	4.8	9.4	3.9	e10	2.8	3.4	6.2	3.0
24	3.4	e2.1	3.0	18	3.2	4.5	2.8	e60	2.5	2.8	e4.7	2.6
25	2.8	e21	7.1	9.1	2.6	8.4	9.2	15	2.2	11	4.1	2.5
26	2.1	e5.0	6.2	14	14	7.5	16	9.4	2.4	5.8	3.8	8.0
27	e2.7	e2.2	3.4	23	5.7	4.5	5.0	9.4	2.2	6.3	3.4	2.8
28	e2.6	e2.1	3.5	13	4.3	5.0	3.8	e16	1.8	3.8	8.1	3.9
29	e9.8	e3.8	9.8	23	---	3.2	8.8	e14	1.6	15	3.7	3.6
30	e7.0	e9.0	7.6	16	---	3.8	9.4	47	1.6	5.9	4.2	6.5
31	e5.4	---	4.1	38	---	3.6	---	19	---	4.1	7.5	---
TOTAL	165.2	170.0	141.7	376.5	190.5	262.0	191.9	402.7	173.1	202.8	177.7	141.9
MEAN	5.33	5.67	4.57	12.1	6.80	8.45	6.40	13.0	5.77	6.54	5.73	4.73
MAX	15	23	21	62	28	51	22	60	18	28	17	14
MIN	2.1	2.1	1.7	2.8	2.4	3.0	2.6	3.2	1.6	2.8	2.5	2.2
AC-FT	328	337	281	747	378	520	381	799	343	402	352	281

CAL YR 1988 TOTAL 1959.9 MEAN 5.35 MAX 44 MIN 1.2 AC-FT 3890
WTR YR 1989 TOTAL 2596.0 MEAN 7.11 MAX 62 MIN 1.6 AC-FT 5150

e Estimated

16899620 MELO RIVER--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979, 1980, 1982, 1983, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO
SEP 11...	1110	6.0	87	7.6	25.0	39	8.0	4.7	3.4	16	0.2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 11...	0.60	42	3.0	3.0	0.10	17	65	0.09	<0.100	220	9

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

16899750 MALEM RIVER

LOCATION.--Lat 05°17'35" N., long 163°00'54" E., Hydrologic Unit 20100006, on left bank 0.9 mi upstream from mouth and 2.0 mi southeast of Mount Finkol.

DRAINAGE AREA.--0.76 mi^3.

PERIOD OF RECORD.--July 1971 to March 1981, March 1982 to September 1988 (discontinued).

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 95 ft, from stadia survey.

REMARKS.--

AVERAGE DISCHARGE.--15 years (1972-80, 1983-88), 6.69 ft3/s (4,850 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft^3/s Mar. 22, 1976, gage height, 6.20 ft, from rating curve extended above 110 ft^3/s; minimum, 0.07 ft^3/s Apr. 30, May 1, 1983.

NO DAILY VALUE RECORDS FOR THE 1989 WATER YEAR.
STATION WAS DISCONTINUED SEPTEMBER 1988.

16899800 TOFOL RIVER

LOCATION.--Lat 05°19'10" N., long 163°00'24" E., Hydrologic Unit 20100006, on left bank 25 ft downstream from right-bank tributary, 0.9 mi upstream from mouth, and 1.3 mi northeast of Mount Finkol.

DRAINAGE AREA.--0.53 mi^2.

PERIOD OF RECORD.--June 1971 to September 1979, March 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 98 ft, from stadia survey.

REMARKS.--Records fair. Water is diverted through 8-in pipe from dam upstream for domestic use.

AVERAGE DISCHARGE.--17 years (1971-79, 1981-89), 5.28 ft^3/s (3,830 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft^3/s, Nov. 10, 1981, gage height, 5.97 ft, from rating curve extended above 79 ft^3/s; minimum, 0.01 ft^3/s, Apr. 1, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep. 19	2130	*369	*3.86				

Minimum discharge, 0.07 ft^3/s, Dec. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	.76	3.2	1.2	24	1.5	.66	2.3	6.6	2.3	1.7	8.1
2	9.3	.54	1.9	1.2	12	1.3	25	2.3	5.0	2.8	1.5	4.0
3	3.0	.54	.70	.54	14	1.1	8.7	6.8	4.7	1.0	1.6	3.1
4	11	.46	.28	.24	11	8.4	4.2	9.4	3.1	.50	9.4	2.6
5	4.0	.70	.20	2.9	5.5	2.2	4.7	2.5	2.2	.62	2.8	3.2
6	2.9	.82	.30	5.4	4.0	11	4.0	2.1	2.0	.42	17	2.0
7	2.3	5.2	.58	3.0	3.2	37	3.6	1.8	2.8	.38	6.6	1.8
8	2.9	1.7	.66	43	3.8	6.4	2.1	1.2	20	2.3	4.6	5.9
9	5.9	.66	.76	5.9	2.6	4.3	1.7	2.0	5.5	.82	2.8	3.1
10	21	.38	.94	5.2	2.5	3.1	2.2	12	16	1.6	2.3	3.8
11	7.1	.70	.76	7.1	2.5	4.7	1.3	2.5	8.1	.66	2.0	3.1
12	4.2	.38	6.8	2.8	1.7	6.4	1.0	2.8	4.5	.62	1.7	1.9
13	3.3	1.8	1.9	2.3	1.5	2.9	.76	2.0	4.3	.76	1.5	1.9
14	3.3	.94	.41	5.0	1.2	2.2	.70	1.4	3.1	2.7	1.3	4.2
15	2.3	.70	.17	14	1.1	2.0	4.7	29	2.3	15	2.0	2.0
16	1.9	1.0	3.2	4.7	1.9	1.6	4.7	6.3	1.9	2.1	1.7	1.3
17	2.1	1.8	1.9	3.3	1.1	1.1	2.9	6.2	1.5	1.3	1.2	1.1
18	3.1	.70	1.9	3.6	1.3	1.2	4.5	27	1.4	1.5	16	.94
19	1.4	.58	.39	2.1	.82	3.8	1.8	17	1.1	1.7	2.9	13
20	1.2	1.5	.14	1.6	2.3	1.3	1.2	7.6	1.5	1.9	1.8	7.3
21	1.4	.66	4.2	1.2	11	.76	1.2	5.2	2.5	1.9	6.7	2.6
22	1.3	.76	2.9	1.1	2.0	.82	1.0	4.3	1.0	4.0	21	1.7
23	1.6	.30	.88	13	1.6	5.1	.88	5.0	1.5	1.7	5.2	1.2
24	1.2	.25	.34	5.9	1.2	2.1	.54	47	.94	1.1	4.8	1.1
25	.86	3.5	.54	2.6	1.1	4.0	6.6	12	.54	13	4.3	.82
26	.70	.76	.66	8.7	16	5.5	7.9	7.6	.58	3.9	2.6	.76
27	.66	.38	.20	15	3.3	1.9	1.7	6.4	.42	2.7	2.3	1.4
28	.58	.58	.28	5.2	1.9	1.5	1.1	12	.38	2.0	4.8	1.1
29	1.7	.88	1.0	11	---	1.1	.82	7.3	.30	6.9	2.2	.76
30	1.6	4.5	2.2	7.6	---	.82	6.6	21	.54	3.3	7.4	2.1
31	1.3	---	.54	37	---	.88	---	9.2	---	2.1	13	---
TOTAL	107.90	34.43	40.83	223.38	136.12	127.98	108.76	281.2	106.30	83.58	156.7	87.88
MEAN	3.48	1.15	1.32	7.21	4.86	4.13	3.63	9.07	3.54	2.70	5.05	2.93
MAX	21	5.2	6.8	43	24	37	25	47	20	15	21	13
MIN	.58	.25	.14	.24	.82	.76	.54	1.2	.30	.38	1.2	.76
AC-FT	214	68	81	443	270	254	216	558	211	166	311	174

CAL YR 1988 TOTAL 1028.56 MEAN 2.81 MAX 37 MIN .14 AC-FT 2040
WTR YR 1989 TOTAL 1495.06 MEAN 4.10 MAX 47 MIN .14 AC-FT 2970

16899800 TOFOL RIVER--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979, 1980, 1982, 1983, 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO
SEP 08...	0900	1.5	108	6.7	31.0	26.0	46	9.7	5.2	4.5	17	0.3

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 08...	0.80	47	5.0	3.8	0.10	26	83	0.11	<0.100	80	2

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

16912000 PAGO STREAM AT AFONO

LOCATION.--Lat 14°16'03" S., long 170°39'02" W., Hydrologic Unit 20100001, on left bank 0.2 mi south of Afono and 0.3 mi upstream from mouth.

DRAINAGE AREA.--0.60 mi^2.

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. Elevation of gage is 30 ft, from topographic map.

REMARKS.--Records good except for days of estimated discharge which are fair. About 0.06 ft^3/s is diverted upstream for domestic use in Afono.

AVERAGE DISCHARGE.--30 years (water years 1960-89), 3.38 ft^3/s (2,450 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,350 ft^3/s, July 5, 1969, gage height, 5.49 ft, from rating curve extended above 61 ft^3/s; minimum, 0.10 ft^3/s, Sept. 29, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 210 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 18	0600	*273	*3.51	Jan. 6	1600	249	3.43
Nov. 27	0330	267	3.49	Jan. 7	1130	270	3.50

Minimum discharge, 0.10 ft^3/s, Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	2.8	2.8	8.0	1.3	1.6	1.8	9.4	e.30	.23	.43	.16
2	.25	1.9	2.2	3.8	5.7	1.4	1.4	6.5	e.35	.23	.37	.16
3	.25	1.8	2.2	21	3.2	1.3	1.3	4.2	e.40	.22	.37	.16
4	.65	1.3	1.9	7.2	4.2	1.2	1.2	4.4	e.60	.32	.32	.17
5	1.7	1.1	1.6	6.3	8.9	1.2	1.0	2.8	e.40	.25	.28	.25
6	4.0	.87	2.6	37	10	1.2	.96	2.2	e.35	.25	.28	.43
7	3.5	.70	42	35	3.9	1.0	1.0	4.5	e.45	.23	.32	.22
8	1.2	.62	29	9.9	4.6	.96	1.3	7.2	e.35	.25	.28	.20
9	.78	.70	22	5.9	2.7	1.9	.96	2.8	e.45	3.6	.25	.19
10	.55	.49	15	4.2	2.1	1.2	.78	1.9	e.40	2.7	.25	.15
11	.43	5.5	20	3.4	1.9	1.3	.70	1.6	e.90	16	.25	.15
12	.37	4.0	16	3.0	14	1.3	.78	1.4	e.70	2.5	.23	.15
13	.73	7.0	11	3.0	13	2.2	.62	1.4	e.50	1.2	.22	.15
14	1.0	6.3	7.0	6.4	5.7	5.4	.55	3.0	e1.0	.78	.20	.15
15	.62	2.4	4.2	4.0	3.2	5.5	.55	2.1	e3.4	.70	.20	.15
16	.49	19	3.2	2.5	3.4	4.0	.49	1.4	2.4	.55	.20	.14
17	.37	21	14	2.1	12	1.9	.49	1.2	.87	.49	.20	.14
18	.37	24	9.6	1.8	4.4	2.3	.43	1.0	.62	.43	.20	.14
19	16	7.9	6.2	1.6	3.4	1.9	.43	e.96	.49	.32	.20	.14
20	4.0	5.2	4.2	1.4	2.7	1.3	4.4	e.80	.43	.28	.20	.14
21	1.7	3.8	3.5	4.6	2.2	1.1	1.9	e.70	.37	.28	.20	.14
22	1.0	2.7	3.2	4.5	6.4	.96	1.5	e.60	.32	1.7	.19	.13
23	1.1	2.1	2.7	4.7	6.7	2.4	.96	e.50	.32	3.3	.17	.13
24	.87	1.8	2.4	2.2	3.6	1.4	1.5	e.45	.28	6.2	.17	.13
25	.70	17	2.5	1.9	2.5	1.2	1.2	e.40	.28	2.5	.17	.13
26	.62	15	7.2	1.8	2.1	1.4	2.9	e.35	.25	1.1	.16	.13
27	.77	32	9.8	1.6	1.8	1.1	2.1	e.30	.28	.70	.16	.13
28	10	10	17	1.4	1.6	12	6.6	e.27	.28	.55	.16	.12
29	7.7	6.5	4.6	1.3	---	7.7	4.6	e.25	.25	.43	.16	.12
30	5.7	4.0	3.6	1.1	---	3.4	3.1	e.25	.25	.37	.15	.12
31	7.7	---	12	1.3	---	2.2	---	e.25	---	.37	.16	---
TOTAL	75.37	209.48	285.2	193.9	137.2	74.92	47.50	65.08	18.24	49.03	7.10	4.82
MEAN	2.43	6.98	9.20	6.25	4.90	2.42	1.58	2.10	.61	1.58	.23	.16
MAX	16	32	42	37	14	12	6.6	9.4	3.4	16	.43	.43
MIN	.25	.49	1.6	1.1	1.3	.96	.43	.25	.25	.22	.15	.12
AC-FT	149	416	566	385	272	149	94	129	36	97	14	9.6

CAL YR 1988 TOTAL 1087.57 MEAN 2.97 MAX 43 MIN .20 AC-FT 2160
WTR YR 1989 TOTAL 1167.84 MEAN 3.20 MAX 42 MIN .12 AC-FT 2320

e Estimated

16920500 AASU STREAM AT AASU

LOCATION.--Lat 14°17'51" S., long 170°45'30" W., Hydrologic Unit 20100001, on right bank at Aasu and 200 ft upstream from mouth.

DRAINAGE AREA.--1.03 mi^2.

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. Elevation of gage is 5 ft, by hand levels from high-tide mark.

REMARKS.--Records good. Small diversion upstream for domestic use. Standard rain gage located at station.

AVERAGE DISCHARGE.--30 years (water years 1960-89), 6.09 ft^3/s (4,410 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 498 ft^3/s, Sept. 7, 1972, gage height, 5.16 ft, from rating curve extended above 20 ft^3/s on basis of slope-area measurement at gage height 4.57 ft; minimum, 0.12 ft^3/s, Oct. 21, 23, 24, 27, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 6	1500	*408	*4.80	Mar. 14	2000	404	4.78
Mar. 14	1530	237	3.88	Apr. 30	0330	198	3.62

Minimum discharge, 0.34 ft^3/s, Sept.29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	5.2	4.6	18	5.3	6.3	5.8	12	2.4	1.7	2.1	.74
2	2.5	4.3	4.0	15	4.6	6.0	5.2	11	2.4	1.7	2.2	.74
3	2.2	9.1	4.0	32	8.3	5.2	4.6	11	2.7	1.7	2.2	.68
4	3.0	6.7	4.3	19	6.5	4.6	4.3	18	2.7	3.8	2.1	.68
5	4.0	5.2	3.6	18	21	5.8	3.8	12	2.1	2.5	1.8	1.0
6	4.9	4.6	5.4	54	15	4.6	4.0	11	5.6	1.9	1.7	1.4
7	4.0	4.6	19	37	14	4.3	3.4	11	5.3	1.9	1.6	.81
8	3.4	3.8	22	24	13	3.7	4.3	11	2.7	1.9	1.6	.74
9	2.8	3.6	33	18	10	9.8	3.4	8.4	2.4	11	1.5	.68
10	2.7	3.6	27	15	10	5.5	3.4	7.4	2.2	7.0	1.4	.63
11	2.5	5.5	28	13	9.2	4.2	3.0	6.4	3.5	6.7	1.5	.63
12	2.4	5.4	21	11	15	8.7	6.5	8.2	3.0	4.3	1.5	1.0
13	3.4	8.8	16	9.8	18	7.0	3.6	12	2.9	3.8	1.4	.68
14	8.1	7.8	14	12	13	22	3.0	12	2.7	3.4	1.3	.74
15	4.9	5.5	11	8.4	11	15	2.7	8.8	6.1	3.2	1.3	.68
16	5.2	7.7	10	7.4	16	9.2	2.5	7.8	6.4	3.0	1.2	.57
17	6.4	13	20	9.1	16	8.4	2.7	7.4	3.8	2.8	1.1	.57
18	7.0	20	19	6.7	13	9.4	2.5	6.4	3.0	2.8	1.1	.57
19	23	13	15	5.7	14	10	2.4	6.1	2.7	2.7	1.1	.52
20	13	10	12	6.4	11	11	7.6	5.5	2.5	2.5	1.0	.52
21	9.5	9.2	9.5	15	12	9.2	3.2	4.9	2.4	2.4	1.0	.68
22	8.4	8.1	8.8	9.5	14	7.8	9.4	4.3	2.2	4.2	1.0	.52
23	15	7.0	8.4	6.7	10	7.0	4.6	4.0	2.1	4.6	1.0	.47
24	9.5	6.4	9.1	6.1	11	6.7	6.2	3.8	1.9	11	1.0	.47
25	7.8	7.2	8.4	6.1	8.8	5.8	4.3	3.4	2.1	4.9	.95	.47
26	7.0	9.2	21	6.7	7.8	5.5	6.0	3.2	1.9	3.6	.87	.47
27	6.8	7.0	26	5.8	7.0	4.6	4.0	3.0	2.1	3.0	.81	.42
28	6.4	8.4	24	4.9	7.8	10	7.1	2.8	2.2	2.5	.81	.42
29	5.8	6.7	16	4.6	---	11	11	2.7	1.8	2.4	.81	.38
30	6.9	5.4	14	4.0	---	7.4	21	2.5	1.8	2.2	.74	.57
31	7.8	---	17	6.5	---	6.7	---	2.4	---	2.2	.81	---
TOTAL	198.5	222.0	455.1	415.4	322.3	242.4	155.5	230.4	87.6	113.3	40.50	19.45
MEAN	6.40	7.40	14.7	13.4	11.5	7.82	5.18	7.43	2.92	3.65	1.31	.65
MAX	23	20	33	54	21	22	21	18	6.4	11	2.2	1.4
MIN	2.2	3.6	3.6	4.0	4.6	3.7	2.4	2.4	1.8	1.7	.74	.38
AC-FT	394	440	903	824	639	481	308	457	174	225	80	39

CAL YR 1988 TOTAL 2107.4 MEAN 5.76 MAX 50 MIN 1.2 AC-FT 4180
WTR YR 1989 TOTAL 2502.45 MEAN 6.86 MAX 54 MIN .38 AC-FT 4960

16931000 ATAULOMA STREAM AT AFAO

LOCATION.--Lat 14°20'10" S., long 170°48'02" W., Hydrologic Unit 20100001, on left bank at Afao, 100 ft upstream from highway bridge, and 300 ft upstream from mouth.

DRAINAGE AREA.--0.24 mi^2.

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

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft, by hand levels from high-tide mark.

REMARKS.--Records good. No diversion upstream.

AVERAGE DISCHARGE.--30 years (water years 1960-89), 1.45 ft^3/s (1,050 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 815 ft^3/s, Oct. 28, 1979, gage height, 4.47 ft, from rating curve extended above 30 ft^3/s; minimum, 0.04 ft^3/s, Oct. 24-26, 28-31, Nov. 1, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 6	1500	260	2.98	Mar. 17	1400	*282	*3.07
Feb. 21	2030	248	2.93	Mar. 28	1800	248	2.93

Minimum discharge, 0.11 ft^3/s, Sept. 20-28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.52	.80	3.1	.82	.87	.74	2.8	.27	.15	.27	.15
2	.43	.44	1.2	2.4	.74	.98	.64	1.3	.27	.15	.27	.13
3	.30	3.4	1.4	17	.64	.69	.59	1.3	.36	.15	.24	.13
4	.47	2.0	1.2	3.0	.59	.59	.54	11	.33	5.2	.24	.15
5	.99	.74	.87	2.8	6.8	.76	.49	1.7	.24	.94	.24	.17
6	.69	.59	1.1	42	5.3	.87	.44	2.8	.28	.44	.21	.30
7	.90	1.2	4.2	8.6	3.6	.54	.44	2.8	.27	.30	.24	.17
8	.59	.69	5.7	3.5	1.9	1.2	.44	2.1	.21	.52	.24	.17
9	.40	.54	7.8	2.2	1.2	3.2	.40	1.3	.19	11	.21	.15
10	.33	.49	11	1.8	1.4	.87	.40	.94	.24	2.1	.21	.15
11	.30	1.2	6.4	1.4	1.4	.64	.40	.88	.27	1.4	.19	.15
12	.27	.94	3.5	2.6	2.6	4.3	1.1	1.1	.21	.80	.19	.15
13	.43	1.3	1.9	1.4	12	2.0	.49	.91	1.2	.64	.19	.15
14	2.3	1.0	1.3	6.1	2.0	1.7	.40	.87	.41	.59	.19	.13
15	.69	.82	.94	1.7	1.3	1.0	.36	.69	1.1	.49	.19	.15
16	.54	.89	.87	1.2	4.3	.69	.33	.64	.59	.44	.19	.13
17	.49	4.0	5.8	1.5	3.6	13	.40	.79	.36	.40	.17	.13
18	.49	7.2	5.8	.94	1.5	4.6	.33	.59	.27	.40	.17	.13
19	7.9	1.6	3.0	.87	1.7	1.4	.30	.49	.24	.36	.17	.13
20	2.0	.94	1.3	3.9	1.0	1.8	1.5	.44	.24	.33	.17	.11
21	1.0	.74	1.2	5.3	11	2.0	.40	.40	.21	.30	.17	.11
22	.94	.59	.87	1.6	4.8	1.1	.45	.40	.19	.83	.17	.11
23	3.8	.54	1.0	1.0	1.3	.80	.33	.36	.19	.40	.17	.11
24	.94	.49	1.4	.94	6.6	.74	.30	.36	.17	.44	.17	.11
25	.64	.49	3.0	.94	1.3	.64	.27	.33	.21	.49	.17	.11
26	.54	2.5	12	1.1	1.0	.69	.30	.33	.17	.40	.17	.11
27	1.2	2.6	14	1.6	.94	.54	.24	.30	.21	.44	.17	.11
28	.59	2.9	8.2	.80	1.4	9.6	.78	.30	.24	.30	.15	.11
29	.49	1.8	2.5	1.4	---	8.3	.68	.27	.19	.27	.15	.13
30	.91	.94	3.4	.74	---	1.3	7.5	.27	.17	.27	.15	.15
31	.89	---	3.2	1.4	---	.94	---	.27	---	.27	.17	---
TOTAL	32.75	44.09	116.85	124.83	82.73	68.35	21.98	39.03	9.50	31.21	6.00	4.19
MEAN	1.06	1.47	3.77	4.03	2.95	2.20	.73	1.26	.32	1.01	.19	.14
MAX	7.9	7.2	14	42	12	13	7.5	11	1.2	11	.27	.30
MIN	.27	.44	.80	.74	.59	.54	.24	.27	.17	.15	.15	.11
AC-FT	65	87	232	248	164	136	44	77	19	62	12	8.3

CAL YR 1988 TOTAL 428.56 MEAN 1.17 MAX 19 MIN .15 AC-FT 850
WTR YR 1989 TOTAL 581.51 MEAN 1.59 MAX 42 MIN .11 AC-FT 1150

16948000 AFUELO STREAM AT MATUU

LOCATION.--Lat 14°18'07" S., long 170°41'07" W., Hydrologic Unit 20100001, on left bank 0.2 mi northwest of Matuu and 0.3 mi upstream from mouth.

DRAINAGE AREA.--0.25 mi^2.

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. Elevation of gage is 80 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Small diversion upstream for domestic use since September 1972.

AVERAGE DISCHARGE.--31 years (water years 1959-89), 1.46 ft^3/s (1,060 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft^3/s, May 3, 1985, gage height, 4.70 ft, from rating curve extended above 26 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.01 ft^3/s, Sept. 16, 17, 20-26, 28, 29, 1975, Apr. 5-7, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 160 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 6	1430	*398	*4.19	Feb. 16	2300	186	3.07
Feb. 5	0930	174	2.99	Mar. 14	1800	211	3.22
Feb. 12	1230	200	3.15	Apr. 22	0330	222	3.28

Minimum discharge, 0.03 ft^3/s, Sept. 23-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.36	.91	4.2	.49	.56	.36	6.3	.11	.09	.09	.04
2	.05	.19	.36	1.7	2.2	.50	.25	2.8	.10	.08	.08	.05
3	.05	.74	.59	18	1.2	.33	.19	1.2	.13	.09	.07	.04
4	.31	.23	.50	2.5	1.4	.30	.23	5.2	.20	.13	.08	.04
5	.28	.11	.28	4.8	8.7	.52	.16	e1.0	.09	.13	.06	.03
6	2.8	.09	.36	40	1.7	.53	.16	e.80	.09	.08	.04	.11
7	1.6	.11	11	18	4.6	.33	.20	e1.5	.15	.10	.09	.04
8	.65	.09	11	3.3	2.8	.25	2.3	e3.0	.10	.10	.05	.03
9	.19	.05	14	1.5	.80	1.3	.39	e1.5	.15	5.5	.04	.03
10	.11	.06	8.5	1.6	.50	.75	.21	e1.0	.10	.83	.05	.03
11	.09	.89	9.3	.80	.38	.50	.19	e.85	.35	3.0	.04	.04
12	.06	.99	2.1	.97	19	1.8	.38	e.70	.28	.50	.04	.04
13	.07	1.4	1.6	1.4	9.0	.70	.16	e.60	.11	.15	.05	.05
14	.63	1.6	1.2	7.2	2.1	14	.13	e1.5	.42	.07	.05	.05
15	.29	.33	.80	1.3	.91	2.9	.11	e1.0	6.3	.06	.05	.05
16	.20	8.2	.70	.70	9.1	.85	.11	e.60	1.8	.06	.04	.03
17	.16	6.6	7.6	.97	10	.60	.11	e.40	.36	.07	.04	.04
18	.16	11	4.2	.52	2.6	.70	.09	e.30	.19	.07	.05	.04
19	8.2	3.1	2.8	.64	2.5	.39	.08	e.25	.14	.07	.05	.03
20	1.0	2.3	2.4	.42	1.0	1.1	4.2	e.20	.10	.06	.04	.04
21	.33	1.3	.85	7.3	1.3	.46	1.5	e.15	.11	.07	.03	.04
22	.16	.42	.65	1.7	2.8	.24	16	e.10	.08	.76	.05	.03
23	.51	.25	.76	.75	1.4	.47	1.3	e.09	.06	.85	.05	.03
24	.16	.19	2.0	.42	.91	.19	.70	e.09	.08	1.1	.06	.03
25	.13	2.4	1.5	.42	.65	.14	.39	e.08	.10	.60	.05	.03
26	.09	3.9	6.9	.46	.50	.23	1.1	e.08	.06	.23	.05	.03
27	.08	8.3	7.9	.33	.42	.14	.46	e.07	.10	.13	.04	.03
28	4.2	3.0	7.5	.25	.70	5.2	4.3	e.06	.16	.08	.04	.04
29	1.1	3.3	1.6	3.0	---	6.4	3.0	e.06	.10	.09	.04	.04
30	.63	1.0	2.6	.65	---	.98	2.8	e.05	.09	.08	.04	.05
31	1.4	---	8.9	.30	---	.46	---	e.09	---	.07	.04	---
TOTAL	25.74	62.50	121.36	126.10	89.66	43.82	41.56	31.62	12.21	15.30	1.59	1.20
MEAN	.83	2.08	3.91	4.07	3.20	1.41	1.39	1.02	.41	.49	.05	.04
MAX	8.2	11	14	40	19	14	16	6.3	6.3	5.5	.09	.11
MIN	.05	.05	.28	.25	.38	.14	.08	.05	.06	.06	.03	.03
AC-FT	51	124	241	250	178	87	82	63	24	30	3.2	2.4

CAL YR 1988 TOTAL 447.61 MEAN 1.22 MAX 17 MIN .04 AC-FT 888
WTR YR 1989 TOTAL 572.66 MEAN 1.57 MAX 40 MIN .03 AC-FT 1140

e Estimated.

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 flood-flow 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 base flow 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 stream-flow 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 1989

Station No.	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Caroline Islands, Island of Kosrae				
16899780	Tafuyat River	Lat 05°18'38" N., long 162°00'47" E., at old Japanese Dam, 0.75 mi upstream from mouth, and 1.5 mi east of Mount Finkol.	0.27	1974-75, 1977-83, 1988-89	09-18-89	1.3
16899830	Innem River	Lat 05°19'49" N., long 163°00'27" E., at concrete road bridge, 0.5 mi upstream from mouth, and 1.4 mi southeast of Mount Mununte.	1.82	1971-74, 1978-83, 1988-89	09-08-89	9.0
		Samoa Islands, Island of Tutuila				
16917500	Leele Stream at mouth, at Fagasa	Lat 14°17'28" S., long 170°43'09" W., at Fagasa and 200 ft upstream from mouth.	.23	1966-76≠, 1977, 1981-89	07-19-89 09-27-89	0.21 .14
16919000	Leaveave Stream near Aasu	Lat 14°18'28" S., long 170°45'06" W., 0.6 mi upstream from mouth and 0.9 mi southeast of Aasu.	.60	1959-63, 1968, 1974-76, 1978-79, 1981, 1983, 1985-87, 1989	08-11-89 09-29-89	1.24 .41
16920000	Aasu Stream near Aasu	Lat 14°18'16" S., long 170°45'29" W., 300 ft downstream from 100-ft waterfall , 0.5 mi south of Aasu, and 0.5 mi upstream from mouth.	.82	1959-63, 1968, 1974-76, 1978-79, 1981, 1983, 1985-87, 1989	07-21-89 09-29-89	1.72 .44
16931500	Asili Stream at alt. 330 ft, near Asili	Lat 14°19'34" S., long 170°47'38" W., 1.3 mi northwest of Leone, 1.5 mi southwest of Aoloaufou, and 0.8 mi upstream from mouth.	.32	1977-86≠, 1987-89	08-15-89	.28

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1989--Continued

Station No.	Station name	Location	Drainage area mi^2	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Samoa Islands, Island of Tutuila--Continued				
16932000	Asili Stream near Asili	Lat 14°19'46" S., long 170°47'42" W., 0.4 mi north of Asili and 0.5 mi upstream from mouth	0.55	1959-61, 1963-65, 1968, 1970, 1974-77, 1981-85, 1987, 1989	08-15-89	0.52
16932500	Asili Stream at Asili	Lat 14°20'04" S., long 170°47'40" W., 100 ft upstream from highway bridge at Asili and 0.1 mi upstream from mouth.	.66	1958-59≠, 1960-61, 1963-65, 1967-69, 1974-77, 1981-85, 1987-89	08-15-89	1.02
16933500	Leafu Stream at alt. 370 ft, near Leone	Lat 14°19'31" S., long 170°46'50" W., 900 ft upstream from village stream intake, 1.0 mi southwest of Aoloaufou, and 1.1 mi north of Leone.	.31	1977-86≠, 1987-89	08-15-89	1.4
16934000	Leafu Stream near Leone	Lat 14°19'47" S., long 170°46'55" W., 30 ft upstream from reservoir, 0.9 mi upstream from mouth, and 1.0 mi north of Leone.	.69	1959-64, 1968-69, 1971-74, 1976-77, 1981-89	08-15-89	.55
16937000	Vaitele Stream at Lepine	Lat 14°18'51" S., long 170°43'35" W., 0.7 mi north of Lepine and 1.1 mi upstream from mouth.	.18	1959-61, 1963-65, 1967-69, 1971, 1974, 1976, 1989	09-28-89	.22
16944000	Papa Stream near Nuuuli	Lat 14°18'31" S., long 170°42'29" W., 0.3 mi upstream from Tauese Stream and 0.9 mi northwest of Nuuuli.	.57	1959-61, 1963-64, 1967-68, 1974-78, 1981-89	07-19-89 09-21-89	.97 .67
16949800	Utumoa Stream near Pago Pago	Lat 14°17'35" S., long 170°42'20" W., 0.6 mi upstream from mouth and 1.1 mi south of Pago Pago above the Vaipito diversion intake system.	.07	1960-61≠ 1963-65, 1967-71, 1974, 1983, 1986-87, 1989	05-24-89 08-23-89	.36 .14
16960000	Alega Stream at Alega	Lat 14°16'58" S., long 170°38'19" W., 300 ft upstream from left-bank tributary, 0.2 mi northwest of Alega, and 0.3 mi upstream from mouth.	.19	1958-76≠, 1977-78, 1981-89	07-19-89 09-27-89	.44 .38
16963900	Leafu Stream near Auasi	Lat 14°16'27" S., long 170°34'26" W., 35 ft upstream from upper village intake, 0.1 mi north of Auasi, and 0.2 mi upstream from mouth.	.11	1972-86≠, 1987-89	07-19-89 09-27-89	.05 .04

≠ Operated as a continuous-record gaging station.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1989

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum		
					Date	Gage height (ft)	Discharge (ft^3/s)
		Mariana Islands, Island of Guam					
16807200	Agana River at Agana	Lat 13°28'23"N., long 144°45'13"E., upstream side of road bridge East Agana, 0.2 mi southeast of Leary Junction, and 0.5 mi northeast of Government House, Agana.	8.60	1973-89	09-11-89	--	e<100
16808120	Namo River near Santa Rosa	Lat 13°23'44"N., long 144°39'57"E., upstream of weir, 0.75 mi south of Camp Roxas, and 0.75 mi northwest of Santa Rita.	1.56	1980-89	09-11-89	--	1,220

Discharge measurements made at miscellaneous sites during water year 1988

Stream	Tributary to	Location	Drainage area mi^2	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Samoa Islands, Island of Tutuila				
Unnamed tributary	Asili Stream	Lat 14°19'42" S., long 170°47'46" W., 50 ft above confluence with Asili Stream and 0.5 mi northwest of Asili.	--	1977, 1987	09-28-88	0.02

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

Discharge measurements made at miscellaneous sites during water year 1989

Stream	Tributary to	Location	Drainage area mi^2	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		Samoa Islands, Island of Tutuila				
Utumoa Down Stream No. 2	Vaipito Stream	Lat 14°17'29" S., long 170°42'21" W., 0.50 mi upstream from confluence of Vaipito Stream and 0.37 mi northwest of Fagaalu Reservoir.	--	--	05-24-89 08-23-89	0.15 0.06
Utumoa Down Stream No. 3	Vaipito Stream	Lat 14°17'28" S., long 170°42'22" W., 0.45 mi upstream from confluence of Vaipito Stream and 0.44 mi northwest of Fagaalu Reservoir.	--	--	05-24-89 08-23-89	0.20 0.12
Leafu Stream No. 3	Pacific Ocean	Lat 14°19'34" S., long 170°46'54" W., 1,100 ft above village catchment and 1.3 mi northeast of Leone, and 150 ft above second falls.	--	1977, 1981-82, 1987	08-15-89	0.85
Unnamed tributary	Asili Stream	Lat 14°19'42" S., long 170°47'46" W., 200 ft above confluence with Asili Stream and 0.5 mi northwest of Asili.	--	1977, 1987-88	08-15-89	0.02

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF POHNPEI

16898850 MAHND RIVER (LAT 06°05'29" N LONG 158°17'02" E)

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
SEP 02...	1250	9.7	42	7.7	26.0	16	2.4	2.4	2.6	26

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	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 02...	0.3	0.30	17	<1.0	3.3	<0.10	12	<0.100	46	2

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

MARIANA ISLANDS, ISLAND OF GUAM

132833144445371. Local number, 18-2844-04 Tide Gage of Agana.

LOCATION.--Lat 13°28'33" N., long 144°44'53" E., Hydrologic Unit 20100003, at Agana Boat Basin. Owner: Government of Guam.

WELL CHARACTERISTICS.--Twelve-inch PVC stilling well, 14 ft deep.

DATUM.--Altitude of land-surface datum is 6.40 ft. Measuring point: Top of PVC pipe, 8.19 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, April 1, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.44 ft above mean sea level, Aug. 27, 1984; lowest, -2.47 ft, Dec. 14, 1985.

TIDE STAGES, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	.60	.47	.71	.75	.63	.65	.41	.48	.31	.52	.24
2	.69	.62	.56	.70	.75	.81	.71	.59	.39	.28	.54	.29
3	.68	.78	.54	.67	.68	.79	.80	.50	.38	.29	.46	.36
4	.67	.72	.55	.63	.69	.75	.79	.40	.36	.31	.56	.35
5	.67	.63	.55	.67	.69	.86	.78	.35	.29	.34	.54	.38
6	.68	.53	.62	.69	.78	.86	.75	.29	.31	.38	.56	.36
7	.71	.51	.65	.72	.75	.85	.71	.27	.32	.40	.44	.26
8	.72	.54	.63	.75	.65	.76	.66	.23	.35	.43	.45	.18
9	.78	.54	.66	.82	.72	.73	.60	.20	.36	.40	.46	.21
10	.72	.55	.65	.77	.70	.73	.54	.13	.35	.44	.43	.21
11	.71	.47	.62	.70	.64	.63	.59	.18	.36	.44	.31	.26
12	.69	.46	.57	.68	.66	.65	.64	.27	.31	.47	.30	.26
13	.70	.39	.58	.73	.81	.62	.64	.39	.32	.47	.27	.20
14	.65	.43	.63	.70	.73	.65	.67	.42	.31	.45	.27	.14
15	.58	.42	.72	.70	.70	.62	.69	.52	.34	.35	.33	.19
16	.56	.39	.66	.68	.93	.61	.68	.54	.33	.36	.38	.14
17	.53	.46	.61	.71	1.10	.62	.70	.57	.23	.40	.34	.10
18	.54	.55	.68	.75	.82	.65	.70	.55	.12	.36	.36	.04
19	.58	.56	.84	.92	.72	.66	.74	.55	.12	.34	.36	-.07
20	.59	.64	.78	.79	.68	.76	.86	.50	.09	.34	.33	-.12
21	.56	.66	.87	.80	.70	.67	1.08	.47	.09	.36	.28	-.13
22	.69	.85	.81	.74	.75	.69	.64	.47	.14	.33	.17	-.13
23	.73	.80	.74	.66	.73	.70	.57	.44	.18	.39	.15	-.11
24	.77	.75	.68	.71	.70	.76	.46	.43	.25	.44	.13	-.07
25	.70	.59	.72	.70	.76	.66	.45	.44	.23	.39	.07	-.04
26	.72	.51	.67	.66	.62	.54	.40	.43	.31	.32	.01	.05
27	.74	.48	.64	.70	.56	.52	.33	.44	.34	.38	.08	.08
28	.72	.47	.64	.72	.52	.53	.36	.52	.36	.37	.12	.10
29	.71	.44	.65	.69	---	.51	.35	.51	.38	.31	.17	.08
30	.71	.45	.65	.71	---	.50	.38	.55	.35	.32	.17	.11
31	.65	---	.64	.75	---	.55	---	.50	---	.44	.18	---
MEAN	.67	.56	.65	.72	.72	.67	.63	.42	.29	.37	.31	.13
MAX	.78	.85	.87	.92	1.10	.86	1.08	.59	.48	.47	.56	.38
MIN	.53	.39	.47	.63	.52	.50	.33	.13	.09	.28	.01	-.13

WTR YEAR 1989 MAX 2.42 FEB 17 MIN -1.98 JUN 21

MARIANA ISLANDS, ISLAND OF SAIPAN

151032145460370. Local number, 14-1045-09 Hakmang Well 78.

LOCATION.--Lat 15°10'22" N., long 145°45'51" E., Hydrologic Unit 20100006, 0.8 mi west-southwest of the Hakmang Communication station and 2.3 mi northeast of San Vicente Village. Owner: Government of the Northern Mariana Islands.

AQUIFER.--Tagpochau Limestone.

WELL CHARACTERISTICS.--Drilled artesian well, depth 369 ft, diameter 12 in.

DATUM.--Elevation of land-surface datum is 229 ft. Measuring point: Top of casing, about 230 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVELS: Water-level recorder, March 1973 to May 1976, March 1977 to September 1978, December 1980 to current year.
WATER QUALITY: Occasional measurements 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest daily water level, 20.18 ft above mean sea level, Sep. 13, 1988; lowest daily, 14.86 ft above mean sea level, Sep. 4, 1988.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.84	16.26	---	16.85	---	---	17.31	16.44	16.14	15.32	---	---
2	15.90	16.26	---	16.83	---	---	17.34	16.48	16.09	15.25	---	---
3	15.92	16.29	---	16.82	---	---	17.37	16.63	16.05	15.28	---	---
4	15.90	16.32	---	16.80	---	---	17.37	16.65	16.01	15.26	---	---
5	18.31	16.31	---	16.78	---	---	17.37	16.64	15.99	15.25	---	---
6	16.59	---	---	16.78	---	---	17.36	16.67	15.98	15.23	---	---
7	16.11	---	---	16.78	---	---	17.35	16.67	15.95	15.23	---	---
8	16.07	---	---	16.78	---	---	17.36	16.69	15.94	15.21	---	---
9	16.06	---	---	---	---	16.75	17.36	16.69	15.92	15.30	---	---
10	16.08	---	---	---	---	16.71	17.34	16.67	15.90	15.34	---	---
11	16.12	---	---	---	---	16.66	17.35	16.69	15.87	15.30	---	---
12	16.12	---	---	---	---	16.62	17.36	16.70	15.85	15.29	---	---
13	16.12	---	---	---	---	16.60	17.31	16.73	15.81	15.38	---	---
14	16.12	---	---	---	---	16.59	17.10	16.72	15.79	15.46	---	---
15	16.11	---	---	---	---	16.60	17.03	16.72	15.79	15.58	---	---
16	17.91	---	---	---	---	16.58	16.97	16.72	15.78	15.94	---	---
17	16.14	---	---	---	---	16.81	16.91	16.69	15.68	16.06	---	---
18	16.13	---	---	---	---	16.92	16.96	16.69	15.61	16.10	---	---
19	16.15	---	---	---	---	16.99	17.07	16.73	15.61	16.14	---	---
20	16.17	---	---	---	---	17.03	17.23	16.73	15.63	16.13	---	---
21	16.16	---	---	---	---	17.07	17.11	16.72	15.56	16.16	---	---
22	16.39	---	---	---	---	17.12	17.07	16.73	15.64	16.15	---	17.94
23	16.22	---	---	---	---	17.15	16.95	16.72	15.60	16.11	---	17.95
24	16.24	---	---	---	---	17.16	16.84	16.73	15.57	16.13	---	18.02
25	16.25	---	---	---	---	17.18	16.72	16.75	15.55	16.09	---	18.08
26	16.25	---	---	---	---	17.21	16.63	16.75	15.53	16.06	---	18.10
27	16.26	---	---	---	---	17.23	16.55	16.64	15.50	16.06	---	18.10
28	16.27	---	---	---	---	17.25	16.52	16.45	15.46	16.09	---	18.11
29	16.31	---	---	---	---	17.26	16.48	16.34	15.44	---	---	18.12
30	16.28	---	16.85	---	---	17.27	16.44	16.27	15.38	---	---	18.17
31	16.27	---	16.84	---	---	17.29	---	16.20	---	---	---	---
MEAN	16.28	---	---	---	---	---	17.07	16.63	15.75	---	---	---
MAX	18.31	---	---	---	---	---	17.37	16.75	16.14	---	---	---
MIN	15.84	---	---	---	---	---	16.44	16.20	15.38	---	---	---

WTR YEAR 1989 MAX MEAN DAILY 18.31 OCT 5 MIN MEAN DAILY 15.21 JUL 8

MARIANA ISLANDS, ISLAND OF SAIPAN--Continued

151130145445970. Local number, 14-1144-07 Akgak Well 31.

LOCATION.--Lat 15°11'30" N., long 145°44'59" E., Hydrologic Unit 20100006, 1.2 mi south of Capitol Hill and 2.5 mi north of San Vicente Village. Owner: Government of the Northern Mariana Islands.

AQUIFER.--Tagpochau Limestone.

WELL CHARACTERISTICS.--Drilled perched water-table well, depth 290 ft, diameter 12 in.

DATUM.--Elevation of land-surface datum is 615 ft. Measuring point: Top of casing, 615.37 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, July 1982 to current year.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 434.54 ft above mean sea level, Feb. 21, 1987; lowest, 371.34 ft above mean sea level, July 21, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	381.03	---	382.20	379.03	379.26	378.29	378.16	376.69	376.70	---	394.94
2	---	381.10	---	382.17	378.92	379.38	378.29	378.14	376.67	376.65	---	395.41
3	---	381.14	---	382.00	378.91	379.10	378.29	378.09	376.65	376.60	---	396.06
4	---	381.18	---	380.82	378.89	378.89	378.29	378.03	376.62	376.59	---	397.92
5	---	381.20	---	380.00	378.88	378.80	378.28	377.95	376.58	376.51	381.12	399.17
6	---	381.25	---	379.57	378.84	378.84	378.27	377.90	376.56	376.50	381.33	398.73
7	---	381.31	---	379.35	378.85	378.92	378.25	377.82	376.52	376.49	381.44	398.36
8	---	381.35	383.99	379.15	378.88	378.93	378.23	377.74	376.49	376.48	381.55	398.33
9	---	381.51	383.83	379.00	378.89	378.83	378.20	377.68	376.39	376.46	381.67	398.56
10	---	381.70	383.53	378.90	378.89	378.79	378.21	377.58	376.38	376.41	381.74	398.80
11	---	381.71	383.35	378.88	378.90	378.81	378.29	377.49	376.35	376.35	381.78	399.06
12	---	381.84	383.08	378.83	378.99	379.15	378.25	377.45	376.33	376.25	381.91	399.39
13	380.61	382.15	382.88	378.82	379.20	379.30	378.18	377.43	376.30	376.25	382.01	399.50
14	380.65	---	382.90	378.82	379.30	379.20	378.25	377.37	376.28	376.24	382.18	399.78
15	380.61	---	382.91	378.80	379.23	379.00	378.57	377.31	376.33	376.20	382.50	400.32
16	380.60	---	383.21	378.80	379.30	378.89	378.38	377.28	376.47	376.19	382.93	400.82
17	380.58	---	383.20	378.79	378.95	378.79	378.30	377.23	376.50	376.18	383.31	401.29
18	380.50	---	382.99	378.79	378.80	378.71	378.24	377.20	376.52	376.10	383.71	401.74
19	380.42	---	382.85	378.90	378.73	378.65	378.21	377.16	376.56	376.10	384.57	402.12
20	380.51	---	382.74	378.90	378.73	378.59	378.21	377.13	376.61	376.09	385.45	402.25
21	380.67	---	382.64	378.85	378.80	378.55	378.21	377.07	376.72	376.08	386.57	402.49
22	380.70	---	382.54	378.90	378.85	378.51	378.21	377.01	376.88	376.09	387.78	402.71
23	380.71	---	382.46	379.30	379.08	378.46	378.26	376.97	376.96	376.08	388.90	402.93
24	380.74	---	382.45	379.75	379.25	378.44	378.27	376.94	377.03	376.07	389.88	403.19
25	380.79	---	382.41	380.01	379.15	378.43	378.27	376.91	377.09	376.05	390.84	403.42
26	380.81	---	382.37	380.22	378.94	378.41	378.26	376.88	377.08	---	391.57	403.89
27	380.86	---	382.34	380.38	378.89	378.39	378.27	376.89	376.95	---	392.29	404.36
28	380.81	---	382.30	380.41	379.00	378.34	378.27	376.87	376.92	---	392.94	404.86
29	380.85	---	382.27	380.66	---	378.30	378.26	376.80	376.84	---	393.52	405.55
30	380.92	---	382.26	380.70	---	378.30	378.24	376.75	376.76	---	394.02	405.89
31	381.02	---	382.21	379.62	---	378.30	---	376.71	---	---	394.47	---
MEAN	---	---	---	379.69	378.97	378.75	378.27	377.35	376.63	---	---	400.73
MAX	---	---	---	382.20	379.30	379.38	378.57	378.16	377.09	---	---	405.89
MIN	---	---	---	378.79	378.73	378.30	378.18	376.71	376.28	---	---	394.94

WTR YEAR 1989 MAX 405.95 SEP 30 MIN 376.04 JUL 25

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SAMPLE DEPTH DIS-TANCE BELOW MSL FEET	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, (MG/L AS CL)
MARIANA ISLANDS, ISLAND OF SAIPAN										
150733145435970	14-0743-26	15 07 27 N	145 43 44 E	03-10-89	0900	--	--	2450	28.0	610
150956145461801	14-0946-01	15 09 56 N	145 46 18 E	12-08-88	1011	--	72	1320	--	280
				12-08-88	1130	--	--	2050	--	520
				12-08-88	1230	--	70	2500	--	600
				12-08-88	1600	--	69	3400	--	950
				12-08-88	1830	--	--	3750	27.5	1100
				12-08-88	2100	--	69	4170	--	1200
				12-08-88	2230	--	--	4260	--	1200
				12-08-88	2330	--	--	3470	--	920
				12-08-88	2400	--	--	4100	--	1200
				12-09-88	0230	--	--	4600	--	1300
				12-09-88	0500	--	--	4780	--	1300
				12-09-88	0800	--	--	4830	--	1700
				12-09-88	1055	--	--	5100	--	1400
				12-29-88	1340	--	41	930	--	170
				12-29-88	1500	--	40	1200	--	270
				12-29-88	1730	--	41	1630	--	400
				12-29-88	1930	--	--	1820	--	470
				12-29-88	2230	--	40	2010	--	530
				12-30-88	0030	--	--	2180	--	560
				12-30-88	0330	9	--	2250	--	590
				12-30-88	0630	--	--	2350	--	640
				12-30-88	0830	--	--	2400	--	680
				12-30-88	1430	--	--	2500	--	650
150936145462501	14-0946-02	15 09 36 N	145 46 25 E	12-20-88	1450	--	18	1130	--	230
				12-20-88	1630	--	18	1150	--	230
				12-20-88	1800	--	18	1150	--	240
				12-20-88	1830	--	--	1180	--	230
				12-21-88	0030	--	--	1170	--	240
				12-21-88	0230	--	18	1170	--	240
				12-21-88	0430	--	--	1200	28.0	240
				12-21-88	0730	--	--	1210	--	240
				12-21-88	1330	--	18	1210	--	240
				12-21-88	1530	--	--	1220	--	240
151026145454970	14-1045-08	15 10 26 N	145 45 49 E	10-02-88	0557	--	--	12600	28.0	4100
				10-03-88	0140	--	--	13000	28.0	4100
				10-10-88	0946	--	--	11800	28.0	4200
				12-02-88	0240	--	--	4900	29.0	1400
				12-15-88	1200	--	--	4800	29.0	1400
				12-20-88	1240	--	--	5080	--	1400
				06-09-89	1335	225	--	5500	28.0	1900
				06-09-89	1400	235	--	7200	28.0	2700
				06-09-89	1425	250	--	7800	28.0	2800
				06-09-89	1450	240	--	7800	28.0	2900
				06-09-89	1520	290	--	8000	28.0	3000
				06-09-89	1550	375	--	9500	28.0	3100
151021145460870	14-1046-03	15 10 21 N	145 46 08 E	10-11-88	1110	--	87	1300	29.0	210
				01-14-89	0930	--	--	2770	27.5	780
				01-20-89	1018	--	--	1500	29.0	350
				01-20-89	1120	--	--	1710	28.0	390
				01-20-89	1300	--	--	1810	28.0	420
				01-20-89	1415	--	--	1880	28.0	430
				01-20-89	1715	--	--	1880	28.0	460
				01-20-89	2200	--	--	2010	27.5	480
				01-21-89	0005	--	--	1900	27.5	480
				01-21-89	0630	--	--	2200	27.5	510
				01-21-89	0850	--	--	2200	28.0	520
				01-21-89	1000	--	--	2200	28.0	530
				01-21-89	1100	--	--	2210	--	530
				03-09-89	1325	--	--	3400	28.0	900

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SAMPLE DEPTH DIS-TANCE BELOW MSL FEET	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, (MG/L AS CL)
MARIANA ISLANDS, ISLAND OF SAIPAN--Continued										
151004145460801	14-1046-04	15 10 04 N	145 46 08 E	12-12-88	1515	--	14	620	--	42
				12-12-88	1730	--	--	620	--	43
				12-12-88	1830	--	--	630	--	45
				12-12-88	1930	--	--	635	--	42
				12-12-88	2100	--	13	650	--	44
				12-13-88	0100	--	--	650	--	47
				12-13-88	0630	--	--	650	--	48
				12-13-88	1300	--	--	650	--	48
				12-13-88	1550	--	--	650	--	50
				01-05-89	1540	--	--	680	--	50
				01-05-89	1700	--	--	660	--	49
				01-06-89	0300	--	--	660	--	50
				01-06-89	0600	--	--	650	--	51
				01-06-89	1500	--	--	650	--	36
				01-06-89	1600	--	--	650	--	54
				01-08-89	1430	50	--	a661	--	72
151017145463801	14-1046-05	15 10 17 N	145 46 38 E	11-20-88	1310	--	--	ab35700	--	14000
				12-27-88	1435	--	--	600	--	90
				12-27-88	1500	--	8.9	700	--	88
				12-27-88	1600	--	--	720	--	88
				12-27-88	2030	--	8.8	720	--	90
				12-28-88	0130	--	--	720	--	92
				12-28-88	1030	--	--	730	--	96
				12-28-88	1530	--	--	730	--	94
151028145462101	14-1046-06	15 10 28 N	145 46 21 E	12-05-88	0800	--	--	1150	34.0	210
				12-05-88	1222	--	79	1300	30.0	250
				12-05-88	1410	--	73	1500	--	310
				12-05-88	1910	--	75	1850	27.5	420
				12-05-88	2340	--	75	2040	27.5	500
				12-06-88	0310	--	75	2200	--	550
				12-06-88	0910	--	--	2400	--	650
				12-06-88	1110	--	--	2410	--	640
				12-06-88	1310	--	--	2400	--	630
				01-07-89	1315	--	62	1200	--	230
				01-07-89	1430	--	62	1380	--	280
				01-07-89	1700	--	64	1550	27.5	340
				01-07-89	2000	--	62	1700	--	380
				01-08-89	0200	--	62	1900	--	470
				01-08-89	0600	--	64	2000	27.5	490
				01-08-89	1100	--	64	2180	--	540
				01-08-89	1400	--	64	2210	--	560
151309145443870	14-1344-18	15 13 08 N	145 44 39 E	03-10-89	1230	--	--	2700	27.5	660

a Laboratory conductance.
b Sample taken at well completeion, prior to purging.

MARIANA ISLANDS, ISLAND OF GUAM

132624144452771. Local number, 18-2645-07 Ordot Well A-20.

LOCATION.--Lat 13°26'24" N., long 144°45'27" E., Hydrologic Unit 20100003, at Ordot School, 1.4 mi west of junction of Routes 4 and 10, Ordot. Owner: Government of Guam.

AQUIFER.--Mariana Limestone and Alutom formation.

WELL CHARACTERISTICS.--Drilled parabasal water-table well, depth reported 120 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 137 ft. Measuring point: Top of casing, 141.74 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, January 1974 to current year.
WATER QUALITY: Water year 1989.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 54.03 ft above mean sea level, Oct. 21, 1980; lowest, 32.76 ft above mean sea level, June 21, 22, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.21	42.32	42.56	39.61	37.37	37.88	36.65	35.92	35.27	35.70	36.07	41.30
2	37.18	42.52	42.46	39.52	37.32	37.90	36.61	35.96	35.25	35.69	36.22	41.26
3	37.17	42.69	42.40	39.41	37.28	37.94	36.57	35.99	35.24	35.68	36.42	41.21
4	37.27	42.82	42.33	39.33	37.24	37.96	36.50	36.02	35.22	35.66	36.57	41.15
5	37.39	42.93	42.25	39.25	37.19	37.96	36.44	36.04	35.21	35.64	36.78	41.12
6	37.53	43.00	42.15	39.16	37.14	37.96	36.39	36.05	35.20	35.63	37.02	41.09
7	37.66	43.08	42.04	39.07	37.09	37.95	36.34	36.05	35.18	35.63	37.23	41.08
8	37.81	43.20	41.94	38.98	37.05	37.95	36.28	36.05	35.18	35.63	37.41	41.20
9	37.98	43.27	41.86	38.90	37.01	37.93	36.22	36.03	35.17	35.62	37.57	41.38
10	38.13	43.33	41.75	38.81	36.96	37.90	36.18	36.01	35.16	35.62	37.67	41.57
11	38.30	43.37	41.64	38.73	36.92	37.87	36.13	35.98	35.16	35.62	37.83	41.89
12	38.48	43.38	41.54	38.64	36.87	37.83	36.09	35.95	35.16	35.62	38.07	42.29
13	38.63	43.35	41.46	38.57	36.83	37.78	36.04	35.92	35.14	35.62	38.28	42.70
14	38.77	43.32	41.38	38.49	36.79	37.73	35.98	35.88	35.12	35.61	38.53	43.08
15	38.92	43.29	41.31	38.40	36.76	37.69	35.93	35.85	35.10	35.59	38.80	43.43
16	39.09	43.27	41.19	38.32	36.75	37.64	35.88	35.81	35.09	35.57	39.16	43.72
17	39.20	43.22	41.08	38.24	36.75	37.58	35.84	35.78	35.06	35.55	39.55	43.98
18	39.37	43.14	40.97	38.17	36.76	37.51	35.79	35.75	35.04	35.54	39.92	44.18
19	39.57	43.08	40.86	38.11	36.77	37.43	35.74	35.72	35.06	35.54	40.22	44.34
20	39.79	43.01	40.78	38.05	36.85	37.38	35.70	35.69	35.13	35.53	40.46	44.48
21	40.04	42.94	40.69	37.97	37.00	37.31	35.65	35.66	35.25	35.52	40.69	44.59
22	40.25	42.91	40.58	37.91	37.12	37.25	35.60	35.63	35.38	35.51	40.89	44.66
23	40.45	42.88	40.47	37.85	37.27	37.18	35.56	35.59	35.50	35.51	41.05	44.72
24	40.66	42.87	40.37	37.79	37.41	37.11	35.54	35.54	35.58	35.51	41.14	44.74
25	40.89	42.87	40.29	37.71	37.52	37.05	35.55	35.51	35.64	35.53	41.19	44.75
26	41.11	42.85	40.20	37.66	37.64	36.99	35.62	35.49	35.67	35.56	41.24	44.74
27	41.33	42.82	40.12	37.61	37.73	36.93	35.70	35.45	35.69	35.60	41.29	44.74
28	41.54	42.75	40.02	37.57	37.82	36.86	35.76	35.41	35.70	35.65	41.31	44.72
29	41.74	42.69	39.88	37.53	---	36.81	35.83	35.37	35.71	35.69	41.34	44.71
30	41.89	42.63	39.77	37.46	---	36.75	35.88	35.34	35.71	35.77	41.35	44.68
31	42.12	---	39.68	37.41	---	36.70	---	35.31	---	35.90	41.34	---
MEAN	39.27	42.99	41.16	38.39	37.11	37.51	36.00	35.77	35.30	35.61	39.12	43.12
MAX	42.12	43.38	42.56	39.61	37.82	37.96	36.65	36.05	35.71	35.90	41.35	44.75
MIN	37.17	42.32	39.68	37.41	36.75	36.70	35.54	35.31	35.04	35.51	36.07	41.08

WTR YEAR 1989 MAX 44.76 Sep 27 MIN 35.04 JUN 18, 19

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132615144470571. Local number, 18-2647-01 Father Duenas Well.

LOCATION.--Lat 13°26'15" N., long 144°47'05" E., Hydrologic Unit 20100003, at Father Duenas Memorial School, Chalan Pago-Ordot. Owner: Government of Guam.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Drilled parabasal water-table well, casing diameter 8 in.

DATUM.--Elevation of land-surface datum is 179 ft. Measuring point: Top of casing, 179.86 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, March 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.37 ft above mean sea level, Oct. 24, 1980; lowest measured, 6.08 ft above mean sea level, Aug. 5, 1980.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	7.80	JAN 4	7.43	MAR 1	7.40	MAY 4	6.83	JUL 6	6.68	SEP 7	6.99
DEC 1	6.45	FEB 2	7.34	APR 4	7.19	JUN 5	6.71	AUG 3	6.85		

132626144471771. Local number, 18-2647-12 Mangilao Well (formerly Exploratory Well), Ex-4.

LOCATION.--Lat 13°26'26" N., long 144°47'17" E., Hydrologic Unit 20100003, in Tai Mangilao near Father Duenas Memorial High School. Owner: Government of Guam.

AQUIFER.--Argillaceous member of the Marianas Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 400 ft, borehole diameter 8 in., casing diameter 6 in., cased to 400 ft.

DATUM.--Elevation of land-surface datum is 152 ft. Measuring point: Top of PVC casing, 153.71 ft above mean sea level.

PERIOD OF RECORD.--
WATER QUALITY: 1981, 1983 to current year.
WATER LEVEL: Occasional measurements, March 1981 to April 1982, February 1983 to current year.
Water-level recorder, May to November 1982.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.86 ft above mean sea level, Sep. 2, 1986; lowest, measured, 4.82 ft above mean sea level, Aug. 23, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	6.40	JAN 4	5.67	MAR 1	5.66	APR 4	5.36	JUN 5	5.04	AUG 3	5.14
DEC 1	5.84	FEB 2	5.54	MAR 14	5.58	MAY 4	5.18	JUL 6	4.99	SEP 6	5.46

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132644144480871. Local number, 18-2648-02 BPM Well 1.

LOCATION.--Lat 13°26'44" N., long 144°48'08" E., Hydrologic Unit 20100003, on lot number 2287, 0.2 mi southeast of junction of Routes 15 and 10, Mangilao. Owner: Ana P. Diaz.

AQUIFER.--Coralline Limestone, probably Miocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 235 ft, casing diameter 12 in.

DATUM.--Elevation of land-surface datum is 210 ft. Measuring point: Top of casing, 209.86 ft, revised, above mean sea level.

PERIOD OF RECORD.--Occasional measurements, February 1972 to December 1973.
Water level recorder, January 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.45 ft above mean sea level, May 22, 1976; lowest, 1.89 ft above mean sea level, Feb. 11, 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.94	2.99	2.73	2.84	2.88	2.89	2.76	2.60	2.60	2.50	2.59	2.49
2	2.93	2.95	2.73	2.83	2.89	2.89	2.78	2.59	2.60	2.49	2.64	2.50
3	2.94	2.94	2.73	2.83	2.88	2.90	2.81	2.60	2.59	2.48	2.66	2.52
4	2.95	2.95	2.74	2.83	2.89	2.91	2.84	2.61	2.59	2.48	2.67	2.53
5	2.94	2.94	2.76	2.81	2.89	2.91	2.85	2.60	2.57	2.49	2.70	2.55
6	2.94	2.91	2.77	2.81	2.89	2.93	2.85	2.59	2.54	2.50	2.70	2.57
7	2.92	2.87	2.79	2.82	2.91	2.95	2.85	2.56	2.53	2.51	2.70	2.59
8	2.91	2.84	2.81	2.83	2.93	2.95	2.85	2.55	2.52	2.52	2.68	2.59
9	2.91	2.84	2.81	2.85	2.94	2.93	2.84	2.53	2.51	2.53	2.68	2.57
10	2.91	2.84	2.83	2.90	2.97	2.93	2.82	2.50	2.51	2.54	2.69	2.66
11	2.91	2.83	2.83	2.93	2.96	2.95	2.80	2.47	2.49	2.54	2.67	2.85
12	2.92	2.80	2.83	2.93	2.95	2.94	2.80	2.47	2.47	2.54	2.63	3.03
13	2.90	2.77	2.83	2.93	2.94	2.93	2.79	2.50	2.45	2.55	2.60	3.12
14	2.90	2.75	2.84	2.91	2.93	2.92	2.79	2.54	2.46	2.56	2.59	3.13
15	2.88	2.74	2.87	2.90	2.92	2.90	2.79	2.57	2.45	2.55	2.61	3.09
16	2.86	2.75	2.91	2.90	2.92	2.88	2.78	2.62	2.46	2.53	2.66	3.04
17	2.86	2.75	2.90	2.89	2.93	2.85	2.78	2.64	2.46	2.54	2.70	2.96
18	2.86	2.77	2.87	2.89	2.96	2.81	2.79	2.66	2.44	2.55	2.73	2.87
19	2.87	2.79	2.87	2.91	3.02	2.79	2.85	2.68	2.43	2.55	2.74	2.79
20	2.89	2.80	2.88	2.93	3.06	2.77	2.90	2.68	2.42	2.55	2.74	2.72
21	2.89	2.81	2.90	2.92	3.07	2.76	3.02	2.66	2.40	2.54	2.71	2.66
22	2.87	2.83	2.92	2.93	3.08	2.76	3.07	2.66	2.40	2.54	2.68	2.62
23	2.90	2.86	2.92	2.93	3.06	2.76	2.99	2.64	2.45	2.54	2.64	2.58
24	2.92	2.87	2.90	2.92	3.05	2.75	2.90	2.64	2.47	2.54	2.62	2.55
25	2.92	2.86	2.89	2.92	3.04	2.75	2.83	2.63	2.47	2.54	2.59	2.53
26	2.93	2.83	2.88	2.92	3.02	2.76	2.77	2.62	2.47	2.52	2.55	2.52
27	2.95	2.81	2.87	2.91	2.97	2.75	2.72	2.61	2.48	2.52	2.52	2.53
28	2.97	2.78	2.87	2.90	2.93	2.75	2.67	2.62	2.50	2.53	2.52	2.54
29	2.97	2.76	2.87	2.89	---	2.75	2.64	2.62	2.51	2.52	2.51	2.52
30	3.00	2.74	2.86	2.88	---	2.74	2.62	2.61	2.50	2.52	2.51	2.52
31	3.01	---	2.84	2.89	---	2.75	---	2.61	---	2.54	2.50	---
MEAN	2.92	2.83	2.84	2.89	2.96	2.85	2.82	2.60	2.49	2.53	2.64	2.69
MAX	3.01	2.99	2.92	2.93	3.08	2.95	3.07	2.68	2.60	2.56	2.74	3.13
MIN	2.86	2.74	2.73	2.81	2.88	2.74	2.62	2.47	2.40	2.48	2.50	2.49

WTR YEAR 1989 MAX 3.16 SEP 13, 14 MIN 2.34 JUN 21, 22

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132758144450571. Local number, 18-2745-03 Agana Well 147.

LOCATION.--Lat 13°27'58" N., long 144°45'05" E., Hydrologic Unit 20100003, on Route 4, 0.6 mi south of junction of Routes 1 and 4 in Agana. Owner: Government of Guam.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth when drilled, 186 ft, when measured in May 1973, 29 ft, casing diameter 6 in.

DATUM.--Elevation of land-surface datum is 33 ft. Measuring point: Top of casing, 33.22 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, August 1955 to May 1960, January 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.42 ft above mean sea level, Oct. 14, 1955; lowest measured, 6.83 ft above mean sea level, June 20, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 3	9.93	JAN 4	9.88	MAR 1	10.44	MAY 4	10.02	JUL 3	8.80	AUG 3	9.60
DEC 1	9.91	FEB 2	9.80	APR 4	10.14	JUN 5	9.95	JUL 6	8.82	SEP 6	9.78

132742144452971. Local number, 18-2745-07 Agana Springs.

LOCATION.--Lat 13°27'56" N., long 144°45'07" E., Hydrologic Unit 20100003, 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.--Elevation of land-surface datum is 10 ft. Measuring point: Edge of concrete spillway, 8.80 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, April 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Lowest water level measured, 6.04 ft above mean sea level, June 8, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 3	f	JAN 4	8.13	MAR 1	8.25	MAY 4	7.37	JUL 3	6.87	SEP 6	8.52
DEC 1	8.67	FEB 2	7.78	APR 4	7.36	JUN 5	6.74	AUG 3	7.82		

f Water overflowing spillway.

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132736144461671. Local number, 18-2746-06 Chochogo Well Ex-1.

LOCATION.--Lat 13°27'36" N., long 144°46'16" E., Hydrologic Unit 20100003, near San Miguel School, Chochogo. Owner: Government of Guam.

AQUIFER.--Mariana Limestone: Agana argillaceous member.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 597 ft, casing diameter 6 in, cased to 300 ft.

DATUM.--Elevation of land-surface datum is 94 ft. Measuring point: Top of PVC casing, 96.50 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, November 1980 to current year.
WATER QUALITY: 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.24 ft above mean sea level, Sept. 2, 1986; lowest measured, 6.14 ft above mean sea level, June 22, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	8.24	JAN 4	7.04	MAR 1	7.39	APR 4	7.63	JUN 5	6.34	AUG 3	7.16
DEC 1	7.47	FEB 2	6.91	APR 3	6.63	MAY 4	7.53	JUL 3	6.43	SEP 6	7.44

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132824144464271. Local number, 18-2846-01 ACEORP Tunnel.

LOCATION.--Lat 13°28'54" N., long 144°46'42" E., Hydrologic Unit 20100003, behind Navy Telephone Exchange, 0.35 mi southwest of junction of Routes 1 and 14, Tamuning. 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 each and tunnel 3 is 700 ft in length.

DATUM.--Elevation of land-surface datum is 180 ft. Measuring point: Top of wooden recorder shelf, 9.28 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, October 1954 to May 1965, March 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.95 ft above mean sea level, May 22, 1976; lowest, 1.70 ft above mean sea level, Feb. 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.77	2.80	2.65	---	2.83	2.69	2.60	2.48	2.41	2.38	2.64	2.32
2	2.73	2.79	2.66	---	2.81	2.81	2.62	2.53	2.39	2.38	2.69	2.34
3	2.74	2.81	2.72	---	2.78	2.77	---	2.54	2.38	2.36	2.72	2.37
4	2.73	2.82	2.69	---	2.75	2.78	---	2.51	2.39	2.36	2.75	2.39
5	2.72	2.78	2.68	---	2.75	2.78	---	2.48	2.37	2.36	2.78	2.46
6	2.71	2.73	2.67	---	---	2.81	---	2.48	2.36	2.41	2.78	2.45
7	2.72	2.66	2.69	---	---	2.81	---	2.46	2.39	2.37	2.74	2.49
8	2.75	2.65	2.71	---	---	2.79	---	2.43	2.39	2.36	2.68	2.45
9	2.81	2.67	2.73	---	---	2.79	---	2.40	2.38	2.36	2.63	2.58
10	2.89	2.68	2.74	---	---	2.79	---	2.34	2.39	2.38	2.58	2.88
11	2.83	2.64	2.74	---	---	2.78	---	2.32	2.37	2.36	2.53	3.11
12	2.80	2.62	2.71	2.81	---	2.76	---	2.28	2.32	2.38	2.49	3.18
13	2.77	2.59	2.72	2.85	---	2.74	---	2.32	2.31	2.40	2.49	3.07
14	2.74	2.58	2.75	2.83	---	2.71	---	2.36	2.30	2.40	2.51	2.91
15	2.72	2.60	2.78	2.83	---	2.69	---	2.41	2.32	2.37	2.56	2.83
16	2.72	2.58	2.79	2.81	---	2.64	---	2.46	2.34	2.39	2.61	2.73
17	2.72	2.59	2.77	2.79	---	2.60	---	2.49	2.37	2.39	2.64	2.62
18	2.70	2.61	2.75	2.80	---	2.60	---	2.51	2.34	2.42	2.66	2.53
19	2.69	2.62	2.83	2.84	---	2.62	---	2.54	2.30	2.43	2.65	2.45
20	2.70	2.63	2.84	2.85	---	2.67	---	2.53	2.28	2.42	2.61	2.40
21	2.68	2.65	2.87	2.85	---	2.70	---	2.52	2.28	2.41	2.54	2.35
22	2.70	2.75	2.82	2.83	2.85	2.67	---	2.51	2.26	2.46	2.48	2.34
23	2.75	2.81	2.82	2.81	2.86	2.69	---	2.50	2.26	2.42	2.44	2.32
24	2.76	2.83	2.79	2.80	2.83	2.71	---	2.49	2.29	2.42	2.41	2.31
25	2.75	2.79	2.78	2.80	2.82	2.72	2.69	2.47	2.28	2.40	2.38	2.30
26	2.77	2.72	2.78	2.79	2.81	2.68	2.65	2.47	2.29	2.40	2.33	2.30
27	2.80	2.69	2.77	2.81	2.75	2.64	2.58	2.46	2.29	2.41	2.30	2.32
28	2.81	2.68	---	2.81	2.69	2.61	2.55	2.46	2.31	2.45	2.32	2.34
29	2.85	2.64	---	2.80	---	2.57	2.54	2.46	2.36	2.48	2.35	2.32
30	2.86	2.64	---	2.79	---	2.57	2.51	2.45	2.38	2.48	2.34	2.31
31	2.84	---	---	2.83	---	2.57	---	2.44	---	2.57	2.32	---
MEAN	2.76	2.69	---	---	---	2.70	---	2.45	2.34	2.41	2.55	2.53
MAX	2.89	2.83	---	---	---	2.81	---	2.54	2.41	2.57	2.78	3.18
MIN	2.68	2.58	---	---	---	2.57	---	2.28	2.26	2.36	2.30	2.30

WTR YEAR 1989 MAX 3.25 SEP 12 MIN 2.13 JUN 21, 22

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132813144472771. Local number, 18-2847-12 (formerly 18-2847-06) Barrigada Well (A-16).

LOCATION.--Lat 13°28'13" N., long 144°47'27" E., Hydrologic Unit 20100003, at Carbullido School, 0.6 mi west of junction of Routes 8 and 10, Barrigada. Owner: Public Utility Agency of Guam.

AQUIFER.--Mariana Limestone, probably Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 215 ft, diameter 12 in.

DATUM.--Elevation of land-surface datum is 207 ft. Measuring point: Top of casing, 208.00 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, June 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.71 ft above mean sea level, May 22, 1976; lowest, 2.83 ft above mean sea level, Feb. 11, 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.73	3.82	3.61	3.70	3.73	3.77	3.59	3.46	3.41	3.33	3.54	3.37
2	3.72	3.80	3.60	3.71	3.72	3.78	3.61	3.47	3.41	3.29	3.58	3.37
3	3.72	3.80	3.62	3.70	3.70	3.77	3.63	3.50	3.41	3.29	3.60	3.39
4	3.73	3.82	3.63	3.68	3.70	3.78	3.66	3.48	3.41	3.29	3.65	3.41
5	3.72	3.79	3.62	3.67	3.70	3.78	3.67	3.46	3.40	3.29	3.69	3.42
6	3.72	3.77	3.60	3.67	3.70	3.80	3.68	3.45	3.39	3.30	3.71	3.50
7	3.72	3.76	3.63	3.68	3.71	3.80	3.68	3.43	3.37	3.31	3.68	3.53
8	3.71	3.68	3.65	3.70	3.71	3.80	3.68	3.41	3.36	3.32	3.62	3.53
9	3.74	3.68	3.67	3.72	3.70	3.79	3.68	3.39	3.35	3.32	3.59	3.60
10	3.79	3.69	3.67	3.78	3.72	3.79	3.65	3.36	3.36	3.34	3.56	4.15
11	3.79	3.66	3.68	3.76	3.71	3.79	3.63	3.31	3.34	3.36	3.53	4.57
12	3.77	3.64	3.67	3.75	3.71	3.77	3.63	3.29	3.31	3.36	3.48	4.59
13	3.77	3.61	3.67	3.77	3.72	3.76	3.62	3.30	3.30	3.37	3.47	4.43
14	3.73	3.59	3.69	3.77	3.76	3.73	3.62	3.35	3.28	3.37	3.48	4.21
15	3.71	3.59	3.71	3.77	3.75	3.69	3.61	3.38	3.28	3.37	3.50	4.09
16	3.71	3.58	3.74	3.75	3.75	3.66	3.62	3.41	3.32	3.35	3.60	4.00
17	3.73	3.58	3.72	3.73	3.77	3.61	3.61	3.44	3.31	3.37	3.60	3.86
18	3.70	3.59	3.70	3.74	3.92	3.61	3.61	3.46	3.30	3.37	3.66	3.75
19	3.70	3.60	3.74	3.75	4.16	3.61	3.63	3.48	3.31	3.38	3.68	3.64
20	3.70	3.62	3.77	3.77	4.06	3.63	3.67	3.48	3.26	3.38	3.64	3.58
21	3.69	3.65	3.79	3.76	3.95	3.64	3.77	3.47	3.25	3.37	3.60	3.52
22	3.69	3.70	3.80	3.75	3.91	3.63	3.81	3.47	3.23	3.38	3.54	3.50
23	3.71	3.77	3.78	3.74	3.90	3.64	3.89	3.46	3.24	3.37	3.48	3.46
24	3.74	3.78	3.76	3.72	3.90	3.65	3.82	3.45	3.23	3.37	3.45	3.43
25	3.73	3.77	3.74	3.72	3.90	3.68	3.70	3.45	3.22	3.36	3.43	3.41
26	3.77	3.73	3.73	3.72	3.90	3.66	3.65	3.43	3.22	3.38	3.41	3.40
27	3.80	3.69	3.73	3.73	3.87	3.63	3.59	3.43	3.23	3.38	3.38	3.42
28	3.80	3.67	3.71	3.72	3.76	3.60	3.54	3.43	3.24	3.39	3.38	3.42
29	3.82	3.62	3.72	3.72	---	3.59	3.52	3.43	3.29	3.40	3.38	3.42
30	3.87	3.61	3.72	3.70	---	3.58	3.49	3.44	3.33	3.41	3.38	3.41
31	3.86	---	3.70	3.72	---	3.57	---	3.43	---	3.45	3.37	---
MEAN	3.74	3.69	3.70	3.73	3.80	3.70	3.65	3.43	3.31	3.36	3.54	3.68
MAX	3.87	3.82	3.80	3.78	4.16	3.80	3.89	3.50	3.41	3.45	3.71	4.59
MIN	3.69	3.58	3.60	3.67	3.70	3.57	3.49	3.29	3.22	3.29	3.37	3.37

WTR YEAR 1989 MAX 4.63 SEP 11, 12 MIN 3.17 JUN 22

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132806144481871. Local number, 18-2848-03 Barrigada Exploratory Well, Ex-9.

LOCATION.--Lat 13°28'06" N., long 144°48'18" E., Hydrologic Unit 20100003, near P.C. Lujan Elementary School Radio Barrigada. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 513 ft, borehole diameter 8 in.

DATUM.--Elevation of land-surface datum is 238 ft. Measuring point: Top of steel casing, 239.41 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, July 1985 to February 19, 1987.
Occasional measurements, September 1981 to June 1985, March 1987 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.93 ft above mean sea level, Aug. 26, 1986; lowest, measured, 2.29 ft above mean sea level, Feb. 18, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	3.18	JAN 4	3.16	MAR 1	3.19	APR 4	3.15	JUN 5	2.94	AUG 3	3.10
DEC 1	3.01	FEB 2	3.18	MAR 22	3.14	MAY 4	2.97	JUL 3	2.77	SEP 6	2.89

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133032144491871. Local number, 18-3049-03 Harmon Loop School Well M-10A.

LOCATION.--Lat 13°30'32" N., long 144°49'18" E., Hydrologic Unit 20100003, at Harmon Loop School, Dededo. Owner: Public Utility Agency of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 288 ft, casing diameter 8 in.

DATUM.--Elevation of land-surface datum is 227 ft. Measuring point: Top of casing, 228.62 ft above mean sea level.

REMARKS.--Well was abandoned in 1973 because of oil taste and high iron content.

PERIOD OF RECORD.--Water-level recorder, January 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.61 ft above mean sea level, May 23, 1976; lowest, 1.94 ft above mean sea level, Feb. 10-12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.97	2.87	2.76	2.84	2.93	2.82	2.73	2.63	2.64	2.47	2.80	2.43
2	2.93	2.86	2.76	2.87	2.90	2.85	2.75	2.69	2.62	2.47	2.86	2.45
3	2.93	2.88	2.78	2.85	2.88	2.86	2.77	2.75	2.60	2.46	2.91	2.46
4	2.92	2.88	2.76	2.83	2.84	2.87	2.78	2.71	2.61	2.47	2.93	2.48
5	2.91	2.87	2.76	2.82	2.84	2.87	2.82	2.66	2.59	2.48	2.97	2.49
6	2.90	2.82	2.75	2.83	2.87	2.90	2.83	2.66	2.55	2.49	3.00	2.50
7	2.89	2.77	2.76	2.83	2.89	2.92	2.83	2.64	2.51	2.50	2.99	2.52
8	2.92	2.75	2.77	2.85	2.89	2.93	2.84	2.63	2.50	2.50	2.92	2.50
9	2.96	2.78	2.79	2.88	2.88	2.94	2.84	2.58	2.50	2.51	2.82	2.51
10	3.00	2.78	2.80	2.91	2.91	2.94	2.82	2.55	2.50	2.52	2.77	2.70
11	2.98	2.73	2.81	2.94	2.90	2.94	2.79	2.52	2.48	2.52	2.72	2.90
12	2.95	2.72	2.80	2.92	2.88	2.92	2.79	2.49	2.46	2.53	2.65	3.02
13	2.91	2.69	2.81	2.94	2.91	2.88	2.79	2.50	2.45	2.54	2.62	3.01
14	2.87	2.68	2.83	2.94	2.95	2.86	2.79	2.55	2.45	2.54	2.63	2.93
15	2.84	2.68	2.87	2.94	2.93	2.83	2.79	2.58	2.45	2.54	2.69	2.84
16	2.82	2.68	2.90	2.92	2.92	2.79	2.80	2.61	2.46	2.53	2.72	2.74
17	2.83	2.68	2.88	2.90	2.95	2.74	2.80	2.64	2.47	2.54	2.72	2.68
18	2.80	2.69	2.85	2.89	2.97	2.74	2.80	2.67	2.44	2.57	2.75	2.59
19	2.80	2.71	2.92	2.91	3.00	2.75	2.81	2.70	2.39	2.56	2.76	2.49
20	2.81	2.72	2.95	2.94	2.97	2.77	2.86	2.71	2.38	2.55	2.74	2.40
21	2.81	2.74	2.96	2.94	2.95	2.80	2.98	2.69	2.36	2.55	2.69	2.37
22	2.79	2.81	2.96	2.93	2.95	2.78	3.06	2.69	2.35	2.56	2.61	2.33
23	2.85	2.90	2.93	2.92	2.95	2.79	3.02	2.67	2.36	2.56	2.55	2.31
24	2.87	2.92	2.90	2.90	2.94	2.82	2.96	2.67	2.38	2.55	2.52	2.28
25	2.87	2.91	2.88	2.90	2.93	2.83	2.87	2.66	2.38	2.55	2.50	2.25
26	2.90	2.84	2.89	2.90	2.93	2.80	2.83	2.66	2.38	2.55	2.45	2.23
27	2.92	2.81	2.88	2.93	2.90	2.76	2.79	2.65	2.38	2.58	2.43	2.25
28	2.92	2.80	2.86	2.92	2.82	2.74	2.76	2.65	2.42	2.61	2.42	2.28
29	2.91	2.76	2.88	2.92	---	2.74	2.74	2.65	2.44	2.62	2.45	2.29
30	2.92	2.75	2.88	2.89	---	2.72	2.69	2.62	2.47	2.64	2.45	2.27
31	2.91	---	2.84	2.94	---	2.72	---	2.64	---	2.73	2.44	---
MEAN	2.89	2.78	2.84	2.90	2.91	2.83	2.82	2.64	2.47	2.54	2.69	2.52
MAX	3.00	2.92	2.96	2.94	3.00	2.94	3.06	2.75	2.64	2.73	3.00	3.02
MIN	2.79	2.68	2.75	2.82	2.82	2.72	2.69	2.49	2.35	2.46	2.42	2.23

WTR YEAR 1989 MAX 3.08 APR 22 MIN 2.16 SEP 26

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133047144500171. Local number, 18-3049-05 Well M-11.

LOCATION.--Lat 13°30'49" N., long 144°49'58" E., Hydrologic Unit 20100003, at intersection of Harmon Loop School Road and Route 1 at Dededo. Owner: Public Utility Agency of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 325 ft, casing diameter 8 in.

DATUM.--Elevation of land-surface datum is 294 ft. Measuring point: Top of casing, 295.82 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, July 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.90 ft above mean sea level, Aug. 27, 1986; lowest, 2.46 ft above mean sea level, Feb. 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.56	3.70	3.44	3.39	3.41	3.52	3.31	3.33	3.20	3.13	3.65	3.06
2	3.54	3.67	3.44	3.40	3.41	3.51	3.34	3.37	3.19	3.14	3.79	3.07
3	3.54	3.65	3.45	3.40	3.42	3.52	3.36	3.39	3.19	3.15	3.78	3.10
4	3.54	3.63	3.42	3.38	3.40	3.52	3.38	3.38	3.18	3.16	3.78	3.14
5	3.53	3.56	3.40	3.36	3.39	3.51	3.38	3.35	3.18	3.17	3.79	3.15
6	3.52	3.52	3.39	3.37	3.41	3.52	3.39	3.31	3.15	3.17	3.86	3.17
7	3.52	3.50	3.39	3.38	3.43	3.53	3.39	3.28	3.13	3.18	3.88	3.18
8	3.53	3.53	3.39	3.38	3.44	3.53	3.41	3.23	3.13	3.18	3.78	3.33
9	3.57	3.56	3.37	3.38	3.42	3.53	3.40	3.21	3.12	3.18	3.69	3.41
10	3.66	3.55	3.39	3.38	3.43	3.53	3.39	3.19	3.12	3.18	3.55	3.99
11	3.77	3.51	3.43	3.38	3.43	3.53	3.37	3.15	3.10	3.18	3.52	4.88
12	3.78	3.50	3.42	3.38	3.42	3.52	3.36	3.12	3.15	3.18	3.49	5.26
13	3.77	3.48	3.42	3.38	3.45	3.51	3.36	3.13	3.16	3.19	3.48	5.10
14	3.71	3.47	3.44	3.38	3.48	3.50	3.35	3.15	3.17	3.19	3.50	4.55
15	3.61	3.47	3.47	3.39	3.46	3.47	3.35	3.19	3.18	3.19	3.55	4.16
16	3.55	3.47	3.47	3.39	3.42	3.43	3.35	3.20	3.19	3.18	3.70	3.96
17	3.59	3.46	3.47	3.42	3.41	3.40	3.35	3.22	3.18	3.19	3.86	3.77
18	3.77	3.46	3.44	3.44	3.41	3.37	3.36	3.23	3.15	3.20	3.89	3.58
19	3.77	3.46	3.47	3.45	3.47	3.37	3.37	3.26	3.13	3.20	3.78	3.49
20	3.76	3.46	3.48	3.48	3.71	3.38	3.39	3.28	3.15	3.19	3.74	3.40
21	3.75	3.47	3.48	3.48	3.74	3.41	3.41	3.25	3.12	3.19	3.58	3.33
22	3.71	3.48	3.49	3.47	3.69	3.40	3.41	3.24	3.12	3.26	3.49	3.24
23	3.68	3.51	3.48	3.47	3.63	3.40	3.41	3.23	3.11	3.45	3.40	3.19
24	3.62	3.52	3.47	3.45	3.58	3.40	3.41	3.23	3.11	3.53	3.33	3.15
25	3.58	3.52	3.45	3.45	3.57	3.41	3.50	3.22	3.09	3.51	3.27	3.14
26	3.62	3.50	3.45	3.44	3.56	3.40	3.51	3.22	3.09	3.47	3.17	3.10
27	3.69	3.48	3.44	3.45	3.54	3.37	3.47	3.21	3.09	3.44	3.14	3.11
28	3.74	3.48	3.43	3.46	3.52	3.35	3.41	3.21	3.08	3.44	3.11	3.11
29	3.74	3.45	3.44	3.44	---	3.34	3.39	3.21	3.10	3.40	3.10	3.09
30	3.73	3.44	3.44	3.41	---	3.33	3.37	3.21	3.12	3.40	3.09	3.09
31	3.73	---	3.42	3.41	---	3.30	---	3.20	---	3.41	3.08	---
MEAN	3.65	3.52	3.44	3.41	3.49	3.45	3.39	3.24	3.14	3.26	3.54	3.54
MAX	3.78	3.70	3.49	3.48	3.74	3.53	3.51	3.39	3.20	3.53	3.89	5.26
MIN	3.52	3.44	3.37	3.36	3.39	3.30	3.31	3.12	3.08	3.15	3.08	3.06

WTR YEAR 1989 MAX 5.30 SEP 13 MIN 3.06 AUG 27-31, SEP 1-3

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133034144500871. Local number, 18-3050-04 Macheche Rd. Well Ex-6.

LOCATION.--Lat 13°30'34" N., long 144°50'08" E., Hydrologic Unit 20100003, in Macheche area, Dededo. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 407 ft, uncased hole diameter 12 in. Well deepened to 462 ft on Aug. 7, 1981.

DATUM.--Elevation of land-surface datum is 309 ft. Measuring point: Top of surface casing, 309.41 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, February 1978 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.09 ft above mean sea level, Aug. 16, 1978; lowest measured, 2.61 ft above mean sea level, Feb. 2, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	3.42	JAN 4	3.37	MAR 1	3.43	APR 5	3.38	JUN 5	3.16	AUG 3	3.40
DEC 1	3.30	FEB 2	3.43	MAR 31	3.27	MAY 4	3.21	JUL 3	3.04	SEP 7	3.07

133115144484971. Local number, 18-3148-02 Harmon Well 1 (107).

LOCATION.--Lat 13°31'15" N., long 144°48'49" E., Hydrologic Unit 20100003, 500 ft north of junction of Routes 1 and 16, Dededo. Owner: Government of Guam.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 289 ft, diameter 10 in.

DATUM.--Elevation of land-surface datum is 268 ft. Measuring point: Top of casing, 267.96 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder: March 1973 to May 1983.
Occasional measurements: June 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.34 ft above mean sea level, May 22, 1976; lowest, 1.84 ft above mean sea level, Feb. 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	2.80	JAN 4	2.79	MAR 1	2.80	MAY 4	2.76	JUL 3	2.38	SEP 6	2.47
DEC 1	2.68	FEB 2	2.86	APR 4	2.86	JUN 5	2.73	AUG 3	3.02		

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133119144491771. Local number, 18-3149-05 Wettengel Exploratory Well Ex-7.

LOCATION.--Lat 13°31'17" N., long 144°49'17" E., Hydrologic Unit 20100003, 200 ft east of junction of Routes 1 and 3, Wettengel. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 698 ft, borehole diameter 8 in., casing diameter 6 in., cased to 10 ft.

DATUM.--Elevation of land-surface datum is 283 ft. Measuring point: Top of 6-inch diameter surface casing, 283.31 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, August 1981 to May 1983.
Water-level recorder, June 1983 to current year.
WATER QUALITY: 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.26 ft above mean sea level, Sept. 13, 1987; lowest, 2.78 ft above mean sea level, June 6, 7, 1983.

WATER LEVEL, IN FEET AOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.67	3.62	3.55	3.60	3.70	3.57	3.48	3.33	3.36	3.21	3.64	3.20
2	3.65	3.64	3.54	3.62	3.68	3.61	3.50	3.34	3.36	3.20	3.68	3.22
3	3.64	3.66	3.55	3.59	3.66	3.62	3.54	3.40	3.35	3.23	3.72	3.26
4	3.65	3.66	3.53	3.58	3.63	3.63	3.56	3.37	3.35	3.23	3.72	3.27
5	3.64	3.64	3.52	3.56	3.63	3.63	3.58	3.33	3.33	3.23	3.74	3.31
6	3.63	3.60	3.46	3.57	3.66	3.66	3.59	3.33	3.32	3.25	3.76	3.35
7	3.62	3.57	3.52	3.58	3.67	3.67	3.59	3.31	3.32	3.26	3.69	3.37
8	3.65	3.56	3.54	3.60	3.67	3.67	3.58	3.29	3.31	3.27	3.63	3.35
9	3.68	3.60	3.56	3.64	3.66	3.68	3.57	3.25	3.29	3.27	3.56	3.39
10	3.69	3.58	3.57	3.66	3.67	3.69	3.53	3.21	3.29	3.29	3.50	3.49
11	3.68	3.53	3.58	3.67	3.66	3.68	3.51	3.18	3.27	3.32	3.44	3.63
12	3.66	3.50	3.57	3.66	3.65	3.66	3.50	3.17	3.23	3.31	3.41	3.74
13	3.64	3.47	3.59	3.69	3.67	3.63	3.51	3.20	3.21	3.31	3.39	3.70
14	3.62	3.47	3.61	3.68	3.69	3.60	3.50	3.23	3.21	3.31	3.40	3.61
15	3.58	3.48	3.64	3.68	3.67	3.57	3.50	3.27	3.21	3.32	3.44	3.55
16	3.59	3.46	3.66	3.66	3.67	3.54	3.51	3.32	3.25	3.29	3.43	3.49
17	3.59	3.45	3.63	3.65	3.70	3.51	3.51	3.35	3.23	3.32	3.45	3.43
18	3.57	3.46	3.62	3.66	3.70	3.49	3.51	3.36	3.17	3.34	3.48	3.34
19	3.56	3.49	3.67	3.66	3.71	3.51	3.53	3.39	3.15	3.33	3.48	3.27
20	3.57	3.51	3.69	3.68	3.68	3.55	3.58	3.38	3.15	3.34	3.45	3.22
21	3.59	3.55	3.70	3.70	3.67	3.58	3.68	3.37	3.13	3.31	3.41	3.20
22	3.59	3.60	3.68	3.71	3.67	3.56	3.70	3.37	3.14	3.37	3.36	3.16
23	3.62	3.64	3.65	3.70	3.67	3.57	3.65	3.37	3.15	3.33	3.31	3.15
24	3.64	3.65	3.62	3.69	3.67	3.60	3.59	3.37	3.16	3.36	3.28	3.14
25	3.63	3.65	3.62	3.69	3.66	3.60	3.52	3.36	3.17	3.36	3.25	3.13
26	3.65	3.60	3.62	3.69	3.66	3.57	3.47	3.36	3.18	3.37	3.21	3.14
27	3.65	3.58	3.60	3.70	3.62	3.53	3.43	3.36	3.17	3.37	3.19	3.16
28	3.64	3.57	3.61	3.70	3.58	3.50	3.41	3.37	3.18	3.43	3.19	3.17
29	3.64	3.54	3.62	3.69	---	3.47	3.38	3.37	3.21	3.45	3.22	3.17
30	3.65	3.52	3.62	3.68	---	3.47	3.35	3.37	3.22	3.48	3.21	3.17
31	3.64	---	3.59	3.71	---	3.46	---	3.38	---	3.59	3.20	---
MEAN	3.63	3.56	3.60	3.66	3.67	3.58	3.53	3.32	3.24	3.32	3.45	3.33
MAX	3.69	3.66	3.70	3.71	3.71	3.69	3.70	3.40	3.36	3.59	3.76	3.74
MIN	3.56	3.45	3.46	3.56	3.58	3.46	3.35	3.17	3.13	3.20	3.19	3.13

WTR YEAR 1989 MAX 3.83 AUG 6 MIN 3.04 SEP 25

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133120144505471. Local number, 18-3150-10 Ghura-Dededo Monitoring Well.

LOCATION.--Lat 13°31'20" N., long 144°50'54" E., Hydrologic Unit 20100003, in the Dededo Well Field, PUAG, Dededo. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 785 ft, uncased hole diameter 12 in.

DATUM.--Elevation of land-surface datum is 393 ft. Measuring point: Top of surface casing, 393.90 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, November 1982 to February 1983.
Occasional measurements, March 1980 to August 1982, March 1983 to current year.
WATER QUALITY: 1979-86, 1989.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.85 ft above mean sea level, July 13, 1987; lowest measured, 1.40 ft above mean sea level, Dec. 17, 1982.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	2.11	JAN 4	2.08	MAR 1	2.07	APR 5	2.08	JUN 5	1.92	AUG 3	2.14
DEC 1	1.95	FEB 2	2.12	APR 5	2.12	MAY 4	1.93	JUL 3	1.74	SEP 6	1.76

MARIANA ISLANDS, ISLAND OF GUAM--continued

133224144495271. Local number, 18-3249-02 Finegayan Exploratory Well Ex-10.

LOCATION.--Lat 13°32'24" N., long 144°49'52" E., Hydrologic Unit 20100003, near NAVCAMS Housing area. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 704.5 ft, uncased hole diameter 8 in.

DATUM.--Elevation of land-surface datum is 348 ft. Measuring point: Top of surface casing, 348.54 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, September 1981 to May 1984.
Water-level recorder, June 1984 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.78 ft above mean sea level, Sept. 12, 13, 1987; lowest measured, 1.97 ft above mean sea level, Feb. 24, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.98	2.98	2.86	2.98	3.02	2.92	2.89	2.72	2.77	2.63	2.92	2.50
2	2.97	2.97	2.86	3.01	2.99	3.00	2.90	2.77	2.74	2.64	2.98	2.53
3	2.99	3.01	2.87	2.96	2.98	3.01	2.95	2.79	2.73	2.63	2.99	2.56
4	3.01	3.00	2.86	2.93	2.94	3.01	2.96	2.75	2.74	2.64	3.00	2.58
5	3.00	2.97	2.86	2.92	2.96	3.02	2.98	2.73	2.72	2.66	3.04	2.61
6	2.99	2.91	2.84	2.93	2.98	3.05	2.99	2.72	2.66	2.66	3.06	2.65
7	2.98	2.89	2.87	2.94	3.00	3.06	3.00	2.72	2.62	2.68	3.03	2.67
8	3.03	2.89	2.88	2.96	3.00	3.06	3.01	2.66	2.60	2.68	2.96	2.65
9	3.09	2.92	2.93	2.99	2.98	3.08	2.99	2.63	2.61	2.67	2.88	2.67
10	3.10	2.90	2.93	3.01	3.01	3.09	2.93	2.62	2.61	2.69	2.80	2.73
11	3.05	2.85	2.94	3.02	3.01	3.07	2.90	2.61	2.58	2.69	2.74	2.84
12	3.02	2.82	2.92	3.01	3.00	3.04	2.89	2.61	2.57	2.72	2.69	2.94
13	2.98	2.79	2.90	3.05	3.04	3.01	2.90	2.63	2.56	2.72	2.68	2.91
14	2.95	2.78	2.93	3.04	3.05	2.99	2.89	2.68	2.57	2.72	2.68	2.82
15	2.92	2.79	2.98	3.04	3.02	2.95	2.89	2.71	2.59	2.72	2.72	2.76
16	2.90	2.78	3.00	3.00	3.01	2.93	2.90	2.78	2.60	2.70	2.68	2.71
17	2.89	2.78	2.99	2.99	3.06	2.91	2.89	2.80	2.58	2.72	2.68	2.67
18	2.88	2.80	2.99	2.99	3.06	2.90	2.89	2.81	2.56	2.74	2.75	2.59
19	2.87	2.82	3.06	3.03	3.04	2.92	2.92	2.83	2.52	2.73	2.78	2.54
20	2.88	2.84	3.04	3.03	3.02	2.96	2.96	2.81	2.49	2.71	2.76	2.49
21	2.88	2.87	3.03	3.04	3.00	2.98	3.08	2.80	2.47	2.70	2.72	2.46
22	2.88	2.95	3.03	3.03	3.02	2.97	3.08	2.80	2.49	2.70	2.64	2.43
23	2.93	3.01	3.00	3.01	3.03	2.98	2.99	2.79	2.50	2.69	2.60	2.43
24	2.93	3.02	2.98	3.00	3.03	3.01	2.93	2.79	2.50	2.70	2.58	2.43
25	2.94	2.99	2.97	2.99	3.03	3.00	2.87	2.77	2.52	2.70	2.56	2.42
26	3.01	2.93	2.97	3.00	3.02	2.96	2.86	2.78	2.53	2.69	2.51	2.43
27	3.02	2.90	2.98	3.03	2.97	2.91	2.80	2.77	2.55	2.72	2.48	2.47
28	3.00	2.89	2.96	3.03	2.92	2.89	2.79	2.77	2.61	2.74	2.49	2.50
29	2.99	2.84	2.99	3.01	---	2.87	2.77	2.77	2.62	2.75	2.52	2.50
30	2.99	2.84	2.98	3.01	---	2.87	2.72	2.78	2.64	2.77	2.51	2.49
31	2.97	---	2.96	3.05	---	2.85	---	2.78	---	2.82	2.50	---
MEAN	2.97	2.89	2.95	3.00	3.01	2.98	2.92	2.74	2.59	2.70	2.74	2.60
MAX	3.10	3.02	3.06	3.05	3.06	3.09	3.08	2.83	2.77	2.82	3.06	2.94
MIN	2.87	2.78	2.84	2.92	2.92	2.85	2.72	2.61	2.47	2.63	2.48	2.42

WTR YEAR 1989 MAX 3.16 DEC 19, JAN 10, 11 MIN 2.35 SEP 22-24

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133628144513271. Local number, 18-3651-05 Northwest Field Exploratory Well Ex-8.

LOCATION.--Lat 13°36'28" N., long 144°51'32" E., Hydrologic Unit 20100003, in old Air Force Housing area in Northwest Field.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 658 ft, diameter 8 in.

DATUM.--Elevation of land-surface datum is 461 ft. Measuring point: Top of surface casing 462.49 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, September 1981 to current year.
WATER QUALITY: 1982 to 1986.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft above mean sea level, July 13, 1987; lowest, 1.88 ft above mean sea level, Feb. 28, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 2	2.64	JAN 4	2.64	MAR 1	2.61	JUN 20	2.20	AUG 8	2.48	SEP 7	2.22
DEC 1	2.48	FEB 2	2.65	APR 5	2.63	JUL 6	2.32				

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SAMPLE DEPTH DIS-TANCE BELOW MSL FEET	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, (MG/L AS CL)
MARIANA ISLANDS, ISLAND OF GUAM									
132624144452771	18-2645-07	13 26 24 N	144 45 27 E	12-01-88	1105	170	767	28.0	62
				12-01-88	1130	340	827	28.0	85
				12-01-88	1200	350	841	28.0	88
				12-01-88	1220	360	848	28.0	90
				12-01-88	1240	370	2800	28.0	680
				12-01-88	1305	380	28200	28.0	9800
				12-01-88	1325	390	41400	28.0	15000
132626144471771	18-2647-12	13 26 26 N	144 47 17 E	03-14-89	1315	16	753	27.5	41
				03-14-89	1355	186	4630	27.0	1400
				03-14-89	1425	196	5400	27.0	1700
				03-14-89	1450	206	5320	27.0	1800
				03-14-89	1515	216	7170	27.0	2800
				03-14-89	1545	226	19400	27.0	11000
				03-14-89	1610	236	43500	27.0	15000
				08-09-89	1230	16	704	29.0	39
				08-09-89	1255	186	4740	28.0	2200
				08-09-89	1320	196	7810	28.0	2300
				08-09-89	1350	206	9670	27.5	3000
				08-09-89	1420	216	11600	28.0	3600
				08-09-89	1450	226	37100	27.5	13000
				08-09-89	1545	236	44200	28.0	16000
132736144461671	18-2746-06	13 27 36 N	144 46 16 E	12-02-88	0905	14	1100	27.5	140
				12-02-88	0920	154	1440	27.0	260
				12-02-88	0945	174	1660	27.0	320
				12-02-88	1000	204	13600	27.0	4200
				12-02-88	1020	234	23400	27.0	7500
				12-02-88	1045	244	27000	27.0	9000
				12-02-88	1105	254	29100	27.0	9800
				12-02-88	1130	279	35700	27.0	12000
				12-02-88	1240	304	40500	27.0	14000
				12-02-88	1305	354	47400	27.0	17000
				12-02-88	1330	454	50300	27.0	18000
				04-03-89	1020	14	738	28.0	40
				04-03-89	1040	154	4030	27.0	1000
				04-03-89	1105	174	5020	27.0	1400
				04-03-89	1125	204	18000	27.0	5800
				04-03-89	1150	234	25400	27.0	8600
				04-03-89	1220	244	27300	27.0	9500
				04-03-89	1245	254	30900	27.0	11000
				04-03-89	1310	279	36400	27.0	14000
				04-03-89	1335	304	46300	26.5	18000
				04-03-89	1405	354	50100	26.5	18000
				04-03-89	1435	454	49900	26.5	19000
				08-17-89	1130	14	764	27.5	52
				08-17-89	1150	154	768	27.5	52
				08-17-89	1210	174	760	27.5	58
				08-17-89	1235	204	10400	27.0	3600
				08-17-89	1255	234	23400	27.0	8800
				08-17-89	1320	244	25000	27.0	9200
				08-17-89	1350	254	26000	27.0	9800
				08-17-89	1420	279	28100	27.0	11000
				08-17-89	1445	304	33600	26.5	14000
				08-17-89	1515	354	35300	26.5	14000
				08-17-89	1545	454	41400	26.5	18000

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SAMPLE DEPTH DIS-TANCE BELOW MSL FEET	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, (MG/L AS CL)
MARIANA ISLANDS, ISLAND OF GUAM--Continued									
132806144481871	18-2848-03	13 28 06 N	144 48 18 E	12-05-88	1055	21	1510	28.5	220
				12-05-88	1125	101	5330	28.5	1400
				12-05-88	1145	106	8770	28.5	2600
				12-05-88	1200	111	15800	28.5	4900
				12-05-88	1230	121	32300	28.5	11000
				12-05-88	1300	141	43300	28.5	16000
				12-05-88	1325	161	48700	28.5	18000
				12-05-88	1350	211	51900	28.5	20000
				03-22-89	1120	21	1120	28.5	180
				03-22-89	1145	101	6760	28.0	1900
				03-22-89	1215	106	8960	28.5	2700
				03-22-89	1245	111	17900	28.0	5800
				03-22-89	1310	161	33100	28.0	11000
				03-22-89	1340	141	43500	28.0	16000
				03-22-89	1410	161	48800	28.0	18000
				03-22-89	1440	211	52100	28.0	19000
				08-02-89	1225	111	20100	28.0	6600
				08-02-89	1255	121	33900	28.0	12000
				08-02-89	1325	141	44100	28.0	16000
				08-02-89	1400	161	48300	28.0	18000
				08-02-89	1410	211	51900	28.0	19000
133034144500871	18-3050-04	13 30 34 N	144 50 08 E	12-06-88	1100	21	432	27.5	28
				12-06-88	1125	121	426	27.5	23
				12-06-88	1145	131	424	27.5	23
				12-06-88	1205	136	30700	27.0	10000
				12-06-88	1225	141	47500	27.0	17000
				12-06-88	1250	146	50200	27.0	18000
				03-31-89	1030	21	436	26.5	23
				03-31-89	1100	121	441	26.5	21
				03-31-89	1130	131	429	26.5	20
				03-31-89	1200	136	39900	26.5	14000
				03-31-89	1300	141	48100	26.5	18000
				03-31-89	1330	146	49500	26.5	18000
				08-10-89	1200	21	504	27.0	42
				08-10-89	1225	121	429	26.5	20
				08-10-89	1305	131	1400	26.5	300
				08-10-89	1340	136	41200	26.5	15000
				08-10-89	1410	141	48900	26.5	18000
				08-10-89	1445	146	51100	26.5	19000
133119144491771	18-3149-05	13 31 19 N	144 49 17 E	12-09-88	1140	7	891	28.0	50
				12-09-88	1205	107	668	28.0	35
				12-09-88	1235	127	666	28.0	38
				12-09-88	1300	132	692	28.0	48
				12-09-88	1325	137	692	27.5	45
				12-09-88	1345	137	686	27.5	48
				12-09-88	1420	147	51300	27.0	19000
				12-09-88	1445	167	52600	27.0	20000
				04-07-89	1055	7	655	28.0	50
				04-07-89	1120	107	642	27.5	44
				04-07-89	1150	127	643	27.5	44
				04-07-89	1220	132	671	27.0	54
				04-07-89	1250	137	3120	27.0	10000
				04-07-89	1320	147	47500	27.0	17000
				04-07-89	1355	167	52500	27.0	19000
				08-16-89	1255	7	614	28.5	36
				08-16-89	1325	107	604	28.0	38
				08-16-89	1350	127	598	27.5	36
				08-16-89	1420	132	599	27.5	36
				08-16-89	1450	137	599	27.5	38
				08-16-89	1540	142	23800	27.0	7900
				08-16-89	1515	147	51900	27.0	19000

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SAMPLE DEPTH DIS-TANCE BELOW MSL FEET	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, (MG/L AS CL)
MARIANA ISLANDS, ISLAND OF GUAM--Continued									
133120144505471	18-3150-10	13 31 20 N	144 50 54 E	12-07-88	1150	5	849	27.5	140
				12-07-88	1220	105	648	27.0	67
				12-07-88	1250	115	698	27.0	88
				12-07-88	1320	125	4080	26.5	1200
				12-07-88	1345	135	15000	26.5	5000
				12-07-88	1410	145	48900	26.5	18000
				12-07-88	1435	155	51700	26.5	19000
				04-05-89	1025	5	697	27.5	110
				04-05-89	1100	105	657	27.0	69
				04-05-89	1130	115	1140	27.0	200
				04-05-89	1210	125	4210	27.0	1200
				04-05-89	1245	135	49900	27.0	18000
				04-05-89	1320	145	50300	26.5	18000
				04-05-89	1400	155	52200	26.5	19000
				08-15-89	1110	5	665	27.0	96
				08-15-89	1140	105	664	27.0	58
				08-15-89	1215	115	968	26.5	140
				08-15-89	1245	125	4020	26.0	1000
				08-15-89	1315	135	23800	26.0	7500
				08-15-89	1345	145	51000	26.0	19000
				08-15-89	1415	155	52000	26.0	19000
133224144495271	18-3249-02	13 32 24 N	144 49 52 E	12-12-88	1120	16	781	28.0	82
				12-12-88	1145	51	578	28.0	50
				12-12-88	1205	81	623	27.5	67
				12-12-88	1230	101	3850	27.0	1000
				12-12-88	1255	111	16000	27.0	5100
				12-12-88	1320	121	34700	27.0	12000
				12-12-88	1345	131	47700	27.0	18000
				04-10-89	1200	16	427	27.5	15
				04-10-89	1225	51	536	27.0	39
				04-10-89	1255	81	584	27.0	56
				04-10-89	1325	101	3750	27.0	1000
				04-10-89	1355	111	15800	27.0	5000
				04-10-89	1425	121	32300	27.0	11000
				04-10-89	1500	131	46100	27.0	16000
				08-18-89	1140	16	447	27.0	14
				08-18-89	1205	51	526	26.5	44
				08-18-89	1230	81	568	26.5	48
				08-18-89	1300	101	3440	26.5	1000
				08-18-89	1325	111	16600	26.5	5200
				08-18-89	1355	121	33500	26.5	12000
				08-18-89	1425	131	46500	26.5	17000

CAROLINE ISLANDS, YAP ISLANDS

092920138050270. Local number, 25-2905-02 Timlang Well 2, Yap.

LOCATION.--Lat 09°29'20" N., long 138°05'02" E., Hydrologic Unit 20100006, 600 ft south of the Communication Station, and 300 ft west of the U.S. Weather Bureau Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 80 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 39 ft. Measuring point: Top of casing, 40.43 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to Sept. 1987.
Water level recorder, Oct. 1987 to current year.
WATER QUALITY: 1984 to 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.38 ft above mean sea level, Aug. 31, 1987; lowest measured, 11.38 ft above mean sea level, May 13, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	34.34	31.20	32.08	35.26	33.00	30.90	26.30	30.44	33.31	35.40	35.47
2	---	34.40	30.99	31.91	35.68	32.61	30.60	26.16	31.96	33.91	35.15	35.64
3	---	34.73	30.89	31.69	35.18	32.18	30.22	26.17	32.10	34.26	34.96	35.48
4	---	35.30	30.72	31.51	34.78	31.90	29.99	26.03	33.46	33.97	34.60	35.32
5	35.48	36.07	30.50	31.25	34.70	31.58	29.80	25.90	35.67	34.07	34.28	35.77
6	35.52	36.29	30.33	30.85	34.59	31.30	29.55	25.41	35.63	34.00	34.00	36.56
7	35.70	36.24	30.20	30.55	34.84	30.90	29.35	25.37	35.45	34.48	33.69	36.86
8	36.11	36.26	29.97	30.41	34.55	30.43	29.22	25.10	35.00	35.02	33.67	36.35
9	36.09	35.87	29.73	30.26	34.12	30.30	29.06	24.66	34.68	34.70	35.17	35.72
10	35.61	35.39	29.62	30.07	33.92	---	28.73	24.05	34.43	34.30	35.80	35.30
11	35.27	35.07	29.69	29.91	33.82	---	28.35	24.00	34.10	33.93	35.70	34.89
12	35.01	34.85	29.62	29.61	33.59	---	28.92	23.92	33.86	33.67	35.22	34.57
13	34.73	34.53	29.48	29.40	33.29	---	29.32	23.86	33.60	33.38	34.74	34.31
14	34.49	34.20	29.42	29.20	33.07	---	29.49	24.18	33.36	34.15	34.36	34.08
15	34.35	33.97	29.28	28.97	32.87	---	29.45	29.27	33.16	34.65	34.02	33.78
16	34.10	33.75	29.10	28.70	32.55	---	29.24	30.88	33.03	34.30	33.61	33.51
17	33.93	33.55	28.95	28.50	32.22	---	28.98	30.94	32.80	33.99	33.61	33.29
18	35.85	33.37	29.03	---	31.90	---	28.74	30.97	32.63	34.55	33.82	33.01
19	37.22	33.18	29.35	28.30	31.60	---	28.56	30.91	35.04	34.80	34.93	32.68
20	37.23	32.98	29.93	28.30	31.27	---	28.32	30.59	34.98	34.49	35.53	32.42
21	36.90	32.82	30.78	28.11	31.11	---	28.32	30.33	34.60	34.38	35.01	32.17
22	---	32.62	33.34	27.94	30.84	33.49	28.39	30.02	34.20	34.74	34.53	31.93
23	---	32.38	34.11	28.06	30.55	33.67	---	29.61	33.83	34.73	34.25	31.73
24	---	32.30	33.92	29.50	30.37	33.43	28.01	29.97	33.52	34.43	34.42	31.53
25	36.33	32.29	33.59	30.79	30.22	33.09	27.77	30.87	---	34.04	35.44	31.38
26	35.87	32.22	33.28	32.29	30.93	32.75	27.50	30.93	32.99	33.99	35.46	---
27	35.42	31.95	32.99	33.04	33.13	32.41	27.37	30.73	32.80	34.21	35.11	---
28	35.28	31.80	32.74	33.64	33.20	32.07	27.03	30.50	33.01	34.30	35.83	30.64
29	35.16	31.64	32.53	33.74	---	31.75	26.87	30.34	33.14	34.35	35.96	---
30	34.83	31.46	32.38	33.55	---	31.44	26.57	30.49	33.02	34.20	35.98	32.91
31	34.50	---	32.30	34.14	---	31.17	---	30.40	---	34.86	36.11	---
MEAN	---	33.86	30.97	---	33.01	---	---	28.03	---	34.26	34.85	---
MAX	---	36.29	34.11	---	35.68	---	---	30.97	---	35.02	36.11	---
MIN	---	31.46	28.95	---	30.22	---	---	23.86	---	33.31	33.61	---

WTR YEAR 1989 MAX 37.04 SEP 7 MIN 23.77 MAY 12

CAROLINE ISLANDS, YAP ISLANDS--Continued

093204138095970. Local number, 25-3209-01 Dorfay 6-in Well, Gagil-Tamil.

LOCATION.--Lat 09°32'04" N., long 138°09'59" E., Hydrologic Unit 20100006, 0.8 mi northeast of the Tamilang Elementary School, and 0.8 mi south of the Coast Guard LORAN Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 170 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 29 ft. Measuring point: Top of casing, 30.92 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, July 1982 to April 1983.
Water level recorder, May 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.48 ft above mean sea level, Sept. 6, 1989; lowest, 15.67 ft above mean sea level, June 10, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.09	19.59	19.77	20.06	20.55	20.02	19.57	19.28	20.02	20.37	20.02	20.89
2	20.92	19.64	19.95	19.87	20.78	19.73	19.61	18.92	20.32	20.50	20.70	21.02
3	20.44	18.86	19.90	19.93	20.52	19.83	19.57	19.24	20.36	20.43	20.78	21.07
4	20.08	20.10	19.63	19.73	20.35	19.83	19.65	19.09	20.54	20.44	20.48	21.00
5	20.51	20.69	19.85	19.95	20.44	19.78	19.43	18.70	20.74	20.41	20.29	20.87
6	20.77	19.36	20.00	19.73	20.68	19.89	19.59	18.85	20.69	20.72	20.31	21.27
7	21.20	20.13	19.72	19.69	20.48	19.58	19.57	18.72	20.75	20.95	20.37	21.27
8	21.39	20.48	19.72	19.80	20.31	19.53	19.29	18.78	20.55	20.87	20.76	21.19
9	21.19	20.61	19.79	19.77	20.21	19.67	19.39	18.82	20.47	20.54	21.01	20.97
10	20.20	20.45	19.87	19.73	20.22	19.31	19.37	18.87	20.38	20.61	21.17	20.75
11	20.47	20.48	19.94	19.72	20.30	19.52	19.31	19.03	20.30	20.67	21.24	20.69
12	20.39	20.69	20.03	19.75	19.92	19.60	19.51	18.84	20.25	20.63	21.04	20.83
13	20.31	20.35	20.08	19.83	19.84	19.62	19.39	18.78	20.20	20.64	20.77	20.85
14	20.25	20.17	20.10	19.45	19.95	19.91	19.50	18.96	20.31	20.55	19.82	20.65
15	20.20	20.24	20.09	19.38	19.95	20.16	19.61	19.77	20.42	20.55	20.34	20.61
16	20.13	20.30	20.15	19.50	19.90	20.36	19.29	20.29	20.79	20.60	20.50	20.57
17	20.38	20.13	20.15	19.49	19.88	20.04	19.30	20.00	20.57	20.53	20.60	20.47
18	20.93	20.17	19.90	19.50	19.75	19.69	19.38	19.82	20.93	20.37	20.28	20.44
19	21.25	20.15	19.62	19.53	19.66	19.82	19.27	19.82	21.15	20.56	20.46	20.38
20	21.27	20.08	20.12	19.51	19.68	19.90	19.41	19.70	20.61	20.57	20.85	20.40
21	21.25	20.06	20.33	19.48	19.64	19.99	19.23	19.84	20.80	20.70	20.69	20.26
22	21.34	19.82	20.51	19.56	19.66	19.97	19.16	19.68	20.47	20.69	20.62	20.29
23	21.23	19.93	20.42	19.64	19.61	19.93	19.17	19.82	20.30	20.71	20.48	20.26
24	21.02	19.98	20.61	19.82	19.54	19.89	19.22	19.82	20.31	20.07	20.50	20.21
25	21.06	19.84	20.76	19.98	19.46	19.88	19.26	19.82	20.29	20.23	21.00	20.18
26	20.74	19.76	20.28	20.12	19.66	19.96	19.04	19.88	20.40	20.25	21.17	20.28
27	20.23	19.86	20.26	20.20	20.20	19.91	19.26	19.90	20.61	20.54	20.92	20.30
28	20.37	19.94	20.17	20.20	20.31	19.76	19.06	20.03	20.70	20.43	20.73	20.37
29	20.25	20.03	20.09	20.23	---	19.60	18.84	20.17	20.58	20.35	21.05	20.19
30	20.05	19.72	20.32	19.87	---	19.52	19.23	20.11	20.43	20.45	21.00	20.55
31	19.95	---	20.03	20.27	---	19.58	---	20.02	---	20.22	21.07	---
MEAN	20.67	20.05	20.07	19.78	20.05	19.80	19.35	19.46	20.51	20.52	20.68	20.64
MAX	21.39	20.69	20.76	20.27	20.78	20.36	19.65	20.29	21.15	20.95	21.24	21.27
MIN	19.95	18.86	19.62	19.38	19.46	19.31	18.84	18.70	20.02	20.07	19.82	20.18

WTR YEAR 1989 MAX 21.48 SEP 6 MIN 18.49 NOV 3

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, YAP ISLANDS

093024138063070 - 25-3006-01 TREATMENT PLANT WELL, GITAEM (LAT 09°30'24" N. LONG 138°06'30" E.)

PERIOD OF RECORD.--Water year 1989.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
SEP 30...	1200	328	28.0	160	26	23	11	13	0.4	0.30

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 30...	162	5.0	10	0.10	62	235	0.32	<0.100	240	61

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF POHNPEI

065649158115571 - 40-5611-01 KOLONIA WELL K-2 (LAT 06°56'49" N. LONG 158°11'55" E.)

PERIOD OF RECORD.--Water year 1989.

DATE	TIME	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO
SEP 06...	1245	54	698	7.7	27.5	240	58	22	45	29	1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 06...	2.1	91	230	4.3	0.10	30	446	0.61	<0.100	15	17

< Actual value is knownto be less than the value shown.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065648158115671 - 40-5611-03 KOLONIA WELL K-5 (LAT 06°56'48" N. LONG 158°11'56" E.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
SEP 06...	1210	210	7.5	27.5	80	14	11	10	21	0.5	1.0

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 06...	70	27	3.5	0.10	32	141	0.19	<0.100	12	1

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065653158120371 - 40-5612-02 KOLONIA WELL K-4 (LAT 06°56'53" N. LONG 158°12'03" E.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO
SEP 01...	0955	63	245	6.7	27.0	120	23	14	7.3	12	0.3

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP 01...	0.80	99	23	4.7	<0.10	20	153	0.21	<0.100	290	78

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065653158120871 - 40-5612-03 KOLONIA WELL K-7 (LAT 06°56'53" N. LONG 158°12'08" E.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT
SEP 06...	1100	180	160	6.9	27.0	27.0	62	9.7	9.1	4.7	14

DATE	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	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 06...	0.3	0.80	64	<1.0	1.3	<0.10	31	<0.100	16	2

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF KOSRAE

051926163002670 - 44-1900-01 TOFOL WELL 4 (LAT 05°19'26" N. LONG 163°00'26" E.)

PERIOD OF RECORD.--Water years 1986, 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)
SEP 09...	1000	268	7.4	27.0	110	24	12	12	19	0.5	1.4

DATE	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 09...	122	11	4.4	0.10	36	176	0.24	<0.100	2100	27

< Actual value is less than the value shown.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

051930163003170 - 44-1900-02 TOFOL WELL 8 (LAT 05°19'30" N. LONG 163°00'31" E.)

PERIOD OF RECORD.--Water years 1986, 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 09...	1105	315	8.1	27.5	110	18	16	21	28	0.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 09...	6.1	153	<1.0	8.6	0.20	2.8	<0.100	12	82

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

052148162592370 - 44-2159-01 TAFUNSAK WELL A (LAT 05°21'48" N. LONG 162°59'23" E.)

PERIOD OF RECORD.--Water years 1986, 1989.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 09...	1500	200	7.1	26.0	90	13	14	4.4	10	0.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 09...	0.40	97	<1.0	6.0	0.10	38	<0.100	4200	220

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

052149162591470 - 44-2159-03 TAFUNSAK WELL D (LAT 05°21'49" N. LONG 162°59'14" E.)

PERIOD OF RECORD.--Water years 1986, 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 09...	1405	348	7.2	27.5	170	29	23	6.6	8	0.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 09...	0.60	172	<1.0	9.2	0.10	26	<0.100	2900	310

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

052150162593170 - 44-2159-04 TAFUNSAK WELL K (LAT 05°21'50" N. LONG 162°59'31" E.)

PERIOD OF RECORD.--Water years 1989.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
SEP 09...	1405	130	7.0	27.5	50	9.5	6.3	3.5	13	0.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP 09...	0.30	52	<1.0	4.2	0.10	6.4	<0.100	1300	460

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

SAMOA ISLANDS, ISLAND OF TUTUILA

141623170394790. Local number, 90-1639-12 Aua Well 103.

LOCATION.--Lat 14°16'23" S., long 170°39'47" W., Hydrologic Unit 20100001, 800 ft north of Aua School and 0.7 mi northwest of Pioa Mountain. Owner: Government of American Samoa.

AQUIFER.--Basalt lava flows of the Pago volcanics.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 208 ft, casing diameter 12 inch.

DATUM.--Elevation of land-surface datum is 60 ft. Measuring point: Top of 12-inch casing, 63.06 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--Occasional measurements, February 1987 to current year. Prior to October 1988, unpublished records in files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.98 ft above mean sea level, September 11, 1989; lowest, 15.40 ft below mean sea level, February 2, 1987.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	-3.08	DEC 5	0.27	FEB 13	-0.62	MAY 22	2.94	JUL 24	-0.40	SEP 25	4.97
24	-3.39	19	1.30	27	2.01	JUN 5	3.06	AUG 7	-2.13		
NOV 7	-0.57	JAN 9	1.36	MAR 27	-0.95	26	2.84	21	4.16		
28	1.97	30	-0.37	APR 11	2.56	JUL 10	2.91	SEP 11	4.98		

141716170390290. Local number, 90-1739-02 Laulii Well 106.

LOCATION.--Lat 14°17'16" S., long 170°39'02" W., Hydrologic Unit 20100001, 800 ft northeast from the confluence of Vaitele and Lesea Streams, and 0.3 mi northeast of Lauliituai School. Owner: Government of American Samoa.

AQUIFER.--Basalt lava flows of the Pago Volcanics.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 372 ft, casing diameter 6-inch.

DATUM.--Elevation of land-surface datum is 52 ft. Measuring point: Top of 4-inch coupling, 52.74 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--Occasional measurements, October 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 31.04 ft above mean sea level, February 27, 1989; lowest, 17.76 ft above mean sea level, September 11, 1989.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	24.67	DEC 5	20.09	FEB 13	22.37	MAY 22	20.87	JUL 24	19.64	SEP 25	18.05
24	23.59	19	22.45	27	31.04	JUN 5	19.74	AUG 7	18.59		
NOV 7	18.94	JAN 9	23.39	MAR 27	20.21	26	19.59	21	19.51		
28	21.60	30	22.19	APR 11	19.49	JUL 10	20.59	SEP 11	17.76		

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141945170435401. Local number, 90-1943-24 Tafunafou Observation Well 1.

LOCATION.--Lat 14°19'45" S., long 170°43'54" W., Hydrologic Unit 20100001, 120 ft northwest of Tafunafou village cross road intersection, and 0.7 mi southeast of High School in Mapusaga. Owner: Government of American Samoa.

AQUIFER.--Basalt lava flows of the Leone Volcanics.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 78 ft, casing diameter 4 inch.

DATUM.--Elevation of land-surface datum is 73 ft. Measuring point: Top of 4-inch casing, 75.18 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby wells.

PERIOD OF RECORD.--Occasional measurements, October 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.38 ft above mean sea level, may have been caused by cascading water in the well following heavy rain, May 13, 1977; lowest, 7.37 ft below mean sea level, July 13, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	0.57	DEC 5	0.34	FEB 13	2.66	MAY 22	0.28	JUL 24	1.60	SEP 25	-2.12
24	-1.09	19	2.74	27	2.45	JUN 5	-0.37	AUG 7	1.58		
NOV 7	-2.09	JAN 9	10.43	MAR 27	2.08	26	-0.40	21	-0.82		
28	0.22	30	-0.72	APR 11	-0.80	JUL 10	1.68	SEP 11	-1.42		

141948170435701. Local number, 90-1943-28 Tafunafou Observation Well 5.

LOCATION.--Lat 14°19'48" S., long 170°43'57" W., Hydrologic Unit 20100001, 1,000 ft southeast of Tafunafou village, and 1.5 mi northwest of Pago Pago International Airport. Owner: Government of American Samoa.

AQUIFER.--Basalt lava flows of the Leone Volcanics.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 106 ft, casing diameter 4 in.

DATUM.--Elevation of land-surface datum is 83 ft. Measuring point: Top of 4-inch casing, 85.32 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional measurements, October 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.32 ft above mean sea level, may have been caused by cascading water in the well following heavy rain, July 28, 1981; lowest, 4.23 ft below mean sea level, Aug. 15, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	1.68	DEC 5	2.25	FEB 13	2.73	MAY 22	2.39	JUL 24	2.26	SEP 25	1.97
24	3.04	19	3.18	27	2.99	JUN 5	1.64	AUG 7	1.82		
NOV 7	2.17	JAN 9	7.02	MAR 27	2.52	26	1.91	21	-0.98		
28	2.42	30	2.02	APR 11	2.32	JUL 10	2.30	SEP 11	1.47		

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142055170455900. Local number, 90-2045-03 Malaeloa Well 92.

LOCATION.--Lat 14°20'55" S., long 170°45'59" W., Hydrologic Unit 20100001, 0.4 mi southeast of Malaeloa School, and 0.6 west of Olovalu Crater. Owner: Government of American Samoa.

AQUIFER.--Lava flows and cinders of the Leone Volcanics underlain by beach sand.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth 191 ft, casing diameter 8 in.

DATUM.--Elevation of land surface datum is 163 ft. Measuring point: Top of 8-inch casing, 163.74 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional measurements, September 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.46 ft above mean sea level, January 9, 1989; lowest, 0.86 ft above mean sea level, November 3, 1987.

CORRECTIONS.--The date for the minimum water level for the period of record reported for water year 1988 is November 3, 1987; the previously published date of November 3, 1988 was in error.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	1.43	NOV 28	3.19	JAN 9	9.46	FEB 13	3.84	MAR 27	3.06	MAY 22	2.96
24	1.69	DEC 5	2.97	30	3.11	27	4.64	APR 11	2.71	JUN 5	2.02
NOV 7	2.89	19	5.10								

142102170445601. Local number, 90-2144-12 Iliili Test Well 115.

LOCATION.--Lat 14°21'02" S., long 170°44'56" W., Hydrologic Unit 20100001, 800 ft northwest of Iliili village church, and 0.5 mi northeast of Futiga village school.

AQUIFER.--Basalt lava flows of the Leone Volcanics underlain by calcareous coastal deposits.

WELL CHARACTERISTICS.--Drilled basal water-table well, well depth 243 ft, casing diameter 4 inch.

DATUM.--Elevation of land-surface datum is 216 ft. Measuring point: Top of 4-inch casing, 216.94 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional measurements, February 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.98 ft above mean sea level, January 9, 1989; lowest, 2.56 ft above mean sea level, May 31, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 11	4.19	DEC 5	5.62	FEB 13	5.76	APR 11	4.53	JUN 5	5.42	AUG 7	5.26
24	4.41	19	6.21	27	6.34	24	6.34	26	5.60	AUG 21	5.62
NOV 7	4.44	JAN 9	8.98	MAR 13	5.84	MAY 8	6.24	JUL 10	5.53	SEP 11	5.27
28	5.65	30	4.96	27	4.29	22	5.70	24	5.67	SEP 25	5.94

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

STATION NUMBER	LOCAL IDENTIFIER	LATITUDE	LONGITUDE	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
			SAMOA ISLANDS, ISLAND OF TUTUILA					
141625170365990	90-1636-06 FAGAITUA W125	14 16 25 S	170 36 59 W	10-24-88	1340	4500	33.0	1400
				01-30-89	1310	4500	27.5	1300
				02-27-89	1310	4500	31.0	1400
				03-27-89	1400	5000	27.0	1600
				04-25-89	0805	5500	27.0	1800
				05-22-89	1315	5500	29.0	1800
				06-26-89	1330	6000	32.0	1800
141623170393801	90-1639-08 AUA W97 TUTUILA	14 16 23 N	170 39 38 E	10-24-88	1250	1200	27.0	410
				01-30-89	1220	1400	27.0	380
141643170420390	90-1642-09 PAGO PLAZA W-1	14 16 43 S	170 42 03 W	01-30-89	1515	1700	26.0	500
				02-27-89	1505	700	28.0	170
				05-22-89	1530	660	27.0	180
				06-26-89	1545	700	28.0	180
141658170421390	90-1642-11 PAGO W-105	14 16 58 S	170 42 13 W	10-24-88	1140	160	26.0	10
				11-28-88	1205	160	26.0	9.0
141928170435201	90-1943-20 TAFUNAFOU W81 T	14 19 28 N	170 43 52 E	11-28-88	0810	160	26.0	17
				01-30-89	0840	120	26.0	15
				02-27-89	0910	140	26.0	11
				03-27-89	0850	130	26.0	12
				04-24-89	0945	105	26.0	11
				05-22-89	0855	130	26.0	12
				06-26-89	0930	210	26.0	31
141952170440201	90-1944-11 TAFUNAFOU W61 T	14 19 52 N	170 44 02 E	10-24-88	0745	1300	26.0	330
				11-28-88	0745	950	26.0	250
				01-30-89	0815	650	26.0	150
				02-27-89	0850	460	26.0	98
				03-27-89	0815	650	26.0	140
				04-24-89	0900	850	26.0	170
				05-22-89	0830	580	26.0	130
				06-26-89	0900	700	26.0	140
141951170440101	90-1944-12 TAFUNAFOU W60 T	14 19 51 N	170 44 01 E	11-28-88	0735	1600	26.0	460
				01-30-89	0810	1000	26.0	240
				02-27-89	0845	750	26.0	180
				03-27-89	0805	900	26.0	220
				04-24-89	0855	980	26.0	240
				05-22-89	0820	725	26.0	190
				06-26-89	0850	1000	26.0	270
141929170441401	90-1944-13 MALAEIMI W67 TU	14 19 29 N	170 44 14 E	11-28-88	--	180	26.0	12
				01-30-89	0855	180	26.0	12
				02-27-89	0920	180	26.0	11
				03-27-89	0905	180	26.0	10
				04-24-89	1215	190	26.0	10
				05-22-89	0920	180	--	11
				06-26-89	0940	180	26.0	11
142002170444201	90-2044-02 ILIILI W84 TUTU	14 20 02 N	170 44 42 E	10-24-88	1010	1700	26.5	420
				11-28-88	1030	1600	26.0	460
				01-30-89	1015	1400	27.0	330
				02-27-89	1050	850	27.0	240
				03-27-89	1105	1300	26.5	300
				04-24-89	1010	1400	27.0	360
				06-26-89	1120	1500	26.0	380
142102170455801	90-2145-03 PUAPUA W119 TUT	14 21 02 N	170 45 58 E	10-24-88	0915	1300	26.0	450
				11-28-88	0925	950	26.0	200
				01-30-89	0925	700	26.0	120
				02-27-89	0950	600	26.0	71
				03-27-89	0950	850	26.0	150
				04-24-89	1055	1200	26.0	290
				05-22-89	1000	650	26.0	120
				06-26-89	1015	1300	26.0	330

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141532170340101 - 90-1534-01 TULA 104 (LAT 14°15'32" S. LONG 170°34'01" W.)

PERIOD OF RECORD.--Water years 1987 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
OCT 24...	1500	560	27.0	150
JAN 30...	1425	650	27.0	150
FEB 27...	1430	700	28.0	160
MAR 27...	1515	725	26.0	150
APR 25...	0930	700	27.0	140
MAY 22...	1420	650	27.0	150
JUN 26...	1440	650	26.5	150

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 05...	1015	36	670	7.2	27.0	0.20	<4	<4	140	27	18	68

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 05...	51	2	2.5	76	19	140	0.20	45	366	0.50	<0.100	0.110

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 05...	0.30	0.160	<1	<100	<1	<1	5	30	22	1	20	12

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 05...	<0.10	<1	4	40	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141532170340101 - 90-1534-01 TULA 104--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 05...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 05...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 05...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 05...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 05...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141520170340390 - 90-1534-03 TULA DW108 (LAT 14°15'20" S. LONG 170°34'03" W.)

PERIOD OF RECORD.--Water year 1989.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
APR 25...	0950	220	27.0	33

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
MAY 03...	1400	235	6.3	27.0	3.6	45	8.9	5.5	24	52	2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)
MAY 03...	1.9	43	<5.0	27	0.10	27	0.200	0.180	<0.20	0.100	<1

DATE	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)
MAY 03...	<100	<1	2	<11	160	32	<3	<10	2	<0.10	<1

DATE	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	BENZENE TOTAL (UG/L) (34030)	BROMOFORM TOTAL (UG/L) (32104)	CARBON-TETRACHLORIDE TOTAL (UG/L) (32102)	CHLORDANE, TOTAL (UG/L) (39350)	CHLOROBENZENE TOTAL (UG/L) (34301)	CHLORODIBROMOMETHANE TOTAL (UG/L) (32105)	CHLOROETHANE TOTAL (UG/L) (34311)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L) (34576)
MAY 03...	<1	160	<0.010	<0.2	12	<0.2	<0.1	<0.20	1.7	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141520170340390 - 90-1534-03 TULA DW108--Continued

DATE	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
MAY 03...	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
MAY 03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY 03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
MAY 03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
MAY 03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141546170354690 - 90-1535-01 SAILELE W130 (LAT 14°15'46" S. LONG 170°35'46" W.)

PERIOD OF RECORD.--Water years 1987 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
OCT 24...	1400	1800	28.0	460
JAN 30...	1330	1500	27.0	360
MAR 27...	1420	a1640	28.0	400
APR 25...	0830	1400	27.0	360
MAY 22...	1340	1400	27.0	370
JUN 26...	1355	1500	26.0	380

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 05...	1140	17	1610	7.1	27.0	0.50	<2	<2	420	78	55	130

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 05...	40	3	3.8	130	47	380	0.20	42	815	1.11	0.200	0.250

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 05...	<0.20	0.140	<1	<100	<1	2	1	30	18	<1	<10	4

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 05...	<0.10	<1	<1	10	<0.010	<0.2	4.3	<0.2	<0.1	<0.20	0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141546170354690 - 90-1535-01 SAILELE W130--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 05...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 05...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 05...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 05...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 05...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141647170360490 - 90-1636-02 ALOFAU W32 (LAT 14°16'47" S. LONG 170°36'04" W.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
OCT 24...	1425	3500	--	1100
JAN 30...	1355	4500	27.5	1400
FEB 27...	1355	4500	28.0	1400
APR 25...	0855	4000	26.5	1300
MAY 22...	1400	4500	27.0	1400
JUN 26...	1420	4500	28.0	1400

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 05...	1240	28	4650	6.9	27.0	0.20	<4	<4	1500	450	100	210

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 05...	23	2	8.9	68	120	1400	0.10	42	2370	3.23	0.200	0.200

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 05...	<0.20	0.020	<1	100	<1	6	1	40	40	<1	10	10

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 05...	<0.10	<1	<1	20	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141647170360490 - 90-1636-02 ALOFAU W32--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 05...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 05...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 05...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 05...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 05...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141624170393290 - 90-1639-11 AUA W99 (LAT 14°16'24" S. LONG 170°39'32" W.)

PERIOD OF RECORD.--Water years 1986 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
FEB 27...	1220	a1210	28.0	310
MAR 27...	1310	1300	28.0	340
APR 24...	1445	1300	27.0	340
MAY 22...	1235	1300	27.0	360
JUN 26...	1235	1300	27.0	360

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 03...	1000	180	1300	7.0	28.0	0.30	<2	<2	530	94	71	29

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 03...	11	0.5	3.8	67	35	360	0.10	41	675	0.92	0.200	0.180

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 03...	<0.20	0.030	<1	<100	<1	3	2	10	9	2	<10	<1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 03...	<0.10	<1	1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141624170393290 - 90-1639-11 AUA W99--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141644170420490 - 90-1642-12 PAGO PLAZA W2 (LAT 14°16'44" S. LONG 170°42'04" W.)

PERIOD OF RECORD.--Water year 1989.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
MAY 03...	1145	725	7.7	27.5	0.10	K30	K8	140	31	16	91	57

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
MAY 03...	3	3.8	71	22	160	0.20	46	413	0.56	0.100	0.170	<0.20

DATE	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY 03...	0.060	<1	100	<1	1	<11	40	8	<1	<10	1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
MAY 03...	0.10	<1	<1	20	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141644170420490 - 90-1642-12 PAGO PLAZA W2--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
MAY 03...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
MAY 03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY 03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
MAY 03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
MAY 03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141659170421690 - 90-1642-13 FITIULI W107 (LAT 14°16'59" S. LONG 170°42'16" W.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
JAN 30...	1130	a170	26.0	10
FEB 27...	1150	180	26.0	10
MAR 27...	1230	180	26.0	11
APR 24...	1405	a170	26.0	10
MAY 22...	1200	170	--	11
JUN 26...	1210	180	26.0	11

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 03...	1045	350	172	7.5	26.0	0.20	<2	<2	58	12	6.7	12

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 03...	30	0.7	2.6	71	2.0	9.2	0.10	52	141	0.19	0.300	0.310

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 03...	<0.20	0.060	<1	100	<1	<1	2	<10	6	2	<10	<1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 03...	<0.10	<1	1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141659170421690 - 90-1642-13 FITIULI W107--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141718170390790 - 90-1739-01 LAULII W96 (LAT 14°17'18" S. LONG 170°39'07" W.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
OCT 24...	1310	180	27.0	12
JAN 30...	1245	180	27.0	12
FEB 27...	1255	180	27.0	12
MAR 27...	1330	180	26.0	13
APR 24...	1504	190	27.0	12
MAY 22...	1300	170	27.0	13
JUN 26...	1320	180	27.0	12

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 03...	0915	65	172	7.4	26.5	0.30	<2	K2	59	12	7.0	12

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 03...	30	0.7	1.6	68	2.0	11	0.10	46	133	0.18	0.100	0.170

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 03...	<0.20	0.100	<1	100	<1	1	2	<10	5	2	<10	4

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 03...	0.10	<1	3	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141718170390790 - 90-1739-01 LAULII W96--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141703170405301 - 90-1740-01 UTULEI DW3 (LAT 14°17'03" S. LONG 170°40'53" W.)

PERIOD OF RECORD.--Water years 1985 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
JAN 30...	1100	480	27.0	78
MAR 27...	1150	500	27.0	64
APR 24...	1255	460	26.5	58
MAY 22...	1130	460	27.0	64
JUN 26...	0805	600	26.0	110

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
APR 29...	1000	450	6.9	26.0	0.40	<1	<1	140	33	13	37	36
JUL 03...	1400	600	7.1	26.5	0.30	>320	>240	170	42	16	52	39

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR 29...	1	4.3	133	9.0	51	0.20	29	259	0.35	0.500	0.520	<0.20
JUL 03...	2	5.2	149	14	93	0.20	30	344	0.47	0.400	0.460	<0.20

DATE	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
APR 29...	0.100	<1	<100	<1	<1	<22	30	10	<1	<10	2
JUL 03...	0.090	<1	<100	<1	<1	3	80	8	2	<10	1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
APR 29...	0.20	<1	<1	40	<0.010	<0.2	10	<0.2	<0.1	<0.20	22	<0.2
JUL 03...	<0.10	<1	1	<10	<0.010	<0.2	0.3	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141703170405301 - 90-1740-01 UTULEI DW3--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
APR												
29...	<0.2	4.0	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	11
JUL												
03...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
APR											
29...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010
JUL											
03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
APR											
29...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01
JUL											
03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
APR											
29...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2
JUL											
03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
APR											
29...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20
JUL											
03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141708170413490 - 90-1741-08 FAGATOGO W102 (LAT 14°17'08" S. LONG 170°41'34" W.)

PERIOD OF RECORD.--Water years 1988 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
NOV 28...	1135	150	26.0	12
JAN 30...	1110	150	26.0	14
APR 24...	1310	120	26.0	14
MAY 22...	1150	140	25.5	15
JUN 26...	0750	160	25.0	16

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 03...	1300	500	150	7.5	26.0	0.30	<2	<2	46	9.2	5.6	12

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 03...	34	0.8	2.8	52	2.0	13	0.10	47	124	0.17	0.200	0.260

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 03...	<0.20	0.030	<1	100	<1	<1	3	<10	7	2	<10	<1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 03...	<0.10	<1	1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141708170413490 - 90-1741-08 FAGATOGO W102--Continued

DATE	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CIS 1,3-DICHLOROPROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	1,2-DIBROMOETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DICHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DICHLORO-WATER UNFLTRD REC (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DICHLORODIFLUOROMETHANE TOTAL (UG/L)	1,1-DICHLOROETHANE TOTAL (UG/L)	1,2-DICHLOROETHANE TOTAL (UG/L)	1,1-DICHLOROETHYLENE TOTAL (UG/L)	1,2-DICHLOROPROPANE TOTAL (UG/L)	1,3-DICHLOROPROPENE TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYLBENZENE TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYLBROMIDE TOTAL (UG/L)	METHYLCHLORIDE TOTAL (UG/L)	METHYLENE CHLORIDE TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)
JUL 03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PARATHION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRACHLOROWAT UNF REC (UG/L)	TETRACHLOROETHYLENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOXAPHENE, TOTAL (UG/L)	1,2-TRANSDICHLOROETHENE TOTAL (UG/L)	TRANS-1,3-DICHLOROPROPENE TOTAL (UG/L)	TRICHLOROETHYLENE TOTAL (UG/L)	1,1,1-TRICHLOROETHANE TOTAL (UG/L)	1,1,2-TRICHLOROETHANE TOTAL (UG/L)	TRICHLOROFLUOROMETHANE TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLORIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141945170435301 - 90-1943-06 TAFUNAFOU W33 (LAT 14°19'45" S. LONG 170°43'53" W.)

PERIOD OF RECORD.--Water years 1982 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
NOV 28...	0715	650	25.0	150
JAN 30...	0745	600	26.0	150
FEB 27...	0830	280	26.0	49
MAR 27...	0740	580	25.5	130
APR 24...	0830	460	26.0	110
MAY 22...	0805	520	26.0	140
JUN 26...	0835	1200	27.0	330

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
MAY 03...	1030	200	6.8	26.0	1.7	>160	70	41	6.9	5.8	23	52
JUL 06...	0830	1520	6.5	29.0	0.40	K4	K4	270	42	40	180	58

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
MAY 03...	2	4.6	47	5.0	26	0.10	31	132	0.18	0.400	0.400	<0.20
JUL 06...	5	14	58	55	400	0.10	35	803	1.09	0.500	0.500	0.20

DATE	NITROGEN, TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)
MAY 03...	--	0.050	<1	100	<1	2	<6	100	33	<1	<10
JUL 06...	0.70	0.020	<1	<100	<1	2	73	80	15	2	<10

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)
MAY 03...	<1	0.20	<1	<1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2
JUL 06...	4	<0.10	<1	3	20	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2

< Actual value is known to be less than the value shown.
> Actual value is known to be greater than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141945170435301 - 90-1943-06 TAFUNAFOU W33--Continued

DATE	CHLORO-ETHANE TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)
MAY												
03...	<0.2	<0.2	1.0	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20
JUL												
06...	<0.2	<0.2	0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20

DATE	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
MAY												
03...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010
JUL												
06...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY											
03...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01
JUL											
06...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
MAY											
03...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2
JUL											
06...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
MAY											
03...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20
JUL											
06...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141952170444201 - 90-1944-15 FALENIU W-85 (LAT 14°19'52" S. LONG 170°44'42" W.)

PERIOD OF RECORD.--Water years 1985, 1987, 1989.

DATE	TIME	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
JUL 06...	0925	320	195	7.3	26.0	0.20	>1600	<4	48	7.3	7.2	19

DATE	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
JUL 06...	41	1	8.3	66	4.0	14	0.20	40	144	0.20	0.900	0.930

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 06...	<0.20	0.090	<1	<100	<1	2	4	<10	9	1	<10	<1

DATE	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMO-FORM TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)	CHLORO-ETHANE TOTAL (UG/L)
JUL 06...	<0.10	<1	<1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 06...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141952170444201 - 90-1944-15 FALENIU W-85A--Continued

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 06...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 06...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 06...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 06...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141918170441090 - 90-1944-19 MALAEIMI W89 (LAT 14°19'18" S. LONG 170°44'10" W.)

PERIOD OF RECORD.--Water years 1987, 1989.

DATE	TIME	FLOW RATE, INSTAN-TANEOUS (G/M)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
JUL 06...	1005	155	153	7.3	25.5	0.50	340	K75	44	7.3	6.3	13

DATE	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)
JUL 06...	36	0.9	4.9	61	2.0	8.8	0.10	34	116	0.16	0.600	0.580

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)
JUL 06...	0.50	1.1	0.040	<1	100	<1	2	3	10	12	<1	<10

DATE	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	SELE-NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMO-FORM TOTAL (UG/L)	CARBON-TETRA-CHLO-RIDE TOTAL (UG/L)	CHLOR-DANE, TOTAL (UG/L)	CHLORO-BENZENE TOTAL (UG/L)	CHLORO-DI-BROMO-METHANE TOTAL (UG/L)
JUL 06...	2	<0.10	<1	1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2

DATE	CHLORO-ETHANE TOTAL (UG/L)	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)
JUL 06...	<0.2	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20

< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptable range (non-ideal colony count).

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

141918170441090 - 90-1944-19 MALAEIMI W89--Continued

DATE	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 06...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 06...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 06...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 06...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142053170455890 - 90-2045-02 MALAELOA W91 (LAT 14°20'53" S. LONG 170°45'58" W.)

PERIOD OF RECORD.--Water year 1989.

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 01...	0930	280	355	7.6	27.0	0.20	<2	<2	130	33	12	21

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 01...	24	0.8	8.4	156	6.0	12	0.30	44	240	0.33	2.00	2.20

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 01...	<0.20	0.100	<1	<100	<1	2	3	<10	<3	2	<10	<1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 01...	<0.10	<1	<1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

DATE	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)	CHLOROFORM TOTAL (UG/L)	CIS 1,3-DICHLOROPROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	1,2-DIBROMOETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DICHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DICHLORO-WATER UNFLTRD REC (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)
JUL 01...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142053170455890 - 90-2045-02 MALAELOA W91--Continued

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 01...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 01...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 01...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 01...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142057170455901 - 90-2045-04 MALAELOA W93 (LAT 14°20'57" S. LONG 170°45'59" W.)

PERIOD OF RECORD.--Water years 1989.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
MAY 02...	0930	360	7.5	26.0	0.10	<1	<1	130	32	11	23	27

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
MAY 02...	0.9	9.6	154	5.0	12	0.40	44	234	0.32	1.00	1.10	<0.20

DATE	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)
MAY 02...	0.100	<1	100	<1	3	<12	30	9	<3	<10	<1	0.10

DATE	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)	2-CHLOROETHYLVINYLETHER TOTAL (UG/L)
MAY 02...	<1	<1	10	<0.010	<0.2	5.9	<0.2	<0.1	<0.20	4.8	<0.2	<0.2

DATE	CHLOROFORM TOTAL (UG/L)	CIS 1,3-DICHLOROPROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	1,2-DIBROMOETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DICHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DICHLORO-WATER UNFLTRD REC (UG/L)	DICHLOROBROMOMETHANE TOTAL (UG/L)
MAY 02...	0.8	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	1.4

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142057170455901 - 90-2045-04 MALAELOA W93--Continued

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
MAY 02...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
MAY 02...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
MAY 02...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
MAY 02...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142042170463001 - 90-2046-03 MALAELOA W70 (LAT 14°20'42" S. LONG 170°46'30" W.)

PERIOD OF RECORD.--Water years 1982 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
OCT 24...	0935	350	26.0	31
NOV 28...	0955	320	26.5	20
JAN 30...	0950	280	26.0	16
FEB 27...	1015	280	26.0	13
MAR 27...	1020	320	26.0	16
APR 24...	1125	320	27.0	16
MAY 22...	1030	250	26.0	16
JUN 26...	1050	320	26.0	19

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 01...	1100	270	320	7.6	26.5	0.30	<2	<2	100	25	10	22

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 01...	29	0.9	9.7	128	4.0	18	0.30	44	213	0.29	0.600	0.710

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 01...	<0.20	0.120	<1	<100	<1	1	4	<10	4	2	<10	<1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 01...	<0.10	<1	1	<10	<0.010	<0.2	2.7	<0.2	<0.1	<0.20	4.6	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142042170463001 - 90-2046-03 MALAELOA W70--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 01...	<0.2	1.0	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	2.1

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 01...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 01...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 01...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 01...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142102170445490 - 90-2144-08 ILIILI W79 (LAT 14°21'02" S. LONG 170°44'54" W.)

PERIOD OF RECORD.--Water years 1986 to current year.

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE WATER (DEG C)	CHLORIDE, (MG/L AS CL)
OCT 24...	0950	600	26.5	130
NOV 28...	1015	750	27.0	120
JAN 30...	1000	600	27.0	85
FEB 27...	1030	580	27.0	76
MAR 27...	1040	600	27.0	78
APR 24...	1025	600	27.0	85
MAY 22...	1045	580	27.0	83
JUN 26...	1100	600	27.0	85

DATE	TIME	FLOW RATE, INSTANTANEOUS (G/M)	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
JUL 01...	1145	60	600	7.7	27.5	0.20	<2	<2	150	27	20	59

DATE	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
JUL 01...	43	2	18	154	16	79	0.80	36	355	0.48	1.40	1.50

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, DISSOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 01...	<0.20	0.040	<1	<100	<1	2	2	10	7	2	<10	<1

DATE	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ALDRIN, TOTAL (UG/L)	BENZENE TOTAL (UG/L)	BROMOFORM TOTAL (UG/L)	CARBON-TETRACHLORIDE TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	CHLOROBENZENE TOTAL (UG/L)	CHLORODIBROMOMETHANE TOTAL (UG/L)	CHLOROETHANE TOTAL (UG/L)
JUL 01...	<0.10	<1	1	<10	<0.010	<0.2	<0.2	<0.2	<0.1	<0.20	<0.2	<0.2

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SAMOA ISLANDS, ISLAND OF TUTUILA--Continued

142102170445490 - 90-2144-08 ILIILI W79--Continued

DATE	2-CHLORO-ETHYL-VINYL-ETHER TOTAL (UG/L)	CHLORO-FORM TOTAL (UG/L)	CIS 1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI-AZINON, TOTAL (UG/L)	1,2-DIBROMO ETHANE WATER WHOLE TOTAL (UG/L)	BENZENE O-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,3-DI-CHLORO-WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI-CHLORO-WATER UNFLTRD REC (UG/L)	DI-CHLORO-BROMO-METHANE TOTAL (UG/L)
JUL 01...	<0.2	<0.2	<0.2	<0.010	<0.010	<0.010	<0.01	<0.2	<0.20	<0.20	<0.20	<0.2

DATE	DI-CHLORO-DI-FLUORO-METHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHANE TOTAL (UG/L)	1,2-DI-CHLORO-ETHANE TOTAL (UG/L)	1,1-DI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,2-DI-CHLORO-PROPANE TOTAL (UG/L)	1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	DI-ELDRIN TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4-D, TOTAL (UG/L)	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN WATER UNFLTRD REC (UG/L)
JUL 01...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.010	<0.01	<0.01	<0.010	<0.010

DATE	ETHION, TOTAL (UG/L)	ETHYL-BENZENE TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL-BROMIDE TOTAL (UG/L)	METHYL-CHLO-RIDE TOTAL (UG/L)	METHYL-ENE CHLO-RIDE TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)
JUL 01...	<0.01	<0.2	<0.010	<0.010	<0.010	<0.01	<0.01	<0.2	<0.2	<0.2	<0.01

DATE	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	STYRENE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA-CHLORO-WAT UNF REC (UG/L)	TETRA-CHLORO-ETHYL-ENE TOTAL (UG/L)	TOLUENE TOTAL (UG/L)
JUL 01...	<0.01	<0.01	<0.10	<0.01	<0.1	<0.1	<0.01	<0.2	<0.2	<0.2	<0.2

DATE	TOX-APHENE, TOTAL (UG/L)	1,2-TRANSDI CHLORO-ETHENE TOTAL (UG/L)	TRANS-1,3-DI-CHLORO-PROPENE TOTAL (UG/L)	TRI-CHLORO-ETHYL-ENE TOTAL (UG/L)	1,1,1-TRI-CHLORO-ETHANE TOTAL (UG/L)	1,1,2-TRI-CHLORO-ETHANE TOTAL (UG/L)	TRI-CHLORO-FLUORO-METHANE TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4,5-T TOTAL (UG/L)	VINYL CHLO-RIDE TOTAL (UG/L)	XYLENE WATER UNFLTRD REC (UG/L)
JUL 01...	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.01	<0.01	<0.2	<0.20

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

MARIANA ISLANDS, ISLAND OF SAIPAN

150804145434770. Isley Field Raingage at airport, Saipan.

LOCATION.--Lat 15°08'04" N., long 145°43'47" E. Approximately 0.1 mi north of the Saipan International Airport, in the Commonwealth Utilities Corporation Isley well field.

PERIOD OF RECORD.--March 1973 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 195 ft, from topographic map.

REMARKS.--Records poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.14	f.00	.04	---	---	.40	.00	.01	.00	---	ff.01
2	.98	.07	.08	.05	---	---	.00	.00	.00	.00	---	.00
3	a.00	.05	.02	.31	---	q.00	.19	.00	.47	x.00	---	.16
4	---	.10	.20	.18	---	.02	.00	.10	.02	---	cc.00	.72
5	---	.36	.02	.00	k.00	.01	.00	.46	.00	---	.16	.74
6	---	.08	.00	.30	.00	.00	r.00	.04	.00	---	.00	1.30
7	b.25	.00	.31	.10	.71	.02	---	t.00	.00	y.00	.10	.89
8	.37	.00	.31	.00	.16	.00	---	---	.00	.04	.01	1.03
9	.34	.31	g.00	.13	.00	.00	---	---	.00	.04	.26	gg.05
10	.25	.01	---	.00	.00	.11	---	---	.00	.00	.67	---
11	.05	.03	---	.12	.00	.02	---	---	.01	.20	.73	---
12	.01	c.16	---	.01	.01	.00	---	u.00	.25	.05	3.35	---
13	.00	---	---	.02	.11	.01	---	.02	.00	.71	1.90	---
14	.07	---	---	.10	m1.87	.00	---	.04	.00	z.05	dd.02	---
15	.22	---	---	.52	---	.00	---	.00	.06	---	---	hh.01
16	.64	---	---	.00	---	.00	---	.05	.01	---	---	.01
17	.05	---	---	.08	n.01	.00	---	.06	.17	---	---	.00
18	.08	d.00	---	.12	.32	.00	---	.20	.47	---	ee.00	.00
19	.00	.98	---	1.25	.11	.00	---	.00	.01	---	.12	.00
20	.01	1.07	---	.00	.01	.00	---	.44	.29	---	.29	.02
21	.08	.90	---	.00	.00	.00	---	v.00	.04	aa.60	.00	.01
22	.60	.01	---	.00	.00	.05	---	---	.07	.13	.00	.10
23	.12	.10	---	.00	.00	.11	---	---	.12	.08	.00	.02
24	.32	.00	---	.00	.01	.00	---	---	.01	.43	.02	.00
25	.35	.00	---	.04	p.00	.00	---	---	.05	.64	.01	jj.00
26	.00	.00	---	.00	---	.00	---	w.00	.00	1.84	---	---
27	.22	.05	---	j.00	---	.00	---	.00	.24	.01	---	---
28	.00	e.00	---	---	---	.00	s.00	.00	.05	1.13	---	---
29	.13	---	---	---	---	.00	.00	.00	.11	1.52	---	kk.65
30	.76	---	h.00	---	---	.00	.00	.00	.00	bb.26	---	.01
31	.05	---	.00	---	---	.00	---	.04	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	2.46	---	---	---

a Partial daily record from 0001 hrs to 1130 hrs
b Partial daily record from 0830 hrs to 2400 hrs. Total accumulated rainfall from Oct. 3 (1130 hrs) to Oct. 7 (0830 hrs) is 5.61 inches
c Partial daily record from 0001 hrs to 1520 hrs
d Partial daily record from 0825 hrs to 2400 hrs. Total accumulated rainfall from Nov. 12 (1520 hrs) to Nov. 18 (0825 hrs) is 0.16 inches
e Partial daily record from 0001 hrs to 1440 hrs
f Partial daily record from 1037 hrs to 2400 hrs. Total accumulated rainfall from Nov. 28 (1440 hrs) to Dec. 1 (1037 hrs) is 0.05 inches
g Partial daily record from 0001 hrs to 1945 hrs
h Partial daily record from 0843 hrs to 2400 hrs. Total accumulated rainfall from Dec. 9 (1945 hrs) to Dec. 30 (0843 hrs) is 0.46 inches
j Partial daily record from 0001 hrs to 2300 hrs
k Partial daily record from 0925 hrs to 2400 hrs. Total accumulated rainfall from Jan. 27 (2300 hrs) to Feb. 5 (0925 hrs) is 0.46 inches
m Partial daily record from 0001 hrs to 2100 hrs
n Partial daily record from 0923 hrs to 2400 hrs. Total accumulated rainfall from Feb. 14 (2100 hrs) to Feb. 17 (0923 hrs) is 0.43 inches

MARIANA ISLANDS, ISLAND OF SAIPAN--Continued

150804145434770. Isley Field Raingage at airport, Saipan--Continued

p Partial daily record from 0001 hrs to 0200 hrs
q Partial daily record from 0901 hrs to 2400 hrs. Total accumulated rainfall from Feb. 25 (0200 hrs) to Mar. 3 (0901 hrs) is 0.09 inches
r Partial daily record from 0001 hrs to 1515 hrs
s Partial daily record from 0830 hrs to 2400 hrs. Total accumulated rainfall from Apr. 6 (1515 hrs) to Apr. 28 (0830 hrs) is 2.39 inches
t Partial daily record from 0001 hrs to 1730 hrs
u Partial daily record from 1050 hrs to 2400 hrs. Total accumulated rainfall from May 7 (1730 hrs) to May 12 (1050 hrs) is 0.24 inches
v Partial daily record from 0001 hrs to 1340 hrs
w Partial daily record from 1000 hrs to 2400 hrs. Total accumulated rainfall from May 21 (1340 hrs) to May 26 (1000 hrs) is 0.29 inches
x Partial daily record from 0001 hrs to 0215 hrs
y Partial daily record from 0910 hrs to 2400 hrs. Total accumulated rainfall from July 3 (0215 hrs) to July 7 (0910 hrs) is 0.70 inches
z Partial daily record from 0001 hrs to 1700 hrs
aa Partial daily record from 1042 hrs to 2400 hrs. Total accumulated rainfall from July 14 (1700 hrs) to July 21 (1042 hrs) is 2.21 inches
bb Partial daily record from 0001 hrs to 2200 hrs
cc Partial daily record from 0900 hrs to 2400 hrs. Total accumulated rainfall from July 30 (2200 hrs) to Aug. 4 (0900 hrs) is 5.26 inches
dd Partial daily record from 0001 hrs to 0330 hrs
ee Partial daily record from 1100 hrs to 2400 hrs. Total accumulated rainfall from Aug. 14 (0330 hrs) to Aug. 18 (1100 hrs) is 2.39 inches
ff Partial daily record from 0841 hrs to 2400 hrs. Total accumulated rainfall from Aug. 26 (0001 hrs) to Sep. 1 (0841 hrs) is 1.74 inches
gg Partial daily record from 0001 hrs to 0645 hrs
hh Partial daily record from 0830 hrs to 2400 hrs. Total accumulated rainfall from Sep. 9 (0645 hrs) to Sep. 15 (0830 hrs) is 3.54 inches
jj Partial daily record from 0001 hrs to 1715 hrs
kk Partial daily record from 0900 hrs to 2400 hrs. Total accumulated rainfall from Sep. 25 (1715 hrs) to Sep. 29 (0900 hrs) is 0.13 inches

MARIANA ISLANDS, ISLAND OF SAIPAN--Continued

151330145442670. Nine Million Gallon Reservoir near Garapan, Saipan.

LOCATION.--Lat 15°13'30" N., long 145°44'26" E. Approximately two miles northeast of Garapan, next to the nine million gallon reservoir in the Puerto Rico area.

PERIOD OF RECORD.--March 1973 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of the gage is approximately 60 ft, from topographic map.

REMARKS.--Records for the year are considered poor, except for March, and May through September, which are considered good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.10	---	---	---	---	.01	.00	.13	.05	---	.04
2	---	.43	---	---	---	---	.08	.02	.32	.32	---	.01
3	---	c.28	---	---	---	---	.04	.00	.78	.29	---	.04
4	---	---	---	---	---	---	.02	.68	.20	.42	h.12	.29
5	---	---	---	---	---	---	.00	.11	.00	.01	.84	.85
6	---	---	---	---	---	---	.00	.26	.11	.00	.01	.94
7	a---	---	---	---	---	---	.00	.25	.01	.01	.13	2.60
8	---	---	---	---	---	d.00	.00	1.09	.10	.44	.00	3.40
9	---	---	---	---	---	.02	.72	.07	.42	.32	.17	1.16
10	---	---	---	---	---	.12	.01	.17	.08	.00	.64	1.32
11	---	---	---	---	---	.05	.08	1.56	.00	2.78	3.24	2.50
12	b.01	---	---	---	---	.00	.08	.42	.32	.01	8.84	.01
13	.02	---	---	---	---	.00	.00	.00	.19	.68	2.02	.00
14	.28	---	---	---	---	.00	.25	.00	.50	.18	.01	.01
15	.05	---	---	---	---	.00	e.00	.10	.07	.92	.04	.00
16	1.09	---	---	---	---	.00	---	.02	.25	2.89	.01	.00
17	.83	---	---	---	---	.00	---	.20	.56	.79	.01	.01
18	.05	---	---	---	---	.00	---	.92	1.60	.14	.05	.00
19	.00	---	---	---	---	.00	---	.04	.05	.02	.02	.00
20	.38	---	---	---	---	.00	---	1.03	.70	1.15	.48	.10
21	.38	---	---	---	---	.00	---	.00	.04	1.80	.02	.01
22	1.58	---	---	---	---	.00	---	.32	.26	.44	.01	.00
23	.08	---	---	---	---	.05	---	.40	.34	.05	.00	.01
24	.16	---	---	---	---	.02	---	.02	.43	6.26	.02	.00
25	.14	---	---	---	---	.00	---	.04	.58	1.88	.02	.00
26	.00	---	---	---	---	.02	---	.06	.00	3.67	.02	.01
27	.53	---	---	---	---	.05	---	.02	.25	.14	.10	.00
28	.02	---	---	---	---	.00	f.68	.00	.31	2.69	.02	.00
29	.35	---	---	---	---	.20	.00	.00	.28	g.02	.18	2.64
30	.47	---	---	---	---	.08	.00	.00	.00	---	.22	.00
31	.05	---	---	---	---	.73	---	.00	---	---	1.39	---
TOTAL	---	---	---	---	---	---	---	7.80	8.88	---	---	15.95

a Total accumulated rainfall from Sep. 23, 1988 (1345 hrs) to Oct. 7 (1059 hrs) is 13.50 inches
b Partial daily record from 1305 hrs to 2400 hrs. Total accumulated rainfall from Oct. 7 (1059 hrs) to Oct. 12 (1305 hrs) is 0.9 inches
c Partial daily record from 0001 hrs to 1030 hrs
d Partial daily record from 0945 hrs to 2400 hrs. No record from Nov. 3 (1030 hrs) to Mar. 8 (0945 hrs), faucet on the raincan was left open
e Partial daily record from 0001 hrs to 0330 hrs
f Partial daily record from 1000 hrs to 2400 hrs. Total accumulated rainfall from Apr. 15 (0330 hrs) to Apr. 28 (1000 hrs) is 5.80 inches
g Partial daily record from 0001 hrs to 0700 hrs
h Partial daily record from 1000 hrs to 2400 hrs. Total accumulated rainfall from July 29 (0700 hrs) to Aug. 4 (1000 hrs) is >36.0 inches, can overflowed

MARIANA ISLANDS, ISLAND OF GUAM

131729144393766. Umatac Raingage at Umatac, Guam.

LOCATION.--Lat 13°17'29" N., long 144°39'37" E. Approximately 100 ft west of the Umatac Fire Station, off Route 4, 0.3 mi south of Umatac Bay.

PERIOD OF RECORD.--December 1978 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam, filed under the name Umatac Fire Station Raingage.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 180 ft, from topographic map.

REMARKS.--Records good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	.07	.00	---	---	---	---	.00	.19	.13	.66	.00
2	.23	.05	.00	---	---	---	---	.04	.17	.11	.00	.00
3	1.45	.24	.00	---	---	---	---	.11	.34	.06	2.74	.24
4	1.24	.37	.01	---	---	---	---	.23	.04	.23	.17	.08
5	.70	.25	.38	---	---	---	---	.04	.19	.40	.31	.62
6	.51	.02	.04	---	---	---	---	.07	.02	.09	.10	1.96
7	.08	.00	1.26	---	---	---	---	.00	.02	.25	.06	.05
8	1.09	.13	.02	---	---	---	---	.01	.00	.25	.40	.40
9	.13	.04	.02	---	---	---	---	.22	.00	.14	.79	1.58
10	.01	.20	.01	---	---	---	---	.12	.05	.19	.34	.68
11	.02	.34	.41	c---	---	---	---	.08	.00	.25	.22	2.42
12	.35	.38	.00	.58	---	---	---	.01	.00	.05	.02	.24
13	.02	.28	.00	.01	---	---	---	.00	.04	.00	2.58	.25
14	.43	.38	.00	1.33	---	---	---	.44	.05	.00	.47	.12
15	.40	.23	.00	1.32	---	---	---	.00	.01	.00	1.03	.00
16	.83	.17	a.32	1.87	---	---	---	.12	.01	.25	.02	.05
17	.02	.86	---	.48	---	---	---	.01	1.31	.17	.05	.55
18	.00	.30	---	.26	---	---	---	.00	.06	.02	.55	2.92
19	.00	.37	b.00	1.20	---	---	e.07	.02	.05	.17	.73	.00
20	1.13	.05	.85	.00	---	---	---	.00	.19	.18	.35	.00
21	.34	.10	.22	.00	---	---	---	.01	.00	.96	.00	.31
22	1.08	.00	.20	8.20	---	---	---	.00	.00	.12	.58	.00
23	.08	.00	.00	.47	---	---	---	.04	.06	.18	.00	.06
24	1.49	.18	.38	d.00	---	---	---	.00	.00	.01	.86	.00
25	2.24	.00	.01	---	---	---	f.23	.02	1.80	.46	.00	.00
26	.06	.24	.00	---	---	---	.00	.22	.56	.11	.00	.00
27	.11	.92	.00	---	---	---	.73	.17	.00	.07	.29	.34
28	.38	.20	.00	---	---	---	1.81	.41	.66	.97	.29	.16
29	.41	.26	.00	---	---	---	.05	.26	.35	.54	.43	.00
30	.60	.01	.02	---	---	---	.00	.37	.11	.80	.00	.00
31	.20	---	.36	---	---	---	---	.35	---	.24	.00	---
TOTAL	16.53	6.64	---	---	---	---	---	3.37	6.28	7.40	14.04	13.03

a Partial daily record from 0001 hrs to 1610 hrs
b Partial daily record from 1100 hrs to 2400 hrs. Total accumulated rainfall from Dec. 16 (1610 hrs) to Dec. 19 (1100 hrs) is 0.60 inches
c Total accumulated rainfall from Jan. 1 (0001 hrs) to Jan. 11 (2400 hrs) is 3.28 inches
d Partial daily record from 0001 hrs to 1400 hrs
e Partial daily record from 1505 hrs to 2400 hrs. No record from Jan. 24 (1400 hrs) to Apr. 19 (1505 hrs), station vandalized
f Partial daily record from 1430 hrs to 2400 hrs. No record from Apr. 20 (0001 hrs) to Apr. 25 (1430 hrs), raincan spigot leaking

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132234144441966. Windward Hills Raingage near Talofofo, Guam

LOCATION.--Lat 13°22'34" N., long 144°44'19" E. On Route 17 (Cross Island Rd.), approximately 0.5 miles northwest of the Route 4A intersection.

PERIOD OF RECORD.--February 1974 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 365 ft, from topographic map.

REMARKS.--Records for the year are considered good, except for May which is poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.05	.00	.00	.00	.00	.22	f.00	---	.19	.89	.17
2	1.10	.08	.00	.18	.00	.16	.04	.29	h.18	.08	.01	.00
3	.04	.02	.00	.00	.00	.44	c.00	.12	.13	.06	1.84	.00
4	.82	.02	.26	.00	.00	.04	---	.05	.13	.74	.22	.08
5	.20	.55	.36	.00	.05	.01	d.01	.32	.01	.95	.23	.30
6	1.37	.08	.34	.05	.00	.00	.06	.02	.01	.05	.04	1.10
7	.06	.06	.19	.00	.00	.00	.04	g.00	.02	.12	.20	.07
8	.07	.46	.04	.13	.00	.00	.05	---	.01	.23	.23	.32
9	.18	.02	.00	.00	.00	.00	.01	---	.56	.07	1.01	4.64
10	.02	.11	.00	.00	.00	.07	.01	---	.14	.02	.32	1.76
11	.00	.26	.22	.40	.29	.00	.01	---	.01	.01	.32	.42
12	.22	.01	.00	.19	.06	a.00	.04	---	.08	.02	.07	.52
13	.06	.11	.01	.10	.23	---	.14	---	.00	.05	1.88	.22
14	.28	.14	.00	.17	.01	---	.18	---	.17	.20	.56	.10
15	.24	.02	.00	.25	.00	---	.08	---	.24	.34	2.39	.00
16	.84	.00	.00	.05	.37	---	.12	---	.66	.37	.43	.01
17	.02	.14	.00	.07	.94	---	.05	---	1.74	.19	.17	.00
18	.01	.22	.16	.00	2.69	---	.13	---	.01	.41	.41	.00
19	.00	.18	.01	.28	.00	---	.34	---	.02	.07	.42	.01
20	.00	.12	.06	.00	.00	---	2.41	---	.88	.36	.00	.00
21	.08	.34	.01	.00	.00	---	3.06	---	.00	.41	.00	.04
22	.55	.72	.05	1.46	1.01	b.00	.04	---	.00	.29	.28	.35
23	.00	.18	.00	.05	.12	.00	.00	---	.07	.05	.02	.22
24	.11	.68	.01	.00	.38	.00	e.00	---	.04	.00	.76	.47
25	1.09	.00	.00	.22	.10	.00	---	---	.16	.77	.00	.02
26	.00	.01	.00	.00	.00	.00	---	---	.00	.02	.06	.01
27	.29	.24	.00	.00	.00	.00	---	---	.37	1.24	.36	.12
28	.30	.00	.00	.07	.00	.00	---	---	.17	1.08	.13	.40
29	.97	.08	.00	.00	---	.00	---	---	.13	.66	.12	.00
30	.40	.00	.00	.06	---	.06	---	---	.00	2.10	.58	.00
31	.43	---	.12	.00	---	.17	---	---	---	.20	.00	---
TOTAL	9.85	4.90	1.84	3.73	6.25	---	---	---	---	11.35	13.95	11.35

a Partial daily record from 0001 hrs to 1300 hrs
b Partial daily record from 0815 hrs to 2400 hrs. Total accumulated rainfall from Mar. 12 (1300 hrs) to Mar. 22 (0815 hrs) is 0.05 inches
c Partial daily record from 0001 hrs to 1630 hrs
d Partial daily record from 1438 hrs to 2400 hrs. Total accumulated rainfall from Apr. 3 (1630 hrs) to Apr. 5 (1438 hrs) is 0.21 inches
e Partial daily record from 0001 hrs to 1000 hrs
f Partial daily record from 1419 hrs to 2400 hrs. Total accumulated rainfall from Apr. 24 (1000 hrs) to May 1 (1419 hrs) is 2.26 inches
g Partial daily record from 0001 hrs to 1200 hrs
h Partial daily record from 1055 hrs to 2400 hrs. Total accumulated rainfall from May 7 (1200 hrs) to June 2 (1055 hrs) is 3.10 inches

MARIANA ISLANDS, ISLAND OF GUAM--Continued

132617144423366. Mount Chachao Raingage near Piti, Guam

LOCATION.--Lat 13°26'17" N., long 144°42'33" E. Approximately two miles south of Route 6 (Spruance Rd.) on the Mt. Alutom access road.

PERIOD OF RECORD.--February 1973 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 830 ft, from topographic map.

REMARKS.--Records for the year are considered good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.08	.05	.00	.00	.20	.20	.00	.00	---	.00	.00
2	---	.18	.00	.06	.00	.20	.04	.00	.25	---	.00	.00
3	---	.16	.01	.00	.00	.01	.00	.00	.00	---	1.99	.00
4	---	.16	.06	.00	.00	.00	.00	.00	.25	---	.08	1.55
5	---	.44	.86	.00	.00	.00	.00	.00	.00	---	.13	.49
6	a.00	.37	.26	.00	.01	.00	.00	.00	.04	f.00	.00	1.24
7	.00	.55	.35	.00	.11	.00	.00	.00	.02	.00	.08	.16
8	.00	.48	.00	.06	.00	.00	.00	.14	.14	.11	.08	.34
9	.84	.12	.01	.05	.14	.00	.00	.43	.61	.24	1.51	4.99
10	.00	.06	.01	.00	.06	.00	.05	.20	.01	.58	.54	1.81
11	.26	.71	.16	.34	1.91	.00	.00	.10	.06	.18	.46	g.00
12	.02	.16	.00	.23	.04	.00	.06	.00	.06	.36	.00	---
13	.55	.08	.00	.00	1.19	.00	.08	.00	.04	.22	1.62	---
14	.29	.02	.13	.00	.00	.00	.16	1.02	.00	.00	.02	---
15	.62	.00	.02	.67	.00	.00	.04	.00	.36	.84	1.64	---
16	1.01	.11	.07	.20	.46	.00	.04	.02	2.05	.24	.05	---
17	---	.49	.00	.02	1.20	.01	.17	.07	e1.79	.37	.17	---
18	---	.13	.11	.11	3.96	.00	.11	.07	---	.22	.10	---
19	---	.42	.01	.14	.00	.00	.91	.08	---	.16	.36	---
20	---	.17	.11	.08	.00	.00	1.74	.00	---	.34	.74	---
21	b---	.59	.20	.01	.00	.00	2.52	.00	---	.48	.05	---
22	.35	1.09	.22	.82	.60	.00	.00	.01	---	.17	.12	---
23	.08	.10	.00	.04	.24	.00	.00	.10	---	.00	.22	---
24	.07	.01	.06	.00	.17	.01	.00	.05	---	.00	.70	---
25	c1.46	.00	.00	.20	.11	.00	.00	.05	---	.77	.00	---
26	---	.00	.05	.00	.00	.00	.00	.07	---	.08	.16	---
27	---	.18	.00	.00	.04	.01	.07	.02	---	.55	.02	---
28	d---	.01	.00	.32	.00	.00	.43	.91	---	1.03	.46	---
29	1.54	.08	.00	.00	---	.00	.01	.44	---	.77	.11	---
30	.12	.00	.00	.08	---	.00	.00	.04	---	1.07	.23	---
31	.31	---	.02	.00	---	.02	---	.26	---	.14	.00	---
TOTAL	---	6.95	2.77	3.43	10.24	0.46	6.63	4.08	---	---	11.64	---

a Partial daily record from 1235 hrs to 2400 hrs. Total accumulated rainfall from Sep. 14, 1988 (1425 hrs) to Oct. 6 (1235 hrs) is 9.10 inches
b No record from Oct. 17 (0001 hrs) to Oct. 21 (2400 hrs)
c Partial daily record from 0001 hrs to 1100 hrs
d No record from Oct. 25 (1100 hrs) to Oct. 28 (2400 hrs)
e Partial daily record from 0001 hrs to 1200 hrs
f Partial daily record from 1430 hrs to 2400 hrs. No record from June 17 (1200 hrs) to July 6 (1430), recorder malfunctioned
g Partial daily record from 0001 hrs to 1540 hrs. No record from Sep. 11 (1540 hrs) to Oct. 2, 1989 (0815 hrs), float tape slipped off the float wheel

MARIANA ISLANDS, ISLAND OF GUAM--Continued

133100144504966. Dededo Raingage at Dededo, Guam.

LOCATION.--Lat 13°31'00" N., long 144°50'49" E. Next to Public Utilities Agency of Guam well D-9, which is within the Guam Municipal Golf Course, approximately 0.5 miles east of Dededo.

PERIOD OF RECORD.--March 1987 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 375 ft, from topographic map.

REMARKS.--Records good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.36	.00	.01	.00	.20	.06	.06	.08	.01	.37	.08
2	.30	.01	.00	.29	.00	.14	.02	.41	.14	.04	.08	.26
3	.01	.05	.00	.01	.00	.01	.01	.01	.13	.08	1.43	.47
4	.29	.19	.18	.00	.00	.00	.04	.11	.12	.47	.46	.72
5	.59	1.36	.28	.01	.11	.02	.03	.04	.00	.78	.07	.23
6	1.01	.06	.02	.00	.02	.00	.01	.02	.00	.24	.14	1.15
7	.29	.02	1.06	.00	.00	.00	.01	.12	.37	.10	.19	.13
8	.02	.52	.10	.04	.00	.00	.25	.10	.31	.16	.34	.37
9	2.08	.14	.02	.00	.00	.00	.05	.17	2.27	.20	.61	4.56
10	.28	.05	.07	.00	.00	.00	.11	.17	.04	.24	.29	1.98
11	.11	.90	.14	.22	.00	.00	.00	.02	.23	.00	.41	1.31
12	.35	.04	.00	.04	.19	.00	.16	.02	1.14	.00	.26	.72
13	.22	.05	.05	.01	1.58	.00	.06	.04	.11	.00	1.22	.05
14	.48	.06	.01	.34	.00	.00	.13	.26	.00	.00	.23	2.20
15	.19	.16	.10	.47	.00	.00	.29	.05	.80	.05	1.96	.00
16	2.59	.17	.19	.28	.96	.00	.10	.01	.10	.17	.44	.10
17	.00	.43	.12	.07	1.07	.00	.13	.02	1.26	1.73	.38	.00
18	.67	.15	.00	.11	3.56	.00	.36	.02	.07	.20	.43	.00
19	.30	.17	.12	.35	.00	.00	.90	.01	.01	.44	.02	.00
20	.05	.18	.48	.01	.01	.00	1.48	.00	.49	.85	.01	.00
21	.64	.62	.19	.00	.04	.00	3.72	.00	.28	1.18	.00	.07
22	.31	.00	.37	.23	.28	.00	.13	.00	.00	2.09	.23	.26
23	.00	.00	.04	.00	.65	.00	.10	.11	.08	.01	.10	.30
24	.07	.46	.08	.00	.44	.00	.00	.02	.00	.32	.46	.00
25	.47	.01	.00	.42	.18	.00	.00	.00	.00	.34	.00	.00
26	.00	.00	.00	.00	.01	.00	.08	.05	.00	.17	.18	.00
27	a.00	.01	.00	.00	.00	.00	.23	.02	.00	.08	.22	.14
28	---	.02	.00	.02	.00	.00	1.61	.41	.56	.86	.73	.01
29	---	.14	.00	.00	---	.00	.02	.17	.54	.58	.26	.00
30	---	.01	.00	.01	---	.01	.00	.53	.00	.89	.06	.00
31	b.11	---	.01	.02	---	.00	---	.46	---	.34	.01	---
TOTAL	---	6.34	3.63	2.96	9.10	0.38	10.09	3.43	9.13	12.62	11.59	15.11

a Partial daily record from 0001 hrs to 1900 hrs
b Partial daily record from 1225 hrs to 2400 hrs. Total accumulated rainfall from Oct. 27 (1900 hrs) to Oct. 31 (1225 hrs) is 3.88 inches

CAROLINE ISLANDS, PALAU ISLANDS

072252134330770. Airai Raingage, Babelthuap, Palau.

LOCATION.--Lat 07°22'52" N., long 134°33'07" E. Approximately 2.5 mi north of the Palau International Airport and 1.0 mi downstream of the Kmekumel River gaging station.

PERIOD OF RECORD.--October 1978 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard NWS 8-in diameter, 3-ft high collecting can with float, counter weight, and recorder. Elevation of gage is 65 ft, from topographic map.

REMARKS.--Records for the year are considered poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.31	.16	---	.05	.23	---	---	---	---	---	---
2	.26	.31	.22	---	.02	.35	---	---	---	---	---	---
3	1.16	1.93	2.02	---	.07	.01	---	---	---	---	---	---
4	.02	.18	.01	---	.01	.00	---	---	---	---	---	---
5	.10	b5.16	.12	---	.61	.08	---	---	---	---	---	---
6	.14	---	.00	---	f.26	.00	---	---	---	---	---	---
7	.20	---	.00	---	---	.01	---	---	---	---	---	---
8	.00	---	.00	---	---	.49	---	---	---	---	---	---
9	.43	---	.01	---	---	.22	---	---	---	---	---	---
10	1.02	---	1.56	---	---	.44	---	---	---	---	---	---
11	.02	---	1.33	---	g.86	.37	---	---	---	---	---	---
12	.19	---	.11	---	.01	.01	---	---	---	---	---	---
13	---	---	.11	---	.00	1.28	---	---	---	---	---	---
14	---	---	.02	---	.73	.64	---	---	---	---	---	---
15	---	---	.01	---	.29	.11	---	---	---	---	---	---
16	---	---	.00	---	.00	.01	---	---	---	---	---	---
17	---	---	.53	---	.17	.01	---	---	---	---	---	---
18	a.04	---	.20	---	.02	.00	---	---	---	---	---	p---
19	.11	---	.16	---	.18	.04	---	---	---	---	---	---
20	.30	---	1.46	---	h2.93	.02	---	---	---	---	---	---
21	3.28	---	1.70	---	---	.00	---	---	---	---	---	---
22	1.49	---	4.73	---	---	.05	---	---	m.06	---	---	---
23	.68	---	.05	e.88	---	.16	---	---	.04	---	---	---
24	2.58	---	.25	.07	j.00	.13	---	---	.00	---	---	---
25	.00	c.01	d.00	2.84	.00	1.50	---	---	.00	---	---	---
26	.00	.12	---	.85	.00	.40	---	---	.00	---	---	---
27	.64	.25	---	.05	.37	.01	---	---	.07	---	---	---
28	1.42	.18	---	.01	1.49	.42	---	---	.05	---	---	q.00
29	.20	.01	---	.50	---	k.62	---	---	n.43	---	---	.00
30	.13	1.04	---	.06	---	---	---	---	---	---	---	.07
31	.12	---	---	.54	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---

a Partial daily record from 0953 hrs to 2400 hrs. Total accumulated rainfall from Oct. 13 (0001 hrs) to Oct. 18 (0953 hrs) is 6.3 inches
b Partial daily record from 0001 hrs to 2315 hrs
c Partial daily record from 1035 hrs to 2400 hrs. Total accumulated rainfall from Nov. 5 (2315 hrs) to Nov. 25 (1035 hrs) is 6.04 inches
d Partial daily record from 0001 hrs to 0913 hrs
e Partial daily record from 0930 hrs to 2400 hrs. Total accumulated rainfall from Dec. 25 (0913 hrs) to Jan. 23 (0930 hrs) is 3.33 inches
f Partial daily record from 0001 hrs to 1430 hrs
g Partial daily record from 1430 hrs to 2400 hrs. Total accumulated rainfall from Feb. 6 (1430 hrs) to Feb. 11 (1430 hrs) is 1.07 inches
h Partial daily record from 0001 hrs to 2300 hrs
j Partial daily record from 1330 hrs to 2400 hrs. Total accumulated rainfall from Feb. 20 (2300 hrs) to Feb. 24 (1330 hrs) is 2.22 inches
k Partial daily record from 0001 hrs to 1920 hrs
m Partial daily record from 1126 hrs to 2400 hrs. Total accumulated rainfall from Mar. 29 (1920 hrs) to June 22 (1126 hrs) is >8.83 inches, rain can overflowed and some of the water spilled out
n Partial daily record from 0001 hrs to 0700 hrs
p Total accumulated rainfall from June 29 (0700 hrs) to Sep. 18 (1030 hrs) is 19.05 inches
q Partial daily record from 1730 hrs to 2400 hrs. Total accumulated rainfall from Sep. 18 (1030 hrs) to Sep. 28 (1730 hrs) is 0.70 inches

CAROLINE ISLANDS, YAP ISLANDS

093249138101070. Loran Station Raingage, Gagil-Tamil, Yap.

LOCATION.--Lat 09°32'49" N., long 138°10'10" E. Approximately 7 mi northeast of Colonia, on the main road, at the U.S. Coast Guard Station.

PERIOD OF RECORD.--December 1981 to current year. Unpublished records, prior to Oct. 1988, are in the files of the U.S. Geological Survey, Guam, filed under the name Loran Raingage.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of the gage is approximately 70 ft, from topographic map.

REMARKS.--Records for the year are considered good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.19	.00	.00	3.85	.00	.00	.00	1.06	.00	.77	---
2	.00	.41	.38	.01	.00	.00	.22	.05	.01	1.03	.26	---
3	.25	1.07	.68	.00	.00	.00	.00	.06	.05	.10	.02	---
4	1.17	.44	.00	.20	.04	.00	.05	.01	1.37	1.68	.00	---
5	.83	.66	.11	.13	1.68	.00	.29	.02	.80	1.56	.00	---
6	.95	.26	.08	.00	.00	.00	.12	.04	1.06	.34	.29	d.36
7	2.53	.00	.08	.00	.00	.00	.00	.07	.01	.89	1.25	1.27
8	.49	2.39	.06	.50	.00	.04	.00	.00	.28	.01	1.55	.20
9	.07	.08	.07	.00	.00	.00	.00	.16	.00	.00	3.26	.01
10	.18	.00	.94	.00	.42	.00	.18	.00	.18	.68	.68	.00
11	.01	.59	.01	.12	.00	.96	.40	.16	.02	.18	.01	.06
12	.00	.53	.00	.02	.00	.00	.62	.31	.00	.32	.05	1.93
13	.00	.00	.35	.06	.00	1.01	.00	.40	.05	.08	.02	.01
14	.12	.00	.00	.00	.20	.01	.00	1.49	.00	1.36	.00	.00
15	.00	.19	.00	.07	.00	.90	.00	3.71	.68	.00	.01	.67
16	.43	.16	.00	.04	.00	.00	.24	.25	.10	.22	.00	.00
17	1.81	.29	.01	.17	.08	.00	.07	.00	.60	.22	.65	.02
18	3.25	.00	.01	.16	.08	.00	.01	.00	1.26	.58	1.12	.00
19	1.08	.00	.68	.00	.13	.06	.00	.00	.50	.02	1.33	.41
20	4.28	.12	.40	.00	.02	.23	.00	.58	.30	.02	.25	.00
21	3.20	.00	.50	.36	.00	.02	.00	.04	.00	1.44	.00	.00
22	.13	.06	a1.78	.40	.12	.05	.00	.28	.00	.01	.43	.23
23	.06	.05	---	.90	.20	.07	.00	.05	.00	.01	c.07	.23
24	2.50	.62	---	.00	.04	.30	.00	.23	.00	.01	---	.40
25	.12	.00	---	.82	1.27	.01	.00	.02	.52	.00	---	.02
26	.00	.00	---	.49	1.61	.01	.00	.26	.55	.89	---	.02
27	.31	.66	---	.29	.16	.00	.00	.65	.26	.04	---	.00
28	.16	.49	---	.19	.00	.07	.47	.55	.25	.00	---	1.52
29	.00	.00	b.35	.00	---	.02	.65	.05	.40	.04	---	1.16
30	.05	.00	.00	1.21	---	.02	.00	.04	.00	.97	---	.46
31	.40	---	.00	.02	---	.04	---	.01	---	.75	---	---
TOTAL	24.46	9.26	---	6.16	9.90	3.82	3.32	9.49	10.31	13.45	---	---

a Partial daily record from 0001 hrs to 1115 hrs
b Partial daily record from 1248 hrs to 2400 hrs. Total accumulated rainfall from Dec. 22 (1115 hrs) to Dec. 29 (1248 hrs) is 1.06 inches
c Partial daily record from 0001 hrs to 0915 hrs
d Partial daily record from 0900 hrs to 2400 hrs. Total accumulated rainfall from Aug. 23 (0915 hrs) to Sep. 6 (0900 hrs) is 8.55 inches

CAROLINE ISLANDS, ISLAND OF POHNPEI

065000158100571. Kiti-Nanmand Raingage at Nanmand, Pohnpei

LOCATION.--Lat 06°50'00" N., long 158°10'05" E. Approximately one mile north of the highway, in the Nanmand area of the Kiti municipality.

PERIOD OF RECORD.--May 1972 to current year. Unpublished records, prior to Oct. 1988, are in the files of the U.S. Geological Survey, Guam, filed under the name Kitti Raingage

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 375 ft, from topographic map.

REMARKS.--Records for the year are considered good, except for Dec., and May through Sep., which are considered poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.79	b.07	---	---	.02	---	.16	.43	---	---	.00
2	---	.05	---	---	---	.00	---	.00	.46	---	---	.84
3	---	.24	---	---	---	.00	---	.22	.94	---	---	.00
4	---	1.03	---	---	---	.00	---	.28	.29	---	---	.08
5	---	.00	---	c---	---	.00	---	1.19	.10	---	---	.26
6	---	.19	---	---	---	.00	---	.62	.00	---	---	1.31
7	a.20	.25	---	---	---	.04	---	1.30	.36	---	---	.62
8	.04	.56	---	---	---	.00	---	.11	.24	---	---	.34
9	.37	.19	---	d.00	---	.96	---	.04	1.97	---	---	.92
10	1.48	.00	---	.01	h.00	.90	---	.40	1.06	---	---	.00
11	.67	.01	---	.61	.36	.92	---	1.15	.32	---	---	.04
12	.01	.02	---	.22	3.94	j.42	n.00	.37	r.00	---	---	.00
13	.30	.04	---	.32	.00	---	1.00	p.94	---	---	---	u---
14	1.22	.22	---	e.14	.04	---	.02	---	---	---	---	---
15	.13	1.85	---	---	.02	k.00	1.87	---	---	---	---	---
16	.01	.28	---	---	1.04	.00	.20	---	---	---	---	---
17	.12	.74	---	---	2.78	.74	1.76	---	---	---	---	---
18	2.83	1.03	---	f.12	.38	.07	.11	---	s---	---	---	---
19	.02	.08	---	.13	.00	.00	.91	---	---	---	---	---
20	.00	.68	---	.50	.00	.07	1.58	---	---	---	---	---
21	.22	.53	---	.06	.47	.00	.00	---	---	---	---	---
22	.80	1.42	---	.01	.36	.88	.00	---	---	---	---	---
23	.24	.00	---	.14	.00	1.98	.78	---	---	---	---	---
24	.54	.19	---	1.92	.00	.11	.29	---	---	---	---	---
25	.22	2.26	---	.24	.01	5.52	.05	---	---	---	---	---
26	1.25	.13	---	.50	.11	.00	3.25	---	---	---	---	---
27	.91	.40	---	.20	.12	.36	.01	---	---	---	---	---
28	1.12	.05	---	.48	.00	.07	.00	---	---	---	t.00	---
29	.53	.61	---	.16	---	.08	.38	---	---	---	.00	---
30	.73	.66	---	5.02	---	m.17	.04	q.77	---	---	.00	---
31	1.46	---	---	g.59	---	---	---	.62	---	---	.00	---
TOTAL	---	14.50	---	---	---	---	---	---	---	---	---	---

a Partial daily record from 1800 hrs to 2400 hrs. No record from Oct. 1 (0001 hrs) to Oct. 7 (1800 hrs)
b Partial daily record from 0001 hrs to 1200 hrs
c Total accumulated rainfall from Dec. 1 (1200 hrs) to Jan. 5 (1630 hrs) is 8.06 inches
d Partial daily record from 1100 hrs to 2400 hrs. No record from Jan. 5 (1630 hrs) to Jan. 9 (1100 hrs)
e Partial daily record from 0001 hrs to 1020 hrs
f Partial daily record from 1015 hrs to 2400 hrs. Total accumulated rainfall from Jan. 14 (1020 hrs) to Jan. 18 (1015 hrs) is 1.90 inches
g Partial daily record from 0001 hrs to 0200 hrs
h Partial daily record from 0800 hrs to 2400 hrs. Total accumulated rainfall from Jan. 31 (0200 hrs) to Feb. 10 (0800 hrs) is 3.63 inches
j Partial daily record from 0001 hrs to 0530 hrs
k Partial daily record from 0900 hrs to 2400 hrs. Total accumulated rainfall from Mar. 12 (0530 hrs) to Mar. 15 (0900 hrs) is 3.24 inches
m Partial daily record from 0001 hrs to 1845 hrs
n Partial daily record from 1530 hrs to 2400 hrs. Total accumulated rainfall from Mar. 30 (1845 hrs) to Apr. 12 (1530 hrs) is 7.65 inches
p Partial daily record from 0001 hrs to 1400 hrs
q Partial daily record from 1130 hrs to 2400 hrs. No record from May 13 (1400 hrs) to May 30 (1130 hrs)
r Partial daily record from 0001 hrs to 0220 hrs
s Total accumulated rainfall from June 12 (0220 hrs) to June 18 (1800 hrs) is 4.74 inches
t Partial daily record from 0730 hrs to 2400 hrs. No record from June 18 (1800 hrs) to Aug. 28 (0730 hrs)
u Total accumulated rainfall from Sep. 13 (0001 hrs) to Oct. 14 (1015 hrs) is 0.29 inches

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065116158120571. Mount Tolen Pwoaipwoai Raingage, Pohnpei.

LOCATION.--Lat 06°51'16" N., long 158°12'05" E. In the Kiti municipality, on the southwest face of Mt. Tolen Pwoaipwoai, approximately 1.7 mi northeast of the Lehn Mesi River gaging station.

PERIOD OF RECORD.--January 1982 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 1590 ft, from topographic map.

REMARKS.--Records for the year are considered poor, except for Jan., Feb., May, Aug., and Sep., which are considered good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.55	---	---	---	.01	.00	---	.05	1.12	---	.02	.02
2	2.81	---	---	---	.04	.05	---	.27	.70	---	2.05	.44
3	1.04	---	---	---	.01	.11	---	.50	1.16	---	2.63	.85
4	a.55	---	---	---	1.31	.14	---	.80	.22	---	1.64	.44
5	---	---	---	---	.00	.16	---	1.49	.23	---	.35	.40
6	---	---	---	f.32	g.48	.02	---	.62	.28	---	.05	.00
7	---	---	---	2.27	---	.23	---	1.88	.31	---	.01	.19
8	---	---	---	.00	---	.02	---	.37	.56	---	1.34	.00
9	---	---	---	.02	h.00	.84	---	.31	m1.88	---	.47	2.15
10	---	---	d.00	.00	.47	1.69	---	1.22	---	---	.00	.41
11	---	---	.00	1.44	1.30	2.05	---	1.78	---	---	1.50	.56
12	---	b.00	.32	.54	3.16	3.38	---	.38	---	---	2.06	.40
13	---	.78	.40	1.69	.07	1.02	---	1.54	---	---	.35	.00
14	---	.29	.00	1.82	.18	.00	k.05	.52	n.00	---	1.15	.00
15	---	1.46	.13	.31	.34	.05	2.96	.71	.00	---	1.07	.20
16	---	.37	.95	.50	2.81	.07	.19	2.29	p.16	---	.01	.16
17	---	1.42	.26	2.28	3.92	j.48	2.40	.22	---	q.32	.00	.01
18	---	1.87	1.31	1.49	.79	---	.16	3.62	---	1.84	2.81	.00
19	---	.05	.59	1.03	.12	---	1.86	.07	---	.26	.77	.00
20	---	1.16	.25	.86	.12	---	2.71	.00	---	.70	1.79	1.88
21	---	1.38	.50	.47	.73	---	.20	.88	---	.25	.79	1.79
22	---	.54	.22	.17	.82	---	.34	.00	---	.97	.47	.07
23	---	.13	.48	.52	.08	---	2.20	.04	---	4.00	.00	.14
24	---	.48	1.13	3.32	.10	---	.42	2.81	---	.88	1.15	.50
25	---	c.74	e4.13	.40	.16	---	.26	1.46	---	.40	.83	.00
26	---	---	---	.84	.07	---	4.54	.06	---	.26	.36	r.00
27	---	---	---	.40	.64	---	.02	.18	---	.00	.02	---
28	---	---	---	1.40	.04	---	.07	.42	---	.07	.34	---
29	---	---	---	.77	---	---	1.36	1.15	---	1.70	.29	---
30	---	---	---	2.44	---	---	8.00	1.82	---	.35	.46	---
31	---	---	---	3.38	---	---	---	.71	---	1.80	3.60	---
TOTAL	---	---	---	---	---	---	---	28.17	---	---	28.38	---

a Partial daily record from 0001 hrs to 1300 hrs
b Partial daily record from 1400 hrs to 2400 hrs. Total accumulated rainfall from Oct. 4 (1300 hrs) to Nov. 12 (1400 hrs) is 27.24 inches
c Partial daily record from 0001 hrs to 0815 hrs
d Partial daily record from 1400 hrs to 2400 hrs. Total accumulated rainfall from Nov. 25 (0815 hrs) to Dec. 10 (1400 hrs) is 1.63 inches
e Partial daily record from 0001 hrs to 1645 hrs
f Partial daily record from 1200 hrs to 2400 hrs. Total accumulated rainfall from Dec. 25 (1645 hrs) to Jan. 6 (1200 hrs) is 12.53 inches
g Partial daily record from 0001 hrs to 1445 hrs
h Partial daily record from 1000 hrs to 2400 hrs. Total accumulated rainfall from Feb. 6 (1445 hrs) to Feb. 9 (1000 hrs) is 0.80 inches
j Partial daily record from 0001 hrs to 1400 hrs
k Partial daily record from 1200 hrs to 2400 hrs. Total accumulated rainfall from Mar. 17 (1400 hrs) to Apr. 14 (1200 hrs) is 26.57 inches
m Partial daily record from 0001 hrs to 1115 hrs
n Partial daily record from 1530 hrs to 2400 hrs. Total accumulated rainfall from June 9 (1115 hrs) to June 14 (1530 hrs) is 3.39 inches
p Partial daily record from 0001 hrs to 1020 hrs
q Partial daily record from 1200 hrs to 2400 hrs. No record from June 16 (1020 hrs) to July 17 (1200 hrs), collector plugged with dirt
r Partial daily record from 0001 hrs to 2020 hrs. Total accumulated rainfall from Sep. 26 (2020 hrs) to Oct. 20 (1500 hrs) is 7.19 inches

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065414158090671. Luhpwor Raingage near Kolonia, Pohnpei.

LOCATION.--Lat 06°54'14" N., long 158°09'06" E. Approximately 0.2 mi downstream from the highway bridge and 200 ft south of the Luhpwor River gaging station, in the Kiti municipality.

PERIOD OF RECORD.--November 1972 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 150 ft, from topographic map.

REMARKS.--Records for the year are considered good, except for November, which is considered poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	d---	.00	1.00	.01	.00	.38	.11	1.09	.58	.00	.19
2	1.19	---	.04	.01	.01	.00	1.03	.71	.44	1.44	.00	.04
3	1.79	---	.31	.00	.00	.00	.12	.19	.71	.64	.02	3.82
4	1.46	---	.49	.00	.56	.41	5.56	.48	.06	3.91	.00	.05
5	.29	---	.50	.00	.00	1.08	.11	.54	.42	.12	.00	1.02
6	.67	---	.92	.47	.12	.06	2.28	1.03	.24	.20	.00	.00
7	.32	---	.00	2.17	.14	.02	.10	.73	.17	.26	.01	.04
8	.08	---	.00	.00	.01	.02	.31	.11	.26	1.52	.00	.04
9	.38	---	.01	g.00	.10	1.46	.31	.56	1.96	.12	.00	2.45
10	.72	---	.08	---	.13	1.07	.07	1.34	.71	.00	.12	.41
11	1.19	---	.96	---	1.63	1.46	1.20	1.13	.19	.10	1.49	.28
12	.37	---	.89	---	1.81	1.72	1.64	.22	.36	.22	1.79	.64
13	.53	---	.25	h.37	.02	.82	1.34	.53	.59	1.16	.55	.00
14	.98	---	.32	.47	.20	.00	.13	.72	1.07	.77	3.46	.00
15	.05	---	.02	.02	.15	.00	2.35	.94	3.11	.02	.73	.04
16	.01	e---	.25	.36	2.68	.00	1.49	2.69	1.00	.01	.02	.08
17	.10	---	.62	1.57	2.96	1.18	j.42	.11	.49	1.00	.07	.00
18	a1.37	---	1.09	1.14	.38	.17	---	m.00	.25	1.68	1.69	.00
19	---	---	.40	1.01	.05	.12	---	---	.78	.42	.22	.01
20	b.00	---	.46	.86	.12	1.32	k.00	---	.11	1.82	.23	1.39
21	.54	---	.08	.78	.02	1.73	.00	---	.00	.13	1.02	.30
22	.44	---	.00	.02	.62	1.42	.65	---	.00	.90	.28	.07
23	.36	---	.02	.48	.13	1.44	.16	---	.00	.05	.31	.00
24	.71	---	.73	1.74	.11	.50	1.09	---	.00	.00	.61	.24
25	.06	---	3.55	.16	.04	3.73	.30	---	.00	.00	.29	.55
26	1.12	---	1.62	.84	.10	.02	2.95	n.05	.00	.00	.80	.02
27	c.54	---	.08	.24	.13	.22	.02	.04	.00	.00	.14	.67
28	---	---	.61	1.25	.00	.25	.02	.05	.64	.00	.59	.35
29	---	---	1.12	.34	---	.19	1.01	.56	.05	.00	2.98	.01
30	---	f.01	2.78	3.11	---	.38	.06	2.99	.04	.00	.00	.00
31	---	---	.04	2.12	---	.04	---	.74	---	.00	3.44	---
TOTAL	---	---	18.24	---	12.23	20.83	---	---	14.74	17.07	20.86	12.71

a Partial daily record from 0001 hrs to 2000 hrs
b Partial daily record from 1135 hrs to 2400 hrs. Total accumulated rainfall from Oct. 18 (2000 hrs) to Oct. 20 (1135 hrs) is 0.26 inches
c Partial daily record from 0001 hrs to 1300 hrs
d Total accumulated rainfall from Oct. 27 (1300 hrs) to Nov. 1 (1100 hrs) is 3.23 inches
e Total accumulated rainfall from Nov. 1 (1100 hrs) to Nov. 16 (1030 hrs) is 4.60 inches
f Partial daily record from 1400 hrs to 2400 hrs. Total accumulated rainfall from Nov. 16 (1030 hrs) to Nov. 30 (1400 hrs) is 7.90 inches
g Partial daily record from 0001 hrs to 1920 hrs
h Partial daily record from 1030 hrs to 2400 hrs. Total accumulated rainfall from Jan. 9 (1920 hrs) to Jan. 13 (1030 hrs) is 1.86 inches
j Partial daily record from 0001 hrs to 0945 hrs
k Partial daily record from 1030 hrs to 2400 hrs. Total accumulated rainfall from Apr. 17 (0945 hrs) to Apr. 20 (1030 hrs) is 2.92 inches
m Partial daily record from 0001 hrs to 0230 hrs
n Partial daily record from 1000 hrs to 2400 hrs. Total accumulated rainfall from May 18 (0230 hrs) to May 26 (1000 hrs) is 1.10 inches

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065506158121471. Nanpil Raingage near Kolonia, Pohnpei.

LOCATION.--Lat 06°55'06" N., long 158°12'14" E. On left bank of the Nanpil River, approximately 0.25 mi downstream from the gaging station, in the Net municipality.

PERIOD OF RECORD.--April 1972 to current year. Unpublished records, prior to Oct. 1988, are in the files of the U.S. Geological Survey, Guam.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collecting can with float, counter weight, and recorder. Elevation of gage is approximately 360 ft, from topographic map.

REMARKS.-- Records for the year are considered good. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	1.01	.00	1.78	.05	.00	.58	.01	1.01	.72	.02	.24
2	1.42	.13	.32	.24	.04	.00	1.27	.19	.53	1.39	1.61	.10
3	1.16	.11	.25	.00	.00	.00	.30	.96	.48	.37	3.01	.98
4	1.44	2.68	.88	.00	.95	.95	5.14	.19	.19	2.80	1.96	.17
5	.31	.07	.61	.00	.00	.18	.14	.37	.20	.68	.48	.91
6	.38	.43	1.84	.44	.49	.40	2.10	.66	.39	.46	.00	.00
7	.56	.20	.00	2.06	.23	.06	.17	.84	.50	.28	.00	.22
8	.43	.72	.04	.00	.00	.00	.58	1.15	.23	1.68	1.10	.00
9	.88	.04	.00	.00	.02	1.49	.32	.47	2.46	.59	.32	1.86
10	.67	.00	.00	.00	.43	1.44	.07	1.09	.53	.00	.00	.37
11	1.34	.00	1.01	1.32	1.31	1.82	1.67	1.24	.36	.13	2.05	.23
12	.02	.00	1.46	1.12	3.08	3.30	1.10	---	.59	.84	1.75	.42
13	.71	.37	.71	2.27	.16	1.74	1.19	---	2.44	1.46	.16	.04
14	1.57	.73	.00	1.07	.39	.02	.23	---	.73	1.36	1.22	.02
15	.18	.68	.00	.26	.32	.00	3.02	---	.06	.00	1.16	.00
16	.00	.61	.23	.41	4.08	.01	.07	---	2.20	.00	.18	.64
17	.44	1.37	.40	.95	1.20	.28	.35	---	1.38	.86	.74	.00
18	3.44	1.99	1.00	1.04	.31	.17	.05	---	.60	.95	2.06	.00
19	.02	.22	.40	.92	.06	.67	1.08	---	.83	.68	.58	.06
20	.00	.64	.61	.80	.02	1.08	1.61	---	.13	.47	.55	.82
21	.60	1.40	.11	.52	.04	1.13	.02	---	.01	.00	1.01	1.04
22	.56	.12	.02	.37	1.03	1.24	.01	---	.44	.20	.40	.07
23	.95	.32	.24	.48	.06	1.60	.42	---	.04	.04	.00	.00
24	.94	.34	.85	1.85	.19	.58	1.18	---	.00	.00	.29	.04
25	.24	2.17	4.21	.53	.00	1.74	.11	a1.67	.00	.41	.34	.14
26	1.60	.11	.96	1.09	.00	.04	3.73	.71	.00	.14	.37	.02
27	.60	.00	.12	.26	.12	.25	.10	.00	.00	.38	.26	.07
28	.13	.36	.48	.98	.00	.56	.05	.26	.23	.17	.07	.32
29	.98	.14	.44	.76	---	.20	2.95	.79	1.15	1.74	2.00	.72
30	1.43	1.41	2.22	2.69	---	.89	.78	3.04	.08	1.18	.40	.00
31	.41	---	.00	1.99	---	.12	---	1.16	---	.96	3.55	---
TOTAL	23.89	18.37	19.41	26.20	14.58	21.96	30.39	---	17.79	20.94	27.64	9.50

a Partial daily record from 1200 hrs to 2400 hrs. Total accumulated rainfall from May 12 (0001 hrs) to May 25 (1200 hrs) is 0.19 inches

CAROLINE ISLANDS, ISLAND OF POHNPEI--Continued

065655158120371. K-7 Raingage at Kolonia, Pohnpei.

LOCATION.--Lat 06°56'55" N., long 158°12'03" E. Approximately 0.7 mi south of downtown Kolonia, next to the track for Central High School, in the Net municipality.

PERIOD OF RECORD.--October 1987 to current year. Unpublished records, prior to Oct. 1988, are in the files of the U.S. Geological Survey, Guam, filed under the name Kolonia K-7 Raingage.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of gage is approximately 140 ft, from topographic map.

REMARKS.-- Records for the year are considered good, except for Jan., May, June, and July, which are considered fair. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	.90	.11	---	.00	.00	.00	.07	.44	.18	.00	.04
2	2.11	.23	.36	---	.13	.00	.00	.12	.79	.95	1.15	.06
3	1.08	.08	.12	---	.00	.00	.96	.11	.38	.18	2.20	.42
4	1.10	1.60	.88	---	.85	.37	.84	.02	.10	3.11	1.34	.04
5	.05	.02	.49	---	.00	.37	4.63	.84	.06	.10	.68	.54
6	.13	.11	1.51	---	.06	.49	.17	.72	.82	.14	.02	.14
7	.24	.02	.01	---	.06	.02	1.02	1.00	.32	.73	.00	.00
8	.34	.50	.04	---	.01	.00	.07	1.07	.62	.72	q.14	.01
9	.60	.04	.00	---	.08	.79	.43	h.10	2.46	1.25	---	1.48
10	.13	.00	.41	---	.38	1.01	.44	---	.74	.05	---	.40
11	1.45	.00	1.15	---	.64	1.49	.16	---	.77	.18	r.97	.12
12	.04	.00	.46	---	b3.18	d.44	1.30	---	.38	.11	1.07	.16
13	.70	.94	.48	a.24	---	---	f.05	---	1.84	1.06	.23	.08
14	.47	.41	.00	.79	c.00	e.00	---	---	.59	n.06	2.74	.00
15	.14	.55	.00	.01	.13	.00	---	---	1.26	---	.70	.00
16	.00	.77	.12	.01	2.52	.00	---	---	1.34	---	.10	.16
17	.18	1.09	.68	.85	.36	.22	---	---	k.06	---	.11	.00
18	3.35	1.33	.65	1.55	.71	.11	---	---	---	---	2.59	.00
19	.12	.02	.42	.83	.04	.11	---	---	---	---	.04	.00
20	.00	.97	.71	1.00	.17	.86	g.00	---	---	---	.00	.71
21	.01	.79	.38	.50	.08	.94	.00	---	---	---	.22	2.39
22	.68	.01	.04	.18	.68	.82	.00	---	---	---	.13	.06
23	.59	.42	.17	.26	.35	1.44	.00	---	---	---	.00	.00
24	1.03	.06	1.28	1.66	.13	.11	.61	j.11	---	---	.01	.00
25	.06	1.64	4.74	.24	.00	.64	.07	1.14	---	---	.26	.74
26	1.03	.18	.89	.46	.00	.00	2.88	.23	---	---	.20	.05
27	.60	.12	.13	.19	.02	.59	.10	.05	---	---	.00	.36
28	.34	.05	.10	.46	.02	.19	.07	.16	m.01	p.00	.61	.02
29	1.88	.23	---	.42	---	.10	2.15	.64	1.19	1.76	4.42	.97
30	1.51	2.11	---	1.69	---	.08	.13	1.75	.04	1.18	.31	.04
31	.88	---	---	1.40	---	.00	---	.68	---	1.60	3.50	---
TOTAL	21.62	15.19	---	---	---	---	---	---	---	---	---	8.99

a Partial daily record from 1230 hrs to 2400 hrs. Total accumulated rainfall from Dec. 29 (0001 hrs) to Jan. 13 (1230 hrs) is 1.17 inches
b Partial daily record from 0001 hrs to 1900 hrs
c Partial daily record from 1345 hrs to 2400 hrs. No record from Feb. 12 (1900 hrs) to Feb. 14 (1345 hrs)
d Partial daily record from 0001 hrs to 0500 hrs
e Partial daily record from 1230 hrs to 2400 hrs. Total accumulated rainfall from Mar. 12 (0500 hrs) to Mar. 14 (1230 hrs) is 3.31 inches
f Partial daily record from 0001 hrs to 0920 hrs
g Partial daily record from 1130 hrs to 2400 hrs. Total accumulated rainfall from Apr. 13 (0920 hrs) to Apr. 20 (1130 hrs) is 9.33 inches
h Partial daily record from 0001 hrs to 1445 hrs
j Partial daily record from 1445 hrs to 2400 hrs. Total accumulated rainfall from May 9 (1445 hrs) to May 24 (1445 hrs) is 11.24 inches
k Partial daily record from 0001 hrs to 1345 hrs
m Partial daily record from 1130 hrs to 2400 hrs. Total accumulated rainfall from June 17 (1345 hrs) to June 28 (1130 hrs) is 2.00 inches
n Partial daily record from 0001 hrs to 0145 hrs
p Partial daily record from 0945 hrs to 2400 hrs. Total accumulated rainfall from July 14 (0145 hrs) to July 28 (0945 hrs) is 8.24 inches
q Partial daily record from 0001 hrs to 1745 hrs
r Partial daily record from 1030 hrs to 2400 hrs. Total accumulated rainfall from Aug. 8 (1745 hrs) to Aug. 11 (1030 hrs) is 1.63 inches

CAROLINE ISLANDS, ISLAND OF KOSRAE

051943162593370. Mount Mutunte Raingage at Srono, Kosrae.

LOCATION.--Lat 05°19'43" N., long 162°59'33" E. Approximately 1.1 mi south of Mount Mutunte.

PERIOD OF RECORD.--May 1971 to current year. Unpublished records prior to Oct. 1988 are in the files of the U.S. Geological Survey, Guam, filed under the name Srono Raingage.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of the gage is approximately 330 ft, from topographic map.

REMARKS.--Records for the year are considered good, except for March, which is considered poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.60	.67	1.44	.05	.36	.37	.16	1.46	.01	.80
2	.44	.00	.10	.48	.54	.00	2.96	.62	.11	1.03	.23	.02
3	.01	.04	.14	.01	2.76	.00	1.02	.84	.31	.14	.25	.20
4	1.97	.00	.02	.10	.02	2.15	.65	.50	.01	.24	1.56	.47
5	.01	.07	.00	1.06	.00	.12	.29	.14	.06	.41	.53	.59
6	.01	.41	.02	1.18	.34	2.16	.58	.47	.06	.07	2.44	.05
7	.00	1.74	.00	.90	.04	.00	.05	.14	.49	.05	.28	.00
8	.78	.11	.47	5.60	a.48	.00	.42	.18	2.22	1.32	.59	1.55
9	1.38	.02	.00	.13	---	.00	.11	1.27	.50	.00	.01	.26
10	2.22	.00	.40	1.06	---	.00	.73	1.69	2.24	1.64	.00	.97
11	.02	.20	.44	.70	---	.00	.13	.13	.54	.01	.50	.14
12	.05	.07	2.48	.01	---	c.10	.02	.68	.10	.48	.01	.05
13	.06	1.93	.14	.34	---	---	.32	.05	.60	.62	.02	.31
14	.40	.01	.04	.92	---	---	.31	.35	.41	.67	.02	.60
15	.00	.08	.00	2.00	---	---	1.61	4.48	.12	3.41	.98	.05
16	.01	.23	1.04	.05	---	---	.65	.20	.00	.00	.02	.00
17	.43	.90	.82	.90	---	---	.86	.38	.05	.00	.12	.00
18	.42	.12	.01	.26	---	---	.36	4.03	.10	1.15	2.21	.00
19	.01	.31	.24	.10	---	---	.01	.30	.08	.08	.08	3.01
20	.00	.58	.05	.04	b.41	---	.19	.07	.47	.35	.00	.46
21	.25	.10	1.38	.00	1.37	---	.24	.35	.67	1.44	1.24	.17
22	.10	.29	.64	.20	.22	---	.24	.23	.04	.31	3.12	.10
23	.72	.04	.06	2.93	.22	---	.44	.62	.56	.19	.02	.16
24	.12	1.02	.22	.80	.07	---	.04	e1.43	.02	.29	.84	.01
25	.04	.68	.37	.02	.19	---	1.87	---	.00	2.28	.22	.01
26	.00	.04	1.40	.02	2.98	---	1.11	---	.10	.44	.02	.66
27	.00	.02	.01	.00	.02	---	.00	---	.06	.13	.19	.58
28	.00	.24	.65	.07	.02	---	.00	---	.01	.01	1.03	.10
29	.16	.00	1.85	.00	---	---	.16	---	.00	1.90	.10	.40
30	.34	.73	.11	.12	---	---	1.33	---	.42	.34	1.25	1.38
31	.35	---	.00	4.33	---	d.01	---	f.49	---	.02	.03	---
TOTAL	10.30	10.02	13.70	25.00	---	---	17.06	---	10.51	20.48	17.92	13.10

a Partial daily record from 0001 hrs to 1800 hrs
b Partial daily record from 1300 hrs to 2400 hrs. Total accumulated rainfall from Feb. 8 (1800 hrs) to Feb. 20 (1300 hrs) is 3.03 inches
c Partial daily record from 0001 hrs to 1230 hrs
d Partial daily record from 1150 hrs to 2400 hrs. Total accumulated rainfall from Mar. 12 (1230 hrs) to Mar. 31 (1150 hrs) is 9.99 inches
e Partial daily record from 0001 hrs to 0230 hrs
f Partial daily record from 1324 hrs to 2400 hrs. Total accumulated rainfall from May 24 (0230 hrs) to May 31 (1324 hrs) is >0.04 inches, can overflowed

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CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

052205163005570. Civil Action Team Raingage near Mutunte, Kosrae.

LOCATION.--Lat 05°22'05" N., long 163°00'55" E. Gage is within the U.S. Navy Seabee Civil Action Team camp compound, on the northeast corner of the island, in Lelu near Tafunsak village.

PERIOD OF RECORD.--Station established on Oct. 26, 1988.

GAGE.--Standard 8-in National Weather Service (NWS) rain collector attached to a standard 8-in diameter, 3-ft high NWS collection can with float, counter weight, and recorder. Elevation of the gage is approximately 3 ft, from topographic map.

REMARKS.--Records for the year are considered good, except for Feb. and June through Sep., which are considered poor. Rainfall recorded in hundredths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.60	.23	---	.00	.64	.14	.14	1.98	.01	.71
2	---	.04	.11	.12	---	.00	1.48	.34	.19	1.08	.00	cc.00
3	---	.98	.24	.00	---	.00	1.03	.76	.08	.14	.34	---
4	---	b.00	.06	.23	---	1.38	.07	.53	.00	.31	.76	---
5	---	---	.04	.38	---	.02	.76	.16	.00	.59	.71	---
6	---	---	.13	.95	---	4.12	.44	.12	.18	.06	2.08	---
7	---	---	.01	1.04	---	k1.14	.04	.16	.22	.19	.32	---
8	---	---	.30	d4.84	---	---	.00	.53	2.40	1.38	.54	---
9	---	---	.00	---	---	---	.04	.38	.04	.00	.04	---
10	---	c.00	.00	e.10	---	m.04	1.00	1.76	1.91	.80	y.00	dd.17
11	---	.00	.00	.38	---	.56	q.00	.16	.29	.12	---	ee.70
12	---	.01	2.84	.00	---	.96	---	.70	.18	.24	---	---
13	---	1.93	.14	.43	---	.58	r.00	.12	.37	.53	---	---
14	---	.05	.60	1.81	---	.02	.00	.10	.02	.60	---	---
15	---	.08	.01	.16	j.11	.07	.84	3.61	u.00	w1.25	z.01	---
16	---	.24	.00	.74	.37	.84	.49	.04	---	---	.24	---
17	---	1.63	.49	.38	.00	.44	.10	.42	---	---	.91	---
18	---	.00	.01	.01	.28	.31	.64	3.00	---	---	.78	---
19	---	.12	.16	.17	.00	1.06	.05	.28	---	---	.00	---
20	---	.84	.22	.00	1.06	.07	.16	.00	---	---	aa.00	---
21	---	.11	1.07	.00	1.50	.08	.02	.42	---	---	---	---
22	---	.06	.71	f1.85	.00	.59	.00	.16	---	---	---	ff.20
23	---	.00	.11	g1.78	.26	1.49	.22	.59	---	---	---	gg.00
24	---	.88	.20	.83	.01	.17	.01	s.05	---	---	---	---
25	---	.64	.40	.09	.43	n.11	.84	---	---	---	---	---
26	a.00	.01	.50	1.10	1.99	---	1.57	---	---	x.58	---	hh.00
27	.00	.00	.00	1.93	.06	p.36	.00	---	v.00	.02	---	.01
28	.00	.56	.00	.23	.07	.22	.00	---	.00	.00	bb.00	.20
29	.94	.00	1.84	2.88	---	.00	.00	---	.00	1.82	.00	.17
30	.66	1.32	.08	2.78	---	.13	.13	---	.19	.10	.78	jj.10
31	.10	---	.00	h.67	---	.00	---	t.60	---	.00	.20	---
TOTAL	---	---	10.87	---	---	---	---	---	---	---	---	---

a Partial daily record from 1015 hrs to 2400 hrs. Station established on Oct. 26, 1988
b Partial daily record from 0001 hrs to 0530 hrs
c Partial daily record from 1000 hrs to 2400 hrs. Total accumulated rainfall from Nov. 4 (0530 hrs) to Nov. 10 (1000 hrs) is 2.78 inches
d Partial daily record from 0001 hrs to 1100 hrs
e Partial daily record from 1010 hrs to 2400 hrs. Total accumulated rainfall from Jan. 8 (1100 hrs) to Jan. 10 (1010 hrs) is 1.79 inches
f Partial daily record from 0001 hrs to 2245 hrs
g Partial daily record from 0852 hrs to 2400 hrs. Total accumulated rainfall from Jan. 22 (2245 hrs) to Jan. 23 (0852 hrs) is 0.57 inches
h Partial daily record from 0001 hrs to 0400 hrs
j Partial daily record from 1507 hrs to 2400 hrs. Total accumulated rainfall from Jan. 31 (0400 hrs) to Feb. 15 (1507 hrs) is 5.33 inches
k Partial daily record from 0001 hrs to 0130 hrs
m Partial daily record from 0940 hrs to 2400 hrs. Total accumulated rainfall from Mar. 7 (0130 hrs) to Mar. 10 (0940 hrs) is 3.52 inches

CAROLINE ISLANDS, ISLAND OF KOSRAE--Continued

052205163005570. Civil Action Team Raingage near Mutunte, Kosrae--Continued

n Partial daily record from 0001 hrs to 0715 hrs
p Partial daily record from 0836 hrs to 2400 hrs. Total accumulated rainfall from Mar. 25 (0715 hrs) to Mar. 27 (0836 hrs) is 1.11 inches
q Partial daily record from 0001 hrs to 0600 hrs
r Partial daily record from 0850 hrs to 2400 hrs. Total accumulated rainfall from Apr. 11 (0600 hrs) to Apr. 13 (0850 hrs) is 0.69 inches
s Partial daily record from 0001 hrs to 0145 hrs
t Partial daily record from 0944 hrs to 2400 hrs. Total accumulated rainfall from May 24 (0145 hrs) to May 31 (0944 hrs) is 10.15 inches
u Partial daily record from 0001 hrs to 0740 hrs
v Partial daily record from 0945 hrs to 2400 hrs. Total accumulated rainfall from June 15 (0740 hrs) to June 27 (0945 hrs) is 1.28 inches
w Partial daily record from 0001 hrs to 0230 hrs
x Partial daily record from 1335 hrs to 2400 hrs. Total accumulated rainfall from July 15 (0230 hrs) to July 26 (1335 hrs) is 11.38 inches
y Partial daily record from 0001 hrs to 1330 hrs
z Partial daily record from 0830 hrs to 2400 hrs. Total accumulated rainfall from Aug. 10 (1330 hrs) to Aug. 15 (0830 hrs) is 0.48 inches
aa Partial daily record from 0001 hrs to 0300 hrs
bb Partial daily record from 1315 hrs to 2400 hrs. Total accumulated rainfall from Aug. 20 (0300 hrs) to Aug. 28 (1315 hrs) is 5.36 inches
cc Partial daily record from 0001 hrs to 0745 hrs
dd Partial daily record from 1230 hrs to 2400 hrs. Total accumulated rainfall from Sep. 2 (0745 hrs) to Sep. 10 (1230 hrs) is 3.88 inches
ee Partial daily record from 0001 hrs to 0330 hrs
ff Partial daily record from 1155 hrs to 2400 hrs. Total accumulated rainfall from Sep. 11 (0330 hrs) to Sep. 22 (1155 hrs) is 3.76 inches
gg Partial daily record from 0001 hrs to 0800 hrs
hh Partial daily record from 1021 hrs to 2400 hrs. Total accumulated rainfall from Sep. 23 (0800 hrs) to Sep. 26 (1021 hrs) is 1.14 inches
jj Partial daily record from 0001 hrs to 0645 hrs. Total accumulated rainfall from Sep. 30 (0645 hrs) to Oct. 4 (1240 hrs) is 1.48 inches

SAMOA ISLANDS, ISLAND OF TUTUILA

141644170391701. Pioa Raingage near Afono, Tutuila.

LOCATION.--Lat 14°16'44" S., long 170°39'17" W., Hydrologic Unit 20100001, at the highest point of the road from Aoa to Afono, 2.1 miles northeast of Utulei High School.

PERIOD OF RECORD.--Jan. 1, 1980 to current year. Prior to October 1988, unpublished records in files of the U.S. Geological Survey.

GAGE.--Standard 8-inch National Weather Service collector with 24-inch tall standard 8-inch can. Elevation of raincan is 840 ft from topographic map.

REMARKS.--Records fair. Rainfall recorded in hundreths of an inch. Data published by the National Weather Service.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.13	---	a.49	---	---	1.07	---	---	.00	.00
2	.00	.00	---	---	1.02	---	---	.70	a.01	---	.00	.00
3	.13	.31	---	a2.30	.12	---	a.10	.39	---	---	.00	.00
4	.32	.18	---	.20	---	---	---	.82	a.80	---	.00	.00
5	.94	---	a.47	.13	---	---	---	---	.09	---	.00	1.00
6	.00	---	.08	1.98	a.87	a.27	---	---	---	a.84	.00	.48
7	1.08	---	1.30	5.00	1.55	---	---	a.37	.20	---	.20	.03
8	.00	---	5.08	.18	.56	---	a.04	1.00	.01	a.76	.00	.00
9	.00	---	2.30	.00	---	a.09	.18	.06	.13	3.00	.00	.00
10	.00	---	---	---	a.09	.41	---	---	---	.25	.00	.00
11	.37	---	---	---	---	---	a.01	---	a.70	3.76	.00	.00
12	.00	---	a3.20	---	---	---	.70	---	.03	---	.00	.19
13	.00	---	.20	---	a2.47	a.69	---	---	.07	---	.00	.00
14	.89	a3.80	1.02	---	---	.08	---	a1.00	.02	---	.00	.00
15	---	---	---	---	---	.60	---	.10	.56	---	.00	.13
16	---	a.07	---	a2.00	---	---	---	.16	1.75	---	.00	.00
17	a.28	3.80	a1.30	.15	a1.88	---	---	.00	---	---	.00	.00
18	.03	2.05	1.00	.00	---	---	---	.00	---	---	.00	.00
19	.50	---	.08	.00	---	---	---	.00	---	---	.00	.00
20	.62	---	---	.54	---	a.57	a.40	.00	---	---	.00	.00
21	.28	a.50	---	---	---	.38	1.80	.00	---	---	.00	.08
22	---	---	---	---	a1.37	.00	.03	.00	---	a2.00	.00	.00
23	---	---	---	a2.12	.80	.08	.50	.00	---	1.00	.00	.00
24	a2.12	---	---	.00	.10	.00	.00	.00	---	.63	.00	.00
25	.00	a3.50	---	.00	.00	.01	.00	.00	---	.26	.00	.00
26	.00	---	---	.50	.00	.07	.38	.00	---	.00	.00	.00
27	.04	---	a1.68	.04	.00	.00	.00	.00	a.25	.00	.00	.00
28	2.42	a3.98	1.48	.00	.00	1.00	.00	.00	.12	.00	.00	.00
29	---	.46	.26	.00	---	1.98	1.93	.00	.00	.00	.00	.00
30	---	.00	.22	.00	---	.22	.70	.00	.00	.00	.00	.00
31	a1.70	---	---	---	---	.01	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	0.20	1.91

a Total accumulated reading since the previous reading.

SAMOA ISLANDS, ISLAND OF TUTUILA

141732170422001. Vaipito diversion Raingage at Pago Pago, Tutuila.

LOCATION.--Lat 14°17'32" S., long 170°42'20" W., Hydrologic Unit 20100001, at diversion intake, on Utumoa Stream, 1.6 miles southwest of Utulei High School.

PERIOD OF RECORD.--1957 to current year. Prior to October 1988, unpublished records in files of the U.S. Geological Survey.

GAGE.--3-inch, 24-inch tall plastic raingage. Elevation of raincan is 460 ft from topographic map.

REMARKS.--Records fair. Rainfall recorded in hundreths of an inch. Data published by the National Weather Service.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.06	---	a.38	---	---	.84	.00	---	.20	.00
2	.00	.00	---	---	.83	---	---	.36	.01	---	.09	.00
3	.08	.27	---	a1.27	.07	---	a.13	.00	---	---	.00	.00
4	.15	.41	---	2.00	---	---	---	.42	---	---	.00	.00
5	.28	---	---	.00	---	---	---	---	a.61	---	.00	.99
6	.00	---	a.07	.96	a.66	a.27	a.22	---	---	a.34	.00	.28
7	.82	---	.80	2.50	1.32	---	---	a.67	a.48	---	.16	.00
8	---	---	2.47	.10	.56	a.18	---	.89	.03	a1.85	.10	.00
9	---	---	1.58	---	.00	.13	---	.15	.20	.19	.00	.00
10	---	---	---	---	.03	.37	---	---	---	2.51	.00	.00
11	a.12	---	---	---	---	---	a.03	---	a.80	---	.00	.00
12	.00	---	a2.73	---	---	---	.89	---	.07	---	.00	.30
13	.00	---	.13	---	a2.96	---	---	---	.10	---	.00	.00
14	---	a3.90	.39	---	---	a.09	---	---	.05	---	.00	.00
15	---	.00	---	---	---	.80	---	a.50	.20	---	.00	.19
16	---	.03	---	a1.15	---	---	---	.08	.58	---	.00	.00
17	a.31	3.00	a.53	.03	a.47	---	---	.00	---	---	.00	.00
18	.02	2.90	.38	.00	---	---	---	.00	---	---	.00	.00
19	---	---	.07	.00	---	---	---	.00	a.47	---	.00	.00
20	---	---	---	.25	---	a.22	a.34	.00	---	---	.00	.00
21	---	a.76	---	---	---	.15	.70	.00	---	---	.00	.14
22	---	---	---	---	a1.13	.00	---	.00	---	a.51	.00	.00
23	---	---	---	a.86	---	.21	a.31	.00	---	1.00	.00	.00
24	a.30	---	---	---	a.21	.38	.00	.00	---	.29	.00	.00
25	---	a3.62	---	---	---	.00	.00	.00	---	.18	.00	.00
26	---	---	---	a.47	---	.03	.17	.00	---	.00	.00	.00
27	a.05	---	a1.36	.01	---	---	---	.00	a.27	.00	.00	.00
28	1.30	a2.88	.89	---	---	a.87	---	.00	.08	.00	.00	.00
29	---	.37	.13	---	---	1.70	a2.05	.00	.00	.00	.00	.00
30	---	.00	.09	---	---	.51	.58	.00	.00	.00	.00	.00
31	a1.80	---	---	---	---	.07	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	---	0.55	1.90

a Total accumulated reading since the previous reading.

SAMOA ISLANDS, ISLAND OF TUTUILA

141751170453001. Aasu Raingage at Aasu, Tutuila.

LOCATION.--Lat 14°17'51" S., long 170°45'30" W., Hydrologic Unit 20100001, in USGS streamgage station 16920500 at Aasu, and 200 ft upstream from mouth.

PERIOD OF RECORD.--Oct. 10, 1960 to current year. Prior to October 1988, unpublished records in files of the U.S. Geological Survey.

GAGE.--Standard 8-inch National Weather Service collector with 24-inch tall standard 8-inch can. Elevation of raincan is 16 ft from topographic map.

REMARKS.--Records fair. Cumulative rainfall amounts read during each visit. Cumulative rainfall read in nearest tenths of an inch.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INTERMITTENT READINGS

PERIOD	RAINFALL
Sep. 13 to Oct. 13	7.2
Oct. 13 to Nov. 22	16.5
Nov. 22 to Dec. 22	25.2
Dec. 22 to Jan. 24	28.3
Jan. 24 to Mar. 01	8.4
Mar. 01 to Apr. 07	6.0
Apr. 07 to May 18	28.0
May 18 to June 21	9.4
June 21 to July 21	2.0
July 21 to Aug. 11	6.4
Aug. 11 to Aug. 29	0.0
Aug. 29 to Sep. 29	2.7
Sep. 29 to Nov. 03	14.5

SAMOA ISLANDS, ISLAND OF TUTUILA

141952170460201. Aasufou Raingage at Aoloaufou, Tutuila.

LOCATION.--Lat 14°19'52" S., long 170°46'02" W., Hydrologic Unit 20100001, at Aasufou Road, 1.8 miles northwest of Mapusaga High School.

PERIOD OF RECORD.--Jan. 1, 1980 to current year. Prior to October 1988, unpublished records in files of the U.S. Geological Survey.

GAGE.--Standard 8-inch National Weather Service collector with 24-inch tall standard 8-inch can. Elevation of raincan is 1,340 ft from topographic map.

REMARKS.--Records fair. Rainfall recorded in hundreths of an inch. Data published by the National Weather Service.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.05	---	a1.02	---	---	.81	---	---	.02	.00
2	.00	.00	---	---	.08	a1.06	---	.70	a.12	---	.08	.00
3	.81	.10	---	a7.00	.22	.28	a.30	.19	---	---	.10	.00
4	.25	1.90	---	.30	---	---	---	3.20	a1.00	a2.00	.02	.00
5	1.04	---	a.85	.42	---	---	---	---	.20	.40	.00	1.07
6	.50	---	.10	1.98	a5.02	a.75	---	a.24	---	---	.00	.80
7	.35	a.40	2.02	6.00	1.05	.27	---	.48	a1.16	---	.08	.13
8	.00	.03	2.76	1.38	1.39	.35	a.30	.76	.08	a1.00	.17	.00
9	---	.80	4.11	.07	---	1.00	1.50	.68	.16	4.00	.00	.00
10	---	---	---	.00	a.19	.33	.00	---	---	.42	.00	.00
11	a.60	---	---	.05	---	---	.05	---	a.90	.60	.00	.00
12	.00	---	a4.13	.25	---	---	1.70	---	.06	---	.00	.25
13	.28	---	1.30	.19	a3.76	a1.70	.48	a1.28	.80	---	.00	.00
14	.80	a4.00	.11	---	1.09	.49	---	2.00	.04	---	.00	.00
15	---	.08	.30	---	.17	2.00	---	1.00	.75	---	.00	.32
16	---	.42	---	a1.40	---	---	a1.00	.15	1.55	---	.00	.00
17	a3.50	1.40	a2.02	.53	a3.42	---	---	.12	---	---	.00	.00
18	.62	4.00	1.98	.00	---	---	---	---	a.10	---	.00	.00
19	2.89	---	.42	.00	---	---	---	---	---	---	.20	.00
20	.75	---	---	.30	---	a3.13	a.65	---	---	---	.00	.00
21	.08	a1.10	---	---	a1.93	1.20	.68	a.23	---	---	.00	.53
22	---	---	---	---	2.00	.05	.08	---	a.06	a1.38	.00	.00
23	---	---	---	a3.22	.20	.10	2.00	a.10	---	.62	.00	.00
24	a2.37	---	---	.00	.90	.20	.90	---	---	.90	.00	.00
25	.00	a.41	---	.00	---	.50	.00	a.02	a.20	.38	.00	.00
26	.00	---	---	.70	---	.02	1.67	.00	---	.05	.00	.00
27	.60	---	a7.50	.01	a.05	---	.21	.00	a.53	.38	.00	.00
28	1.10	a2.50	2.97	---	---	a.10	.07	.00	.50	.00	.00	.00
29	---	.48	.12	---	---	3.60	2.00	.00	.00	.00	.00	.00
30	---	.00	.30	a.16	---	.15	1.58	.00	.00	.00	.06	.00
31	a1.75	---	---	---	---	.04	---	.00	---	.00	.10	---
TOTAL	---	---	---	---	---	---	---	---	---	---	0.83	3.10

a Total accumulated reading since the previous reading.

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October 1, 1978

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).

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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